

00V-259

//ALL HMA8ST70 10/06/00 10/06/00 10/06/00
TO: ALL HYUNDAI SERVICE MANAGERS
FROM: CHUCK HALPER
SUBJECT: CAMPAIGN 039 - MASS AIR FLOW SENSOR CONNECTION RECALL
CAMPAIGN

Hyundai Motor America is conducting a voluntary Customer Notification (Safety Recall) on 1999 and 2000 Sonatas equipped with 2.5L V-6 engines produced from the start of production through July 4, 2000 inclusive, to make repairs affecting the MAF sensor electrical connection. Engine vibration transmitted to the Mass Air Flow sensor electrical connector wiring harness may cause an intermittent MAF sensor electrical signal interruption which could lead to low-speed engine stalling.

Details on this campaign follow below:

1.) The repair will reduce the amount of vibration transmitted to the MAF sensor electrical connection by changing the sensor wiring routing and mounting position in vehicles produced from the start of production through May 29, 2000 from the air intake resonator to a new air intake hose clamp. In addition, on vehicles produced from the start of production through July 4, 2000, the MAF sensor connector female terminal pins will be packed with corrosion inhibiting lubricant, and the Engine Control Module will be reprogrammed using the Hi-Scan Pro. (See TSB 00-01-005 for details)

2.) On October 9, 2000, a dealer letter will be sent to all Dealer Principals, Dealership Parts Managers and Service Managers. Enclosed with the Service Manager's letter will be five (5) Technical Service Bulletins, a copy of the Customer Notification Letter, and a VIN listing of both dealer in-stock vehicles and retail customers affected by this campaign.

3.) Between October 6, 2000 and October 12, 2000 parts (Service Kits, PN# 91400-3B000 and one syringe of lubricant, (PN#-00305-F0000-39) will be shipped to ONLY those dealerships with affected vehicles. The campaign parts will be included in the dealership's weekly parts stock order. Additional parts can be ordered through the regular parts system.

NOTE: One syringe is SUFFICIENT to service a MINIMUM of 50 vehicles.

4.) Beginning October 16, 2000, customer notification letters will be mailed in four (4) weekly flights.

5.) It is IMPORTANT TO SUBMIT A CAMPAIGN CLAIM FOR EACH VEHICLE REPAIRED so your dealership can be compensated for your work and so Hyundai can maintain accurate records of campaign completion rates.

If you have any questions, please contact your District Parts and Service Manager.

//END

//ALL HMA-BST-57 09/20/00 09/20/00 09/20/00

TO: ALL HYUNDAI SERVICE MANAGERS

FROM: NATIONAL SERVICE DEPARTMENT

SUBJECT: 1999-2000 SONATA V-6 INFREQUENT LOW SPEED ENGINE STALLING

1999 and 2000 model year Sonatas equipped with 2.5L V-6 Engines that were produced through July 4, 2000 may exhibit infrequent low speed engine stalling. This condition is the result of an intermittent interruption of the Mass Air Flow sensor signal - a result of engine vibration being transmitted to the Mass Air Flow sensor connector.

Your dealership will receive detailed information regarding a campaign to repair this condition in the near future. In the interim, please contact the Hyundai Technical Assistance Line at (800) 325-6604 with questions regarding repairs for any vehicle exhibiting this condition.

//END

October 9, 2000

**TO: ALL HYUNDAI DEALER PRINCIPALS:
ALL HYUNDAI DEALERSHIP SERVICE MANAGERS:
ALL HYUNDAI DEALERSHIP PARTS MANAGERS:**

Hyundai Motor America, in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act, is conducting a voluntary Customer Notification (*Mass Air Flow Sensor Connection Recall Campaign*) on 1999 and 2000 Hyundai Sonatas with V-6 engines, manufactured from start of production through July 4, 2000 inclusive.

Engine vibration transmitted to the MAF sensor connector may cause an intermittent MAF sensor interruption, which may lead to low speed stalling. The recall campaign repair procedure involves changing the sensor wiring harness mounting from the air intake resonator to a new air intake hose clamp on affected vehicles produced from the start of production through May 29, 2000. It also consists of reprogramming the Engine Control Module using the Hi-Scan-Pro and packing the MAF sensor connector female terminal pins with corrosion inhibiting lubricant.

Customer notification letters will be sent in four (4) weekly flights, beginning October 16, 2000, requesting that customers contact their Hyundai dealership for an appointment to have the campaign repair performed. Enclosed with the Service Manager's letter are materials which were developed for your use: Five (5) copies of the Warranty and Technical Service Bulletin (TSB) containing instructions on performing the repair and submitting the campaign claim, a copy of the Customer Notification Letter, and a VIN listing of both your dealer stock and your retail customers affected by this campaign.

Between October 6, 2000, and October 12, 2000, an initial supply of Service Kits (91400-38Q00) and a syringe of Lubricant (PN-90305-F0000-39) will be shipped to dealerships with affected vehicles. One syringe of Lubricant is sufficient to service a minimum of fifty (50) vehicles. The campaign parts will be included in your dealership's weekly stock order. Additional parts can be ordered through the regular parts system.

Hyundai appreciates your cooperation. Questions may be directed to your District Parts and Service Manager

Sincerely,



Chuck Halper
Vice President of Service

MOTOR VEHICLE RECALL

Dear 1999 or 2000 Sonata V-6 Owner:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Hyundai has determined that a defect, which relates to motor vehicle safety, exists in certain 1999 and 2000 model year Sonata 2.5-liter V-6 vehicles.

What is the problem?

Some 1999 and 2000 model year Hyundai Sonatas equipped with 2.5-liter V-6 engines may experience intermittent low-speed engine stalling, if the Mass Air Flow Sensor electrical connector signal is interrupted as a result of engine vibration. Engine stalling may result in an accident.

What will Hyundai do?

- To ensure that the Mass Air Flow Sensor electrical connector signal does not become interrupted and does not cause your vehicle to stall, we are asking you to schedule an appointment as soon as possible to take your vehicle to your Hyundai dealer. The Hyundai dealer will reroute the Mass Air Flow Sensor connector wiring harness, as necessary. Additionally, corrosion inhibiting lubricant will be applied to the connector terminals and your vehicle's 2.5 liter V-6 engine Engine Control Module will be reprogrammed to reduce the likelihood that an intermittent Mass Air Flow Sensor connector signal interruption could result in low speed stalling.

You should plan to leave your vehicle at your Hyundai dealer for a half day to have this service performed. This service will be performed at no charge to you.

What should you do?

- We urge you to call your Hyundai dealer to schedule an appointment to have this work performed as soon as possible.

What if you have other questions?

- If you have any difficulty having this service performed, we recommend that you call the Hyundai Customer Assistance Center at 1-800-633-5151. If you are still not satisfied that we have remedied this situation without charge, and within a reasonable amount of time, you may wish to write to the Administrator, National Highway Traffic Safety Administration, 400 Seventh Street, S. W. Washington, D.C. 20590 or call their toll-free Auto Safety Hotline at 1-888-327-4236.

We urge your prompt attention to this important safety matter.

Hyundai Motor America



HYUNDAI Technical Service Bulletin

Group	CAMPAIGN
Number	00-01-005
Date	OCTOBER, 2000
Model	1999-2000 SONATA

Subject
**1999-2000 SONATA V-6 MASS AIR FLOW
 SENSOR CONNECTION
 CAMPAIGN 039**

DESCRIPTION:

Engine vibration transmitted to the MAF (Mass Air Flow) sensor electrical connector wiring harness may cause an intermittent MAF sensor electrical signal interruption, which may lead to low speed engine stalling on some 1999 and 2000 model year Sonata vehicles equipped with 2.5-liter V-6 engines. The MAF sensor connector wiring harness is secured to the air intake resonator on vehicles produced through May 29, 2000. The following procedure reduces the vibration transmitted to the MAF sensor connector by changing the sensor wiring routing and mounting position from the air intake resonator to a new air intake hose clamp.

In addition, the MAF sensor connector female terminal pins will be packed with corrosion inhibiting grease and the ECM (Engine Control Module) on all 1999 and 2000 model year Sonata vehicles equipped with 2.5-liter V-6 engines will be reprogrammed, using the HI-Scan Pro, with new logic to reduce the likelihood of low speed stalling if a MAF sensor signal interruption occurs.

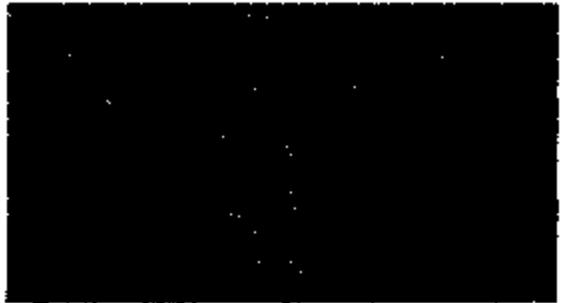
VEHICLES AFFECTED

- Model: 1999 and 2000 Sonatas equipped with 2.5L V-6 engines
- Affected vehicle production date and VIN range:

SERVICE ITEM	AFFECTED VEHICLE PRODUCTION DATE RANGE	AFFECTED VIN RANGE
Air Intake Hose Clamp Replacement	All produced through May 29, 2000	Produced through KMHWF35V1YA315812
ECM Reprogramming	All produced through July 4, 2000	Produced before KMHWF35V0YA335601
Corrosion Inhibiting Grease	All produced through July 4, 2000	Produced before KMHWF35V0YA335601

PARTS INFORMATION

AIR INTAKE HOSE CLAMP REPLACEMENT PARTS REQUIRED

NO.	PART NAME	SERVICE KIT PART NO.	ILLUSTRATION
1	Plastic Wiring Tie-Clamp	91400-38Q00	
2	Intake Hose Clamp		
3	Nys Nyogel 780G (Corrosion Inhibiting Grease)	00305-F0000-39	

ECM REPROGRAMMING SPECIFICATIONS

VEHICLE PRODUCTION DATE RANGE	SPECIFICATION	AFFECTED ECM P/N	NEW ECM ID
All produced through April 30, 2000	With ABS/TCS	39109-37001	E0N5A01B
	Without ABS/TCS	39109-37011	E0N5N01B
All produced from May 2, 2000 through July 4, 2000	Not applicable	39109-37006	E1N5TR1A



Group	CAMPAIG
Number	00-01-005

SERVICE PROCEDURE

NOTE: Verify that the vehicle is affected by the campaign by identifying the vehicle production date and VIN.

AIR INTAKE HOSE CLAMP REPLACEMENT

NOTE: This procedure applies to vehicles with a VIN of KMHWF35V1YA315812 or lower produced through May 29, 2000.

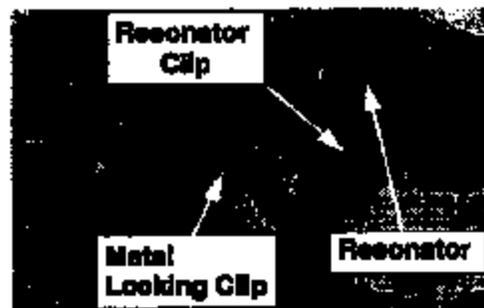
1. Turn the radio on and record the customer's pre-set radio stations on a copy of the following table.

	1	2	3	4	5	6
AM						
FM1						
FM2						

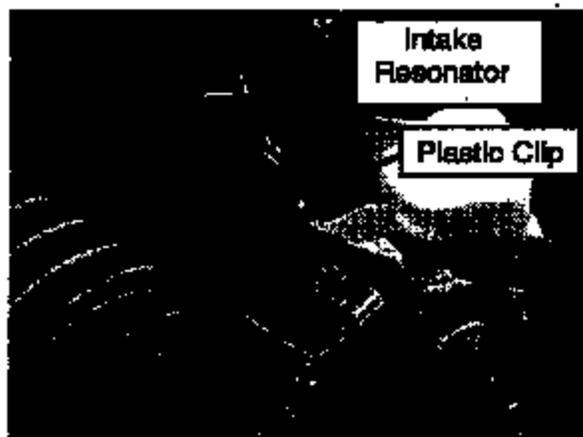
2. Open the hood and support it securely.
Disconnect the battery negative (-) cable.



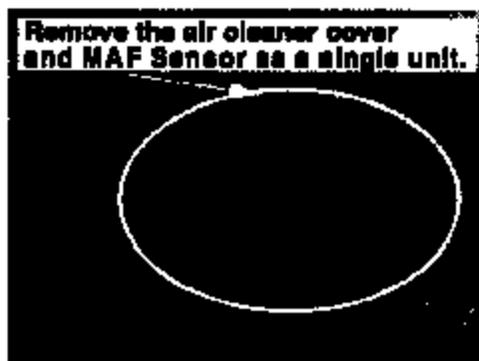
3. Disconnect the MAF sensor connector by first prying off the metal locking clip and then unclipping the MAF sensor connector wiring from the air intake resonator.



4. Cut off the plastic clip on the intake resonator with a pair of diagonal cutters. This is to ensure the harness is not placed back into the clip at a later date.



5. Loosen the intake hose clamp tightening screw on the clamp closest to the MAF on the throttle body side. (see photo) Unclip the four (4) air cleaner cover clamps and remove the air cleaner cover and MAF sensor as a unit.



6. Replace the air intake hose mounting clamp with the replacement air intake clamp that is supplied with service kit P/N 91400-38Q00. Then reinstall the items in reverse order.





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NOTE: Before applying lubricant on the terminals, plug-in the sensor connector and unplug the sensor connector 5 times. This will assist in removing any electrically resistive film which may exist on the terminal contact points.

7. Apply corrosion inhibiting grease on each MAF sensor female connector pin receptacle.
(Recommended grease: Nye Nyogel 780G)

NOTE: Apply enough grease inside each terminal opening to completely fill the opening to a depth of 0.125 inch minimum.



8. Tie the MAF sensor connector wiring approximately 2" (50mm) from the end of the connector with the new plastic wiring tie-clamp that is supplied with service kit P/N 91400-38Q00 and cut off the excess tie-clamp.



8. Insert the retaining clip on the plastic wiring tie-clamp into the air intake hose clamp hole. Install the MAF sensor connector, making sure to reinstall the metal locking clip that was removed in Step 3.



10. Reconnect the battery cable.
11. Check the engine for proper operation after starting.
12. Set the radio station buttons to the customer's pre-set stations and reset the clock.

ECM REPROGRAMMING

NOTE: Before conducting the ECM reprogramming, apply lubricant to the MAF sensor female connector terminals as described in step 7 on page 5 in the "Air Intake Hose Clamp Replacement" procedure.

CAUTION: Before Conducting Reprogramming

- Conduct reprogramming with the ignition key in the "ON" position
- The DLC (Data Link Connector) cable should never be disconnected from either the vehicle or the Hi-Scan during reprogramming.

WARNING: If reprogramming is interrupted, the manual update procedure must be used.

- Do not start the engine during reprogramming.
- Do not turn the ignition key off during reprogramming.



Group	CAMPAIGN
Number	00-01-005

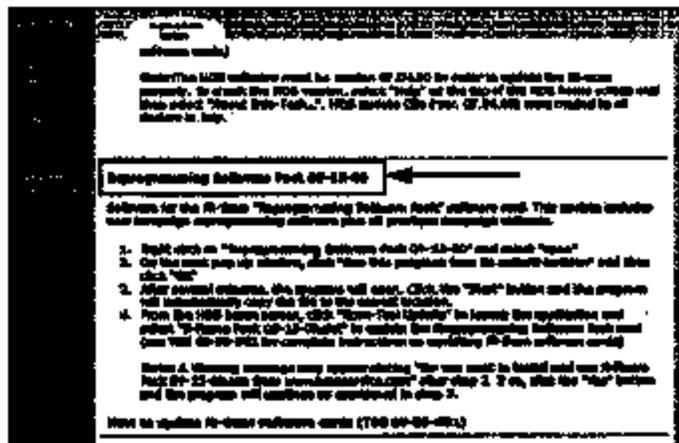
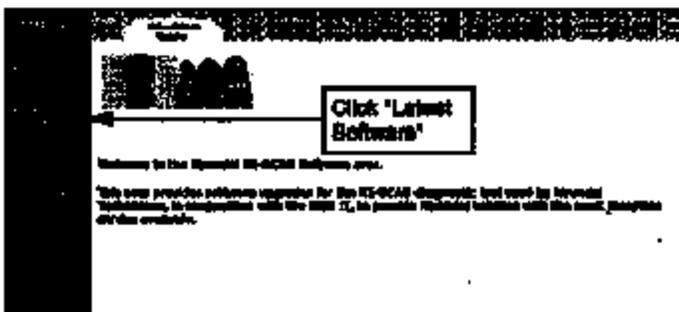
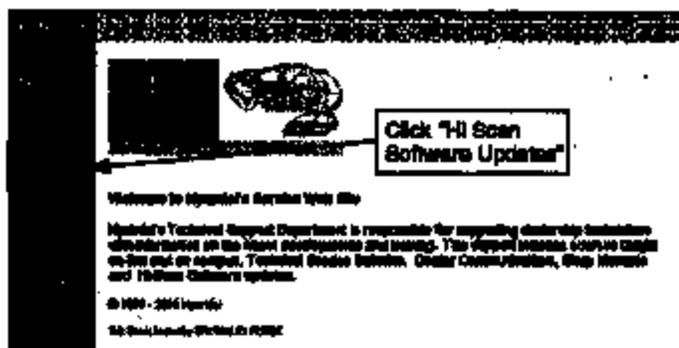
DOWNLOADING REPROGRAMMING SOFTWARE

1. Reprogramming software pack 09-15-00 is required for this campaign.
2. If you do not already have this software, log on to the Service Technology Web Site (www.hmaservice.com) and click on "Hi Scan Software Update."

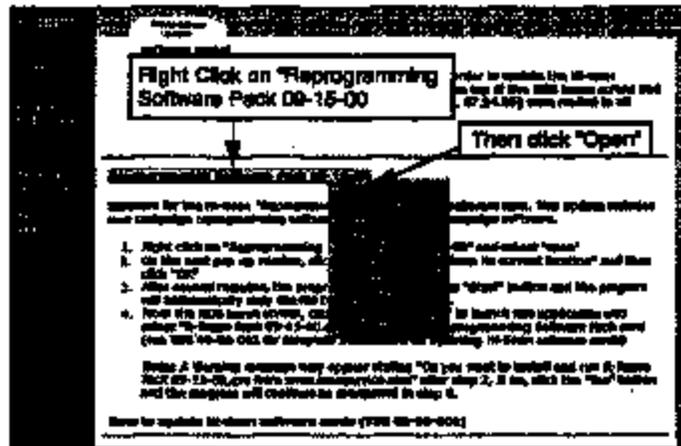
NOTE: This software can be downloaded to your HDS or to a PC.

3. Select "Latest Software"

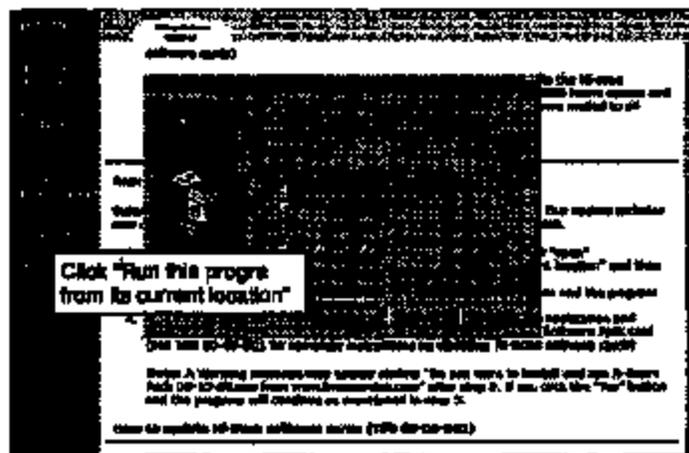
4. Scroll down to "Reprogramming Software Pack 09-15-00". This software package contains four separate programs. The revised ECM program for the 1999-2000 Sonata that is required for Campaign 39 is included in this group.



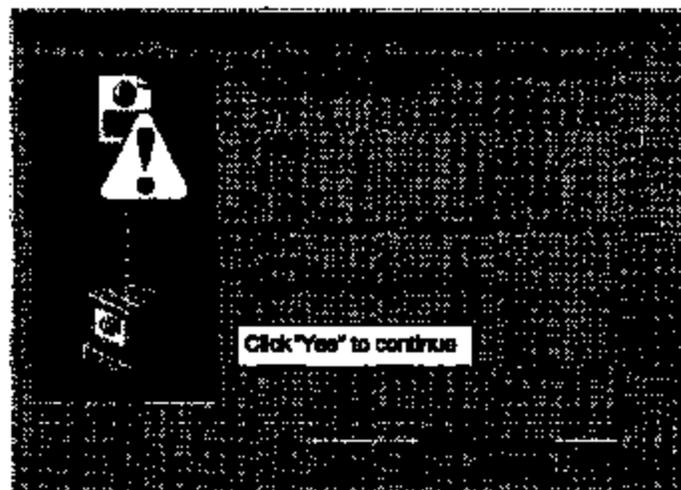
5. Right click on "Reprogramming Software Pack 09-15-00" and then click on "Open".



6. If you are doing this procedure from HDS, select "Run this program from its current location" and click "OK"



7. A warning message may appear. Just click "Yes" to continue.

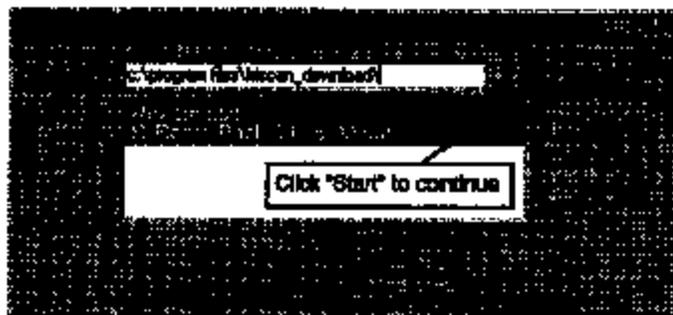




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8. After about 10 minutes of downloading, this window pops up. Just click "Start" and the new Hi-Scan Software will be automatically placed in the proper directory.

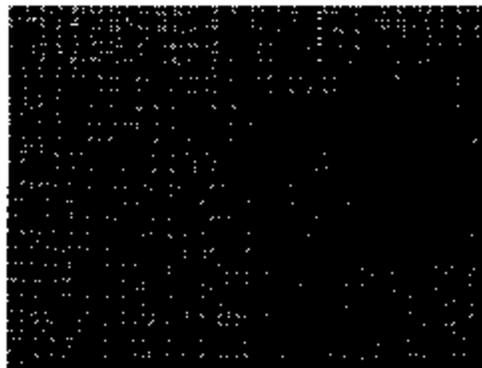


9. To update the reprogramming card in the Hi-Scan refer to TSB 00-00-001 for instructions.

NOTE: When the reprogramming card is being updated in the Hi-Scan, remove the "SOL" and "INFO" cards and only leave the "Reprogramming card installed.

AUTOMATIC UPDATE PROCEDURE

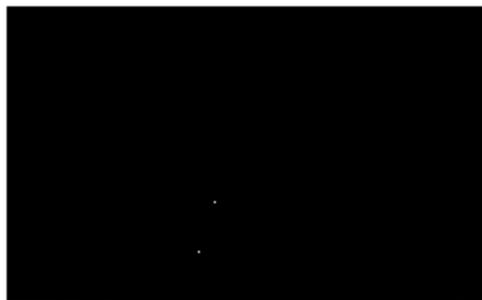
1. Remove the system (sol) software card from the Hi-Scan and insert the reprogramming software card with the new ECM program into the Hi-Scan top slot.



2. Plug the DLC cable from the Hi-Scan into the data link connector under the instrument panel on the driver's side.

3. Turn the ignition to the "ON" position.

4. Turn the Hi-Scan "ON" and press "ENTER."



5. Select option "03". "EF SONATA 2.5L ECM (Campaign 039)" and press "ENTER."

CAMPAIGN SELECTION	
01.	EF SONATA TCM (CAMP 035)
02.	98 BOSCH ECM (TSB 00-36-008)
03.	EF SONATA 2.5L TCM (CAMP 039)
04.	EF, SM 2.4D TCM (CAMP 041)
05.	SOFTWARE DOWNLOAD

6. Select option "01". "EF SONATA ENGINE AUTO SELECT" AND PRESS "ENTER." This option automatically detects the ECM type and downloads the correct program.

RE-PROGRAMMING	
01.	EF SONATA ENGINE AUTO SELECT
02.	EF SONATA ENGINE USER SELECT



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7. Enter "0601" as the password and press "ENTER."

RE-PROGRAMMING

ENTER YOUR PASSWORD : —

8. Hi-Scan will establish communication and check the ECM ID. Hi-Scan will reprogram the ECM automatically.

RE-PROGRAMMING

ESTABLISHING COMMUNICATION

NOTE: Hi-Scan detects the current ECM ID (affected) and assigns the new ECM ID (target) and displays them for about 1 second.

RE-PROGRAMMING

CUR ECM ID → EXXXXXX

NEW ECM ID → IXXXXXX

NOTE:

- The current ECM ID will be replaced by the new ECM ID.
- If the Hi-Scan does not download the program, use the Manual Update Procedure following this section.

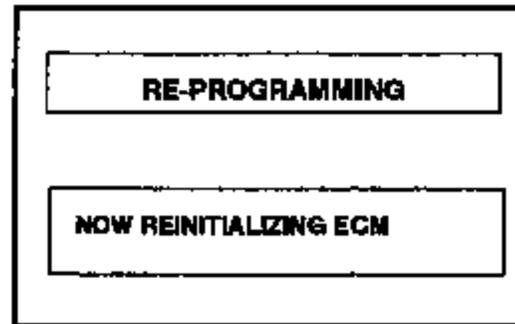
RE-PROGRAMMING

EXXXXXX → EXXXXXX

XX %

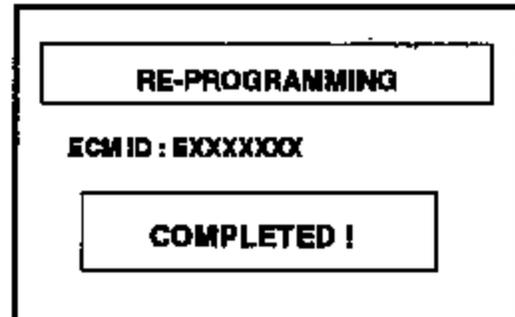
WARNING: Do not interrupt the reprogramming at any time. The ECM will be rendered inoperative if the program does not download completely.

9. Hi-Scan re-initializes the ECM.



10. When the "COMPLETED" message is displayed, the process is finished.

NOTE: Before turning the Hi-Scan off, check the new ECM ID displayed on the Hi-Scan screen to verify that the correct ECM software has been downloaded. Refer to the ECM specification table shown on page 2 of this TSB.



11. Check the engine for proper operation.



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MANUAL UPDATE PROCEDURE

NOTE: In the event menu option "01. EF SONATA ENGINE AUTO SELECT" does not download the new ECM program, option "02. EF SONATA ENGINE USER SELECT" must be used.

1. Turn the Ignition to the "ON" position.
2. Turn the HI-Scan "ON" and press "ENTER."
3. Select menu option "02. EF SONATA ENGINE USER SELECT" and press "ENTER."

RE-PROGRAMMING
01. EF SONATA ENGINE AUTO SELECT
02. EF SONATA ENGINE USER SELECT
03. DATA DOWNLOAD

4. Choose the ECM type which is correct for your vehicle by referring to the chart shown below.

NOTE:

- The menu options "01" and "02" apply to the vehicles produced through April 30, 2000.
- The menu option "03" applies to the vehicles produced from May 2, 2000 through July 4, 2000.

RE-PROGRAMMING
01. EF 2.5 ABS/TCS
02. EF 2.5 NON ABS/TCS
03. EF 2.5 (5/2/2000 - 7/4/2000)

PRODUCTION DATE RANGE	SYSTEM IDENTIFICATION	MENU	PASSWORD
All Production April 30, 2000 and before	With ABS or TCS	01. EF 2.5 ABS/TCS	1504
	Without ABS or TCS	02. EF 2.5 NON ABS/TCS	2615
All Production from May 2, 2000 through July 4, 2000	Not applicable (System is identified automatically)	03. EF 2.5(5/2/2000 - 7/4/2000)	3726

5. Enter the correct password after identifying the vehicle production date, VIN and system. Then press "ENTER."

WARNING: Be sure to input the correct password. If an incorrect password is selected, the correct ECM software will not be downloaded.

6. Hi-Scan will reprogram the ECM automatically. Wait until the reprogramming is completed.

NOTE: Hi-Scan displays the new ECM ID on the screen.

7. Hi-Scan re-initializes the ECM.

RE-PROGRAMMING

01. EF 2.5 ABS/TCS
02. EF 2.5 NON ABS/TCS
03. ENTER YOUR PASSWORD :—

RE-PROGRAMMING

ESTABLISHING COMMUNICATION

RE-PROGRAMMING

FORCED → EXXXXXXXX
PROGRAM DOWNLOAD

XX %

RE-PROGRAMMING

NOW REINITIALIZING ECM
PLEASE WAIT

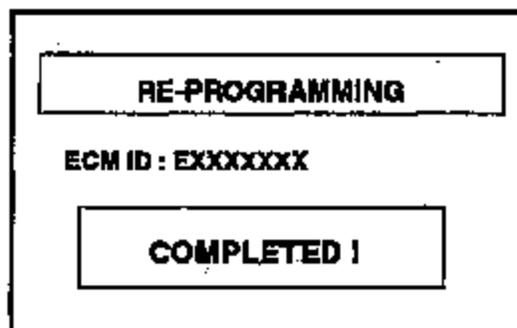


HYUNDAI Technical Service Bulletin

Group	CAMPAIGN
Number	00-01-005

8. When the "COMPLETED" message is displayed, the process is finished.

NOTE: Before turning the HI-Scan off, check the new ECM ID displayed on the HI-Scan screen to verify that the correct ECM software has been downloaded. Refer to the ECM specification table shown on page 2 of this TSB.



9. Start the engine to check for proper operation.

CAMPAIGN CLAIM INFORMATION:

OPERATION CODES AND LABOR TIMES

OP CODE	OPERATION	OP TIME	DEFECT CODE	
			NATURE	CAUSE
01B083R0	<ul style="list-style-type: none"> • Replace hose clamp • Apply grease to MAF connector • Reprogram ECM VINs produced through May 29, 2000.	0.4 M/H	*N66	*C15
01B084R0	<ul style="list-style-type: none"> • Apply grease to MAF connector • Reprogram ECM VINs produced through July 4, 2000.	0.3 M/H		

*N66: Electrical malfunction

**C15: Poor contact

NOTE: Submit claims using the applicable Campaign Operation Code using the Campaign Claim Screen.

//ALL HMA-BXXXXX 10/06/00 10/06/00 10/06/00
TO: All Hyundai Service Managers
FROM: Chuck Halper
SUBJECT: CAMPAIGN 040 - 1999 & 2000 Elantra Mass Air Flow Sensor
Connection Recall Campaign

Hyundai Motor America is conducting a voluntary Customer Notification (Recall Campaign) to replace MAF sensor connectors in Hyundai Elantras manufactured between June 1, 1999 and June 16, 2000, inclusive. With the original MAF sensor connector, engine vibration may cause an intermittent interruption of the original MAF sensor electrical connection which may lead to low speed stalling.

Details on this campaign follow below:

1. The repair will reduce the amount of engine vibration transmitted to the MAF sensor connector by replacing the connector and wiring harness with one that incorporates a relief loop. (See TSB 00-01-006 for details)
2. Beginning October 16, 2000, customer notification letters will be mailed in six (6) weekly flights.
3. A dealer letter will be mailed to all Dealer Principals, Dealership Parts Managers and Service Manager on October 9, 2000. Enclosed with the Service Manager's letter will be five (5) Technical Service Bulletins, a copy of the Customer Notification Letter, and a VIN listing of both your in-stock vehicles and retail customers affected by this campaign.
4. Between October 6, 2000, and October 12, 2000, parts (PN # 91400-29AB1) will be shipped to ONLY those dealerships with affected vehicles. The campaign parts will be included with the dealership's weekly parts stock order. Additional parts can be ordered through the regular parts system.
5. It is IMPORTANT TO SUBMIT A CAMPAIGN CLAIM FOR EACH VEHICLE REPAIRED so your dealership can be compensated for your work and so Hyundai can maintain accurate records of campaign completion rates.

If you have any questions, please contact your District Parts and Service Manager.

//END

//ALL HMA-BST-58 09/18 09/18 09/18

TO: ALL HYUNDAI SERVICE MANAGERS
FROM: NATIONAL SERVICE DEPARTMENT
SUBJECT: 1999-2000 ELANTRA INFREQUENT LOW SPEED ENGINE STALLING

1999 and 2000 model year Elantras produced beginning June 01, 1999 through June 16, 2000 may exhibit infrequent low speed engine stalling. This condition is the result of an intermittent interruption of the Mass Air Flow sensor signal - a result of engine vibration being transmitted to the Mass Air Flow sensor connector.

Your dealership will receive detailed information regarding a campaign to repair this condition in the near future. In the interim, please contact the Hyundai Technical Assistance Line at (800) 325-6604 with questions regarding repairs for any vehicle exhibiting this condition.

//END

MOTOR VEHICLE RECALL

Dear 1999 or 2000 Elantra Owner:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Hyundai has determined that a defect, which relates to motor vehicle safety, exists in certain 1999 and 2000 model year Elantra vehicles.

What is the problem?

- Some 1999 and 2000 model year Hyundai Elantras may experience intermittent low-speed engine stalling, if the Mass Air Flow Sensor electrical connector signal is interrupted as a result of engine vibration. Engine stalling may result in an accident.

What will Hyundai do?

- To ensure that the Mass Air Flow Sensor electrical connector signal does not become interrupted and does not cause your vehicle to stall, we are asking you to schedule an appointment as soon as possible to take your vehicle to your Hyundai dealer. The Hyundai dealer will replace the Mass Air Flow Sensor connector and a portion of the wiring harness to incorporate a new relief loop in the harness to reduce the vibration that may be transmitted to the MAF sensor connector. A corrosion inhibiting lubricant has also been applied to the new connector.

You should plan to leave your vehicle at your Hyundai dealer for a half day to have this service performed. This service will be performed at no charge to you.

What should you do?

- We urge you to call your Hyundai dealer to schedule an appointment to have this work performed as soon as possible.

What if you have other questions?

- If you have any difficulty having this service performed, we recommend that you call the Hyundai Customer Assistance Center at 1-800-633-5151. If you are still not satisfied that we have remedied this situation without charge, and within a reasonable amount of time, you may wish to write to the Administrator, National Highway Traffic Safety Administration, 400 Seventh Street, S. W., Washington, D.C. 20590 or call their toll-free Auto Safety Hotline at 1-888-327-4236.

We urge your prompt attention to this important safety matter.

Hyundai Motor America

October 9, 2000

**TO: ALL HYUNDAI DEALER PRINCIPALS
ALL HYUNDAI DEALERSHIP SERVICE MANAGERS
ALL HYUNDAI DEALERSHIP PARTS MANAGERS**

In accordance with the requirements of the National Traffic and Motor Vehicle Safety Act, Hyundai Motor America is conducting a voluntary Customer Notification (*1999 & 2000 Elantra Mass Air Flow Sensor Connection Recall Campaign*) on Hyundai Elantras manufactured between June 1, 1999 and June 16, 2000, inclusive.

Engine vibration transmitted to the MAF sensor connector may cause an intermittent MAF sensor electrical interruption, which may lead to low speed stalling. The repair will change the connector and wiring harness to incorporate a relief loop in the harness. This will reduce the amount of vibration which may be transmitted to the MAF sensor electrical connector.

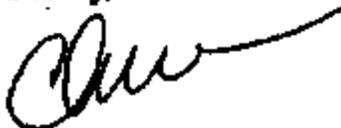
Enclosed with the Service Manager's letter are materials which were developed for your use: Five (5) copies of the Warranty and Technical Service Bulletin (TSB) containing instructions on performing the repair and submitting the campaign claim, a VIN listing of both your dealer stock and retail customers affected by this campaign, and a copy of the customer notification letter.

Commencing October 16, 2000, customer notification letters will be mailed in six (6) weekly flights, urging customers to contact their Hyundai dealership to make an appointment to have the campaign repair performed.

Between October 6, 2000, and October 12, 2000, an initial supply of parts (PN# 91400-29AB1) will be shipped to dealerships with affected vehicles. The campaign parts will be included in your dealership's weekly stock order. Additional parts can be ordered through the regular parts order.

Hyundai appreciates your cooperation. Questions may be directed to your District Parts and Service Manager

Sincerely,



Chuck Halper
Vice President of Service



HYUNDAI Technical Service Bulletin

Group	CAMPAIGN
Number	00-01-006
Date	OCTOBER, 2000
Model	1999 - 2000 ELANTRA

Subject

**1999 - 2000 ELANTRA MASS AIR FLOW
SENSOR CONNECTOR REPLACEMENT
CAMPAIGN 040**

DESCRIPTION:

Engine vibration transmitted to the MAF (Mass Air Flow) sensor electrical connector wiring harness may cause an intermittent MAF sensor electrical signal interruption, which may lead to low-speed engine stalling on some 1999 and 2000 model year Elantra vehicles. This TSB describes the procedure for changing the MAF sensor electrical connector and wiring harness to incorporate a relief loop in the harness that will reduce the vibration that may be transmitted to the MAF sensor electrical connector.

VEHICLES AFFECTED

- Model : 1999 and 2000 Model Year ELANTRA vehicles
- Affected vehicle production date range : June 01, 1999 through June 16, 2000.
- Affected VIN range : - Sedan : KMHJF25FXXU867528 through KMHJF35FXYU043200
- Wagon : KMHJW25F6XU145781 through KMHJW35FXYU183148

PARTS INFORMATION

NO.	PART NUMBER	QUANTITY	ILLUSTRATION	REMARKS
1	MAF Sensor Connector	1		Service Kit No. 91400-29AB1
2	Heat Shrink Tube	4		
3	Splice Terminal (Large)	2		
4	Splice Terminal (Small)	2		

- Each terminal opening in the MAF sensor connector has been lubricated with "NYE 760G" grease.
- The MAF sensor connector wire has been fastened to the connector to create a relief loop.

NOTE: Do not remove the tie wrap holding the wire harness to the connector.

SERVICE PROCEDURE

NOTE: Verify that the vehicle is affected by the campaign by identifying the vehicle identification number and vehicle production date.

1. Turn the radio on and record the customer's pre-set radio stations on a copy of the following table.

	1	2	3	4	5	6
AM						
FM1						
FM2						

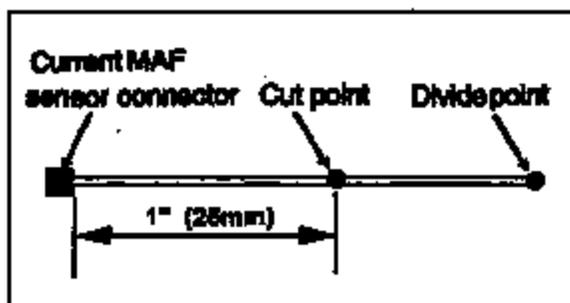
2. Disconnect the battery negative (-) terminal.



3. Pry off the MAF connector locking clip. Disconnect the MAF sensor connector from the MAF sensor.



4. Remove the plastic protective tube from the MAF sensor connector wiring harness and set aside for later use. Cut the MAF sensor connector wiring at approximately 1" (25mm) from the end of the connector. Discard the removed connector.





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- Strip the wires back about 1/2" (13mm).
- Slide the heat shrink tubes, supplied with the repair kit, on the end of each of the four wires on the new MAF sensor connector pigtail.



- Splice the ends of the four wires from the new MAF sensor connector pigtail to the four exposed wires. Interlace the wire strands together, one color at a time, and twist them together. Make sure the wire colors and sizes match before splicing the wire together.



- Using the included crimp clips, crimp the wires together, using an electrical crimping tool. Make sure to use one of the "Large" crimp clips on the red wire.



NOTE: The crimp clips do not provide a reliable joint by themselves. They are only intended to hold the wires together during the soldering operation. Each joint must be soldered after using the crimp clips.

9. Plug in the soldering iron and allow the tip to come up to operating temperature (typically 3 to 5 minutes). Coat the soldering iron tip with a thin film of solder by melting a small amount of flux core solder on the tip (to protect the tip from oxidation).

NOTE: The ideal tip temperature is 700 to 800 degrees F. The soldering iron used should be able to reach and maintain the appropriate temperature.

10. Touch the wire strands/wire crimp to be soldered with the soldering iron tip and allow the wires to heat up. Angle the tip of the soldering iron so that the contact surface to the wires/crimp is maximized.
11. Make sure that the wires do not get too hot. When the wires become overheated, the insulation will begin to deform & become damaged.
12. While the wires are heating up, periodically touch the end of the rosin-core solder to the wire strands next to the soldering iron tip. When the wire strands are heated to the proper temperature, the solder will melt and flow very quickly away from the solder tip.
13. The recommended solder wire is 0.032 in diameter 60/40 (tin/lead) Rosin-Core Solder. (available at electronic supply stores, including Radio Shack)



14. Quickly feed enough rosin-core solder wire to achieve an even, moderate thickness coat of solder over the joint. Once the solder begins to flow, the soldering process will be completed in a few seconds.



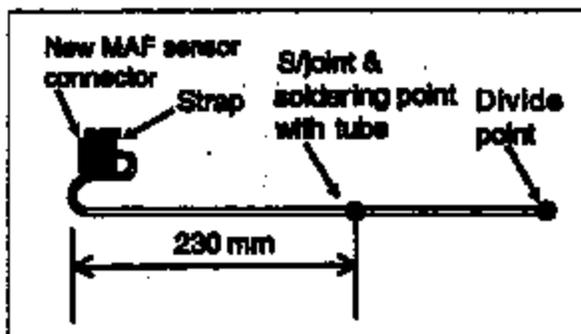


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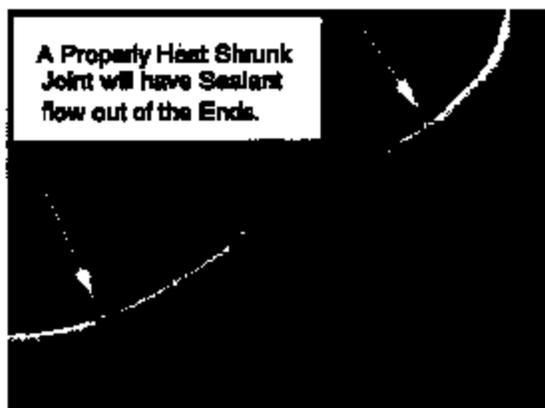
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NOTE: A good solder joint will have an even, smooth & shiny appearance.
A poor solder joint (also called a cold solder joint) will have a dull appearance & an uneven surface.

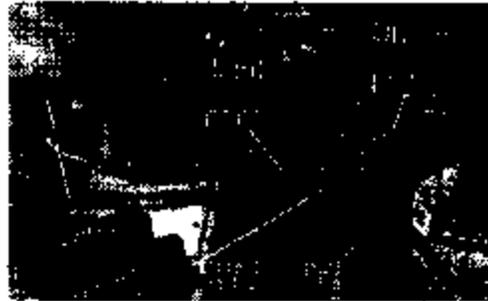
15. Slide the heat shrink tubes over the solder joints.



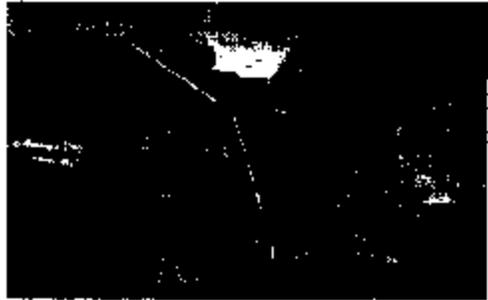
16. Using a heat gun with a heat deflector attachment, heat up the shrink wrap tubing until the tubing shrinks tightly and the sealant starts to flow out of the end of the tubing.



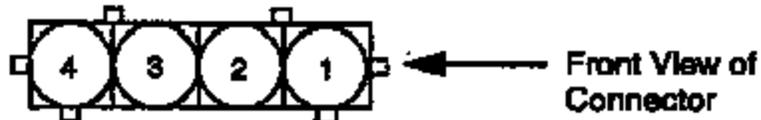
17. Replace the protective tube removed in step 4 over the MAF sensor connector wiring harness. Then tape the MAF sensor connector wiring harness from the end of the protective tube to the end of the vinyl tube with electrical tape.



18. Connect the MAF sensor connector and reinstall the MAF connector locking clip which was removed in Step 3 of this procedure.
19. Reconnect the negative cable on the battery and check engine for proper starting.
20. Set the radio station buttons to the customer's pre-set stations and verify reception in all bands (AM, FM1, FM2). Reset the clock to the correct time.



WIRE COLORS AND SIZES



NO.	WIRING COLOR CONNECTION		SIZE	WITH CONNECTION
	CUT WIRE SIDE	SUPPLIED NEW MAF SENSOR CONNECTOR WIRE SIDE		
1	Pink	Pink	0.5	ECM #41
2	Red	Red	1.26	B+ from ECM Relay
3	Brown	Brown	0.5	ECM #14
4	Black	Black	0.85	Ground

NOTE: Before splicing the wires, make sure the wires are matched according to the above table.



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CAMPAIGN CLAIM INFORMATION

OP CODE	OPERATION	OP TIME	DEFECT CODE	
			NATURE	CAUSE
01B048R0	Repair MAF sensor connector	0.4 M/H	*N06	**C15

*N06: Engine stalling

**C15: Poor contact

NOTE: Submit claims using the above Campaign Operation Code using the Campaign Claim Screen.