



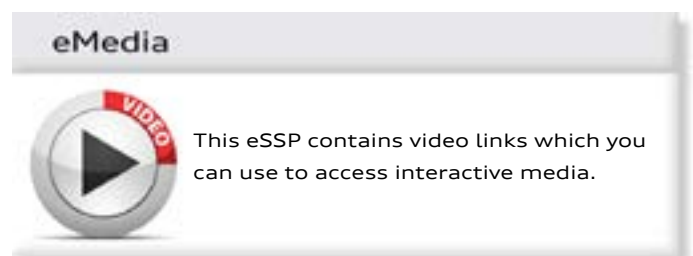
## The 2017 A4 Introduction



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Service Training  
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Always check Technical Bulletins and the latest electronic service repair literature for information that may supersede any information included in this booklet.



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This eSelf Study Program teaches a basic knowledge of the design and functions of new models, new automotive components or technologies.

**It is not a Repair Manual! All values given are intended as a guideline only.**

For maintenance and repair work, always refer to the current technical literature.



**Note**



**Reference**



# Introduction

The A4 family and its predecessor the Audi 80 have been technological innovators and true winners for many decades. The new Audi A4 sedan features numerous high-end technologies which set higher benchmarks for its class. These features combine elegant design with an innovative operating concept, systematic lightweight construction and new, efficient drivetrain solutions. The Audi A4 sedan is also ahead of its peers in terms of infotainment and assistance systems.

When it comes to interior dimensions, the new Audi A4 sedan is ahead of its predecessors in almost every aspect. The passenger compartment offers a feeling of genuine spaciousness. The design features underscore this impression, as its clear architecture is strictly focused on horizontal lines.

In terms of aerodynamics, the new model dramatically outpaces the competition. The Audi A4 sedan has a drag coefficient of 0.23. Even the rear design plays a pivotal role in terms of aerodynamics. On the new Audi A4 sedan, the lines of the rear trunk lid ensure that the air flow is smooth.

As a result of these changes, Audi drivers can look forward to a truly high-tech experience - an innovative synthesis of technology and aesthetics.



## Learning objectives of this eSelf-Study Program:

This Self Study Program describes the design and functioning of the Audi A4. When completed, you will be able to answer questions on the following topics:

- ▶ New features of the body.
- ▶ New features of the occupant protection system.
- ▶ New power transmission features.
- ▶ New chassis features.
- ▶ Function of the surround camera.
- ▶ New features of the climate control system.

## Engine (at model introduction)

- ▶ 2.0l R4 TFSI engine 252 hp (188 kW)
- Other engine versions will become available at a later date.

## Headlights

Depending on trim level, the A4 can be equipped with either xenon plus or LED headlight technology.

## Assistance systems

The following systems are optionally available:

- ▶ Adaptive cruise control (Stop & go including traffic jam assist)
- ▶ Predictive efficiency assist
- ▶ Audi active lane assist
- ▶ Audi side assist
- ▶ Park assist
- ▶ Rear cross traffic assist
- ▶ Exit warning
- ▶ Turning assist
- ▶ Evasion assist
- ▶ Camera based traffic sign recognition
- ▶ Audi pre sense city, basic and rear

## Climate control

A three-zone automatic climate control system with separate rear controls is standard equipment on the new A4. Temperature displays are integrated into the rotary dials. When one of the capacitive rocker switches is approached by a finger, its function is shown enlarged on the LCD display and selected.



## Displays and operation

The focal point of the operating system is the optional MMI all-in-touch control unit with a full touch surface. The Audi virtual cockpit and Head-up display are standard equipment on the Prestige model.

## Body

Hot-stamped components form the high-strength, backbone of the occupant cell. They strengthen the transition from the front end to the passenger compartment, the frontal area of the roof frame, the 'B' pillars, the side sills and parts of the floorpan.

The module cross member under the instrument panel is made of extruded and sheet aluminum, while the front cross member is an extruded profile. In addition, the nodes in the upper ends of the 'D' pillars are made of die-cast aluminum. The rear trunk lid is also aluminum.

## LED Taillights

The dynamic rear turn signals use a series of light diodes switched sequentially from inside to outside in the direction of turn, clearly signaling the car's direction to other road users.

## Power transmission

At model introduction, the A4 will be equipped with a 7-speed S tronic dual clutch transmission. This will be used in both the front wheel drive and quattro models.

## Suspension

The A4 now has electro-mechanical steering in addition to the newly developed five-link front and rear axles. The optional Audi adaptive suspension now has a central control module to help ensure ideal interaction between the driving conditions and system function. With the use of Audi drive select, ride dynamics can also be tailored by the driver.

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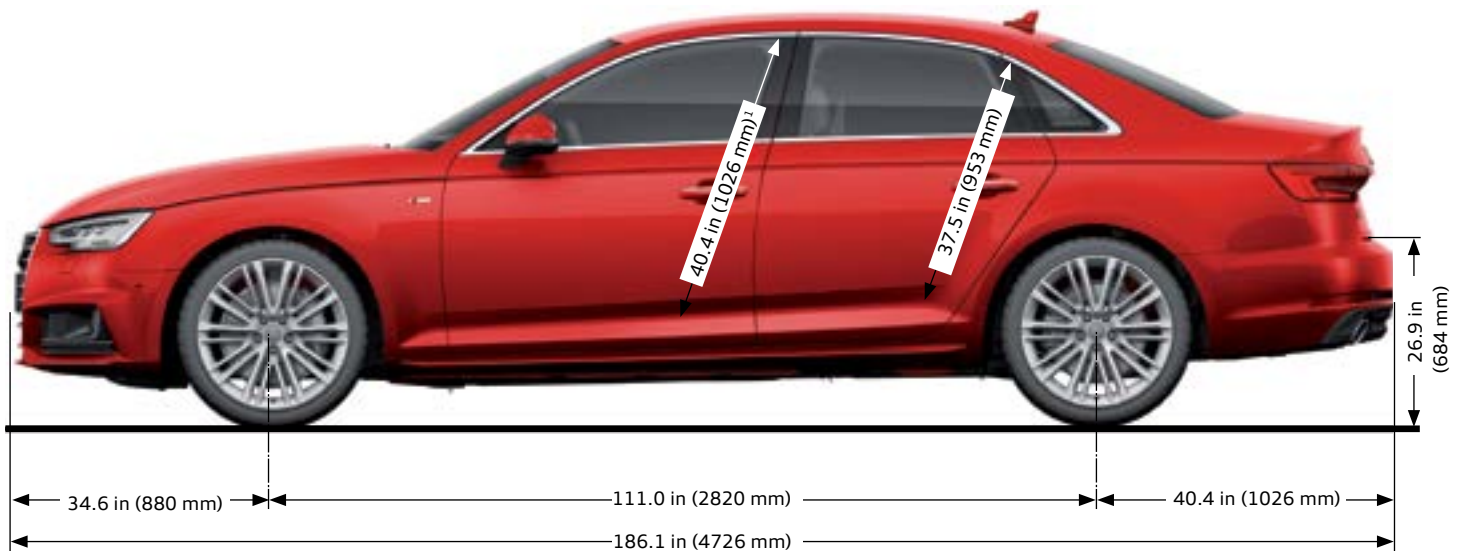
# Dimensions



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## Exterior dimensions and weights

Length	186.1 in (4726 mm)
Width (not including exterior mirrors)	72.5 in (1842 mm)
Width (including exterior mirrors)	79.6 in (2022 mm)
Height	56.2 in (1427 mm)
Front track width	61.9 in (1572 mm)
Rear track width	61.2 in (1555 mm)
Wheelbase	111.0 in (2820 mm)
Curb weight	3152.6 lb (1430 kg)
Gross vehicle weight	4475.3 lb (2030 kg)

## Inner dimensions and other specifications

Front cabin width	58.1 in (1476 mm) <sup>2)</sup>
Front shoulder width	55.9 in (1421 mm) <sup>3)</sup>
Rear cabin width	57.7 in (1466 mm) <sup>2)</sup>
Rear shoulder width	54.5 in (1384 mm) <sup>3)</sup>
Load sill height	684/634 <sup>4)</sup>
Trunk capacity	16.9 cu ft (480 l)
Drag coefficient $c_w$	0.23
Capacity of fuel tank	15.3 / 14.3 gal (58l / 54l) <sup>4)</sup>

<sup>1)</sup> Maximum headroom

<sup>2)</sup> Elbow room width

<sup>3)</sup> Shoulder room width

<sup>4)</sup> Front wheel drive /quattro drive

All dimensions refer to the unladen weight of the vehicle.

# Body

## Introduction

The A4 sedan has a multi-material design. This lightweight construction concept utilizes die-cast aluminum components in addition to regular sheet-metal parts.

A decisive factor in modern body construction is the lightness and rigidity of the body structure as a whole. The bodies of the Audi A4 incorporate die-cast aluminum components in addition to soft, high-strength, modern high-strength and ultra-high-strength sheet-steel components.







Due to geometrical lightweight construction and an intelligent material mix, the body of the Audi A4 is 33.0 lb (15 kg) lighter than the previous version of the Audi A4.

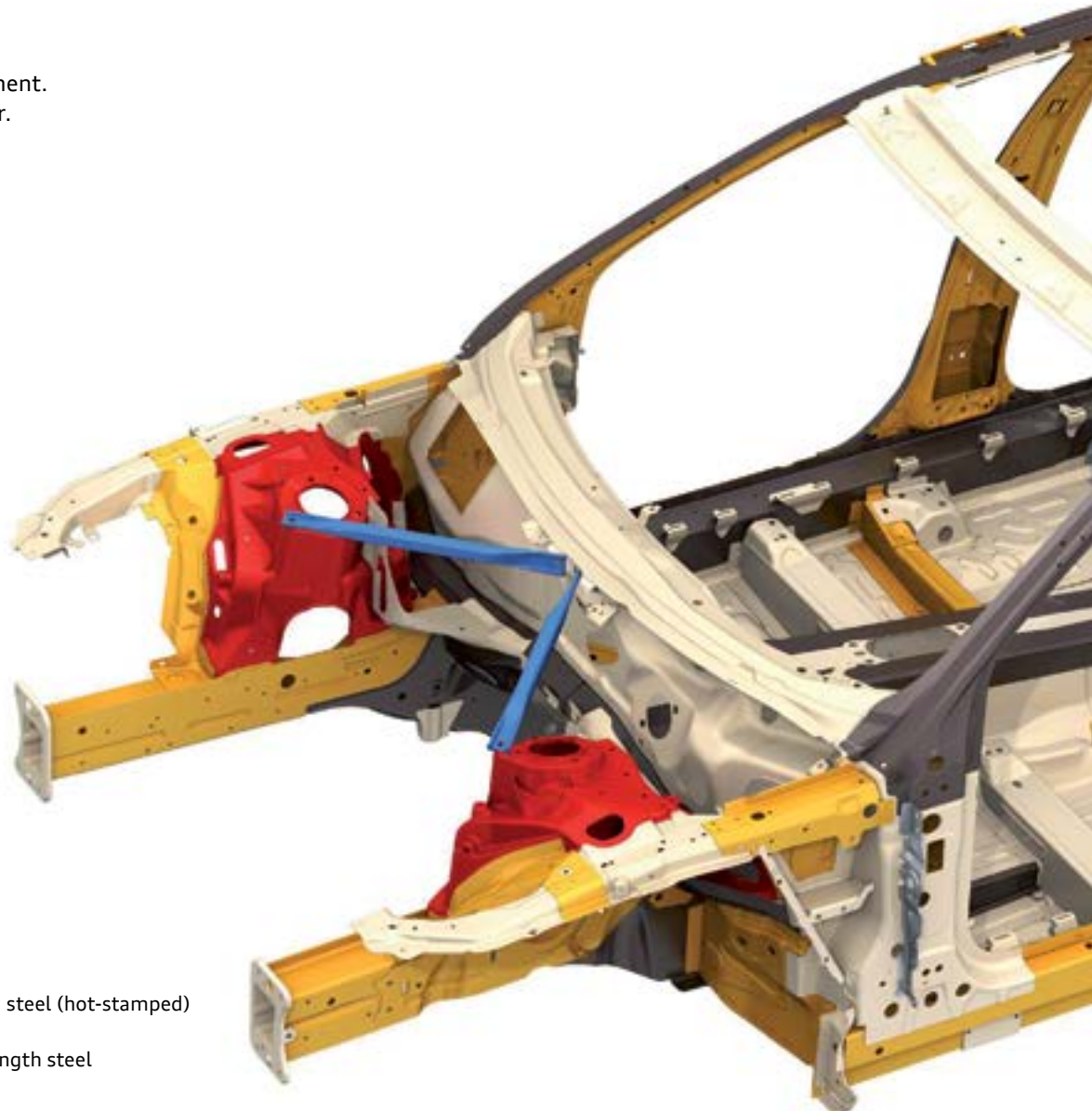
## Body structure

Ultra-high-strength hot-stamped components are used in the following areas:

- ▶ Front frame side member.
- ▶ Front side member reinforcement.
- ▶ Bulkhead (tunnel bridge).
- ▶ 'A' pillar.
- ▶ 'B' pillar.
- ▶ Inner chassis rail (sill).
- ▶ Upper tunnel reinforcement.
- ▶ Rear frame side member.

### Key:

-  Die-cast aluminum
-  Aluminum profile
-  Ultra-high-strength steel (hot-stamped)
-  Advanced high-strength steel
-  High-strength steel
-  Soft steel



## Ultra-high-strength steel (hot-stamped)

Hot-stamped components form the high-strength, backbone of the occupant cell. They strengthen the transition from the front end to the passenger compartment, the frontal area of the roof frame ('A' pillar), the 'B' pillars, the lower beams and parts of the floorpan. They constitute 17% of the body structure.

Sectional repairs may be performed on the following hot-stamped components:

- ▶ 'A' pillars.
- ▶ 'B' pillars.

Special care must be taken when handling hot-stamped steel during repairs to the body. This material must not be straightened or reshaped, even if the deformation is only minimal, due to its high yield strength and rebound characteristics.

Special attention was given to service solutions during the development of the body structure. This means that damaged components are replaced fully or partially at specially designated parting cut areas.

All other hot-stamped components must, if damaged, be completely replaced to manufacturer specifications. High heat input into the welding area would irreversibly compromise the strength and structure of the component through micro-structural changes in the material.



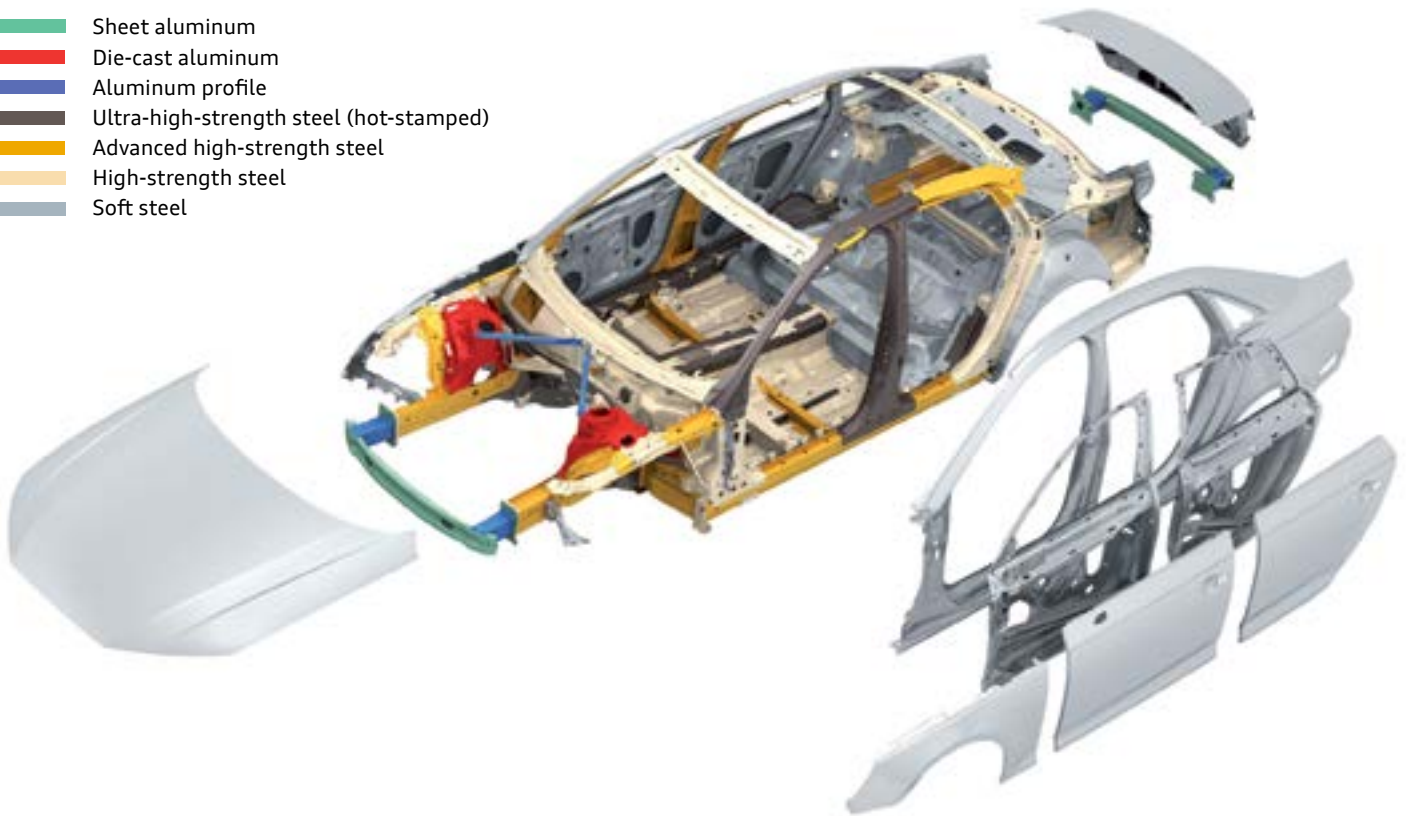
## Outer skin

The A4 sedan has a steel outer skin. The attachments are also made of steel. Only the bumper impact beams and the rear trunk lid of the Audi A4 are made of aluminum. The rear lid is deep-drawn in the press using what is known as an "intelligent" tool process.

Laser sensors measure how the sheet metal behaves during the shaping process. If necessary, electrically operated drawing aids make small adjustments to the press. This results in even higher precision to the stamped component.

### Outer skin of the A4 sedan

- Sheet aluminum
- Die-cast aluminum
- Aluminum profile
- Ultra-high-strength steel (hot-stamped)
- Advanced high-strength steel
- High-strength steel
- Soft steel



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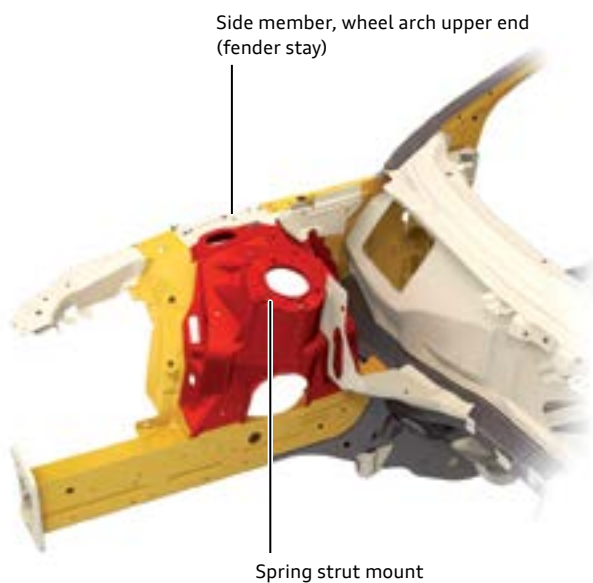
## Aluminum castings

The aluminum castings in the vehicle structure are joined to the adjacent sheet-metal parts by punch riveting and structural adhesive. The adhesive also serves to insulate both materials from one another, thus preventing contact corrosion.

Specific repair solutions have been developed for repairing damage to these aluminum castings and adjoining sheet-steel parts. Straightening and reshaping work is not permitted in the area of these components.

## Structural integration of the spring strut

The front spring strut mounts are die-cast aluminum components. Compared with sheet-steel components, which are welded together out of several parts, they reduce weight in the Audi A4 by a total of 17.6 lb (8.0 kg). This design allows a very stiff connection between the upper wishbones and the car body helping to ensure optimal conditions for driving dynamics.



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# Attachments

## Door handles

The kinematics of the door handles on the Audi A4 have been modified.

Door handles typically move in a horizontal direction only. The 2017 A4 door handle now swivels approximately 30° upwards.

This results in an action which is anatomically adapted to the movement of the hand and provides better ergonomics when opening the door.



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## Active radiator louver

(not available at vehicle introduction)

The Audi A4 may be equipped with an active cooling air intake system which improves aerodynamics and assists the thermal management system.

Unlike the Audi Q7, the A4 features a split active cooling air intake system. The upper and lower louvers can be activated separately.

Three positions are possible depending on input variables such as coolant temperature, engine temperature and transmission temperature.

- ▶ Both louvers closed.
- ▶ The lower unit open and the upper unit closed (to ensure earlier air flow through the charge air cooler).
- ▶ Both louvers open.

The lower louver does not have a bottom shutter plate. This ensures a continuous, forced flow of air through the charge air cooler. Both louvers are open at speeds over 99.4 mph (160 km/h).



Upper radiator louver



Lower radiator louver



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## Sunroof

A conventional glass sliding sunroof is standard for the A4 models.

## Sedan



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## Seating systems

The Audi A4 has eight-way power front seats as standard equipment on the Premium model while the eight-way power seats of the Premium plus and Prestige models have the additional memory function as standard.

To enhance seating comfort, there is an adjustable center armrest between the front seats, two cup holders and large door pockets for storage.

### Standard front seat



### Optional sport seat

The sport seats have electrically adjustable lumbar supports and are optionally available with seat ventilation.



## Seat memory

The memory function allows personal seating profiles to be stored for the driver. The memory function can be operated with the radio remote key or with the recall buttons in the driver's door.

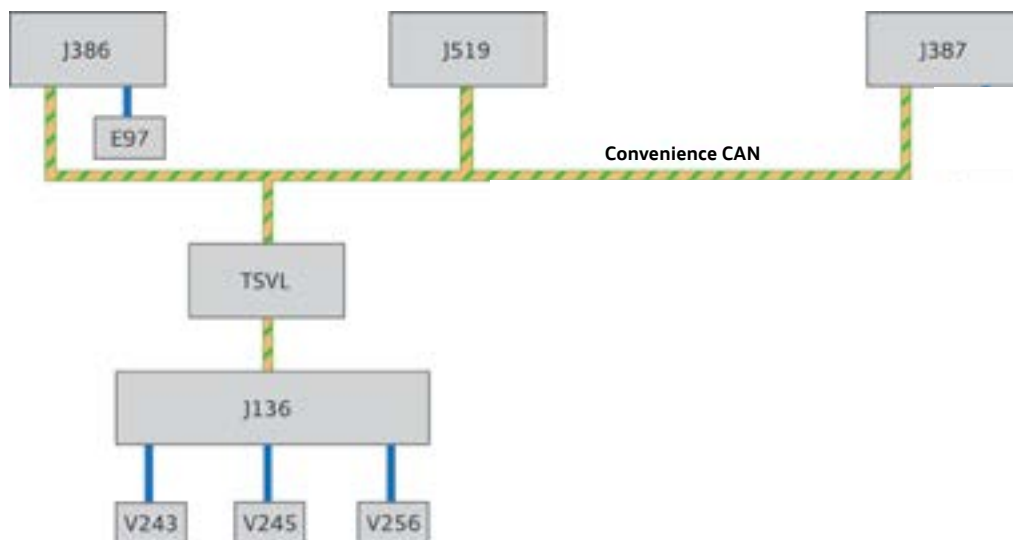
Whenever the vehicle is locked, the driver's seat profile is stored and assigned to the key. The seat profile is automatically recalled when the door is opened.

The outside rear view mirror settings are also stored with the seat memory.

### System overview and signal characteristic

The information from Driver Memory Seat Control Head E97 is processed by Driver Door Control Module J386.

This information is then transferred to Memory Seat/Steering Column Adjustment Control Module J136 via the Convenience CAN. The seat module then activates the corresponding control motors.



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#### Key:

**E97** Driver Memory Seat Control Head

**J136** Memory Seat/Steering Column Adjustment Control Module

**J386** Driver Door Control Module

**J519** Vehicle Electrical System Control Module

**V243** Driver Seat Angle Adjustment Motor

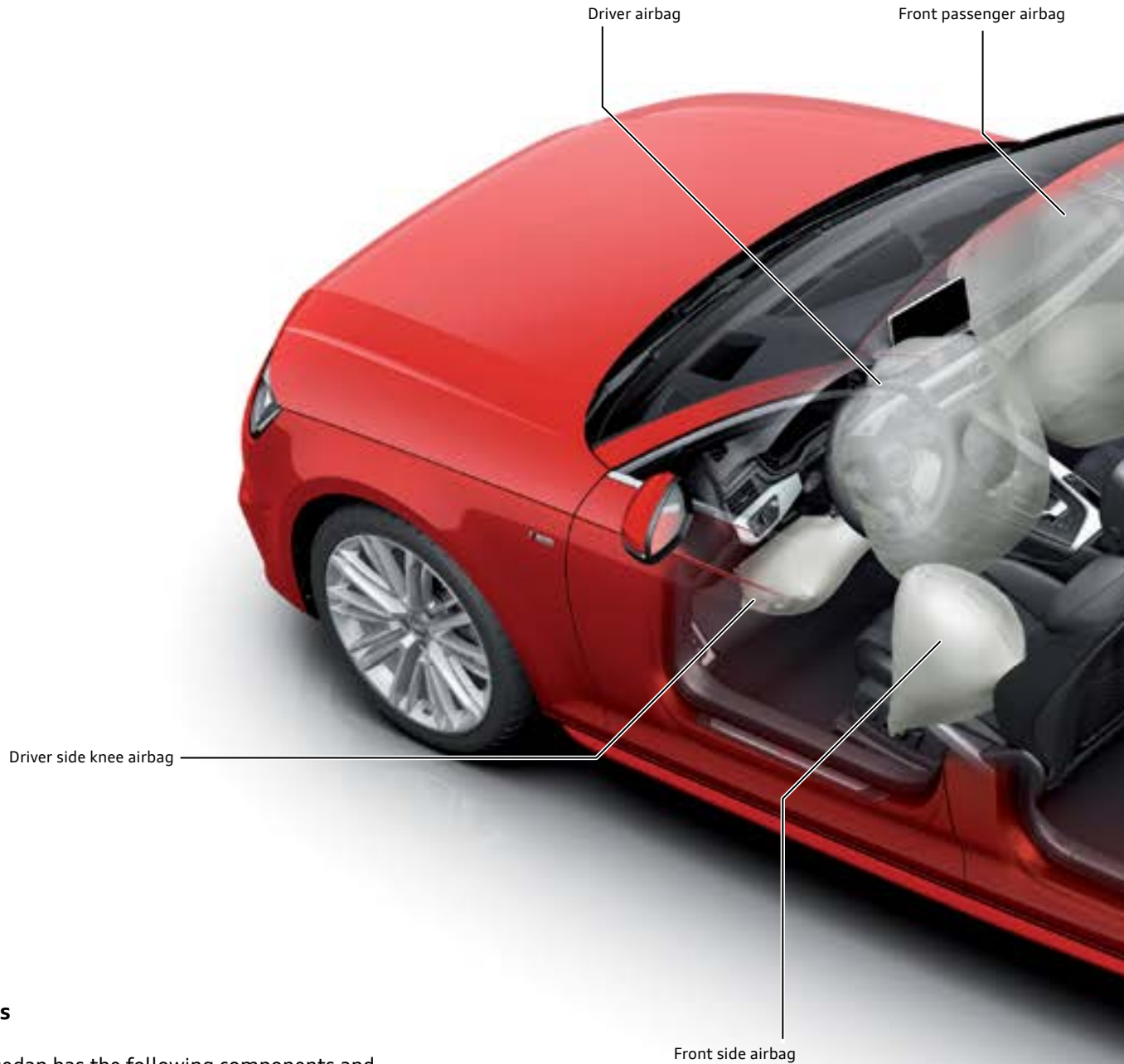
**V245** Driver Seat Height Adjustment Motor

**V256** Driver Seat Depth Adjustment Motor

**TSVL** Left Front Seat Coupling Station

# Occupant protection

## Passive safety



### Components

The Audi A4 sedan has the following components and systems:

- ▶ Airbag control module
- ▶ Adaptive driver airbag
- ▶ Adaptive front passenger airbag (front passenger airbag, two-stage)
- ▶ Front side airbags
- ▶ Rear side airbags (equipment option)
- ▶ Side curtain airbags
- ▶ Knee airbags
- ▶ Front airbag crash sensors
- ▶ Crash sensors for side impact detection in the doors
- ▶ Crash sensors for side impact detection in the 'C' pillars
- ▶ Center pedestrian protection crash sensor (acceleration sensor)
- ▶ Front inertia-reel safety belts with pyrotechnic belt tensioners
- ▶ Front inertia-reel safety belts with electrical belt tensioners
- ▶ Front inertia-reel safety belts with active belt force limiters
- ▶ Inertia-reel safety belts for second seat row with pyrotechnic belt tensioners, driver and front passenger sides
- ▶ Safety belt warning for all seats
- ▶ Front passenger airbag OFF and ON warning lamp
- ▶ Driver and front passenger seat position sensors
- ▶ Battery interrupt igniter





Passenger side knee airbag

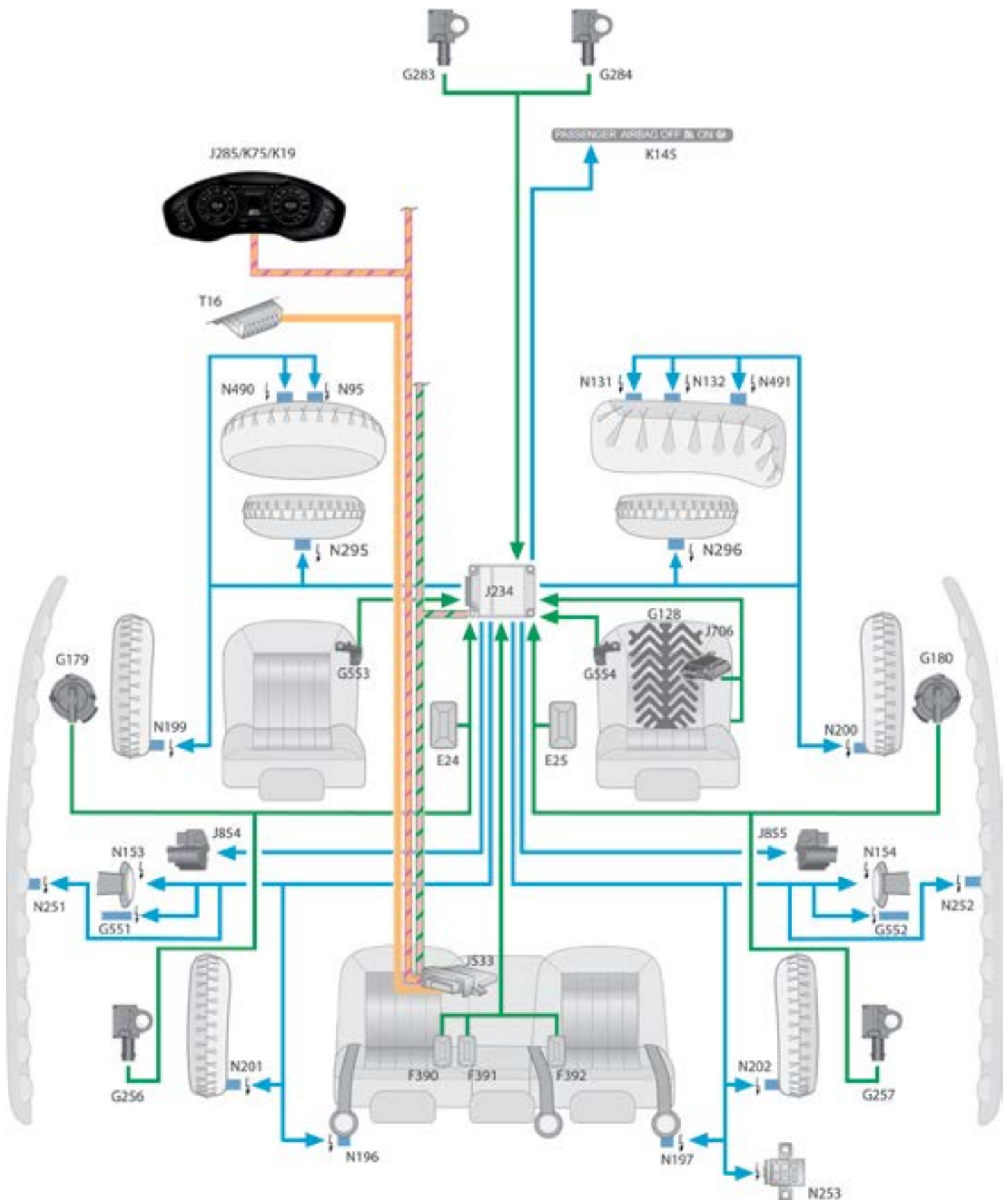
Front side airbag

Head airbag,  
driver and front passenger side

Rear side airbag

Rear side airbag

# System overview








## Additional equipment

Equipment specifications may vary due to the different requirements and statutory provisions which apply to vehicle manufacturers in the various markets.

### Key to illustration on page 16:

<b>E24</b>	Driver Seat Belt Switch	<b>K19</b>	Seat Belt Indicator Lamp
<b>E25</b>	Front Passenger Seat Belt Switch	<b>K75</b>	Airbag Indicator Lamp
<b>F390</b>	Driver Side Second Row Seat Belt Switch	<b>K145</b>	Front Passenger Airbag -Disabled- Indicator Lamp
<b>F391</b>	Center Second Row Seat Belt Switch		
<b>F392</b>	Passenger Side Second Row Seat Belt Switch		
		<b>N95</b>	Driver Airbag Igniter
<b>G128</b>	Front Passenger Occupant Detection Sensor	<b>N131</b>	Front Passenger Airbag Igniter 1
<b>G179</b>	Driver Thorax Airbag Crash Sensor	<b>N132</b>	Front Passenger Airbag Igniter 2
<b>G180</b>	Front Passenger Thorax Airbag Crash Sensor	<b>N153</b>	Driver Seat Belt Tensioner Igniter 1
<b>G256</b>	Driver Side Rear Thorax Airbag Crash Sensor	<b>N154</b>	Front Passenger Seat Belt Tensioner Igniter 1
<b>G257</b>	Passenger Side Rear Thorax Airbag Crash Sensor	<b>N196</b>	Driver Side Rear Seat Belt Tensioner Igniter
<b>G283</b>	Driver Front Airbag Crash Sensor	<b>N197</b>	Passenger Side Rear Seat Belt Tensioner Igniter
<b>G284</b>	Passenger Side Front Airbag Crash Sensor	<b>N199</b>	Driver Thorax Airbag Igniter
<b>G551</b>	Driver Belt Force Limiter	<b>N200</b>	Front Passenger Thorax Airbag Igniter
<b>G552</b>	Front Passenger Belt Force Limiter	<b>N201</b>	Driver Side Rear Thorax Airbag Igniter
<b>G553</b>	Driver Seat Position Sensor	<b>N202</b>	Passenger Side Rear Thorax Airbag Igniter
<b>G554</b>	Front Passenger Seat Position Sensor	<b>N251</b>	Driver Head Curtain Airbag Igniter
		<b>N252</b>	Front Passenger Head Curtain Airbag Igniter
<b>J234</b>	Airbag Control Module	<b>N253</b>	Battery Interrupt Igniter
<b>J285</b>	Instrument Cluster Control Module	<b>N295</b>	Driver Knee Airbag Igniter
<b>J533</b>	Data Bus On Board Diagnostic Interface (Gateway)	<b>N296</b>	Front Passenger Knee Airbag Igniter
<b>J706</b>	Passenger Occupant Detection System Control Module	<b>N490</b>	Driver Airbag Release Valve Igniter
<b>J854</b>	Left Front Seat Belt Tensioner Control Module	<b>N491</b>	Front Passenger Airbag Release Valve Igniter
<b>J855</b>	Right Front Seat Belt Tensioner Control Module		
		<b>T16</b>	Data Link Connector

### Wire colors:

	Diagnostics CAN
	Infotainment CAN
	FlexRay
	Input signal
	Output signal

## Sensors

### Front Passenger Occupant Detection Sensor G128 with Passenger Occupant Detection System Control Module J706

Front Passenger Occupant Detection Sensor G128 is a second-generation component that was also used on the 2015 Audi TT for the North American market. In this new-generation system, the seat heater element (Front Passenger Seat Heating Element Z8) serves not only as a seat heater but also as a sensor mat for seat occupancy recognition. As before, capacitive sensors are used for occupancy recognition.

Passenger Occupant Detection System Control Module J706 is connected to ground by a discrete wire. To prevent interference with the capacitive system, the wires leading to Front Passenger Occupant Detection Sensor G128 are shielded. J706 is connected to Airbag Control Module J234 by a LIN bus.



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Front Passenger Occupant Detection Sensor G128

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## Service Kit

Front Passenger Occupant Detection Sensor G128 and Passenger Occupant Detection System Control Module J706 are calibrated to one another during the manufacturing process. In the event of a fault to either of these components, they must be replaced as a unit. It is not permitted to interchange individual components.

The electrical plug between G128 and J706 must never be disconnected. Two Service Kits are available depending on the trim level of the vehicle.

### Service Kit version 1

- ▶ Passenger Occupant Detection System Control Module J706.
- ▶ Seat cushion.
- ▶ Front Passenger Occupant Detection Sensor G128 including wiring. In this case, the sensor is bonded to the seat upholstery.

### Service Kit version 2

- ▶ Passenger Occupant Detection System Control Module J706.
- ▶ Seat upholstery.
- ▶ Front Passenger Occupant Detection Sensor G128 including wiring. In this case, the sensor is stitched to the seat upholstery.

## Diagnostics

Both G128 and J706 are diagnosed via Airbag Control Module J234.

If a Service Kit is replaced, a basic setting procedure must be performed using the Guided Fault Finding function. In this case, the serial number of the Service Kit is transferred to the Airbag Control Module.

## Airbag Control Module J234

The Airbag Control Module for the new Audi A4 is based on the control module of the 2017 Audi Q7. The characteristics have been adapted to the Audi A4.

### Sensors

As in the 2017 Audi Q7, the driving dynamics control sensors are integrated in the Airbag Control Module of the Audi A4. These sensors measure acceleration in the X and Y directions as well as the yaw rate about the Z axis.

The driving dynamics control sensors work in a lower acceleration and deceleration range than the crash sensors. The acceleration and deceleration levels which may occur during a collision are different to those which may occur when a vehicle loses grip (for example, oversteer, understeer).

If the vehicle is equipped with dynamic steering (PR No. 1N8) or the quattro sport differential (PR No. GH2), the driving dynamics control sensors are duplicated in the Airbag Control Module J234. This provides redundant (multiple) backup for the sensor signals for dynamic steering and quattro Sport.



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Airbag Control Module  
J234



#### Note

The Dynamic steering system and also the Sport differential will not be available at vehicle launch.



# Active safety

## Audi pre sense

The Audi pre sense system (pre sense city, pre sense basic, pre sense rear, pre sense front, collision avoidance assist or turn assist) of the Audi A4 has the same on-board pre sense functions as the 2017 Audi Q7.

The components and the specifications have been adapted to suit the A4. In functional terms, the Audi pre sense functions in the A4 are identical to those in the 2017 Audi Q7.

### Display in instrument cluster



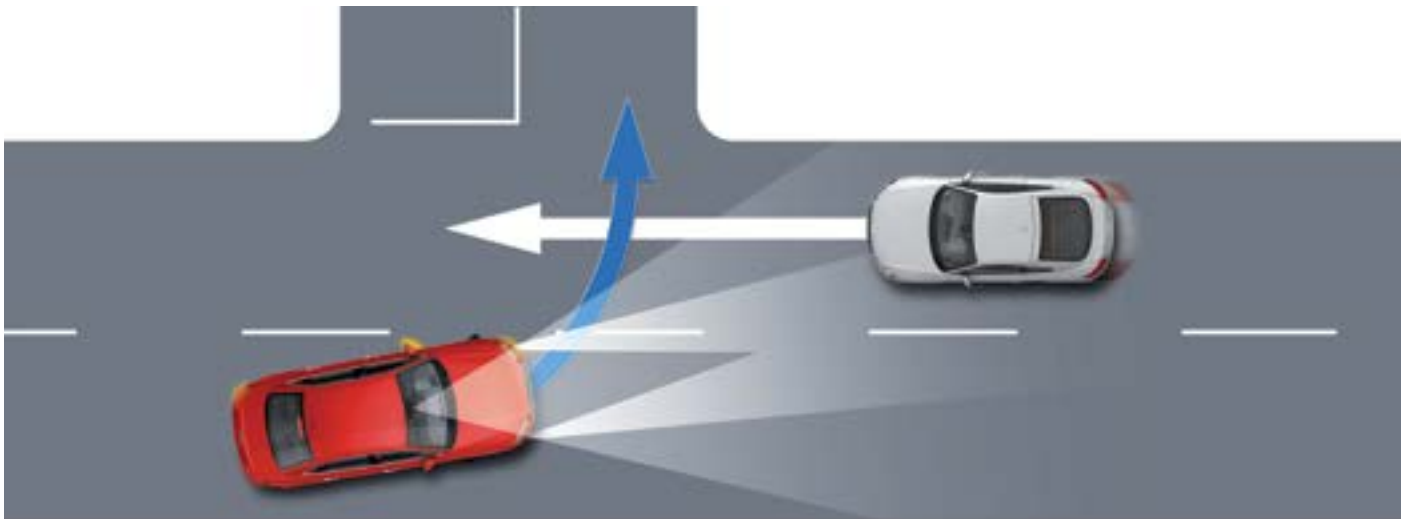
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### Pre sense city with pedestrian recognition function



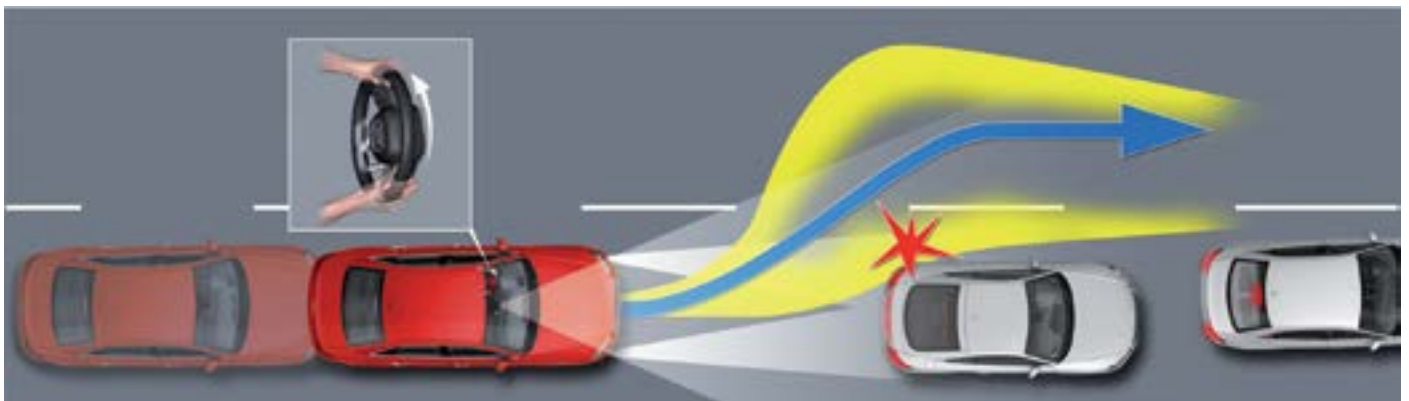
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### Turning assist



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### Collision avoidance assist



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#### Reference

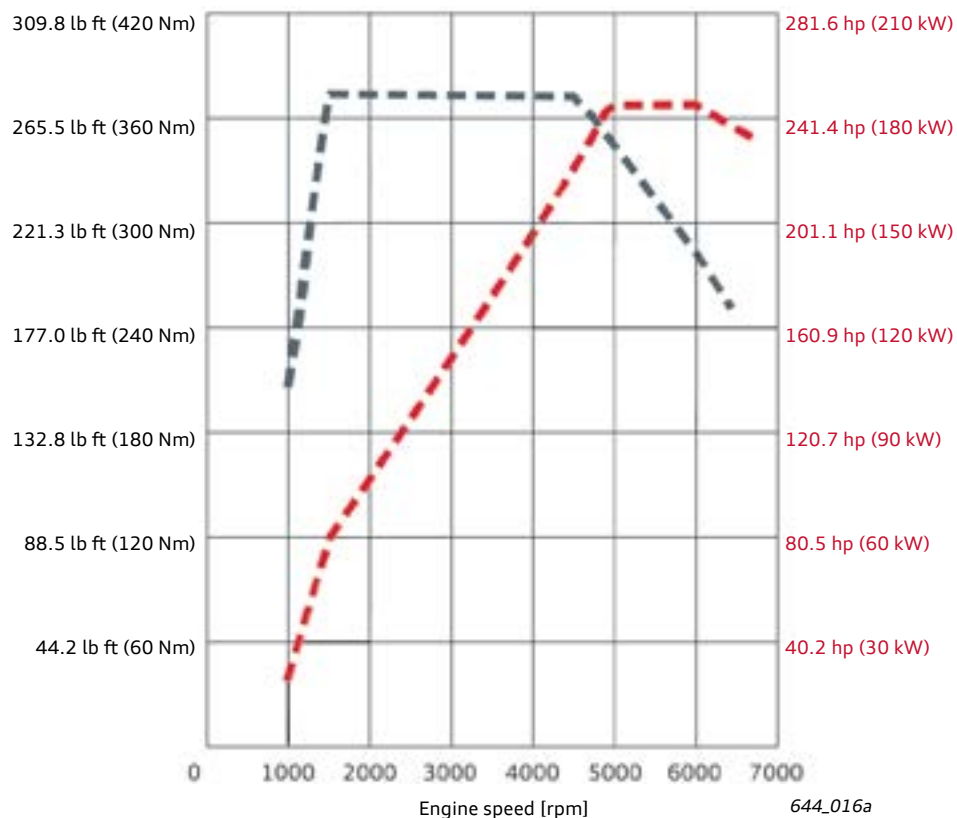
For detailed information about Audi pre sense, refer to eSelf-Study Program [970363, The 2017 Audi Q7 Occupant Protection and Infotainment Systems.](#)

# Engines

## Torque/power curve of 2.0l TFSI engine

Engine with code CYMC

- - - Power output in hp (kW)
- - - Torque in lb ft (Nm)



Features	
Engine code	CYMC
Type	4-cylinder inline engine
Displacement	121.1 cu in (1984 cc)
Stroke	3.65 in (92.8 mm)
Bore	3.25 in (82.5 mm)
Number of valves per cylinder	4
Firing order	1-3-4-2
Compression ratio	9.6 : 1
Power output at rpm	252.0 hp (188 kW) @ 4200 - 6200
Torque at rpm	273 lb ft (370 Nm) @ 1450 - 4200
Fuel type	Premium unleaded 91 AKI
Engine management system	SIMOS 18.4
Lambda/knock control	Adaptive lambda control, adaptive knock control
Mixture formation	Direct fuel injection (FSI)
Exhaust gas treatment	Close-coupled ceramic catalyst, oxygen sensors before and after catalytic converter
Emission standard	LEV III Tier 3

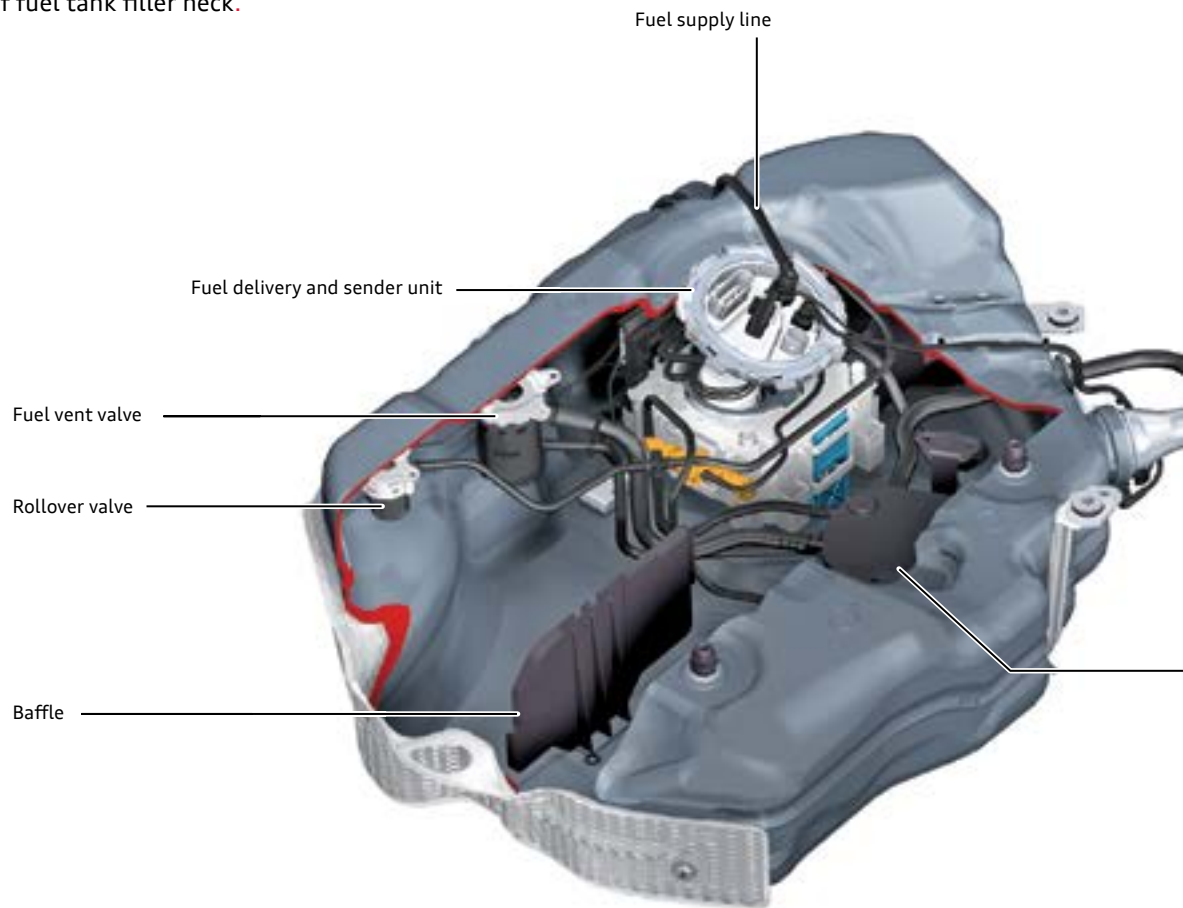
## Fuel tank

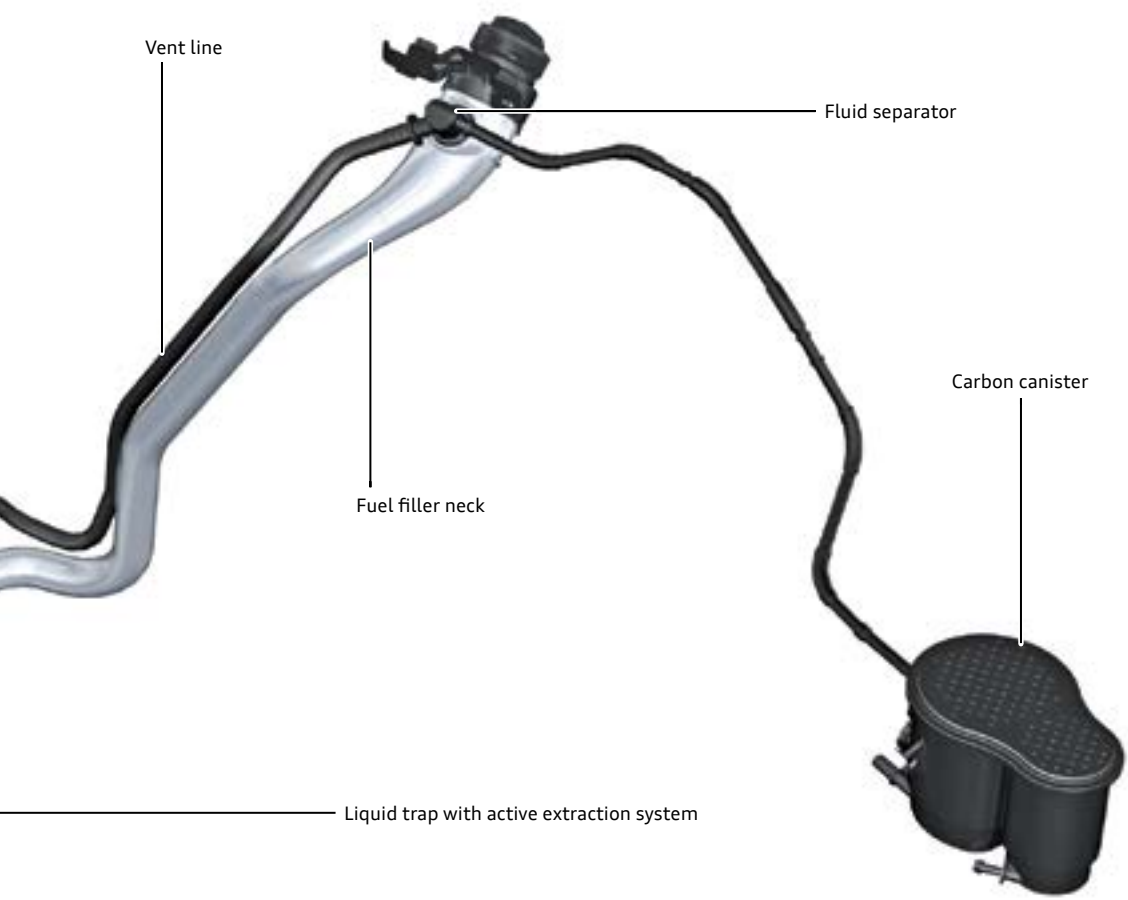
The fuel systems in the Audi A4 have the following features:

- ▶ Compact design.
- ▶ Maximum integration of components to reduce fuel system evaporative emissions.
- ▶ No carrier plate.
- ▶ Fuel delivery system with large integral swirl pot.
- ▶ Use of sound-insulating baffles.
- ▶ The components in the secondary chamber for example, fuel level sender in quattro models, are not accessible to service personnel. There is only one service port in the fuel tank.
- ▶ A liquid trap with active extraction system is integrated in the fuel tank ventilation system.
- ▶ Fluid separator at top of fuel tank filler neck.

The illustration shows the fuel tank of a front wheel drive vehicle with auxiliary heating. The auxiliary heating is optional equipment but not available in the North American Region (NAR).

Filling volume	
Front wheel drive	15.3 gal (58 l)
quattro drive	14.3 gal (54 l)





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## Tank ventilation system

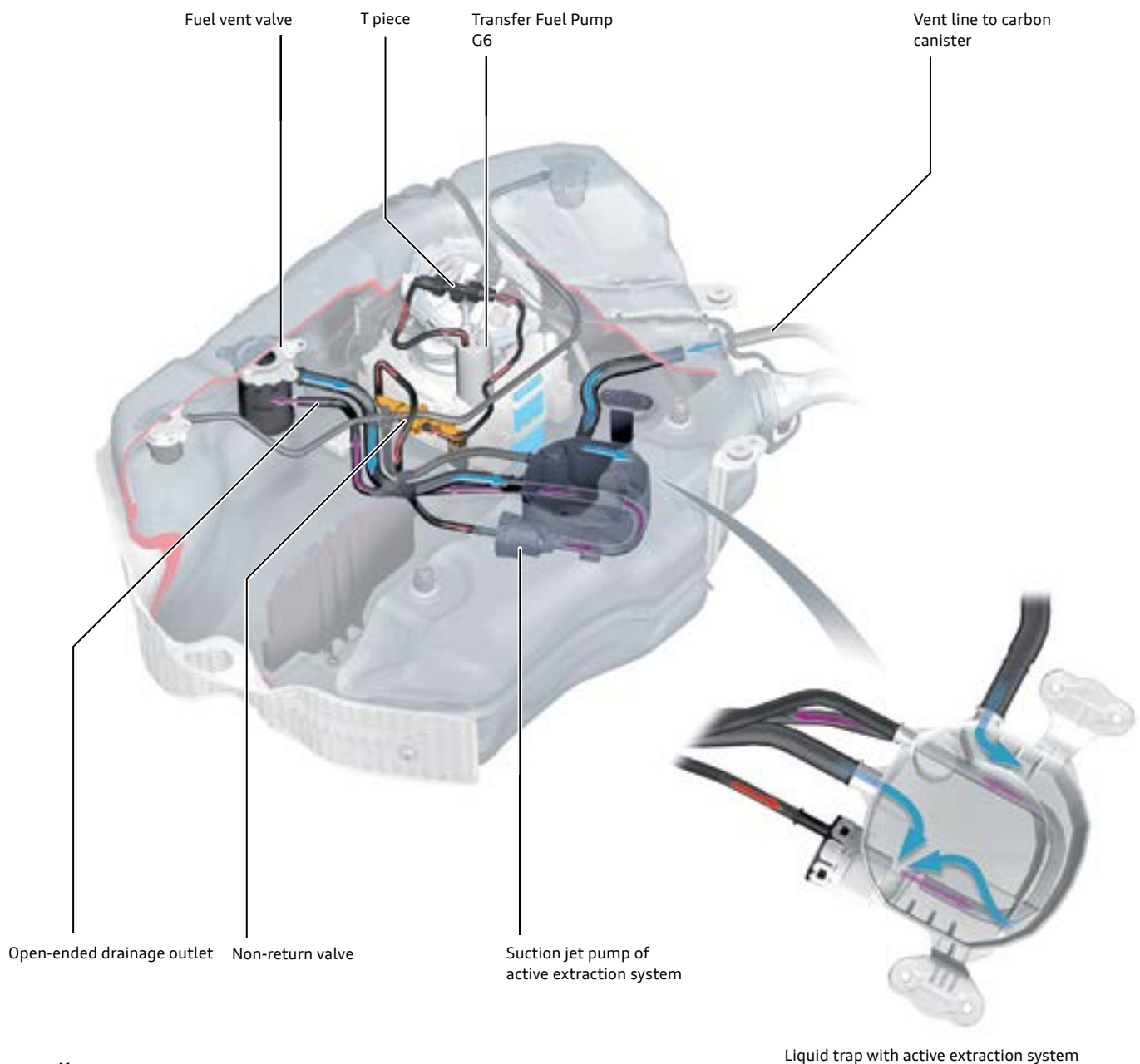
Due to the space constraints in new models, the tank ventilation system has been revised. It was important to ensure that siphoning cannot occur in the line from the fuel filler neck to the carbon canister.

### Tank ventilation function

The system requires a larger liquid trap due to the boiling characteristic of the fuel. The fuel that has collected in the liquid trap is extracted by means of a suction jet pump and drained off without pressure at the highest point in the tank.

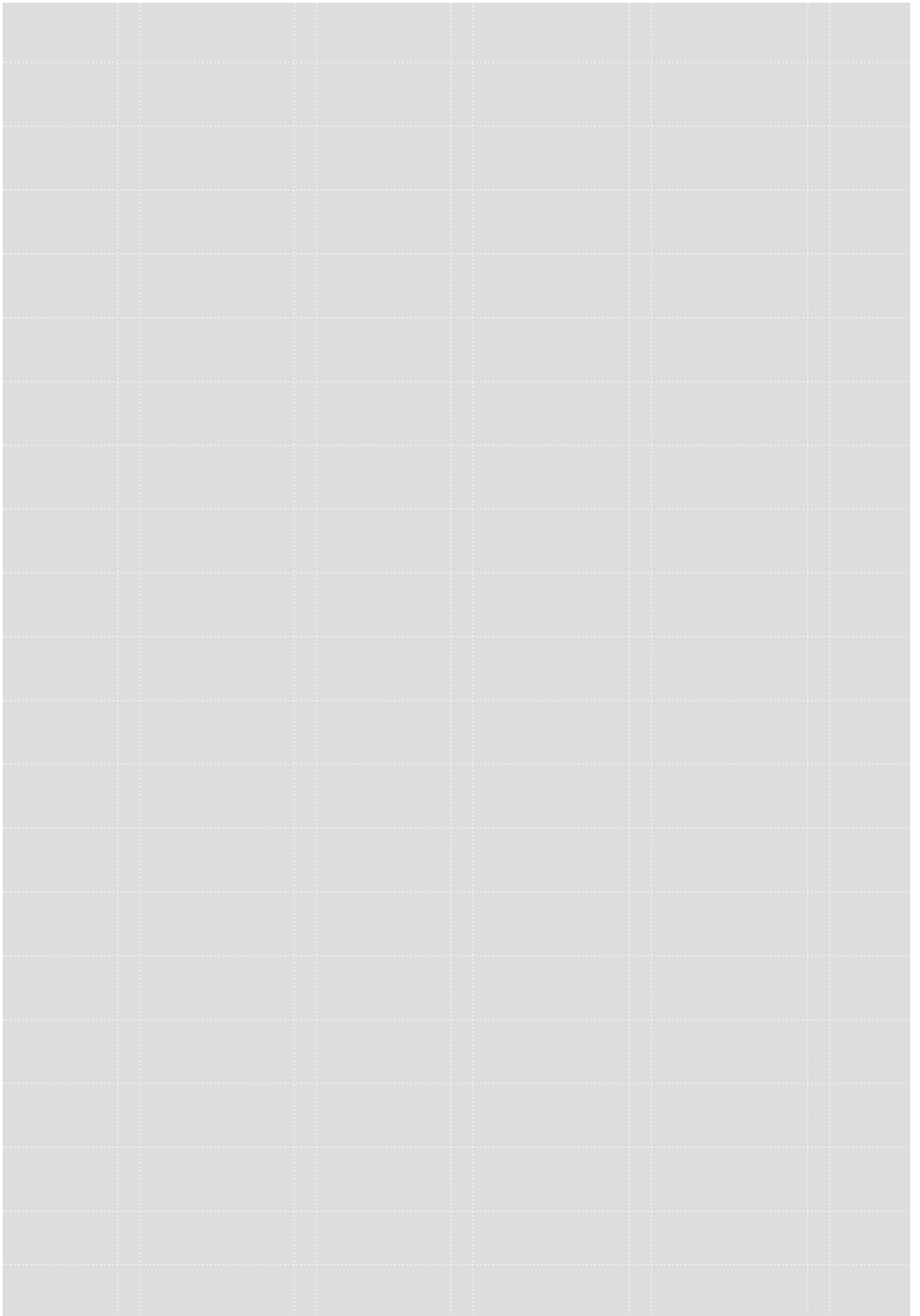
### Effects of failure of the tank ventilation system

If one of the components of the ventilation system fails, problems may occur during refuelling (refuelling shut-off). A strong fuel odor could also be noticeable in gasoline-engined vehicles due to carbon canister flooding.



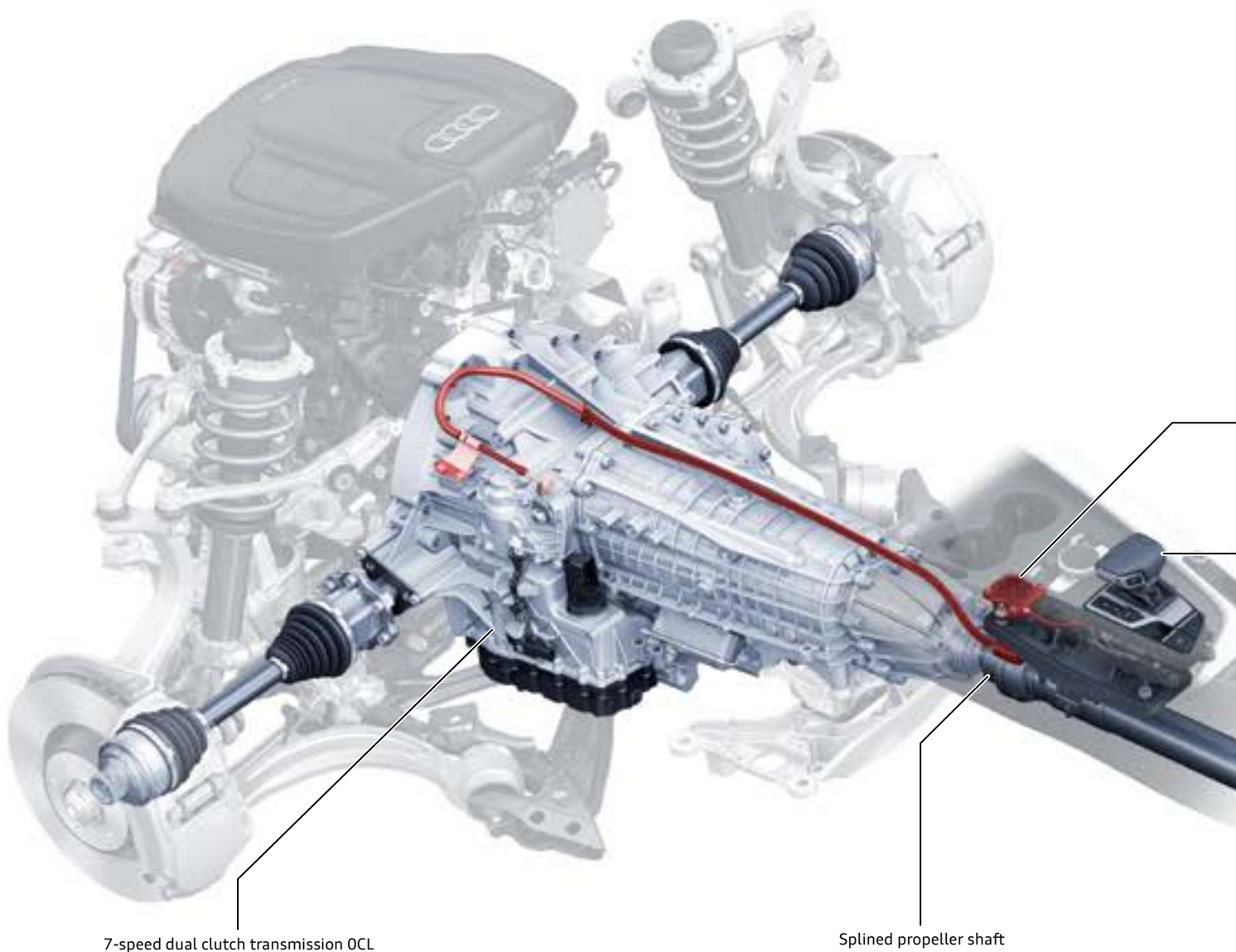


## Notes



# Power transmission

## Overview



The following transmissions will be available at start of production:

- ▶ 7-speed dual clutch gearbox OCK – S tronic – DL382-7F – front wheel drive – refer to page 32.
- ▶ 7-speed dual clutch gearbox OCL – S tronic – DL382-7Q – all-wheel drive – refer to page 32 - 34.

### Front propeller shaft assembly

The propeller shaft is splined to the transmission output shaft.

For more information, please refer to [eSelf-Study Program 950103, The 2011 Audi A8 Power Transmission](#) and the [Audi Service TV program "Audi A8 Power Transmission Part 2 / Topic: Splined Prop Shaft" of 02.09.2010.](#)

## Rear final drive

### Standard

- ▶ Rear final drive ODB – for engines with a maximum torque of up to approximately 295 lb ft (400 Nm). More details about this rear final drive refer to eSelf-Study Program, [990163, The 2017 Audi Q7 Introduction](#).

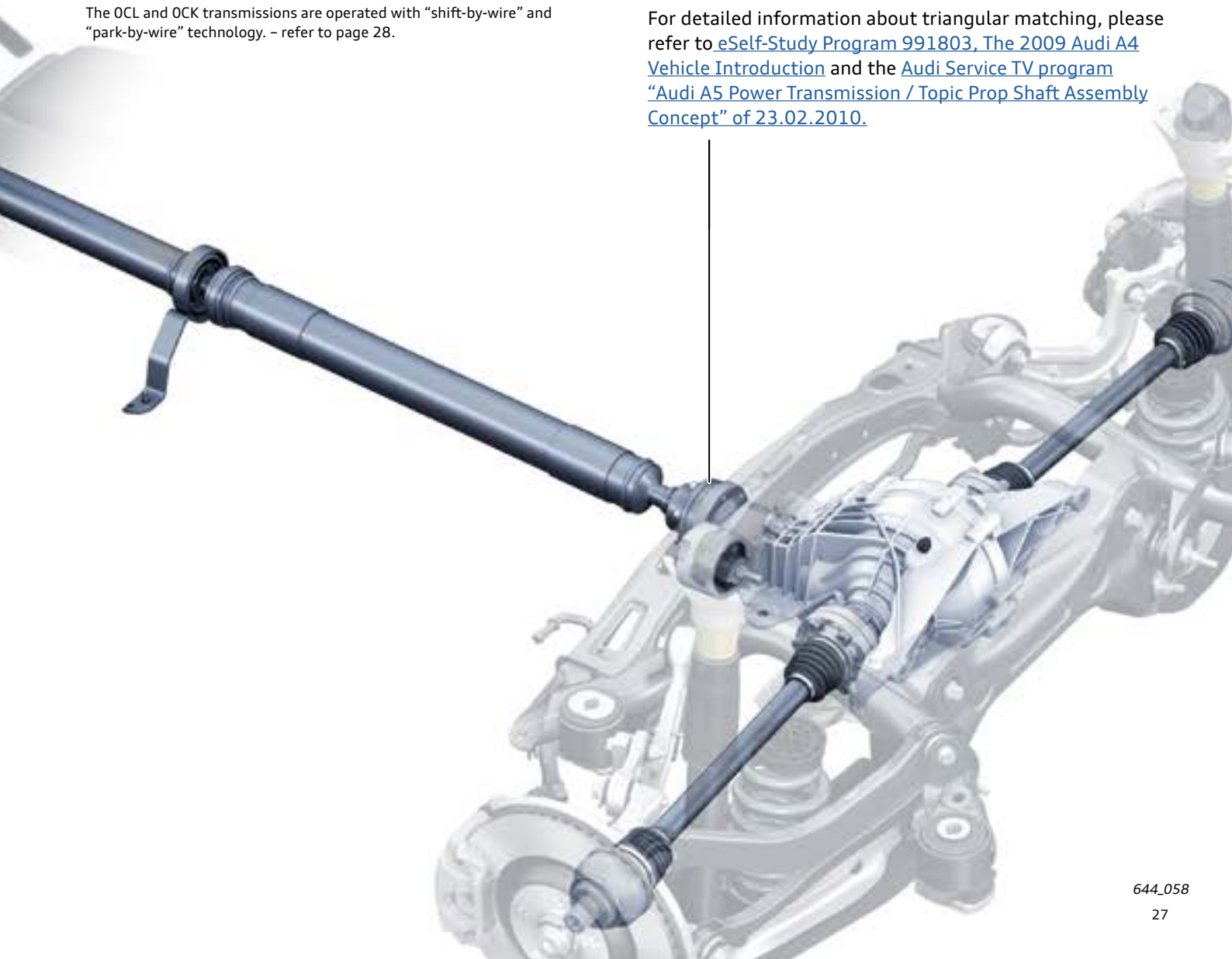
Emergency-releasing the parking lock – refer to page 44

Selector mechanism  
The OCL and OCK transmissions are operated with “shift-by-wire” and “park-by-wire” technology. – refer to page 28.

### Rear propeller shaft assembly

The special procedure for attaching and tightening the propeller shaft to the rear axle drive (triangular matching) is described in the workshop manual.

For detailed information about triangular matching, please refer to [eSelf-Study Program 991803, The 2009 Audi A4 Vehicle Introduction](#) and the [Audi Service TV program “Audi A5 Power Transmission / Topic Prop Shaft Assembly Concept” of 23.02.2010](#).



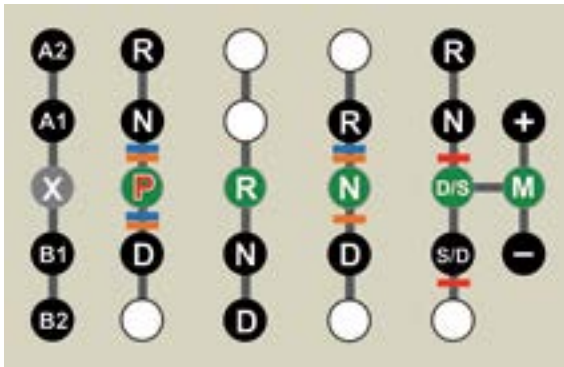
## Automatic transmission selector mechanism

The 2017 Audi A4 uses the latest generation Audi selector mechanism with full shift-by-wire capability (SBW). This means that parking lock operation is also fully automatic. The term used for this is "park-by-wire" (PBW). There is no selector cable connecting the selector mechanism to the transmission. This selector mechanism is currently used in the 2017 Audi Q7 and will also be used in the future C-series vehicles.

The operating concept is essentially identical to the familiar operating logic of other Audi models. After every operation, however, the selector lever always returns to the center position in the automatic or Tiptronic gate.

The parking lock normally engages and disengages automatically via the Auto-P function, but can also be engaged manually by the driver using the P button.

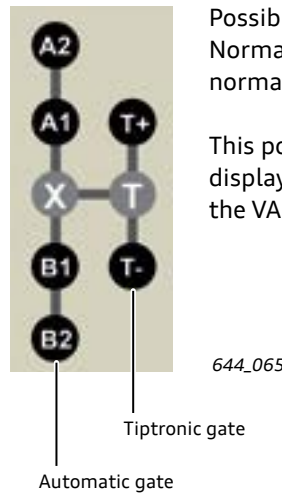
## Shift schematic



644\_066

- Positions selectable without moving the selector
- Selectable drive positions
- Normal position of the selector lever and current drive position
- Software lock: deactivate by pressing Selector Lever Release Button E681
- Software lock: deactivate by pressing the foot brake<sup>1)</sup>
- Mechanical locking by Shift Lock Solenoid N110. Deactivated by pressing Selector Lever Release Button E681 (brake pedal must also be pushed)

## Basic shift schematic



Possible positions of the selector lever. Normal position X in automatic mode or normal position T in Tiptronic mode.

This position information (A1, A2 etc.) is displayed in the measuring values using the VAS Scan Tool.

## Automatic gate



644\_067

## Tiptronic gate



644\_068

## Speed-dependent transmission protection function

A change in driving direction from forward to reverse and vice versa is only possible up to a driving speed of about 9.3 mph (15 km/h) with the OCK/OCL transmissions.

When this speed threshold is exceeded, a transmission protection function prevents direction reversal.

<sup>1)</sup> The orange-colored software lock is activated in drive position N only after about one second. This allows quick-changing of the drive position from D to R and vice versa without applying the brake. This makes it possible, for example, to free a stuck vehicle by rocking it backwards and forwards and makes it easier to change gears when maneuvering the vehicle.

## Component overview



644\_069

### Selector Lever Release Button E681

E681 is used to deactivate the software lock (highlighted in blue in illustration 644\_066) and to release Shift Lock Solenoid N110. There are two shift elements for reliability and diagnostic functions. In the event of a fault, button E681 is considered actuated.

The locks marked red and blue (illustration 644\_066) are disabled. A fault is registered in the control module and indicated to the driver in the DIS. To move the selector out of drive positions **P** and **N**, the brake pedal must be pressed in addition to the release button.

### Parking Lock Button E816

The P button is for manually deactivating the parking lock. It can only be deactivated if a vehicle equipped with the OCK/OCL transmission is traveling less than 0.6 mph (1 km/h).

E816 has three elements for reliability and diagnostic functions. The shift status is transferred to Selector Lever Sensor System Control Module J587 via two interfaces. In the event of a fault, a message appears in the DIS and the parking lock can only be engaged by the Auto P function.



## Information exchange

Data between the selector mechanism and the transmission is via Data Bus On Board Diagnostic Interface J533 (Gateway). Selector Lever Sensor System Control Module J587 communicates with the Infotainment CAN, Transmission Control Module J217 and the FlexRay.

If J587 should malfunction preventing the transmission from operating using the selector mechanism, drive Positions, **P**, **R**, **N** and **D** can be selected by simultaneously operating both shift paddles while the vehicle is stationary with the foot brake applied.

## Information flow

J587 registers the positions of the selector lever as well as Parking Lock Button E816 and Selector Lever Release Button E618. It sends this information to Transmission Control Module J217. The TCM engages the gear corresponding to the driver input and sends that information back to J587.

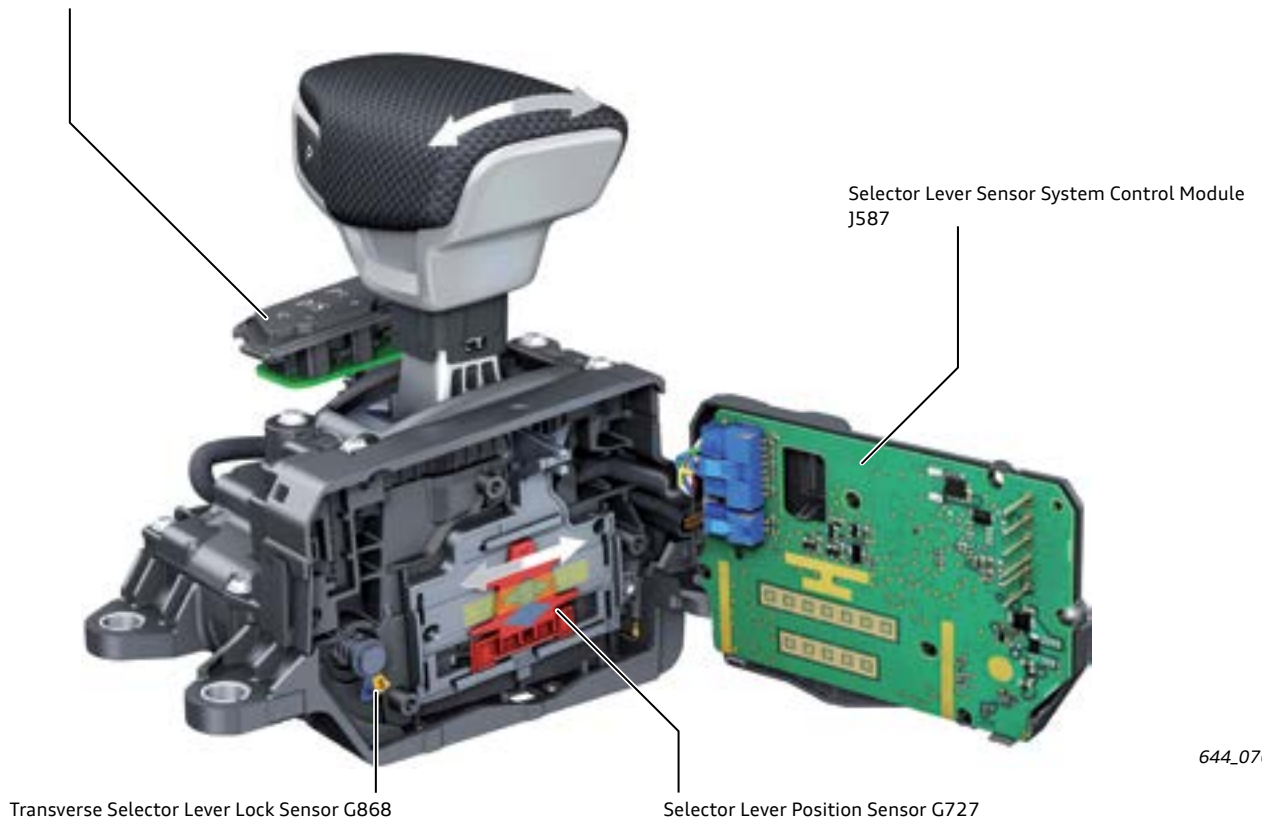
J587 then activates Shift Lock Solenoid N110, Transverse Selector Lever Lock Motor V577, Selector Lever Transmission Range Display Y5 and Parking Lock Indicator Lamp K320.

During gear selection, there is a short delay until the corresponding gear symbol lights up.

## Special feature of the dual clutch gearboxes

Selector Lever Sensor System Control Module J587 has two additional interfaces for controlling Parking Lock Solenoid N486. Refer to the functional diagram on the following page.

Selector Lever Transmission Range Display Y5



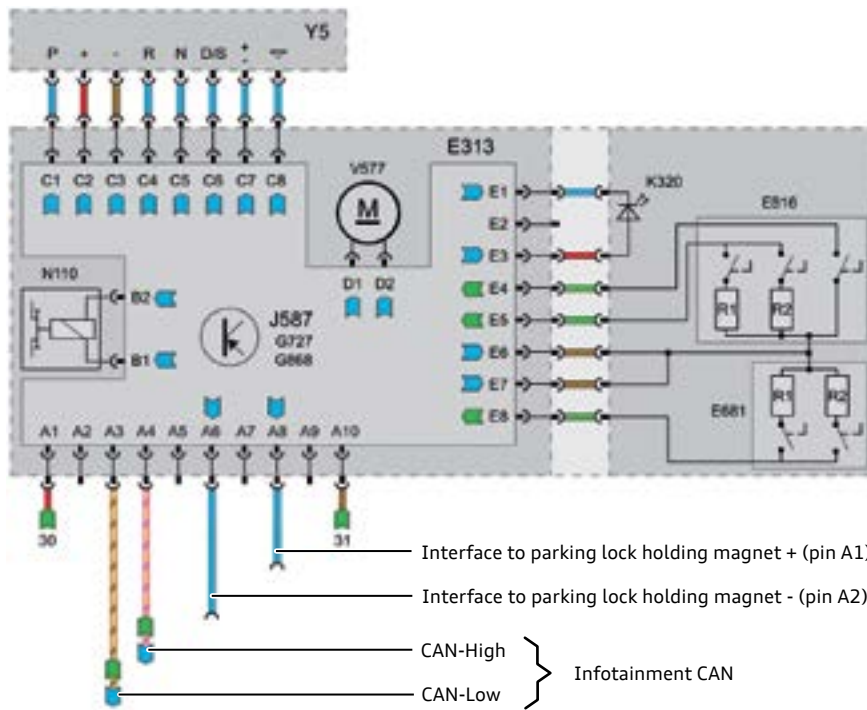
644\_070



### Note

The engine does not have to be running to disengage the parking lock (P-OFF). This is because ATF is supplied by an electric-powered ATF pump and a pressure accumulator. Therefore, the supply of ATF is not dependent on engine operation and the parking lock can be disengaged when the ignition is on.

## Function diagram – selector mechanism



### Key:

- E313** Selector Lever
- E681** Selector Lever Release Button
- E816** Parking Lock Button
- G727** Selector Lever Position Sensor
- G868** Transverse Selector Lever Lock Sensor
- J587** Selector Lever Sensor System Control Module
- K320** Parking Lock Indicator Lamp
- N110** Shift Lock Solenoid
- V577** Transverse Selector Lever Lock Motor
- Y5** Selector Lever Transmission Range Display

644\_071

### Auto-P function

The parking lock is electro hydraulically operated. This allows the TCM to automatically operate the parking lock, enhancing operating comfort.

The Auto-P function engages the parking lock automatically (P-ON position) if all of the following conditions are met:

- ▶ Vehicle stationary – speed less than .6 mph (1 km/h)
- ▶ Driving position **D**, **S**, **R** or **M** is selected
- ▶ Engine is not running – terminal 15 OFF

### Activating drive position N (P-OFF position)

Automatic engagement of the parking lock can be suppressed, for example, when in a car wash. A condition is that the selector mechanism, P button and transmission are functioning properly.

To activate P OFF, N must be selected when the engine is running. Then the engine must be switched off. When the ignition is switched off, the parking lock is suppressed for approximately 30 minutes.

The driver can also engage the parking lock by pressing the P button as soon as the vehicle is traveling slower than 1.2 mph (2 km/h).

The parking lock is disengaged automatically (P-OFF position) if the engine is running and drive position **D**, **S**, **R**, **N** or **M** is selected with the brake applied and the release button pressed.

After 29 minutes the following message is displayed in the DIS: "Start engine to remain in N." along with a warning tone. If this instruction is not followed, the parking lock engages after 30 minutes and the system shuts down.

If a speed signal (greater than .6 mph [1 km/h]) is detected during this time, the period is extended according to the driving time of the vehicle until the system detects that the vehicle has been stationary for at least five minutes.

During the stopping period in the P-OFF position, electrical power is consumed by the activity of the control module, bus operation and the holding magnet. If the vehicle is held stationary for a lengthy period of time, the battery may become discharged to the extent that the parking lock automatically self-engages.

If it is necessary to hold the parking lock in the P-OFF position for a longer period of time, the parking lock emergency release mechanism must be actuated (refer to page 36 and 44).

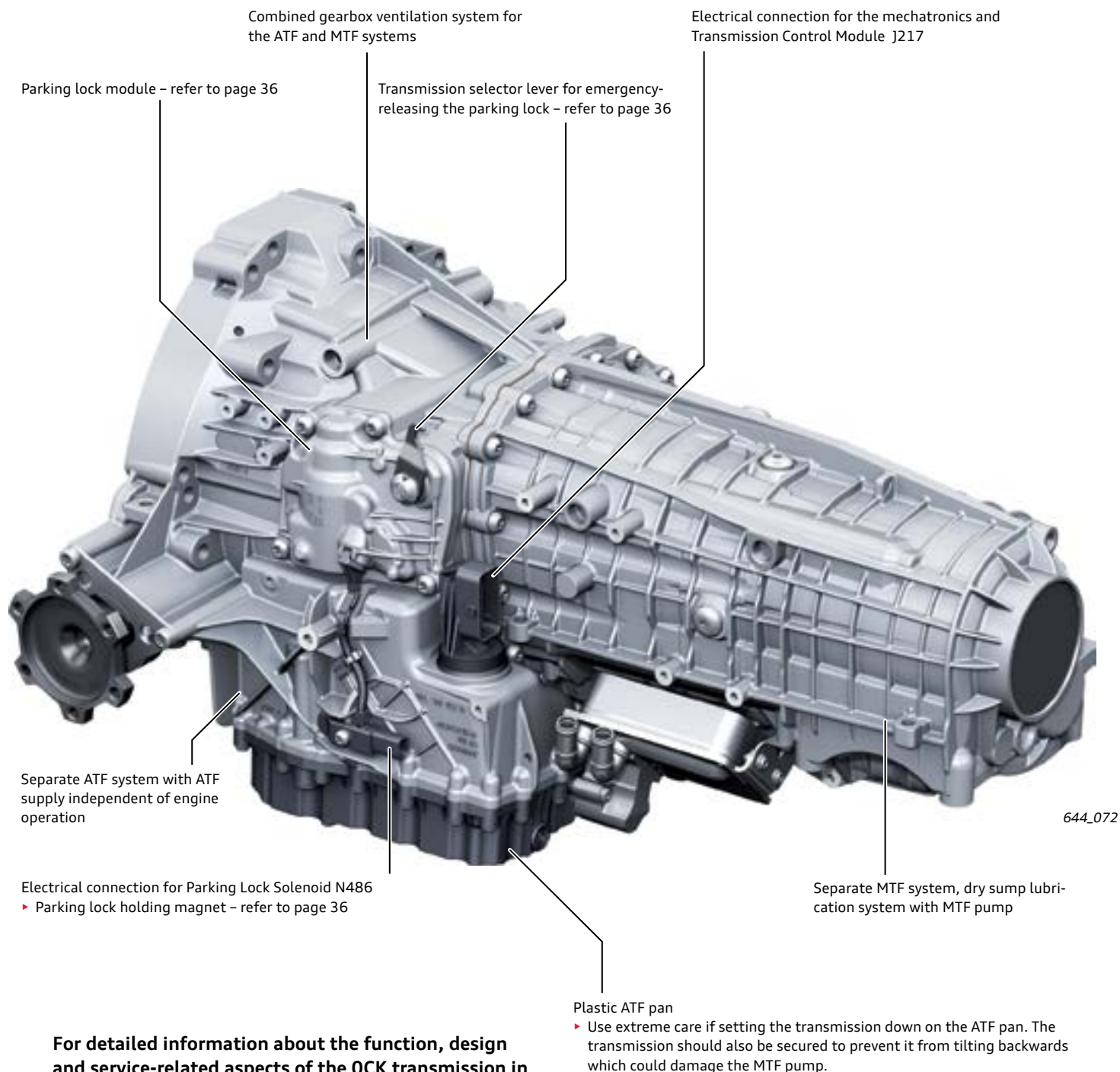
## 7-speed dual clutch transmission OCK/OCL – S tronic

Both the OCK and OCL S tronic transmissions are enhancements of the OCK transmission introduced in the European Audi A6 ultra. This vehicle was never sold in the North American Region.

Key new features are a variant for quattro all-wheel drive, the shift-by-wire technology and the electro-hydraulically operated parking lock with park-by-wire technology.

These transmissions also use a plastic ATF pan.

### 7-speed dual clutch transmission OCK – front-wheel drive



**For detailed information about the function, design and service-related aspects of the OCK transmission in the Audi A6 ultra (type 4G), refer to the following Audi Service TV programs:**

- ▶ [7-speed dual clutch gearbox OCK – S tronic Part 1 Design and function of 26.10.2014.](#)
- ▶ [Dual mass flywheel with centrifugal pendulum-type absorber of 16.01.2015.](#)



## Special features at a glance

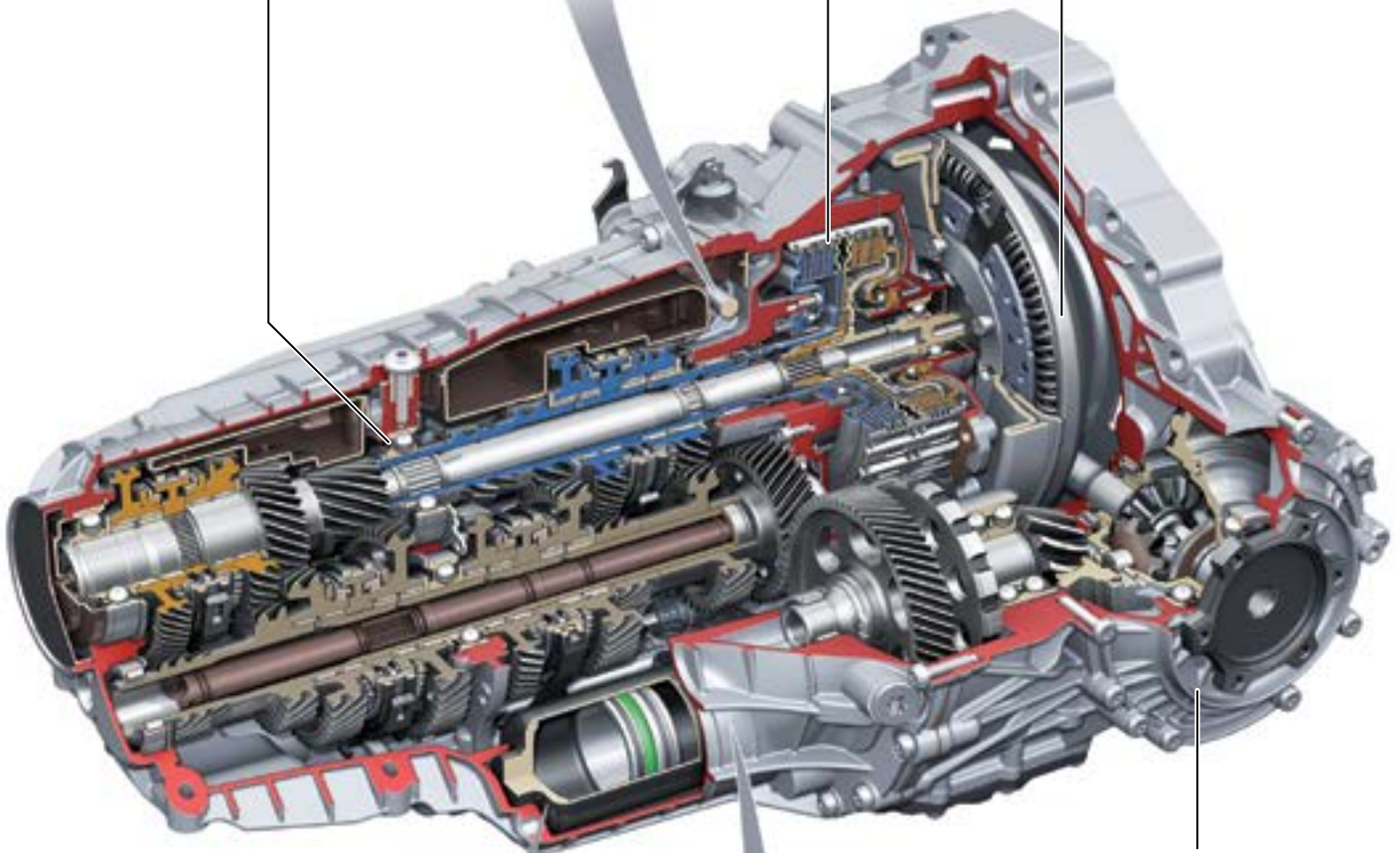
Shift-by-wire and park-by-wire technology

Low-friction bearing concept of gear set for increased efficiency

Innovative features of the dual clutch transmission:

- ▶ Clutch operation with stationary central engagement system (without rotary union)
- ▶ Active clutch plate separation
- ▶ Separate clutch cooling system

Dual mass flywheel with centrifugal pendulum-type absorber



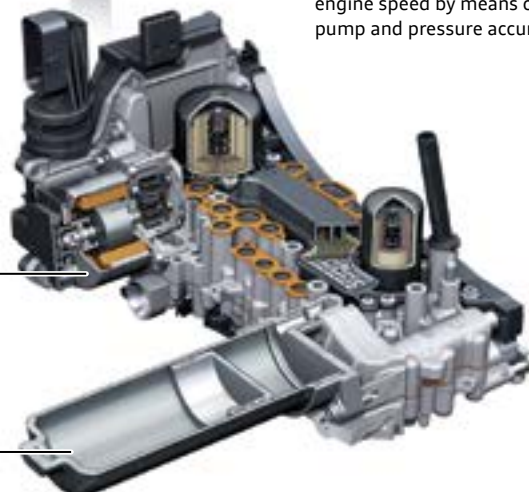
Rear axle final drive without hypoid offset

Dry sump lubrication system for the gear set and MTF pump

- ▶ Transmission Electric Pump 2 V553



Mechatronic unit with demand-responsive, full-time ATF supply independent of engine speed by means of an electrical ATF pump and pressure accumulator concept



Electric-powered tandem ATF pump

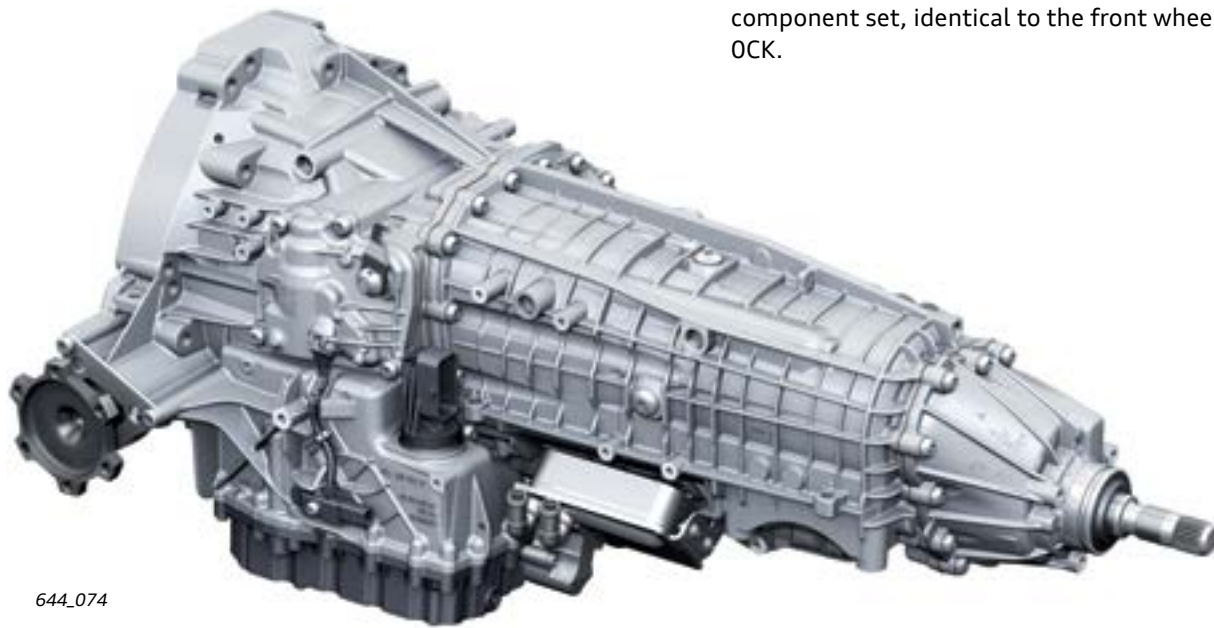
- ▶ Transmission Fluid Auxiliary Hydraulic Pump V552

Pressure accumulator (gas pressure hydraulic accumulator)

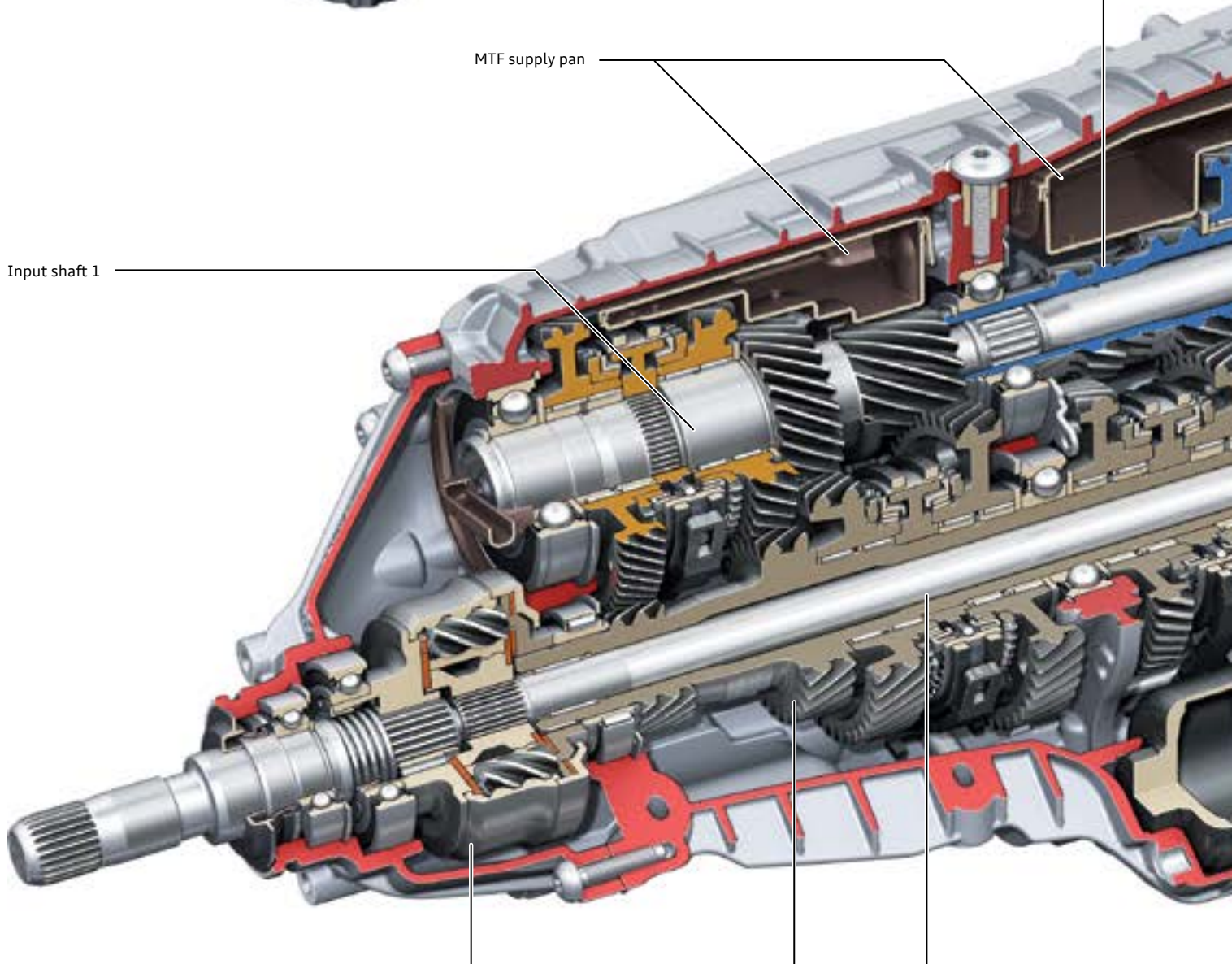
- ▶ **Note:** follow the safety instructions given in the Repair Manual

## 7-speed dual clutch transmission OCL – all-wheel drive

The quattro version – OCL is, apart from the all-wheel drive component set, identical to the front wheel drive version – OCK.



644\_074



Self-locking center differential with asymmetric-dynamic engine torque split

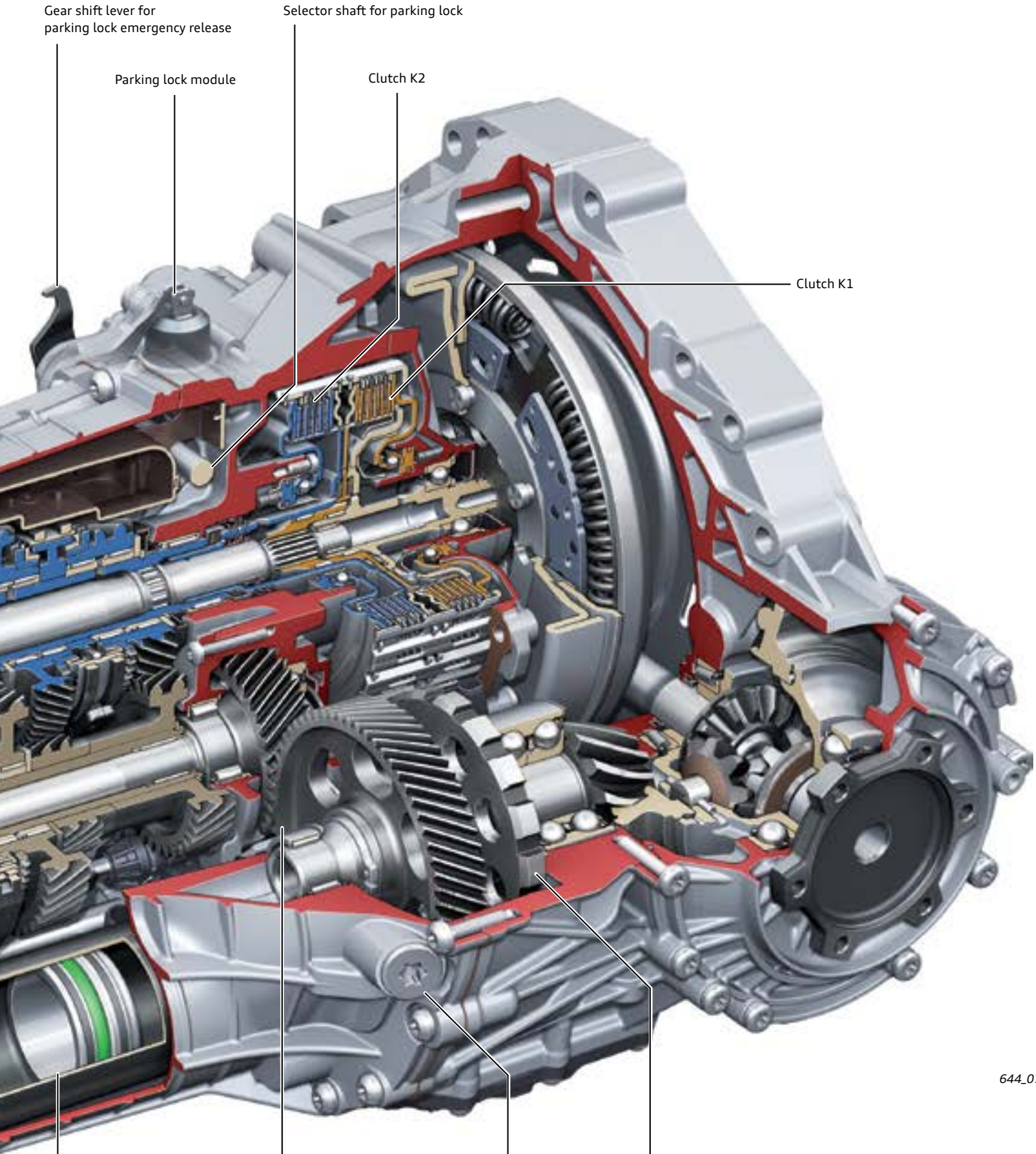
The self-locking center differential comes in different versions (different manufacturers). The characteristics of both versions are identical.

Input shaft for sub-gearboxes 1 and 2

The input shaft within the output shaft for sub-gearboxes 1 and 2 connects to the spur gear step of the front final drive



With the OCK or OCL transmission, top speed is in 6th gear. In 7th gear engine speed is reduced for better fuel economy. See also page 48.



644\_075

Pressure accumulator (gas pressure hydraulic accumulator)  
**Note:** please follow the safety instructions given in the Repair Manual.

Spur gear step - front final drive

MTF filler and inspection bolt

Parking lock gear

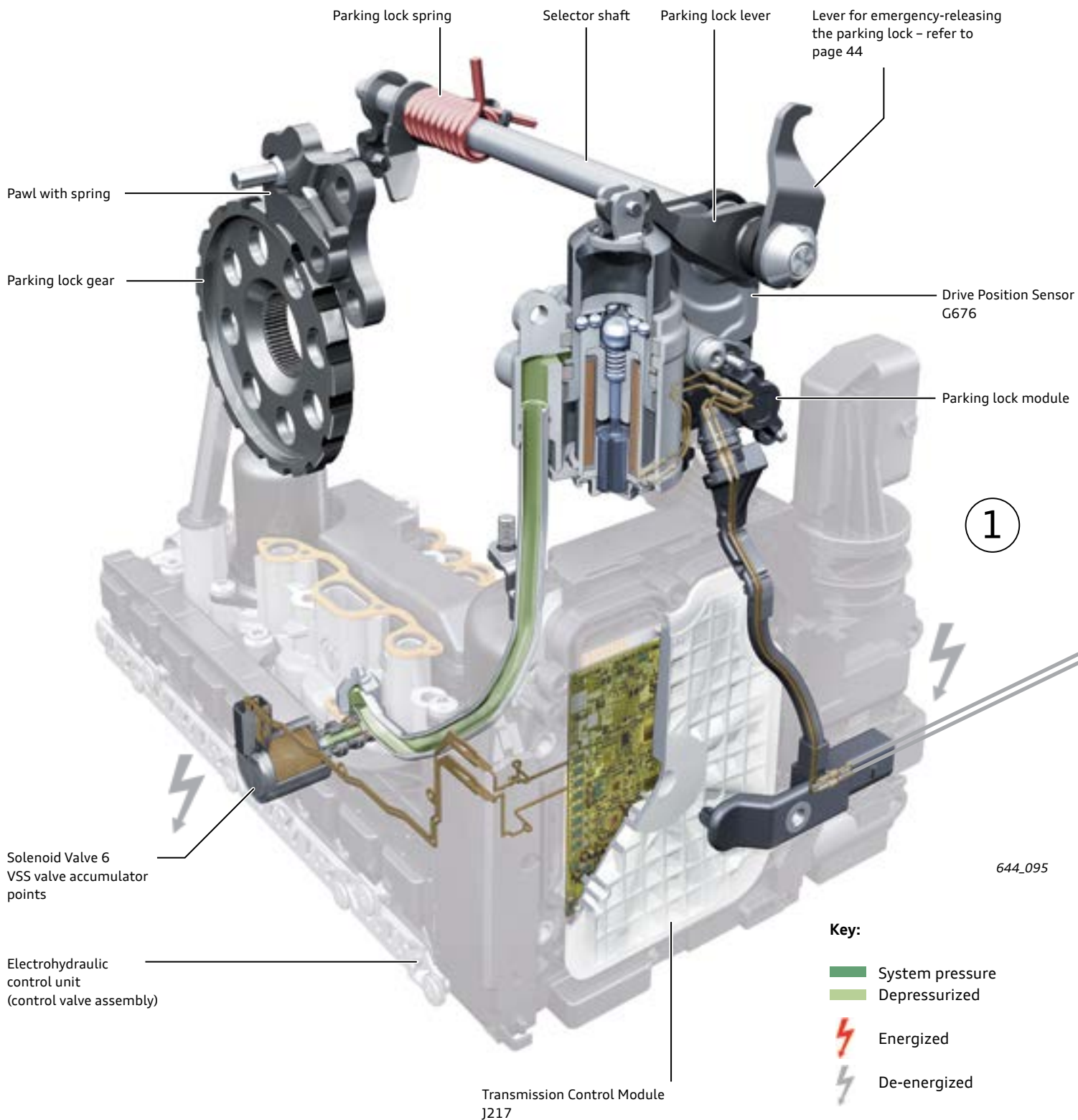
**Key:**

- Gearbox input, sub-gearbox 1
- Gearbox input, sub-gearbox 2

## park-by-wire (PBW) parking lock

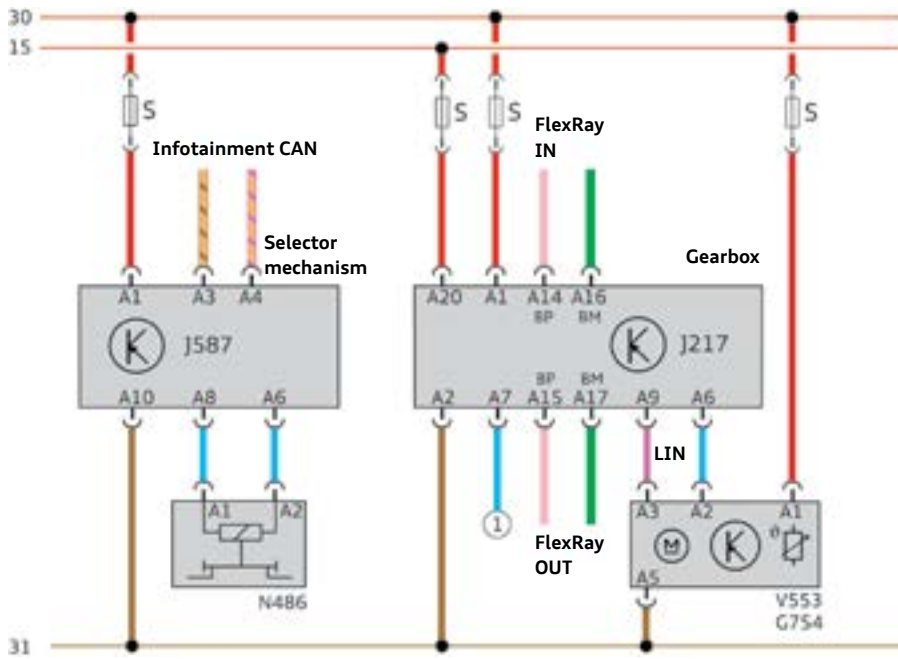
The OCK/OCL transmissions for the 2017 A4 use an electro-hydraulically operated parking lock (park-by-wire).

The main feature of the system is that the parking lock is not solely controlled by the Mechatronic unit; the selector mechanism is also actively involved. Selector Lever Sensor System Control Module J587 activates the parking lock magnets while Transmission Control Module J217 controls the parking lock. Refer to function chart on page 37.





## Function plan – OCK/OCL transmission with park-by-wire



Data is exchanged between the selector mechanism and the transmission via the Gateway over the Infotainment CAN and the FlexRay data bus – refer to page 70.

### Key:

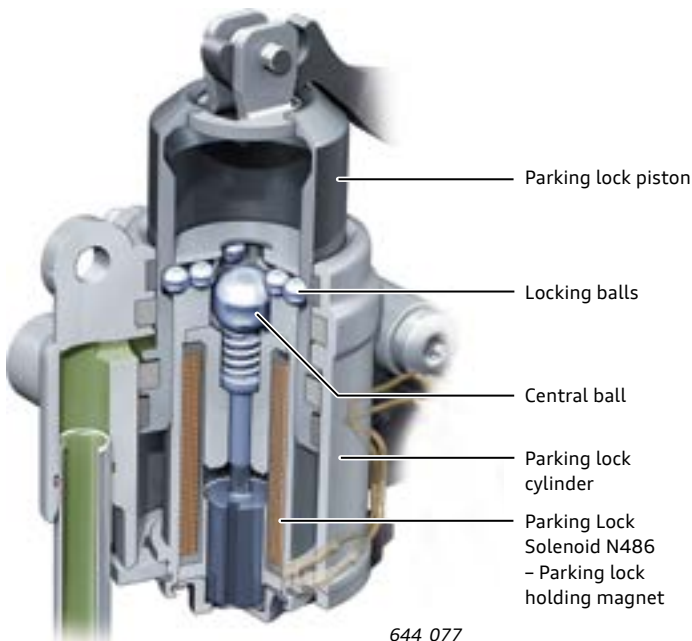
- G754** Transmission Fluid Temperature Sensor 2 – MTF temperature sensor
- J217** Transmission Control Module
- J587** Selector Lever Sensor System Control Module
- N486** Parking Lock Solenoid – Parking lock holding magnet
- V553** Transmission Electric Pump 2 – MTF pump
- BP** FlexRay Bus Plus
- BM** FlexRay Bus Minus
- ① Starter control signal (P/N signal)

644\_038

### Selector mechanism



### Parking lock module



644\_077

### Function

The parking lock is engaged mechanically by spring force alone (P-ON). The parking lock module is disengaged (P-OFF) by hydraulic pressure produced by the Mechatronic unit. A special locking mechanism integrated in the piston of the parking lock module additionally secures the parking lock in the P-ON or P-OFF position and increases the operating reliability of the park-by-wire system. Refer to page 42.

The core of the locking mechanism is Parking Lock Solenoid N486. N486 is activated by Transmission Control Module J217. Selector Lever Sensor System Control Module J587 provides feedback to J217 on the actual status of N486. J217 and J587 communicate with one another bi-directionally via the Gateway using the Infotainment CAN and the FlexRay data bus.

The various functional states of the parking lock and the parking lock module are shown below:

① 2A 2B ③ 4A 4B 4C 4D 4E

① **Parking lock engaged (P-ON) – refer to illustration 644\_095**

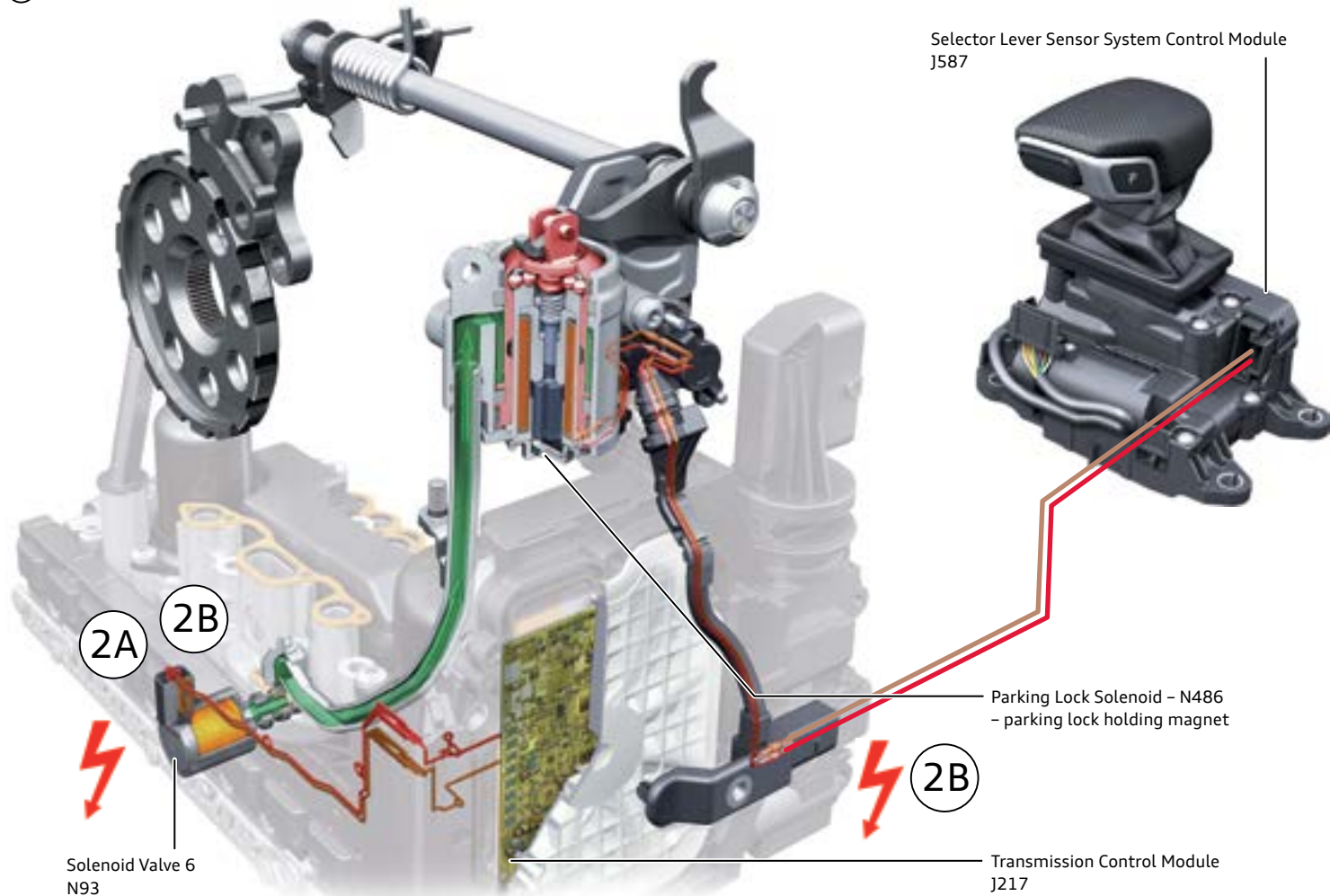
### Starting scenario

The vehicle is shut off (the bus is at idle) and the parking lock is engaged (P-ON).

The entire hydraulic system is depressurized and de-energized. When Solenoid Valve 6 N93 is de-energized, the inlet from the parking lock cylinder to the oil sump is open. The parking lock spring pushes the locking pawl into the tooth gap in the parking lock gear and holds the parking lock in the engaged position.

The parking lock holding magnet is inactive. The locking balls do not have a locking effect because the central ball does not exert any force on the locking balls.

② Parking lock disengaged (P-OFF)

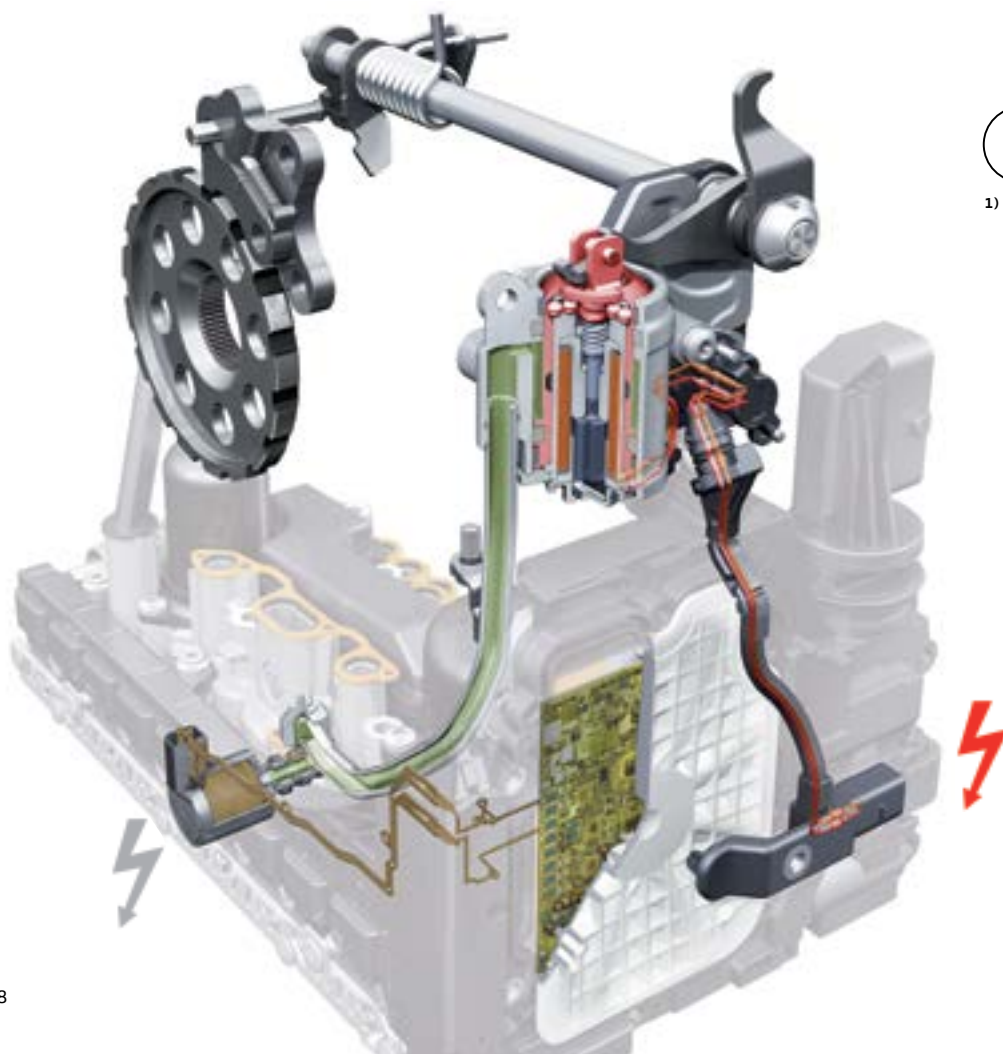


644\_086

③ Keep parking lock disengaged by activating drive position N (time-limited P-OFF position - refer to page 31)<sup>1)</sup>

3

<sup>1)</sup> **Note:** The parking lock module is only depressurized in **N** after the ignition is switched OFF. This is a special function for workshop/car wash scenarios. After **N** is selected and the ignition is switched ON, the system pressure is applied to the parking lock module.



Key:

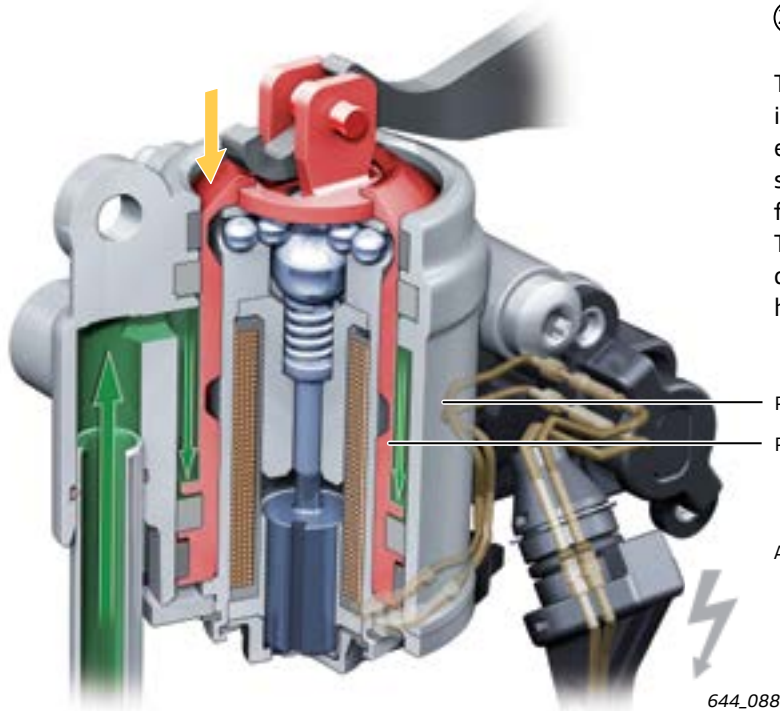
- █ System pressure
- █ Depressurized
- ⚡ Energized
- ⚡ De-energized

644\_087



②A Disengage parking lock (P-ON --> P-OFF)

To disengage the parking lock, Parking Lock Solenoid N486 is deactivated. Transmission Control Module J217 then energizes Solenoid Valve 6 N93, which in turn directs the system pressure to the parking lock cylinder. The piston force is greater than the force of the parking lock spring. The parking lock is disengaged. If the P OFF position is detected by Drive Position Sensor G676, the parking lock holding magnet is activated (refer to 2B).

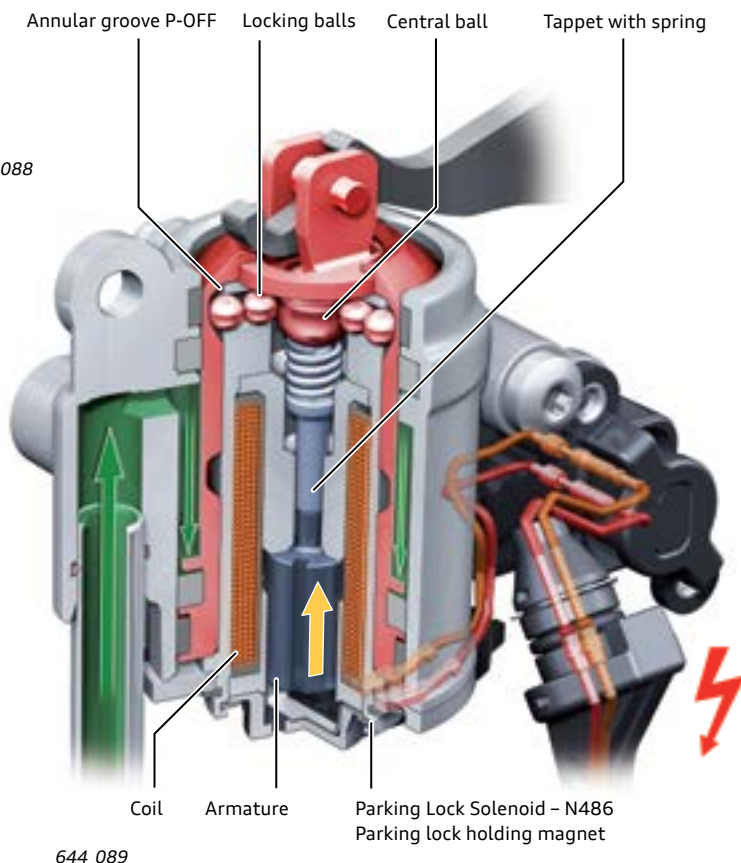


②B Keep parking lock disengaged (P-OFF)

In the P-OFF position, oil pressure is continuously applied to the parking lock piston – refer to (3) for exception. To safeguard against an unwanted pressure drop, the parking lock piston is additionally locked with the aid of a locking mechanism. This locking mechanism is actuated by Parking Lock Solenoid N486, in turn was activated by Selector Lever Sensor System Control Module J587.

**Function – locking mechanism / parking lock holding magnet**

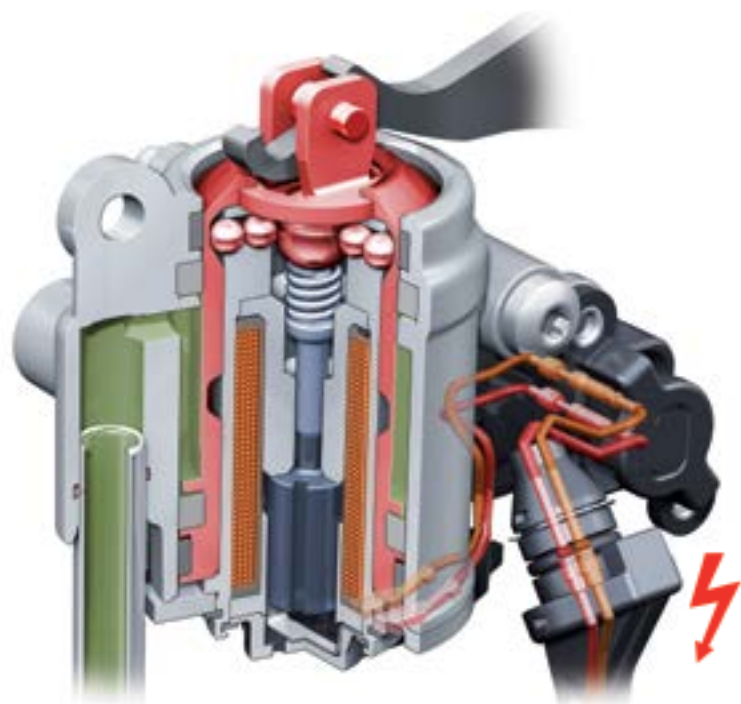
The armature is pulled into the coil by energizing N486. The armature pushes the central ball upwards with the tappet, with the result that the locking balls are pushed into and held in the P-OFF annular groove as long as N486 is energized. To activate the lock, N486 is initially energized by applying approximately 1.2 A. To hold the lock, the current is reduced to approximately 620 mA. This prevents the coil from overheating and reduces power consumption.



③ Keep parking lock disengaged by activating drive position N<sup>1)</sup>

The P-OFF position can be maintained by selecting drive position N before switching off the ignition or before shutting off the engine (bypassing the Auto-P function). After switching the ignition off, Selector Lever Sensor System Control Module J587 remains active in local run-on mode and energizes Parking Lock Solenoid N486.

Transmission Control Module J217 shuts down as soon as it has reduced the pressure inside the pressure accumulator – refer to page 41 (4D). The P-OFF position is now held solely by N486 or by the locking mechanism, which locks the parking lock piston in the P-OFF position. This P-OFF position is maintained for a limited time – refer to page 31 "Auto-P function".

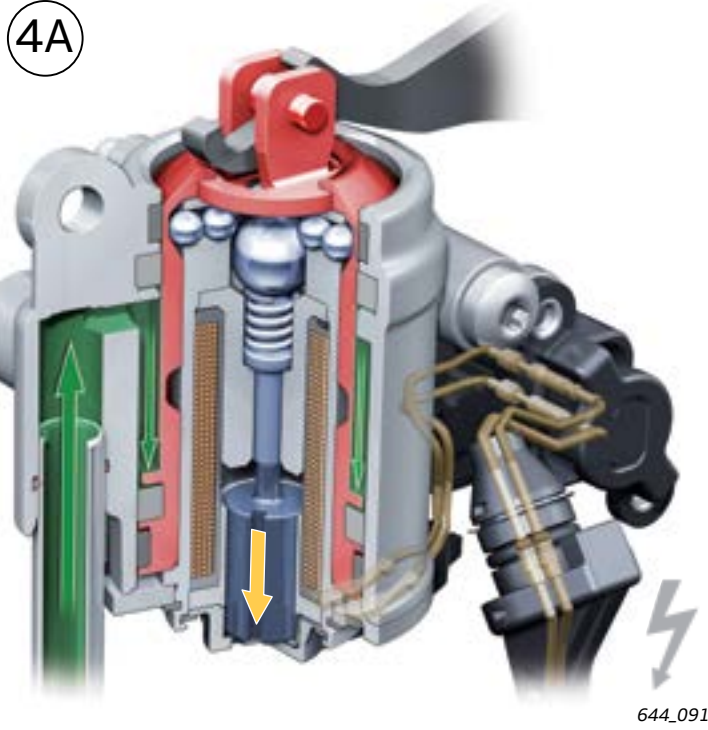




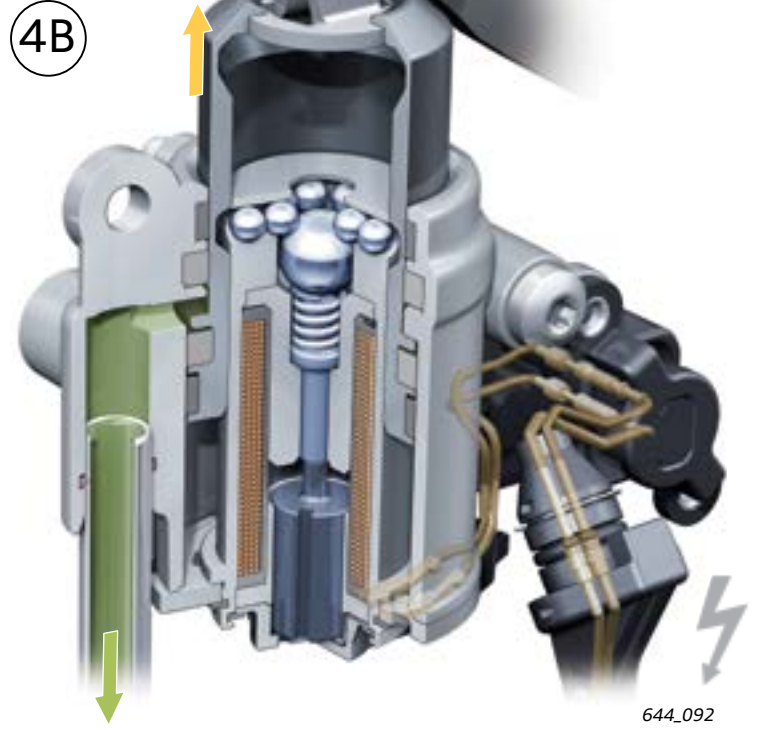
④ Engage parking lock (P-ON --> P-OFF)

Starting scenario

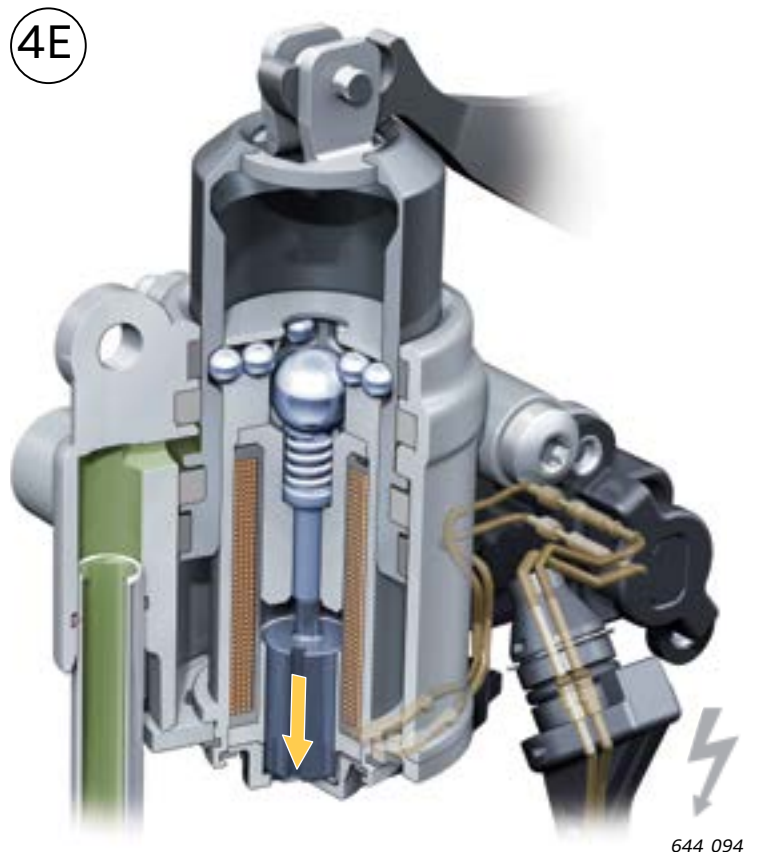
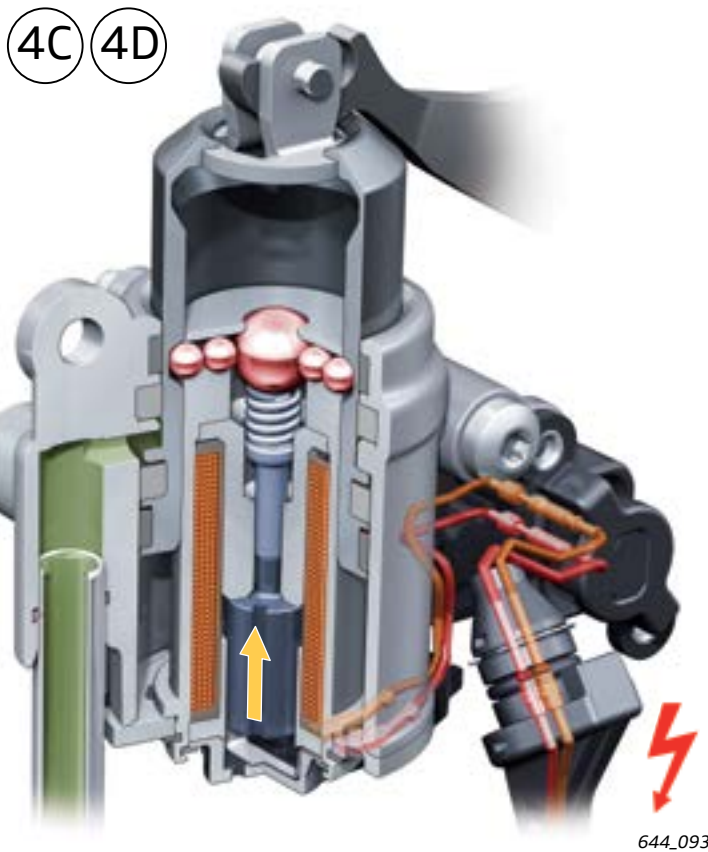
Taking (2B) as a starting point – refer to illustration 644\_089 – the engine is shut off when the vehicle is stationary and the parking lock is engaged by the Auto-P function. The process of "engaging the parking lock" (up to (1) on page 41) involves several steps (4A) – (4E).



④ To engage the parking lock, the parking lock holding magnet must first be switched off to allow movement of the selector shaft.

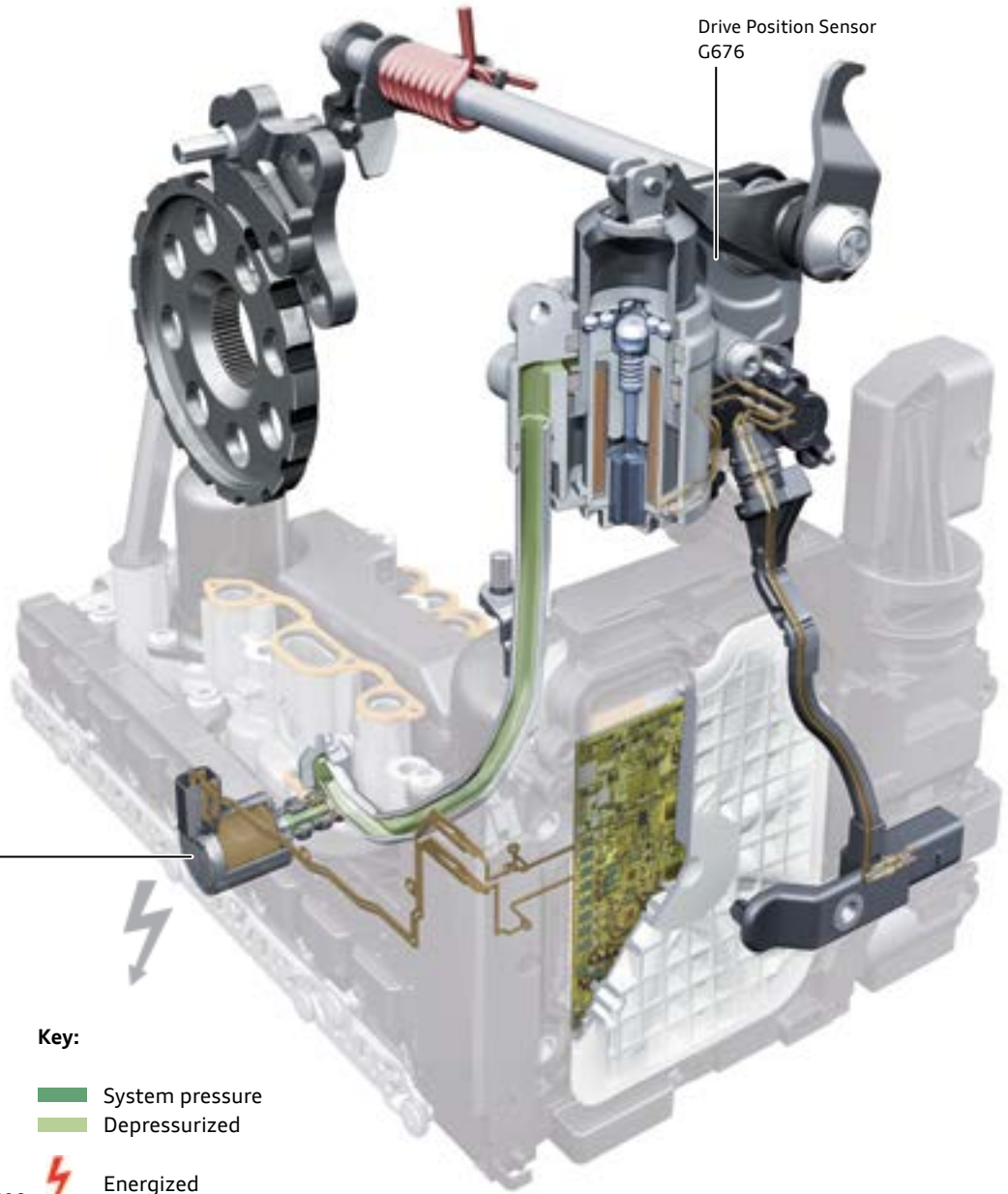


④ Solenoid Valve 6 N93 is deactivated and opens the inlet from parking lock cylinder to the oil sump. The pressure in the parking lock cylinder is dissipated. The parking lock is engaged (P-ON) by the parking lock spring.



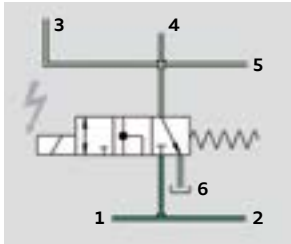
**Parking lock engaged (P-ON)**

1



Solenoid Valve 6 - N93  
VSS valve accumulator points

**Solenoid Valve 6 N93 - de-energized**



644\_096

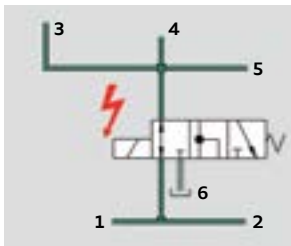
**Key:**

■ System pressure  
■ Depressurized

⚡ Energized

⚡ De-energized

**Solenoid valve 6 N93 - energized**



644\_097

- 1 System pressure from pressure accumulator
- 2 To gear actuator control unit
- 3 To parking lock cylinder
- 4 To clutch control unit
- 5 To clutch control unit
- 6 To oil sump

**Solenoid valve 6 N93**

Solenoid valve 6 N93 has two adjacent switch positions.

- ▶ **Energized** switches the system pressure to the parking lock cylinder.
- ▶ **De-energized** opens the inlet from the parking lock cylinder to the oil sump.

644\_076

④C If the P-ON position is detected by Drive Position Sensor G676, Selector Lever Sensor System Control Module J587 energizes Parking Lock Solenoid N486. This ensures the parking lock cannot be disengaged because of a malfunction.

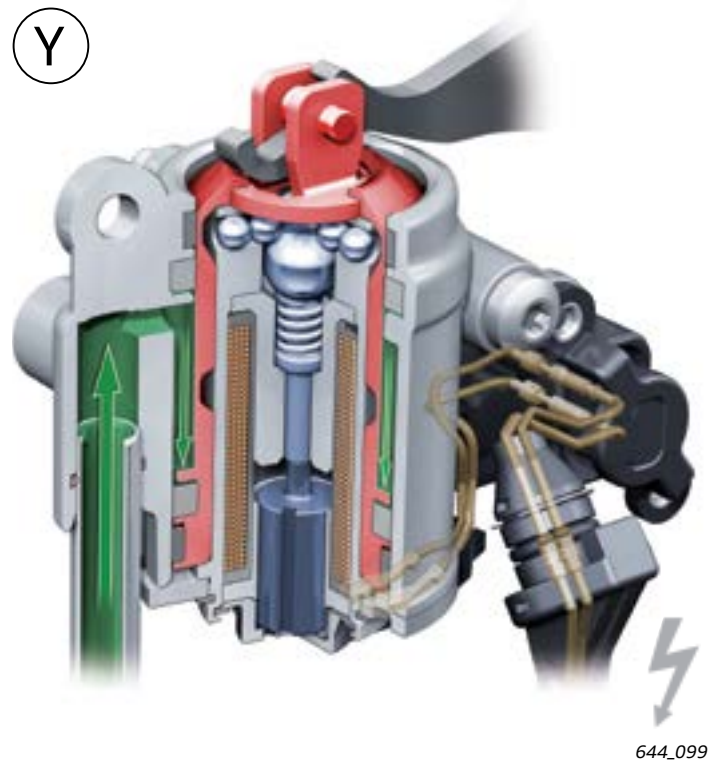
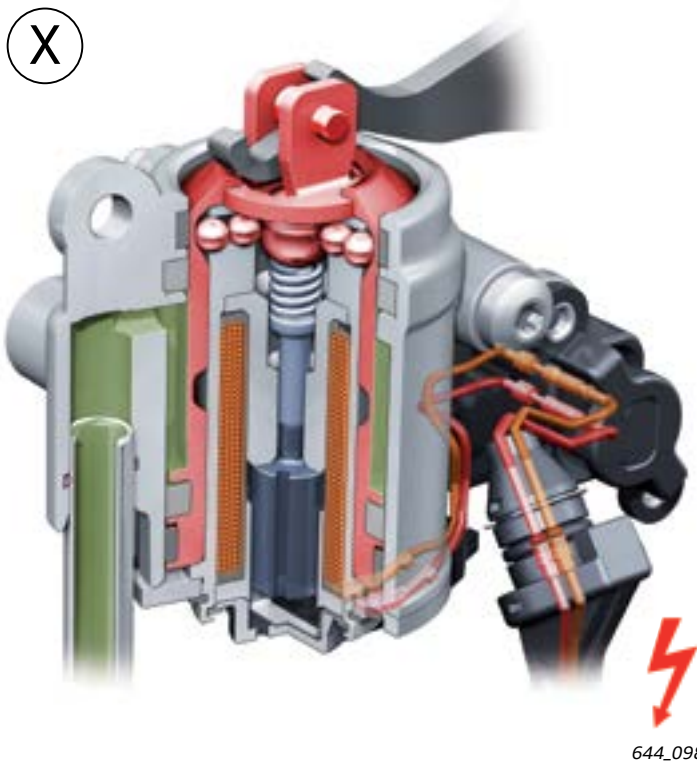
④D The pressure in the pressure accumulator is now actively reduced by alternately activating the gear actuators. After the pressure has dissipated, J217 deactivates unless prevented from doing so by other internal activity. Selector Lever Sensor System Control Module J587 remains active and energizes Parking Lock Solenoid N486.

④E N486 is energized by J587 until the Gateway goes to sleep and deactivates J587. The parking lock is now in the starting position (1) – refer to page 36 or illustration 644\_095.

## Functional reliability of the parking lock

The system is configured so the P-OFF position is maintained in two ways when not faults are present: first, hydraulically by system pressure and second, electro-mechanically by Parking Lock Solenoid N486.

If the system malfunctions during vehicle operation, this ensures that the parking lock is not engaged after a simple fault.



⊗ If an unwanted drop in hydraulic pressure occurs in the Mechatronic unit, P-OFF position is maintained by Parking Lock Solenoid N486. Because N486 is activated by Selector Lever Sensor System Control Module J587, P-OFF position is maintained even if there is a loss of electrical power to the Mechatronic unit.

⊙ In the event of a fault in the power supply to N486 from J587, the P-OFF position is maintained electro-hydraulically by the Mechatronic unit.

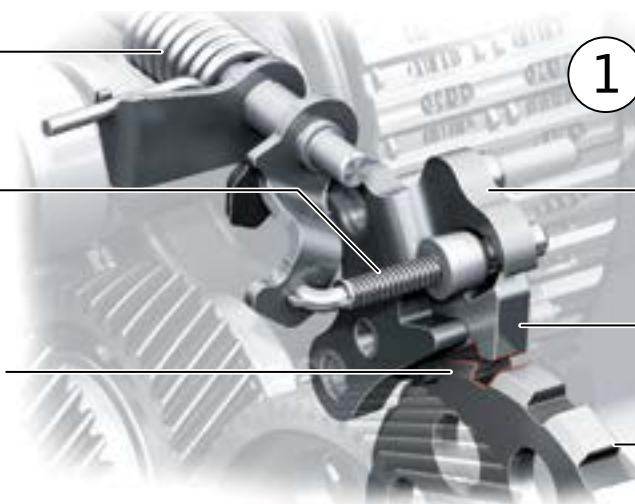
## Parking lock mechanism

### P-OFF position

Parking lock spring

Sliding cone with spring

If the parking lock gear is as shown here, the locking pawl can lock into the tooth without resistance.



Thrust bearing, fixed

Pawl with spring

Parking lock gear

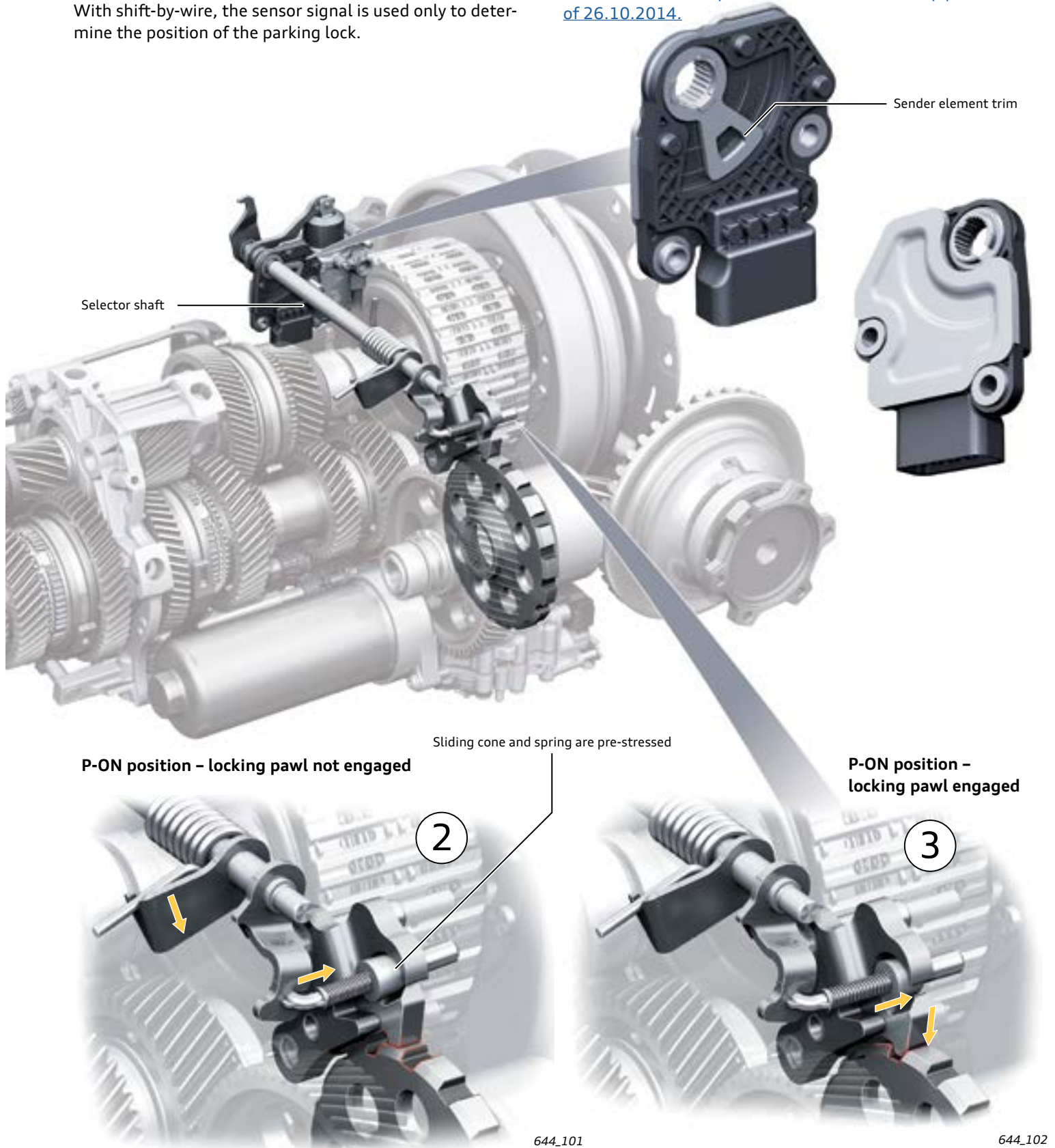


## Drive Position Sensor G676

The position of the parking lock is monitored by Transmission Control Module J217 and Drive Position Sensor G676.

With shift-by-wire, the sensor signal is used only to determine the position of the parking lock.

For further information about G676, refer to the [Audi Service TV program: "7-speed dual clutch gearbox OCK – S tronic Part 2 – Service and practical advice for workshop personnel" of 26.10.2014.](#)



Since the parking lock gear is "tooth to tooth", the sliding cone does not push the locking pawl into the tooth until the vehicle moves a little.

For safety reasons, the geometry of the parking lock gear and the locking pawl gearing is designed so the locking pawl cannot engage at a speed of over approximately 2 mph (3 km/h).



### Note

The parking lock gear locks the pinion shaft of the front final drive. If the vehicle is raised on one side at the front, the locking action is cancelled on the opposite wheel.

## Emergency release

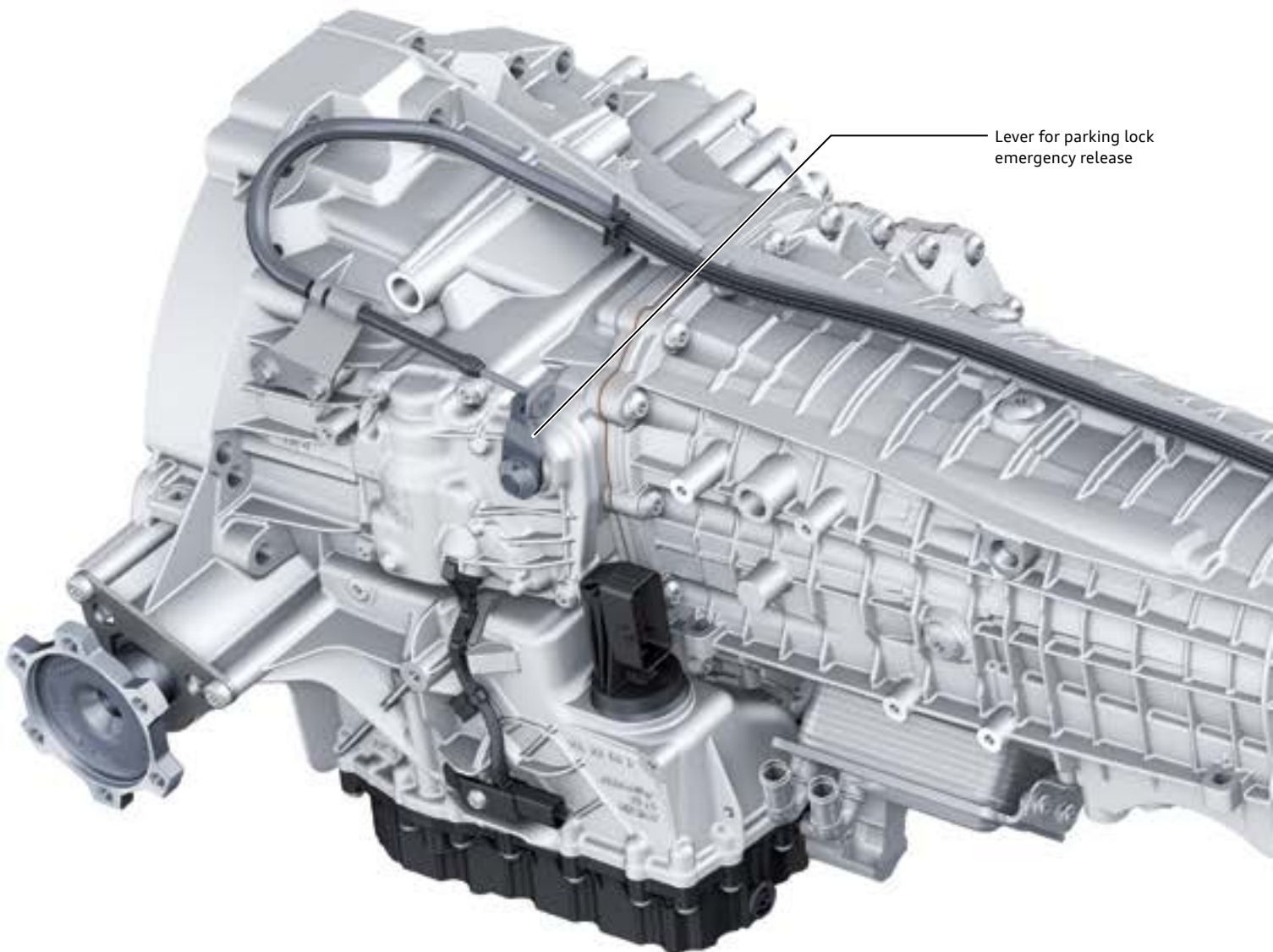
During normal operation, the parking lock is electro-hydraulically actuated. To allow electro-hydraulic disengagement of the parking lock, the engine does not have to be running. This is because the OCK/OCL transmissions are supplied with ATF by an electric-powered ATF pump and a pressure accumulator. The ATF supply is not dependent on operation of the engine. This means the parking lock can be disengaged when the ignition is on.

To hold the parking lock in the OFF position, sufficient ATF pressure must be available or the parking lock holding magnet must have a sufficient power supply.

In the event of malfunction, the emergency release mechanism is used to disengage the parking lock or to hold the P-OFF position for longer, if necessary.

The emergency release mechanism of the parking lock must be actuated in the following situations:

- ▶ To tow the vehicle
- ▶ If the parking lock cannot be released electro-hydraulically due to a malfunction.
- ▶ If the vehicle cannot be maneuvered or moved due to low supply voltage.
- ▶ If the engine is not running and it is necessary to maneuver or move the vehicle, for example, in the workshop.
- ▶ For function testing after carrying out assembly work on components of the emergency release mechanism.



A special feature is the positioning of the emergency release Bowden cable in relation to the gear selector lever. A rigid rod and a mushroom-shaped plate are attached to end of the emergency release Bowden cable and surround the selector lever without touching it. This minimizes structure-borne noise transmission from the transmission to the Bowden cable, and into the passenger compartment. The plate and the gear selector lever do not make contact until the emergency release mechanism is actuated.



Attachment of the emergency release cable





## Installation location of the emergency release mechanism

In the Audi A4, the parking lock is emergency-released from inside the vehicle by means of a cable pull. The emergency release mechanism is located under the cupholder in the center console.



644\_080

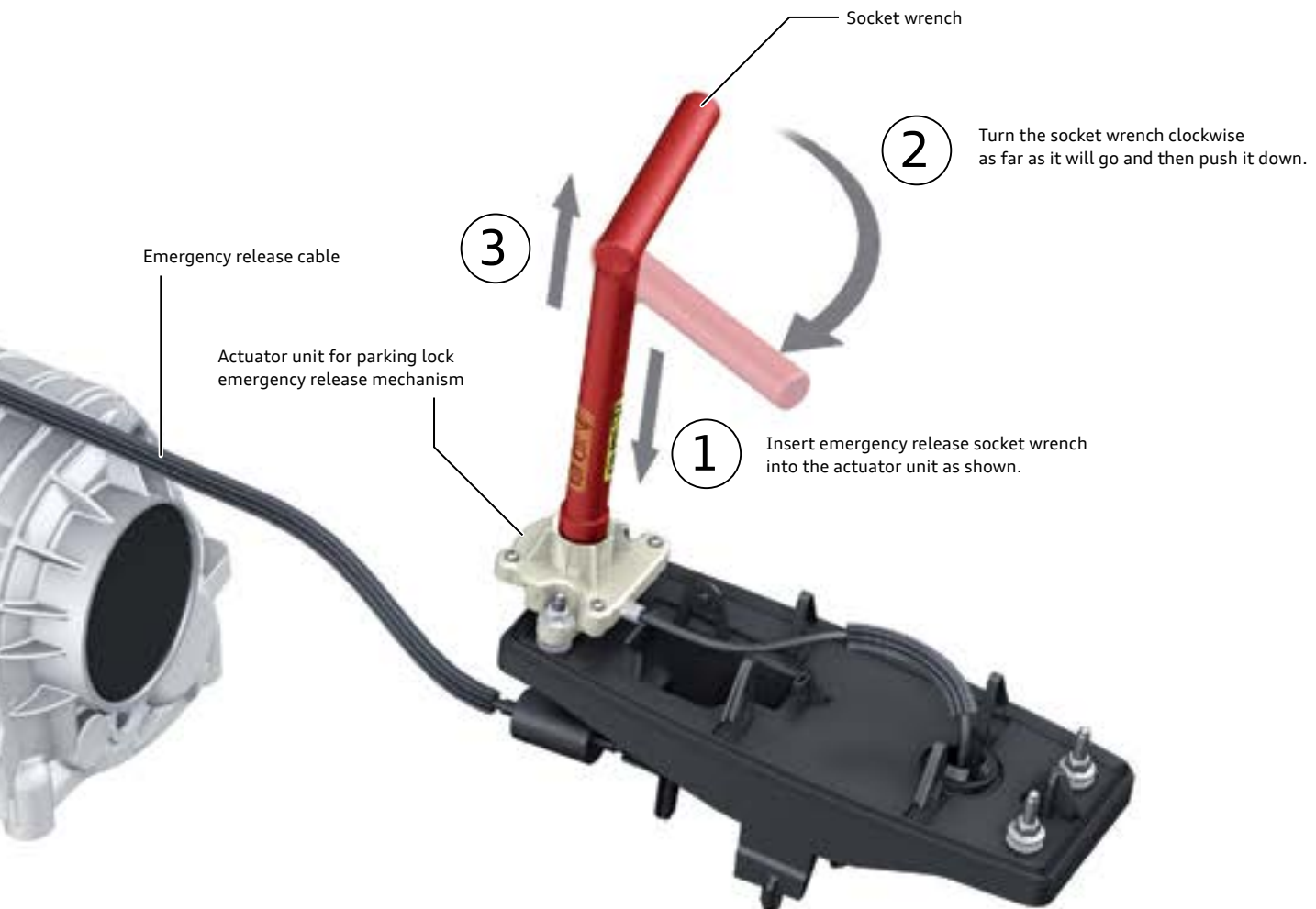
## Emergency-releasing the parking lock (P-OFF position)

**Warning! Before actuating the emergency release mechanism of the parking lock, the vehicle must be secured to prevent it from rolling away.**

The wrench and screwdriver needed for the procedure are located in the vehicle tool kit. After removing the rubber inlay, remove the cover using a screwdriver – refer to illustration 644\_080. Items (1) and (2) show the procedure.

Rubber inlay

Cover



644\_078



When the parking lock emergency release mechanism is actuated, the yellow warning lamp and the drive position indicator **N** light up in the instrument cluster.

The following message is also displayed in the instrument cluster: **Vehicle may roll away! P cannot be selected. Please apply parking brake.**

## ③ Deactivating the emergency release mechanism (P-ON position)

Hold the socket wrench with both hands and carefully pull it out – item (3). Use one hand to guide the socket wrench, to avoid damaging other adjacent parts. If the wrench is tight, it is easier to remove if it is turned slightly clockwise.

**Note: Do not under any circumstances turn the socket wrench back (counter-clockwise) as this will damage the actuator unit.**

## Tip-shifting in D/S

Manual gearshifts can be executed at any time using the shift paddles on the steering wheel positions **D/S**. If Tiptronic is activated, the transmission switches to manual mode for a limited time.

If the vehicle is in a normal, constant driving state for a period of about 8 seconds, the transmission shifts back into drive position **D** or **S**.

The countdown from about 8 seconds is stopped in the following cases:

- ▶ A sporty driving style is detected.
- ▶ When cornering.
- ▶ If over-run mode is detected.
- ▶ Selection of another gear with the steering wheel Tiptronic.

It is possible to return to automatic mode before this in various ways:

- ▶ Pull the selector lever back one position (position B1).
- ▶ Move the selector lever from the Tiptronic gate and back into the automatic gate.
- ▶ Long duration pull of the Tip+ shift paddle (long pull+).

## Special features of the steering wheel Tiptronic function

- ▶ After a long duration pull of the Tip- shift paddle (long pull-), the transmission shifts down into the lowest possible gear.
- ▶ After a long duration pull of the Tip+ shift paddle, the transmission switches from temporary Tiptronic mode to automatic mode.
- ▶ If a system malfunction occurs in the selector mechanism, drive positions **P**, **R**, **N** and **D** can be selected by simultaneously pulling both shift paddles, provided that the vehicle is stationary and the brake is applied.

## Launch control program

The Launch Control Program regulates the maximum acceleration of the vehicle from a standing start. Refer to the Owner's Manual for operating instructions and other information.

## Audi drive select

With Audi drive select, it is possible to select between different vehicle setups.

Transmission setups are tailored to the customer's requirements in a country-specific manner. For this reason, only typical differences between the various modes can be shown here.

Mode	Transmission setup
comfort	This setup is especially comfort-oriented with soft gear shifts and low engine speeds. As is the case in <b>auto</b> mode, gear selections are made with the aid of the driver type recognition feature.
auto	<p><b>Driver type recognition in drive positions D and S:</b> In drive positions <b>D</b> and <b>S</b> a driver type recognition is made on the basis of the driver's driving style. Criteria for driver type recognition include the mode of actuation of the brake and accelerator, the speed of the vehicle as well as transverse and longitudinal acceleration within defined periods. Accordingly, an economical driving style leads to early upshifts and late downshifts. A sporty driving style leads to late upshifts and early downshifts. The driving phases in which the driver adopts an efficient, economical, sporty or manual driving style can be seen using the VAS Scan Tool.</p> <p><b>Selector position D:</b> Gearshifts are comfort-oriented and shift point selection is adapted to the driver's driving style with the aid of driver type recognition.</p> <p><b>Selector position S<sup>1)</sup>:</b> In Sport mode, the shift points are sporty and adapted to the performance range of the engine. The shift points are configured with the aid of driver type recognition. Shift times and shift points vary from driving in the standard sport program to a handling course setup with short, noticeable shift cycles.</p>
dynamic	If <b>dynamic</b> mode is selected, transmission control module activates the sport program (drive position <b>S</b> ). In <b>dynamic</b> mode, both the Tiptronic functions and drive position <b>D</b> are available. If selector position <b>D</b> is activated before shutting off the engine, selector position ( <b>D</b> ) is again activated when the engine is subsequently started <sup>1)</sup> . If the driver wishes to have selector position <b>S</b> , he must select it.
individual	In <b>individual</b> mode, the driver can freely select the transmission setup irrespective of other vehicle systems.

<sup>1)</sup> Based on the emission class, the drive programs of selector position **D** are always pre-selected when the vehicle is restarted.



### Note

In the case of certain engine-transmission combinations, maximum speed is only achieved in the **auto** and **dynamic** modes.



### Reference

For further information about Audi drive select, refer to eSelf-Study Program [970563, The 2017 A4 Electronic and Electrical Systems](#).

## Towing

If a disabled vehicle with an automatic transmission requires towing, the usual restrictions apply:

- ▶ Actuate the parking lock's emergency release mechanism.
- ▶ Maximum towing speed of approximately 34 mph (50 km/h).
- ▶ Maximum towing distance of approximately 34 miles (50 km).

To tow the vehicle with an axle raised, the instructions in the Owner's Manual must be followed.



### Note

For further information, please refer to the Owner's Manual.

---

## Transmission warning lamps and driver information

The transmission control module provides information and fault messages about transmission operation that are displayed in the Driver's Information System according to their priority. Please refer to the Owner's Manual for further information.





# Running gear

## Overall concept

The suspension of the 2107 A4 is a new development compared to the previous model. It is the second Audi model to use the new modular longitudinal platform (MLBevo).

A key development goal was to achieve systematic light-weight construction while resolving any conflict of objectives between high ride comfort and outstanding driving dynamics.



644\_119

The following suspension variants are available for the 2017 Audi A4:

Suspension variants	Features
Standard suspension (1BA) <sup>1)</sup>	This is standard equipment for all models.
Sports suspension (1BE) <sup>1)</sup>	This chassis version is optional. For all models, ride height is approximately 0.9 in (23 mm) lower than that of the standard suspension. The distinctly sporty suspension setup is achieved by using special springs, dampers and anti-roll bars.
Suspension with electronic damper control (1BL) <sup>1)</sup>	The suspension with electronic damper control is an option for the Prestige model. Ride height is approximately 0.4 in (10 mm) lower than that of the standard suspension.

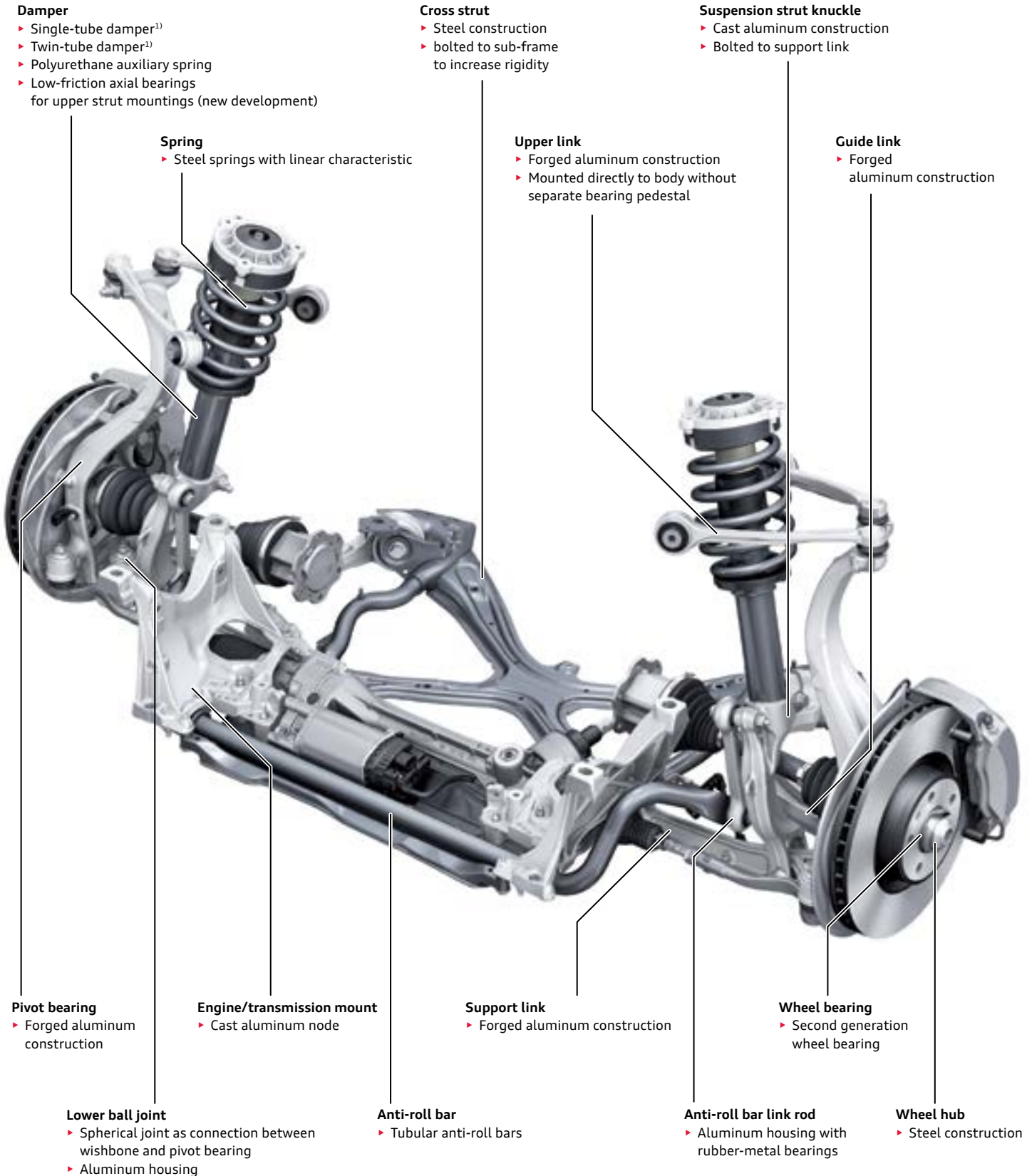
<sup>1)</sup> Production control number

# Axles and wheel alignment

## Front axle

The Audi A4 adopts the tried and tested five-link axle concept already used on other Audi models.

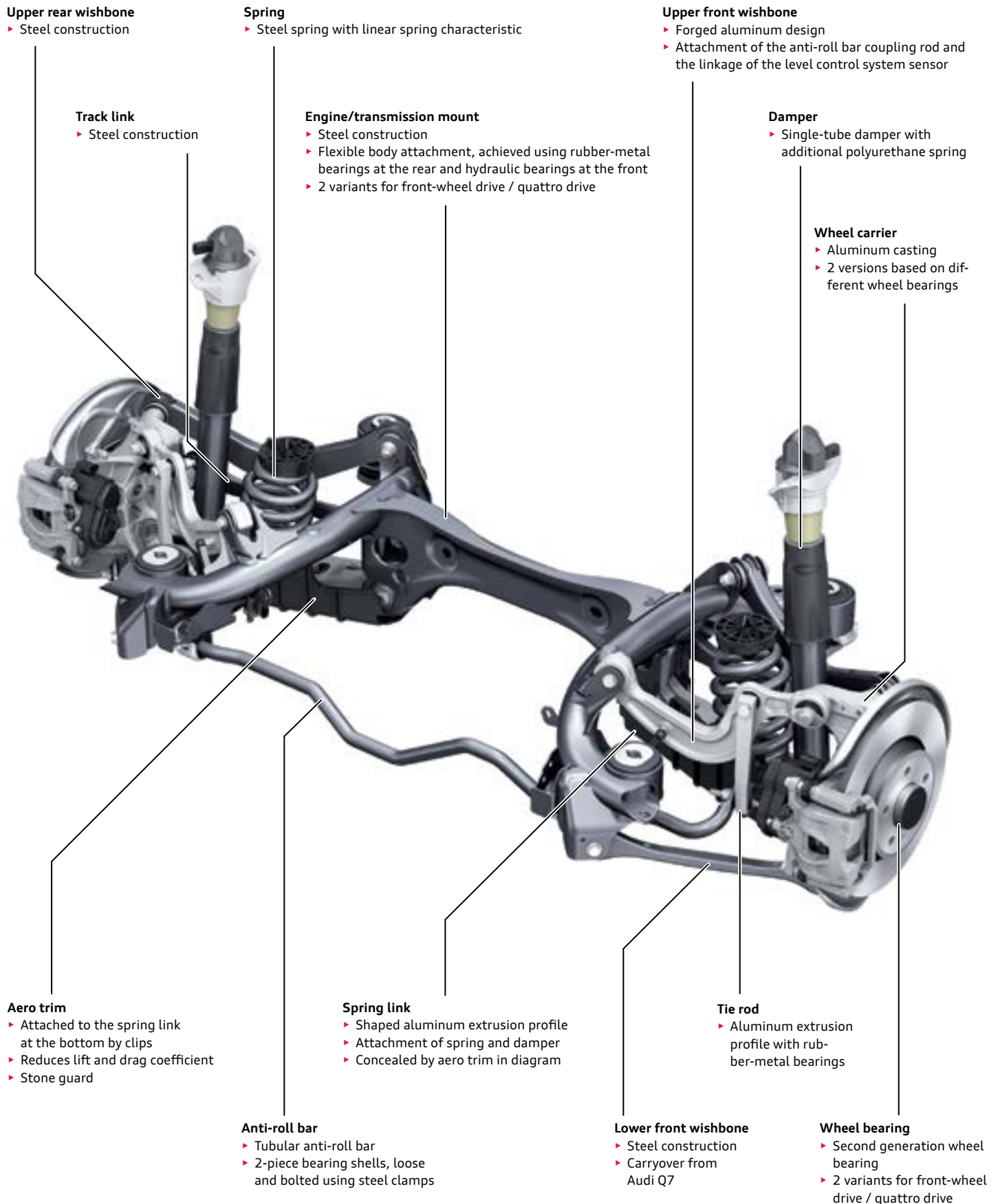
The system components are basically identical in design and function to those of the front axle on the Audi Q7.



<sup>1)</sup> Depending on suspension version.

## Rear axle

The system components are basically identical in design and function to those of the rear axle on the Audi Q7.



## Wheel alignment

The left and right toe values on the front axle can be adjusted separately by altering the length of the track rods. The camber can be balanced (centered) within narrow limits

by shifting the sub-frame transversely. Individual tracking values and individual camber values can be adjusted on the five-link rear suspension.

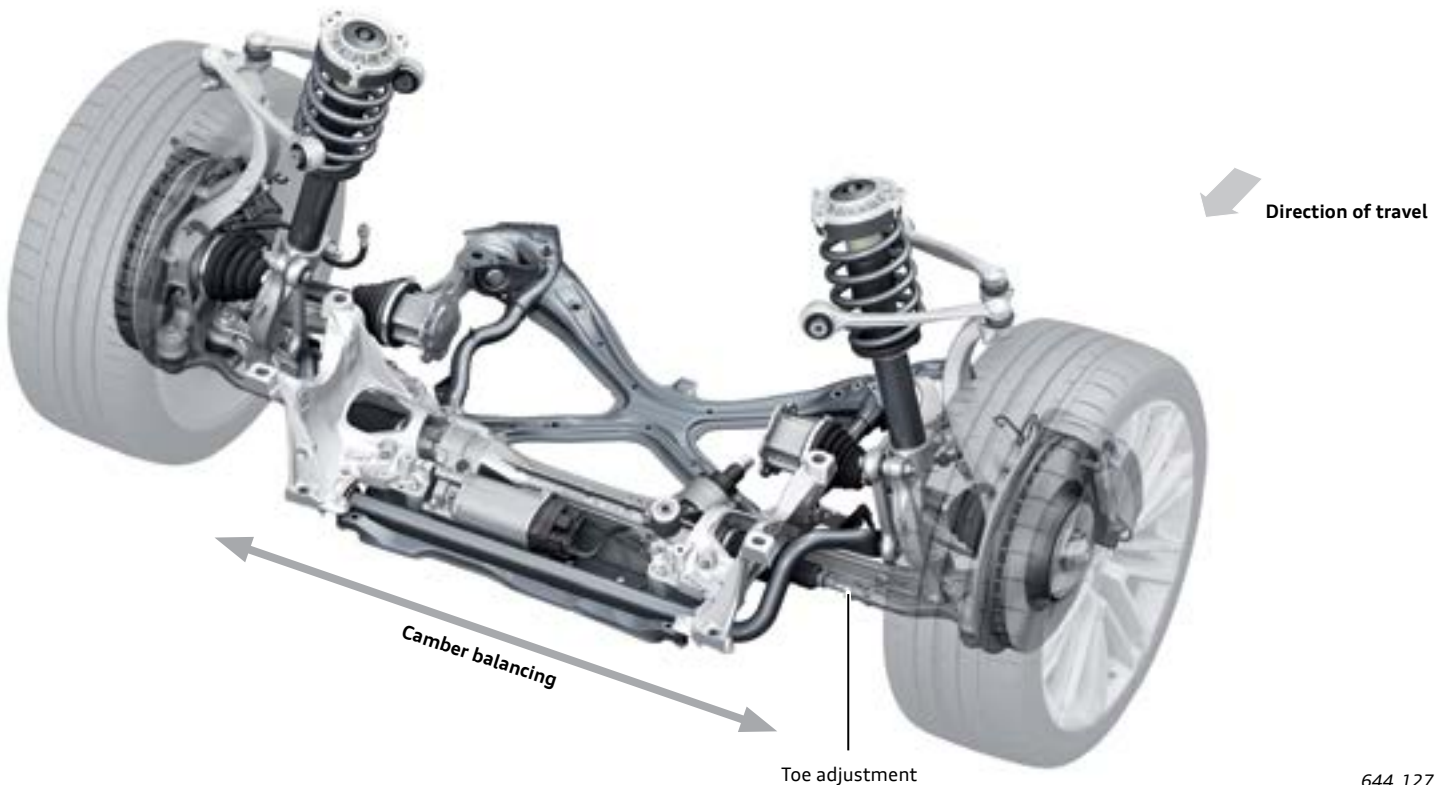
### Rear axle

Toe adjustment at attachment point  
Spring link sub-frame  
(concealed by aero trim)

Toe adjustment at attachment point  
of track link and sub-frame  
(not shown in graphic)



### Front axle





## Suspension with electronic damper control (1BL)

The 1BL system is based on that of the predecessor A4. A key new feature is Drivetrain Control Module J775. This new module incorporates the previously separate body acceleration sensors in addition to sensors for measuring torque around the X and Y axes (pitch and roll rates).

CDCivo dampers ("continuously damping control internal evolution") are used. The "internal" designation refers to the integration of the solenoid valve into the damper. The addition "evolution" refers to the latest technically advanced damper generation.

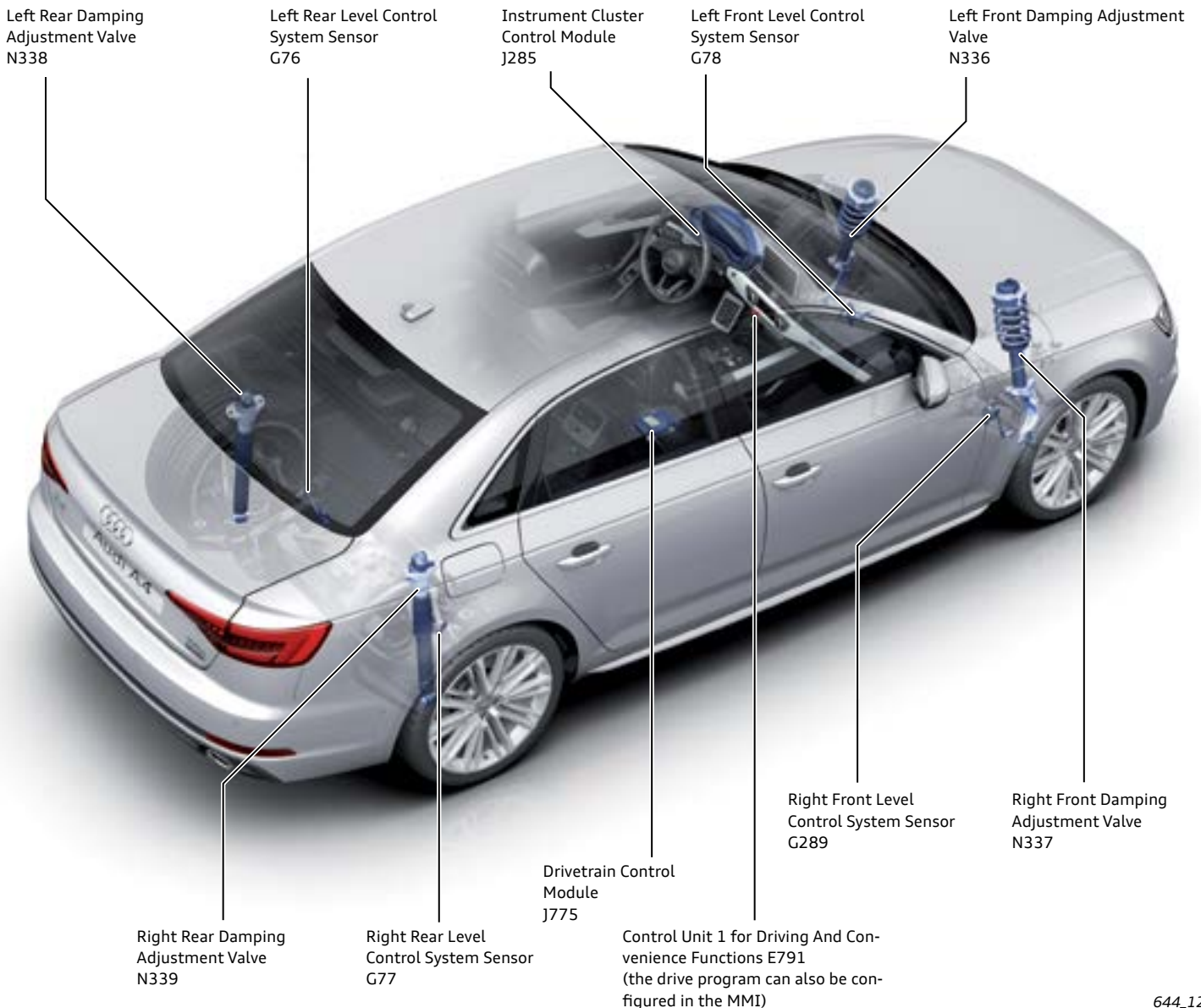
The control module activates the solenoid valve by a PWM signal directly and bypasses the piston valves. Depending on the opening cross-section of the valve, the damping forces can be varied in the tension and compression stages. Activation is wheel-selective.

To determine the required damping forces, the control software has a modular design. The vertical module evaluates lift, pitching and rolling movements of the body structure on the basis of the sensors integrated in the control module.

The transverse module uses the measured data from the steering angle sensor and the transverse acceleration sensor of the Airbag Control Module to determine the transverse dynamics.

The longitudinal module assesses the vehicle's longitudinal dynamics by evaluating the measured data for brake pressure from the ABS Control Module and the driver's torque input from the ECM. A higher-level system module serves to respond to the actions of other systems (ESC, EPB, brake assist etc.).

In addition, the speed of the vehicle and the road conditions (surface unevenness – determined from the measured data supplied by the body acceleration sensor from Drivetrain Control Module J775) are incorporated into the control process.



## Drivetrain Control Module J775

Drivetrain Control Module J775 was first introduced in the 2017 Audi Q7. As mentioned earlier, the sensors to measure vertical acceleration (Z) as well as torque around the longitudinal axis (X) and the transverse direction (Y) are integral with J775.

J775 also computes the vehicle's dynamics for the sport differential (not available at vehicle introduction). The module is mounted on the center tunnel at the front of the vehicle and communicates over the FlexRay data bus.



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## System behavior

The electronic damper control system has three different damping characteristics. Depending on the setting chosen in Audi drive select, the system activates maps which provide a medium, comfort-oriented or sporty characteristic.

When the ignition is switched on (terminal 15), the damper valves are activated with short pulses to activate the control system and vent the valves. If the vehicle is stationary and terminal 15 is on, the damper valves are activated by applying about 400 mA (low damping forces – "soft" characteristic). The highest damping forces are produced when a current of about 1.9 A is applied.

If a damper becomes defective or if there is no longer any measured data available from a level control system sensor, the control system is deactivated.

The damper valves are designed in such a way that medium damping forces (basic damping) are produced in a neutral (non-activated) state. The vehicle remains dynamically stable despite the corresponding loss of comfort.

The system shutdown is indicated to the driver in the DIS by a yellow pictogram (damper icon) and by text message.



644\_130a



### Reference

For further information about Audi drive select, refer to Self-Study Program [970563, The 2017 A4 Electronic and Electrical Systems](#).

## Service operations

J775 is encoded online. The following three basic settings are available for the electronic damper control system:

► **Program tension stop**

Raise the vehicle on a hoist until the wheels do not touch the ground and the dampers can be moved to their tension stops. The corresponding measured data from the level control system sensor is stored in the control module.



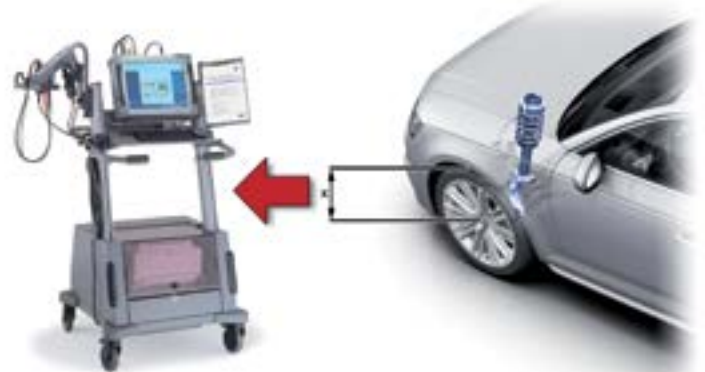
644\_129

► **Program zero position of height sensors**

This process follows the same approach as the other Audi models with adaptive air suspension or damper control (= programming the default suspension height). The distance from the center of the wheel to the wing cutout is measured at all four wheel positions and indicated to the VAS Scan Tool. The control module stores the corresponding measured data from the level control system sensor. Together with the data for the tension stops, the positions of the pistons in the dampers can be determined using the measured data from the level control system sensors.

► **Calibrate inertial sensors**

This basic setting is used to calibrate the sensors in the control module for measuring the pitching and rolling movements as well as the body acceleration in the z axis.



644\_131

The basic settings can be performed separately or collectively. The activation of the damper valves can be checked by performing an output check.

## Brake system

During the development of the brakes, special attention was given to lightweight construction. A weight savings of up to approximately 11.0 lb (5 kg) has been achieved compared with the previous model. The brake pads are now copper-free and meet the mandatory regulations which do not come into effect until 2021. An electro-mechanical parking brake is standard equipment for the Audi A4.

The ninth-generation Electronic Stability Control (ESC) system by Robert Bosch GmbH is adapted from the Audi Q7. The control software has been configured for use in the Audi A4. Compared with the previous model, the brake circuit layout has been modified from diagonal to a split between the front brakes and rear brakes.

### Front axle

Engine type	2.0l TFSI 252 hp (188 kW)
Minimum wheel size	17"
Brake type	Conti 4MF 42-42 Fixed caliper
Number of pistons	4
Brake disc diameter	13.3 in (338 mm)
Brake disc thickness	1.18 in (30 mm)

### Rear axle

Engine type	2.0l TFSI 252 hp (188 kW)
Minimum wheel size	17"
Brake type	TRW PC43HE EPBi floating caliper
Number of pistons	1
Brake disc diameter	12.9 in (330 mm)
Brake disc thickness	0.86 in (22 mm) (ventilated)



644\_133

Conti 4MF 42-42



644\_135

TRW PC43 HE EPBi with ventilated brake disc



## Electro-mechanical parking brake (EPB)

The electro-mechanical parking brake is standard equipment for the Audi A4. In terms of design, function, operation and scope of service, the actuator is identical to that used in the Audi A7 Sportback. The control software is an integral part of ABS Control Module J104.

Electro-mechanical parking brake (EPB)



644\_136

## Brake servo and master brake cylinder

A size 8/9" tandem brake servo with a "single-rate" characteristic is used in the Audi A4. The brake light switch is the same as the 2017 Q7. It is located on the master brake cylinder and is a Hall-effect sensor.

Vacuum is supplied by a mechanically powered vacuum pump.



644\_137

## Electronic Stability Control (ESC)

Two versions of the ESC 9.0 by Robert Bosch GmbH are used in the Audi A4. Vehicles equipped with ACC have a six-piston hydraulic pump and three pressure sensors for additional measurement of the brake pressure within the brake circuits. A 2-piston hydraulic pump is used in vehicles without ACC. These ESC units are already used in the 2017 Audi Q7. The control software has been modified for use in the A4.

The module is located on the left hand side of the engine compartment under the Engine Control Module. It uses the measured data (longitudinal and transverse acceleration, yaw rate) provide by the sensors in Airbag Control Module J234.

Active wheel speed sensors have been adopted from the 2017 Q7. The ESC service operations are identical to those of the 2016 Audi A7 Sportback or 2017 Audi Q7.



644\_139

## Operation and driver information

The two-stage operating concept has also been implemented in the Audi A4. Sport mode is activated by briefly pressing the ESC button (less than three seconds). The TCS and ESC control functions are limited in order to allow a more sporty style of driving. If the ESC button is pressed for longer than three seconds, TCS and ESC are fully deactivated.



644\_124



### Reference

For further information about the design, function and service operations for ESC, please refer to eSelf-Study Program [960163, The 2017 Audi Q7 Running Gear and Suspension System](#).

## Steering system

### Overview

Like its predecessor, the Audi A4 is equipped with an electro-mechanical steering system (EPS). The steering column is mechanically adjustable.

Dynamic steering (not available at model introduction) is also optional.

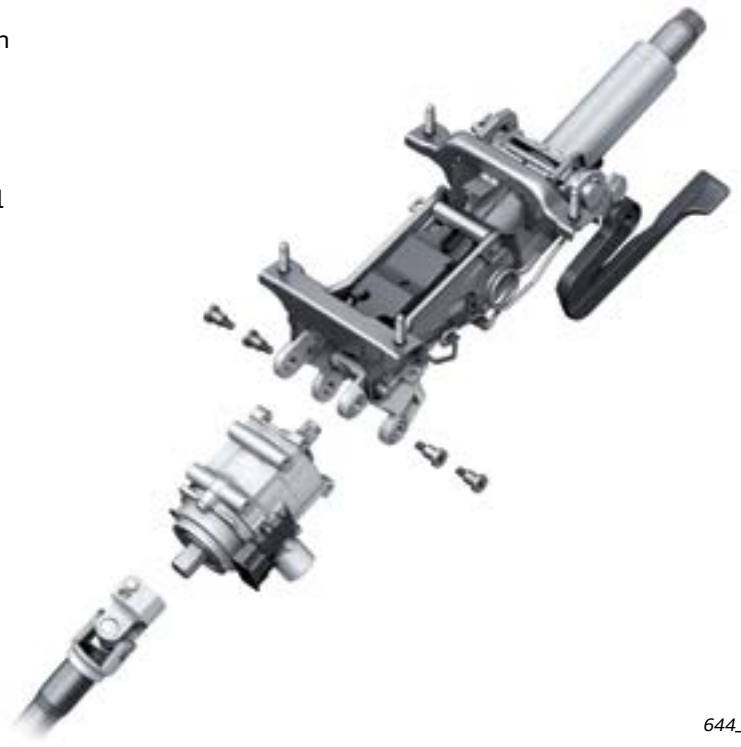


644\_140

Steering system with dynamic steering option (not available at model introduction).

## Steering column

The mechanically adjustable steering column is identical in design and function to that of the 2017 Q7. The modified installation position and the modified adjustment range (axial/vertical 2.3/1.9 in (60/50 mm) compared with the Q7 is achieved by using an adapted bracket and different stop elements. If the vehicle is equipped with the optional dynamic steering system, a variant with specially adapted connection dimensions is used.



644\_141

## Electro-mechanical steering (EPS)

### Design and function

The electro-mechanical steering system in the Audi A4 transmits power to the steering rack through a ball drive as in the Audi R8.

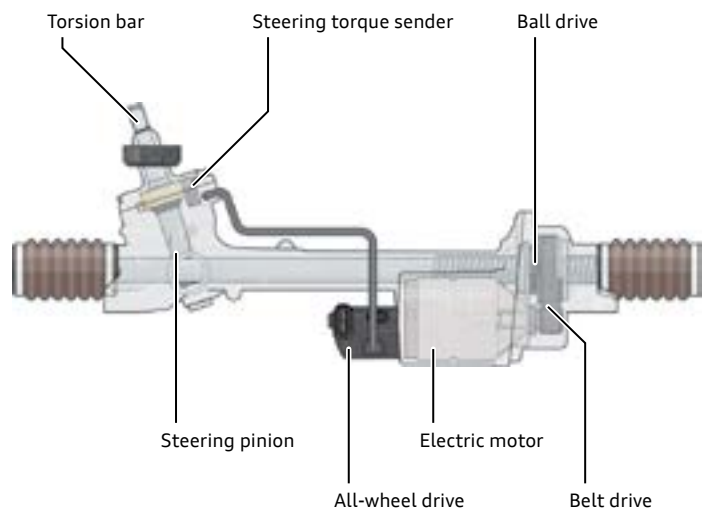
The ball drive is driven by a belt drive from an electric motor aligned in parallel with the steering rack. In the Audi A6, A7 Sportback, A8 and Q7 models, the electric motor concentrically surrounds the steering rack.

The paraxial layout was chosen for design space reasons in particular. The concentric layout involves making allowance for an installation height of about 4.7 in (120 mm), the installation height for the paraxial layout is only about 2.3 in (60 mm).

The steering ratios for the dynamic electro-mechanical steering system (not available at model introduction) are more direct than those of the standard system.



644\_125



644\_126



## Operation and driver information

This steering system is tailored to the driver by selecting a mode in the Audi drive select system. Three maps have been programmed into the control module for this purpose.

System faults are indicated to the driver by the usual yellow and red warning symbols. If the maximum steering assistance achievable by the system is less than 60% of the maximum servo power, the red warning symbol is activated.



644\_130a

## Service operations

The service operations for the steering system used on the Audi A4 are also identical to those for the systems used on the Audi A3, A6, A7 Sportback, A8, Q7 and R8 models.

For detailed information, refer to eSelf-Study Program [960143, The 2015 Audi A3 Running Gear and Suspension System.](#)

It is no longer necessary to program the maximum steering end-stops after replacing the steering. This is performed automatically during subsequent driving cycles. A basic setting function for resetting the programmed values allows an existing steering system to be installed in a different vehicle. The steering unit can only be replaced as a complete unit. The steering unit in combination with the sub-frame is a key factor in body stiffness. The instructions given in ElsaPro must be followed when removing and installing the steering unit.



644\_125

## Steering wheels

Steering wheel	Equipment	Steering wheel	Equipment
	Multi-function steering wheel with trapezoidal airbag module		Multi-function steering wheel with round airbag module and flattened rim (For use in S and S-line models. Not available at vehicle introduction).

644\_145

## Dynamic steering (not available vehicle introduction)

Dynamic steering is optional for the Audi A4. The Audi A4 is the first Audi model to be equipped with the second-generation dynamic steering system.

### New features of the actuator

The gear ratio (angle of rotation of steering pinion relative to angle of rotation of electric motor) has been changed from 1:50 to 1:30. This has increased maximum positioning velocity from approximately 450°/s to approximately 650°/s. Maximum motor speed has also been reduced to 3200 rpm from 4500 rpm. Acoustic response and dynamics during stabilizing steering inputs have been improved.

The new two-piece housing is about 12.8 oz (400 g) lighter than that of the first-generation actuator. Dust and water protection have been improved. The gear housing and motor housing are completely separate.

The mechanical lock for the hollow shaft of the electric motor is a new design. A proportional magnet is now used instead of the "digital" electric magnet. A key advantage is the elimination of locking noise. Power consumption is also reduced.

### New features of the electric motor

Maximum torque has been increased to 1.4 Nm from 1.1 Nm. The rotor position sensor has double the number of magnetic pole pairs, increasing the sensor resolution to 7.5° from 15°.

### Active Steering Control Module J792

The control module uses a dual core microprocessor and communicates over the FlexRay data bus. A one piece connector replaces the three individual connectors used in previous versions.

### Service operations

In terms of the service operations, the second-generation dynamic steering system is identical to the first-generation system.

If it is necessary to replace the actuator, the steering column unit must be replaced. However, if it is necessary to replace the steering column, the intact actuator can be reused.



Dynamic steering actuator

644\_142



644\_143

## Adaptive Cruise Control (ACC)

The fourth-generation ACC system is used in the Audi A4. In terms of design and function as well as operation and service operations, the ACC system of the A4 is identical to that of the Q7.

The ACC-based assistance systems first used in the Audi Q7 are also offered for the Audi A4. When adapting these assistance systems for the Audi A4, special attention was given to efficiency and reducing CO<sub>2</sub> emissions.

The configured time intervals (time gaps) to vehicles ahead can be varied by the system within certain limits ("flexible time gaps").



Right Adaptive Cruise Control Sensor G259 and Distance Regulation Control Module J428.

Left Adaptive Cruise Control Sensor G258 and Distance Regulation Control Module 2 J850.

644\_123



### Reference

For detailed information about the system configuration, the assistance functions, system operation, driver information and service operations for the ACC, refer to eSelf-Study Program [960163, The 2017 Audi Q7 Running Gear and Suspension System](#).

# Wheels and tires

Premium models come with standard 17" wheels. 18" wheels are optional. The Premium plus and Prestige models have 18" wheels as standard.

All models will come equipped with a full-size temporary space-saving spare tire and jack.

## Standard wheels

### Premium

7.5Jx17 5-parallel spoke design  
Cast wheel  
95H all season tires



### Premium plus / Prestige

8Jx18 5-spoke dynamic design  
245/40 R18 93H all-season tires



## Optional wheels

### Premium

8Jx18 10-spoke design  
245/40 R18  
93H all-season tire



### Premium plus / Prestige

8.0J x 18 ET40  
Flow form cast wheel  
Bicolor  
245/40 R18 93H all-season tires

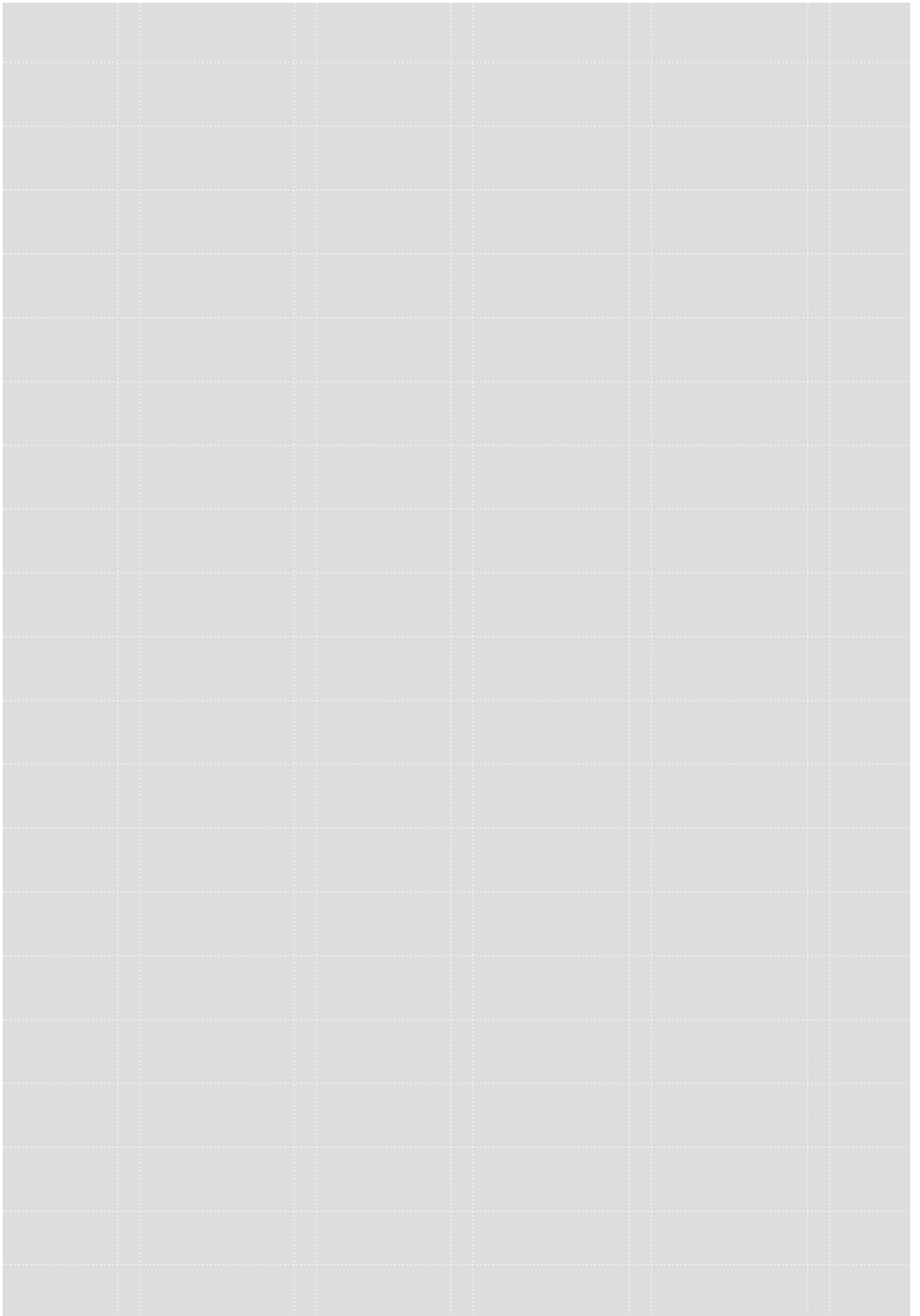


## Tire Pressure Monitoring System

The second-generation indirect TPMS is standard equipment for the Audi A4. In terms of design and function, operation and driver information as well as service and diagnosis functions, the system is identical to the systems already in use in other current Audi vehicles.



## Notes

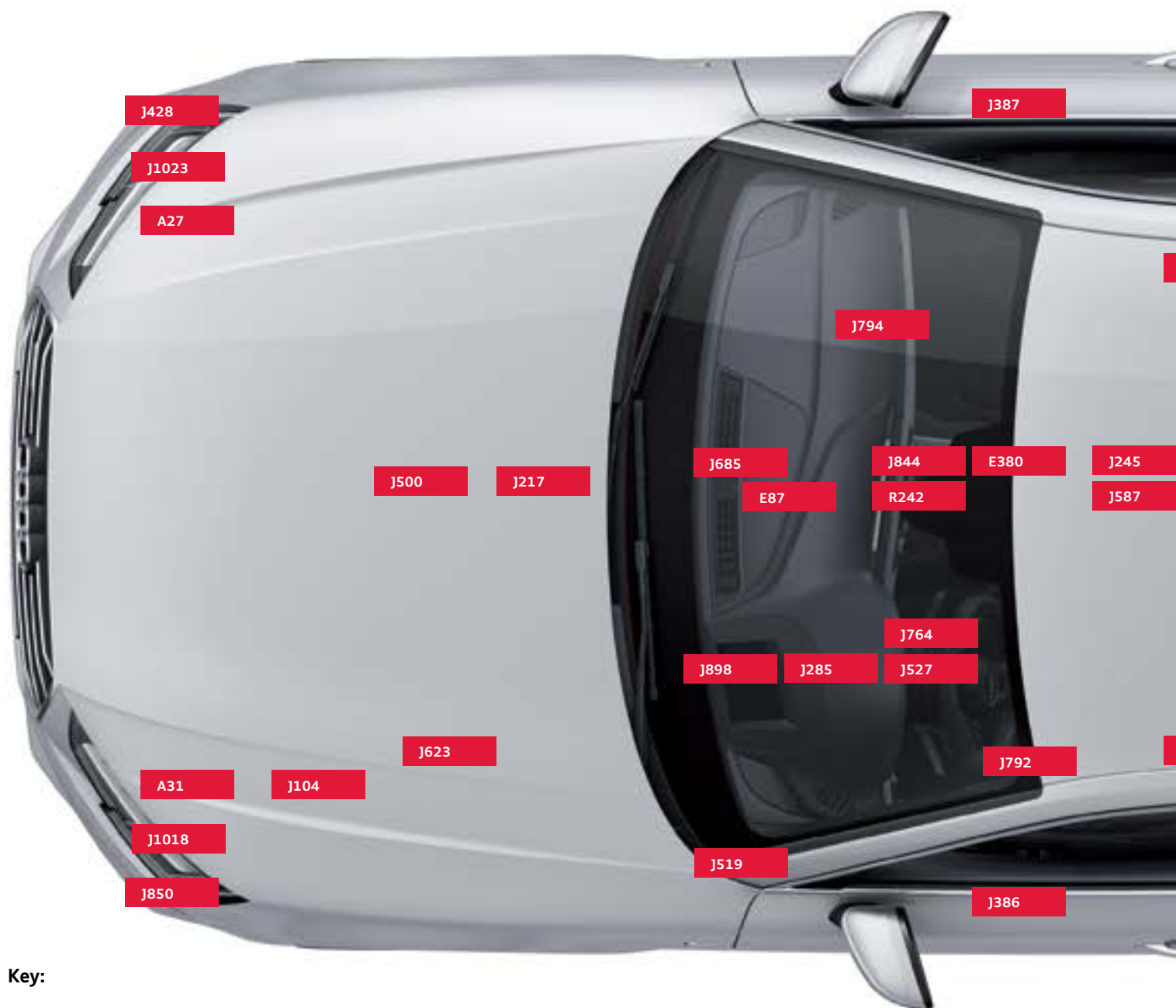


# Electrical system

## Installation locations of control modules

Some of the control modules shown in the overview are optional and/or country-specific equipment.

Refer to the current service literature for details of control module installation positions as well as instructions for installation and removal.



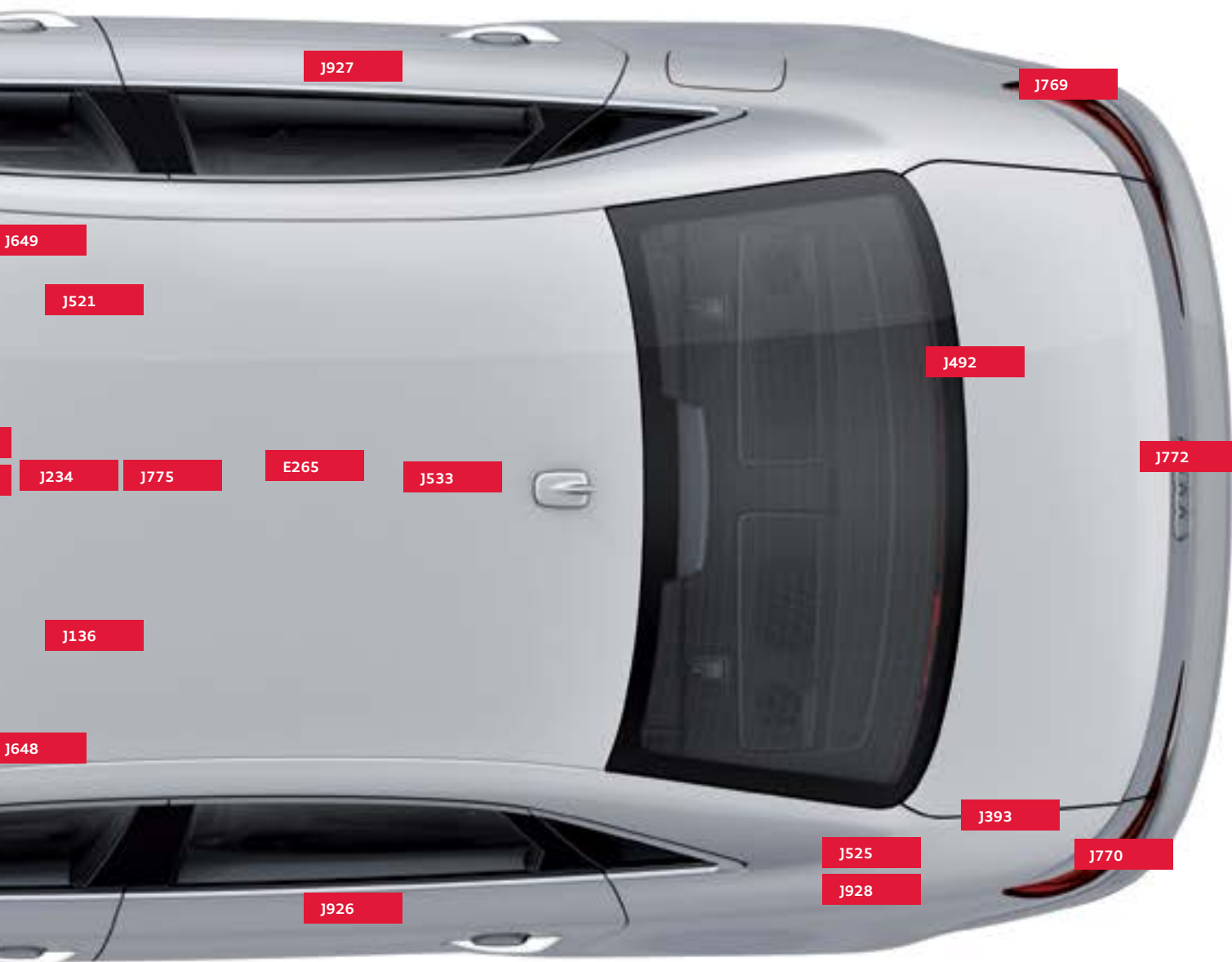
### Key:

**A27** Right LED Headlamp Power Output Module 1  
**A31** Left LED Headlamp Power Output Module 1

**E87** Front A/C Display Control Head  
**E265** Rear A/C Display Control Head  
**E380** Multimedia System Control Head

**J104** ABS Control Module  
**J136** Memory Seat/Steering Column Adjustment Control Module  
**J217** Transmission Control Module  
**J234** Airbag Control Module  
**J245** Power Sunroof Control Module  
**J285** Instrument Cluster Control Module

**J386** Driver Door Control Module  
**J387** Front Passenger Door Control Module  
**J393** Comfort System Central Control Module  
**J428** Distance Regulation Control Module  
**J492** All Wheel Drive Control Module  
**J500** Power Steering Control Module  
**J519** Vehicle Electrical System Control Module 1  
**J521** Front Passenger Memory Seat Control Module  
**J525** Digital Sound System Control Module  
**J527** Steering Column Electronics Control Module  
**J533** Data Bus On Board Diagnostic Interface

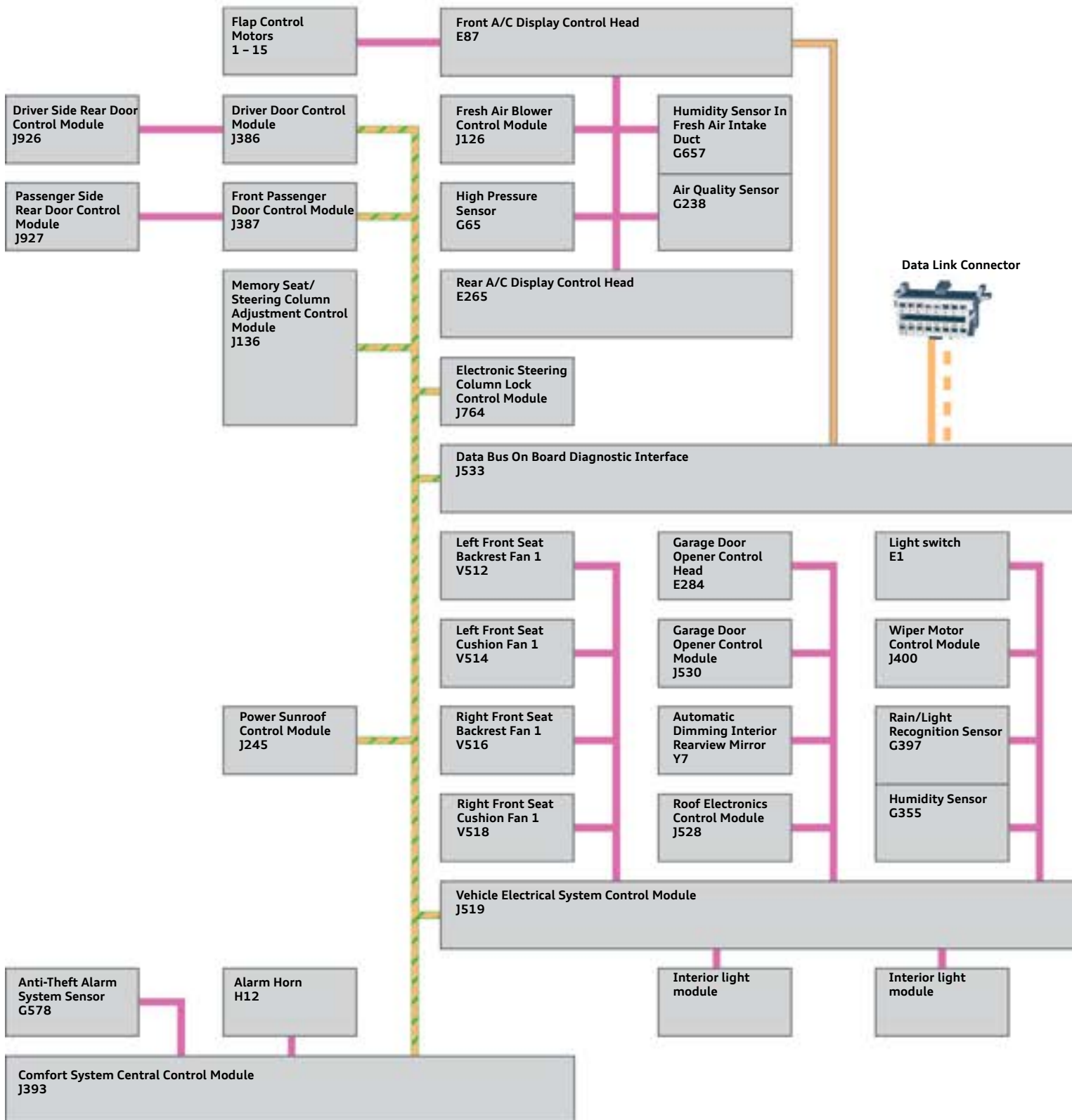


644\_113

- |  |  |
|--|--|
| <b>J587</b> Selector Lever Sensor System Control Module                | <b>J792</b> Active Steering Control Module                       |
| <b>J623</b> Engine Control Module                                      | <b>J794</b> Information Electronics Control Module 1             |
| <b>J648</b> Left Rear Information Display Control Head Control Module  | <b>J844</b> Automatic High Beam Assist Control Module            |
| <b>J649</b> Right Rear Information Display Control Head Control Module | <b>J850</b> Distance Regulation Control Module 2                 |
| <b>J685</b> Front Information Display Control Head                     | <b>J898</b> Windshield Projection Head Up Display Control Module |
| <b>J764</b> Electronic Steering Column Lock Control Module             | <b>J926</b> Driver Side Rear Door Control Module                 |
| <b>J769</b> Lane Change Assistance Control Module                      | <b>J927</b> Passenger Side Rear Door Control Module              |
| <b>J770</b> Lane Change Assistance Control Module 2                    | <b>J928</b> Peripheral Camera Control Module                     |
| <b>J772</b> Rearview Camera System Control Module                      | <b>J1018</b> Left Light Control Module                           |
| <b>J775</b> Drivetrain Control Module                                  | <b>J1023</b> Right Light Control Module                          |
|  | <b>R242</b> Driver Assistance Systems Front Camera               |

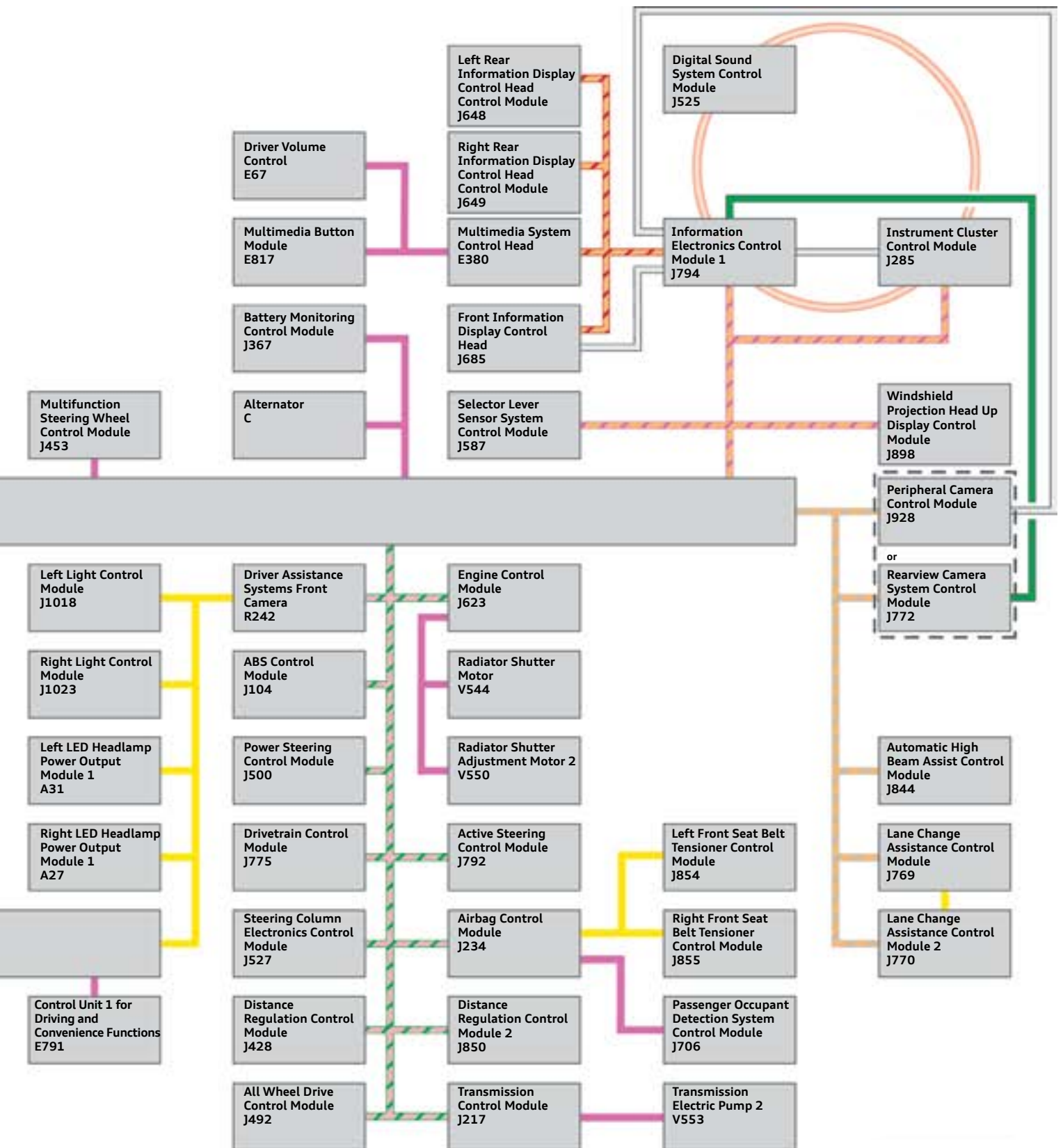
# Topology

For a detailed description of the control modules and the electrical system, refer to eSelf-Study Program [970563](#), [The 2017 A4 Electronic and Electrical Systems](#).



- Key:**
- Convenience CAN
  - Hybrid CAN
  - Extended CAN
  - Infotainment CAN
  - FlexRay
  - Modular Infotainment Platform (MIB) CAN
  - LIN bus





- Sub-bus systems
- MOST bus
- LVDS
- FBAS

- "OR" configuration
- Ethernet port for diagnose interface VAS 6154

# Surround cameras

## Function

The surround view camera system is designed to help a driver during maneuvering and parking. A better overview of the immediate vicinity of the vehicle helps the driver detect obstacles or hazards outside the normal range of vision.

The system has wide angle lens cameras that capture the entire area around the vehicle. The cameras are integrated in the front grille, the rear lid handle and both outside review mirrors.

The driver can choose between five different views: a bird's eye view of the vehicle or images from individual cameras.

## Available views

The views from the surround cameras are always displayed in split-screen mode. The selected view is shown on the left-hand side of the MMI display and takes up about 2/3 of the total display area.

If the overhead view is already being shown on the left-hand side of the display, the graphic of the Optical Parking System (OPS) is shown on the right-hand side.

An image is displayed in portrait mode on the right-hand side. This is either the graphic of the Optical Parking System (OPS) or the "overhead view" (bird's eye view) of the surround cameras.

## The following five views are available:

### Rear view – normal view

This view shows the area behind the vehicle. The image provided by the rear camera is solely used for this purpose. The orange-colored lines show the projected trajectory of the vehicle as it continues to back up. They are dependent on the actual steering angle and are designed to help the driver during backing up and parking. If the red line in the image hits an obstacle, the driver should stop because there is a risk of collision.

### Corner view, rear

This view represents a 180° panorama view of the area behind the vehicle and is identical to the image from the rear camera. The distortion of the wide-angle image is eliminated from this view. This view is ideal for reverse parking in impaired visibility situations. It enables cross traffic approaching from the side to be detected earlier and helps avoid a collision. The orange-colored lines show the projected trajectory of the vehicle as it continues to travel forwards.



644\_159



644\_162

### Front view

This view shows the area in front of the vehicle. The image provided by the front camera. The image components of the camera picture showing the front side area of the vehicle are, however, not shown in this view.



644\_161

### Corner view, front

This view represents a 180° panorama view of the area in front of the vehicle and is identical to the image from the front camera. The distortion of the wide-angle image is eliminated. This view helps, for example, when maneuvering forwards out of a perpendicular parking space in an impaired visibility situation or when passing a narrow driveway exit. It enables cross traffic approaching from the side to be detected earlier and helps avoid a collision.



644\_163

### Overhead view

This view shows the immediate vicinity of the vehicle from the bird's eye perspective. This image is a composite of all 4 camera pictures. However, objects above the door mirrors at the side cannot be displayed. This is not possible because the side cameras are installed on the undersides of the door mirrors. The two red lines in front of the vehicle show the projected path ahead on the basis of the steering angle.



644\_164

## Installation locations of components in the Audi A4

### Installation location of peripheral cameras R243 – R246

Front Peripheral Camera  
R243



644\_147

Rear Peripheral Camera  
R246



644\_148

Left Peripheral Camera  
R244



644\_149

Right Peripheral Camera  
R245



644\_150



Peripheral Camera Control  
Module  
J928

644\_165



## System operation

### Switching on and off

The surround cameras are a useful addition to Audi parking system. The system is able to show the entire area around the vehicle in the form of a bird's eye view. This allows obstacles to be recognized visually by the driver, in addition to the audible signals generated by the parking aid.

The following actions activate the surround camera display on the MMI screen:

- ▶ Engagement of reverse gear.
- ▶ Pressing the parking aid button.

The bird's eye view also covers the areas to the side of the vehicle which are beyond the range of the parking aid sensors.

For this reason, activation of the surround cameras is coupled to the activation and deactivation of the Audi park assist system.

The following actions deactivate the surround camera display:

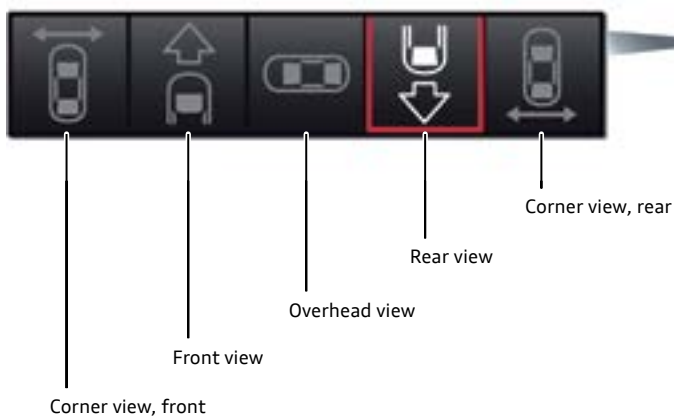
- ▶ Traveling forwards at a speed of greater than 6.2 mph (10 km/h).
- ▶ Pressing the parking aid button again.
- ▶ Switching off the ignition.



644\_166a

### Selecting the desired view

The driver can select the desired view using the turn-push button on the MMI panel. The following option is available for this purpose at the edge of the MMI screen.

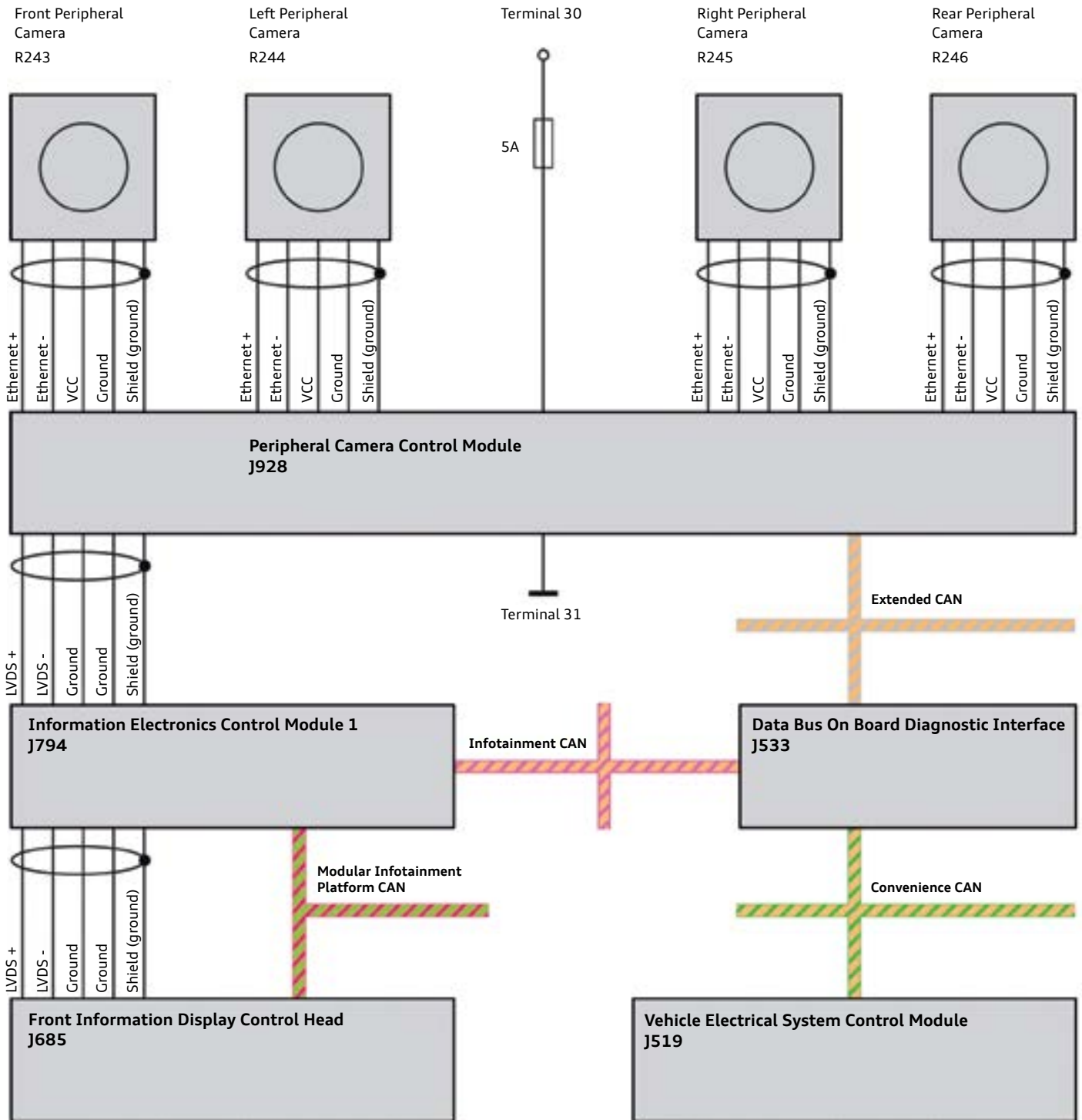


644\_167

## Implementation of the function in the vehicle

The images provided by the four surround cameras R243 – R246 are transmitted to Peripheral Camera Control Module J928 via a shielded Ethernet connection.

This connection transmits the requested image via a shielded LVDS connection to Information Electronics Control Module J794, which in turns sends the image via a shielded LVDS connection to Instrument Cluster Control Module J285.



## Calibration tool VAS 721 001

### Calibrating the second-generation surround camera

To calibrate the second-generation surround cameras, two calibration mats (VAS 721 001) are rolled out at the sides of the vehicle. Both calibration mats are identical. After this, they are aligned with the vehicle as specified in the Workshop Manual. Finally, the calibration program is started using the VAS Scan Tool. It takes only a few seconds to successfully complete the calibration routine.

Each of the two calibration mats are approximately 26 ft (8 m) long. Due to the length and alignment of the calibration mats, each mat can be viewed simultaneously by three surround cameras. Depending on the side of the vehicle, these are the left or right side camera and the two front and rear cameras. All four cameras are calibrated simultaneously after aligning both calibration mats.



644\_151

#### eMedia



Video link to access Top view camera calibration.



#### Reference

For information about other driver assistance systems in the Audi A4, refer to eSelf-Study Program [970263, The 2017 Audi Q7 Driver Assistance Systems](#).

# Infotainment

## MMI

Two basic versions of the MMI system are available for the 2017 A4.

- ▶ The MMI radio plus (I8S) – two models.
- ▶ MMI Navigation plus (I8H).

They are all based on MIB2. This page and the next outline the various configurations that are available based on the A4 model.

### A4 Premium MMI Radio plus (I8S)



#### Standard equipment for Premium

7.0" TFT color monitor with 800 x 480 pixel resolution

5" monochrome display in instrument cluster with Driver information system (9S5)

AM/FM radio (HD)

Mid operating unit (no MMI touch)

CD drive (MP3, WMA, AAC)

2 SDXC card readers

Audi music interface and Audi smart-phone interface with 2 USB ports and AUX-In jack (UI2)

Bluetooth interface (9ZX)

Audi sound system (9VD)

#### Optional equipment for Premium

MMI Navigation plus package (PND)

- ▶ MMI Navigation High (7UG)
- ▶ 8.3" TFT color monitor with 1024 x 480 pixel resolution
- ▶ Color DIS (97S)
- ▶ MMI Touch
- ▶ Audi connect with online services (EL3)
- ▶ MMI radio high (I8H)
- ▶ Audi Auto-SOS & Audi connect vehicle-related services (1W3)

Convenience package (WPD)

- ▶ SIRIUS® satellite radio (QV3)

### A4 Premium plus MMI Radio plus (I8S)



#### Standard equipment for Premium plus

7.0" TFT color monitor with 800 x 480 pixel resolution

5" monochrome display in instrument cluster with Driver information system (9S5)

AM/FM radio (HD)

Mid operating unit (no MMI touch)

SIRIUS® satellite radio (QV3)

CD drive (MP3, WMA, AAC)

2 SDXC card readers

Audi music interface and Audi smart-phone interface with 2 USB ports and AUX-In jack (UI2)

Bluetooth interface (9ZX)

Bang & Olufsen Sound System with 3D sound (9VS)

Audi Auto-SOS & Audi connect vehicle-related services (1W3)

#### Optional equipment for Premium plus

Audi technology package (PNY)

- ▶ MMI Navigation High (7UG)
- ▶ 8.3" TFT color monitor with 1024 x 480 pixel resolution
- ▶ MMI Touch
- ▶ Audi connect with online services (EL3)
- ▶ MMI radio high (I8H)
- ▶ Audi Auto-SOS & Audi connect vehicle-related services (1W3)
- ▶ Audi virtual cockpit (9S8)

### A4 Prestige MMI Navigation plus (I8H)



#### Standard equipment for Prestige

8.3" TFT color monitor with 1024 x 480 pixel resolution

Audi virtual cockpit (9S8)

AM/FM radio (HD)

MMI touch

SIRIUS® satellite radio (QV3)

DVD drive (audio and video)

2 SDXC card readers

Audi music interface and Audi smart-phone interface with 2 USB ports and AUX-In jack (UI2)

Bluetooth interface (9ZX)

Bang & Olufsen Sound System with 3D sound (9VS)

Audi Auto-SOS & Audi connect vehicle-related services (1W3)

Audi connect with online services (EL3)

3D SSD navigation (7UG)



#### Reference

For further information about the **Infotainment system and Audi connect**, refer to Self-Study Program [970663\\_ The 2017 A4 Infotainment and Audi Connect](#).



# Climate control

## Introduction

A three-zone climate control system is standard equipment on the 2017 A4.

Technically, Front A/C Display Control Head E87 is identical to the 2017 Q7. The temperature displays are integrated in the rotary dials. Operation is done by a minimum of buttons and capacitive rocker switches.

A combined dust and pollen filter protects the passengers in both fresh air mode and re-circulation mode.

A wide air outlet strip across the instrument panel allows indirect ventilation while increasing the air flow.

## Three-zone deluxe automatic air conditioning

Passenger compartment temperature sensor



644\_022

## Rear control panel



Seat heating, rear (optional)

644\_023

## Climate control housing

The housing for the climate control system of the 2017 A4 is similar to that of the 2017 Q7. The only difference is the number of installed control motors.

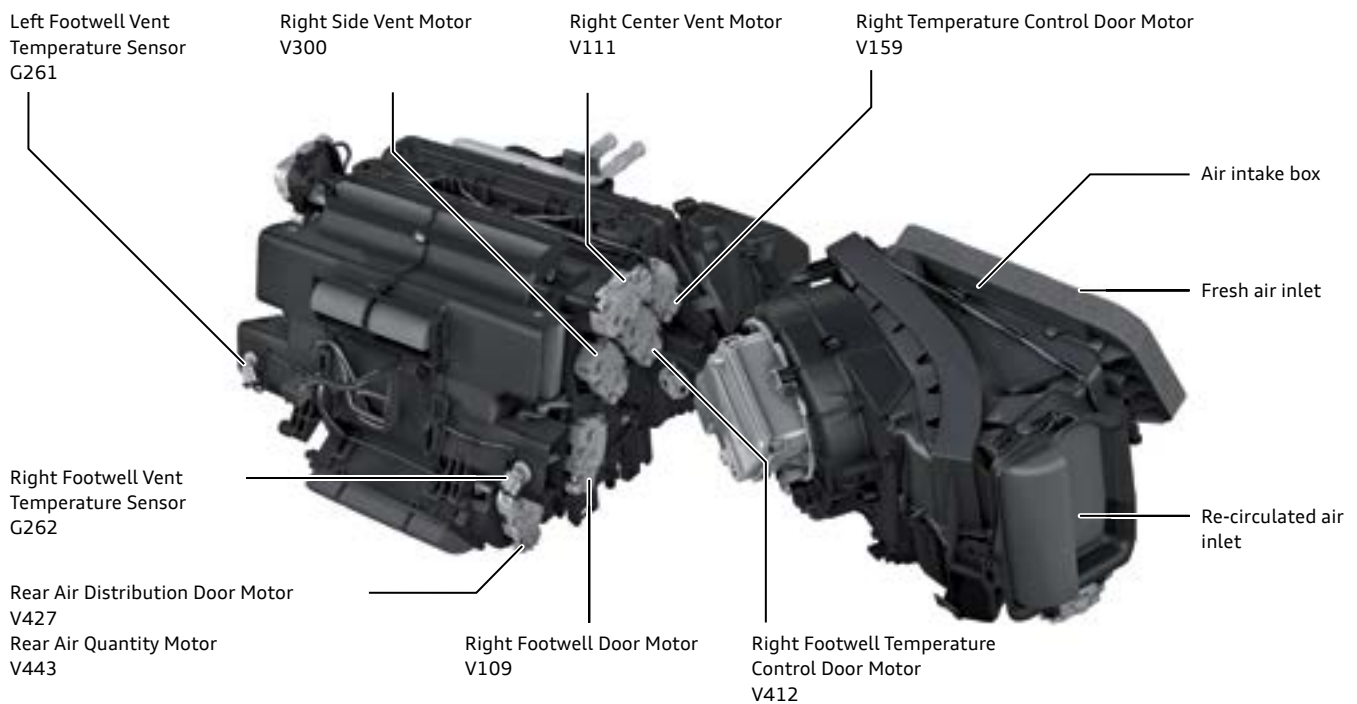
If repair work is needed, the following components of the air conditioner can be removed and replaced without removing the instrument panel:

- ▶ Control motors.
- ▶ Heat exchanger.
- ▶ Fresh Air Blower V2 with Fresh Air Blower Control Module J126.

## Control motors

The control motors are all identical in design and are programmed by auto addressing using the VAS Scan Tool.

If repair work is needed, the cables and plugs leading to the control motors and the cable connections to the temperature sensor must not be interchanged otherwise the components could be incorrectly addressed.



644\_024

## Fresh air blower



644\_025

## Steering wheel heating

Steering wheel heating is part of the optional cold weather package on Premium Plus and Prestige models. It's operation is indicated by a display in the instrument cluster.

Once activated, the steering wheel maintains a constant pre-set temperature.



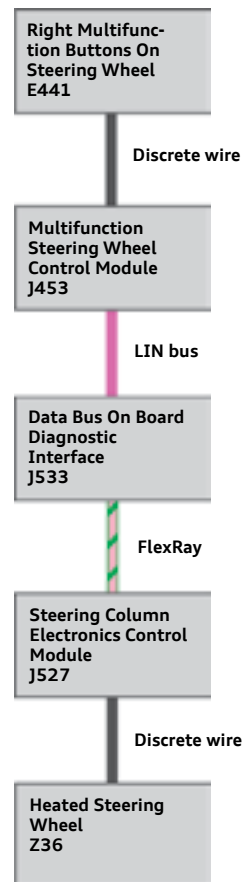
644\_028

Steering wheel heating button, integrated in Right Multifunction Buttons On Steering Wheel E441

### Activation

The heated steering wheel receives its electrical power from Steering Column Electronics Control Module J527.

The signal provided by the seat heating button in Right Multifunction Buttons on Steering Wheel E441 is transferred over a discrete wire to Multifunction Steering Wheel Control Module J453. J453 transfers the data via a LIN bus to Data Bus On Board Diagnostic Interface J533. From J533, the information is sent over the FlexRay to Steering Column Electronics Control Module J527. From J527, the information is sent over the FlexRay to Heated Steering Wheel Z36.



644\_029

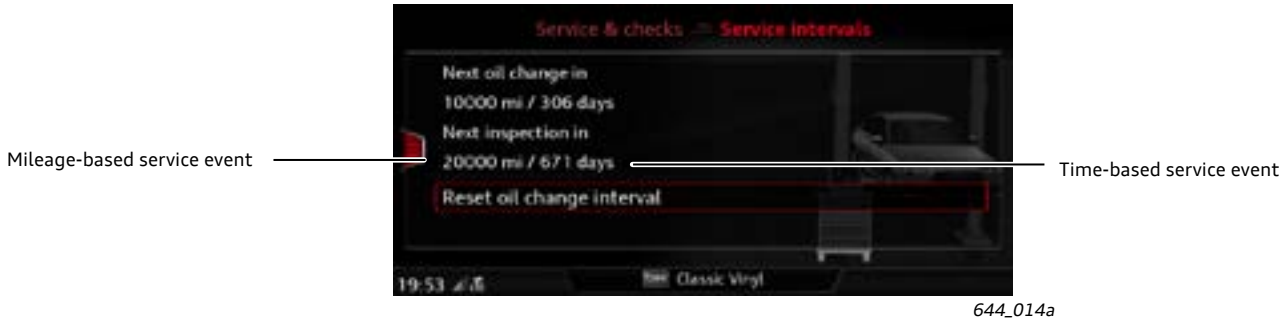
# Service

## Inspection and maintenance

The following service intervals are displayed:

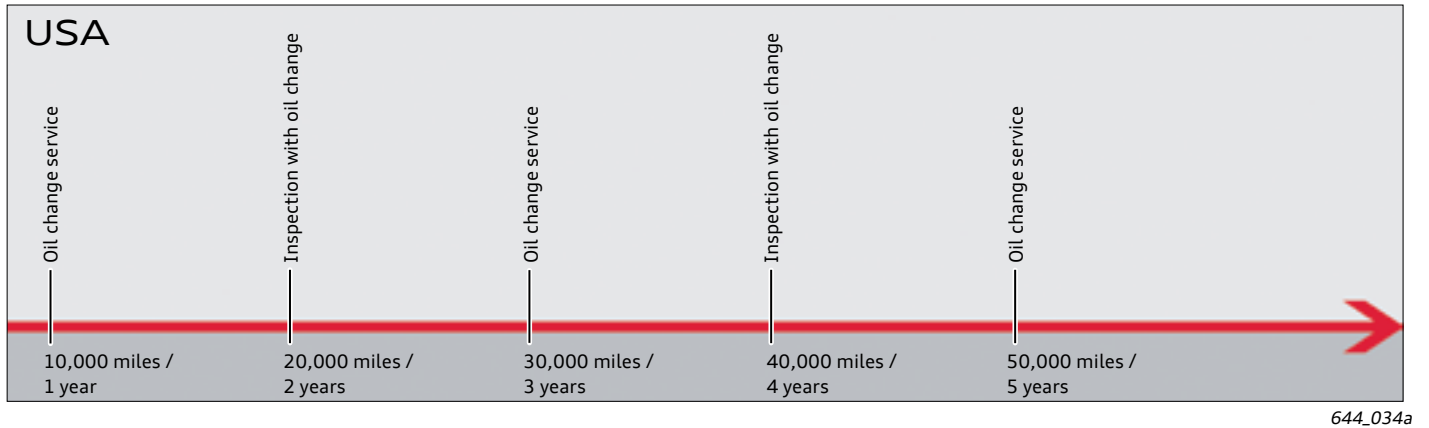
- ▶ Oil change service.
- ▶ Mileage-based service events.
- ▶ Time-based service events.

### Example of a service interval display



### Overview of maintenance intervals for vehicles in the USA

The Audi A4 is subject to fixed inspection and maintenance intervals in the USA.



<sup>1)</sup> S tronic



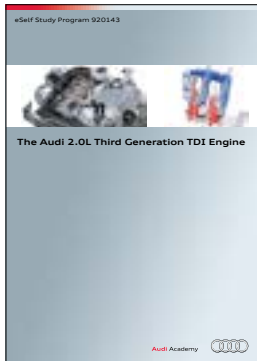
#### Note

Always check the current Fluid Capacity Charts and Maintenance information for the latest requirements and specifications.

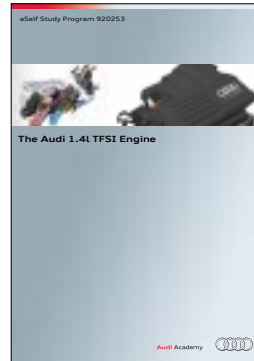


# Self-study programs

For more information about the technology of the Audi A4, please refer to the following self study programs.



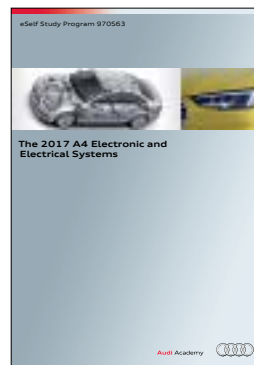
[SSP 920143](#)  
[The Audi 2.0l Third Generation TDI Engine](#)



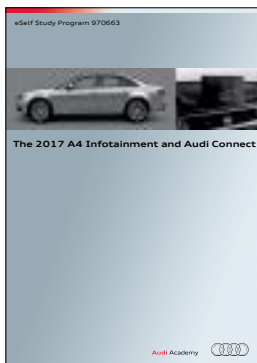
[SSP 920253](#)  
[The Audi 1.4l TFSI Engine](#)



[SSP 922903](#)  
[The 2.0L 4V TFSI Engine with AVS](#)



[SSP 970563](#)  
[The 2017 A4 Electronic and Electrical Systems](#)



[SSP 970663](#)  
[The 2017 A4 Infotainment and Audi Connect](#)



# Knowledge assessment

An On-Line Knowledge Assessment (exam) is Available for this eSelf-Study Program.

The Knowledge Assessment is required for Certification credit.

You can find this Knowledge Assessment at:

[www.accessaudi.com](http://www.accessaudi.com)

From the [accessaudi.com](http://accessaudi.com) Homepage:

- ▶ Click on the “ACADEMY” tab
- ▶ Click on the “Academy site” link
- ▶ Click on the Course Catalog Search and select “990263 - The 2017 A4 Introduction”

Please submit any questions or inquiries via the Academy CRC Online Support Form which is located under the “Support” tab or the “Contact Us” tab of the Academy CRC.

*Thank you for reading this eSelf-Study Program and taking the assessment.*



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