

 **HYUNDAI AMERICA TECHNICAL CENTER, INC.**

A Subsidiary of
Hyundai Motor Company (Korea)

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March 24, 2005

Mr. Ronald Medford
Acting Associate Administrator for Enforcement
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

RE: Defect Information Report

Dear Mr. Medford:

Pursuant to Part 573 of Title 49 of the Code of Federal Regulations, Hyundai Motor Company is submitting information concerning a recall that is being voluntarily initiated. Specific information as required by Section 573.6 is as follows:

573.6(c)(1)

Manufacturer - Hyundai Motor Company
Distributor - Hyundai Motor America

573.6(c)(2)

Certain model year 2005 Hyundai Tucson vehicles produced beginning July 30, 2004 through February 27, 2005.

573.6(c)(3)

Approximately 30,558 model year 2005 Hyundai Tucson vehicles produced beginning July 30, 2004 through February 27, 2005.

573.6(c)(4)

All model year 2005 Hyundai Tucson vehicles produced beginning July 30, 2004 through February 27, 2005.

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573.6(c)(5)

The 2005 model year Tucson is equipped with an Electronic Stability Program (ESP). The ESP Hydraulic Electronic Control Unit (HECU) controls the operation of the ESP based upon the processing of information received from various sensors, as follows:

Wheel Speed Sensors – measure the rotational speed of each wheel

Steering Angle Sensor – measures the position of the steering wheel

Brake Pressure Sensor – measures the brake line pressure at the master cylinder

Yaw Rate and Acceleration Sensor – measures the vehicle's yaw rate and lateral acceleration

The ESP considers the vehicle to be in an unstable state if the yaw rate sensor detects that the vehicle is oversteering or understeering by measuring the vehicle's rotation about the vertical axis through its center of gravity. In response to oversteering, the HECU applies the front brake that is opposite to the direction that the vehicle is oversteering, thereby causing the vehicle to follow the direction the driver is steering. If the vehicle is understeering, the HECU applies the rear brake that is opposite to the direction that the vehicle is understeering, thereby causing the vehicle to follow the direction the driver is steering. The HECU may also reduce engine power.

Each time the vehicle is traveling at speeds less than 2 kph (1.2 mph), the yaw rate sensor offset is recalibrated to provide a "zero" reference value for travel in a straight direction. If the wheels are turned during this calibration process at speeds below 2 kph, the yaw rate sensor offset may be inaccurately set at too high a value, up to a maximum error of 4 degrees/second. Therefore, when the vehicle is traveling, the yaw rate sensor may inaccurately interpret the yaw rate to be up to 4 degrees/second higher than actual, based upon the yaw rate sensor's offset calibration error.

As stated above, the ESP considers the vehicle to be in an unstable state based upon the output and offset calibration of the yaw rate sensor. If the yaw rate sensor offset was calibrated to be 4 degrees/second higher than actual because the wheels were turned while the yaw rate sensor offset was being calibrated, the ESP would consider the yaw rate to be 4 degrees/second higher than actual, and the ESP may activate when it is not needed.

If the ESP operated briefly, vehicle speed would not be reduced, however, the ESP may operate until the vehicle speed is reduced to 15 kph (9.3 mph). The ESP switch on the instrument panel can be pushed to turn off the ESP.

573.6(c)(6)

Hyundai Motor Company became aware of this condition after receiving information in January 2005 about possible inadvertent ESP activation while driving through turns. During February 2005, Hyundai Motor Company and its supplier conducted an evaluation of this condition. This evaluation led to the determination that the HECU programming logic results in this condition. The ESP HECU program was changed in production to correct this condition on February 28, 2005.

The Revised HECU program allows the yaw rate sensor offset calibration to occur at a speed of 0.125 kph (0.08 mph), which virtually eliminates the potential for the misinterpretation of steering wheel inputs and provides for a maximum offset error of 0.2 degrees/second.

HYUNDAI AMERICA TECHNICAL CENTER, INC.

Hyundai Motor Company has decided to conduct a recall in the United States to reprogram the ESP HECUs of model year 2005 Hyundai Tucson vehicles produced beginning July 30, 2004 through February 27, 2005. In March 2005, Hyundai Motor Company provided notice to the United States distributor of Hyundai automobiles that it intended to conduct a recall to correct this condition. Hyundai is aware of approximately thirty-three customer contacts to Hyundai Motor America or its dealers related to this condition. Hyundai is not aware of any accidents or injuries related to this condition.

573.6(c)(8)

All owners of record of the affected vehicles will be contacted by first class mail and instructed to bring their vehicles to Hyundai dealers. Hyundai dealers will reprogram the ESP HECU in each vehicle.

Hyundai anticipates the recall owner notification will be completed in two mailings during April 2005.

Reprogramming or other service to the ESP HECU of all vehicles affected by this recall would have been covered for 5 years or 60,000 miles under Hyundai's new vehicle limited warranty. As no owners of these 2005 model year vehicles would have incurred expenses for this warranted repair as a result of this condition, Hyundai believes that it is not necessary, and should not be required, to provide notification regarding reimbursement under section 577.11.

573.6(c)(9)

The Technical Service Bulletin containing the service procedure for reprogramming the ESP HECU will be provided to NHTSA when available. Other relevant communications will also be forwarded when they are available.

573.6(c)(10)

A draft of the owner notification letter is attached.

573.6(c)(11)

Hyundai has assigned "Campaign 068" as the designation for the campaign.

Sincerely,



Robert Babcock
Manager, Corporate Affairs

DRAFT MOTOR VEHICLE RECALL

Dear 2005 Tucson Owner:

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

Federal law requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within ten days.

Hyundai has decided that a defect, which relates to motor vehicle safety, exists in certain model year 2005 Hyundai Tucson vehicles that were produced during the period beginning on July 30, 2004 through February 27, 2005.

What is the problem?

- Your vehicle is equipped with an Electronic Stability Program (ESP). The ESP system contains a yaw rate sensor, which detects if the vehicle is oversteering or understeering. The yaw rate sensor output is used by the ESP to decide if it should apply a brake or reduce engine power to help the driver control the vehicle. The yaw rate sensor offset is recalibrated each time the vehicle is traveling at speeds less than 1.2 mph. If the steering wheel is turned while the vehicle is traveling at less than 1.2 mph, the yaw rate sensor offset may be recalibrated inaccurately and the ESP program may become too sensitive. While driving through a turn, under conditions where ESP activation may not be needed, a sensitive ESP program may cause the engine to reduce power and may cause a brake at one of the wheels to be applied without brake pedal application by the driver. This may cause the vehicle to slow and may affect the path that the vehicle is traveling. Brake application caused by inadvertent ESP activation may result in a crash.

The ESP switch, located on the instrument panel to the left of the steering wheel, may be pressed to turn off the ESP and prevent inadvertent ESP activation.

What will Hyundai do?

- To ensure that your vehicle's Electronic Stability Program (ESP) works properly, we are asking you to schedule an appointment as soon as possible to take your vehicle to your Hyundai dealer. The Hyundai dealer will reprogram the ESP Hydraulic Electronic Control Unit (HECU). This procedure will be performed at no charge to you. You should plan to leave your vehicle at your Hyundai dealer to have this service performed. Repair times will vary and depend on your dealer's appointment schedule.

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 repair 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.

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