

# 1990 - 1992 Corvette ZR-1: Service Bulletin: Engine Service Program

**Subject:** ENGINE SERVICE PROGRAM - LT5 5.7L CORVETTE ZR1  
ENGINE (VIN CODE J)

**Model and Year:** 1990-92 CORVETTE ZR1

**Source:** Chevrolet Service Bulletin

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THIS BULLETIN CANCELS AND SUPERSEDES DEALER SERVICE BULLETIN NO. 90-59-5. DATED SEPTEMBER 1990. THE 1991 AND 1992 MODEL YEARS HAVE BEEN ADDED AS WELL CHANGES IN THE PROCEDURE. ALL COPIES OF 90-59-6 SHOULD BE DISCARDED. THIS BULLETIN IS IN EFFECT UNTIL FURTHER NOTICE and should be filed in the "Special Exchange Policy Procedures Manual" previously provided.

This program is designed to assist dealers in servicing the LT5 5.7L V8 engine used in the Corvette ZR1. Because production volumes are limited and engine reliability is proven, internal repair of the engine is confined to a specialized LT5 Repair Center.

As part of this program, the Chevrolet Technical Assistance Network (TAN) is prepared to work in concert with GM Service Technology Group, the Corvette Action Center and Corvette Engineering and Manufacturing Group to resolve customer concerns.

Note, this program is designed to handle repairs covered by the warranty as well as repairs not covered by warranty (Customer Pay Repairs).

The service program will be administered by the Chevrolet Technical Assistance Network (TAN) and coordinated through General Motors Service

Parts Operations (GMSPO).

If your dealership receives a customer concern on this engine, follow the procedure below which identifies components which may be serviced on the vehicle and assists in diagnosing engines that may require technical assistance or repairs by the Repair Center.

#### A. LT5 ENGINE COMPONENTS WHICH MAY BE SERVICED BY DEALERS

**NOTE: Any deficient engine component listed below should be repaired according to Service Procedures in appropriate Corvette Service Manuals.**

1. Throttle body and air intake duct.
2. Inlet plenum and related pipes and connector's.
3. Direct Ignition System and camshaft sensor, crankshaft sensor, Electronic Spark Control (ESC) sensor, coil, wires, module and spark plugs.
4. Fuel rail assembly and/or components and injector housings.
5. Secondary port throttle system (excludes throttle shafts and linkages), including vacuum reservoir, actuators, lines, and external linkage in the valley of the engine, exposed when inlet plenum is removed.
6. Crankcase ventilation components including pipes.
7. Oil filter and filter housing and its components, and oil level dipstick.
8. Engine wiring harness.
9. Coolant pump, pipes, water outlet.

10. Complete accessory drives and supporting brackets, including starter, generator, A/C compressor, power steering pump, and all attaching parts.
11. All engine electrical sensors and oxygen sensor.
12. Flywheel and clutch components including housing.
13. Exhaust manifold/catalytic converter assembly.
14. Secondary injector modules.
15. Chain tensioners and housings.
16. Engine mounts.

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

- Cam cover may be removed to repair oil leak between cover and head.
- Oil pan may be removed to repair oil leak on the pan side rails only.

**\*IMPORTANT:** Any service items beyond those listed above require TAN authorization. Call the Chevrolet Technical Assistance Network - Miscellaneous Group at 1-800-227-3175.

## **B. INTERNAL ENGINE REPAIR OR REPLACEMENT DIAGNOSIS**

If dealership service management determines any internal engine components require repair or replacement, the engine may require removal (authorized by TAN) from the vehicle and shipment to the Repair Center. If shipment for repair is anticipated, only components described in section "A" above may be removed to determine whether the engine must be removed from the vehicle.

If engine removal is needed, any of the above mentioned parts removed must be reinstalled (i.e., complete engines are required for shipment).

To assist owners in service decisions in cases of non-warranty repairs, Dealers are to advise owners of the sundry expense involved which includes shipping, labor and a diagnostic charge regardless of engine repairability by the Repair Center.

### C. ENGINE SERVICE PROGRAM PROCEDURE

Once the above diagnosis is made, call the Chevrolet Technical Assistance Network - Miscellaneous Group at 1-800-227-3175.

- TAN will require the VIN, engine serial number, mileage and vehicle delivery date along with a description of your diagnosis. In cases involving customer pay repairs or insurance claims, TAN will arrange an estimate of engine repair costs to the Dealer, if needed.

- TAN will arrange shipment of an engine shipping container within two (2) work days and provide you with a TAN reference number.

- The engine shipping container will have attached an envelope with the following:

- plastic shipping plugs

- engine plastic bag cover

- return shipping label

- Bill of Lading

- instructions

- The dealership prepares and ships the removed engine (see "D" - Preparation for Shipping and "E" - Shipping Instructions).

- Upon receipt the Repair Center will diagnose the repairability of the returned engine. If repairable and:

If the repairs are covered by warranty, the Repair Center will complete the necessary engine repairs within ten (10) work days and return ship the repaired engine to the dealership. The shipping and repair costs will be absorbed by Chevrolet and not be invoiced to the dealership.

If customer paid repairs are involved, an Estimate of Repairs, if requested, will be forwarded to the Dealer. After reviewing the Estimate of Repairs with the owner, the Dealer must contact TAN to authorize the Repair Center to complete engine repairs or request the engine be returned to the dealership. After completing authorized repairs the engine will be returned to the dealership with a GMSPO Engine Repair Memo Invoice included. The invoice amount will be billed on the Dealer's open account. If repair is not authorized, the engine will be returned to the dealership without repair along with a Memo Invoice for the involved shipping expense and diagnosis charge. The invoice amount will be billed on the Dealer's open account.

- If the engine is not repairable, the Repair Center will contact TAN.

If the non-repairable engine is covered by warranty, TAN will order a replacement engine through GMSPO-SPAC. The non-repairable engine will be retained/scrapped by the Repair Center. The dealership will not be invoiced for the shipping expense or the replacement engine.

If the non-repairable engine is not covered by warranty, TAN will advise the dealership and request a customer decision be obtained relative to ordering a replacement engine and as to the disposition of the non-repairable engine. If the customer decides a replacement engine is appropriate, TAN will order a replacement engine through GMSPO-SPAC. The non-repairable engine will

be retained/scrapped by the Repair Center. If the customer decides not to replace the engine, the customer has the option of leaving the non-repairable engine at the Repair Center or having it return shipped to the dealership. However, the return shipment expense will increase the total cost invoiced to the dealership. In any case, the dealership will be invoiced for the shipping costs and diagnosis of the non-repairable engine. If a customer pay replacement engine is ordered by TAN, it will be invoiced to the dealership per normal parts invoicing procedures.

- The repaired or replaced engine is reinstalled in the vehicle by the Dealer per Service Manual procedures.

- If the repair is covered by warranty, the dealership submits a warranty claim (see "G" - Warranty Claim Procedure).

- For customer pay repairs, the Dealer invoices the customer based on the shipping and repair/replacement costs invoiced to the dealership plus other dealership labor and parts costs involved in the repair.

#### D. PREPARATION FOR SHIPPING

- The removed engine must be returned in the shipping container provided, without examination other than as described in section "A" above. Engine dress must remain (i.e., intake manifold, etc.). Do not ship with exhaust manifolds. Dealerships returning units even partially disassembled will be judged as violating this procedure and as such will be subject to being invoiced for all materials furnished.

- Any items removed in the section "A" above for diagnosis must be reinstalled according to specifications in the Service Manual.

- Visually check all fluid levels to assure they are within the normal operating range. Drain and measure the oil and coolant. Record the oil and coolant measurement results on the repair order. **REPLACE THE DRAIN PLUG.**

- Remove the engine assembly as outlined in the appropriate Corvette Service Manuals.
- If the removed engine leaks, mark the leak area on the engine charts provided with the instructions.
- Write the TAN reference number on the repair order.
- Place a copy of the repair order in the original envelope and attach it to the removed engine.
- Place the engine in the plastic bag provided before placing it in the shipping container.

#### E. SHIPPING INSTRUCTIONS

- Place the return shipping label provided over the original container shipping label.
- The Bill of Lading provided is the only document required to return ship the removed engine. Freight has been prepaid. NOTE: The same carrier, whose name is on the Bill of Lading, must be used for the return shipment.
- All required data on the Bill of Lading will be complete, except the date and carrier signature. After the Bill of Lading has been dated and signed by the carrier, retain the last copy with your repair order and provide the other two (2) copies to the carrier. Your copy of the Bill of Lading, signed by the carrier, is your proof of the engine shipment.

Ship the removed engine to: Mercruiser 3003 N. Perkins Road Stillwater, OK 74075 ATTN: LT5 Engine Service Program

#### F. SHIPPING CONTAINER RETURN

- After the repaired or replaced engine is installed in the vehicle, the shipping container must be returned to the Repair Center. Failure to return the container, within ten (10) work days, will result in the dealership being invoiced \$500.00 for the container, plus an administration charge.
  
- Place the return shipping label provided over the original container shipping label.
  
- The Bill of Lading provided is the only document required to return ship the empty container. Freight has been prepaid. NOTE: The same carder, whose name is on the Bill of Lading, must be used for the container return shipment.
  
- All required data on the Bill of Lading will be complete, except the date and carder signature. After the Bill of Lading has been dated and signed by the carder, retain the last copy and provide the other two (2) copies to the carrier. Your copy of the Bill of Lading, signed by the carrier, is your proof of the container return shipment.

## G. WARRANTY CLAIM PROCEDURE

Claims for external repairs should be submitted as per normal claim submission procedures.

Labor	Operation	Labor	Other	Net	Number	Description	Hours	Hours	Amount
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T1850	Repair/Replace	Engine	Assembly	11.1	0.5				\$#.##
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\* Administration Allowance

\*\*Applicable miscellaneous items, such as engine oil and engine coolant, should be included in the Net Amount (DMN) column of the claim. (Cost of the internal repair or engine replacement under warranty is billed directly to



Chevrolet.)

## H. CUSTOMER PAY REPAIR PROCEDURE

Invoice the customer based on the shipping and repair/replacement costs invoiced to the dealership plus other dealership labor and parts costs.

General Motors bulletins are intended for use by professional technicians, not a "do-it-yourselfer". They are written to inform those technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions and know-how to do a job properly and safely. If a condition is described, do not assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See a General Motors dealer servicing your brand of General Motors vehicle for information on whether your vehicle may benefit from the information.

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