REPORT NUMBER 401-STF-09-002

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 401 INTERIOR TRUNK RELEASE

HYUNDAI MOTOR COMPANY
2009 HYUNDAI GENESIS
FOUR-DOOR PASSENGER CAR
NHTSA NO. C90501

U.S. DOT SAN ANGELO TEST FACILITY
131 COMANCHE TRAIL, BUILDING 3527
GOODFELLOW AFB, TEXAS 76908

March 26, 2009

FINAL REPORT

PREPARED FOR

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
NVS-220
OFFICE OF VEHICLE SAFETY COMPLIANCE
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16. Abstract Compliance tests were conducted on the subject 2009 Hyundai Genesis four-door passenger car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-401-01 for the determination of FMVSS 401 compliance. Test failures identified were as follows: NONE.		
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SECTION 1

INTRODUCTION

1.1 PURPOSE OF COMPLIANCE TEST

A 2009 Hyundai Genesis four-door passenger car was tested to determine if the vehicle was in compliance with the requirements of FMVSS 401. All tests were conducted in accordance with NHTSA/Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure TP-401-01 dated August 8, 2007.

1.2 TEST VEHICLE

The test vehicle was a 2009 Hyundai Genesis four-door passenger car. Nomenclatures applicable to the test vehicle are:

A. Vehicle Identification Number: KMHGC46E89U025598

B. NHTSA Number: C90501

C Manufacturer: Hyundai Motor Company

D. Manufacture Date: 07/2008

1.3 TEST DATE

The test vehicle was tested January 27, 2009.

SECTION 2

TEST PROCEDURE AND DISCUSSION OF RESULTS

2.1 TEST PROCEDURE

Prior to test, the test vehicle was inspected for completeness and systems operability, including battery capability and trunk closure function. The vehicle was then photographically documented as required by the NHTSA/OVSC Test Procedure. The owner's manual was reviewed, and pertinent trunk release information was noted.

The rear trunk manual release system stationary vehicle tests were conducted with an occupant enclosed in the trunk compartment with the lid shut. An assistant was present and prepared to release the occupant if necessary. The compartment was evaluated with all removable equipment furnished by the manufacturer stowed in accordance with vehicle label instructions.

The procedure used consists of the following steps:

1. Determine the means by which a trapped person within the trunk would escape from the compartment, e.g. pull of a T-handled release mechanism, rotation of fixed lever release mechanism, push of a button, etc.
2. For informational purposes, install a linear force transducer to the release mechanism determined above and record the force required to be applied by the trapped occupant to escape.
3. Verify that the release mechanism is visible in the darkened trunk S4.2(a), and determine method used, e.g. phosphorescence or auxiliary lighting. Some time may be required to allow for the eyes to adjust to the darkened environment within the trunk compartment. Photograph if possible the lighted release mechanism.
4. With the vehicle stationary and no key in the ignition (representing unoccupied vehicle), actuate the release mechanism and verify that the trunk lid releases from all latching positions. Record force required during 3 attempts to release trunk latching mechanism.
5. Repeat step 4 above, except with the engine idling (time with trunk lid latched not to exceed 30 seconds).

2.2 DISCUSSION OF RESULTS

The force required to release the trunk lid did not exceed eighteen (18) Newtons on any attempt. The data indicate compliance of the test vehicle's manual trunk release system for the No Key in Ignition and the Idling Vehicle trunk release tests.

SECTION 3

TEST DATA

DATA SHEET 1
FMVSS No. 401 – TEST DATA SUMMARY

MODEL YEAR/MAKE/MODEL/BODY STYLE: 2009 Hyundai Genesis 4-door passenger car

VEHICLE NHTSA NUMBER: C90501 VIN: KMHGC46E89U025598

GVWR: 2,200 kg (4,850 lbs) DATE OF MANUFACTURE: 07/2008

TEST LAB: U. S. DOT San Angelo Test Facility TEST DATE: January 27, 2009

	PASS/FAIL	COMMENTS
Automatic or Manual release mechanism inside the trunk compartment. S4.1	**PASS**	Manual
If manual release, lighting feature is included. S4.2(a)	**PASS**	None
Except as provided by S4.3(b), actuation of release mechanism required by S4.1 completely releases trunk lid from all latching positions of the trunk lid latch. S 4.3(a)	**PASS**	None

REMARKS: None

RECORDED BY: Jack R. Stewart DATE: January 27, 2009

APPROVED BY: Kenneth H. Yates

DATA SHEET 2
TEST PREPARATION INFORMATION

MODEL YEAR/MAKE/MODEL/BODY STYLE: 2009 Hyundai Genesis 4-door passenger car

VEHICLE NHTSA NUMBER: C90501 TEST DATE: January 27, 2009

TRUNK LOCATION: Rear

NUMBER OF TRUNK LATCHING POSITIONS: One

INTERIOR TRUNK RELEASE: Manual

EQUIPPED WITH POWER CLOSURE ASSISTING DEVICE: No

OWNER'S MANUAL DESCRIPTION OF TRUNK RELEASE: Yes

REMOVABLE EQUIPMENT DELIVERED IN TRUNK:

SPARE TIRE: Yes SIZE: T135/90D17

TIRE JACK: Yes

LUG WRENCH: Yes

REMARKS: None

RECORDED BY: Jack R. Stewart DATE: January 27, 2009

APPROVED BY: Kenneth H. Yates

DATA SHEET 3 (Sheet 1 of 2)
MANUAL TRUNK RELEASE OPERATION

MODEL YEAR/MAKE/MODEL/BODY STYLE: 2009 Hyundai Genesis 4-door passenger car

VEHICLE NHTSA NUMBER: C90501 TEST DATE: January 27, 2009

Method used to actuate interior trunk release: Rotating cable lever

Can test personnel enter trunk and be closed within? Yes

Size of occupant: 5' 10", large frame

Is there access to the trunk compartment by folding down rear seat or partition? No (see remarks)

Does release mechanism require electric power? No

Can release mechanism be easily seen inside the closed trunk? Yes

Method used by vehicle manufacturer to ensure that
release mechanism is visible in the closed trunk compartment: Phosphorescence

Laboratory test method used to determine visibility of release mechanism: Trunk entry

DATA SHEET 3 (Sheet 2 of 2)
MANUAL TRUNK RELEASE OPERATION

Vehicle Stationary (0 km/h)	Force in Newtons Required to Release Trunk Lid (no requirement)	Trunk Released from **All** Latching Positions	Pass/Fail
NO KEY IN IGNITION			
Attempt 1	16.6	Yes	Pass
Attempt 2	16.4	Yes	Pass
Attempt 3	17.4	Yes	Pass
Average	16.8		
ENGINE IDLING			
Attempt 1	17.0	Yes	Pass
Attempt 2	16.0	Yes	Pass
Attempt 3	16.7	Yes	Pass
Average	16.6		

TEST RESULTS **PASS**

REMARKS: There is no entry or exit access to the trunk area by way of the rear seat except for a 7”x7” opening through the rear seat behind the rear seat armrest. There is a “Trunk Lid Control Button” located inside the vehicle glove box that is used to prevent unauthorized access into the trunk. The “Emergency Trunk Safety Release” works properly with the “Trunk Lid Control Button” in either of its two positions.

RECORDED BY: Jack R. Stewart DATE: January 27, 2009

APPROVED BY: Kenneth H. Yates

SECTION 4

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO	CAL. DATE	NEXT CAL. DATE
DIGITAL FORCE GAGE	WAGNER INSTRUMENTS FORCE TEN	SERIAL #10363	8/6/2008	8/6/2009

SECTION 5

PHOTOGRAPHS

2009 HYUNDAI GENESIS
NHTSA NO. C90501
FMVSS NO.401

FIGURE 5.1
FRONT OF VEHICLE

2009 HYUNDAI GENESIS
NHTSA NO. C90501
FMVSS NO.401

FIGURE 5.2
LEFT SIDE VIEW OF VEHICLE

2009 HYUNDAI GENESIS
NHTSA NO. C90501
FMVSS NO. 401

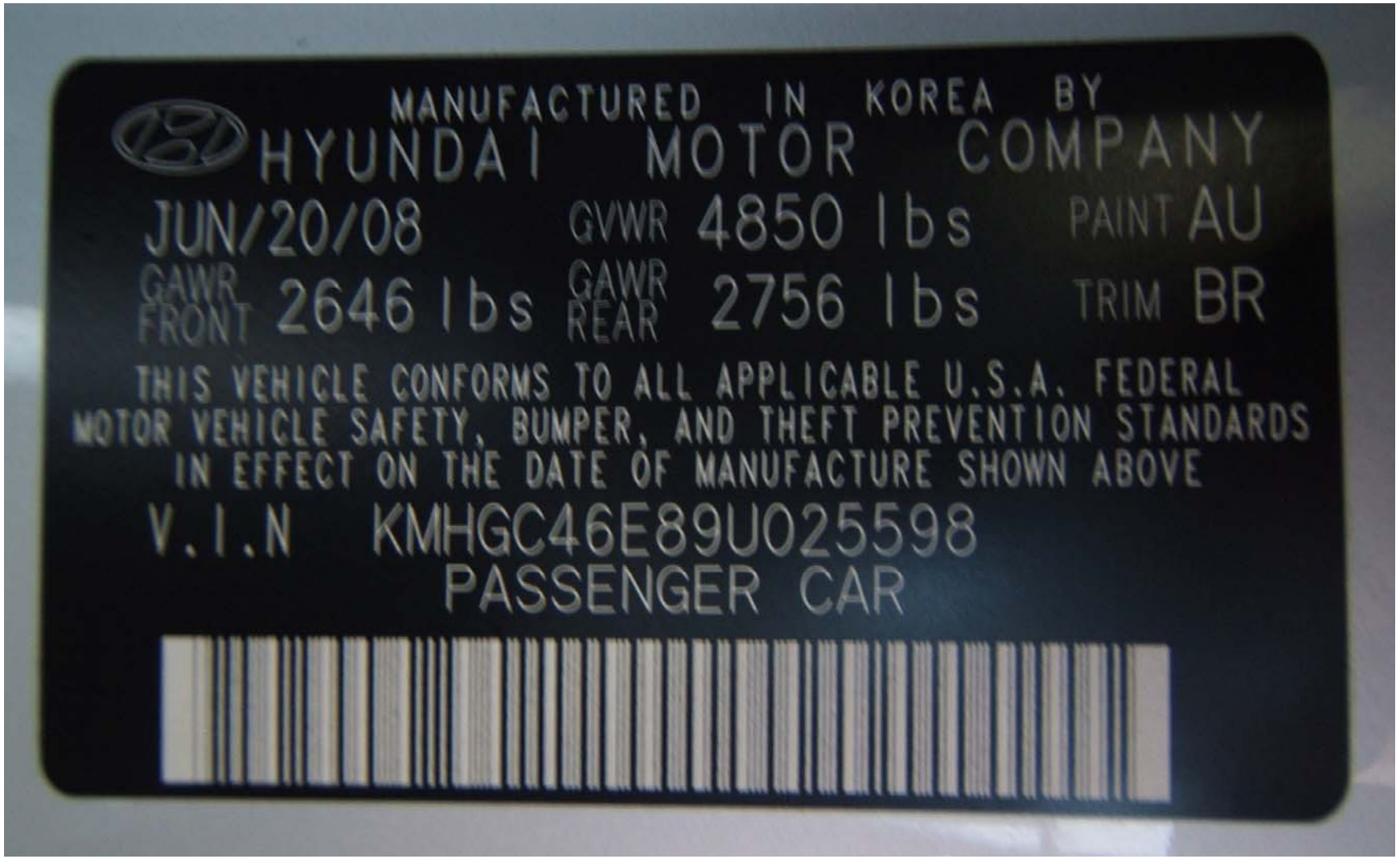
FIGURE 5.3
RIGHT SIDE VIEW OF VEHICLE

2009 HYUNDAI GENESIS
NHTSA NO. C90501
FMVSS NO. 401

FIGURE 5.4
LEFT REAR QUARTER VIEW

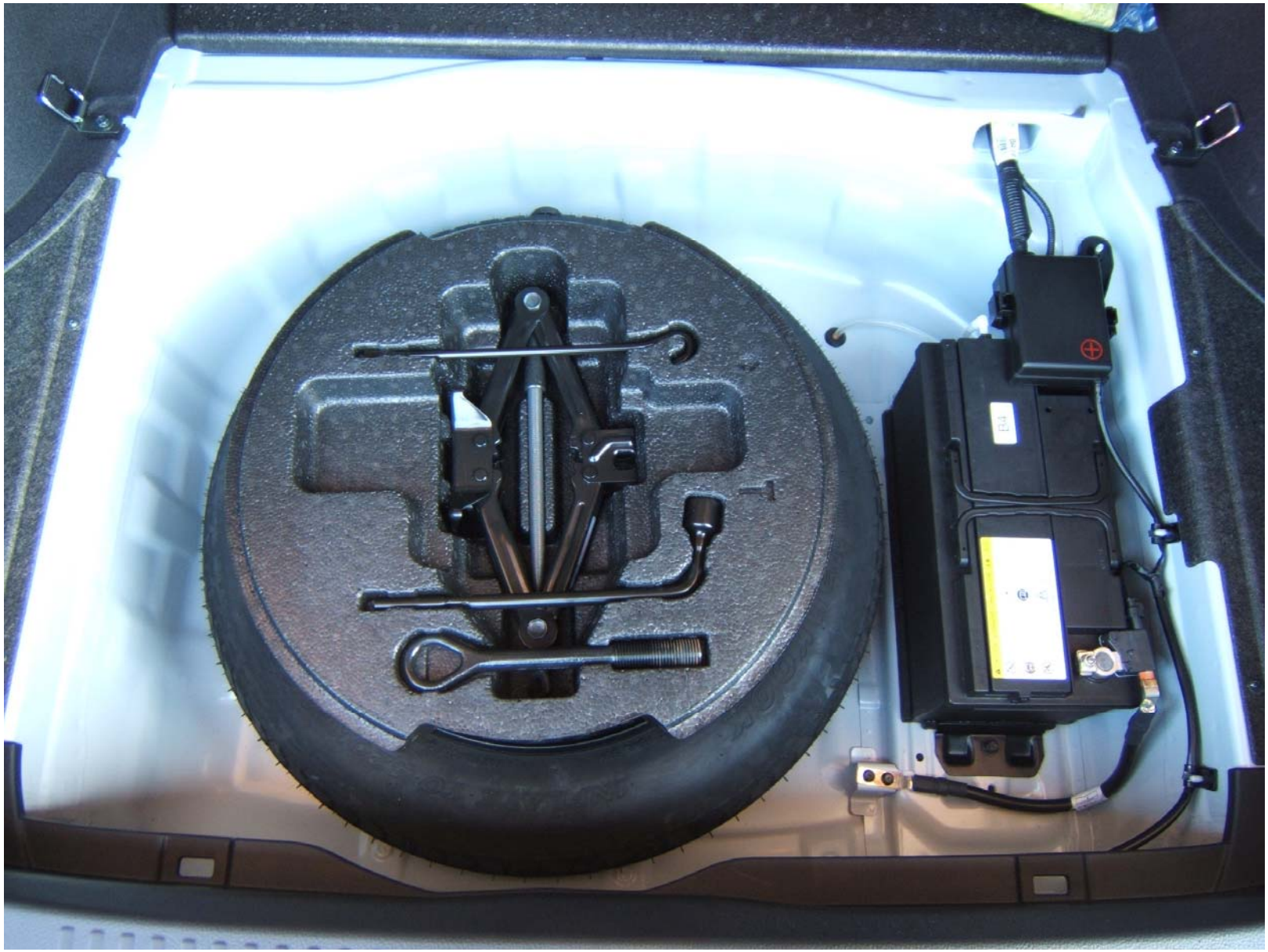
2009 HYUNDAI GENESIS
NHTSA NO. C90501
FMVSS NO. 401

FIGURE 5.5
RIGHT REAR QUARTER VIEW



2009 HYUNDAI GENESIS
NHTSA NO. C90501
FMVSS NO. 401

FIGURE 5.6
VEHICLE CERTIFICATION LABEL



2009 HYUNDAI GENESIS
NHTSA NO. C90501
FMVSS NO. 401

FIGURE 5.7
VEHICLE TRUNK COMPARTMENT INTERIOR
SHOWING ORIGINAL EQUIPMENT INSTALLED

2009 HYUNDAI GENESIS
NHTSA NO. C90501
FMVSS NO. 401

FIGURE 5.8
VEHICLE TRUNK COMPARTMENT MANUAL RELEASE MECHANISM

2009 HYUNDAI GENESIS
NHTSA NO. C90501
FMVSS NO. 401

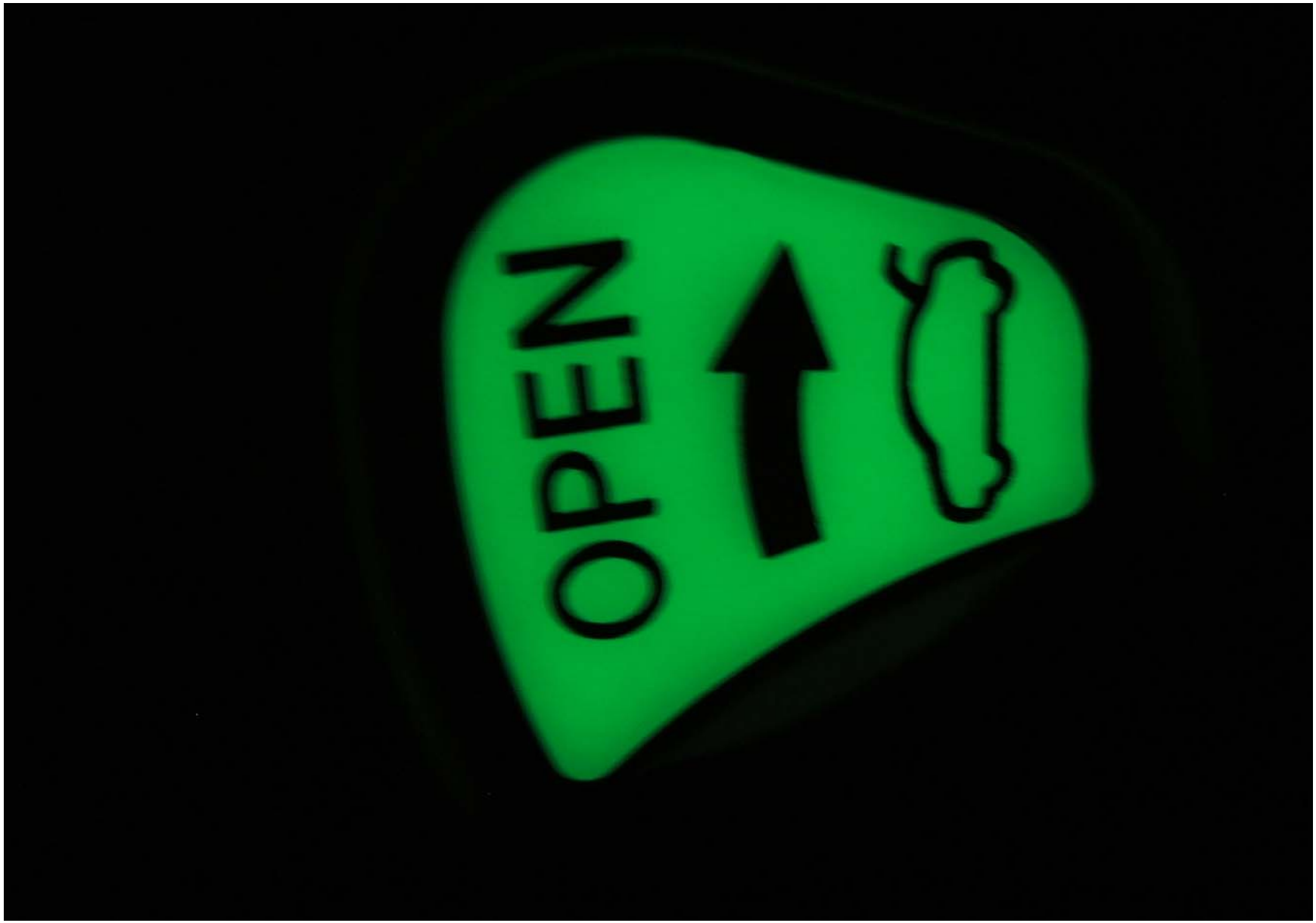
FIGURE 5.9
RELEASE MECHANISM WITH TEST EQUIPMENT ATTACHED

2009 HYUNDAI GENESIS NHTSA NO. C90501
NHTSA NO. C90501
FMVSS 401

FIGURE 5.10
TEST OBSERVER IN TRUNK COMPARTMENT

2009 HYUNDAI GENESIS
NHTSA NO. C90501
FMVSS NO. 401

FIGURE 5.11
TRUNK LID EXTERIOR



2009 HYUNDAI GENESIS
NHTSA NO. C90501
FMVSS NO. 401

FIGURE 5.12
RELEASE MECHANISM INSIDE CLOSED TRUNK

SECTION 6
OWNER'S MANUAL PAGES

⚠ WARNING

Make sure no objects or people are near the rear of the vehicle when opening the trunk.

⚠ CAUTION

Make certain that you close the trunk before driving your vehicle. Possible damage may occur to the trunk lift cylinders and attached hardware if the trunk is not closed prior to driving.

D070200ABH

Closing the trunk

To close, lower the trunk lid, then press down on it until it locks. To be sure the trunk lid is securely fastened, always check by trying to pull it up.

⚠ WARNING

The trunk lid should be always kept completely closed while the vehicle is in motion. If it is left open or ajar, poisonous exhaust gases may enter the car and serious illness or death may result.

OBH048014

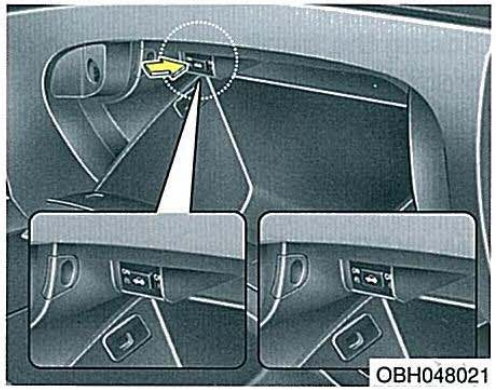
D070300ABH

Emergency trunk safety release

Your vehicle is equipped with an emergency trunk release cable located inside the trunk. The lever glows in the dark when the trunk lid is closed. If someone is inadvertently locked in the trunk, pulling this handle will release the trunk latch mechanism and open the trunk.

⚠ WARNING

- **No one should be allowed to occupy the trunk of the vehicle at any time. If the trunk is partially or totally latched and the person is unable to get out, severe injury or death could occur due to lack of ventilation, exhaust fumes and rapid heat build-up, or because of exposure to cold weather conditions. The trunk is also a highly dangerous location in the event of a crash because it is not a protected occupant space but is a part of the vehicle's crush zone.**
- **Your vehicle should be kept locked and keys be kept out of the reach of children. Parents should teach their children about the dangers of playing in trunks.**



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Trunk lid control button

The trunk lid control button located in the vehicle glove box is used to prevent unauthorized access to the trunk.

- When the trunk lid control button is ON (depressed), the trunk can be unlocked with the trunk lid release lever and the transmitter (or smart key).
- When the trunk lid control button is OFF (not depressed), the trunk can be unlocked with the master key (or the mechanical key of the smart key) only.

✻ NOTICE

Close the trunk, and keep the trunk lid control button in the OFF (not depressed) position before washing the vehicle in an automatic car wash.