REPORT NUMBER 114-GTL-10-003

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 114 THEFT PROTECTION

DAIMLER AG STUTTGART
2010 MERCEDES GLK 350, MPV
NHTSA NO. CA0514

GENERAL TESTING LABORATORIES, INC.
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May 31, 2011

FINAL REPORT

PREPARED FOR

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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Approval Date: 05/31/11

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By:

Acceptance Date: 5/27/11

Technical Report Documentation Page

1. Report No. 114-GTL-10-003	2. Government Accession No. N/A	3. Recipient's Catalog No. N/A
4. Title and Subtitle Final Report of FMVSS 114 Compliance Testing of a 2010 MERCEDES GLK 350 MPV NHTSA No. CA0514		5. Report Date May 31, 2011 6. Performing Organ. Code GTL
7. Author(s) Grant Farrand, Project Engineer Debbie Messick, Project Manager		8. Performing Organ. Rep# GTL-DOT-10-114-003
9. Performing Organization Name and Address General Testing Laboratories, Inc. 1623 Leedstown Road Colonial Beach, Va 22443		10. Work Unit No. (TRAIS) N/A 11. Contract or Grant No. DTNH22-06-C-00032
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Admin. Enforcement Office of Vehicle Safety Compliance (NVS-220) 1200 New Jersey Ave., S.E., Washington, DC 20590		13. Type of Report and Period Covered Test Date March 23, 2010 14. Sponsoring Agency Code NVS-221

15. Supplementary Notes

16. Abstract

Compliance tests were conducted on the subject 2010 Mercedes GLK 350 4-door MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-114-03-DRAFT-GTL-REVC for the determination of FMVSS 114 compliance.

Test failures identified were as follows:
None

17. Key Words Compliance Testing Safety Engineering FMVSS 114	18. Distribution Statement Copies of this report are available from NHTSA Technical Information Services (TIS) Room W45-212 (NPO-411) 1200 New Jersey Ave., S.E. Washington, DC 20590 Telephone No. (202) 366-4947	
19. Security Classif. (of this report) UNCLASSIFIED	21. No. of Pages 32	22. Price
20. Security Classif. (of this page) UNCLASSIFIED		

Form DOT F 1700.7 (8-72)

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SECTION 1

PURPOSE OF COMPLIANCE TEST

1.0 PURPOSE OF TEST

A model year 2010 Mercedes GLK 350 MPV was subjected to Federal Motor Vehicle Safety Standard (FMVSS) No. 114 testing to determine if the vehicle was in compliance with the requirements of the standard. FMVSS 114 specifies requirements to decrease the likelihood that a vehicle is stolen, or accidentally set in motion.

1.1 The test vehicle was a 2010 Mercedes GLK 350 MPV. The vehicle was identified as follows:

A. Vehicle Identification Number: WDCGG8HB8AF474687

B. NHTSA No.: CA0514

C. Manufacturer: DAIMLER AG STUTTGART

D. Manufacture Date: 02/10

E. Color: Silver

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 114 testing on March 23, 2010.

SECTION 2

TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 TEST PROCEDURE

All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedure TP-114-03-DRAFT-GTL-REVC and General Testing Laboratories, Inc. (GTL) Test Procedure, TP-114-03-Draft, “Theft Protection and Rollaway Prevention”.

2.1 SUMMARY OF RESULTS

Test data indicate the FMVSS 114 requirements appear to have been satisfied. All test data resulting from the tests were recorded on test data sheets in Section 3.

SECTION 3

TEST DATA

3.0 TEST RESULTS

The following data sheets document the results of FMVSS 114 testing on the 2010 Mercedes GLK 350.

FMVSS 114, THEFT PROTECTION
DATA SHEET 1 – VEHICLE IDENTIFICATION

TEST DATE: 03/23/10 LAB.: General Testing Laboratories
CONTRACT: DTNH22-06-C-00032 VEH. NHTSA NO.: CA0514
VIN: WDCGG8HB8AF474687 BUILD DATE: 02/10

MY/MAKE/MODEL/BODY STYLE: 2010 Mercedes GLK 350

TRANSMISSION TYPE:
Automatic X; Manual ___; Other ___ (describe: _____)

DRIVE TRAIN TYPE:
Front Wheel _____; Rear Wheel _____; 4-Wheel X

FUEL TANK LEVEL: 100 (% OF max.) MILEAGE: 16

VEHICLE STARTING SYSTEM:

Location of the starting system:
On Dash to Right Side of Steering Column

Selectable settings:
Off/Lock, Accessory, On, Start

Explain how the system is activated:
Keyless Go – 1,Electronic Key FOB must be in the passenger compartment, 2. Press the start/stop push button.

Description of the key:
Electronic Key FOB with embedded electronic code

STARTING SYSTEM ACTIVATION

Describe how the key is inserted into the starting system:
For the “Keyless Go” system, the key has to be identified inside the vehicle compartment.

Describe how the key is used to activate the starting system:
Keyless Go – 1,Electronic Key FOB must be in the passenger compartment, 2. Press the start/stop push button.

Describe how the key is removed from the starting system:
For the “Keyless Go” system: Terminal position off (0) and the keyless go key is outside the occupant compartment.

FMVSS 114, THEFT PROTECTION
DATA SHEET 1 continued

GEAR SELECTION CONTROL

Describe the gear selection control:
Center Console mounted Shift Lever.

Describe how the gear selection control is activated:
Depress service brake pedal, then move gear selector to desired position.

Describe all of the selectable settings:
Park, Reverse, Neutral, Drive with +/-

IMMOBILIZER

Is the vehicle equipped with an immobilizer YES X NO

Describe the immobilizer device and how it prevents vehicle theft (if equipped):
The immobilizer is activated/deactivated by an authentication scheme. After a successful authentication, the ECU receives an electronic code for enabling ignition and fuel injection.

OPTIONAL RELEASE DEVICES

Describe if the vehicle is equipped with optional release devices:
Release for console shift lever

OPTIONAL RELEASE DEVICES:

Key Removal Gear Selection Control X None Other

VEHICLE FLUIDS

Check all vehicle fluids and adjust to the proper levels for operation: Full

VEHICLE TIRE PLACARD INFORMATION

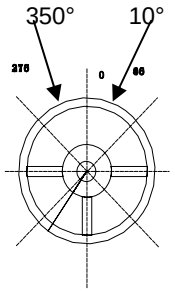
Vehicle Mfg. Recommended Tire Inflation Pressure
(kPa): Front 240 Rear 270

TIRE INFLATION PRESSURES:

Measured (kPa): LF 240 LR 270 RF 240 RR 270

WEIGHT
Vehicle Curb Weight(kg): 1895.5 Weight of Driver (kg): 91 (target = 91kg)

FMVSS 114, THEFT PROTECTION
DATA SHEET 2

REQUIREMENT S5.1.1	PASS	FAIL
Engine cannot be started without using the key _X_ Yes ____ No	X	
With key removed, steering wheel locks: Yes: _X_ No:_____ Identify locking position(s) on wheel using arrow(s) Clockwise: _____350_ (degrees) Counterclockwise:___10___ (degrees) 		
Key removal prevents forward self-mobility: Yes:___X___ No:_____ If yes describe: Vehicle will not start without key in vehicle and the steering locks.		
When key is removed from the starting system, starting of the engine or motor and either steering or self mobility is prevented. YES	X	

REMARKS:

FMVSS 114, THEFT PROTECTION
DATA SHEET 2 continued

REQUIREMENT S5.1.3	PASS	FAIL
An audible warning is activated whenever the key is in any starting system position with the exception of "on" and "start" and the door closest to the driver's designated seating position is opened. Yes__X__ No _____ NOTE: An audible alarm and a message is displayed on the dash that reads "Don't Forget Your Key". Identify ALL key/starting system position setting: _____	X	

REQUIREMENT S5.1.4	PASS	FAIL
With the vehicle engine or motor shut down and the transmission gear selection control in any position other than "park"; The steering wheel can rotate without locking? Yes__X__ No_____ NOTE: Engine cannot be turned off by push button if gear selector is not in the park position.	X	
The vehicle is free to roll forward? Yes__X__ No_____	X	

REMARKS:

RECORDED BY: G. Farrand DATE: 03/23/10
APPROVED BY: D. Messick

FMVSS 114, ROLLAWAY PREVENTION
DATA SHEET 3
(for vehicles equipped with transmission with a “park” position)

VEH. NHTSA NO.: CA0514 TEST DATE: 03/23/10

REQUIREMENT S5.2.1	PASS	FAIL
The starting system prevents key removal in ALL gear selection control positions except “park”. Yes X No		
Can the gear selection control be placed between each gear selection position and will it remain there without assistance? Yes No X		
If yes, can the key be removed from the starting system? Yes No	X	
If the key can be removed from the vehicle starting system when the gear selection control is not locked in “park”, a mechanism shall exist which, upon key removal, the vehicle transmission or gear selection control shall become locked in “park” as the direct result of removing the key. If such a mechanism exists, describe the mechanism and its function:		

REQUIREMENT S5.2.2	PASS	FAIL
The gear selection control is locked in the “park” position when the key is removed from the starting system. Yes X No	X	

REMARKS:

DATA SHEET 3 continued

REQUIREMENT S5.2.3	PASS	FAIL
ELECTRICAL FAILURE (Battery Discharge) In the event of an electrical failure, key removal from the starting system when the transmission or gear selection control is not locked in “park” is permitted”. Yes_____ No__X	X	
The vehicle is equipped with an override device that permits key removal from the starting system when the transmission or gear selection control is not locked in “park”. Yes_____ No__X	N/A	
If yes, select the type of override device equipped: Opaque Cover_____ No Cover_____ Describe the override device design and mode of activation (if equipped):	N/A	
FILL IN THE SECTION BELOW THAT APPLIES: OVERRIDE WITH AN OPAQUE COVER: The opaque surface cover prevents sight of and use of override device. Yes_____ No_____ The opaque surface cover can only be removed by using a screwdriver or other tool. Yes_____ No_____ As a direct result of removing the key from starting system, the following is prevented: Steering_____ or Self-Mobility_____ OVERRIDE WITH NO COVER The override device requires the use of a tool to activate. Yes_____ No_____ Simultaneous activation of the override device and removal of key from starting system is required. Yes_____ No_____ As a direct result of removing the key from the starting system, the following is prevented: Steering_____ or Self-Mobility_____	N/A N/A	

REMARKS:

DATA SHEET 3 continued

REQUIREMENT S5.2.4	PASS	FAIL
GEAR SELECTION CONTROL OVERRIDE DEVICE The vehicle is equipped with an override device that allows the user to move the gear selection control from "park" after the key has been removed from the starting system. Yes__X__ No____ If yes, select the type of override device that is equipped: Override operated with a: Key_____ Opaque Cover__X__ No Cover_____ Describe the override device design and mode of activation (if equipped): **The override device is a lever that can be manually depressed to unlock the gear selector lever. The override device is covered by an opaque cover.** **FILL IN THE SECTION BELOW THAT APPLIES:** OVERRIDE OPERATED WITH KEY: The key is required to operate the override device that allows the user to move the gear selection control from "park" after the key has been removed from the starting system. Yes_____ No_____ OVERRIDE WITH AN OPAQUE COVER The opaque surface cover prevents sight of and use of override device. Yes__X__ No____ The opaque surface cover can only be removed by using a screwdriver or other tool. Yes_____ No___X* As a direct result of removing the key from the starting system, the following is prevented: Steering __X__ or Self-Mobility__X__ OVERRIDE WITH NO COVER The override device requires the use of a tool to operate. Yes_____ No_____ Simultaneous activation of the override device and removal of key from starting system is required. Yes_____ No_____ As a direct result of removing the key from the starting system, the following is prevented: Steering_____ or Self-Mobility_____	X N/A X N/A	

REMARKS:*Cover can be removed by hand without tools. The opaque cover was designed to require the use of a tool to remove it. But after conducting the compliance test it was discovered that a side load on the cover without a tool could also cause the cover to dislodge. Mercedes will improve the design with continuous improvement.

DATA SHEET 3 continued

REQUIREMENTS S5.2.5	PASS	FAIL
VEHICLE FACING UPHILL ON 10% GRADE With the gear selection control in "park" measure movement of the vehicle down the slope upon releasing the service brake. Test grade: 15 % (9% to 15%) Measured movement: 36 mm (150mm maximum) **NOTE:** Repeat procedure if vehicle fails on grade in excess of 10%. Test grade: _____ % (9% to 10%) Measured movement: _____ mm (150 mm maximum) VEHICLE FACING DOWNHILL ON 10% GRADE With the gear selection control in "park" measure movement of the vehicle down the slope upon releasing the service brake. Test grade: 15 % (9% to 15%) Measured movement: 17 mm (150mm maximum) **NOTE:** Repeat procedure if vehicle fails on grade in excess of 10%. Test grade: _____ % (9% to 10%) Measured movement: _____ mm (150 mm maximum)	X X	see note

REMARKS:

DATA SHEET 3 continued

REQUIREMENTS S5.3	PASS	FAIL
VEHICLE FACING UPHILL ON 10% GRADE		
With the key in the "off" position, the transmission will shift out of "park" without the service brake being applied. Yes_____ No__X	X	
With the key in the "acc" position, the transmission will shift out of "park" without the service brake being applied. Yes_____ No__X	X	
With the key in the "on" position (engine off), the transmission will shift out of "park" without the service brake being applied. Yes____ No__X	X	
With the key in the "start" position, the transmission will shift out of "park" without the service brake being applied. Yes_____ No__X	X	
With the key in the "other" position (please specify), the transmission will shift out of "park" without the service brake being applied. Yes_____ No_____	N/A	
Does the key stay between starting system positions without being held by operator? Yes_____ No__X If so, please describe.	X	
Brake force readings (force required to allow the transmission to shift out of "park"):		
The vehicle is equipped with adjustable pedals: Yes_____ No__X		
Fore Position: Aft Position (if applicable)		
Reading 1 6.0 N — Reading 1_____ Reading 2 6.3 N — Reading 2_____ Reading 3 5.9 N — Reading 3_____ Reading 4 5.4 N — Reading 4_____ Reading 5 5.6 N — Reading 5_____ Avg. 5.84 N — Avg. _____	X	

REMARKS:

RECORDED BY: G. Farrand DATE: 03/23/10

APPROVED BY: D. Messick

SECTION 4
TEST EQUIPMENT LIST

ITEM	MFR	MODEL	S/N	CAL. PERIOD	DATE OF NEXT CALIB.	REMARKS
SLR DIGITAL CAMERA	NIKON	D50	N/A	N/A	N/A	
TIRE PRESSURE GAUGE	WESKLER	45-0/100	107	12 MO.	04/03/10	
INCLINOMETER	MITUTOYO	PRO 360	950-315	N/A	BEFORE USE	
STEEL TAPE	STANLEY	FAT MAX	33-890	12 MO.	03/29/10	
WHEEL SCALES	INTERCOMP	SERIES 94	199744	12 MO.	03/02/11	
WHEEL SCALES	INTERCOMP	SERIES 94	199744	12 MO.	03/02/11	
WHEEL SCALES	INTERCOMP	SERIES 94	199744	12 MO.	03/02/11	
WHEEL SCALES	INTERCOMP	SERIES 94	199744	12 MO.	03/02/11	
SPRING SCALE	CHATILLON	DPP-10	4729	12 MO.	BEFORE USE	

SECTION 5

PHOTOGRAPHS

2010 MERCEDES GLK 350
NHTSA NO. CA0514
FMVSS NO. 114

FIGURE 5.1
¾ FRONTAL VIEW FROM LEFT SIDE OF VEHICLE

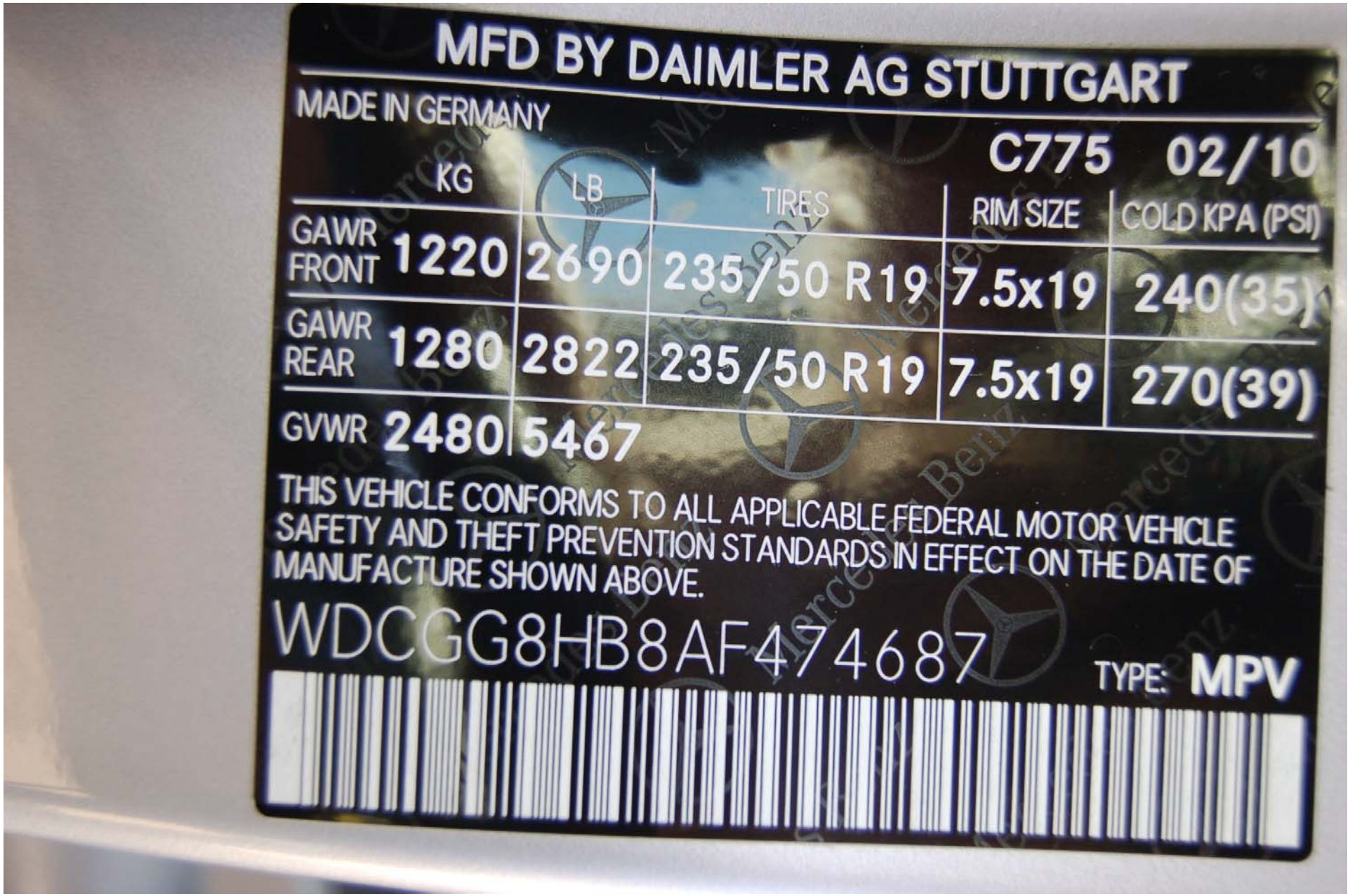


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FIGURE 5.2
VEHICLE CERTIFICATION LABEL

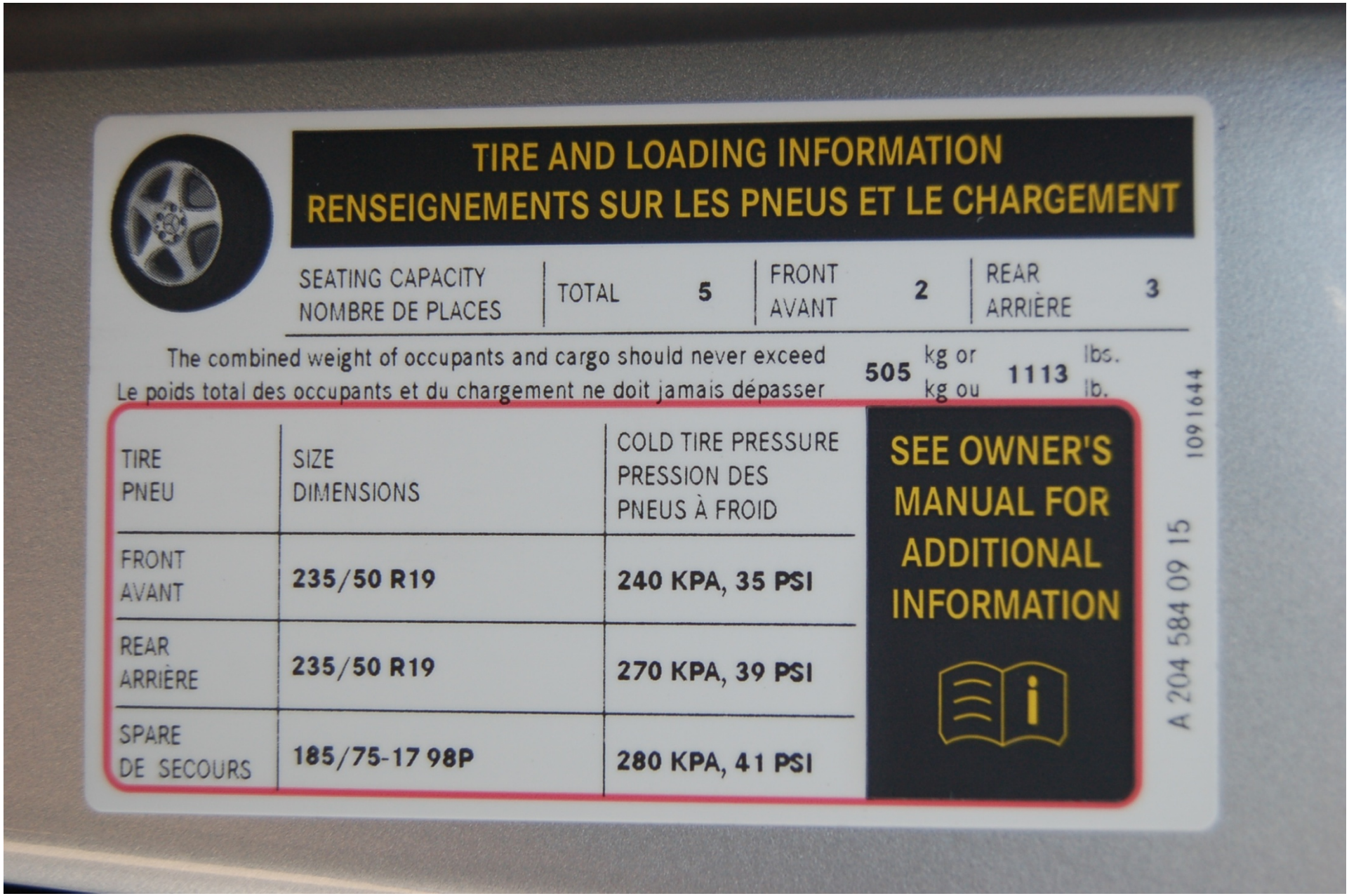

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FIGURE 5.3
VEHICLE TIRE INFORMATION LABEL

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FIGURE 5.4
CLOSE-UP VIEW OF IGNITION KEY

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FMVSS NO. 114

FIGURE 5.5
KEYLESS-GO BUTTON

2010 MERCEDES GLK 350
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FIGURE 5.6
STARTING SYSTEM CONTROL WITH KEYLESS-GO BUTTON REMOVED

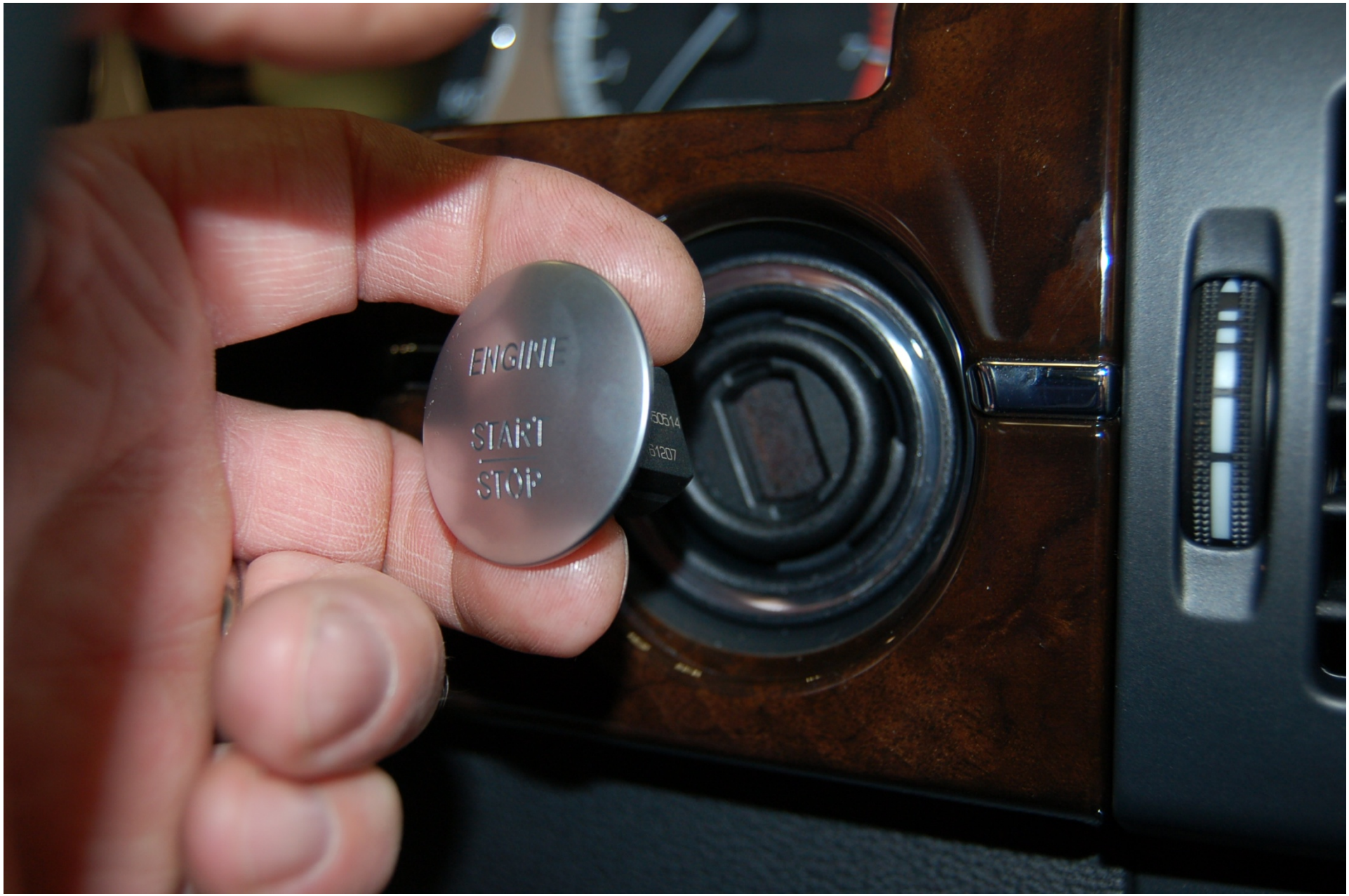

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FIGURE 5.7
STARTING SYSTEM CONTROL WITH KEYLESS-GO BUTTON REMOVED

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NHTSA NO. CA0514
FMVSS NO. 114

FIGURE 5.8
STARTING SYSTEM CONTROL WITH ELECTRONIC KEY FOB INSERTED

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FIGURE 5.9
KEY REMINDER

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FIGURE 5.10
KEY REMOVED INDICATOR

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FIGURE 5.11
KEYLESS-GO BUTTON MALFUNCTION

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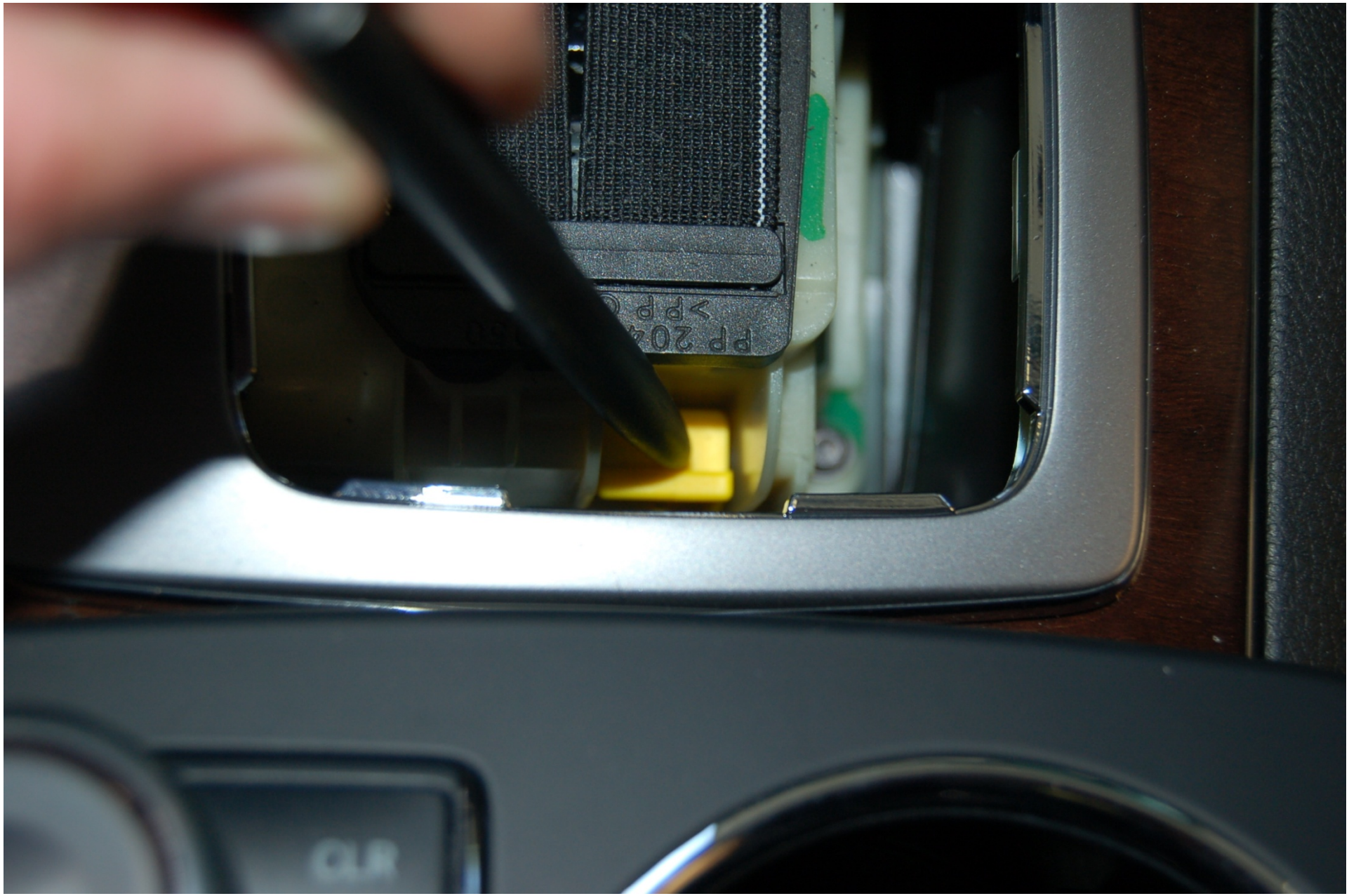
FIGURE 5.12
TRANSMISSION GEAR SELECTION CONTROL

2010 MERCEDES GLK 350
NHTSA NO. CA0514
FMVSS NO. 114

FIGURE 5.13
GEAR SELECTOR RELEASE BUTTON



2010 MERCEDES GLK 350
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FIGURE 5.14
GEAR SELECTOR RELEASE BUTTON