



## Audi Q3

The material in this Self Study Program (SSP) may contain technical information or reference vehicle systems and configurations which are not available in the Canadian market.

Please ensure you reference ElsaPro for the most current technical information and repair procedures.

As the most recent and compact addition to the Audi SUV series, the Audi Q3 caters to the demands of a modern, urban world while offering all the authentic plus-points of an SUV (Sports Utility Vehicle). It complements the successful Audi SUV family started in March 2006 with the launch of the Audi Q7. The Audi Q5 is the sports car among SUVs and has successfully led the way in the premium mid-range SUV segment since 2008.

The Audi Q3 stands out by virtue of its sporty, muscular appearance and its modern, coupe-like styling, and yet it is an authentic SUV through and through. This concept makes the Audi Q3 appealing to more than one target group because it meets a wide variety of customer requirements.

The charismatic Audi Q3 is not what you would consider a "smaller sibling of the Q5 and Q7", but a vehicle with a very distinctive identity. It has the rugged character of a fully-fledged A-segment SUV coupled with a coupe-like styling unmatched in this segment — and yet it has all the hallmarks of an Audi. The Audi Q3 is compact, flexible and functional and therefore is also a good option for people who do a lot of city driving.

The growing number of Audi model series has also led to a growing number of production sites. While the Audi Q3 is an all-new addition to the model range, the production facility in Martorell (Seat Spain) is a new addition to the Audi production network.



602\_012

#### Learning objectives of this Self Study Programme:

This Self Study Programme provides you with general information about the Audi Q3. After you have worked your way through this Self Study Programme, you will be able to answer the following questions:

- ▶ What defines the deployment stages of the airbag?
- ▶ What materials are used in the B post?
- ▶ Which unit bearings are used in the gearbox?
- ▶ How is the damper control function monitored?
- ▶ Which sensors are integrated in the electromechanical parking brake control unit?
- ▶ What modifications have been made to Audi active lane assist?
- ▶ Which new adapters are available for the Apple iPod?

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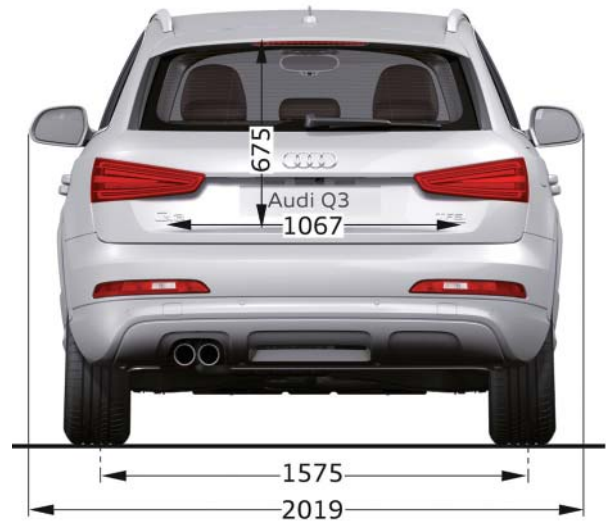
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# Introduction

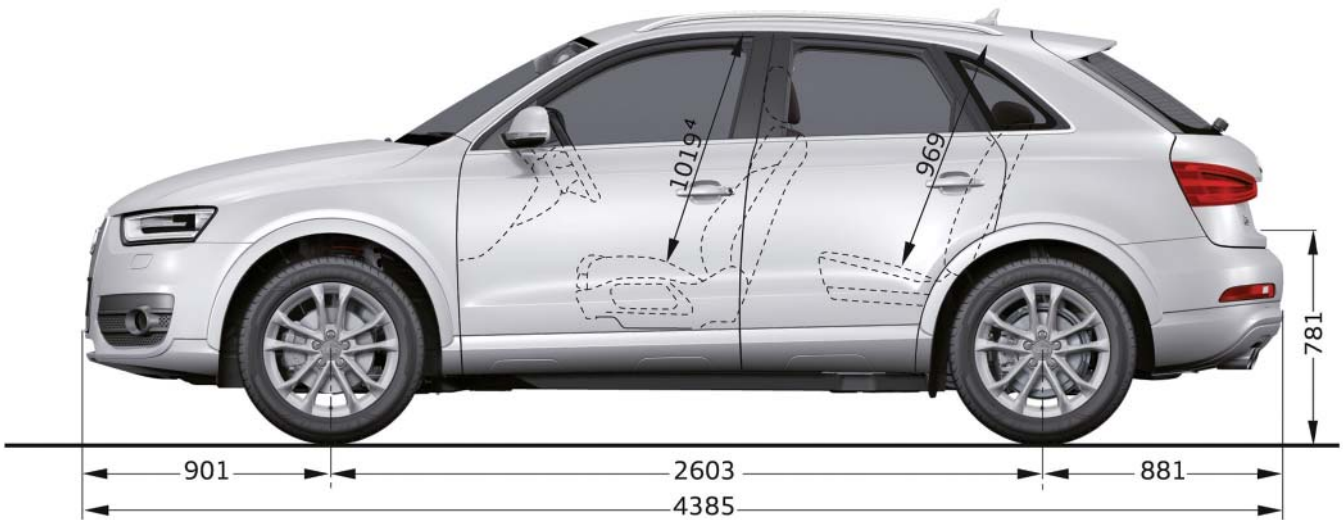
## In brief



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The Self Study Programme teaches a basic knowledge of the design and functions of new models, new automotive components or new technologies.

**It is not a Repair Manual! Figures are given for explanatory purposes only and refer to the data valid at the time of preparation of the SSP.**

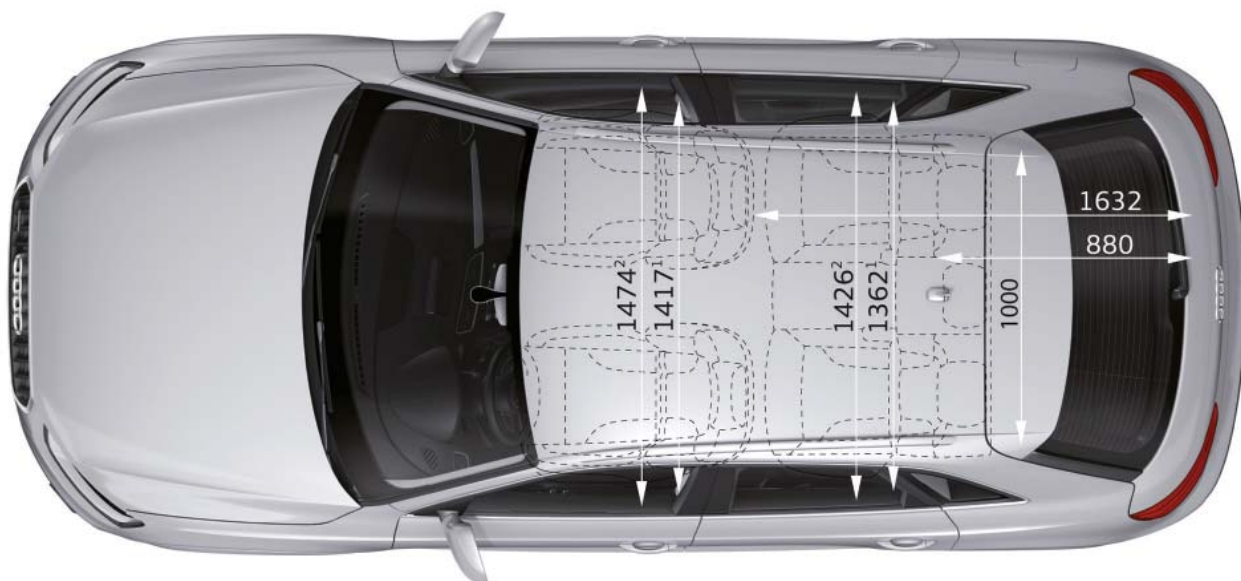
For maintenance and repair work, always refer to the current technical literature.



Note



Reference



602\_036

<b>Length</b> in mm	4385	<b>Cabin width, front</b> in mm	1417
<b>Width</b> in mm	1831	<b>Cabin width, rear</b> in mm	1362
<b>Height</b> in mm	1608	<b>Headroom, front</b> in mm	1019
<b>Track width, front</b> in mm	1571	<b>Headroom, rear</b> in mm	969
<b>Track width, rear</b> in mm	1575	<b>Through-loading width</b> in mm	1067
<b>Wheelbase</b> in mm	2603	<b>Load sill height</b> in mm	781
<b>Trailer load</b> in kg with brake at a gradient of 8 %	2000	<b>Boot capacity</b> in l	460/1365
<b>Kerb weight</b> in kg	1510	<b>Tank capacity</b> in l	64
<b>Max. gross weight</b> in kg	2110	<b>Drag coefficient</b> in $c_w$	0,32

<sup>1)</sup> width, shoulder room

<sup>2)</sup> width, elbow room

<sup>3)</sup> without a roof aerial, vehicle height is reduced by 18 mm.

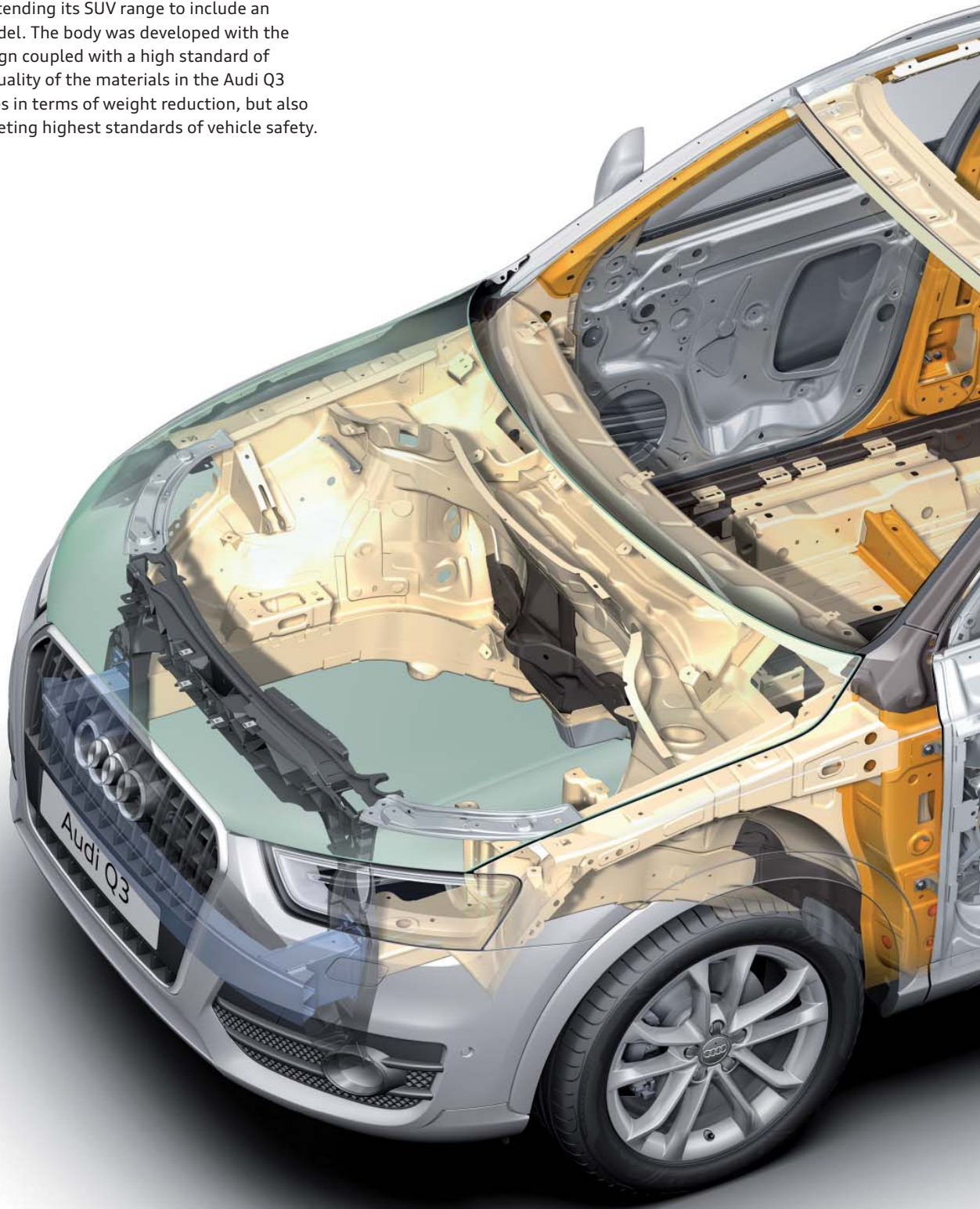
<sup>4)</sup> maximum headroom

All dimensions are given in millimetres and refer to the unladen weight of the vehicle.

# Body

## Overview

The Audi Q3 sees Audi extending its SUV range to include an A-segment derivative model. The body was developed with the focus on lightweight design coupled with a high standard of vehicle safety. The high quality of the materials in the Audi Q3 offers not only advantages in terms of weight reduction, but also provides the basis for meeting highest standards of vehicle safety.



## Attachments


The attachments, and specifically the doors, are of lightweight steel construction with double sealing lines and sealed joints. Further weight reductions were achieved by the use of aluminium in the bonnet and tailgate.

The body including attachments weighs 423 kg, the body cell accounting for 303 kg and attachments for the remaining 120 kg.



602\_099

**Key:**

- |   |                             |   |   |
|---|-----------------------------|---|---|
|  | Mild steels                 |  | Ultra-high-strength steels              |
|  | High-strength steels        |  | Ultra-high-strength steels (hot-formed) |
|  | Modern high-strength steels |  | Aluminium panels                        |



## Body structure

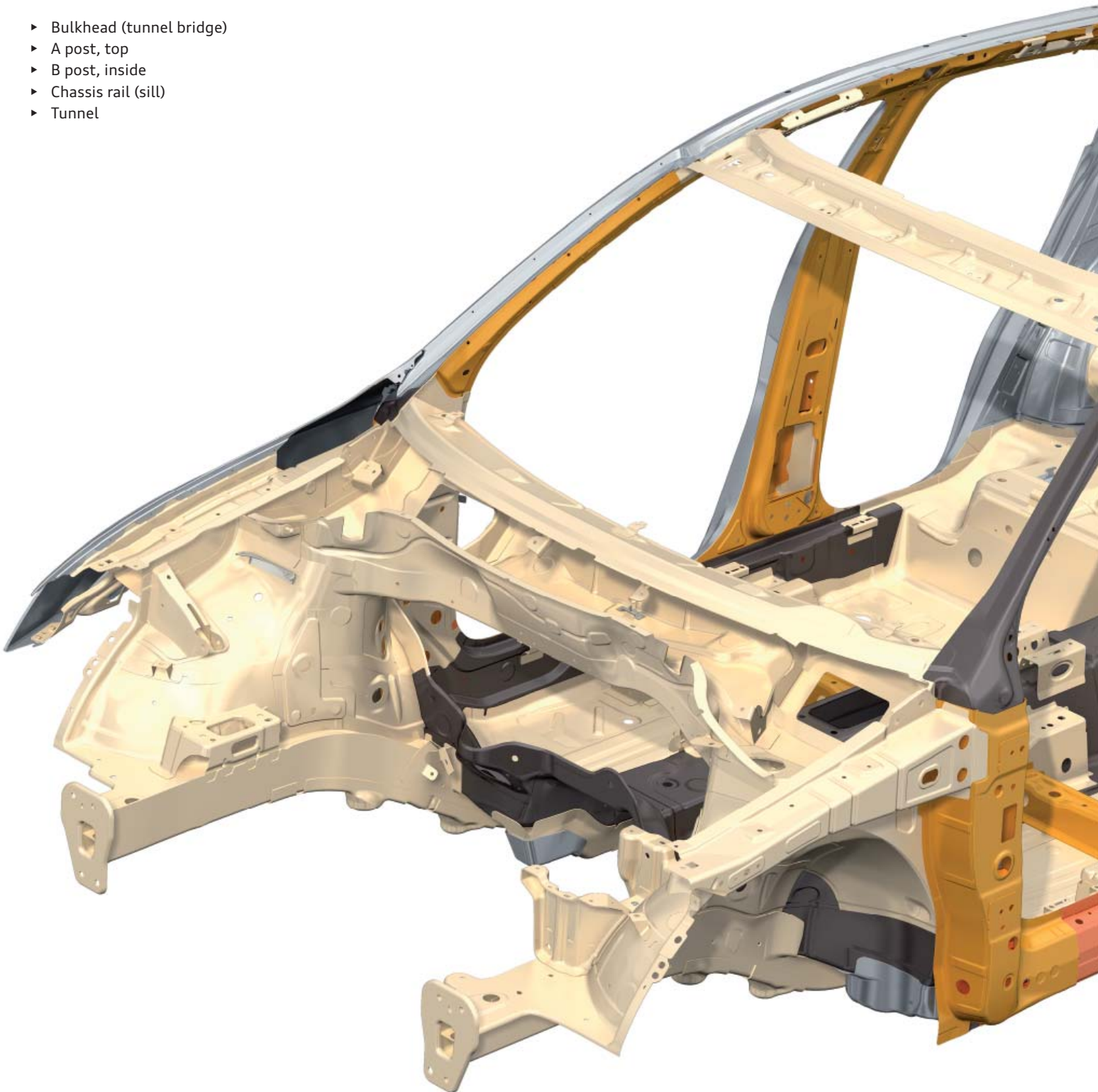
Resistance spot welding is mainly used as a joining method in body construction for the Audi Q3. There are approximately 4000 spot welds in the body cell of the Audi Q3. In addition, resistance spot welds are combined with a high-strength bonding process in the body areas with critical requirements, such as vibration comfort and passive safety.

Adhesive bonds are increasingly assuming sealing and corrosion protection functions in the Audi Q3. A special expanding adhesive is used in the plenum chamber area, eliminating the need for additional sealing. In total, approximately 74 m of adhesive is used in the body cell.

## Ultra-high-strength hot-formed components

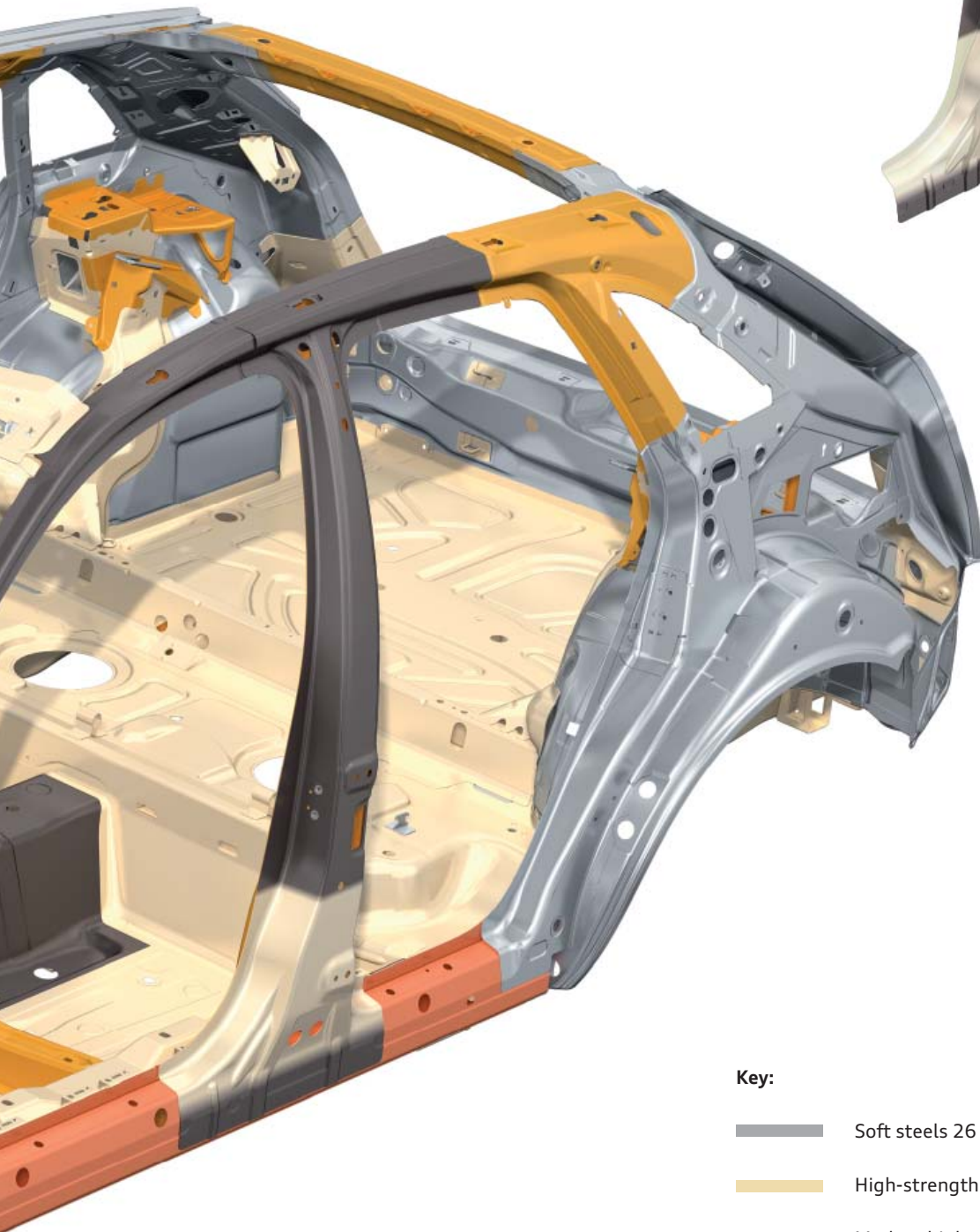
Ultra-high-strength hot-formed components are installed in the following areas:

- ▶ Bulkhead (tunnel bridge)
- ▶ A post, top
- ▶ B post, inside
- ▶ Chassis rail (sill)
- ▶ Tunnel



## B post, inside

The B post of the Audi Q3 is partially tempered in the shaping process. This imparts ultra-high-strength properties to the steel in top and bottom sections and only high-strength properties to the steel in the mid-section. This allows the forces exerted on the vehicle body during a side impact to be effectively absorbed.



602\_101

602\_100

### Key:

- Soft steels 26 %
- High-strength steels 42 %
- Modern high-strength steels 15 %
- Ultra-high-strength steels 4 %
- Ultra-high-strength steels (hot-formed) 13 %

## Panorama glass sunroof

The Audi Q3 can be equipped with a panorama glass sunroof. The panorama glass sunroof consists of an opening front glass element and a fixed rear glass element.

It is designed as an externally guided roof system. In this concept, the front glass panel "rides" over the rear glass panel, increasing the headroom inside the occupant cell.

### Operating elements

The operating elements of the roof system are located in the front light module above the rear-view mirror. The glass panel is opened by means of a four-way switch and always moves in the direction in which the switch is pressed or pushed. It is a two-stage switch. With the first stage, the panel can be moved manually into any position.

With the second stage, the panel moves automatically into its end position. The lift position is obtained by pressing the switch and the close position by pulling the switch.



602\_102

### Reinforcing frame

The body versions with and without panorama glass sunroof achieve the same level of rigidity by using the reinforcing frame shown in red.



602\_103

## Bumper system

The front bumper combines design with conformity to the various technical requirements relating to vehicle safety, protection of vulnerable road users, ease of repair and long life. The supporting element is the chrome frame around the radiator grille. This frame is inserted into the mounting boxes of the plastic frame during bumper assembly.

The three-part bumper cover and the front spoiler are attached to the radiator grille. This multi-part design allows individual components to be replaced so that minor damage can be repaired with a minimum of expense. This is a factor contributing to the affordable insurance group classification of the Audi Q3.



602\_104

The rear bumper consists of a cover with welded-in enclosing part and a spoiler with integrated diffuser for the exhaust tail pipes. The bumper is attached to the rear of the body via the enclosing part. The pre-assembled guiding parts are attached flush with the body side sections at the side.

The wrap-around tailgate necessitated relocating some of the tail lights into the bumper. These lights are integrated in the enclosing part together with the sensors for the optional Audi side assist system or the keyless entry aerials. The rear sensors for the optional parking aid or park assist function are attached to the spoiler or cover.



602\_105

## Tow bar

At the customer's request, the Audi A3 can be factory-fitted with a tow bar with a manual swivelling ball head. The swivelling ball head is released by pulling a cable. The actuating button is located conveniently on the left-hand side behind the boot side trim.

An LED flashing red or lit green indicates to the customer whether the ball head is locked or released. This ensures that the customer is reliably informed when the tow bar is ready for use or safely swivelled in.

Actuating button for swivelling ball head

Indicator lamp (LED), lit green or flashing red



602\_106

# Occupant protection

## Components

The occupant protection system in the Audi Q3 comprises the following components and systems:

- ▶ Airbag control unit
- ▶ Driver and front passenger airbags
- ▶ Front side airbags
- ▶ Head airbags
- ▶ Front airbag crash sensor
- ▶ Crash sensors for side impact detection in the B posts
- ▶ Crash sensors for side impact detection in the C posts
- ▶ Seat belt warning for all seats
- ▶ Seat belt switches on all seats in the seat belt buckles
- ▶ Seat occupancy sensor in front passenger seat



602\_139

## Additional equipment

The vehicle can optionally be equipped with rear side airbags and/or a keyswitch for deactivating the front passenger airbag with associated warning lamp.

Due to the different requirements and statutory regulations which apply to car makers in the various markets, equipment is subject to change, particularly in the US market.

### Key to figure on page 13:

- E24 Seat belt switch, driver side
- E25 Seat belt switch, front passenger side
- E224 Airbag disabling switch, passenger side (optional)
- E258 Rear seat belt switch, driver side
- E259 Rear seat belt switch, front passenger side
- E609 Rear central seat belt switch

- G128 Seat occupancy sensor, front passenger side
- G179 Side airbag crash sensor, driver side
- G180 Side airbag crash sensor, front passenger side
- G256 Rear side airbag crash sensor, driver side (C post)
- G257 Rear side airbag crash sensor, driver side (C post)
- G283 Front airbag crash sensor, driver side (front end)

- J234 Airbag control unit
- J285 Control unit in dash panel insert
- J533 Data bus diagnostic interface (gateway)

- K19 Seat belt reminder warning lamp
- K75 Airbag warning lamp
- K145 Passenger airbag off warning lamp (PASSENGER AIRBAG OFF) (optional)

- N95 Driver side airbag igniter
- N131 Front passenger side airbag igniter 1
- N153 Seat belt pretensioner igniter 1, driver side
- N154 Seat belt pretensioner igniter 1, front passenger side
- N199 Side airbag igniter, driver side
- N200 Side airbag igniter, front passenger side
- N251 Head airbag igniter, driver side
- N252 Head airbag igniter, front passenger side

- T16 16 pin connector, diagnostic port

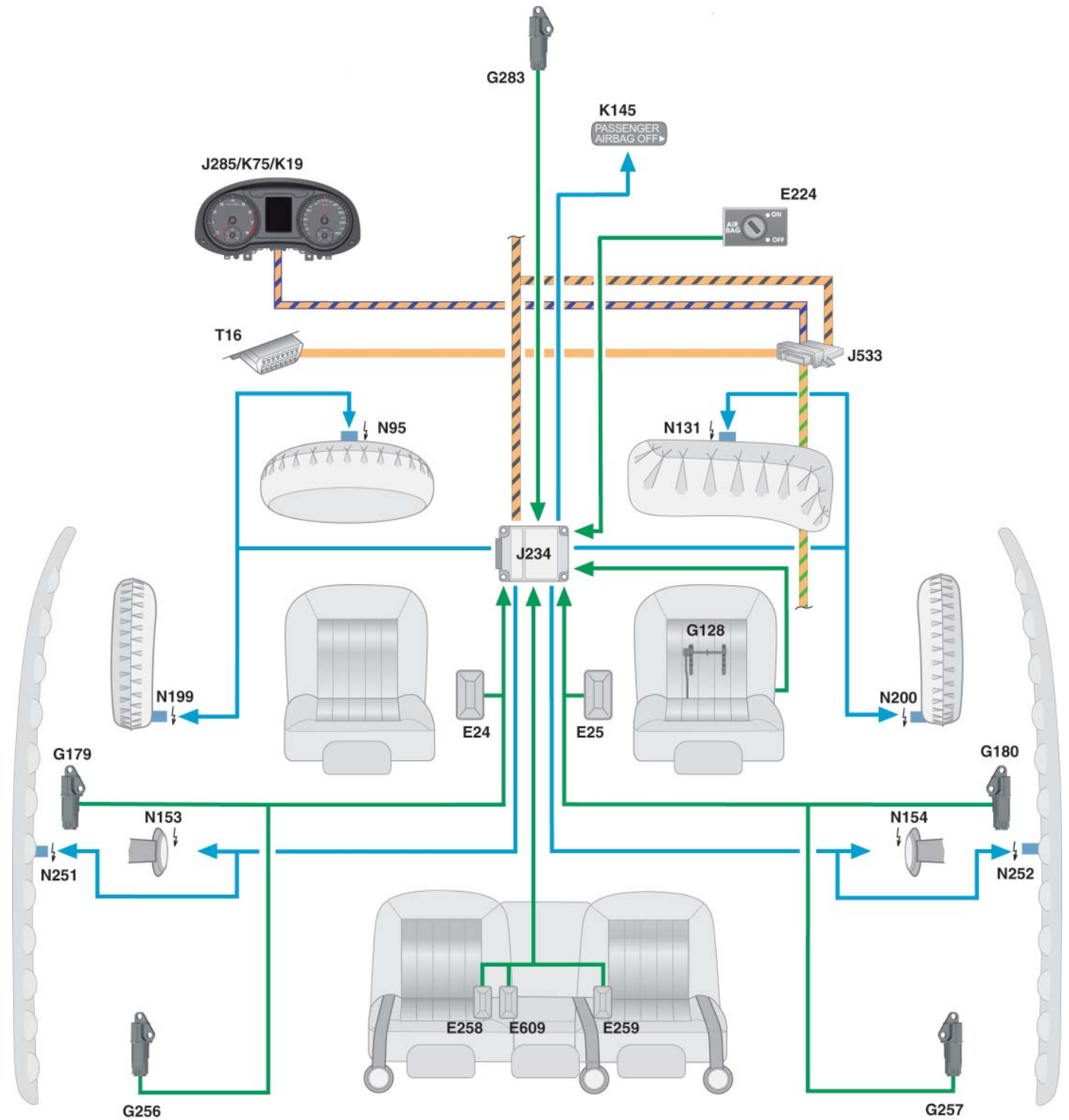


### Note

The diagrams in the chapter "Occupant protection" are schematic diagrams provided for a better understanding.

## System overview

The system overview shows by way of example the equipment options available for a vehicle marketed in Germany.



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### Key:

Powertrain CAN bus

Convenience CAN bus

Input signal

Dash panel insert CAN bus

Diagnostics CAN bus

Output signal

## Front airbags

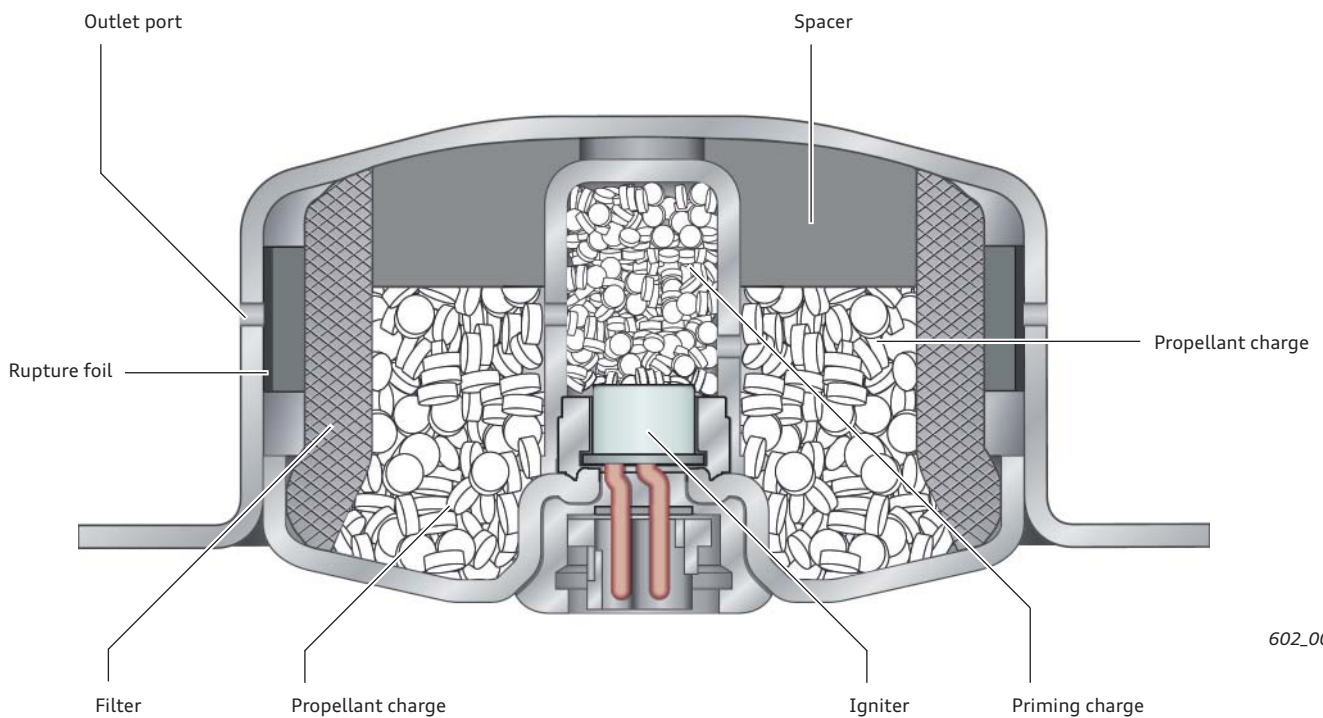
Single-stage airbag modules are used in the Audi Q3 for the driver and front passenger. These are equipped with different gas generators.

On the driver's side there is a solid propellant generator and on the front passenger side a hybrid gas generator which inflates the airbag.

### Driver side airbag igniter N95

The igniter activated by the airbag control unit ignites the priming charge, in turn igniting the actual propellant charge.

If the developing gas pressure exceeds a defined threshold due to combustion of the propellant charge, the rupture foil opens the outlets admitting the gas to the airbag. The airbag unfolds and is inflated.

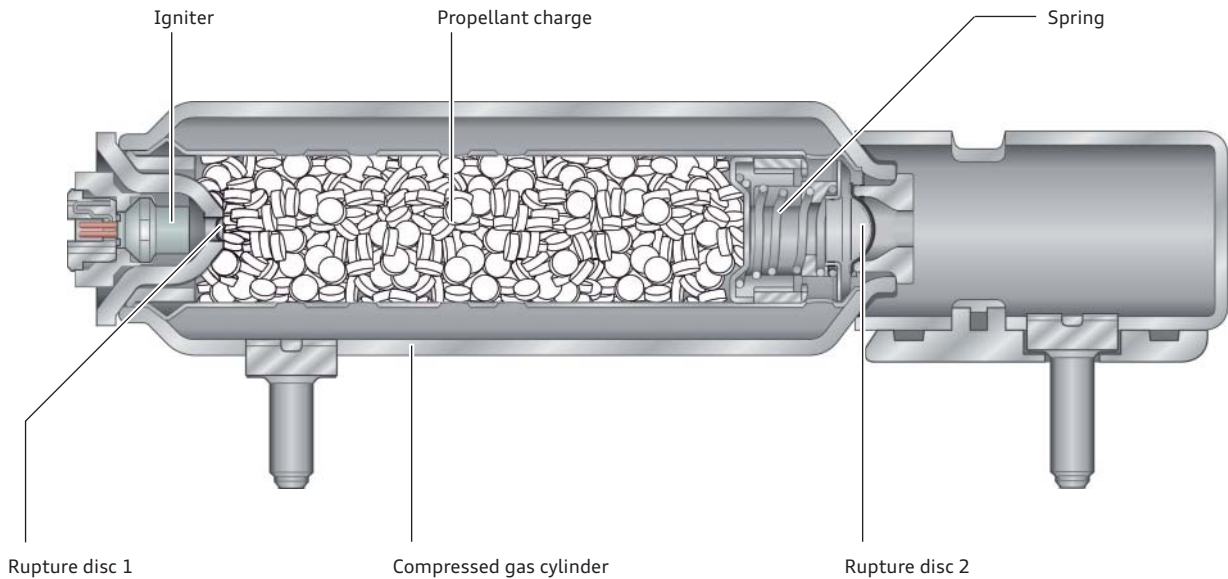


602\_001

## Front passenger side airbag igniter 1 N131

The airbag control unit J234 activates the front passenger side airbag igniter 1 N131. The activated igniter breaks the rupture disc 1 and ignites the propellant charge.

Due to the combustion of the propellant charge, the pressure inside the compressed gas cylinder rises to the point at which rupture disc 2 breaks. The gas mixture unfolds and inflates the airbag.



602\_002

### Definition of terminology used for airbags in Audi vehicles

The deployment stages of an airbag were previously defined by the propellant charges inflating the airbag with gas. Today, the deployment stages of an airbag are determined by the number of installed igniters. In this context, it does not matter if an igniter ignites a propellant charge or activates an adaptivity feature (opening of an additional outlet).

Igniter	Propellant charges	Adaptivity	Old designation Settings	New designation Settings
1	1	None	1	1
2	2	None	2	2
2	1	yes	1	2
3	2	yes	2	3



## Airbag control unit

Basically, the task of the airbag control unit J234 is to detect a crash, evaluate all input information and activate the relevant systems accordingly.

The airbag control unit is installed beneath the centre console.

## Head airbags

Gas generators with pressurised gas cylinders are used for inflating the airbags. In these gas generators, the igniters have only the task of opening the compressed gas cylinders. The escaping compressed gas unfolds and inflates the airbags. The head airbags are designed in such a way that, after unfolding, they cover nearly the entire window area in the occupant cell.

## Side airbags

The side airbags are so-called "soft cover modules" identical to those used in other Audi modules as well. These modules are equipped with solid propellant generators.

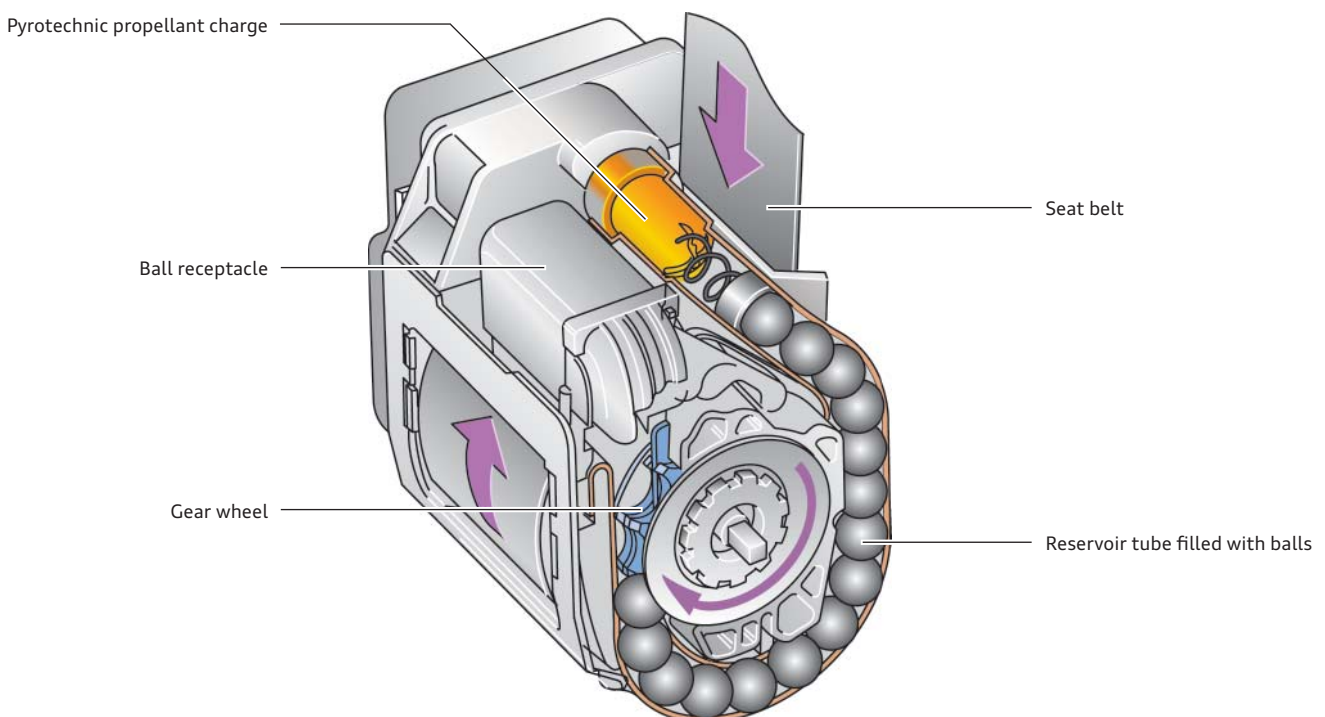
## Inertia reel seat belts

The Audi Q3 is equipped with pyrotechnic seat belt tensioners in the front seats. The familiar ball-type seat belt tensioners are used.

The seat belt tensioners are driven by balls stored in a reservoir tube. In the event of a crash, the propellant charge is ignited by the airbag control unit.

If the propellant charge is ignited, the expanding gases set the balls in motion, driving them around a gear wheel into the ball receptacle.

The seat belt reel is coupled to the gear wheel and also rotated by the balls, tautening/tensioning the seat belt.



602\_011

## Seat belt reminder

### Front seat belt reminder

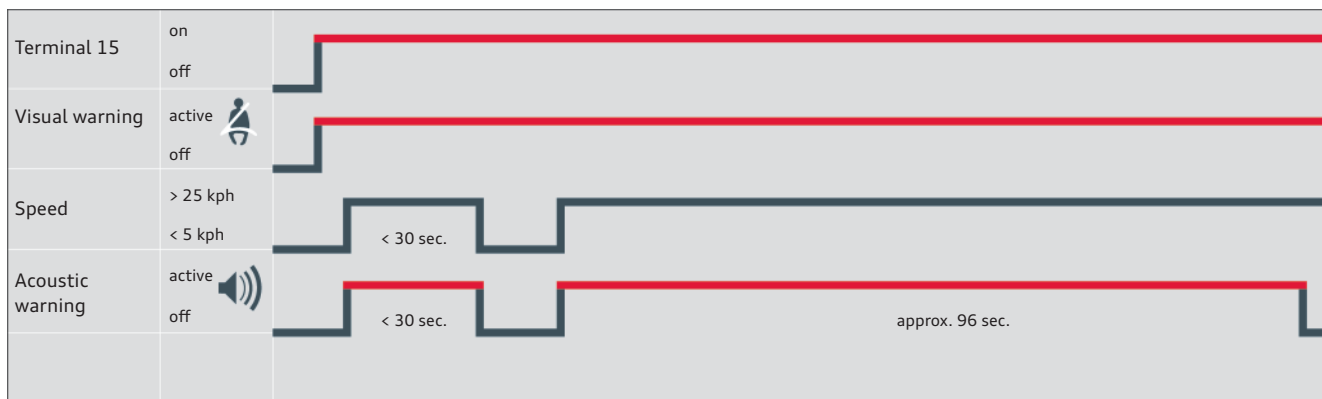
If the front occupants are not wearing their seat belts, they are alerted to this by the seat belt reminder warning lamp K19 after the ignition is turned on.

The warning lamp K19 comes on if the driver and/or front passenger has not fastened his/her seatbelt. When the vehicle exceeds a speed of 25 kph, the front occupants are also reminded to put on their seat belt by an acoustic signal.

If the acoustic warning has started and the vehicle decelerates to a speed of less than 5 kph within the first 30 seconds, the acoustic warning is suppressed. If the vehicle's speed increases again to above 25 kph, the acoustic warning resumes. If the first 30 seconds have elapsed since commencement of the acoustic warning, the acoustic warning does not stop unless the seat belts are fastened.

The total duration of the acoustic warning is limited to 126 seconds. The acoustic warning also varies in volume and frequency.

### Seat belts not fastened warning



602\_004

### Rear seat belt reminder

After the ignition is turned on, the status of the seat belts (fastened/not fastened) is indicated on the centre display of the dash panel insert for 31 seconds.

Each change of status is indicated for an additional 31 seconds. If a rear passenger removes his/her seat belt while the vehicle is travelling (at a speed higher than 25 kph), an acoustic warning sounds once and the relevant indicator on the centre display flashes for 31 seconds.

The airbag control unit J234 receives signals from the rear belt switches on the driver side E258, on the front passenger side E259 and in the centre E609 indicating whether the seat belts are fastened.

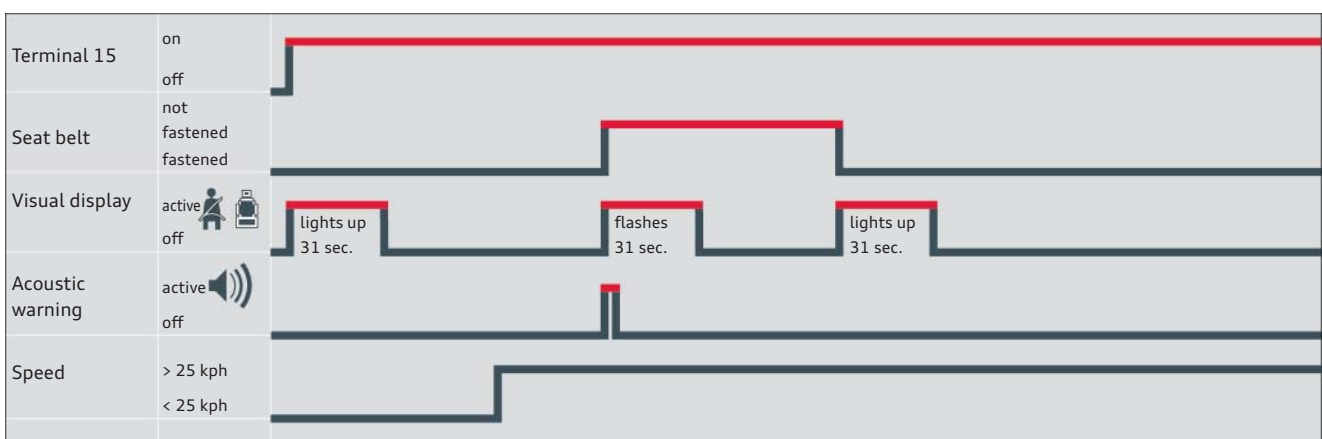


Seat belt fastened

Seat belt not fastened

602\_005

### Warnings on rear seat belt status



602\_006

# Engines

## The 2.0l TFSI engine

### Technical features

- ▶ Charging by means of exhaust turbocharger
- ▶ Start-stop system and recuperation
- ▶ Four-valve cylinder head with camshaft phaser on the intake side
- ▶ Adapted belt drive (minus the power steering pump)
- ▶ Engine management by timing chain
- ▶ Intake manifold with flaps
- ▶ Volume-controlled oil pump
- ▶ Upgraded high-pressure injectors



602\_009



### Reference

For further information about the design and operation of the 2.0l TFSI engine, refer to Self-Study Programme 436 "Modifications to the chain-driven 4-cylinder TFSI engine".

## Specifications

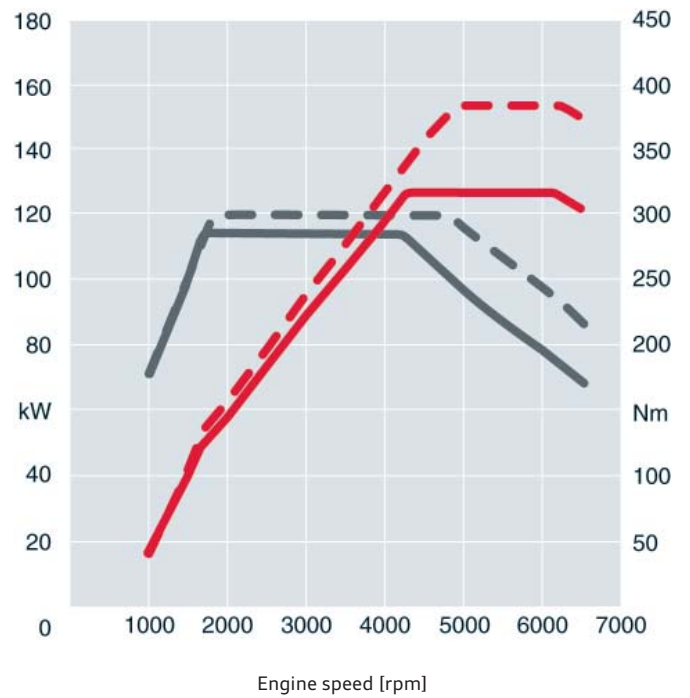
### Torque-power curve

#### 2.0l TFSI engine with engine code CCZC

- Power in kW
- Torque in Nm

#### 2.0l TFSI engine with engine code CPSA

- - - Power in kW
- - - Torque in Nm



602\_010

Engine code	CCZC	CPSA
<b>Type</b>	Four-cylinder inline engine	Four-cylinder inline engine
<b>Displacement</b> in cm <sup>3</sup>	1984	1984
<b>Power output</b> in kW (hp) at rpm	125 (170) at 4300 – 6200	155 (211) at 5000 – 6200
<b>Torque</b> in Nm at rpm	280 at 1700 – 4200	300 at 1800 – 4900
<b>Number of valves per cylinder</b>	4	4
<b>Bore</b> in mm	82.5	82.5
<b>Stroke</b> in mm	92.8	92.8
<b>Compression ratio</b>	9.6 : 1	9.6 : 1
<b>Powertrain type</b>	<ul style="list-style-type: none"> <li>▶ quattro 6-speed manual gearbox</li> <li>▶ quattro 7-speed S tronic</li> </ul>	<ul style="list-style-type: none"> <li>▶ quattro 7-speed S tronic</li> </ul>
<b>Engine management</b>	Bosch MED 17.1	Bosch MED 17.1
<b>Fuel</b>	Premium unleaded (sulphur-free) 95 RON	Premium unleaded (sulphur-free) 95 RON
<b>Emissions standard</b>	EU V	EU V
<b>CO<sub>2</sub> emission</b> in g/km	174	179

## 2.0l TDI engine (2nd gen)

### Technical features

- ▶ Common rail injection system with exhaust turbocharger
- ▶ Electromagnetic injectors
- ▶ Engine management via timing chain
- ▶ Injection system with injection pressures of up to 1800 bar
- ▶ Twin balancer shafts
- ▶ Adapted belt drive (minus the power steering pump)
- ▶ 4/2-way valve in the cooling system
- ▶ Electrical exhaust gas recirculation valve
- ▶ Low temperature EGR cooling
- ▶ Particulate filter with separate, integrated oxidising catalytic converter
- ▶ Start-stop system and recuperation



602\_008



### Reference

For further information on the design and operation of the 2.0l TDI engine, refer to Self Study Programme 420 "The 2.0l TDI Engine with Common Rail Injection System" and Self Study Programme 442 "The 1.6l TDI Engine with Common Rail Injection System".

## Specifications

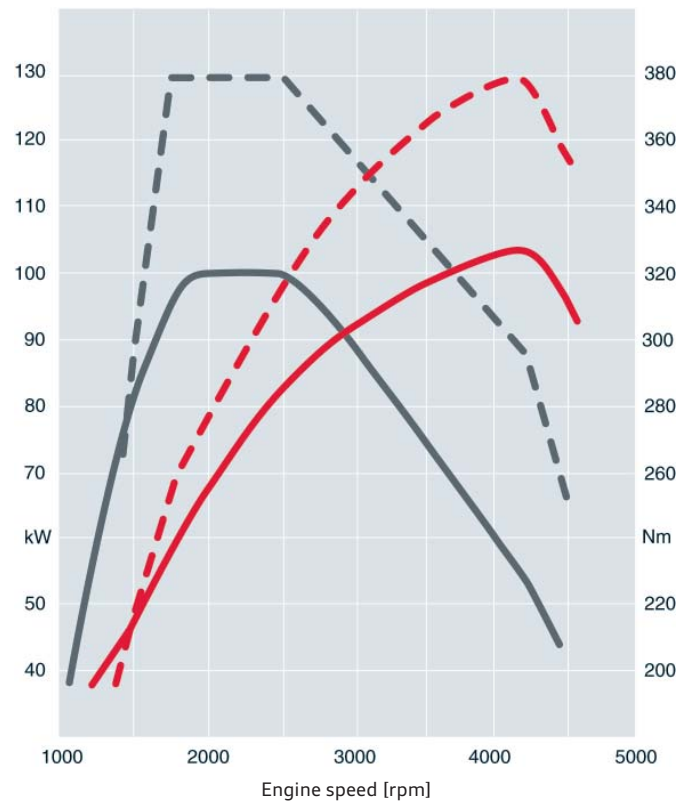
### Torque-power curve

#### 2.0l TDI engine with code CFFB

- Power in kW
- Torque in Nm

#### 2.0l TDI engine with code CFGC

- - - Power in kW
- - - Torque in Nm



602\_032

Engine code	CFFB	CFGC
<b>Type</b>	Four-cylinder inline engine	Four-cylinder inline engine
<b>Displacement</b> in cm <sup>3</sup>	1968	1968
<b>Power output</b> in kW (hp) at rpm	103 (140) at 4200	130 (177) at 4200
<b>Torque</b> in Nm at rpm	320 at 1750 – 2500	380 at 1750 – 2500
<b>Number of valves per cylinder</b>	4	4
<b>Bore</b> in mm	81.0	81.0
<b>Stroke</b> in mm	95.5	95.5
<b>Compression ratio</b>	16.5 : 1	16.5 : 1
<b>Powertrain type</b>	<ul style="list-style-type: none"> <li>▶ 6-speed manual gearbox (front-wheel drive)</li> <li>▶ 6-speed manual gearbox (quattro)</li> <li>▶ quattro 7-speed S tronic</li> </ul>	<ul style="list-style-type: none"> <li>▶ quattro 7-speed S tronic</li> </ul>
<b>Engine management</b>	Bosch EDC 17 CR	Bosch EDC 17 CR
<b>Fuel</b>	Diesel to EN 590	Diesel to EN 590
<b>Maximum injection pressure</b> in bar	1800	1800
<b>Emissions standard</b>	EU V	EU V
<b>CO<sub>2</sub> emission</b> in g/km	138	156

## Engine/gearbox mounting

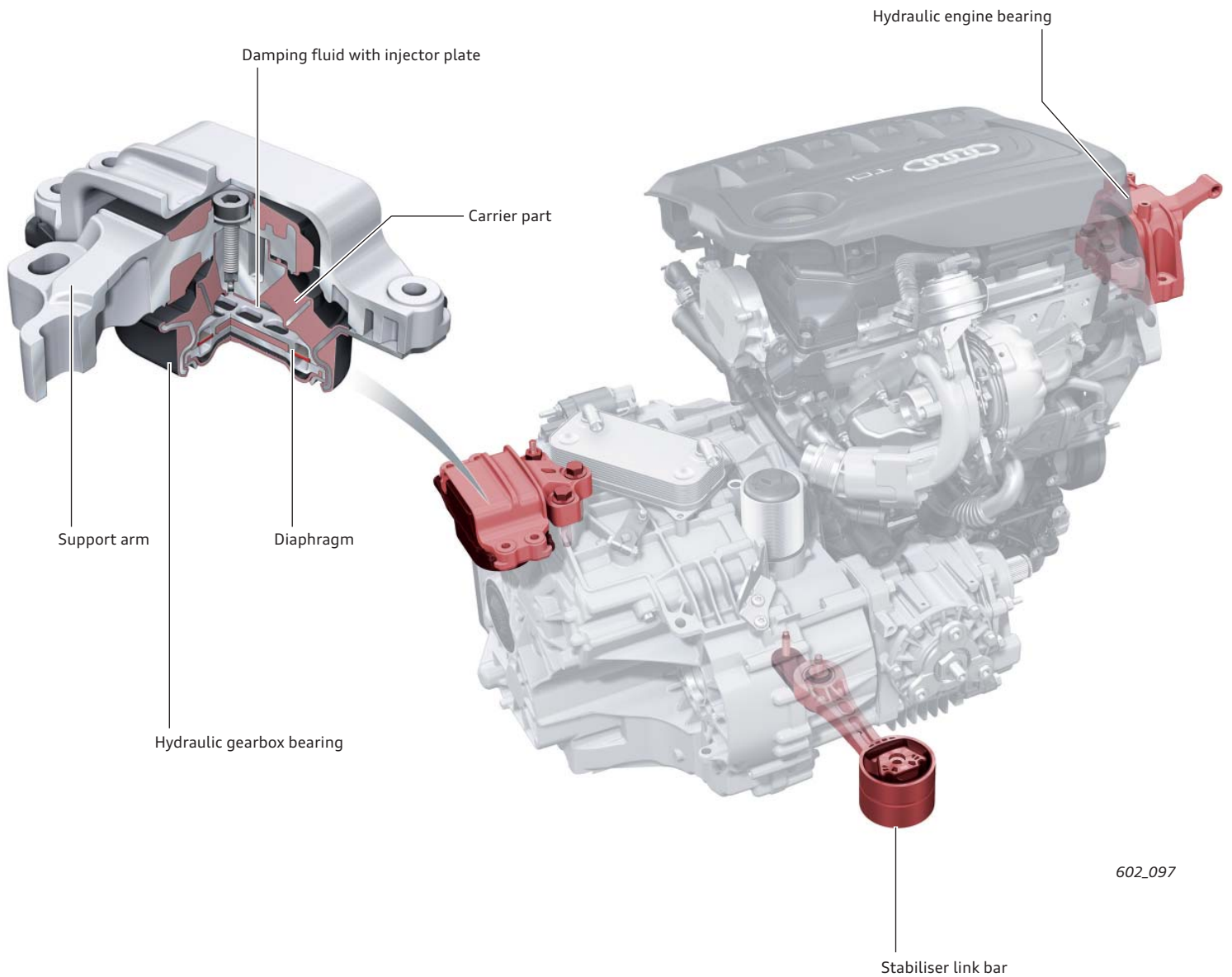
The engine/gearbox mounting is a key factor influencing noise and vibration comfort in a vehicle. Because of the dynamic and sporty suspension set-up, hydraulic unit bearings are used in the Audi Q3.

A standard torque roll bearing, also known as a self-aligning bearing, is used for transverse mounted engines. It is based on the separation of the lead-bearing and torque multiplication functions.

The hydraulic damping in the bearings essentially reduces low-frequency engine/gearbox movements and thus optimises vibration comfort.

The resultant engine torque is absorbed by the stabiliser link rod, which is designed as an elastomer bearing and connected directly to the gearbox and vehicle body via the subframe.

### Overview



602\_097

## Fuel system

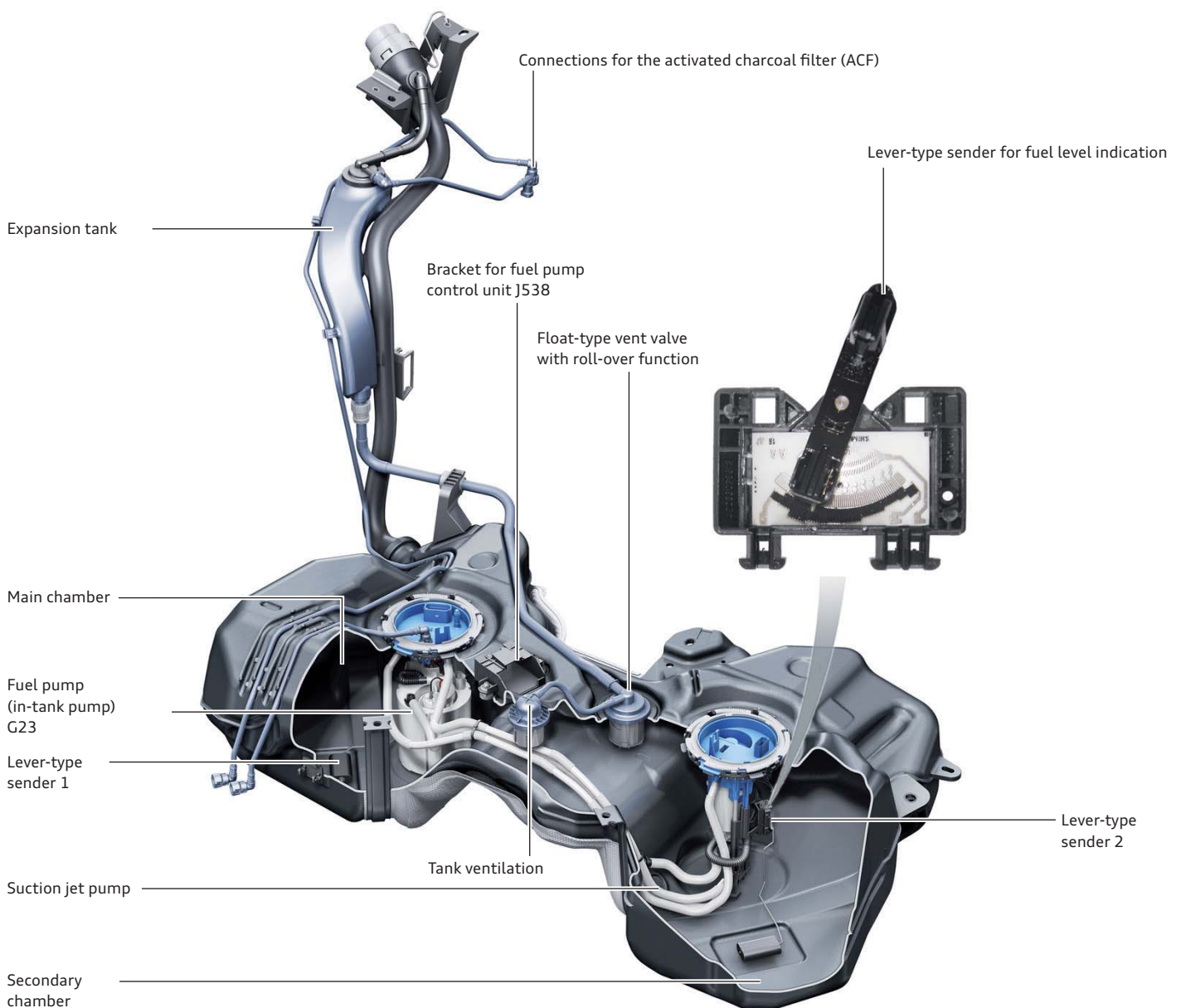
The vehicle has a 64 litre saddle tank. A favourable filler tube routing and a continuously rising fuel vent line allow easy refueling.

A lever-type sender in each of the main and secondary chambers ensures high display accuracy. A three-wire thick film sensor is used for fuel level indication. The additional wire supplies redundant information that can be used to arithmetically eliminate contact resistance due to aggressive fuels. Consequently, contact resistance is no longer a factor affecting the accuracy of fuel level indication.

The lever-type sensor is mounted to the bottom-supported swirl-pot of the fuel delivery unit. Fuel supply to the petrol and diesel engines is regulated according to demand. Only the actual amount of fuel needed is made available. Brushless, electrically commutated fuel pumps are used.

Only one tank version is available for the European-market petrol and diesel engines. The fuel tank is ready for new fuel types E10<sup>1)</sup> and B7<sup>2)</sup>.

## Fuel tank and fuel level sender



602\_096

<sup>1)</sup> E10 = petrol with a 10 % ethanol content

<sup>2)</sup> B7 = diesel with a 7 % biodiesel content



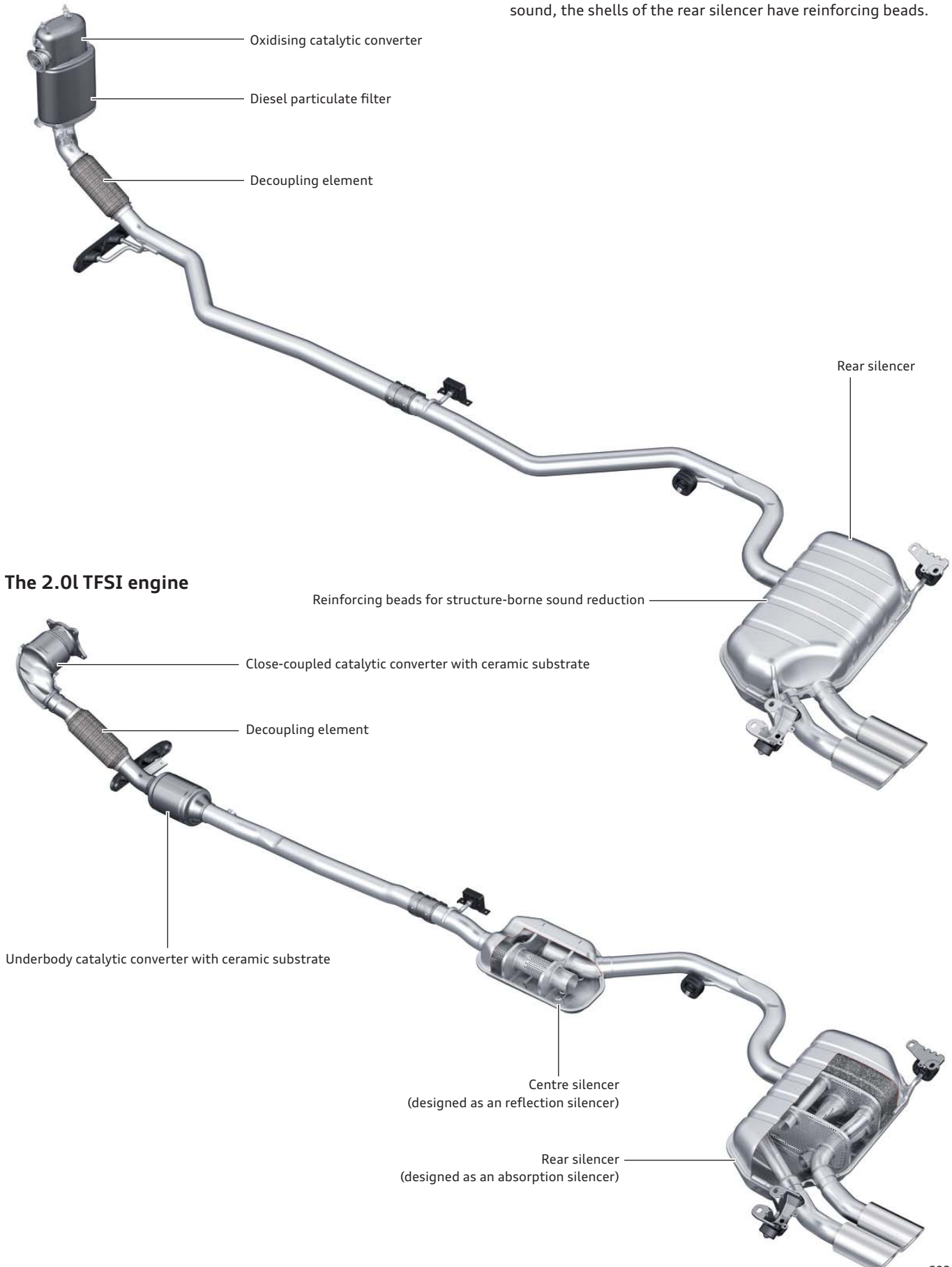
## Exhaust systems

The overall weight of the usual exhaust systems was reduced by using high-grade stainless steel, low wall thickness in the exhaust pipes and lightweight silencers.

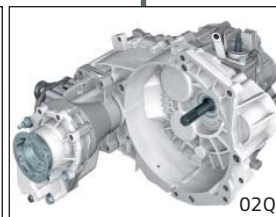
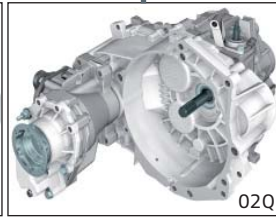
Due to its low weight and low exhaust backpressure, the overall catalytic converter and silencer system significantly reduces CO<sub>2</sub> emissions.

### 2.0l TDI engine

Both ceramic and metal catalytic converter substrates are used in the exhaust gas aftertreatment system. To reduce structure-borne sound, the shells of the rear silencer have reinforcing beads.



## Engine/gearbox combinations



### Gearbox designations:

- 0BB 6-speed manual gearbox (front-wheel drive)
- 02Q 6-speed manual gearbox (quattro)
- 0BH 7-speed double clutch gearbox - S tronic (quattro)

# Running gear

## Overview

A fundamental goal in the development of the suspension system for the Audi Q3 was to set new standards in driving experience in this premium SUV segment. Focal points were driving enjoyment, sportiness and driving comfort in addition to good off-road capability. Special emphasis was placed on providing the Audi Q3 with a balanced suspension set-up. The Audi Q3 delivers the classic Audi driving experience coupled with long-distance driving comfort and excellent off-road performance.

To achieve this, use is made of a newly designed McPherson strut front axle with aluminium wishbones and a multi-link rear suspension. This was done by combining an array of innovations comprising proven and systematically enhanced component solutions.

The improved axles for front and quattro drive are basically the same as those in the Audi A3 '04, but have been readapted for the Audi Q3 with entirely new elastokinematics. The good driving experience results from the low gross weight (the Q3 with 2.0 TFSI engine weighs 1530 kg to DIN unladen), an axle load distribution of 58.5 % on the front axle, the wide track on the front axle (1571 mm) and rear axle (1575 mm) as well as a range of tyres with very large diameters from 16 to 19 inches.

In the basic version, the Audi Q3 has a 16 inch brake system as standard on the front and rear axles and an electromechanical parking brake.



602\_043

## Versions

Three different suspension versions are available for the Audi Q3. The regular suspension system is standard. A sports suspension 20 mm lower than the standard suspension is optional. The sports suspension is designed specially for customers who attach more importance to sportiness and agility than to off-road performance.

The likewise optional electronic damper controls system offers more advanced fine tuning of the driving dynamics in combination with Audi drive select. It significantly improves driving comfort without neglecting meeting the demands on a sporty SUV. The ride height of the suspension system with electronic damper control is identical to that of the standard suspension system.

# Axles

## Front axle

The front axle of the Audi Q3 is based on the transverse platform of the Group. A key new development is the rear control arm bearing. It is a major factor contributing to the outstanding steering response and agility of the Audi Q3. The minimal bearing motion in the transverse direction provides a high camber thrust rate and optimal cornering stability.

The kinematic front axle configuration in combination with the design of the rubber bearings results in neutral handling at the limit of traction with slight understeer and is therefore easily manageable. A large castor angle and a large castor offset at wheel centre provide good straightline stability.



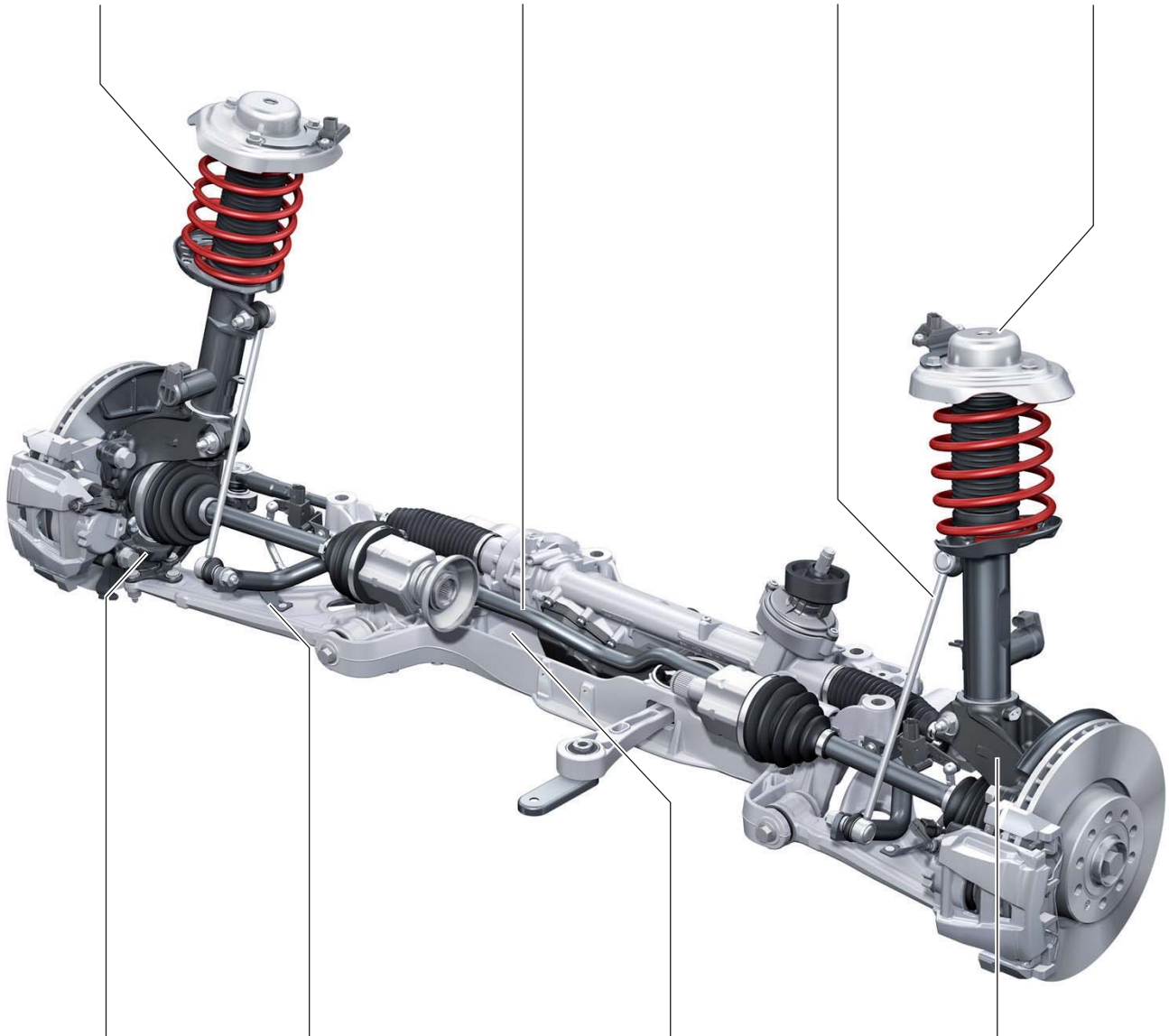
602\_044

Linear-rate steel springs with progressive-rate polyurethane auxiliary springs

Tube-type anti-roll bar

Anti-roll bar tie rod

Coil-over suspension strut bearings with separate spring/damper mountings



The control arm and wheel carrier are connected by a spherical joint.

Wishbone  
Forged aluminium part

Three-piece engine/gearbox mounting  
Aluminium chill casting

Wheel carrier  
Nodular cast iron

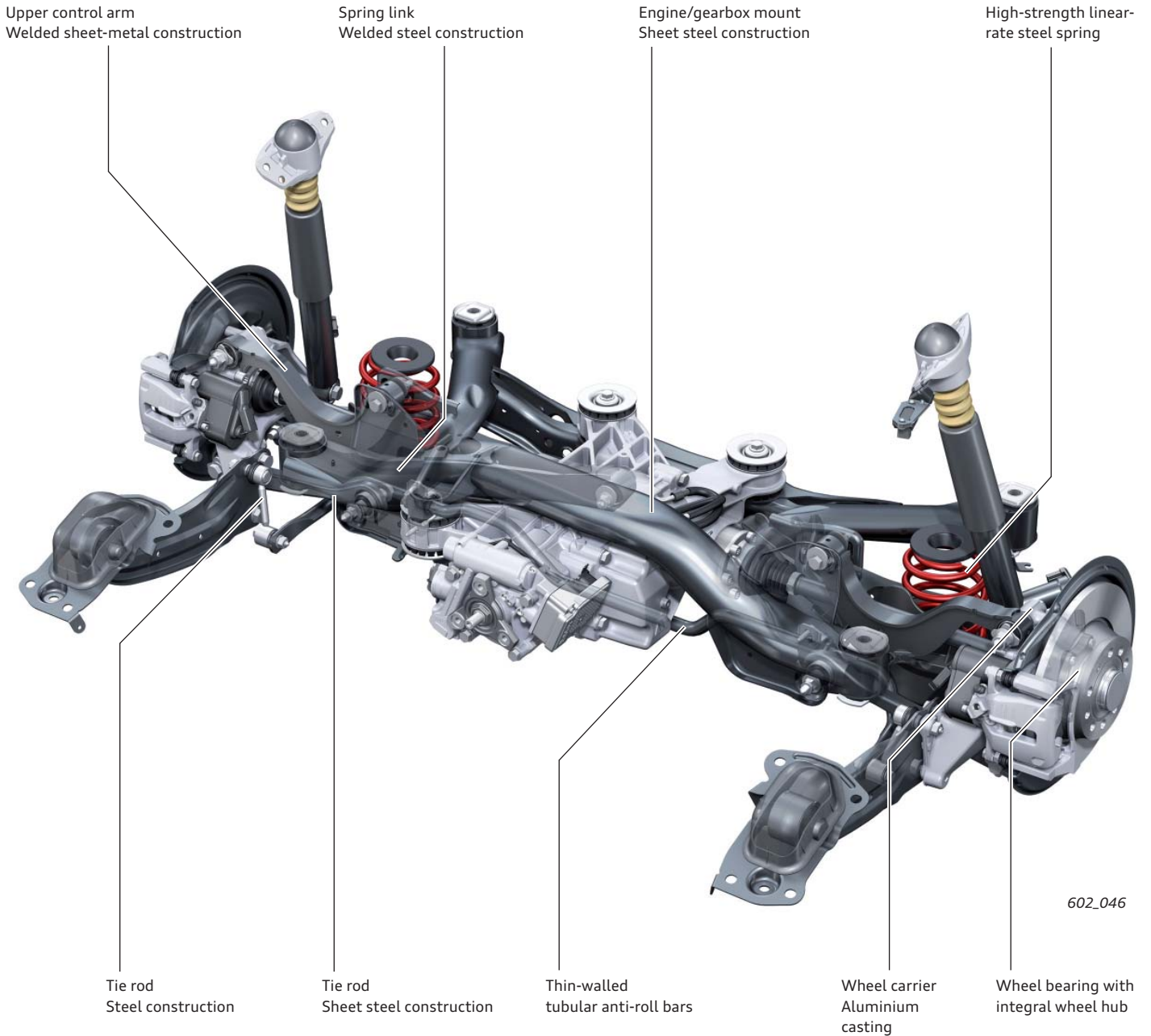
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## Rear axle

The Audi Q3 has a four-link suspension based on the suspension system already used on the Audi A3 '04 and Audi TT '07. The engine/gearbox carrier also supports the rear axle differential in the quattro version.

The axle components of the front wheel drive and quattro models are identical.

The components and bearing elements are designed on the premise that high transverse rigidity means greater agility, sportiness and driving safety and that longitudinal resiliency means enhanced driving and roll comfort.



## Chassis alignment and set-up

Provision has been made for individual front axle toe adjustment in service workshops. Toe and camber can be adjusted individually at the rear axle.

# Electronic damper control

## Design and operation

The Audi Q3 uses the Monroe CES dampers featured previously on the Audi A6 '05 (CES = continuously controlled electronic suspension). The optional system allows the driver to adapt the damping forces to the driving situation in three modes: auto, dynamic and comfort. The mode is selected in Audi drive select.

The mode can be changed while the vehicle is stationary and while driving. The previously used setting is memorised and restored when the vehicle restarts. A key new feature is the efficiency mode in Audi drive select. In this mode the damper setting is identical to that in auto mode.

Damping adjustment valve, rear left  
N338

Damping adjustment valve, front left  
N336

Body acceleration sender, front right  
G342

Body acceleration sender, rear left  
G343

Body acceleration sender, front left  
G341

Damping adjustment valve, front right  
N337



Vehicle level sender, rear left  
G76

ECD control unit (electronically controlled damping)  
J250

Vehicle level sender, front right  
G289

Damping adjustment valve, rear right  
N339

Vehicle level sender, front left  
G78

602\_047

## Twin-tube vibration damper

Twin-tube vibration dampers whose damping force is regulated by electrically activated solenoid valves are used for electronic damper control. The activation currents vary from approximately 0.2 to 2.0 A, with damping force increasing with electrical current. The damper is not activated while the vehicle is stationary. The necessary activation current is computed by the control unit. The activation currents are generated by the control unit power modules.

The vibration dampers are activated in milliseconds depending on road condition, driver input and various driving situations such as braking, accelerating or cornering. In addition to the sensor signals, the control unit evaluates signals from components such as the steering, engine, gearbox, the brake system and the driver assistance systems.

The vehicle level sensors monitor vehicle ride height at a sampling rate of 800 Hz. This is sufficient to additionally calculate the vibration characteristics of the axle components (unsprung masses).

The movement of the vehicle body (sprung masses) is monitored by the body acceleration sensors.



602\_048

Electrically activated solenoid valve  
(damping adjustment valve)



### Reference

In terms of design and general functionality, the electronic damper control system of the Audi Q3 is identical to the DCC Adaptive Chassis Control system implemented for the VW Tiguan. For more detailed information on the design and function of DDC, refer to SSP 406 "DCC Adaptive Chassis Control".

---

## Service operations

The system has self-diagnostic capability. The service operations are the same as for the systems which are already used on other Audi models.

# Brake system



## Overview

The Audi Q3 delivers outstanding braking performance thanks to a generously proportioned 16-inch brake system. The known additional functions of Hold Assist, Hill Start Assist and speed-dependent emergency braking are available thanks to the electro-mechanical parking brake (EPB). For the first time in an Audi model, use is made of a high-performance ESP system by TRW specially designed to meet the demands on a powerful SUV.



602\_049

## Design and function of the wheel brakes

	Front axle	Rear axle
		
<b>Engine type</b>	2.0l TFSI 2.0l TDI	2.0l TFSI 2.0l TDI
<b>Brake type</b>	16" FN3 57/25/13.5 floating caliper brake	16" CII 41 EPB aluminium floating caliper with actuators for the Electric Parking Brake (EPB)
<b>Number of pistons</b>	1	1
<b>Piston diameter</b>	57 mm	41 mm
<b>Brake disc diameter</b>	312 mm, vented brake discs	282 mm, solid brake discs



## Brake servo and master brake cylinder

An 11-inch single brake booster with a "single rate" characteristic is used on left hand drive models. For reasons of installation space, a 7/8 tandem brake booster with two diagonally split brake circuits is used on right hand drive models.

The aluminium tandem master brake cylinder with 23.8 mm diameter provides the necessary performance and short brake pedal travel combined with low actuation forces.

A non-contact Hall sensor on the master brake cylinder delivers the signal for the brake light function.



602\_052

## Brake application

The foot controls have a modular design in order to save weight. Each module comprises the pedal lever and associated bearing pedestal. The components of the accelerator and clutch pedals are manufactured from fibre-reinforced plastic. For strength reasons, the brake pedal bearing pedestal is manufactured as a sheet steel part with a weight-saving shell design.



602\_053

## Service operations

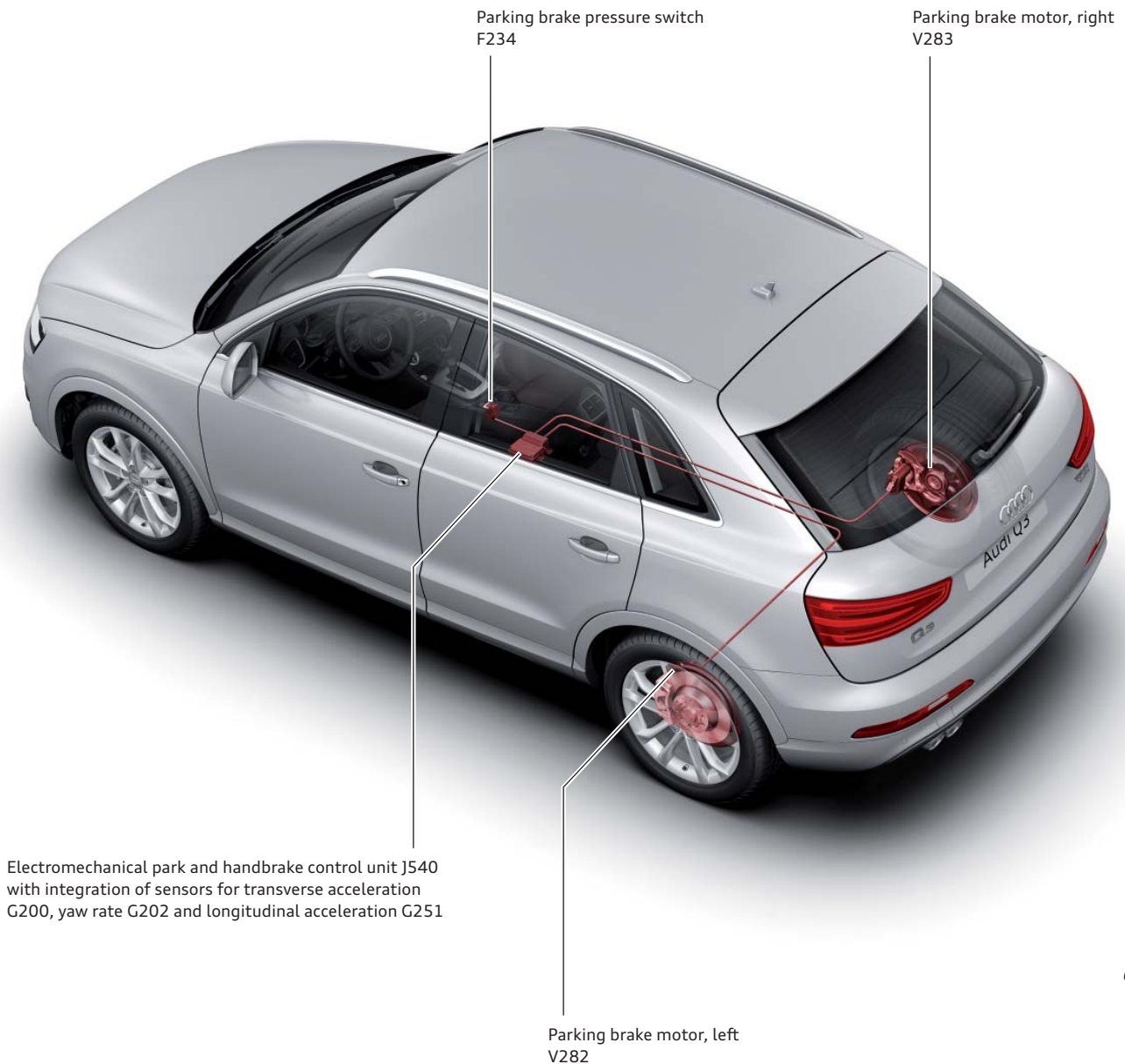
The service operations on the brake system are the same as for systems already in use on other Audi models.

## Electro-mechanical parking brake (EPB)

### Design and operation

The Audi Q3 uses the electromechanical parking brake (EPB) featured already in other Audi models. A new feature is the integration into control unit J540 of sensors for transverse acceleration G200, yaw rate G202 and longitudinal acceleration G251. These integrated sensors replace the ESP sensor unit G419.

The design and function of parking brake motors V282 and V283 are identical to those of the components already in use. The functions of control unit J540 are also identical to those of the functions implemented in current Audi models with EPB.



602\_054

### Service operations

After online coding of control unit J540 has been carried out in service workshops, the basic setting procedure must now be carried out in order to calibrate the aforementioned sensors.

## ESP

### Design and operation

The Audi Q3 features an ESP system by TRW (TRW 450) for the first time in an Audi model.

In addition to the basic functions EBD, ABS, ASR, EDL and ESP, the following additional functions have been implemented:

#### Standard equipment:

- ▶ Electronics transverse lock for front wheel drive vehicles
- ▶ Torque vectoring on vehicles with quattro drive
- ▶ Hydraulic Brake Assist
- ▶ Hydraulic brake booster
- ▶ Brake disc wiper
- ▶ Hydraulic brake fading compensation
- ▶ Driver steering recommendation (DSR)

#### Optional equipment:

- ▶ Trailer stabilisation system
- ▶ Tyre pressure indicator
- ▶ Park assist



602\_055



#### Reference

The above-mentioned functions are already implemented on other Audi models in an identical or similar form. For detailed information about new features of the park assist function in the Audi Q3, please refer to SSP 600 "New Driver Assist Systems 2011".

Active wheel speed sensors are used on the Audi Q3.

The steering wheel sender G85 is an integral part of the steering units on right hand drive models. It is integrated in the steering column switch module on left hand drive models.



602\_056

### Service operations

The control unit and hydraulic unit cannot be separated in service workshops.

In both left and right hand drive models, the steering angle sender G84 is calibrated in the power steering control unit J500.

Other service operations are identical to those of the EPS systems already used on other Audi models.

## Steering system

### Overview

The Audi Q3 has an electromechanical steering system identical to that used previously on the A3 '04, TT '07 and A7 Sportback models. Compared to a conventional hydraulic steering system, fuel savings of up to 0.3 litres per km are achievable. The manually adjustable safety steering column ensures an optimal ergonomic steering wheel position for any driver.

The Audi Q3 is equipped as standard with the tried and tested four-spoke steering wheel. A newly developed three-spoke steering wheel is optional and will in future be available for all Audi Q series models.

Safety steering column with cardan shaft, mechanically adjustable, adjustment range 50 mm horizontally and vertically

Four-spoke steering wheel as basic equipment  
See page 41 for equipment options



Electromechanical steering system with axial parallel drive by electric motor

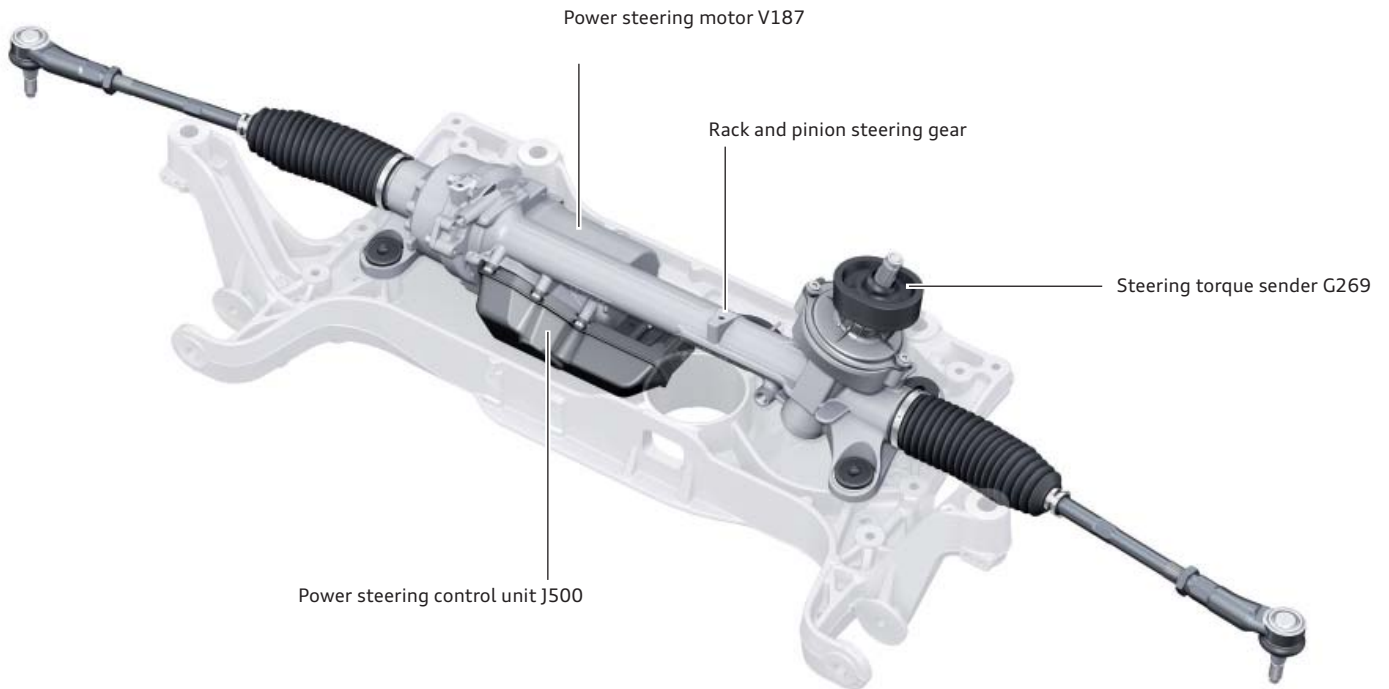
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## Electromechanical steering

### Overview

In contrast to the Audi A7 Sportback, the Audi Q3 uses an electro-mechanical steering system with axial parallel drive in left hand drive models <sup>1)</sup>.

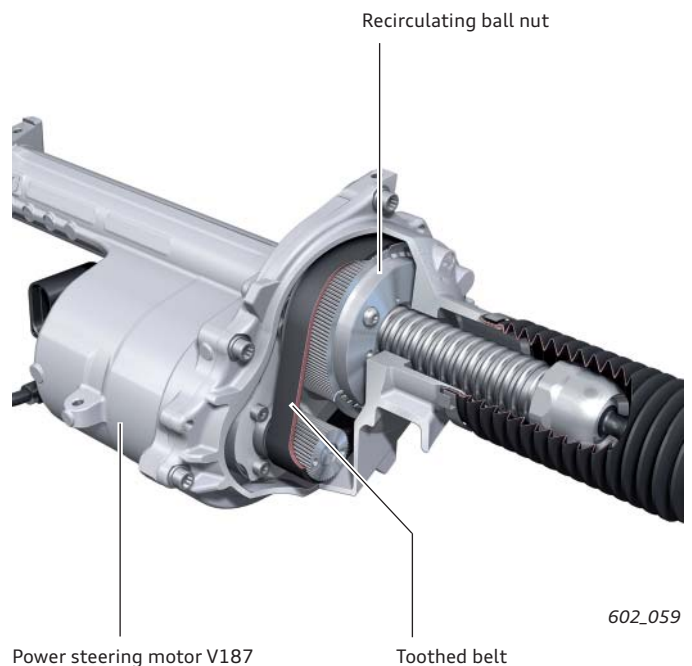
The compact unit essentially consists of the actual steering gear, the electric motor for power assistance, the electronic control unit, a sensor for measuring steering torque and a sensor for monitoring the position of the electric motor rotor.



602\_058

### Drive

The electric motor is driven directly by the power electronics of the control unit. The rotational movement of the engine is converted to the linear movement of the rack by a ball screw which essentially consists of a recirculating ball nut. The recirculating ball nut is driven through a toothed belt by the engine. The functional principle is basically the same as that of the steering system used in the Audi A7 Sportback. There are differences in the way in which the recirculating ball nut is driven.



602\_059

<sup>1)</sup> Right hand drive models have the ZF electromechanical steering system featured previously on the Audi A3 '04 and TT '07 models.

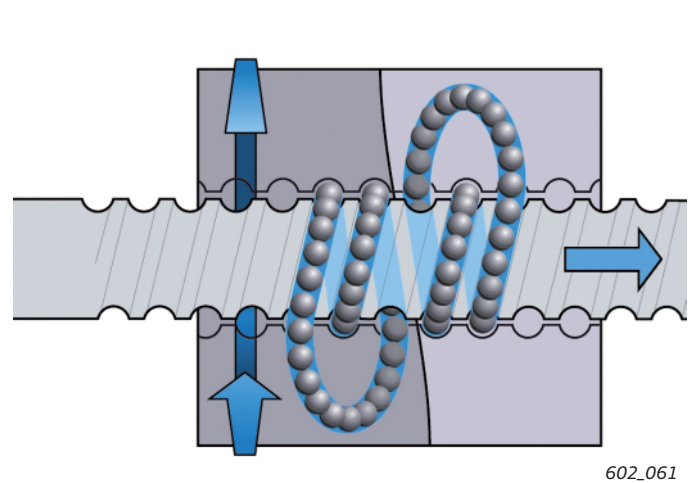
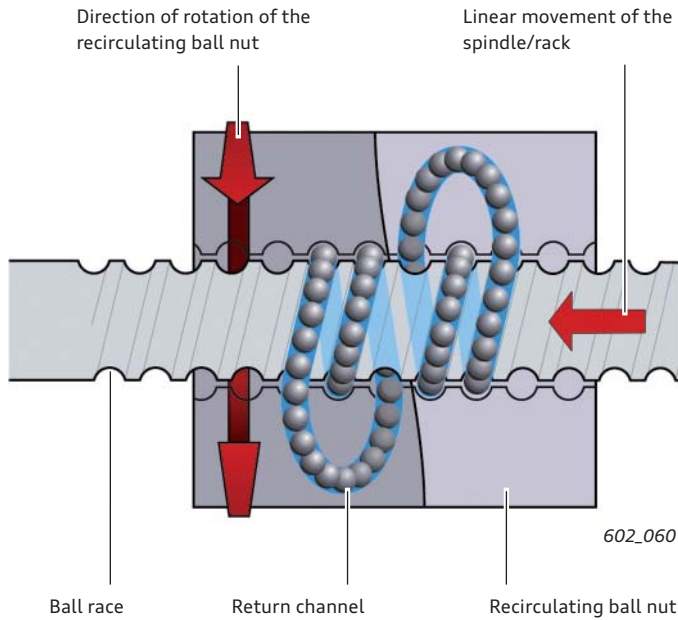


### Reference

For detailed information about the general design and function of the steering gear, refer to SSP 480 "Audi A7 Sportback Running Gear".

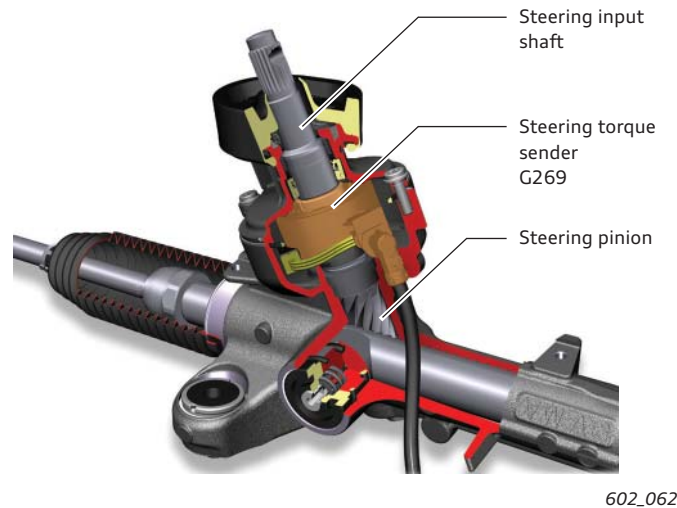
The functional principle of the ball screw is similar to that of a conventional screw and nut system. The convolutions are replaced by ball races, and the connection between the screw (spindle) and nut (recirculating ball nut) is made by balls running in the races. The balls roll in a closed loop like the roller elements in a bearing.

This is achieved by using a return channel in the recirculating ball nut which connects the lead-in and lead-out ends of the recirculating ball nut ball races. Reversing the direction of movement of the recirculating ball nut and the rolling direction of the balls also changes the linear direction of movement of the rack.



### Steering torque sender G269

Steering torque is measured by the steering torque sender G269. The steering input shaft and steering pinion are interconnected by a torsion bar. Turning the steering wheel results in minimal rotation of the torsion bar and therefore also of the steering input shaft relative to the steering pinion. This angle of rotation is measured by the sensor. The angle of rotation is a direct measure of steering torque. The design and function of the steering torque sender are identical to those of the component which is already used on the Audi A7 Sportback.



#### Reference

For detailed information, please refer to SSP 480 "Audi A7 Sportback Running Gear".

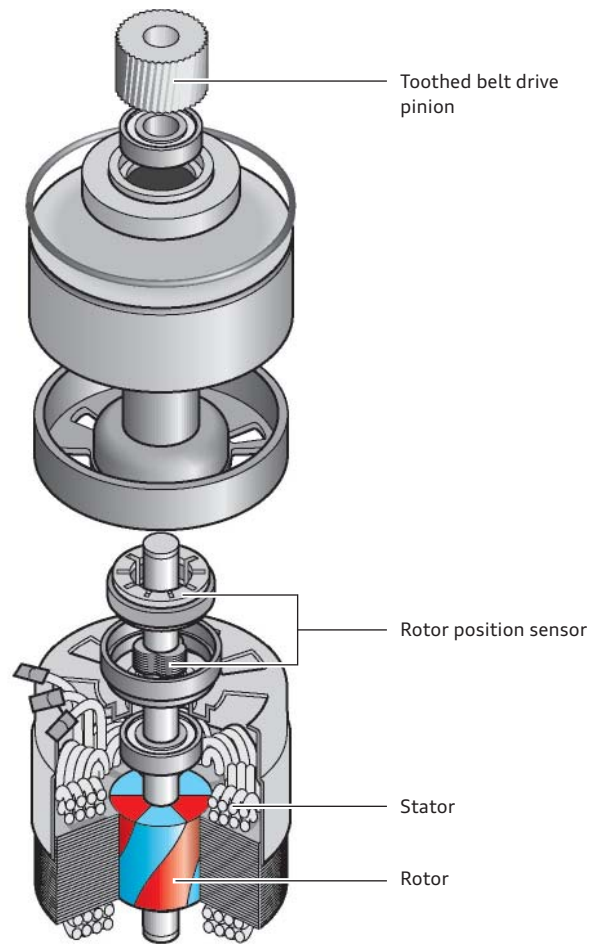
## Power steering motor V187

The Audi Q3 used a permanently excited three-phase AC synchronous motor for steering assistance. This motor concept was chosen on the basis of the following key advantages:

- ▶ Synchronous motors are noted for their compact design and high performance.
- ▶ Permanent excitation eliminates the need for collector rings for transmitting the exciter current to the rotor.

The necessary phase voltages are calculated by the control unit and applied to the stator coils through the power module. The stator comprises nine field coils. They are arranged in groups of three connected in series and energised by a sine-wave current. The three electric currents are phase offset relative to one another. The three magnetic fields generated thus produce a resultant rotating magnetic field which induces a synchronous rotational movement in the rotor.

The rotor comprises six permanent magnets alternately arranged in a north-south direction. For smoother running, the six-pole ring magnet is magnetised at an angle.

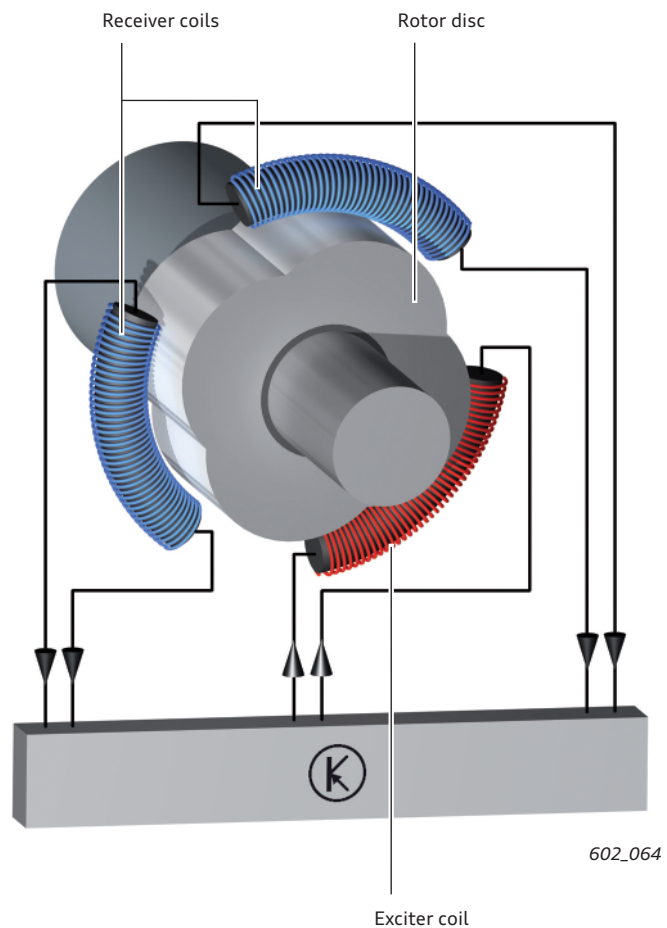


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## Rotor position detection

The rotor position sensor monitors the position of the rotor. The control unit must know the exact position of the rotor to be able to calculate the phase voltages required for the rotating magnetic field (electronic sensor controlled commutation). The measured value of the rotor position sensor is also utilised to define the steering stops. To avoid hard mechanical stops, "soft" limits stops are implemented by the electromechanical steering system.

The exciter coil is supplied with a sine-wave exciter voltage. The alternating magnetic field which develops around the exciter coil acts upon the rotor disc. The rotor disc conducts the magnetic flux of the alternating magnetic field generated by the exciter coil to the receiver coils. This induces in the receiver coils an alternating voltage which is phase offset proportional to the position of the rotor disc relative to the exciter voltage.



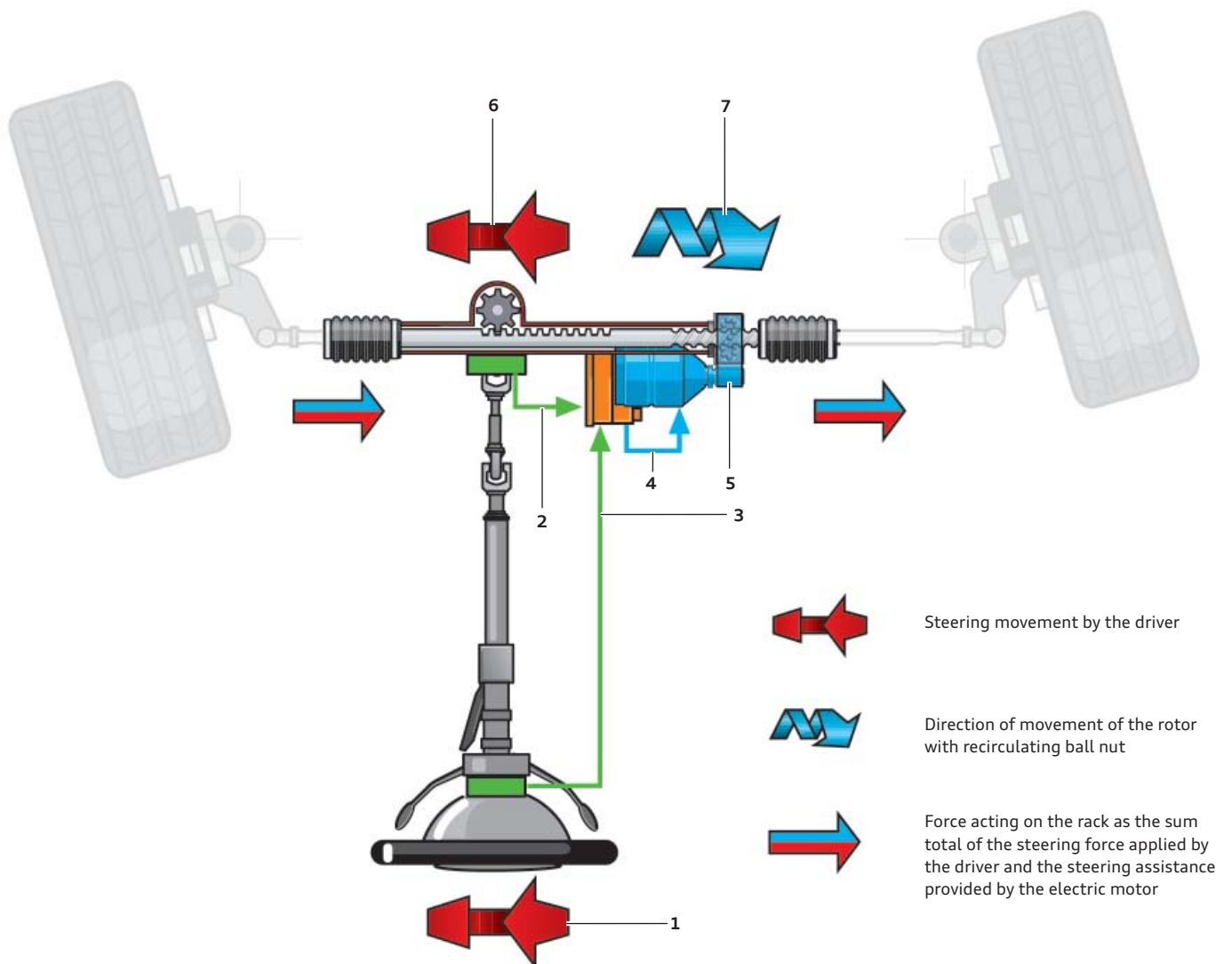
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## General functional principle shown using a steering operation as an example

When the steering wheel starts to turn, the torsion bar connecting the steering input shaft to the steering pinion is rotated. This rotation is measured by the steering torque sender and indicated to the control unit. At the same time, the control unit receives further signals relevant to the functionality of the steering system:

- ▶ the steering angle from the steering angle sender G85
- ▶ the driving speed from the ESP control unit
- ▶ the speed the internal combustion engine from the engine control unit
- ▶ and the current position of the electric motor rotor V187 through its rotor position sensor.

The control unit evaluates this information and calculates the electrical current and the phase shift of the drive current for electric motor V187 on the basis of a coded map in the control unit. When the motor is activated, its torque is transmitted to the recirculating ball nut by the toothed belt. Depending on the drive current level, a defined amount of torque is provided for steering assistance. The resultant force acting on the rack is made up of the steering torque applied by the driver and the torque generated by the electric motor.



### Key:

- 1 Steering movement by the driver
- 2 Signal from the steering torque sender
- 3 Signal from the steering angle sender
- 4 Activation of the electric motor
- 5 Recirculating ball nut drive
- 6 Steering torque applied by the driver
- 7 Steering torque applied by the electric motor

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## Additional functions

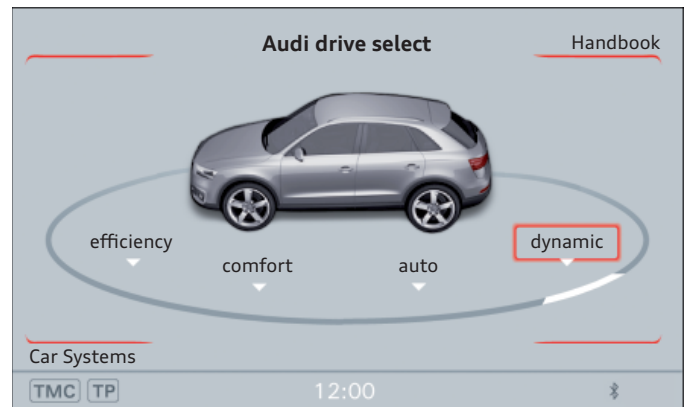
In the Audi Q3 too, various adjustments/functions are implemented by the electromechanical steering system in addition to the basic function. The driver is assisted in certain driving situations in the following ways:

- ▶ Speed-dependent power assisted steering (servotronic) is implemented as standard.
- ▶ Return of the steering wheel to the straight-ahead position after steering lock has been applied is assisted by the "active reset" function. This enhances both directional stability and steering comfort.

- ▶ The "straight-ahead driving correction" function takes the strain off the driver when driving in a straight line against a constant, sustained crosswind or when driving on a cambered road surface. A corrective steering torque is generated by active steering assistance.
- ▶ The Audi Q3 also uses the "DSR" (driver steering recommendation) function implemented previously in the Audi A3 '04 and A7 Sportback in combination with ESP and electromechanical steering. This function is described in SSP 480 "Audi A7 Sportback Running Gear".
- ▶ Steering comfort is enhanced by implementing damped maximum steering locks.

## Operation and driver information

The driver can choose between three different steering maps. Setting of the steering characteristic - from comfortable to sporty - is coupled to the setting in Audi drive select. If efficiency mode is selected, a balanced characteristic is set (this is equivalent to the "auto" setting).



602\_066

## Service operations

No provision has been made for the replacement of individual steering unit components (except for the track rods and boots). In the event of a fault, the complete unit must be replaced. The power steering control unit J500 is encoded online. After coding has been completed, a basic setting procedure must be carried out.

This entails defining which advanced functions (e.g. park assist, DSR) are to be implemented by the steering system. It is necessary to carry out an adaption process for the maximum steering locks in order to avoid "hard" end stops. As a requirement for this, the steering angle sender G85 must be calibrated and initialised.



602\_058

## Steering wheels

The steering wheel and airbag have been systematically designed for lightweight construction. Weight has been reduced by approximately 0.5 kg by the use of ultra-lightweight magnesium in the steering wheel skeleton and fibre-reinforced plastic in the airbag. Equipped with two paddle switches, the multifunction steering wheels allow user-friendly operation of the driver information system including telephone, audio devices and onboard computer.

Two additional optional paddle switches allow gear changes to be performed manually on models with S tronic. The steering wheels come in two optional colour versions matching the vehicle interior.

### Overview



**4-spoke design**

standard



**Leather steering wheel, 4-spoke design**

Option



**Multifunction leather steering wheel of 4-spoke design**

Option



**Multifunction leather steering wheel of 4-spoke design incl. paddle switches**

Option



**Sports leather steering wheel of 3-spoke design**

Option



**Multi-function sports steering wheel of 3-spoke design**

Option



**Multi-function sports steering wheel of 3-spoke design including paddle switches**

Option

# Wheels and tyres / tyre pressure indicator

## Wheels and tyres overview

The wheel/tyre combinations used for the Audi Q3 ensure superb handling, comfort and driving stability for a vehicle of this class. All engine types are equipped with size 6.5J x 16 forged aluminium wheels even in the basic trim.

The weight saving compared to a standard cast aluminium wheel is approximately 1.7 kg per wheel. The Audi Q3 comes as standard with a Tire Mobility System (TMS). A Minispare spare wheel of size 4.0J x 18 with rim depth 27.5 and 145/80 R18 tyres is optional.



1



2



4



6



3



5



7

### Basic 16" wheel

6.5J x 16 ET33  
Forged aluminium wheel  
brilliant silver finish  
215/65 R16  
(basic wheel for all  
engine types)

1

### Optional 17" wheels

7J x 17 ET43  
Lightweight aluminium wheel,  
brilliant silver finish  
235/55 R17

2

7J x 17 ET43  
Lightweight aluminium wheel,  
brilliant silver finish  
235/55 R17

3

### Optional 18" wheels

7J x 18 ET43  
Lightweight aluminium wheel,  
brilliant silver finish  
235/50 R18

4

7J x 18 ET43  
Lightweight aluminium wheel,  
polished  
235/50 R18

5

### Winter wheels

6.5J x 16 ET33  
Forged aluminium wheel,  
brilliant silver finish  
215/65 R16 M&S

6

6.5J x 17 ET33  
Lightweight aluminium wheel,  
brilliant silver finish  
215/65 R17 M&S

7

## Tyre pressure indicator

The Plus tyre pressure indicator already available in other Audi models is also optional for the Audi Q3. The design, functionality and operation are identical to those of the systems already in use.

## Power supply

### Battery

The car battery in the Audi Q3 is housed in the engine bay and protected by an insulating blanket or battery box. Battery size, type and protection are dependent on engine, trim and country version. All Audi Q3 models have an energy management system and a brake energy recuperation function. All Q3 models with a start-stop system come fitted with an AGM battery.

The following batteries are used on the Audi Q3:

#### Standard batteries

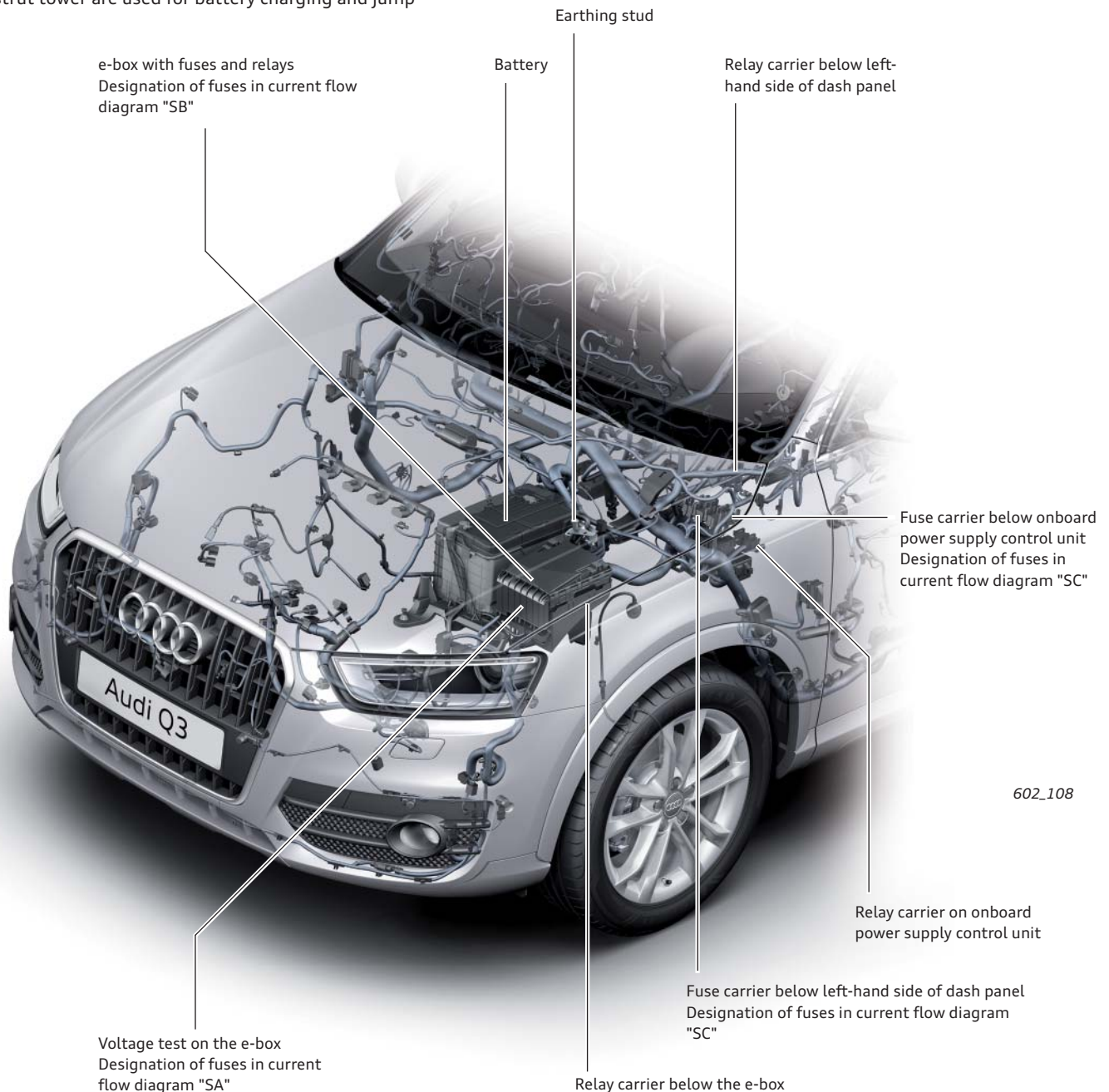
- ▶ 44 Ah/220 A
- ▶ 51 Ah/280 A
- ▶ 60 Ah/280 A
- ▶ 61 Ah/330 A
- ▶ 72 Ah/380 A

#### AGM batteries (on models with start-stop)

- ▶ 68 Ah/380 A

### Jump start points / fuses and relays

The battery positive terminal and the earthing stud near the left-hand strut tower are used for battery charging and jump starting.



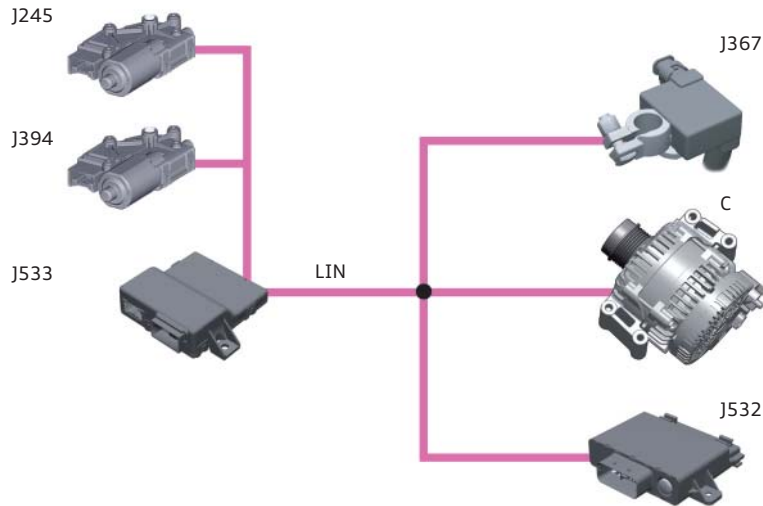
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## Data bus diagnostic interface J533 (gateway)

In the case of the Audi Q3, a distinction is made between two versions of the data bus diagnostic interface J533: a version for models with infotainment CAN and a version for models with MOST bus system.

In a full-spec Audi Q3, there are five LIN slaves connected to the data bus diagnostic interface J533:

- ▶ Sliding sunroof control unit J245
- ▶ Sunroof roller blind control unit J345
- ▶ Battery monitor control unit J367
- ▶ Alternator C
- ▶ Voltage stabiliser J532



602\_109

### Summary

**Designation** Data bus diagnostic interface J533

**Installation position** Dash panel, driver footwell

Bus systems	Speed	Capabilities
<b>Convenience CAN bus</b> (always fitted)	100 kbit/s	Single-wire capable
<b>Powertrain CAN bus</b> (always fitted)	500 kbit/s	Not single-wire capable
<b>Dash panel insert CAN bus</b> (always fitted)	500 kbit/s	Not single-wire capable
<b>Diagnostics CAN bus</b> (always fitted)	500 kbit/s	Not single-wire capable
<b>Extended CAN bus</b> (option)	500 kbit/s	Not single-wire capable
<b>Infotainment CAN bus</b> (dependent on infotainment version)	100 kbit/s	Single-wire capable
<b>MOST bus</b> (dependent on infotainment version)	22 Mbit/s	Ring structure (open circuit results in failure)
<b>LIN bus</b>	20 kbit/s	Single-wire bus system

- Tasks**
- ▶ Networking gateway
  - ▶ Diagnostic interface
  - ▶ Transport mode (energy-optimised for transportation or long periods of non-use)
  - ▶ Wake-up monitor (monitors bus standby mode or bus wake-up function)
  - ▶ Data supplier for on-board computer with efficiency program
  - ▶ Energy management

LIN master for:

- ▶ Battery monitor control unit J367 (always fitted)
- ▶ Alternator C (always fitted)
- ▶ Voltage converter J532 (on models with start-stop system only)

- ▶ Control of the panorama glass sunroof and sunroof roller blind

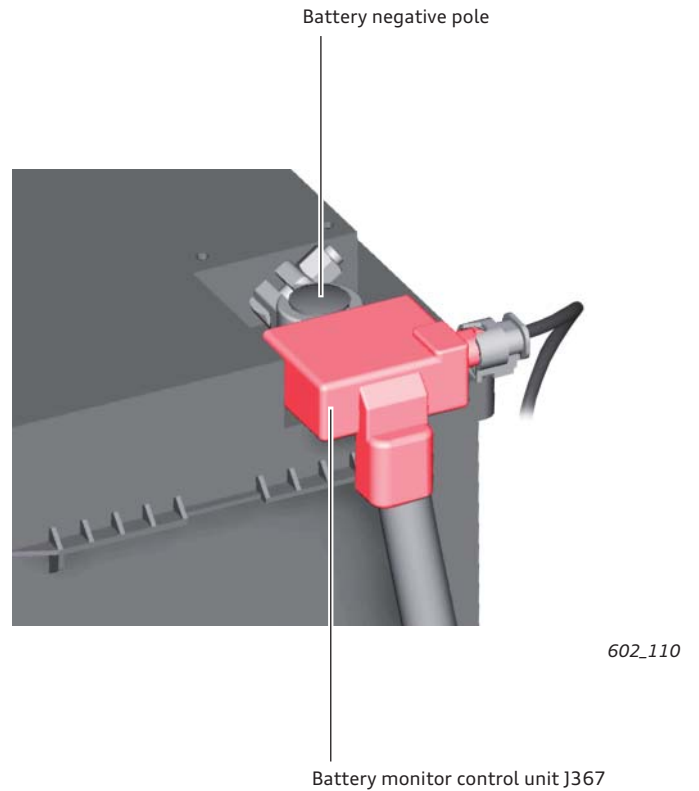
LIN master for:

- ▶ Sliding sunroof control unit J245 (option)
- ▶ Sunroof roller blind control unit J345 (option)

**Diagnostic address** 19

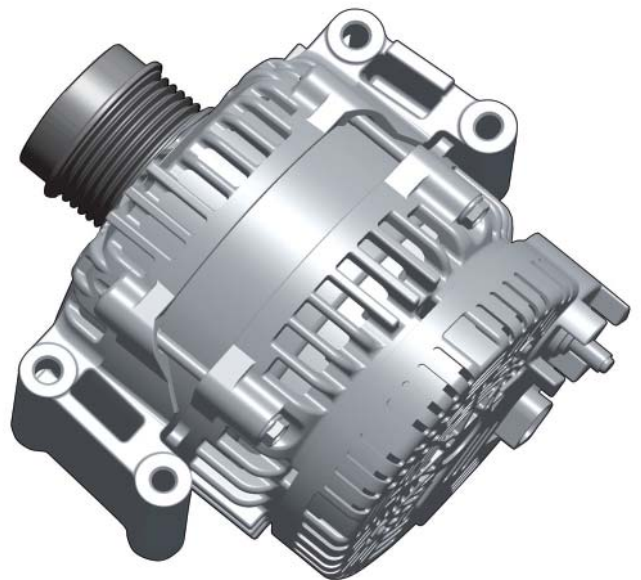
## Battery monitor control unit J367

Summary	
<b>Designation</b>	Battery monitor control unit J367
<b>Installation position</b>	at the car battery's negative terminal
<b>Tasks</b>	Measurement of: <ul style="list-style-type: none"><li>▶ car battery charging and discharge currents</li><li>▶ battery voltage</li><li>▶ battery temperature</li></ul>
<b>Diagnostic address</b>	None, LIN slave, measured data and diagnostics via data bus diagnostics interface J533 (gateway)



## Alternator C

Summary	
<b>Designation</b>	Alternator C
<b>Installation position</b>	at bottom front right of engine, driven by central ribbed V belt
<b>Tasks</b>	Charging the vehicle battery
<b>Diagnostic address</b>	None, LIN slave, measured data and diagnostics via data bus diagnostics interface J533 (master)



Alternators with LIN controllers are used on the Audi Q3.

## Voltage stabiliser J532

### Summary

<b>Designation</b>	Voltage stabiliser J532
<b>Installation position</b>	under the seat at the front left
<b>Versions</b>	200 watts or 400 watts
<b>Tasks</b>	To stabilise the voltage for selected components during the start cycle
<b>Diagnostic address</b>	None, LIN slave, measured data and diagnostics via data bus diagnostics interface J533 (master)

Depending on trim, the following electrical equipment is connected to the 200 watt voltage stabiliser:

- ▶ Control unit in dash panel insert J285
- ▶ Automatic anti-glare rear-view mirror Y7
- ▶ Radio R
- ▶ Information electronics control unit 1 J794
- ▶ CD changer R41
- ▶ MMI display J685
- ▶ TV tuner R78



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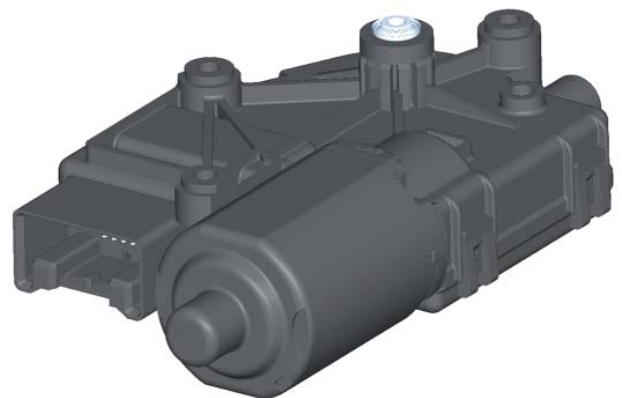
The 400 watt version is used on models equipped with an Audi sound system. On these models, the radio is connected to the second, stabilised output.

The digital sound package control unit J525 is not connected to the voltage stabiliser. This control unit has its own internal voltage stabiliser.

## Sliding sunroof control unit J245 and sunroof roller blind control unit J394

### Summary

<b>Designation</b>	Sliding sunroof control unit J245 Sunroof roller blind control unit J394
<b>Installation position</b>	in the roof area
<b>Tasks</b>	Opening and closing the sliding sunroof or the sunroof roller blind
<b>Diagnostic address</b>	None, LIN slave, measured data, diagnostics and actuator test via data bus diagnostics interface J533 (master)



602\_113

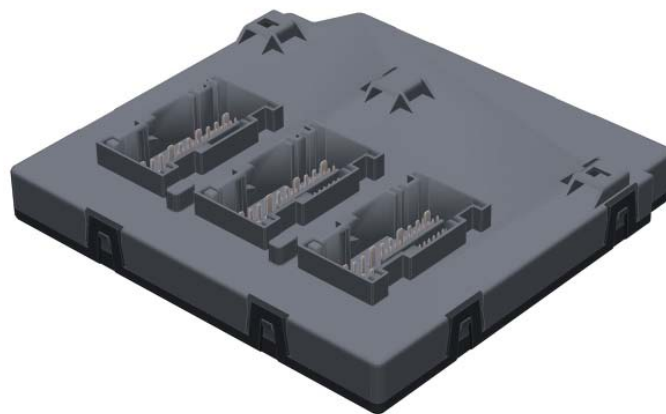


### Reference

For further information about the data bus diagnostic interface J533, the battery monitor control unit J367 and the voltage stabiliser J532, please refer to Self Study Programme 477 "Audi A1". Here you will also find a functional description of the alternator C.

## Onboard power supply control unit J519

The onboard power supply control unit J519 of the Audi Q3 basically corresponds to that in the Audi A1.  
 Difference to the onboard power supply control unit in the Audi A1: in the A1, the front windscreen wiper is activated by the onboard power supply control unit via two relays. The Q3 has a "LIN wiper", i.e. the onboard power supply control unit J519 is the LIN master of the wiper motor control unit J400.  
 J519 is mounted to the dash panel relay carrier in the driver footwell area.

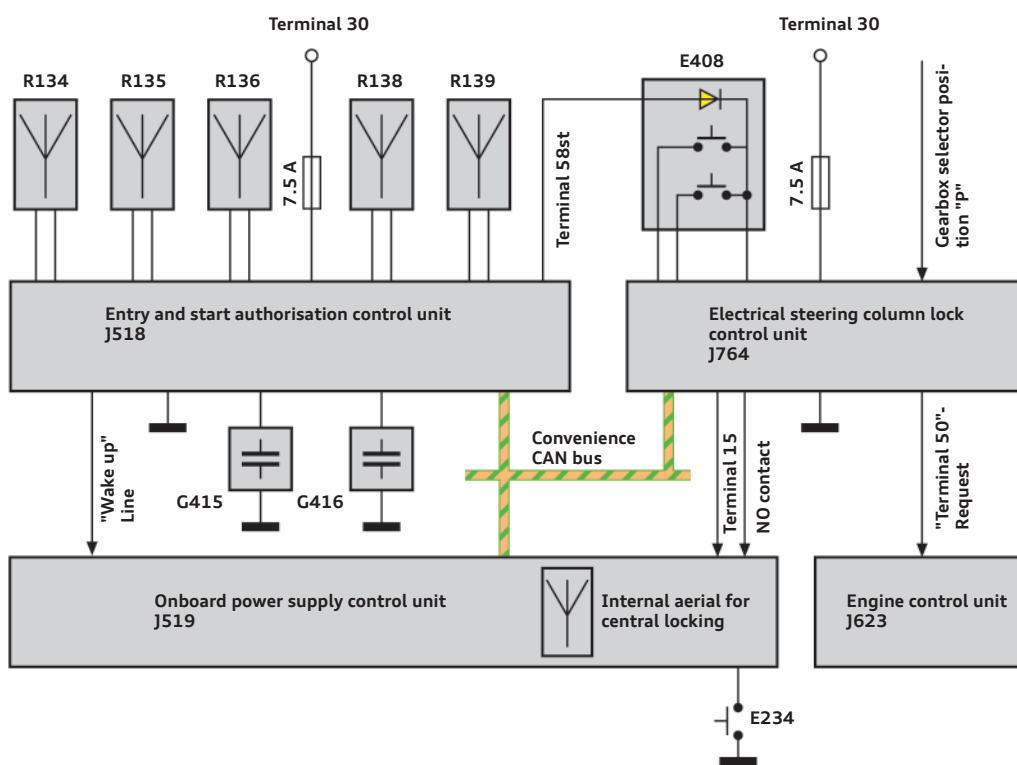


602\_133

## Advanced Key

The Audi Q3 can be equipped with an advanced key similar in design and function to that of the Audi A1.

The Q3 can be locked and unlocked "keylessly" even from the front passenger door side. For this reason, the Q3 requires one aerial and one touch sensor more than the system in the A1.



602\_134

### Key:

**E234** Tailgate handle release button

**E408** Entry and start authorisation control unit

**G415** Exterior door handle touch sensor, driver side

**G416** Exterior door handle touch sensor, front passenger side

**R134** Driver side aerial for entry and start authorisation

**R135** Front passenger side aerial for entry and start authorisation

**R136** Rear bumper aerial for entry and start authorisation

**R138** Interior aerial -1- for entry and start authorisation

**R139** Interior aerial -2- for entry and start authorisation



### Reference

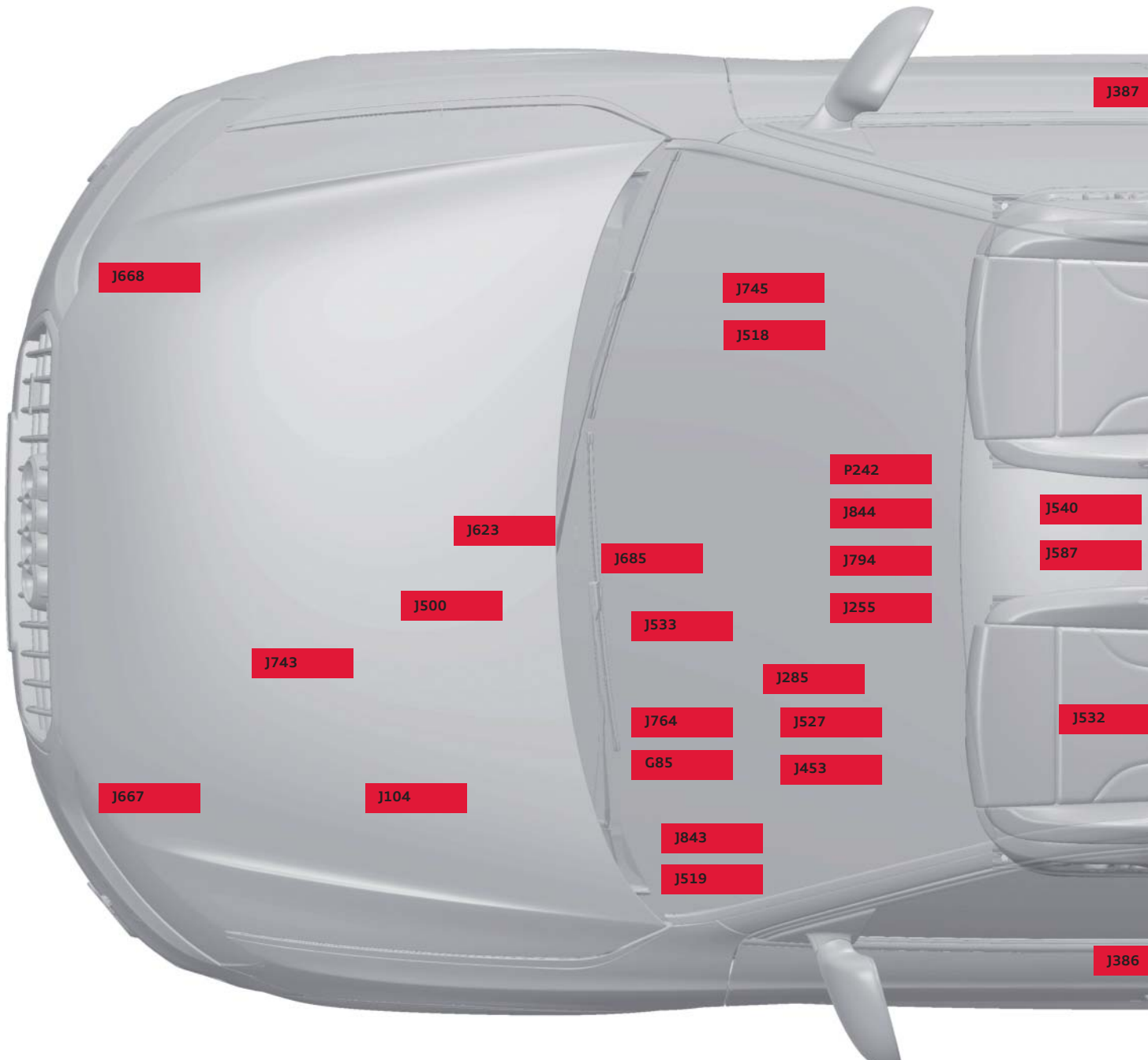
For further information about the onboard power supply control unit J519, the terminal control unit, the immobiliser and the advanced key, please refer to Self Study Programme 477 "Audi A1".



## Installation locations of the control units

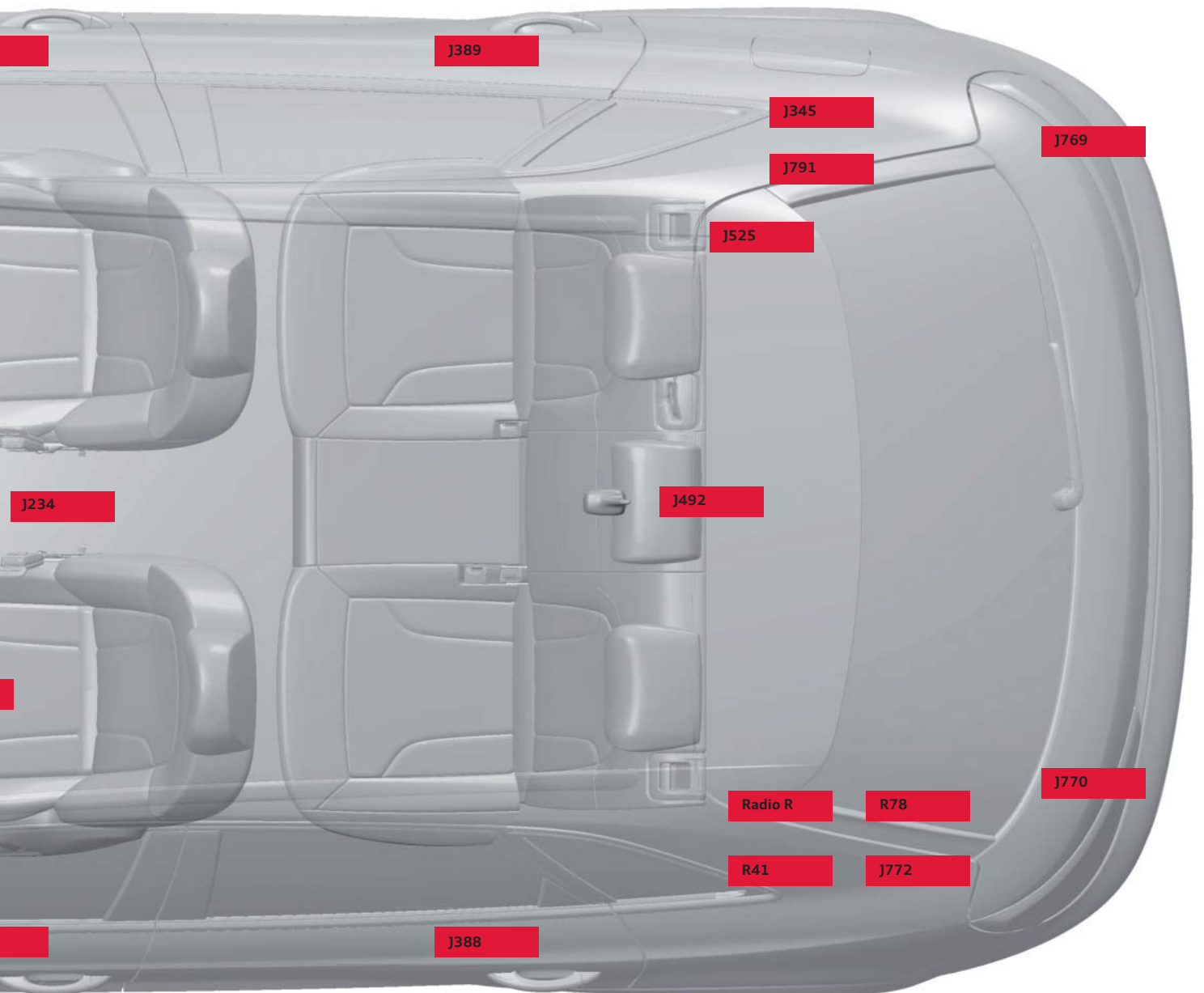
Some of the control units shown in the overview are optional and/or country-specific equipment.

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



### Key:

- |             |  |             |  |
|-------------|--|-------------|--|
| <b>G85</b>  | Steering angle sender                                | <b>J388</b> | Rear left door control unit                |
| <b>J104</b> | ABS control unit                                     | <b>J389</b> | Rear right door control unit               |
| <b>J234</b> | Airbag control unit                                  | <b>J453</b> | Multifunction steering wheel control unit  |
| <b>J250</b> | ECD control unit (electronically controlled damping) | <b>J492</b> | Four-wheel drive control unit              |
| <b>J255</b> | Climatronic control unit                             | <b>J500</b> | Power steering control unit                |
| <b>J285</b> | Control unit in dash panel insert                    | <b>J518</b> | Entry and start authorisation control unit |
| <b>J345</b> | Trailer detector control unit                        | <b>J519</b> | Onboard power supply control unit          |
| <b>J386</b> | Door control unit, driver side                       | <b>J525</b> | Digital sound package control unit         |
| <b>J387</b> | Door control unit, front passenger side              | <b>J527</b> | Steering column electronics control unit   |
|             |  | <b>J532</b> | Voltage stabilizer                         |
|             |  | <b>J533</b> | Data bus diagnostic interface              |



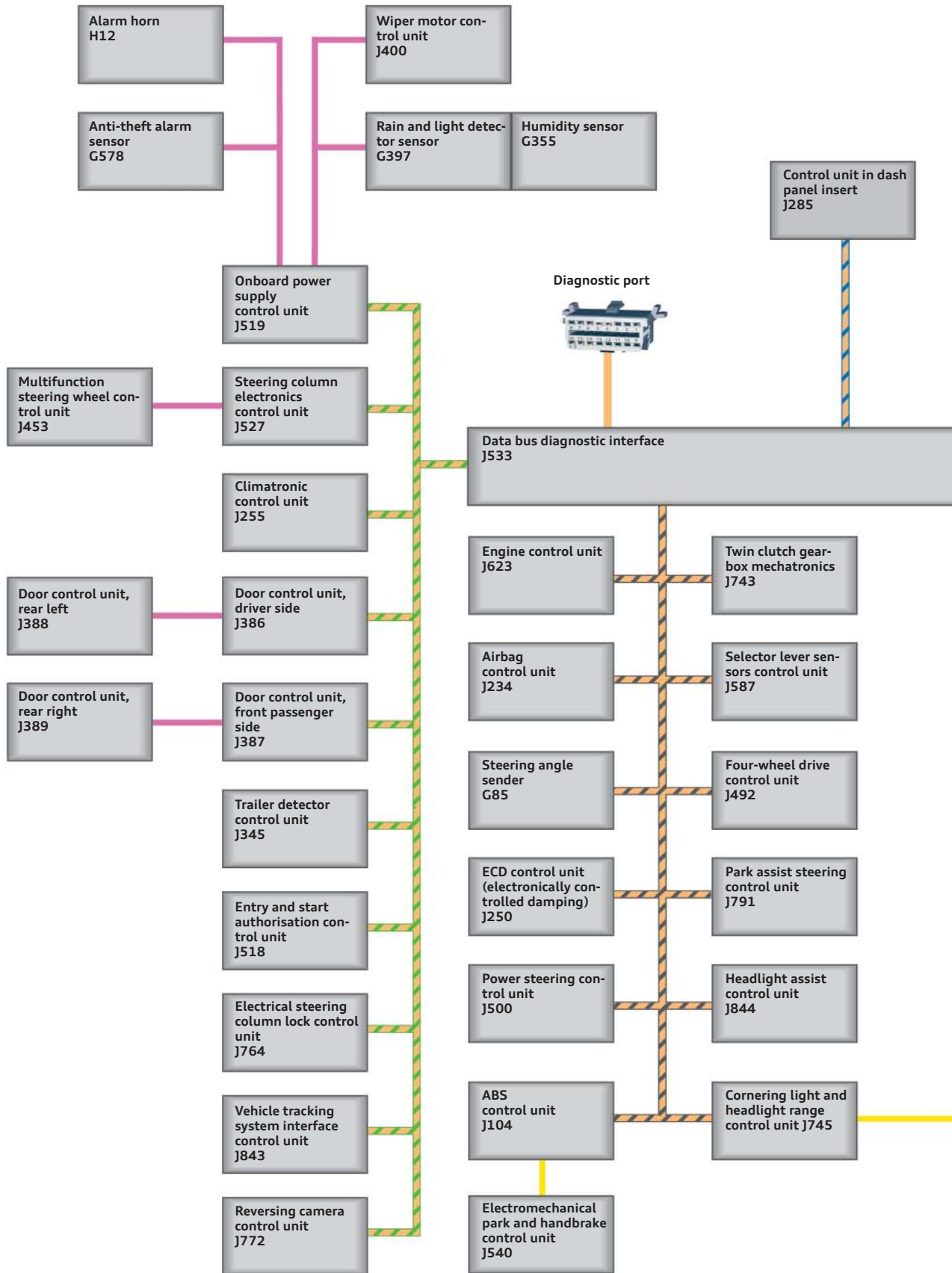
602\_092

**J540** Electromechanical park and handbrake control unit  
**J527** Selector lever sensors control unit  
**J623** Engine control unit  
**J667** Headlight power module, left  
**J668** Headlight power module, right  
**J685** MMI display  
**J743** Twin clutch gearbox mechatronics  
**J745** Cornering light and headlight range control unit  
**J764** Electrical steering column lock control unit  
**J769** Audi lane assist control unit  
**J770** Audi lane assist control unit 2

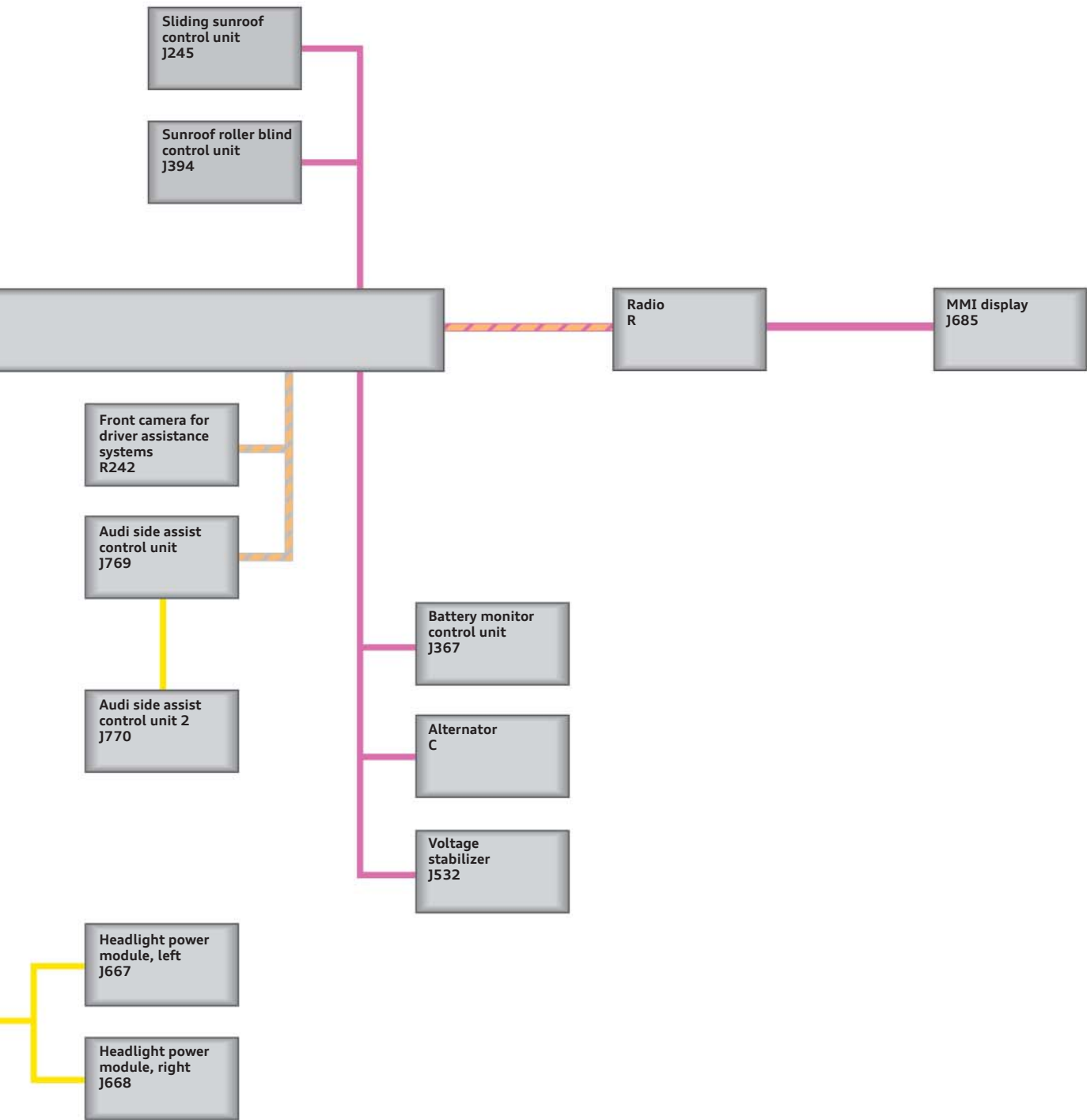
**J772** Reversing camera system control unit  
**J791** Audi parking system control unit  
**J794** Information electronics control unit 1  
**J843** Vehicle tracking system interface control unit  
**J844** Headlight assist control unit  
**R** Radio  
**R41** CD changer  
**R78** TV tuner  
**R242** Front camera for driver assistance systems

# Topology

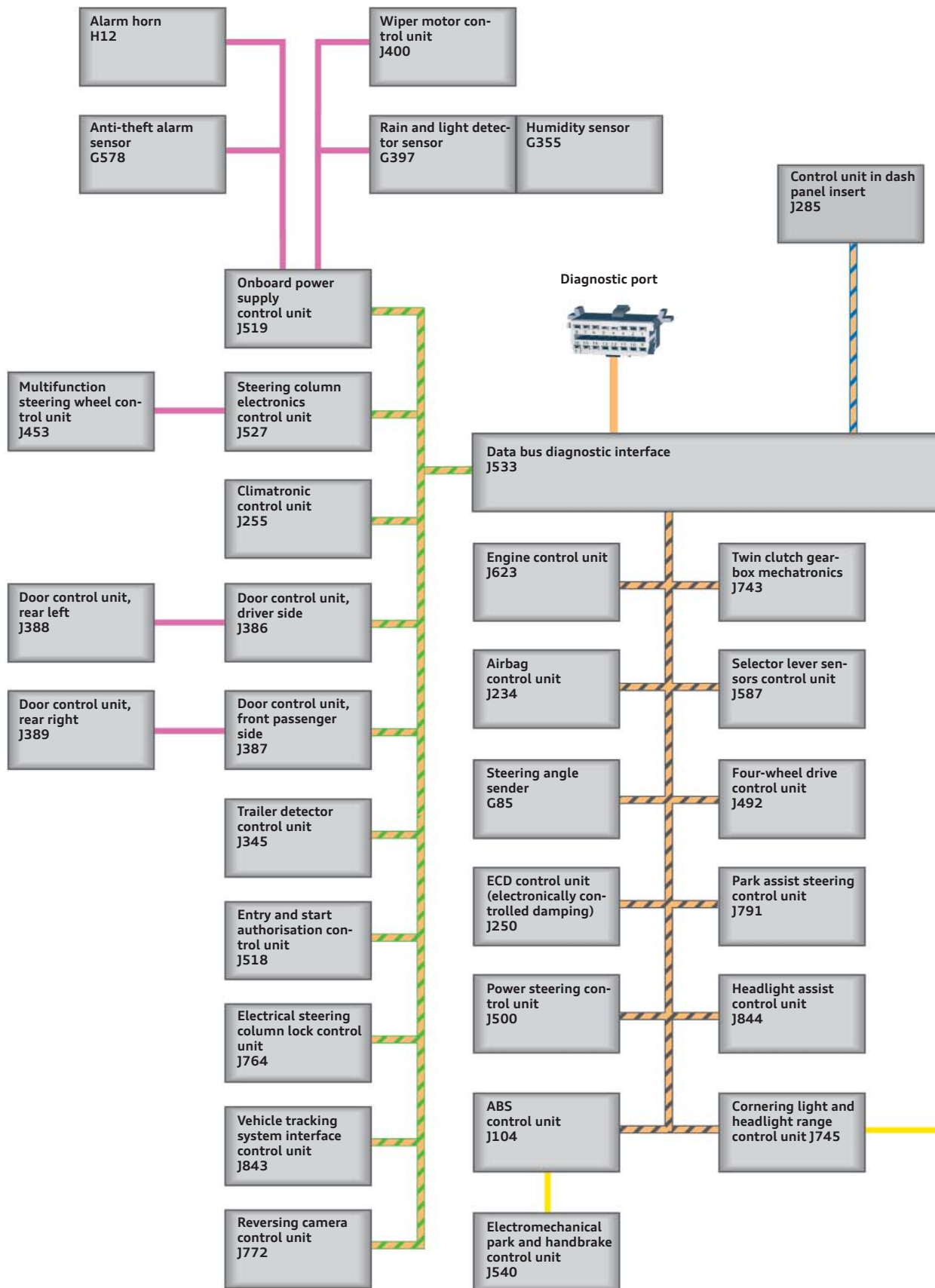
## Models with infotainment CAN bus



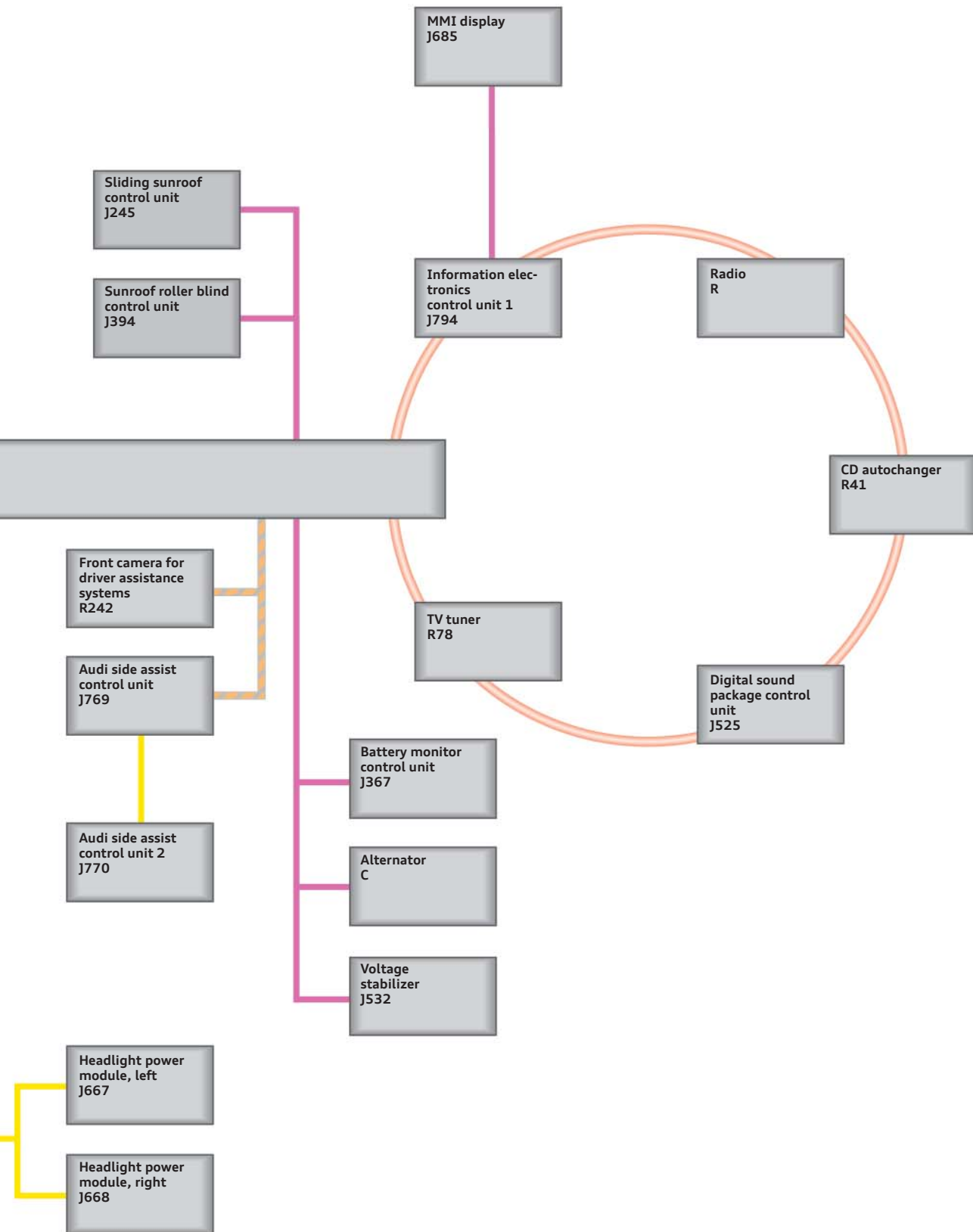
- Key:**
- Powertrain CAN bus
  - Infotainment CAN bus
  - LIN bus
  - Convenience CAN bus
  - Diagnostics CAN bus
  - Sub-bus systems
  - Extended CAN bus
  - Dash panel insert CAN bus



# Models with MOST bus



- Key:**
- Powertrain CAN bus
  - Convenience CAN bus
  - Diagnostics CAN bus
  - Dash panel insert CAN bus
  - Extended CAN bus
  - MOST bus
  - LIN bus
  - Sub-bus systems



# Exterior lighting

## Headlight

In the case of the Audi Q3, a distinction is made between three headlight versions:

- ▶ halogen headlights
- ▶ bi-xenon headlight
- ▶ bi-xenon headlight with adaptive light (AFS)

The "adaptive light" feature assumes the cornering light function in the Audi Q3. The Audi Q3 is optionally available with a headlight assist system.

The headlights can be installed and removed from the Audi Q3 without dismantling the bumper. In addition to the headlight end caps and repair tabs, the parts shown in the diagrams can be replaced. In the event of damage to the upper headlight attachments, repair tabs can be attached to the headlight housing.

## Halogen headlights



Light functions	Illuminants used	Power
Daytime running light Parking light	W21W bulb (dimmed to 90 %) (dimmed to 40 %)	21 watts
Dipped beam	Bulb H7	55 watts
Main beam	Bulb H7	55 watts
Turn signal	Bulb PY24W	24 watts
Fog light (integrated in the bumper, not shown)	Bulb H11	55 watts

In the case of the halogen headlight, the daytime running light is not dimmed when the turns signals are activated.

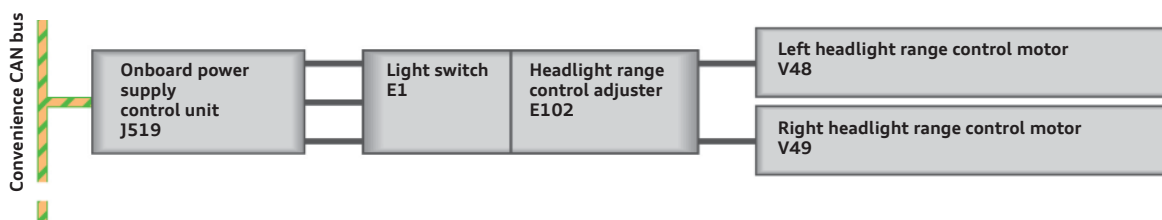
To adapt the headlights (for driving in countries where traffic drives on the opposite side of the road), certain regions of the headlight have to be masked with a non-transparent film.

## Headlight range control unit

Models with halogen headlights are equipped with a manual headlight range control system. The knurled wheel for headlight range adjustment is integrated in a light switch adjacent to the knurled wheel for adjusting the instrument lighting.

Onboard power supply control unit J519 is a convenience CAN bus user. Light switch E1 and the headlight range control adjuster E102 are discretely connected to the onboard power supply control unit. The two headlight range adjustment control motors are discretely connected to adjuster E102.

### Schematic diagram of the activation mechanism



602\_114

## Bi-xenon headlight / bi-xenon headlight with adaptive light

In the bi-xenon version, the daytime running light and side light are provided by two LEDs with a plastic optical fibre cable. The two LEDs are mounted on the LED module. They cannot be replaced separately.

In the event of a fault, the LED module can be replaced. The swivel motor for the cornering light (not shown in the diagram) cannot be replaced separately.



602\_094

Light functions	Illuminants used	Power
<b>Daytime running light</b> <b>Parking light</b>	2 LEDs with plastic optical fibres (dimmed to approx. 25 %)	approx. 10 watts
<b>Dipped beam</b> <b>Cornering light</b> (with adaptive light only) <b>Main beam</b>	Gas discharge lamp D3S	35 watts
<b>Turn signal</b>	Bulb PY24W	24 watts
<b>Fog light</b> (integrated in the bumper, not shown)	Bulb H11	55 watts

## Daytime running light and side light

Both LEDs for the daytime running light are operated at 100% of their capacity. The power output of both LEDs is reduced to approx. 25 % for the side light function. In the bi-xenon versions, the daytime running light is dimmed to side light level when the turn signals are activated.

The headlights have to be adapted for driving in countries where vehicles drive on the opposite side of the road. This is done using the vehicle diagnostic tester (address word 55 Headlight range control < Functions < Trip mode),

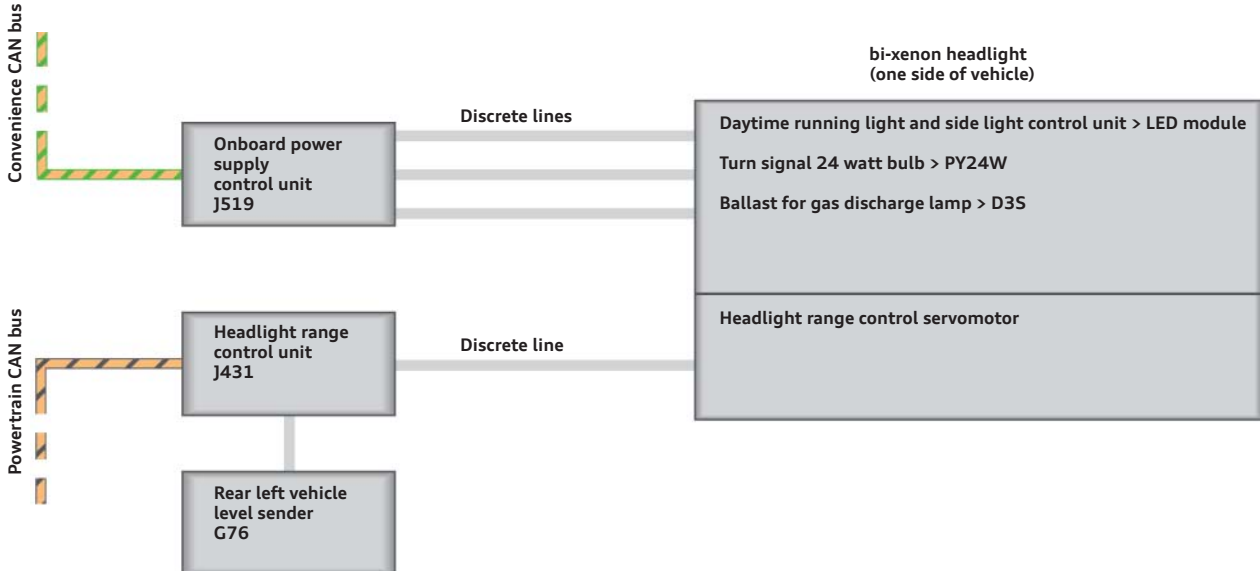


## Dynamic headlight range control

Audi Q3 models with xenon headlights have a dynamic headlight range control system. Depending on the altitude and movement of the vehicle, headlight range control motors V48 and V49 correct the headlight range of the headlights.

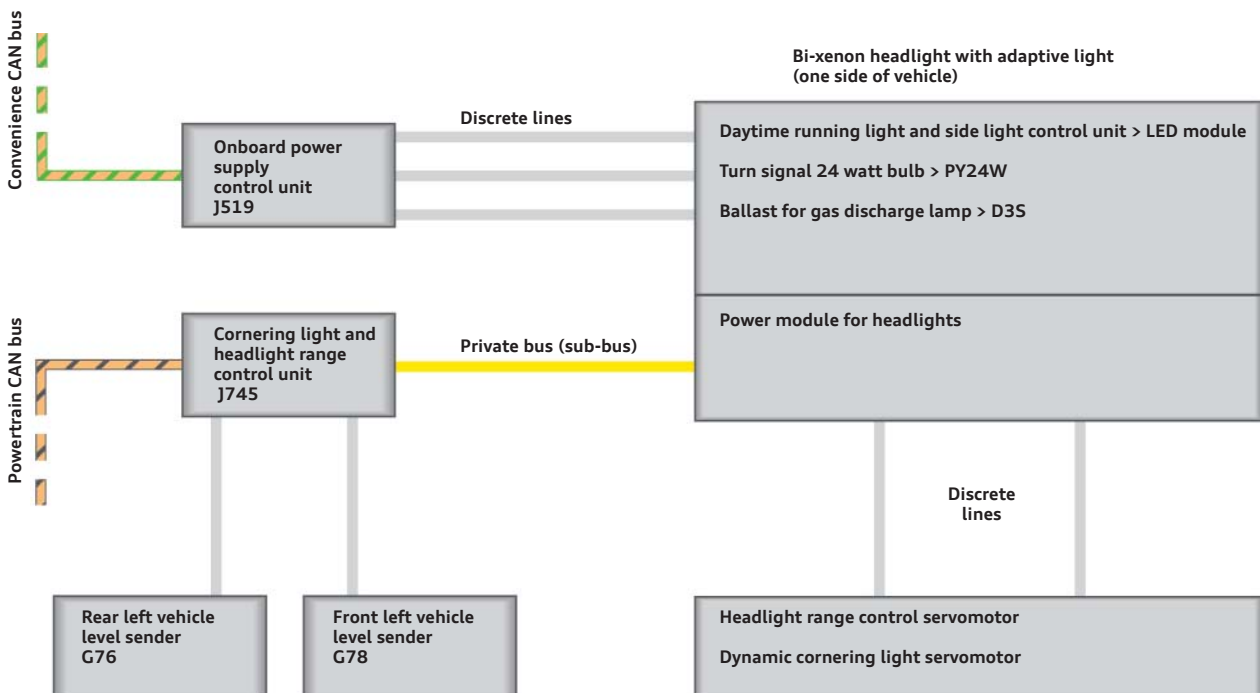
The headlight range control configurations described below are available for the bi-xenon headlights and the bi-xenon headlights with adaptive light.

### Schematic diagram of the activation mechanism for bi-xenon headlights



602\_115

### Schematic diagram of the activation mechanism for bi-xenon headlights with adaptive light



602\_116

Audi Q3 models equipped with wheel damping electronics have three senders for measuring vehicle ride height - two on the front axle and one on the rear axle. The signals from these senders are read into the electronically regulated damping control unit J250.

The electronically controlled damping control unit J250 is a powertrain CAN user and relays information on vehicle ride height to the headlight range control unit as bus signals.

## Tail lights

In the Audi Q3, the light functions of the rear lighting are distributed to the tail lights in the tailgate and to the additional tail lights in the rear bumper.

There are two versions of the tail lights in the tailgate:

- ▶ basic tail lights
- ▶ LED tail lights

On the other hand, there is only one version of the additional tail light fitted with bulbs.

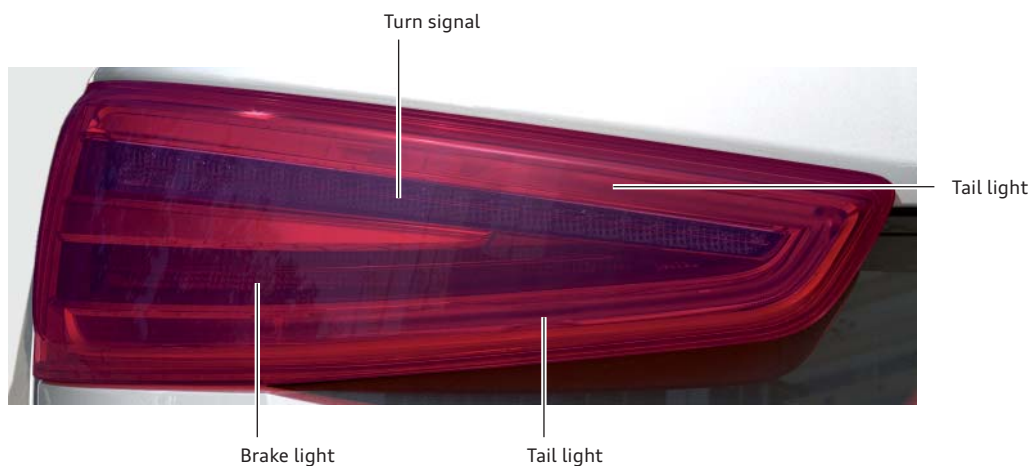
### Basic tail light



602\_117

Light functions	Illuminants used	Activation mechanism	Power
<b>Tail light 1</b> <b>Brake light 1</b>	Bulb P21W	dimmed to 30 % 100 %	21 watts
<b>Tail light 2</b> <b>Brake light 2</b>	Bulb P21W	dimmed to 30 % 100 %	21 watts
<b>Turn signal</b>	Bulb PY21W	100 %	21 watts

### LED tail light



602\_118

Light functions	Illuminants used	Activation mechanism	Power
<b>Tail light</b>	2 LEDs with plastic optical fibres	100 %	approx. 2 watts
<b>Brake light</b>	18 red LEDs	100 %	approx. 3.5 watts
<b>Turn signal</b>	21 yellow LEDs	100 %	approx. 3.5 watts

The tail lights are activated by the onboard power supply control unit J519. In both versions, all tail light functions are disabled when the tailgate is open. The bulbs of the basic tail lights can be replaced.

For this purpose, the tail light must be removed from the tailgate. None of the component parts of the LED tail lights can be replaced.

## Additional tail lights

The fixed additional tail lights in the Audi Q3 are needed because the tail lights also swing up when the tailgate is opened. They are integrated in the bumper and accommodate the reversing light and rear tail light functions, as well as the turn signal and the tail/brake light when the tailgate is open.

The additional tail lights can be taken out in order to remove the bulbs from the rear bumper. A blanking cap which provides access to the light screws is integrated in the bumper cover for this purpose. The additional tail lights are activated by the onboard power supply control unit J519.



602\_119

Light functions	Illuminants used	Activation mechanism	Power
<b>Tail light<sup>1)</sup></b>	Bulb W16W	dimmed to approx. 30 %	
<b>Brake light<sup>1)</sup></b>		100 %	16 watts
<b>Turn signal<sup>1)</sup></b>	Bulb W16W	100 %	16 watts
<b>Rear fog light</b>	Bulb W16W	100 %	16 watts
<b>Reversing light</b>	Bulb W16W	100 %	16 watts

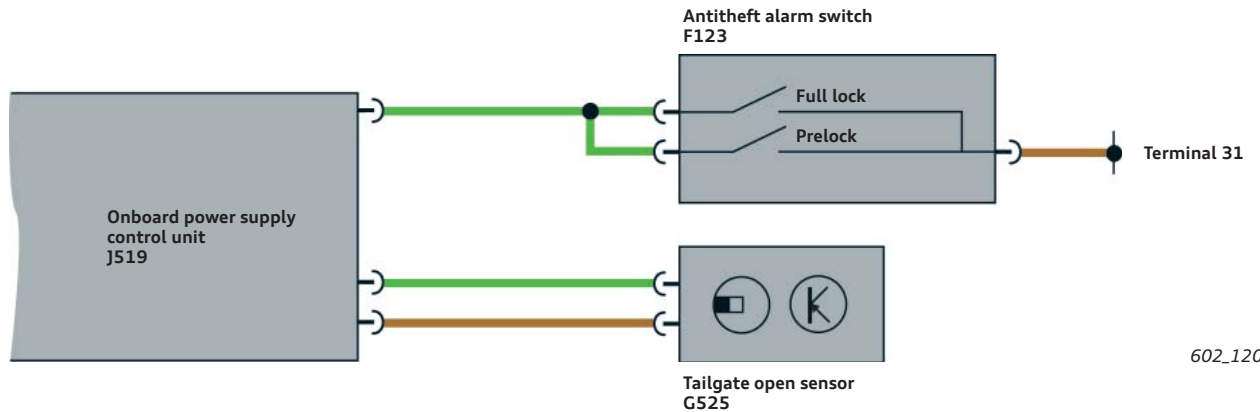
<sup>1)</sup> active only when tailgate is open

## Activation mechanism

The tail lights are deactivated when opening the tailgate, and the tail/brake light and turn signal functions are taken over by the additional tail lights in the bumper. To reliably detect an open tailgate, the antitheft alarm switch F123 and the tailgate open sensor G525 are evaluated. The antitheft alarm switch F123 comprises two microswitches integrated in the tailgate lock.

The tailgate open sensor G525 is a Hall sensor which is integrated in the rear lock plate cover. The onboard power supply control unit not only evaluates the operating states of both switches, but also monitors the time between the signals generated by both switches. If there is too much time lag between both signals when closing the tailgate, the additional tail lights are not deactivated for safety reasons.

## Schematic diagram of the circuit



## High-level brake light

The high-level brake light is integrated in the rear spoiler and, comprising a total of 48 LEDs, provides additional brake lighting. The component parts of the high-level brake light cannot be replaced. In the event of a fault, the complete brake light must be removed (after taking off the rear spoiler).



## Number plate lights

The number plate lights on the Audi Q3 use LED technology, irrespective of tail light version. Both number plate lights are clipped into the tailgate panel, and each has two LEDs. Like the high-level brake light, they are activated by the onboard power supply control unit J519.

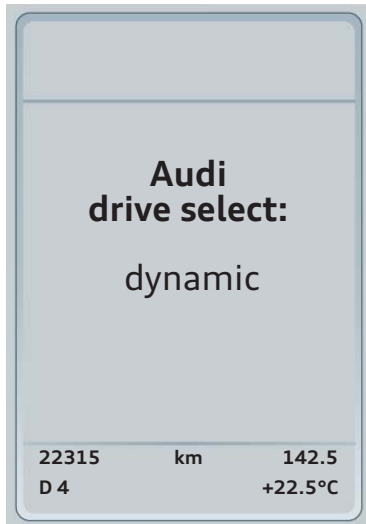


## Audi drive select

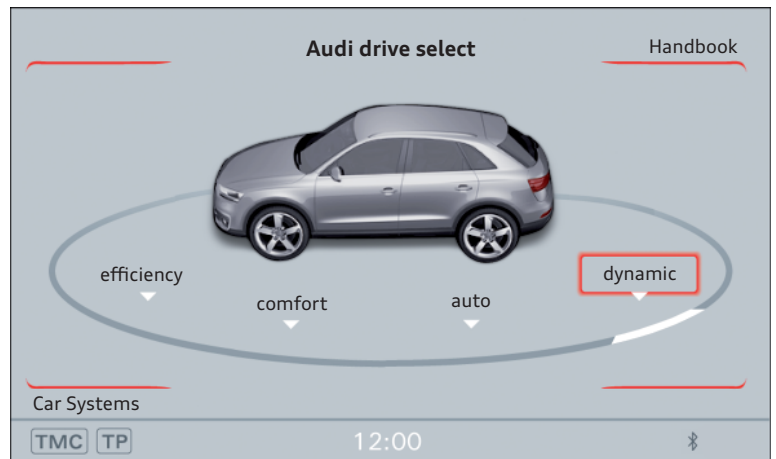
The Audi E3 is equipped with the Audi drive select system. The customer can choose between four operating modes: efficiency, comfort, auto and dynamic. The efficiency mode configures the vehicle for fuel efficiency and helps the driver to conserve fuel. The efficiency mode requires a dash panel insert with driver information system. Unlike in other Audi models, the individual mode is not available in the Audi Q3.

Depending on infotainment system, the Audi drive select system can be set either via a button on the centre console or via the CAR menu in the RMC/MMI.

The selected mode of the Audi drive select system is displayed in the dash panel insert in models equipped with the chorus radio option. In models equipped with the RMC or MMI option, the mode is shown on the external "MMI display".



602\_135



602\_136

## Controllable systems

The system is operated using the buttons in the centre console



Operation via CAR menu in Radio Media Center (RMC) or MMI



### Damper control<sup>1)</sup>

Variable damper rate



### Accelerator/engine

Variable characteristic



### Automatic air conditioning<sup>1)</sup>

Reduced operation



### Servotronic

Variable steering torque



### Cornering light<sup>1)</sup>

Variable swivelling action



### Automatic gearbox<sup>1)</sup>

Variable shift program



602\_137

<sup>1)</sup> Optional equipment



### Reference

For more detailed information about the efficiency mode, refer to Self Study Programme 486 "Audi A8 '11".

## Functional characteristics in models with efficiency mode

### Vehicles with twin clutch gearbox

	efficiency		comfort		auto		dynamic	
	D	S	D	S	D	S	D	S
<b>Engine</b>								
Power/ torque	reduced	normal	normal	normal	normal	normal	normal	normal
Load change	balanced	balanced	balanced	balanced	balanced	balanced	sparty	sparty
<b>Gearbox</b>								
Freewheel	active	inactive	inactive	inactive	inactive	inactive	inactive	inactive
Shift characteristics	"E" <sup>1)</sup>	"S" <sup>2)</sup>	"D" <sup>3)</sup>	"S" <sup>2)</sup>	"D" <sup>3)</sup>	"S" <sup>2)</sup>	"D" <sup>3)</sup>	"S" <sup>2)</sup>

<sup>1)</sup> optimised for fuel economy





<sup>2)</sup> sparty

<sup>3)</sup> balanced

### Vehicles with manual gearbox

	efficiency		comfort		auto		dynamic	
<b>Engine</b>								
Upshift indicator	eco		normal		normal		normal	
Power/ torque	reduced		normal		normal		normal	
Load change	balanced		balanced		balanced		sparty	
<b>Gearbox</b>								
	—		—		—		—	

### Drive-independent vehicle systems

	efficiency		comfort		auto		dynamic	
<b>Steering</b> 	balanced		comfortable		balanced		sparty	
<b>Damper control</b> 	balanced		comfortable		balanced		sparty	
<b>Automatic air conditioning</b> 	reduced		normal		normal		normal	
<b>Cornering light</b> 	eco		comfortable		normal		sparty	

# Driver assistance systems

## Front camera for driver assistance systems R242

The Audi Q3 uses a new camera, which is required for the various driver assistance systems. It replaces the camera control unit J852 used previously in the Audi A6 '11 and Audi A8 '10 and is installed in the same position in the vehicle. In Customer Service, the camera is referred to as the front camera for driver assistance systems E242. It is a control unit with integrated camera which is connected to the extended CAN bus.

A key new feature of the front camera is that it has a powerful CPU. This allows assistance systems previously distributed across multiple control units in other models to be implemented as a single control unit - the front camera for driver assistance systems R242.

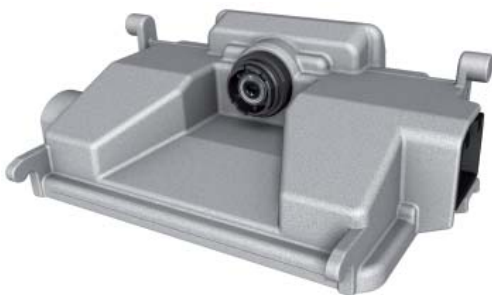
The front camera for driver assistance systems E242 houses the software for the following assistance systems:

- ▶ Audi active lane assist
- ▶ Speed limit display
- ▶ Headlight Assist

Both the image processing system control unit J851 and the camera control unit J852 are required in the C7 platform for the driver assistance systems Audi active lane assist and speed limit indicator. The Headlight Assist system is integrated in the separate control unit J844.

In the Audi Q3, on the other hand, only the front camera for driver assistance systems R242 is required when ordering the three above-mentioned driver assistance systems.

Camera control unit J852 (e.g. Audi A6 '11)



602\_082

Image processing system control unit J851 (e.g. Audi A6 '11)



602\_083

Headlight assist control unit J844



602\_084

Front camera for driver assistance systems R242



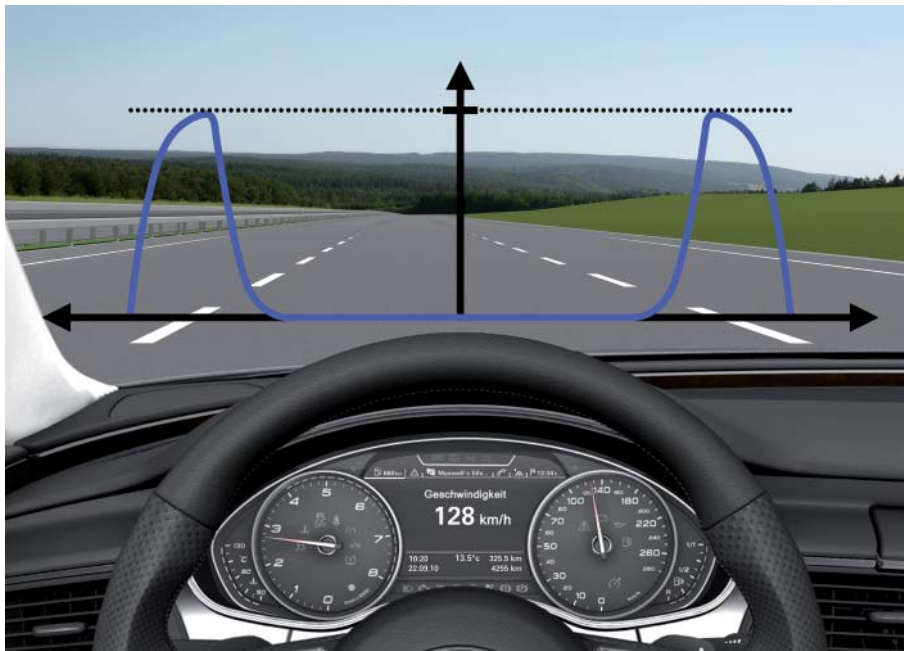
602\_085

## Audi active lane assist

The Audi active lane assist system in the Audi Q3 is based on the familiar Audi C7 platform system. There are also, however, several striking differences between these systems.

These are as follows:

- ▶ On C7 platform models, there are two options for timing corrective steering inputs: "early" or "late". The Audi Q3 does not have an "early" corrective steering point, only a "late" corrective steering point. This also eliminates the need for a setting option in the MMI. It means that, in the case of the Audi Q3, corrective steering inputs are made whenever the vehicle approaches a lane marker line, and not when it moves away from the centre of the lane.
- ▶ The Audi Q3 does not have the additional overtake detection function. This means that Audi active lane assist also intervenes if handling indicates that the driver intends changing lane without activating the turn signals.
- ▶ The Audi Q3 also does not have the additional function of early system intervention when objects are detected on the adjacent lane.



602\_086



### Reference

For more detailed information about Audi active lane assist, refer to Self Study Programme 483 "Audi A7 Sportback – Convenience Electronics and Audi active lane assist".

Audi active lane assist is currently available in only a limited number of counties.



## Speed limit display

The speed limit display in the Audi Q3 is identical to the function in C7 platform vehicles.

The speed limit display is not available for the Audi Q3 as a separately orderable function. If an Audi Q3 has Audi active lane assist and MMI 3G Plus, the vehicle comes automatically equipped with the speed limit display.



602\_087



### Reference

For further information about the speed limit display, refer to SSP 482 "Audi A7 Sportback Head-up Display and Speed Limit Display".

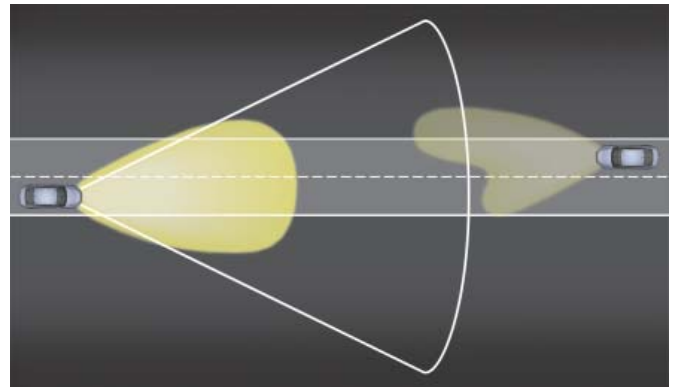
The speed limit display is currently available in only a limited number of countries.

## Headlight Assist

Two different versions of the headlight assist system can be installed in the Audi Q3. In all cases, however, this is the headlight assist system which switches between the "main head on" and "main beam off" states. The "intelligent light system" function, with its continuous transition between main beam and dipped beam, will not be available at market launch of the Audi Q3.

If an Audi Q3 is ordered with the Audi active lane assist and Headlight Assist driver assistance systems, Headlight Assist is integrated in the front camera for driver assistance systems R242. Audi active lane assist requires the front camera, which is why it is also used for Headlight Assist.

If Headlight Assist is ordered without Audi active lane assist, the vehicle comes fitted with the headlight assist control unit J844. It is integrated in the rear view mirror and is identical to the known system launched in 2008.



602\_088



### Reference

For further information about the headlight assist function, refer to Self Study Programme 434 "The Audi Headlight Assist".

## Introduction

The high quality standards in automobile manufacturing at Audi are also reflected in the air conditioning control system of the Audi Q3.

The objectives were equally high - firstly in order to offer the occupants a high degree of comfort and, secondly, to make climate control as energy efficient as possible.

### Air conditioning system versions

A manual air conditioning system is available as the entry-level version.

The optional fully automatic two-zone air conditioning system regulates nominal temperature, air distribution and air flow rate depending on sunlight intensity, interior and exterior temperature. It also has a humidity sensor. A dew point sensor and a windscreen temperature sensor are integrated in the base of the mirror to detect impending windscreen fogging and to enhance climate comfort by cabin humidity management.

### Energy efficiency

- ▶ **Automatic start-stop:** the air conditioning system control unit sensors continuously monitor the temperature and moisture content of the air in the occupant cell, thus allowing engine stop times to be maximised.
- ▶ **Networking of air conditioning system control unit and onboard computer:** the driver is informed as to the operating status of the air conditioning system as well as the resulting fuel consumption and receives hints on efficient use of the air conditioning system if, for example, an open side window or the sliding sunroof is increasing energy consumption.

Equipment	Manual air conditioning system	Automatic climate control system
Climate zones	Single-zone system	Two-zone system
Interior filtering	Dust and pollen filter	Dust and pollen filter without activated charcoal
Manual air circulation	♦	♦
Automatic air circulation		♦
Sunlight photosensor		♦
Air quality sensor		♦
Cabin humidity sensors		♦
Seat heating levels	5	3
Glove compartment cooling system		♦

## Manual air conditioning system

The manual air conditioning system control unit J301 also has three rotary switches for manual adjustment of temperature, blower speed and air distribution. The air distribution and temperature flaps are actuated electrically by servomotors. The manual air conditioning system control unit J301 therefore does not have Bowden cables or flexible shafts.

The manual air recycle button can be used for switching between air recirculation mode and fresh air mode. The cooling mode, and ultimately the compressor, can be switched on and off with the AC button. The manual air conditioning system control unit J301 is held in place in the dash panel by four screws.



602\_037

Manual air conditioning system control unit J301

## Automatic climate control system

The automatic climate control system is configured as a two-zone air conditioning system. The automatic air recirculation function can be activated via the Climatronic control unit J255. The optional seat heater for the front seats can be activated on three output levels using the button in the Climatronic control unit J255.

The automatic air conditioning system control unit always has at its disposal information from the following sensors:

- ▶ Air quality sensor G238
- ▶ Sunlight photosensor G107
- ▶ Humidity sensor G355

The Climatronic control unit J255 is fixed in place in the dash panel by clips and can be pulled out using a suitable special tool. A detailed description of the removal procedure can be found in the Workshop Manual.

Cabin air is fed into the dash panel temperature sensor by the dash panel temperature sensor blower V42. If repairs are needed, the blower V42 can be removed from the Climatronic control unit J255 and replaced separately.



602\_038

Climatronic control unit J255

Dash panel temperature sensor blower V42

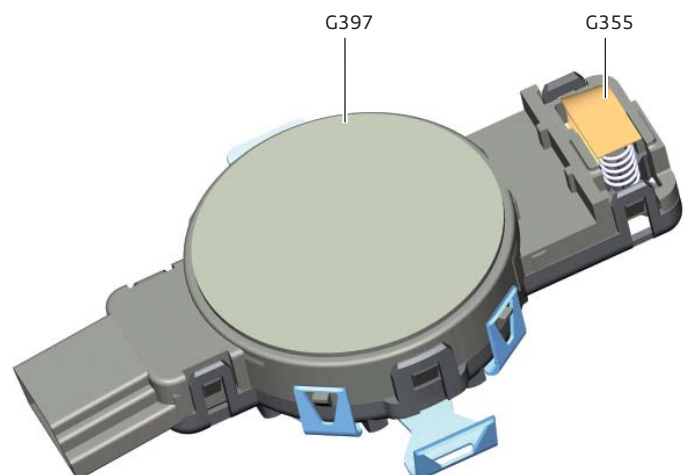
## Humidity management with combined rain, light and humidity sensor

The humidity management system in the cabin uses humidity sensor G355 to measure the cabin humidity for automatic air conditioning. The humidity sensor measures the relative humidity inside the cabin and the windscreen temperature.

Depending on vehicle trim, it may be the case, for instance, that only a rain and light detection sensor G397 or only a humidity sensor G355 is fitted.

In vehicles equipped with an Automatic Light Control and automatic air conditioning, the rain and light detection sensor and the humidity sensor are combined in a single unit.

If repairs are needed, the sensor is delivered complete with a transport protection cover which must be removed prior to installation in the vehicle.



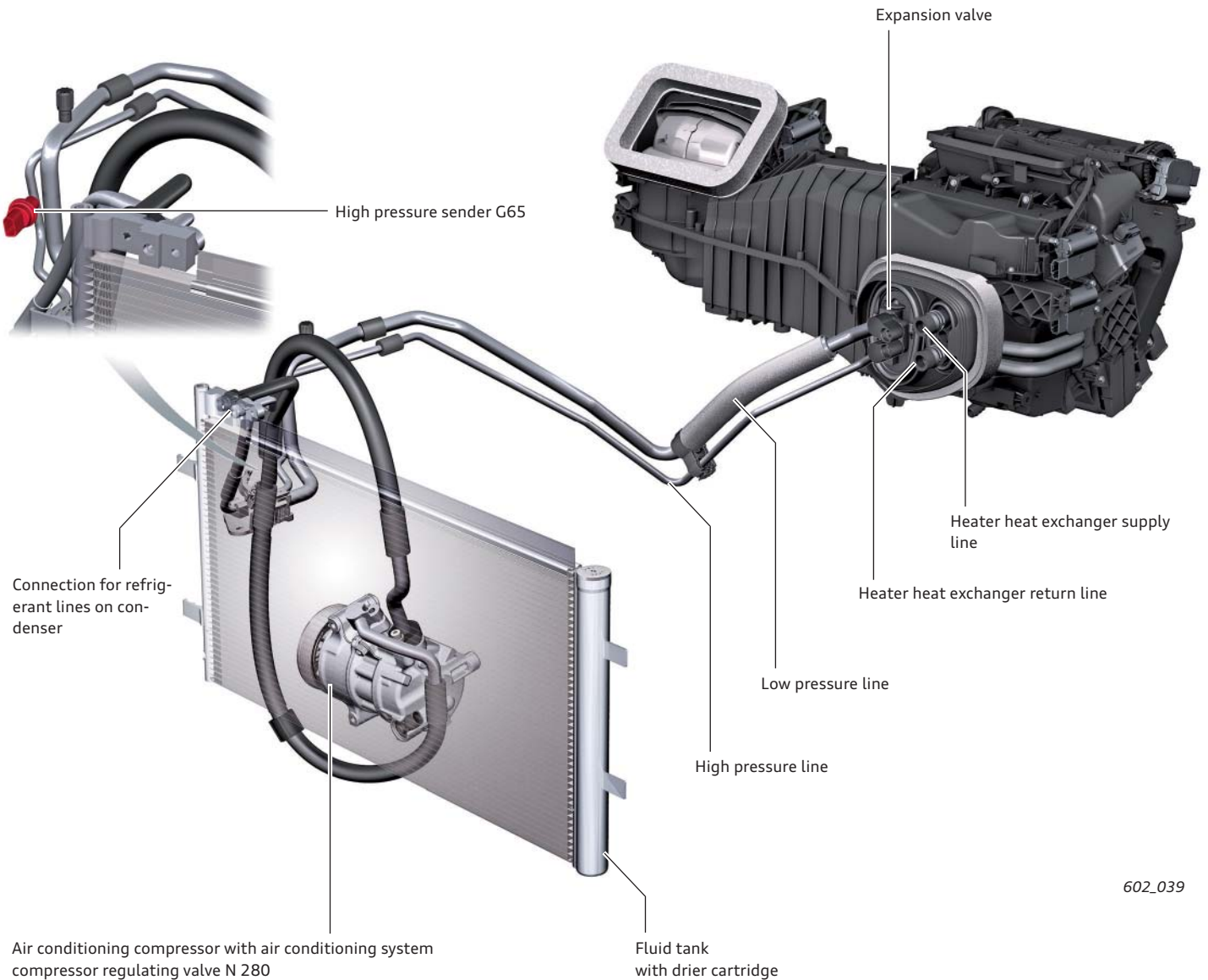
602\_121

## Refrigerant circuit

The refrigerant circuit of the Audi Q3 is designed for coolant type E134a. The refrigerant circuit is controlled by an externally controlled six piston compressor and an expansion valve. The refrigerant circuit has separate high and low pressure lines and no internal heat exchanger. The condenser houses the fluid tank with drier cartridge.

If repairs are needed, the drier is removed upwards. The two service connections are located in the engine bay on the right-hand side above the side member. The high-pressure sensor G65 sends its data by PWM signal to the manual air conditioning system control unit J301 or to the Climatronic control unit J255.

### Design



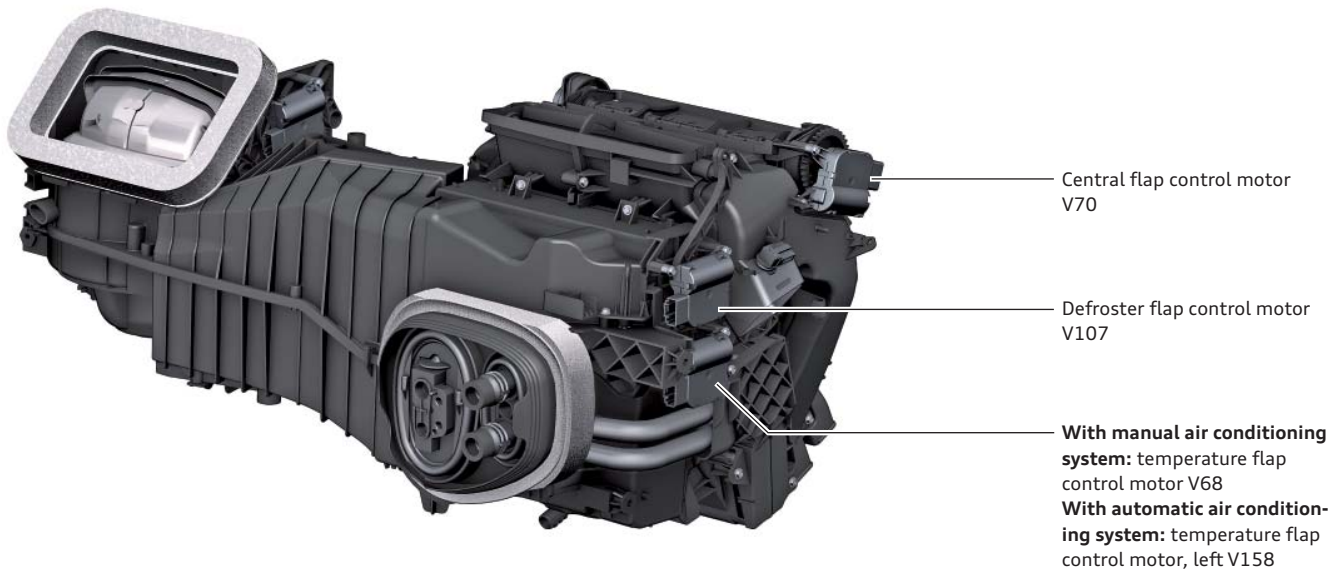
602\_039

## Air conditioner

The air conditioner is based technically on the air conditioner of the Audi A3 '04. The air conditioner geometry in the Audi Q3 is identical in the automatic and manual air conditioning systems. The automatic and manual air conditioning systems have different flap control units:

- ▶ Air conditioners for right-hand drive models have a mirror-inverted design.
- ▶ The air conditioner has a condensate drain which flows into the centre tunnel in the front passenger side footwell.
- ▶ The heater heat exchanger can be replaced with the dash panel and centre console installed.
- ▶ The dust and pollen filter can be accessed from the front passenger footwell.

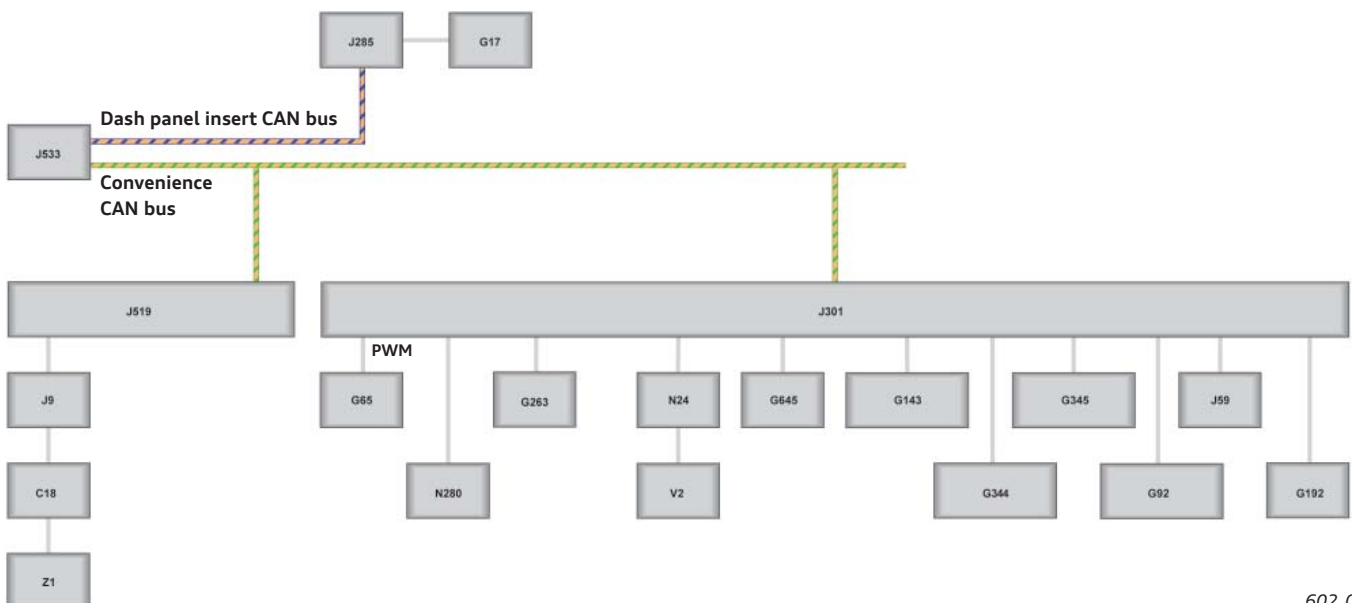
## Design



602\_040

## Connected components

### Manual air conditioning system

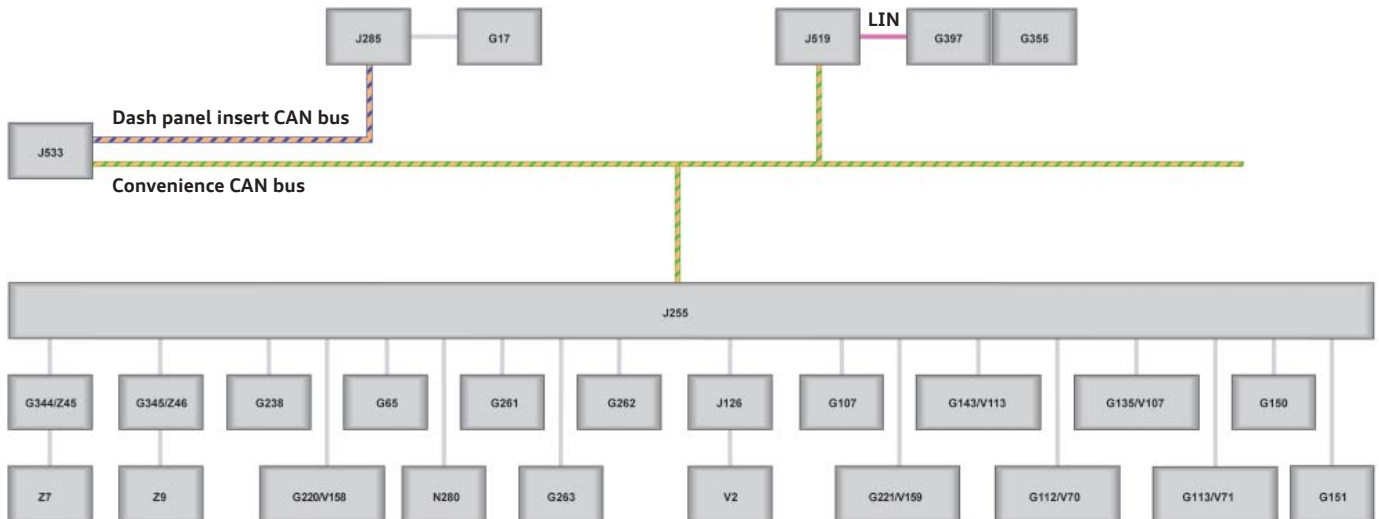


602\_041

The manual air conditioning system J301 communicates with the onboard power supply control unit J519 and the control unit in dash panel insert J285 via the CAN data bus.

The heated front seats are heated via the heated front seats control unit J774. J774 is discretely connected to the onboard power supply control unit and therefore is not involved in data bus communications.

## Automatic climate control



602\_042

### Key to figures on pages 68 and 69:

C18	Windscreen aerial suppression filter	J9	Heated rear window relay
G17	Ambient temperature sensor	J59	X contact relief relay
G65	High pressure sender	J126	Fresh air blower control unit
G92	Temperature flap control motor potentiometer	J255	Climatronic control unit
G107	Sunlight photosensor	J285	Control unit in dash panel insert
G112	Central flap control motor potentiometer	J301	Air conditioning system control unit
G113	Air flow flap control motor potentiometer	J519	Onboard power supply control unit
G135	Defroster flap control motor potentiometer	J533	Data bus diagnostic interface (gateway)
G143	Air recirculation flap control motor potentiometer	N24	Fresh air blower series resistor with overheating cut-out
G150	Left vent temperature sender	N280	Air conditioning compressor regulating valve
G151	Right vent temperature sender	V2	Fresh air blower
G192	Footwell vent temperature sender	V70	Central flap control motor
G220	Left temperature flap control motor potentiometer	V71	Air flow flap control motor
G221	Right temperature flap control motor potentiometer	V107	Defroster flap control motor
G238	Air quality sensor	V113	Air recirculation flap control motor
G261	Left footwell vent temperature sender	V158	Left footwell flap control motor
G262	Right footwell vent temperature sender	V159	Right temperature flap control motor
G263	Evaporator outlet temperature sender	Z1	Heated rear window
G344	Front left seat temperature sender	Z7	Heated driver seat backrest
G345	Front right seat temperature sender	Z9	Heated front passenger seat backrest
G355	Humidity sender	Z45	Front left heated seat
G397	Rain and light detector sensor	Z46	Front right heated seat
G645	Air distributor flap control motor potentiometer		

### Signal processing

In the Audi Q3 virtually all sensor and actuator signals are read in, processed and output directly by the air conditioning system control unit. The ambient temperature sensor G17 and the humidity sensor G355 are exceptions.

The value measured by the temperature sensor G17 is read into the dash panel insert control unit J285, and the information is transmitted to the data bus system across the air conditioning system control unit.

The humidity sensor G355 sends its data to the onboard control unit J519 by LIN signal. The data is then transmitted to the Climatronic control unit J255 by convenience CAN bus.

# Infotainment

The Audi Q3 offers infotainment equipment of the highest standard.

To cater to the extensive requirements of customers, the Audi Q3 offers a wide range of equipment options and accessories. The infotainment system of the Audi Q3 is comparable to the systems installed in the Audi A1. In contrast to the Audi A1, however, the Audi Q3 offers customers the option of ordering a TV tuner.

The front panels of the information electronics control units 1 J794 have been adapted for the Audi Q3. The concert radio also has a chrome bezel identical to that which is already standard in the MMI Navigation plus system.

## Overview of versions

In all, five different infotainment system versions are available for the Audi Q3. Depending on country, customers can choose between the chorus radio or one of three versions of the concert radio, as well as the high-end MMI Navigation plus system.

The concert radio is also available with Connectivity Package and Navigation Package options. These packages include further equipment features such as the Audi music interface.

The difference between the Connectivity Package and the Navigation Package is that the customer can have the navigation function activated at a later date if the concert radio is ordered with the Connectivity Package. This is carried out at an Audi dealership, where the customer also receives the required SD card and navigation data.

The concert radio is based on the Radio Media Center (RMC) infotainment platform. The MMI Navigation plus system is based on the MMI 3rd generation plus (MMI 3G Plus) infotainment platform.

The following table shows the key standard and optional equipment features.



### Note

No Bluetooth-related functions are available on Audi vehicles in countries where Bluetooth is not permitted.



### Reference

Details of infotainment versions can be found in the following Self Study Programmes:

- ▶ SSP 477 "Audi A1"
- ▶ SSP 484 "Audi A7 Sportback Occupant Protection, Infotainment, Air Conditioning"
- ▶ SSP 603 "Audi A6 Avant '12"

### chorus radio (Europe only)

### concert radio



### Basic equipment

3.1" monochrome display with  
132 x 46 pixel resolution

6.5" TFT colour monitor with  
400 x 240 pixel resolution

AM/FM radio single tuner

AM/FM radio with  
phase diversity

CD drive (MP3)

Car menu

CD drive  
(MP3, AAC, WMA)

1 SD card reader  
(for SDHC cards with up to 32 GB of  
memory)

AUX In socket

AUX In socket

Basic sound system  
(4 x 20 watts)

Basic sound system  
(4 x 20 watts)

### Options

Bluetooth interface for HFP  
and A2DP (9ZX)

Universal mobile phone prewiring  
UHV for HFP and A2DP (9ZX)

Digital radio DAB

CD changer (MP3)

Audi Sound System

BOSE Surround Sound

**concert radio with  
Connectivity Package**

**concert radio with  
Navigation Package**

**MMI Navigation plus**



6.5" TFT colour monitor with  
400 x 240 pixel resolution

6.5" TFT colour monitor with  
400 x 240 pixel resolution

7" TFT colour monitor with  
800 x 480 pixel resolution

Prewired for navigation

2D navigation system with  
SD card

3D hard drive  
navigation system

AM/FM radio with  
phase diversity and TMC tuner<sup>1)</sup>

AM/FM radio with  
phase diversity and TMC tuner

AM/FM radio with  
phase diversity and background tuner

Car menu

Car menu

Car menu

CD drive  
(MP3, AAC, WMA)

CD drive  
(MP3, AAC, WMA)

DVD drive  
(Audio/Video, MP3, AAC, WMA,  
MPEG4)

2 SD card readers  
(for SDHC cards with up to 32 GB of  
memory)

2 SD card readers  
(for SDHC cards with up to 32 GB of  
memory)

2 SD card readers  
(for SDHC cards with up to 32 GB of  
memory)

20 GB jukebox

Audi music interface (AMI)

Audi music interface (AMI)

Audi music interface (AMI)

Basic sound system  
(4 x 20 watts)

Basic sound system  
(4 x 20 watts)

Basic sound system  
(4 x 20 watts)

Bluetooth interface  
for HFP and A2DP (9ZX)

Bluetooth interface  
for HFP and A2DP (9ZX)

Bluetooth interface  
for HFP and A2DP (9ZX)

Speech dialogue system

Speech dialogue system

Premium speech dialogue system

UHV universal mobile phone prewiring  
(9ZF)

UHV universal mobile phone prewiring  
(9ZF)

UHV universal mobile phone prewiring  
(9ZF)

BTA Bluetooth car phone (availability is  
market dependent, includes Audi  
Online Services and WLAN hotspot)

Digital radio DAB

Digital radio DAB

Digital radio DAB

CD changer (MP3)

CD changer (MP3)

CD changer (MP3)

Audi Sound System

Audi Sound System

Audi Sound System

BOSE Surround Sound

BOSE Surround Sound

BOSE Surround Sound

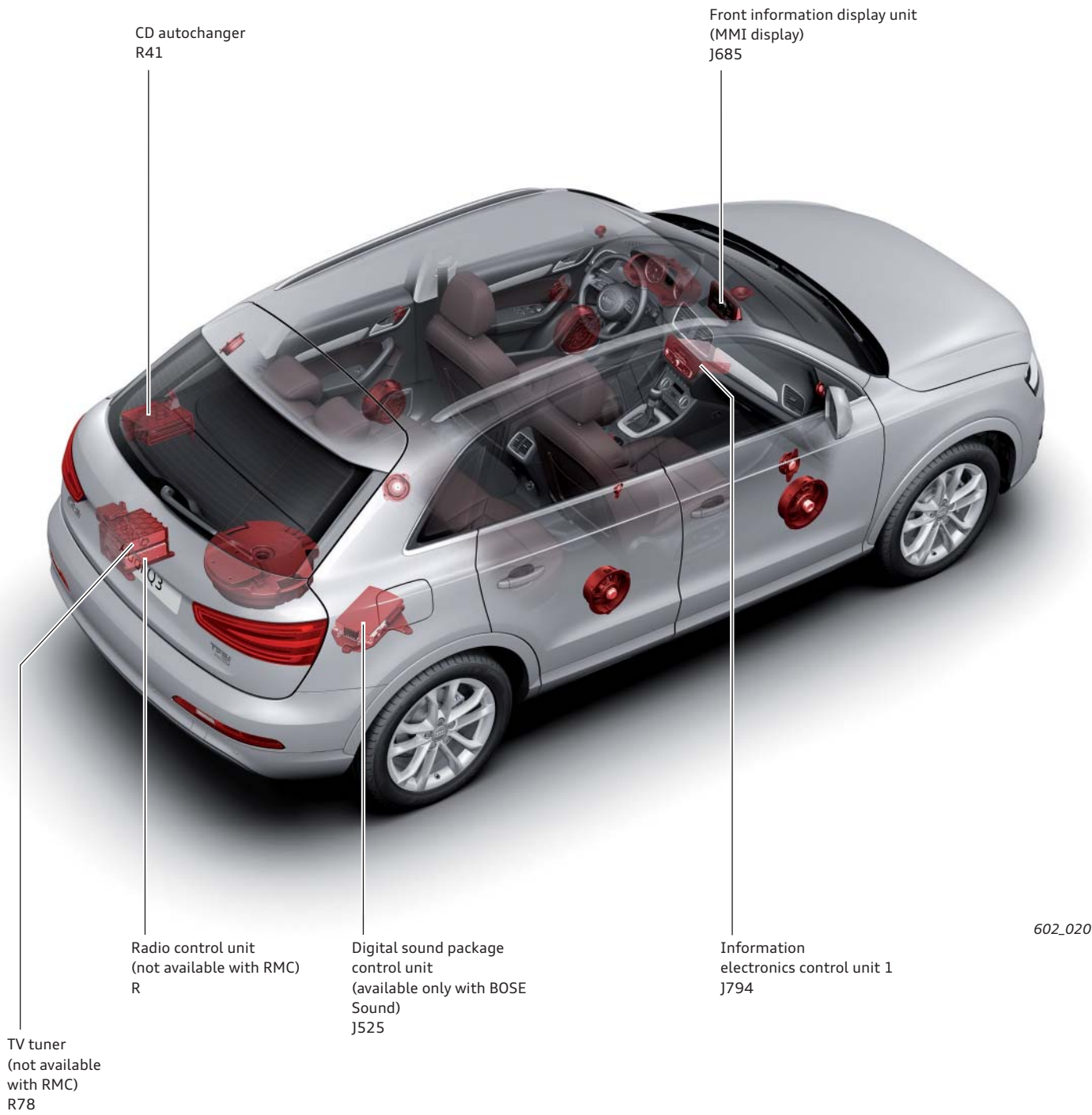
TV tuner

<sup>1)</sup> only available with activated navigation function



## Installation locations of control units

The infotainment control units are installed in different locations on the Audi Q3. The following diagram shows all control units which can be installed with MMI Navigation plus on the Audi Q3.



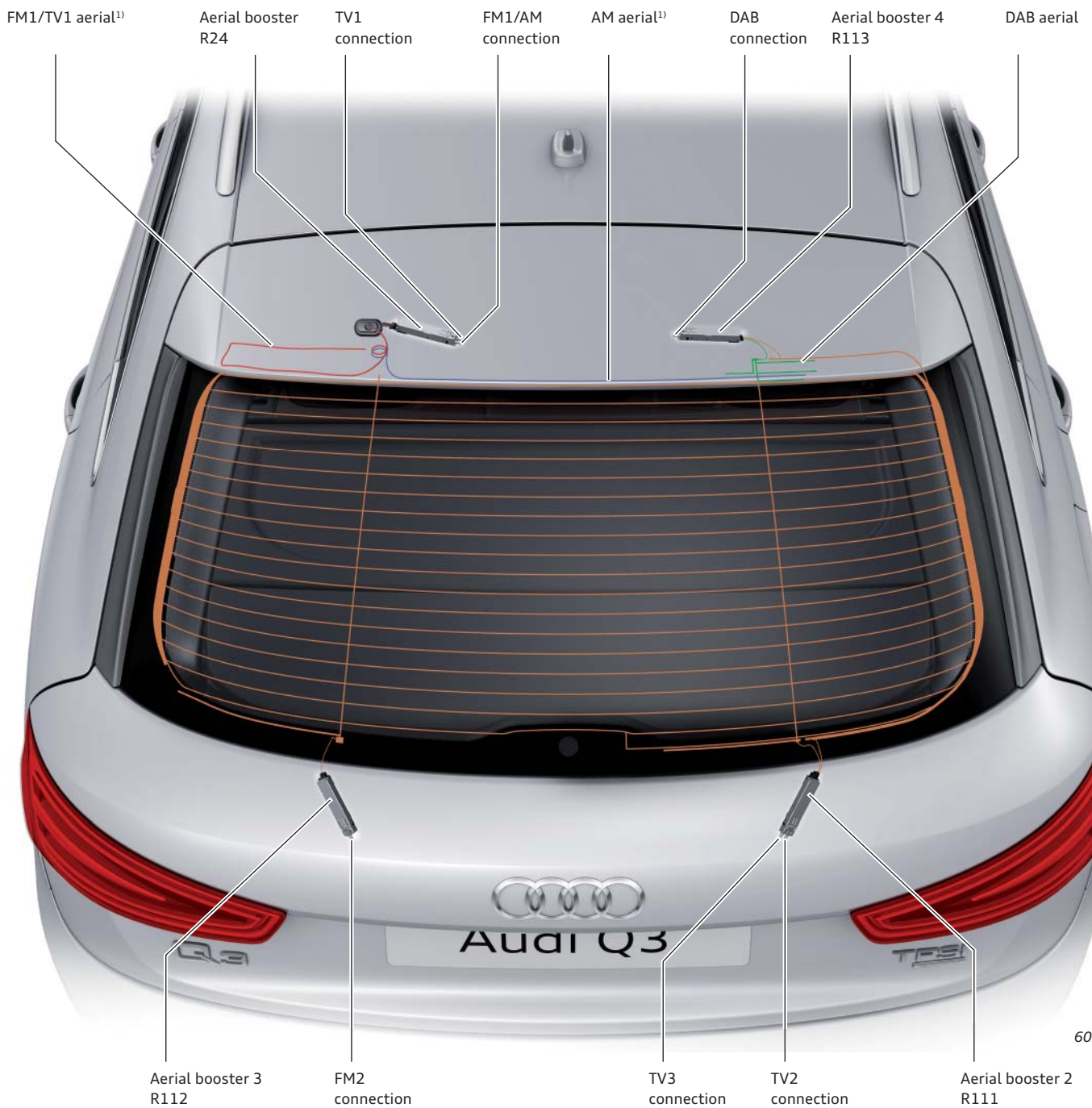
## Aerials overview

Most of the aerials in the Audi Q3 are integrated in the rear window. Only the optional telephone and navigation aerials are integrated in roof aerial R216.



602\_031

## Overview of rear window aerials with boosters



602\_023

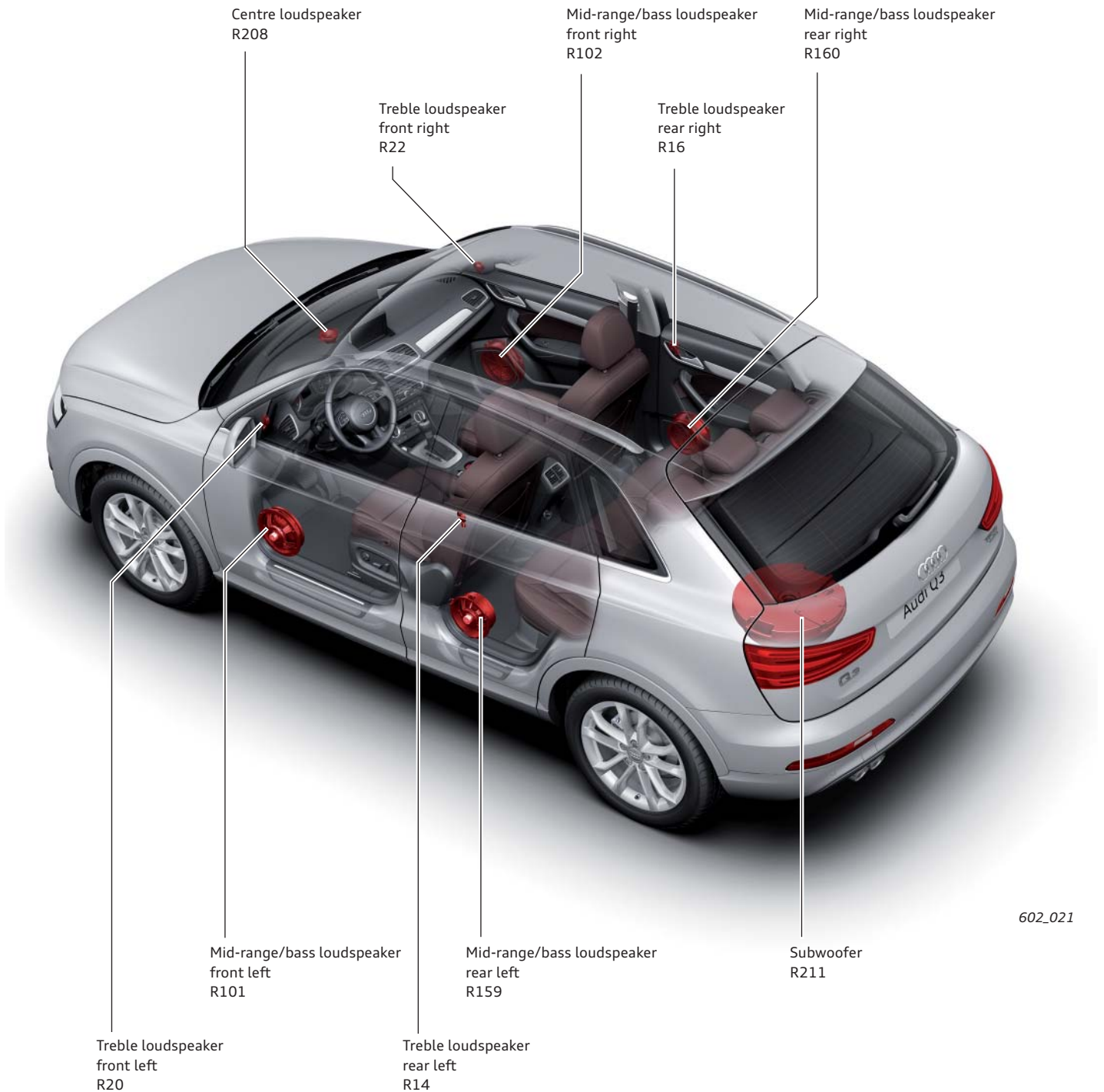
<sup>1)</sup> integrated in rear spoiler

## Sound systems

The sound systems on the Audi Q3 are identical in equipment and function to those on the Audi A1. However, they have been adapted to the cabin of the Audi Q3. The Audi Q3 in standard trim has a basic sound system with eight loudspeakers and 4 x 20 watts power output.

The optional standard sound system offers a fuller sound. The audio amplifier delivers a total power output of 180 watts distributed to ten loudspeakers. If the vehicle is fitted with a concert radio, the audio amplifier is integrated in information electronics control unit 1 J794. If the vehicle is fitted with an MMI Navigation plus system, the audio booster is integrated in the radio control unit.

### Audi Q3 with standard sound system

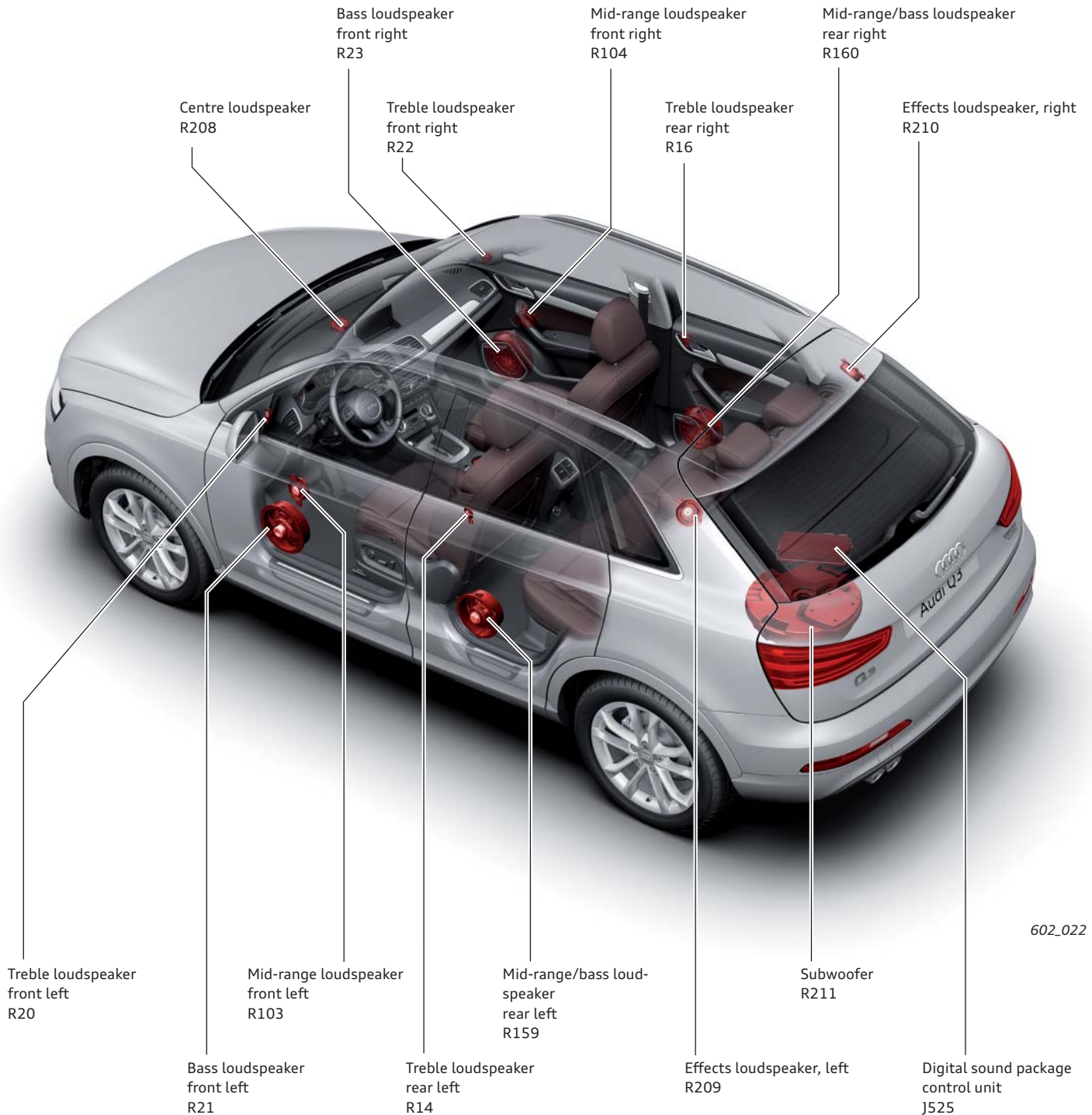


602\_021

## Audi Q3 with BOSE Surround Sound

The optional BOSE Surround Sound System provides excellent sound quality. It has 14 loudspeakers and delivers a total power output of approximately 465 watts for uncompromising sound quality. The BOSE audio amplifier (digital sound package control unit J525) is installed in the boot floor in the Audi Q3.

In models fitted with the BOSE Surround Sound system, the two bass loudspeakers in the front doors are visually enhanced by indirect lighting in the speaker grilles. The LEDs installed for this purpose are driven by the door control units.



602\_022

## Displays

(front information display unit J685)

Depending on trim level, the Audi Q3 has various displays. The concert radio and MMI Navigation plus have different colour displays. They differ from one another in terms of their size and resolution. When the displays are not required, they can be folded away manually. They are positioned in the centre of the dash panel.

The concert radio (RMC) has a 6.5" TFT display with 400 x 240 pixel resolution.

MMI Navigation plus has a 7" TFT display with a maximum resolution of 800 x 480 pixels.

The display is connected to the information electronics control unit 1 J794 by a 4 pin connector. Two of the four wires are used for image transfer by LVDS (Low Voltage Differential Signaling). One wire is used for data transfer by LIN bus. The fourth wire is an earthing wire. The display is supplied with electrical power through a separate connector.



602\_024

Concert radio display



602\_025

MMI Navigation plus display

## iPod adapter plus

The new adapter cable plus for the Apple iPod is supported in model year 2012 and later vehicles.  
Its parts number is: 4F0.051.510R.

The iPod adapter plus is not just a cable connection between the AMI and the iPod, rather it is an active interface with special hardware and software. A special Apple authentication chip is built into the housing of the iPod connector plug in the iPod adapter cable plus. This chip contains the software needed in order to enable additional functions. The authentication chip is used to check which functions the device connected to the iPod (information electronics control unit 1 J794) is allowed to use.

The iPod adapter plus can be distinguished from prior versions by a red anti-kink device on the AMI connecting plug as well as a large housing at the iPod connecting plug.

The iPod adapter plus is available in model year 2012 and later vehicles with the following equipment:

- ▶ Radio Media Center with Audi music interface (AMI)
- ▶ MMI 3G Plus with Audi music interface (AMI)

The iPod adapter plus supports the following functions:

- ▶ Audio streaming
- ▶ Cover display
- ▶ Video streaming

All information embedded in an audio file (e.g. track, album, artist) is displayed. If a cover is available for a track currently playing on the iPod, this is also displayed.

The video streaming function can be used to play back video files. Films, broadcasts, music videos, video podcasts and rented films can be played on an iPod.

As a safety precaution, the video screen is disabled while driving.

The following Apple products running the following firmware (FW) version or higher are currently supported:

- ▶ iPod Nano 5G running FW 1.0.2
- ▶ iPod Nano 6G running FW 1.0.0  
(limitation: video is not supported)
- ▶ iPod Touch 1G running FW 3.0.0
- ▶ iPod Touch 2G running FW 3.0.0
- ▶ iPod Touch 3G running FW 3.0.0
- ▶ iPod Touch 4G running FW 4.0.0
- ▶ iPhone 1G running FW 3.0.0
- ▶ iPhone 3G running FW 3.0.0
- ▶ iPhone 3GS running FW 3.0.0
- ▶ iPhone 4G running FW 4.0.0
- ▶ iPad 1G and 2G running FW 4.2.1



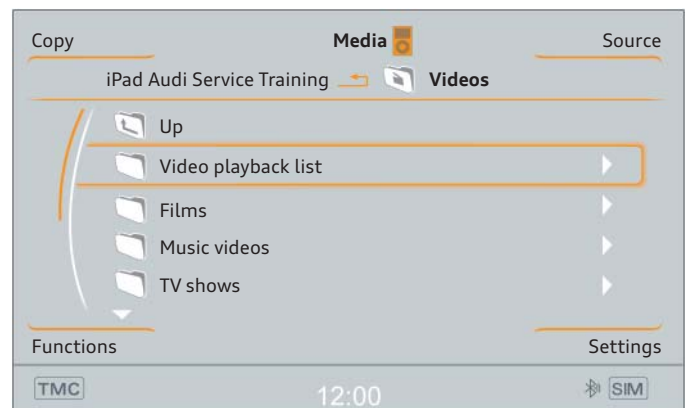
iPod adapter cable plus

602\_028



Audio playback display

602\_029



Video menu display

602\_030



### Note

Further information about supported iPod versions and in-car functions can be found in the Mobile devices database at: [www.audi.com/bluetooth](http://www.audi.com/bluetooth) or [www.audi.com/mp3](http://www.audi.com/mp3).

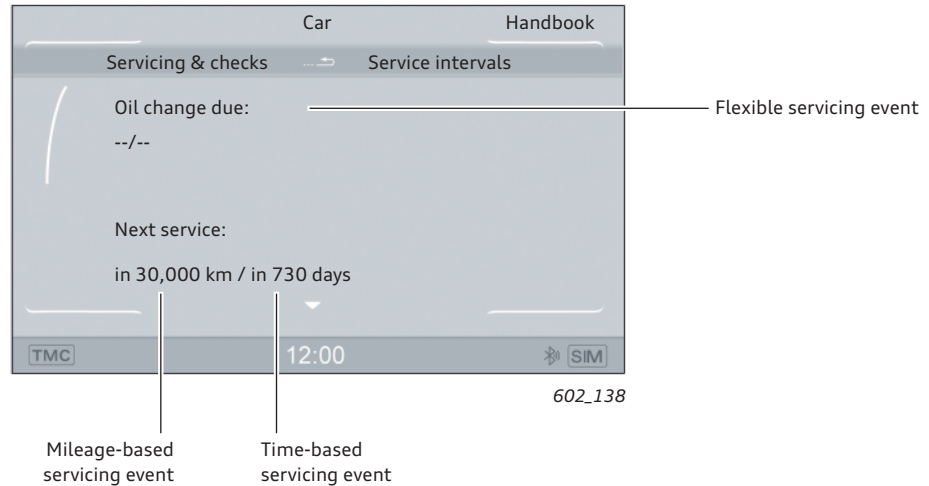
# Service

## 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 in the MMI



On new vehicles, the next oil change due box (flexible servicing event) is initially blank. A servicing interval computed from the driving profile and engine load is displayed after the vehicle has covered approx. 500 km. The display "Oil change due" then switches to "Next oil change".

The value in the mileage-based servicing events box is now 30,000 km for new vehicles and is counted down in increments of 100 km.

The value in the time-based servicing events box is now 730 days (2 years) for new vehicles and is updated on a daily basis (upwards of a total mileage of approx. 500 km).

## Overview of service intervals

	Audi Q3 2.0l TDI 103 kW	Audi Q3 2.0l TDI 130 kW	Audi Q3 2.0l TFSI 125 / 155 kW
<b>Oil change interval</b>	15,000 km / 1 year – 30,000 km / 2 years (market-dependent)		
<b>Service interval</b>	30,000 km / 2 years	30,000 km / 2 years	30,000 km / 2 years
<b>Dust and pollen filter</b>	30,000 km / 2 years	30,000 km / 2 years	30,000 km / 2 years
<b>Brake fluid</b>	Change after 3 years for the first time (depending on market), then every 2 years		
<b>Haldex clutch</b>	60,000 km / 4 years	60,000 km / 4 years	60,000 km / 4 years
<b>Fuel filter</b>	60,000 km	60,000 km	Lifetime
<b>Spark plugs</b>	—	—	90,000 km / 6 years
<b>Air filter</b>	90,000 km	90,000 km	90,000 km
<b>Timing gear</b>	210,000 km	210,000 km	Chain (lifetime)



### Note

The specifications in the current service literature always apply.

## Self Study Programmes

For further information about the technology in the Audi Q3, refer to the following Self Study Programmes.



602\_124



602\_125



602\_126



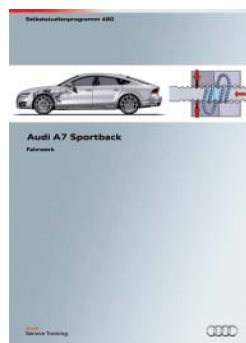
602\_128

**SSP 420 Audi 2.0l TDI Engine with Common Rail Injection System**, order number: A08.5S00.45.20

**SSP 434 The Audi Headlight Assist System**, order number: A07.5S00.50.20

**SSP 436 SSP 436 Modifications to the chain-driven 4-cylinder TFSI engine**, order number: A08.5S00.52.20

**SSP 477 Audi A1**, order number: A10.5S00.70.20



602\_129



602\_130



602\_131



602\_132

**SSP 480 Audi A7 Sportback Chassis**, order number: A10.5S00.73.20

**SSP 482 Audi A7 Sportback Head-up Display and Speed Limit Indicator**, order number: A10.5S00.75.20

**SSP 483 Audi A7 Sportback Convenience Electronics and Audi active lane assist**, order number: A10.5S00.76.20

**SSP 484 Audi A7 Sportback Occupant Protection, Infotainment and Air Conditioning**, order number: A10.5S00.77.20



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