

# TECHNICAL BULLETIN



## Momentary Engine Power Loss or Stalling Diagnosis and Repair

**18-38**

MODEL **91-94 4.0L Sedans**  
**93-94 4.0L XJS**

DATE **4/94**

### ISSUE:

Investigation has shown that momentary engine power loss and/or stalling can be caused by one or a combination of conditions.

To address these concerns, the following changes have been introduced on production vehicles:

CONDITION	CHANGE	INTRO. VIN
Resistance build-up across Mass Air Flow Sensor connector	MAFS and harness connector pins gold plated	Sedan: 699043 XJS: 192404
EMS ground stud loose (Sedan only)	Tightening process assured	Sedan: 691370
HT tracking across ignition coil tower (Sedan only)	Ignition coil cover fitted	Sedan: 688765
Water ingress to ECM connector (Sedan only)	ECM drip shield fitted	Sedan: 683199
	Plenum drain modified	Sedan: 681967
EMS relay contacts contaminated	Cleanliness assured	Relay date code 183

Revised components are available for service of earlier vehicles. Diagnostic and repair instructions are provided in this bulletin.

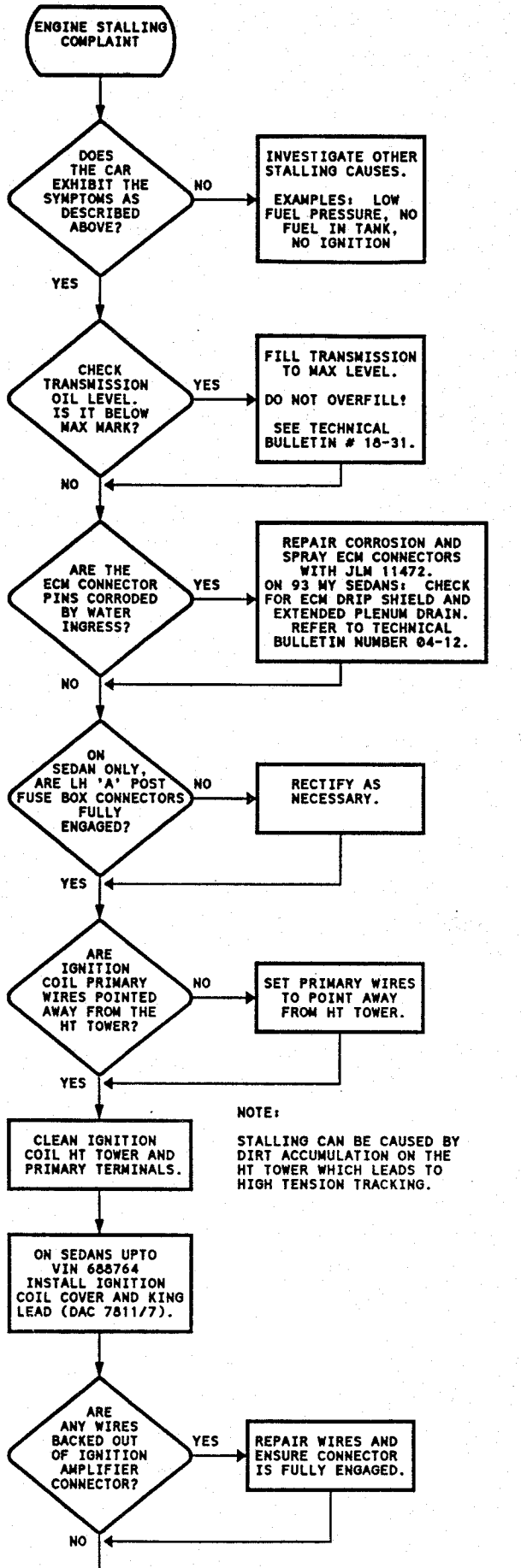
### ACTION:

#### Diagnosis and Repair (91-94 MY Vehicles)

For complaints of momentary engine power loss and/or stalling (engine restarts immediately), work through the attached Diagnostic Chart to find and correct all possible causes. Perform every applicable step, whether or not a fault is found.

After completing the chart and if the vehicle is equipped with MAFS part number DBC 5917 or DBC 10852, refer to the last page and install a new MAFS and harness connector with gold plated pins using the following procedure.

**DIAGNOSTIC CHART: SYMPTOM - MOMENTARY LOSS OF ENGINE POWER, OR STALLING - ENGINE RESTARTS IMMEDIATELY.**  
 USE THE FOLLOWING CHART TO FIND AND CORRECT THE CAUSE. PERFORM EVERY STEP WHETHER OR NOT A FAULT IS FOUND.



**NOTES:**

THIS STEP APPLIES TO HELLA RELAYS ON 93 MY VEHICLES ONLY.

FOR RELAY DATE CODES: FIRST 2 DIGITS INDICATE WEEK.

LAST DIGIT INDICATES YEAR.

**NOTE:**

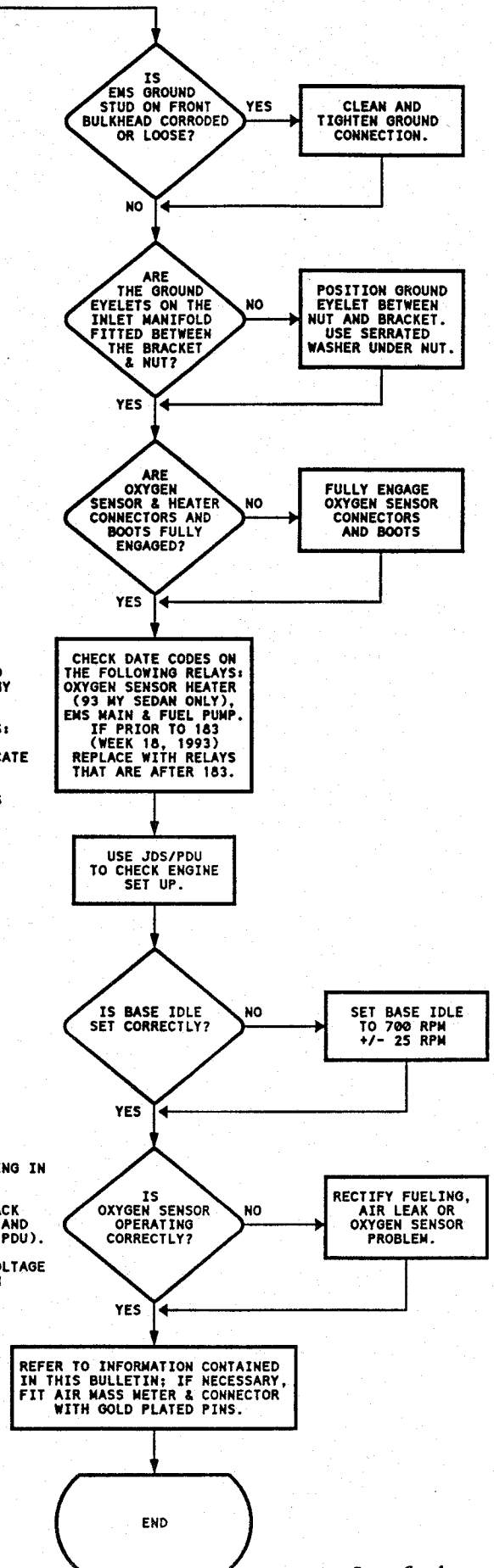
STALLING CAN BE CAUSED BY DIRT ACCUMULATION ON THE HT TOWER WHICH LEADS TO HIGH TENSION TRACKING.

**NOTE:**

WHEN ENGINE IS RUNNING IN CLOSED LOOP:

OXYGEN SENSOR FEEDBACK SHOULD BE BETWEEN 1 AND 4 VOLTS (USE JDS OR PDU).

OXYGEN SENSOR RAW VOLTAGE SHOULD SWING BETWEEN 0.2 AND 0.8 VOLTS.



## MAFS and Harness Connector Replacement

### General Notes

- Gold plated MAFS terminal pins can be identified by their gold color.
- Do not match tin plated harness connector pins to a MAFS with gold plated pins, they are not compatible.
- When installing a MAFS with gold plated pins on any vehicle previously equipped with a MAFS with tin plated pins, also fit a new harness connector with gold plated pins. Use the replacement procedure given in this bulletin.
- Mass air flow sensors (MAFS) and harness connectors with gold plated pins have new part numbers; refer to PARTS INFORMATION.

### Procedure

1. Record preset radio stations (including X-mem) and disconnect the vehicle battery.
2. Disconnect the MAFS multi-plug.
3. Release the air cleaner clips and loosen the clamp securing the MAFS.
4. Remove the 6mm nut securing the air intake elbow to the inner fender.
5. Remove the MAFS from the vehicle. Remove and discard the original 'O' ring seal to the air cleaner.
6. Release the plastic strap securing the MAFS harness flylead to the inlet manifold.
7. Unwrap the tape from the harness flylead to allow the wires in the replacement connector to be joined to the harness.
8. Place the new connector and flylead alongside the existing harness to determine where to cut the wires. The new lead must be no shorter than the existing harness and must not be more than 1 " longer. Note that the wire ends are staggered to prevent bunching of the splices. Cut the existing harness wires to match the new wire lengths.
9. Trim 3/4" of insulation from the wire ends. Slide a 2" section of heat-shrink tube over each wire.
10. Match the wire colors and twist the bare wire ends together to form end-to-end splices. Solder the joints using 50/50 rosin core solder.

11. Shrink the tubing over the joints with a heat gun.
12. Wrap the new flylead with black PVC tape and secure the harness to the inlet manifold strap.
13. Fit a new 'O' ring (part # EAC 4714) to the air cleaner side of the new MAFS.
14. Install the new MAFS, checking that the 'O' ring is properly seated in the air cleaner tube; tighten hose clamp and secure air cleaner clips.
15. Locate the air intake elbow onto its mount; install and tighten the 6mm mounting nut.
16. Connect the MAFS multi-plug.
17. Connect the vehicle battery; reset the radio code and stations into memory.

**PARTS INFORMATION:**

<u>Description</u>	<u>Application</u>	<u>Part Number</u>
Mass Air Flow Sensor	93/94 MY 4.0L Sedan and 4.0L XJS	DBC 12516
Mass Air Flow Sensor	All 88 - 92 MY Sedans	DBC 12517
MAFS Harness Flylead and Connector	All Sedans	LMD 3345AA
MAFS Harness Flylead and Connector	93/94 MY 4.0L XJS	LHD 3345AA
'O' Ring Seal	All	EAC 4714
King Lead and Ignition Coil Cover	Sedans upto VIN 688764	DAC 7811/7
EMS Relay(s)	As req'd (date codes prior to 183)	DAC 7686 (blue) DAC 7687 (violet)

**WARRANTY INFORMATION**

<u>Fault Code</u>	<u>R.O. Number</u>	<u>Time Allowance</u>
7CDX	18.91.07	2.15 hrs.