REPORT NUMBER: 114-CAL-08-05

SAFETY COMPLIANCE TESTING FOR FMVSS No. 114 THEFT PROTECTION AND ROLLOWAY PREVENTION

VOLKSWAGEN AG SLOVAKIA 2008 VOLKSWAGEN TOUAREG MPV

NHTSA NUMBER: C85802

CALSPAN TEST NUMBER: 8858-F114-05

CALSPAN CORPORATION P.O. BOX 400 BUFFALO, NEW YORK 14225



May 1, 2008

FINAL REPORT

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Prepared By:

Timet Me Holen

Vincent M. Paolini, Project Engineer

Approved By:

David J. Travale, Program Manager Transportation Sciences Center

Approval Date:

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Vincent M. Paolini, Project Engineer			8858-F114-05	-		
David J. Travale, Program Manager						
9. Performing Organization Name and Address			10. Work Unit No.			
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SECTION 1

PURPOSE OF COMPLIANCE TEST

This test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 114 Compliance Test Program conducted for the National Highway Traffic Safety Administration (NHTSA) by General Dynamics Advanced Information Engineering Services under Contract No. DTNH22-06-C-00031. The purpose of this test was to determine if the subject vehicle, a 2008 Volkswagen Touareg MPV, was in compliance with FMVSS No. 114, Theft Protection and Rollaway Prevention. The purpose of this standard is to reduce the incidence of crashes resulting from unauthorized operation of vehicles by specifying requirements for theft protection. Additionally, FMVSS No. 114 specifies requirements to reduce the incidents of crashes from rollaway of parked vehicles with automatic transmissions as a result of children moving the shift mechanism out of the "park" position. This standard applies to passenger cars, trucks and multipurpose passenger vehicles having a Gross Vehicle Weight Rating (GVWR) of 4536 kilograms or less. This compliance test was conducted using the requirements found in the OVSC Laboratory Test Procedure No. TP-114-03, dated May 2, 2008.

SECTION 2

TEST PROCEDURE AND DISCUSSION OF RESULTS

A 2008 Volkswagen Touareg MPV with an automatic transmission was subjected to FMVSS No. 114 testing in accordance with the NHTSA Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure TP-114-03, dated May 2, 2008. This test was performed by General Dynamics Advanced Information Engineering Services on May 1, 2008.

The test equipment used for this test included a standard metric tape ruler, a digital inclinometer with digital clinometer function, weight scales and a digital manometer. Testing was performed in the following sequence:

STARTING SYSTEM REQUIREMENT (S5.1.1):

Normal activation of the vehicle engine was prevented with the key removed from the starting system. Both steering and forward self mobility were also prevented.

AUDIBLE ALARM REQUIREMENT (S5.1.3):

With the key left in the vehicle starting system and the driver's door opened, an audible alarm was activated. This "warning to the driver" was verified in all ignition switch positions except "on" and "start".

"PARK" POSITION REQUIREMENT (S5.1.4)

With the vehicle key in the ignition and the engine shut off, the steering wheel was locked (unable to rotate in either direction) and the vehicle was free to roll forward in all transmission positions except "park".

ROLLAWAY PREVENTION REQUIREMENT (S5.2.1)

With the vehicle key in the ignition and the engine shut off, the starting system prevented key removal in all transmission positions other than "park." This vehicle was not equipped with an advanced key and the transmission could not be placed in locations between locking gear selector positions. The vehicle was not equipped with a mechanism that will lock the transmission in "park" as a result of removing the key in a transmission position other than "park."

GEAR SELECTION REQUIREMENT (S5.2.2):

With the vehicle ignition key removed, the gear control could not be moved from the "park" position. With the vehicle ignition key in the "ON" position and the vehicle engine running, the transmission could be moved to the "drive" position by depressing the brake pedal.

KEY REMOVAL OVERRRIDE REQUIREMENT (S5.2.3):

The vehicle was equipped with a special device, which when activated, permitted removal of the key from the ignition switch in the event of a vehicle electrical system failure. (refer to Figure 6 and page 5-7). The device was operable by depressing a button with a ballpoint pen or similar device located near the ignition switch and rotating the key counterclockwise and removing the key.

GEAR SELECTION CONTROL OVERRRIDE REQUIREMENT (S5.2.4):

This vehicle was not equipped with a key transmission override option.

TEN PERCENT GRADE "PARK" REQUIREMENT (S5.2.5)

The vehicle was driven forward and stopped with the service brakes on a 9.7% grade. The parking brake was fully applied and the transmission lever was placed in "park". When the service and parking brakes were released the vehicle moved 27 mm (150 mm maximum is allowed on a 10% grade).

The vehicle was driven in reverse and stopped with the service brakes on a 9.7% grade. The parking brake was fully applied and the transmission lever was placed in "park". When the service and parking brakes were released the vehicle moved 33 mm (150 mm maximum is allowed on a 10% grade). The subject vehicle appeared to perform within the safety performance requirements.

BRAKE TRANSMISSION SHIFT INTERLOCK REQUIREMENT (S5.3)

With the vehicle key in the starting system, the vehicle transmission was unable to be shifted from the "park" position without depressing the brake pedal for each of the starting system key positions.

SECTION 3

TEST DATA

DATA SHEET 1 – ALL VEHICLES

TEST DATE:	May 1, 2008	LAB: Calspan	l		
CONTRACT:	DTNH22-06-C-00031	VEHICLE NHTSA NU	JMBER:	C85802	
VIN:	WVGBE77L08D001412	BUILD DATE:		04/07	
MY/MAKE/MODEL/BC	DDY STYLE:	2008 Volkswager	n Touareg MPV		
TRANSMISSION TYP	E: X; Manual;	Other <u>(describe:</u>)
DRIVE TRAIN TYPE: Front Wheel	; Rear V	Vheel <u>-</u> ;	Four Wheel	X	
OPTIONAL RELEASE	DEVICES: <u>X</u> ; Transmission	; None			
VEHICLE STARTING Location of the start dash panel.	SYSTEM: ing system: The ignition node	is located to the right of t	he vehicle steerin	g column on the	

Selectable settings: "ACCESSORY", "OFF", "ON" and "START"

Activation of starting system: Place the key in the ignition switch, depress the brake pedal and rotate clockwise to start engine

KEY:

<u>Description of key:</u> The vehicle uses a traditional mechanical type key with a integral microchip for vehicle computer recognition

STARTING SYSTEM ACTIVATION:

Insertion of key into starting system: The key inserts into the ignition switch like a traditional lock and key mechanism

<u>Activation of starting system with key</u>: Place the key in the ignition switch, depress the brake pedal and rotate the key clockwise to start the engine.

Removal of key from starting system: The vehicle must be in "PARK" and the key turned to "OFF"

GEAR SELECTION CONTROL:

Gear selection control: The gear selection control is located on the center console between the front seats.

<u>Activation of gear selection control</u>: The gear selector is operable when the engine is running. The driver must depress the brake pedal to move the gear selector out of "PARK"

<u>Selectable settings</u>: "PARK", "REVERSE", "NEUTRAL", "DRIVE", "SPORT" and tiptronic® operation in the "DRIVE" position to select individual drive gears.

DATA SHEET 1 (Continued)

IMMOBILIZER:

Is the vehicle equipped with an immobilizer:	Yes	Х	No	-
--	-----	---	----	---

<u>Description of Immobilizer and how it prevents vehicle theft</u> Automatically activates when the ignition key is removed from the ignition switch. The key must be recognized by the vehicle computer for the engine to start.

OPTIONAL RELEASE DEVICES:

Key Removal	Х	Gear selection Control	-	None	-	Other	-
•							

Pry off cover plate to ignition system using a ball point pen or similar object. Press the emergency release button on ignition lock using a ballpoint pen or similar object. With the emergency button depressed turn the ignition key to the left and remove key.

TIRE PRESSURE:

Vehicle Manufactur	er Re	comme	ende	d (kPa)	Fr	ont	25	50	;	Re	ar	300
Measured (kPa):	LF	250	;	LR	250	;	RF	300	;	RR	300	

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

	LEFT SIDE (kg)	RIGHT SIDE (kg)	TOTAL (kg)	PERCENT
FRONT =	562.0	600.5	1162.5	50.5%
REAR=	590.5	547.0	1137.5	49.5%

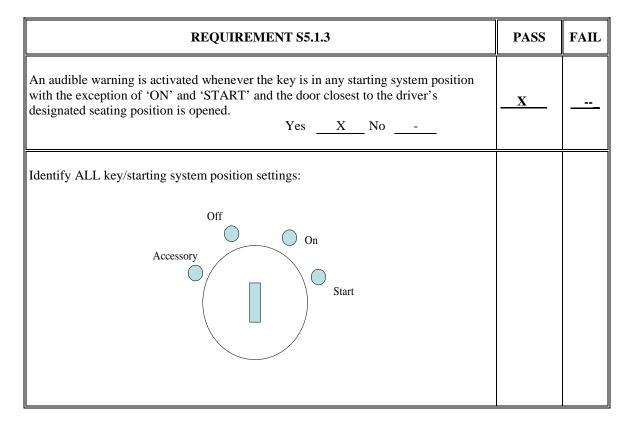
TOTAL DELIVERED WEIGHT (UDW): 2300.0 kg

DATA SHEET 2 – THEFT PROTECTION

TEST DATE:	May 1, 2008	LAB:	Calspan	
CONTRACT:	DTNH22-06-C-00031	VEHICLE NHTSA NUMBER:		C85802
VIN:	WVGBE77L08D001412	BUILD DATE:		04/07
MY/MAKE/MODEL/BO	ODY STYLE:	2008 Vo	olkswagen Touareg M	IPV

REQUIREMENT S5.1.1	1	PASS	FAIL			
Engine cannot be started without using the key. Yes X No		X				
With key removed, steering locks:						
Yes X No -						
Identify the steering wheel locking position(s) on the circle using arrows						
Clockwise: 0 (degrees)						
Counterclockwise: 0 (degrees)						
Key removal prevents forward self-mobility:						
Yes X No -						
If <u>yes</u> , describe: <u>The vehicle steering column remains locked</u> , the transmission leve in "PARK" and the vehicle has an engine immobilizer system which prevents the en- from starting.		<u>X</u>				
When the key is removed from the starting system, starting of the engine or motor a steering or self mobility is prevented	nd either	<u>X</u>				

DATA SHEET 2 - THEFT PROTECTION



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 <u>X</u> No <u>-</u>	X	
The vehicle is free to roll forward? Yes <u>X</u> No	<u> </u>	

Remarks: None

 RECORDED BY:
 Vincent M. Paolini
 DATE:
 May 1, 2008

 APPROVED BY:
 David Travale
 David Travale

DATA SHEET 3 – ROLLAWAY PREVENTION (For vehicles equipped with automatic transmission with a 'PARK' position)

TEST DATE:	May 1, 2008	LAB: Calspan	
CONTRACT:	DTNH22-06-C-00031	VEHICLE NHTSA NUMBER:	C85802
VIN:	WVGBE77L08D001412	BUILD DATE:	04/07
MY/MAKE/MODEL/BO	DDY STYLE:	2008 Volkswagen Touareg M	IPV

REQUIREMENT S5.2.1	PASS	FAIL
The starting system prevents key removal in ALL gear selection control positions except "park". Yes <u>X</u> No <u>-</u>		
Can the gear selection control be placed between each gear selection position and will it remain there without assistance? Yes - No X If <u>ves</u> , can the key be removed from the starting system? Yes - No -	<u> </u>	
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's transmission or gear selection control shall become locked in "park" as the direct result of removing the key. If such a mechanism exists, <u>describe the mechanism and its function:</u> <u>NOT APPLICABLE</u>		

REQUIREMENT S5.2.2	PASS	FAIL
The gear selection control is locked in the "park" position when the key is removed from the	v	
starting system. Yes <u>X</u> No <u>-</u>	<u> </u>	

DATA SHEET 3 – ROLLAWAY PREVENTION

(For vehicles equipped with automatic transmission with a 'PARK' position)

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. YesX No YesX No 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". YesX No YesX No If yes, select the type of override device that is equipped: Override operated with a: Opaque CoverX No cover The emergency release button is next to the vehicle starting system. Pry off cover plate to vehicle starting system using a ball point pen or similar object. Press the emergency release button on the vehicle starting system lock using a ballpoint pen or similar object. With the emergency button depressed turn the vehicle starting system to the left and remove key. FILL IN THE SECTION BELOW THAT APPLIES:	_ <u>X</u>	
OVERRIDE WITH AN OPAQUE COVER: The opaque surface cover prevents sight of and use of the override device Yes X No - The opaque surface cover can be removed only by using a screwdriver or other tool. Yes X No - The opaque surface cover can be removed only by using a screwdriver or other tool. Yes X No - As a direct result of removing the key from the starting system, the following is prevented: Steering X self mobility X	<u>_X</u>	
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 the key from the starting system is required. Yes No As a direct result of removing the key from the starting system, the following is prevented: Steering self mobility	<u>N/A</u>	N/A

DATA SHEET 3 – ROLLAWAY PREVENTION

(For vehicles equipped with automatic transmission with a 'PARK' position)

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 No X		
If <u>yes</u> , select the type of override device that is equipped: Override operated with a: Key <u></u> Opaque Cover <u>-</u> No cover <u></u>		
Describe the device design and mode of activation (if equipped):		
FILL IN THE SECTION BELOW THAT APPLIES: OVERRIDE OPERATED WITH A KEY:		
OVERRIDE OF ERATED WITH A REL.		
A 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 YesNo _X	<u>N/A</u>	<u>N/A</u>
OVERRIDE WITH AN OPAQUE COVER:		
The opaque surface cover prevents sight of and use of the override device Yes No The opaque surface cover can be removed only by using a screwdriver or other tool.	<u>N/A</u>	N/A
Yes No		
As a direct result of removing the key from the starting system, the following is prevented: Steering 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 the key from the starting system is required. Yes No	<u>N/A</u>	<u>N/A</u>
As a direct result of removing the key from the starting system, the following is prevented: Steering self mobility		

DATA SHEET 3 – ROLLAWAY PREVENTION

(For vehicles equipped with automatic transmission with a 'PARK' position)

REQUIREMENTS S5.2.5	PASS	FAIL
<u>Vehicle facing uphill on 10% Grade:</u> With the gear selection control in "park", measure movement of the vehicle down the slope upon releasing the service brake.		
Test grade: <u>10.5</u> % (9% to 15%) Measured movement: <u>27</u> mm (150mm maximum)		
NOTE: Repeat procedure if vehicle fails on grade in excess of 10%.		
Test grade: <u>N/A</u> % (9% to 10%) Measured movement: <u>N/A</u> mm (150 mm maximum)		
	X	
<u>Vehicle facing downhill on 10% Grade:</u> With the gear selection control in "park", measure movement of the vehicle down the slope upon releasing the service brake.		
Test grade: <u>9.7</u> % (9% to 15%) Measured movement: <u>33</u> mm (150mm maximum)		
NOTE: Repeat procedure if vehicle fails on grade in excess of 10%.		
Test grade: <u>N/A</u> % (9% to 10%) Measured movement: <u>N/A</u> mm (150 mm maximum)		

Remarks: None

RECORDED BY:	Vincent M. Paolini	DATE:	May 1, 2008
APPROVED BY:	David Travale		
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FMVSS 114, ROLLAWAY PREVENTION DATA SHEET 3 – ROLLAWAY PREVENTION

(For vehicles equipped with automatic transmission with a 'PARK' position)

REQUIREMENTS S5.3	PASS	FAIL
With the key in the "off" position, the transmission will shift out of "park" without the service brake being applied	<u>_X</u>	
Yes - No X		
With the key in the "acc" position, the transmission will shift out of "park" without the service brake being applied	X	
Yes - No X		
With the key in the "on" position (<i>engine off</i>), the transmission will shift out of "park" without the service brake being applied	<u> </u>	
$\frac{\text{Yes}}{\text{Yes}} = \frac{1}{2} \text{No} \frac{X}{1}$		
With the key in the "on" position (<i>engine running</i>), the transmission will shift out of "park" without the service brake being applied Yes - No X	<u> </u>	
With the key in the "start" position, the transmission will shift out of "park" without the service brake being applied Yes NoX	X	
With the key in the "other" position (<i>please specify</i>), the transmission will shift out of		
"park" without the service brake being applied Yes - No X	<u> </u>	
Does the key stay between starting system positions without being held by operator? If so,		
please describe <u>NOT APPLICABLE</u>	<u>N/A</u>	<u>N/A</u>
Brake force readings (force required to allow the transmission to shift out of "park"):		
Reading 1 6.0 lbf		
Reading 2 6.0 lbf		
Reading 3 6.0 lbf	N/A	N/A
Reading 4 6.0 lbf		
Reading 5 6.0 lbf		
Average <u>6.0</u> lbf		

Remarks:

RECORDED BY:	Vincent M. Paolini	DATE:	May 1, 2008
APPROVED BY:	David Travale		

SECTION 4

TEST EQUIPMENT LIST AND CALIBRATION DATES

Equipment	Manufacturer	Name	Range	Accuracy	Calibration	Calibration
					Date	Due
Clinometer	MD	Smart Level	0-100%	0.1%	04/2008	04/2009
Steel Tape	Stanley	Stanley 3137	3 meters	0.5mm	N/A	N/A
Weight	Long Acre	Computer Scales	0-12,000lbs.	0.2%	03/2008	03/2009
Scales	_	2000				
Manometer	Meriam	350 Smart	0-200 psi.	0.05%	02/2008	02/2009
	Instrument Co.	Manometer				
Plumb Bob	Stanley	Plumb bob	N/A	N/A	N/A	N/A

SECTION 5

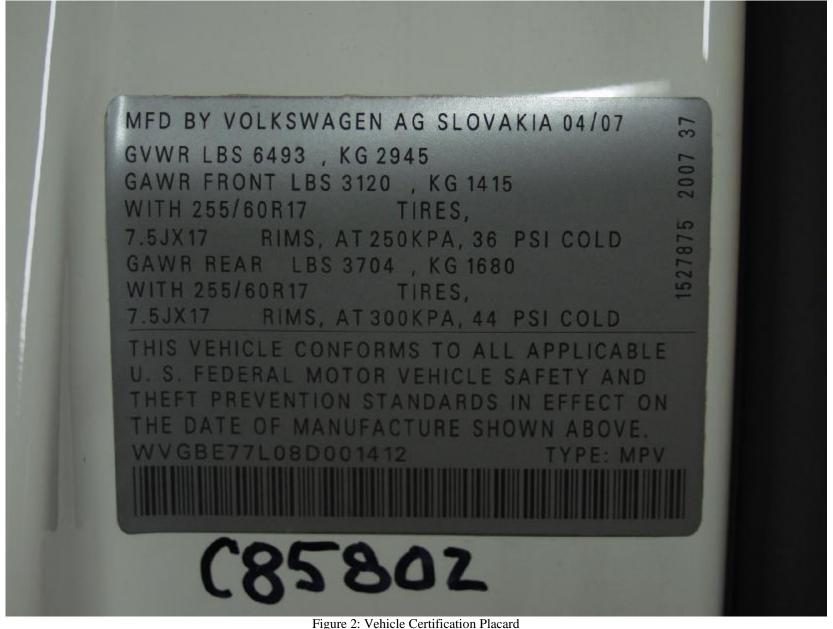
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Figure 1: Vehicle Left Front Three-Quarter View



2008 Volkswagen Touareg MPV NHTSA No.: C85802

5-3

	TIRE AND	LOADING IN	FORMATION	
V	SEATING CAL	PACITY TOTAL 5	FRONT 2 REAR 3	1-
CARC	THE COMBINE GO SHOULD NEV	D WEIGHT OF C ER EXCEED 517	CCUPANTS AND KG OR 1140 LBS	\$33
TIRE	SIZE	COLD TIRE PRESSURE	SEE OWNER'S	716 010 633
FRONT	255/60 R17	250 KPA, 36 PSI	MANUAL FOR	716
REAR	255/60 R17	300 KPA, 44 PSI	ADDITIONAL	
SPARE	195/80 - 17		INFORMATION	

Figure 3: Vehicle Tire Placard

2008 Volkswagen Touareg MPV NHTSA No.: C85802

5-4



Figure 4: Close-Up of Ignition Switch

2008 Volkswagen Touareg MPV NHTSA No.: C85802

5-5

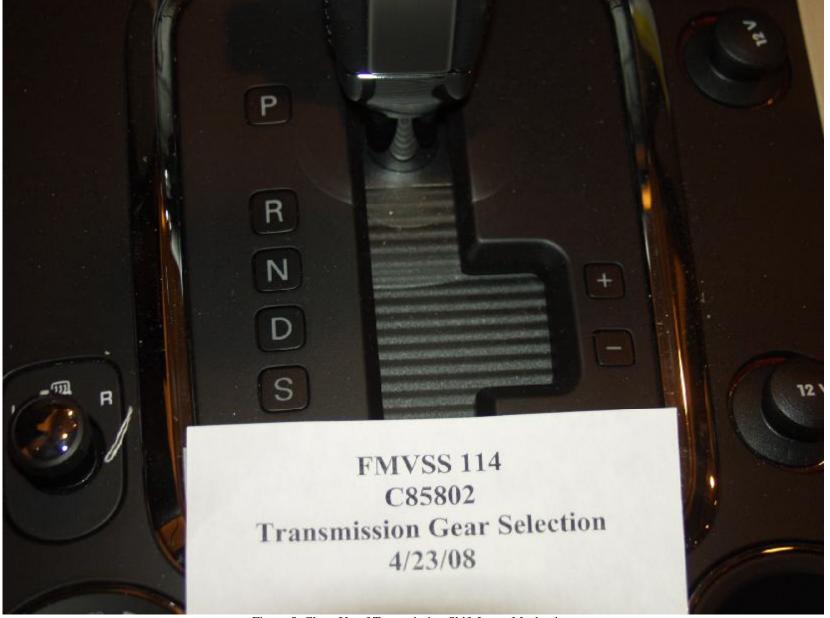


Figure 5: Close-Up of Transmission Shift Lever Mechanism

2008 Volkswagen Touareg MPV NHTSA No.: C85802

5-6



FMVSS 114 C85802 Key Removal Override 4/23/08

Figure 6: Close-Up of Special Device Which Allows For Key Removal

NOT APPLICABLE

Figure 7: Close-Up of Special Device Which Allows Moving of Shift Lever

SECTION 6

VEHICLE OWNER'S MANUAL



C85802

3.1 Controls and Equipment

Touareg Model year 2008



Keys

Key set

The key set contains:

- Two master keys with remote control and a panic button
- panie button
- An emergency key

• Two keys for the roof rack (when factory-installed) \Rightarrow page 106

Emergency key

The emergency key fits all the vehicle locks.

We recommend you keep the emergency key separate from the vehicle documents. It should only be used temporarily if you have misplaced or lost your genuine key.

To help prevent accidents, injuries and theft $\Rightarrow \Delta$

Replacement key

If you need a replacement key, please contact the Volkswagen dealer with a valid remote key and the VIN of the vehicle.

WARNING

Improper use of vehicle keys can result in serious personal injury.

• Always take the key with you when you leave the vehicle. It can be used to start the engine and operate vehicle systems such as the power windows, leading to serious personal injury.

• Never leave children, disabled persons or anyone who cannot help themselves in the vehicle. The doors can be locked with the remote control key. This could result in people being trapped in the vehicle in an emergency. For example, depending on the time of year, people

MARNING (continued)

trapped in the vehicle can be exposed to very high or very low temperatures.

• Never remove the key from the ignition switch while the vehicle is moving or rolling to a stop. The steering will lock and you will not be able to control the vehicle.



• The remote control keys contain electronic components. Protect them from damage from moisture or rough handling.

• Never leave any keys inside the vehicle. Entry by others without your permission could harm the vehicle or it could be stolen. Take the keys with you whenever you leave your vehicle.

i Tips

• Making a replacement key requires the key number (on the key tag).

• The key number identifies the way the key has to be cut and allows the microchip in the key to be programmed to work with the coded electronic immobilizer in your vehicle.

• A key without the special microchip or with a chip that has not been coded properly will not work with your vehicle, even if it has been cut correctly.

• Additional remote control keys are available from authorized Volkswagen dealers or qualified workshops. Each key must be programmed to work with your ⇒ page 38.

• You can use up to four remote control keys with your vehicle. ◀

Opening and closing 35

Booklet 3.1 Controls and Equipment

A WARNING (continued)

hicle that are much higher than the outside temperatures, particularly in summer. Temperatures can quickly reach levels that can cause unconsciousness and death, particularly to small children.

 Never remove the key from the ignition switch while the vehicle is moving or rolling to

M WARNING (continued)

a stop. The steering wheel will lock and you will not be able to control the vehicle.

i Tips

For the keyless entry system to work properly you must be carrying the key with you. In addition, the batteries in all remote control keys must be in a good condition and not weak.

Anti-theft alarm system

Description

The anti-theft alarm helps prevent unauthorized vehicle entry and theft.

The anti-theft alarm is automatically switched on when you lock the vehicle. Close all windows and doors completely before locking the vehicle so that the anti-theft system does not trigger alarms unnecessarily.

What triggers the alarm?

With the vehicle locked, the alarm is triggered by:

- Opening the vehicle with a key without switching the ignition on within 15 seconds
- Opening a door
- Opening the hood
- Opening the rear hatch

When the alarm is triggered, the horn will sound for about 30 seconds and the turn signals will flash for about 2 minutes.

Emergency opening (if the power locking system has failed)

• Press the button in the remote control key to release the key bit \Rightarrow page 36, fig. 21 (c).

• Unlock the vehicle using the key in the driver's door. The anti-theft alarm system stays activated, but the alarm will not yet sound.

• Switch the ignition on within 15 seconds. The electronic immobilizer detects a valid vehicle key and deactivates the anti-theft warning system. If you do not switch the ignition on within 15 seconds, the alarm will sound.

How can I switch off the alarm system?

The alarm system is switched off by unlocking the vehicle using the B (unlock) button in the remote control key, or by switching the ignition on.



• When the alarm stops and you open another door, the rear hatch or any other part of the vehicle monitored by the alarm system, the alarm will be triggered again.

 The anti-theft alarm system works even if the battery is disconnected or not working properly.

40 Opening and closing

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Ignition lock

Ignition key position

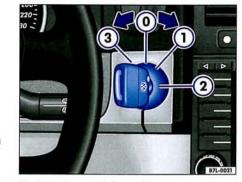


Fig. 1 Ignition switch key positions

Ignition off

If the key is inserted into the ignition lock in this position \Rightarrow fig. 1, the steering lock is automatically unlocked. When the key is removed from the lock in this position, the steering lock is automatically locked $\Rightarrow \triangle$.

1 Switching the ignition on

Turn the key to position () to switch the ignition on.

(2) Starting the engine

Depress the brake pedal.

Turn the key to position (2) to start the engine \Rightarrow page 6. Major electrical consumers (headlights, for example) will be switched off until the engine has started. Once the engine has started, let the ignition key return to position (1).

To start the engine, you must always begin with the key in the ignition-off position (). This helps to keep the starter from being damaged while the engine is running.

③ Switching the ignition off; stopping the engine

Turn the key to position ③.

¹⁾ Where applicable

Automatic switch-off of electrical components

Components that use a lot of electrical power (the seat heaters or rear window defogger, for example) will automatically be switched off when the ignition is on and the engine is not running. This prevents draining your battery. Information text will appear in the instrument cluster.

Components that use little electricity are not switched off automatically. However, they can also drain the battery.

M WARNING

Improper use of vehicle keys can result in serious personal injury.

• Always take the key with you when you leave the vehicle. It can be used to start the engine and operate vehicle systems such as the power windows, leading to serious personal injury.

• Never leave children, disabled persons or anyone who cannot help themselves in the vehicle. The doors can be locked using the remote control key. This could result in people being trapped in the vehicle in an emergency. For example, depending on the time of year, people trapped in the vehicle can be exposed to very high or very low temperatures.

• Never remove the key from steering lock while the vehicle is moving or while it is rolling to a stop. The steering will lock and you will not be able to steer or control the vehicle.

🕛 Note

You can damage the starter or the engine if you try to start the engine (key position (2)) when the vehicle is still moving, or if you try to start the engine immediately after switching it off.

i Tips

• If the (S) indicator light¹ comes on in the instrument cluster when the ignition is switched on, depress the brake pedal.

Starting and driving 3

If you release the ignition key in positions (1),
(2) or (3), it automatically returns to position (0).

• If the key is in the ignition lock, a buzzer sounds when the driver door is opened. This is a reminder to remove the key.

• After the ignition is switched off, you can only remove the radio key if the selector lever for the automatic transmission is in position P After the ignition key is removed, the selector lever is locked. ◀

Applies to vehicles: with 10 cylinder Diesel engine

Starting the Diesel engine with a dead vehicle battery

An emergency start is possible only on vehicles with 10 cylinder Diesel engine and two batteries.

An emergency start can only be carried out with a dead vehicle battery. An emergency start saves you the trouble of a jump start.

To carry out an emergency start

Insert the ignition key into the ignition lock.

- Depress the foot brake.

- Turn the ignition key to the left beyond the point of resistance.

- Turn the ignition all the way to the right within 10 seconds \Rightarrow page 3, fig. 1 (2) to activate automatic start \Rightarrow page 7. The engine management system takes over to start the engine.

- Release the ignition key.

 If you wait longer than 10 seconds, you have to cancel the procedure and start again from the beginning. Following an emergency start, some electrical loads are not available for a maximum time of 5 minutes.

U Note

To avoid damaging the starter, release the ignition key at least as soon as the engine starts.

i Tips

- Do not leave the ignition switched on for an extended period during the emergency start. Otherwise the second battery may become so drained that an emergency start is no longer possible. During the emergency start **PLEASE START ENGINE** appears in the display.
- If the cause of the discharged battery was not an electrical load left switched on, have the battery thoroughly checked by your authorized Volkswagen dealer or qualified workshop and replace it if necessary.
- Following an emergency start, both batteries should be properly charged individually by your authorized Volkswagen dealer or qualified workshop.

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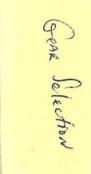
• The second battery has a limited capacity.

Applies to vehicles: with an automatic transmission Removing the key from the ignition lock

The key can be removed only with the transmission selector lever in P (Park).

To remove the key, the ignition must be switched off and the transmission selector lever **must** be in the P (Park) position. Once you have removed the key, the selector lever will be locked. Please be sure to apply the parking brake whenever you remove the key. ◀

4 Starting and driving



Emergency ignition key release



Fig. 2 Ignition lock: Cover

If you are unable to remove the ignition key, for example because the vehicle battery is discharged, proceed as follows:

- Carefully pry off the cover \Rightarrow fig. 2 () using the tip of a ballpoint pen or similar object.

- Press the emergency release button \Rightarrow fig. 3 (arrow) using a ballpoint pen or similar object.



Fig. 3 Ignition lock: Emergency release button for the ignition key

 With the emergency release button depressed, turn the ignition key to the left and remove it.

If you can only remove the ignition key from the ignition using the emergency release button, the vehicle should be inspected at a dealership. There may be a problem in the electrical system. ◀

Electronic immobilizer



The immobilizer helps to prevent unauthorized use of your vehicle.

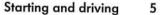
The immobilizer is automatically activated when you remove the key from the ignition switch.

An electronic chip in the key automatically communicates with the immobilizer when you insert the key into the ignition switch, and lets you start the engine. Indicator light 🧠

When the ignition is switched on, the key is automatically scanned. If an unauthorized key is used, the indicator light comes on in the instrument cluster. The vehicle can no longer be operated with this key.



The engine can only be started with a genuine and correctly coded Volkswagen key. ◀



Starting and stopping the engine

Applies to vehicles: with a gasoline engine

Starting the gasoline engine

Automatic start simplifies the starting procedure.

The gasoline engine can only be started using a genuine Volkswagen key with the correct code.

− Shift the transmission into P (Park) or N (Neutral) \Rightarrow page 12.

- Depress the brake pedal.

− Turn the ignition key briefly to position ⇒ page 3, fig. 1 (2) to activate *automatic start*. The engine management system takes over to start the engine $\Rightarrow \triangle$.

Release the ignition key as soon as the engine starts.

After starting an engine that is very hot, it may be necessary to give it some gas.

A cold engine may be a little noisy for the first few seconds until oil pressure has built up in the hydraulic valve lifters. This is normal and no cause for concern.

If the engine does not start after 10 seconds, switch off the ignition, wait 30 seconds, then try again.

If you have problems starting ⇒ Booklet 3.3 "Tips and Advice", chapter "Emergency starting."

Automatic start

When you turn the ignition key directly to position \Rightarrow page 3, fig. 1 (2) the engine management system takes over to start the engine.

No major electrical loads should be switched on during the starting procedure – otherwise the vehicle battery is put under unnecessary load.

Cancel engine start

Automatic engine starting is cancelled as soon as you remove your foot from the brake.

To carry out a new automatic start routing, the ignition must be switched off completely, the

Starting and driving

foot brake must be depressed and the ignition key turned briefly to position ② again.

M WARNING

Reduce the risk of serious personal injury when starting and running the vehicle's engine.

 Never start or let the engine run in a confined or enclosed area. Exhaust from the engine contains carbon monoxide, a poisonous, colorless and odorless gas. Carbon monoxide can cause unconsciousness and death.

• Never leave the vehicle unattended with the engine running. The vehicle could move suddenly or an unusual operating condition could occur resulting in property damage or personal injury.

Never use "starting fluids." They can be explosive and can cause a "run-away" vehicle condition.

🕛 Note

• You can damage the engine if you drive at high engine speeds (rpm), at full throttle, or by over-loading the engine when it is cold.

• The engine cannot be started using a pushstart or by towing.

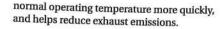
 To help prevent damage to the starter, release the key as soon as the engine starts.

• The vehicle must not be pushed or towed in order to start the engine. Unused fuel could enter into the catalyst and damage it.

• If your engine will not start, try jump-starting it using another vehicle's battery. Read and follow the instructions in ⇒ Booklet 3.3 "Tips and Advice", chapter "Starting assistance".

🕷 For the sake of environment

Do not warm up the engine by running it with the vehicle standing still. Drive off as soon as you start the engine. This helps the engine reach



Applies to vehicles: with a Diesel engine Starting the Diesel engine

Automatic start simplifies the starting procedure.

The Diesel engine can only be started using a genuine Volkswagen key with the correct code.

Shift the transmission into P (Park) or N (Neutral).

Depress the brake pedal.

- Turn the ignition key briefly to position \Rightarrow page 3, fig. 1 (2) to activate *automatic start*. The engine management system takes over to start the engine $\Rightarrow \Lambda$.

Release the ignition key as soon as the engine starts.

After starting an engine that is very hot, it may be necessary to give it some gas.

When starting a cold Diesel engine, it may be a little noisy for the first few seconds until oil pressure has built up in the hydraulic valve lifters. This is normal and no cause for concern.



If the Diesel engine does not start after 10 seconds, switch off the ignition, wait 30 seconds, then try again.

If you have problems starting the Diesel engine ⇒ page 4, "Starting the Diesel engine with a dead vehicle battery" and ⇒ Booklet 3.3 "Tips and Advice", chapter "Jump starting."

Automatic start

When you turn the ignition key directly to position \Rightarrow page 3, fig. 1 (2) the engine management system takes over to start the engine.

The message **ENGINE IS STARTING** appears in the instrument cluster during pre-glow for a maximum of 8 seconds, depending on outside temperature and engine temperature. As soon as the engine starts, the message goes out. No major electrical loads should be switched on during the starting procedure – otherwise the vehicle battery is put under unnecessary load.

The engine can only be started using a properly coded, original Volkswagen key made for your

Cancel engine start

i Tips

vehicle.

Automatic engine starting is cancelled as soon as you remove your foot from the brake. In this case the message in the instrument cluster goes out.

To carry out a new automatic start routing, the ignition must be switched off completely and the ignition key turned briefly to position ② again.

To start the diesel engine after the fuel tank has been run dry

If the fuel tank was run completely dry, the starting process after refueling with diesel fuel can take longer than usual – up to one minute. This is because the fuel system first has to be vented of air while starting.

Pre glow indicator light 0 with Diesel engine

If the indicator light ⁶⁰ comes on when the ignition is switched on, pre-glow is in progress. After the indicator light has gone out, the engine should be started right away. With the engine at **operating temperature**, the indicator light ⁶⁰ does **not** come on. The engine can be started immediately.

WARNING

Reduce the risk of serious personal injury when starting and running the vehicle's engine.

• Never start or let the engine run in a confined or enclosed area. Exhaust from the engine contains carbon monoxide, a poisonous, colorless and odorless gas. Carbon monoxide can cause unconsciousness and death.

Starting and driving

7

MARNING (continued)

• Never leave the vehicle unattended with the engine running. The vehicle could move suddenly or an unusual operating condition could occur resulting in property damage or personal injury.

• Never use "starting fluids." They are potentially explosive and can cause a "runaway" vehicle condition.

U Note

• You can damage the engine if you drive high engine speeds, at full throttle or by over-loading the engine when the engine is cold.

• The engine cannot be started using pushstarts or by towing.

Stopping the engine

• To avoid damaging the starter, release the ignition key at least as soon as the engine starts.

 If your engine does not start, try jumpstarting it using another vehicle's battery. Read and follow the instructions in ⇒ Booklet 3.3 "Tips and Advice", chapter "Starting assistance".

🕷 For the sake of environment

Do not warm up the engine by running it with the vehicle standing still. Drive off as soon as you start the engine. This helps the engine reach operating temperature faster and reduces emissions.



The engine can only be started using a suitable, coded, original Volkswagen key made for your vehicle. ◀

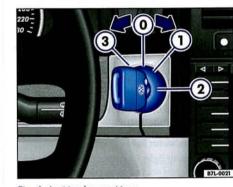


Fig. 4 Ignition key positions

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- Let the vehicle come to a complete stop.

Shift the automatic transmission to P (Park).

- Switch the ignition off by turning the key to position $\Im \Rightarrow$ fig. 4.

 Be sure to apply the parking brake whenever you remove the key from the ignition.

After the engine has stopped, the radiator cooling fan may continue to run for up to 10 minutes, even if the ignition is switched off. The radiator cooling fan can start automatically if the engine is hot and the coolant temperature rises, or if the sun heats up the engine compartment.

MARNING

Never stop the engine before the vehicle has come to a complete stop. You can lose control of the vehicle, crash and be seriously injured.

• The airbags and safety belt pretensioners will not work when the ignition is switched off.

• The brake booster does not work when the engine is not running. A lot more brake pedal pressure will be necessary to stop the vehicle.

• The power steering system does not work when the engine is not running and you will need more force to steer the vehicle.

• When the key is removed from the ignition switch, the steering will lock and you will not be able to steer the vehicle.

 Never park where the hot exhaust system could ignite flammable materials, such as brush, leaves, dry grass, spilled fuel, etc.

8 Starting and driving

gasoline – fire hazard!

• Due to the high temperatures reached by your catalytic converter, you should never park

your vehicle in an area where there are highly

flammable materials such as dry grass or spilled



If the vehicle has been driven hard for a long time, the engine could overheat when it is stopped. To reduce the risk of engine damage, let the engine idle for about 2 minutes before you switch off the ignition.

Keyless Go

Applies to vehicles: with Keyless Access Start button description

With "Keyless Go", you can operate the vehicle without using the vehicle key.



Fig. 5 Center console detail: Start button

With the start button \Rightarrow fig. 5(arrow), you can carry out all functions of the normal ignition switch without using the remote control key. You simply need to have the vehicle key with you.

Start button functions

 Press the button *once* to the first stage, in order to release the steering lock.

 Press the button *a second time* to the first stage, in order to switch on the ignition. Press the button *a third time* to the first stage, in order to switch off the ignition.

Press the button to the second stage, in order to start the engine.

 Press the button to the second stage again, in order to shut off the engine and switch off the ignition.

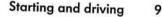
- For longer than one second, press and hold down the button *once* to the **first** stage, in order to re-activate the steering lock.

The "Keyless Access" system consists of:

- Keyless Entry (⇒ Booklet 3.1 "Controls"),
- Keyless Go (\Rightarrow page 9), and
- Keyless Exit (⇒ Booklet 3.1 "Controls").

As soon as the vehicle is locked from the outside, the steering lock is automatically activated, unless this has already been done manually.

If you pressed the switch to the second stage while attempting to lock the steering wheel, **IGNITION ACTIVE** appears in the display after the door has been opened. At the same time, an acoustic signal will beep for approx. 10 seconds.



Automatic transmission

Transmission programs

The automatic transmission has two programs - Standard and Sport.

D - Drive (standard)

switching gears later.

being used (D or S).

later. S - Sport

i Tips

By selecting the standard program **D**, you will be driving an economical program, i.e. a program that is designed to reduce fuel consumption. The transmission shifts up earlier and down

By selecting the sport program S, you will be driving a sporty program, i.e. a program that fully utilizes the power reserves of the engine by

Driving in D uses less fuel than driving in S.

The display in the instrument cluster shows the

gear selected, and the transmission program

***** For the sake of environment



Fig. 6 Center console with automatic transmission selector lever

Selecting the Standard program

 Move the selector lever to position D (Drive).

Selecting the Sport program

Move the selector lever to position S (Sport).

Automatic Shift Lock (ASL)

The shift-lock keeps the selector lever from being accidentally shifted out of P (Park) or N (Neutral).

Releasing the shift-lock

- Switch the ignition on.

 While holding the brake pedal down, press the release button in the selector lever handle.

The shift-lock is activated when:

• The selector lever is in P

• The selector lever is in N for more than about 1 second and you are driving slower than 3 mph (5 km/h)

The shift-lock will not engage if you quickly move the selector lever through position N when shifting between R and D. This makes it possible to "rock" the vehicle back and forth if it is stuck in snow or mud. ◀

12 Starting and driving

Driving with an automatic transmission

The transmission upshifts and downshifts automatically.



Fig. 7 Center console with automatic transmission selector lever

Starting the engine

− Start the engine with the selector lever in position P or N. For more information \Rightarrow page 6.

Driving

- Press and hold the brake pedal.

- Release the parking brake.

Press and hold the release button in the selector lever handle.

Move the selector lever to R (Reverse), D
 (Drive) or S (Sport).

 Release the button and wait for the transmission to engage (a slight movement can be felt).

- Release the brake and depress the accelerator $\Rightarrow \Lambda$.

Stopping briefly

- Always use the foot brake to keep the vehicle from creeping forward, at a traffic light, for example. You do not need to move the selector lever to **P** (Park) or **N** (Neutral).

Do not depress the accelerator.

Parking

- Depress and hold the brake pedal until the vehicle comes to a full stop $\Rightarrow \Lambda$.

- Apply the parking brake \Rightarrow page 23.

 Press and hold the release button and move the selector lever to P (Park).

Driving down hills

Select the tiptronic[®] position.

Pull the lever to the "-" ("minus") position to downshift.

Stopping on a hill

 When necessary, you should hold the vehicle in position with the foot brake to keep it from rolling backward.

- Do not try to keep the vehicle from rolling backward by increasing engine speed with the transmission in a drive gear $\Rightarrow \Delta$.

Starting on a hill

- Firmly apply the parking brake.

- After setting the gear, apply gas gradually and simultaneously release the parking brake. Please also read the notes on the hill start assist \Rightarrow page 67.

The transmission automatically upshifts to keep the engine from over-revving. When driving downhill, you may need a lower gear to increase the braking effect of the engine. For example, you should use tiptronic[®] and shift down to 3rd gear to drive down a steep slope. If the engine braking effect is not enough to help you maintain the desired speed, use the foot brake to reduce speed $\Rightarrow \Delta$.

The Automatic Shift Lock (ASL) locks the selector lever in P or N when the ignition is switched on. You have to depress the brake pedal to move the selector lever out of P or N. This prevents un-

Starting and driving 13

wanted vehicle movement caused by accidentally engaging a drive gear.

Always hold the vehicle with the foot brake if you stop while driving up a hill, to keep it from rolling backward.

The ignition key cannot be removed unless the selector lever is in **P**.

"Depress Brake Pedal" indicator lamp (S)

If this indicator light illuminates, the brake pedal has to be depressed. This is necessary when the automatic transmission shift lever is moved out of the P or N positions. You may also be shown a message in the instrument cluster display informing you or requesting you to take necessary action.

\Lambda WARNING

Unintended vehicle movement can cause serious personal injury.

• Never get out of the driver's seat when the engine is running, especially when the transmission is in a drive gear. If you must leave your vehicle with the engine running, always firmly set the parking brake and shift the transmission into P (Park).

• When the engine is running and a drive gear -D (Drive), S (Sport) or R (Reverse) -has been selected, always press and hold the brake pedal to keep the vehicle from moving. Power is transmitted to the wheels any time a driving gear is selected, and the vehicle may "creep" even at idle speed.

• Never depress the accelerator when moving the selector lever.

• Never shift into R (Reverse) or P (Park) when the vehicle is moving.

 Before you drive down a steep section of road, reduce speed and shift to a lower gear using tiptronic[®] for better engine braking, and to reduce the load on the brakes.

 When you must stop on an incline, always hold the vehicle in place with the footbrake to prevent it from rolling back.

• Do not ride the brakes or apply the brake pedal too often or too long. Constant braking

MARNING (continued)

causes the brakes to overheat and will substantially reduce braking performance, increase braking distance and can cause complete failure of the brake system.

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1)

 Never leave the vehicle in the neutral position N, it will roll down mountains or hills, regardless of whether the engine is running or not.

\Lambda WARNING

Never stop the engine before the vehicle has come to a complete stop. You can lose control of the vehicle, crash and be seriously injured.

• The airbags and safety belt pretensioners will not work when the ignition is switched off.

 The brake booster does not work when the engine is not running. A lot more brake pedal pressure will be necessary to stop the vehicle.

• The power steering system does not work when the engine is not running and you will need more force to steer the vehicle.

• When the key is removed from the ignition switch, the steering will lock and you will not be able to steer the vehicle.

• Never coast down a slope with the transmission in Neutral.

U Note

• If you stop the vehicle on a hill, do not try to hold the vehicle in place by depressing the accelerator with the transmission in a drive gear. The transmission could overheat and be damaged. Apply the parking brake or depress the brake pedal to keep the vehicle from rolling.

• Never let the vehicle coast or roll down a hill in N (Neutral) and the engine not running. This will damage the automatic transmission.

i Tips

If the transmission is unintentionally shifted into N (Neutral) while driving, take your foot off the accelerator pedal and wait until the engine speed has dropped to idle speed before shifting back into a drive gear.

14 Starting and driving

GOAR Jelection

- Briefly push the selector forward (\rightarrow) to

When accelerating, the transmission automatically upshifts to the next higher gear before reaching maximum engine speed (rpm). When selecting a lower gear, the transmission will downshift only when doing so will not over-

If tiptronic[®] is selected while driving with the

lever position D), it will also be in 3rd gear in tip-

Selector lever position and the gear selected are

transmission operating in 3rd gear (selector

shown in the instrument cluster display.

Shifting with tiptronic®

Th

Tiptronic[®] lets the driver upshift and downshift manually, or choose automatic gear selection.

upshift.

downshift.

rev the engine.

tronic[®] mode.



Fig. 8 Automatic transmission selector lever in tiptronic position

Shifting with tiptronic®

- Move the selector lever from the D (Drive) position on the left to the tip-tronic[®] position on the right \Rightarrow fig. 8.

Selector lever position and drive gear

Automatic transmission information is shown on the display in the instrument cluster.

Selector Lever Position

The set selector lever position is shown both to the side of the selector lever, as well as in the instrument cluster display. In addition, the gear which the automatic transmission is currently in is shown in the display.

Tiptronic[®] Gear Display

If the automatic transmission is shifted manually in tiptronic[®] mode, the individual gears are shown in the display.

P – Park

When the selector lever is in P, the drive wheels are locked mechanically.

Shift into P only when the vehicle is completely stopped $\Rightarrow \Lambda$.

To **remove** the lever from the **P** position, you must depress the release button (button in the selector lever handle) *and* you must step on the brake pedal simultaneously.

To engage the lever in the P position, you must depress the release button and, if necessary, step on the brake pedal.

If the battery is dead, the selector lever cannot be moved out of **P**.

R - Reverse

Shift into **R** only when the vehicle is completely stopped $\Rightarrow \triangle$.

Shift into **R**, you must depress the release button *and* simultaneously step on the brake pedal with the ignition on.

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When the selector lever is in the **R** position and the ignition is on, the following functions are triggered:

The back-up light illuminates.

• The air conditioning automatically switches to recirculation mode.

• The parking assistant²⁾ switches on.

N – Neutral

POAK

0

12 UTIDA

In Neutral, no power is transmitted to the wheels, and engine braking cannot help to slow down the vehicle.

Never use the N selector lever position for driving downhill, as the motor will have no braking effect. This places all the load on the brake.

The automatic transmission may be damaged if the vehicle is driven downhill with the selector lever in the N position and the engine switched off.

D – standard driving position (standard proaram)

All forward gears are automatically switched up and down in this selector lever position. This is dependent on the engine load, your individual driving style and the driving speed. The braking effect of the engine when driving downhill is minimal. In addition to the lever selector position **D**, the display also shows the respective

gear. To switch from N to D, the brake pedal must be depressed at speeds below 3 mph or when the vehicle is stationary $\Rightarrow \Delta$.

S – standard driving position (sport program) In the selector lever position all forward gears are automatically shift up *later* and down *earlier* than in selector lever position D, in order to fully utilize the power reserves of the engine. This is dependent on the engine load, your individual driving style and the driving speed. The braking effect of the engine when driving downhill is minimal. In addition to the lever selector position S, the display also shows the respective gear.

To engage S, you must depress the release button.

2) Where applicable

16 Starting and driving

▲ WARNING

Inadvertent movement of the vehicle can result in an accident and severe injury.

• Never leave your vehicle with the engine running while in gear. If you must leave your vehicle with the engine running, set the parking brake and engage the park lock P.

When the engine is running and the transmission is in gear (D, S or R) or in tiptronic[®] mode, it is essential that you stop the vehicle with the brake. When idling, the transmission of power does not stop completely – the vehicle "creeps".

• Do not depress the accelerator pedal when you change the selector lever position, as this poses a risk of an accident!

 Never place the selector lever in the R or P position while the vehicle is moving. This can result in an accident and severe injury.

 Before you drive down a steep section of road, reduce speed and shift to a lower gear using tiptronic[®] to achieve better engine braking effect and to reduce the load on the brake system.

• Do not ride the brakes or apply the brake pedal too often or too long. Constant braking causes the brakes to overheat and substantially reduces braking performance, increases braking distance or causes complete failure of the brake system.

WARNING

Never stop the engine before the vehicle has come to a complete stop. You can lose control of the vehicle, crash and be seriously injured.

 The airbags and safety belt pretensioners will not work when the ignition is switched off.

 The brake booster does not work when the engine is not running. A lot more brake pedal pressure will be necessary to stop the vehicle.

• The power steering system does not work when the engine is not running and you will need more force to steer the vehicle.

• When the key is removed from the ignition switch, the steering will lock and you will not be able to steer the vehicle.