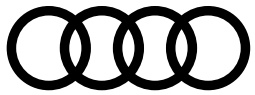




# The 2019 Audi Q8 Introduction

eSelf-Study Program 990793



Audi of America, LLC  
Service Training  
Created in the U.S.A.  
Created 08/2018

Course Number 990793

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

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The eSelf-Study Program (eSSP) teaches a basic understanding of the design and mode of operation 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 further information about maintenance and repair work, always refer to the current technical literature.

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**Note**



**Reference**

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# Introduction

The Audi Q8 combines the best of two worlds – the refined elegance of a four-door luxury coupé and the practical versatility of a large SUV. The new top-of-the-line model of the Q family demonstrates luxury-class prestige in every detail. Its generously sized interior with variable luggage compartment, cutting-edge operating and running gear technology and its intelligent driver assist systems make the Audi Q8 an assured companion for business and leisure.

A powerful yet efficient 3.0l V6 TFSI engine with mild hybrid technology provides the dynamic characteristics promised by the muscular design. With quattro permanent four-wheel drive and ground clearance of almost 10 inches (254 mm), the SUV coupé is equally at home away from paved roads.

The coupe-like roof line gives it a significantly flatter look than its sister model the 2017 Q7. The Q8 is 2.6 inches (66 mm) shorter but approximately 1.1 inches (27 mm) wider. Strong contours and taut, athletic surfaces convey power, high quality and the special dynamics of the permanent four-wheel drive system. The Q8 offers its very own interpretation of the progressive design language which was introduced with the Audi A8, fusing the attributes of an elegant four-door luxury coupé with those of a handsome SUV, and including echoes of an Audi icon: the original quattro. With the striking single-frame grill in octagonal design, the Audi Q8 presents the new face of the Q family.

Like the Audi Q7, the Audi Q8 is built at the Bratislava factory.



672\_001

## Overview

As Audi's SUV crossover model, the Audi Q8 features expressive design with a new octagonal single-frame grill and characteristics reminiscent of the original Audi quattro.

Like the 2019 Audi A8, the Audi Q8 is based on Mild Hybrid Electric Vehicle (MHEV) technology. Below is a summary of the key features of the new Audi Q8.

### Climate Control

The new allergen air filter, installed as standard, ensures high air quality by reducing fine particulate matter, harmful gases and allergens inside the vehicle. Premium air quality is provided by the use of fragrance and ionization.

### Engines

High performance and efficiency provided by a powerful TFSI engine with a 48V mild hybrid system.

### Driver assist systems

Control Module for Adaptive Cruise Control J428 is installed in the single frame grill (top left). Laser Distance Regulation Control Module J1122 is also installed in the grill (top right).

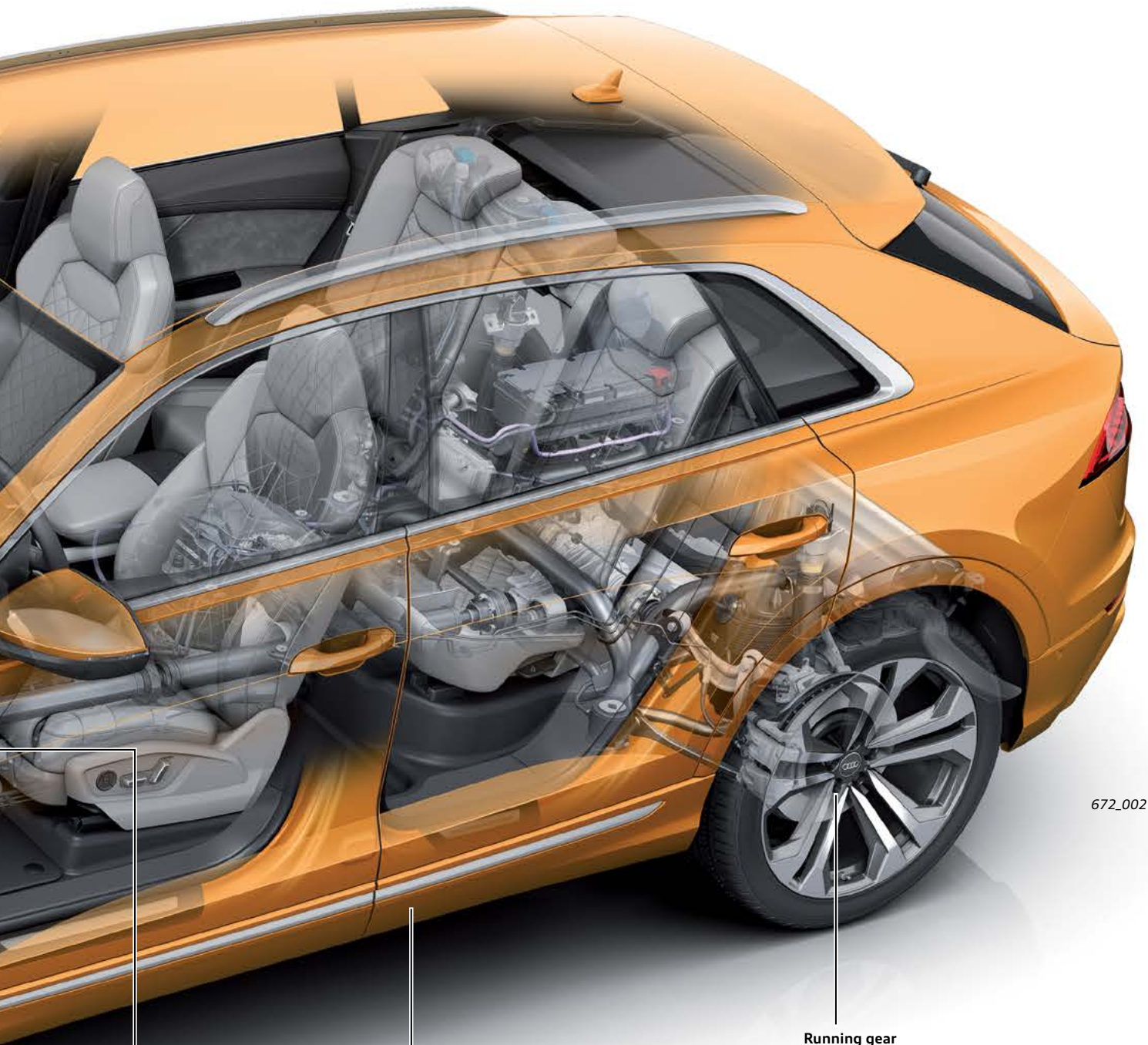
### LED headlights

Standard LED headlights with a color temperature similar to daylight. Optional Audi matrix LED headlights. (Awaiting approval for the U.S. and Canadian markets.)

### Displays and operation

Up-to-date MMI touch response display and operating concept using two touch displays with haptic feedback. An Audi virtual cockpit with full HD resolution and a head-up display are available as optional extras.





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**Body**

The lightweight body has a multi-material construction which ensures optimum functions and weight. The front and rear doors are frameless. A two-part panoramic sunroof is optionally available.

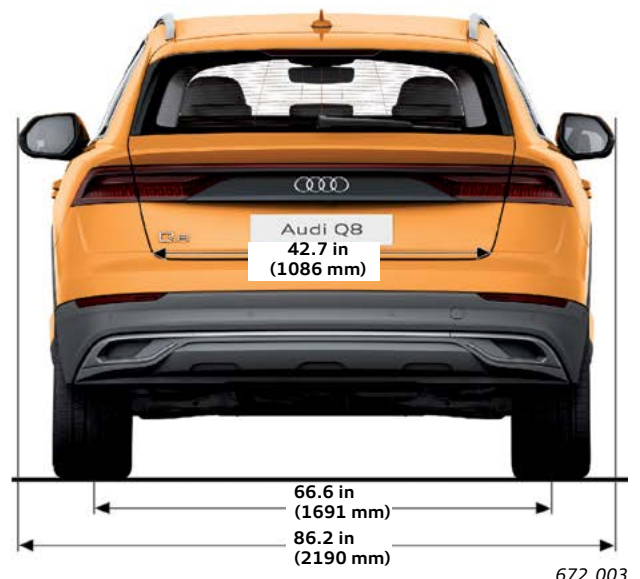
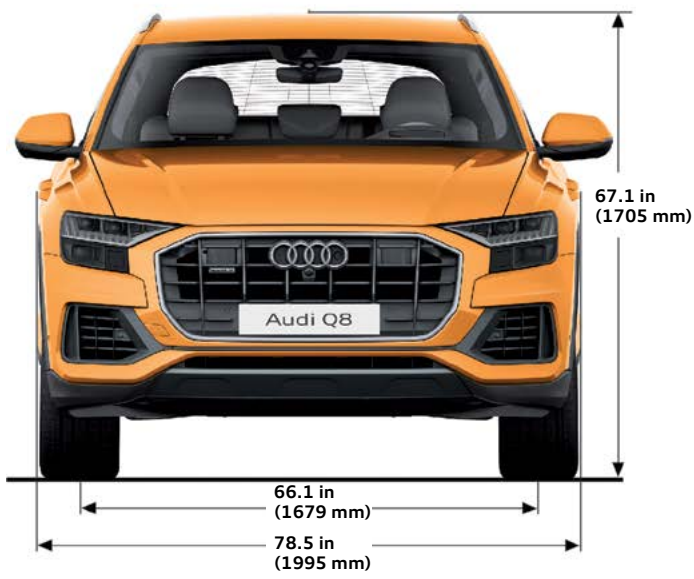
**Running gear**

Adaptive shock absorbers as standard; adaptive air suspension and four-wheel steering as optional extras to optimize the vehicle's dynamic characteristics.

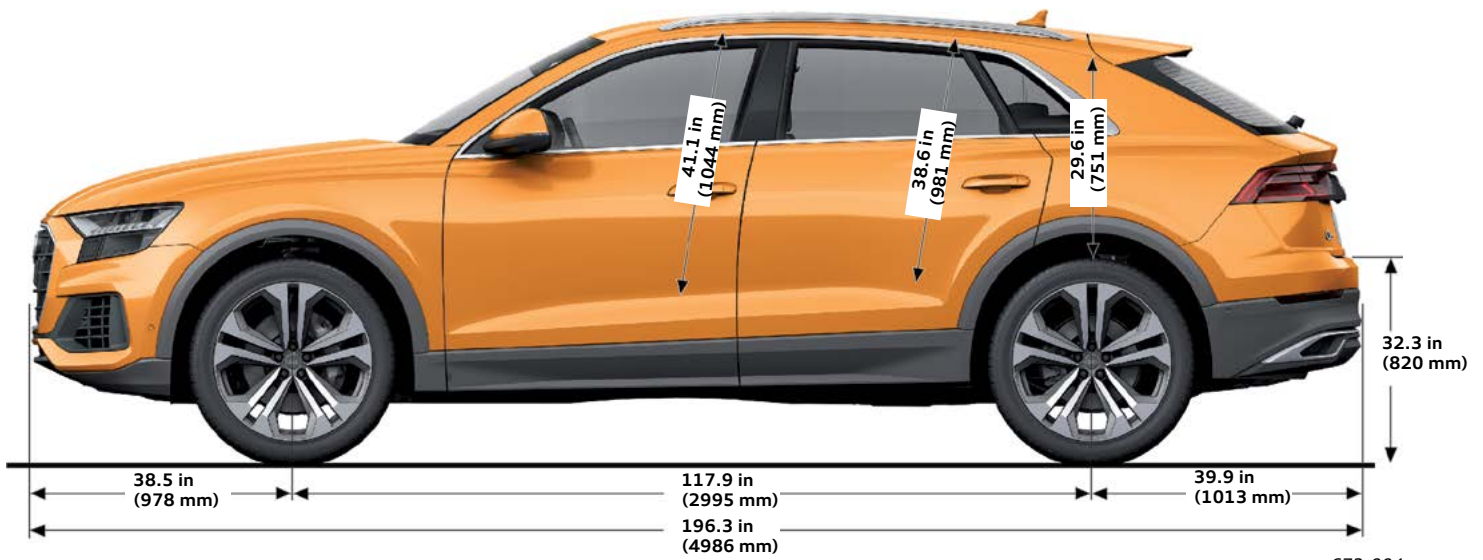
**Power transmission**

- > 8-speed automatic transmission
- > quattro with self-locking center differential and final drive with open differential on rear axle
- > The driver's commands are transmitted from the selector mechanism to the transmission via shift-by-wire technology.

# Dimensions



672\_003



672\_004



672\_005

Exterior dimensions and weights	
Length	196.3 in (4986 mm)
Width (not incl. mirrors)	78.5 in (1995 mm)
Width (incl. mirrors)	86.2 in (2190 mm)
Height	67.1 in (1705 mm) <sup>1)</sup>
Front track	66.1 in (1679 mm)
Rear track	66.6 in (1691 mm)
Wheelbase	117.9 in (2995 mm)
Unladen weight	4894 lb (2220 kg)
Max. gross weight	6173 lb (2890 kg)

Interior dimensions and other specifications	
Front cabin width	61.9 in (1572 mm) <sup>2)</sup>
Front shoulder width	59.5 in (1512 mm) <sup>3)</sup>
Rear cabin width	61.4 in (1559 mm) <sup>2)</sup>
Rear shoulder width	58.5 in (1486 mm) <sup>3)</sup>
Load sill height	32.3 in (820 mm)
Luggage compartment capacity	21.3 cu ft (605 l) <sup>4)</sup> 61.9 cu ft (1755) <sup>5)</sup>
Drag coefficient cW	0.34
Capacity of fuel tank	22.4 gal (85 l)

<sup>1)</sup>Including roof antenna

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

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

<sup>4)</sup>Seat bench in rearmost position, load up to top edge of backrest

<sup>5)</sup>With rear seat backrest folded down, load up to roof



# Body

## Overview

The body of Audi Q8 has a multi-material construction; in terms of layout and construction, it is largely similar to the 2017 Q7. The lightweight body contains many aluminum and hot-formed steel components; these steel components form the ultra high-strength backbone of the occupant cell and are used for 14.4% of the bodyshell.








15% of the body is made of high-pressure aluminum die castings; this includes the suspension turrets in the engine compartment and the connections between the side members and longitudinal members. Aluminum panels are used for the side frame and large areas of the floor, the rear wheel housings and the roof, as well as for the frameless doors, the front fenders and the rear lid; they make up 23.7% of the body.

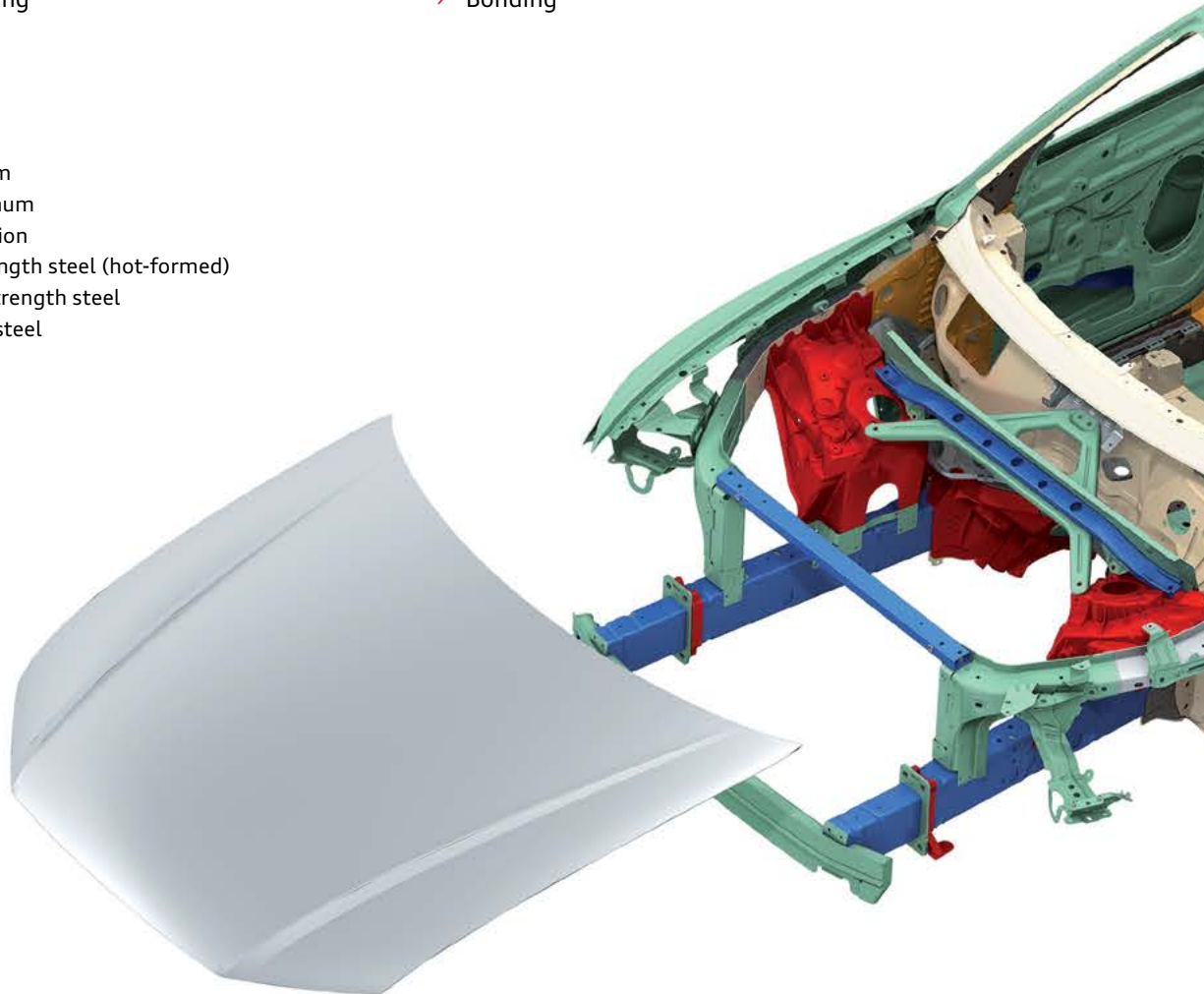
## Joining techniques

The following joining techniques are used during the manufacture of the multi-material body:

- > Resistance spot welding for steel
- > MAG welding
- > Laser welding for aluminum
- > Laser welding for steel
- > MIG welding
- > Friction element welding
- > Semi-tubular punch riveting
- > Pop riveting
- > Flow-drill screws
- > Clinching
- > Seaming
- > Bonding

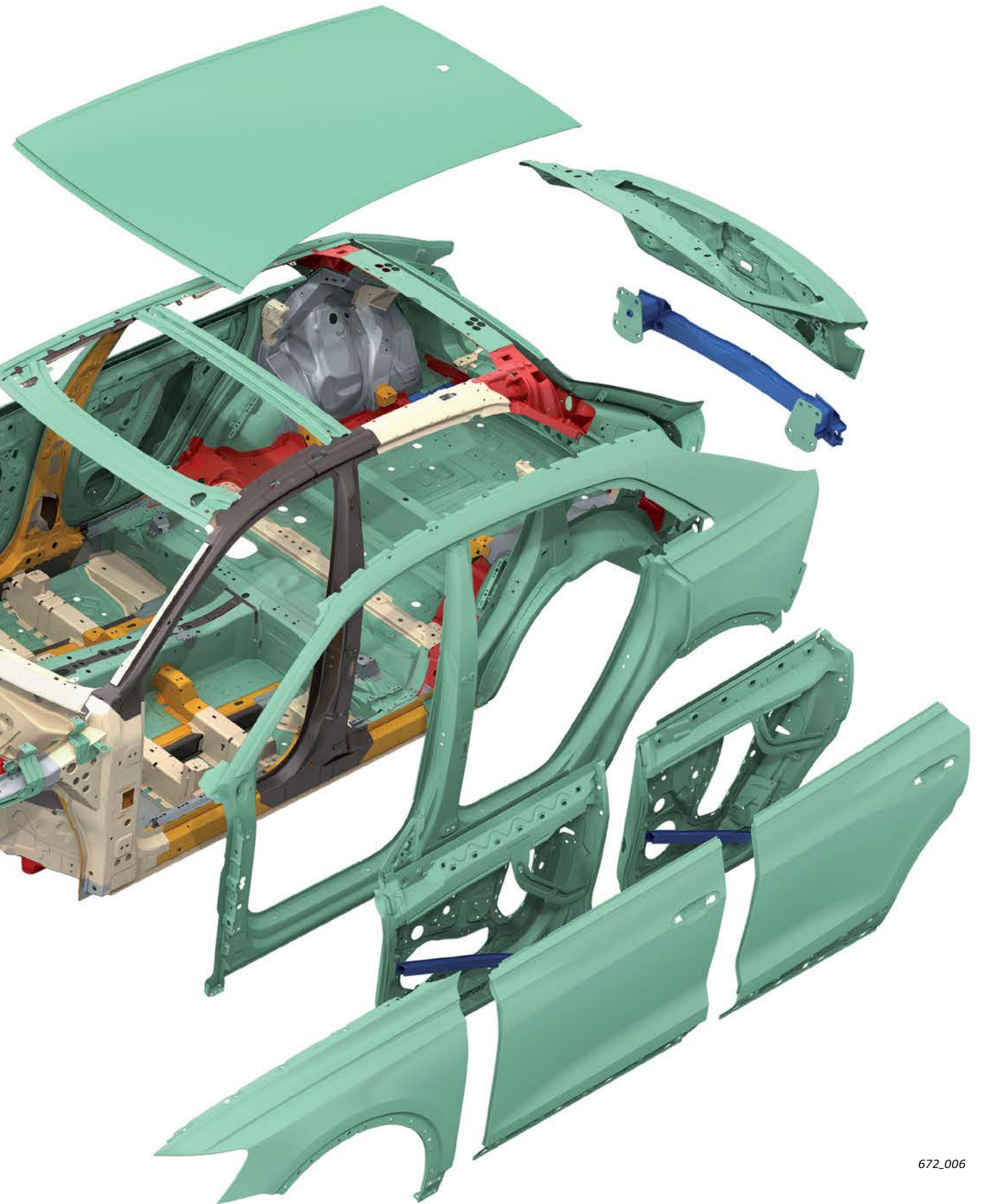
### Key:

	Sheet aluminum
	Die-cast aluminum
	Aluminum section
	Ultra-high-strength steel (hot-formed)
	Modern high-strength steel
	High-strength steel
	Soft steel



### Reference

For further information on the construction and structure of the body, please refer to eSelf-Study Program [990163, The 2017 Audi Q7 Introduction](#).



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## General body repairs

Although it is very easy to see that the Audi Q8 is related to the 2017 Audi Q7 in technological terms, there are some

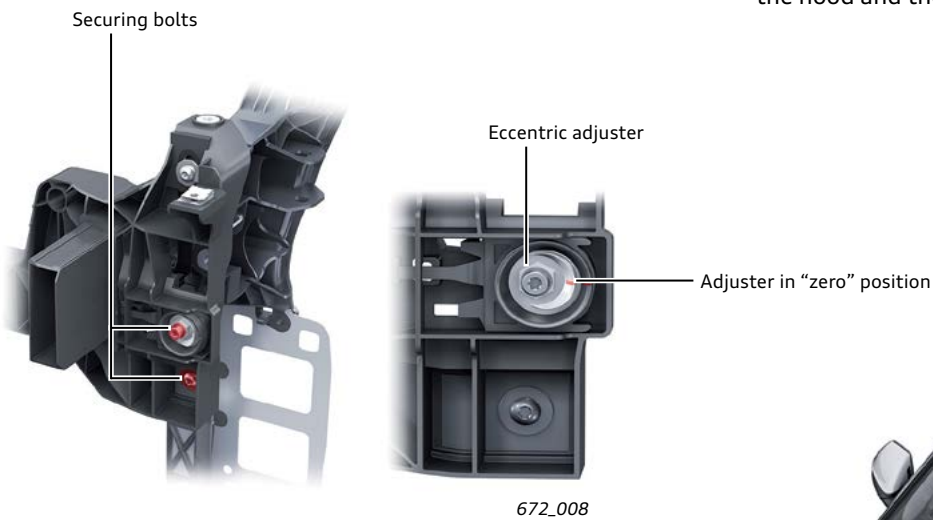
major differences with regard to several service-related aspects, including general body repair work.

### Front bumper

The high quality standards of the body of the Audi Q8 are emphasized by extremely accurate and even gap widths. To ensure that the original gap widths are restored correctly, for example after any repair work performed on the body following an accident, there are numerous adjustments which can be made on the doors, hood, rear lid and bumpers.

To adjust the gap widths at the front end of the Audi Q8, a new type of eccentric adjuster is featured in the headlight mounting.

Once the two securing bolts have been loosened, the eccentric adjuster at the upper bolt can be turned – for example using the socket wrench from the rear window adjusting tool V.A.G 1739 – and the position of the headlight in relation to the hood and the bumper cover can be adjusted precisely.



#### Note

When installing the headlight mounting, it is important to turn the eccentric adjuster to the "zero" position. To ensure this, the two markings must align. If this is done, there will be no hindrances when adjusting the bumper during the subsequent installation procedure.

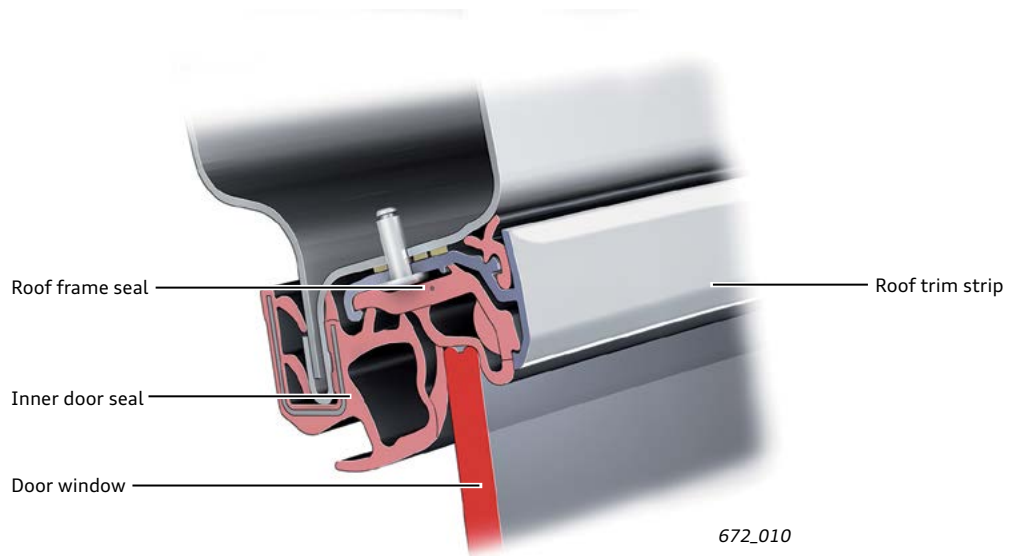
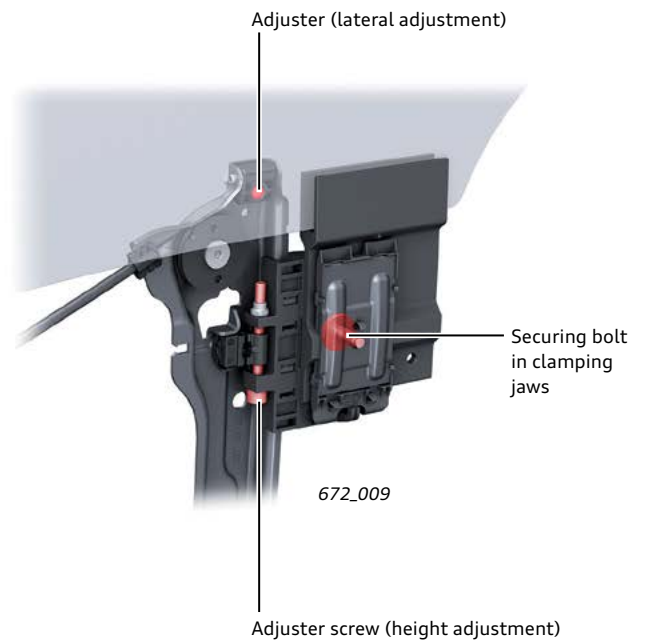


## Frameless door windows

The door windows on the Audi Q8 are frameless. A lateral adjuster is used to determine the incline of the window and therefore the pressure it exerts on the inner door seal. To perform adjustment, the adjuster with which the window regulator is secured in the door must be rotated. The height adjuster determines the depth of the window in the roof frame seal. To perform the adjustment, the adjuster screw on the window mounting in the window regulator must be rotated.

Parallel adjustment of the rear door window to the front door window and to the side window is performed by moving the window in the clamping jaws of the window regulators.

If any windows have not been adjusted correctly, it may result in wind noise, moisture or frozen door windows in winter.



## Electric luggage compartment cover

The Audi Q8 can be equipped with an electric luggage compartment cover as an option. In technical terms, the system is the same as the one in the 2017 Q7. However, when the rear lid is opened, the luggage compartment cover moves forward almost horizontally in the luggage compartment side trim rather than being raised into the D-pillar trim. Luggage Compartment Cover Motor 1 V473 is located on the rear cross panel and is activated by Rear Lid Control Module J605. Using a reel and Bowden cables, this moves two actuators forwards or backwards, depending on the direction in which the electric motor is rotating. This opens or closes the luggage compartment cover.

The number of motor revolutions is measured via Luggage Compartment Cover Sensor G758.

To prevent any folds or creases from forming in the cover, it is important for both actuators to run synchronously. It must therefore be ensured that the Bowden cables are routed correctly. In particular, they must not be twisted when they are secured in the double clips. If the actuators are still not positioned in parallel, the Bowden cable can be corrected using the adjuster.

When removing the actuators, it is essential to pull out the securing pins carefully to ensure that the entire drive unit cannot be damaged.



## Panoramic sunroof

A two-part panoramic sunroof is optional; the front glass element can be opened electrically or can be tilted open at the rear.

The rear panel is fixed; it is also made of glass and ensures a particularly light-filled and friendly ambiance inside the vehicle.

The power-operated sunroof sun blind is light-proof; it offers 100% protection against the sun and therefore ensures that less heat builds up inside the vehicle.

A total of four water drain hoses make sure that rainwater, for example, which has entered between the glass panel and the sunroof frame is drained off reliably.

The hoses are attached directly to ball-shaped couplings on the sunroof frame. At the bottom, the front drain hoses lead to the plenum chamber and the rear ones to the rear wheel housings. When routing the hoses, it is important to make sure that you do not pull on them while connecting them. They must be connected in such a way that they are not stretched; equally, they must not hang down.

To ensure correct installation, the front drain hoses have red markings, while the rear left hose has blue and the rear right hose green markings. The hoses must be secured in their retainers at these markings.

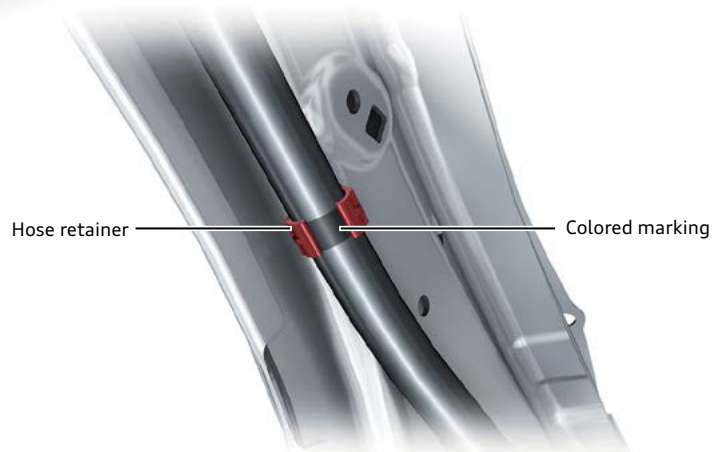


Water drain grommet in plenum chamber

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672\_013



Hose retainer

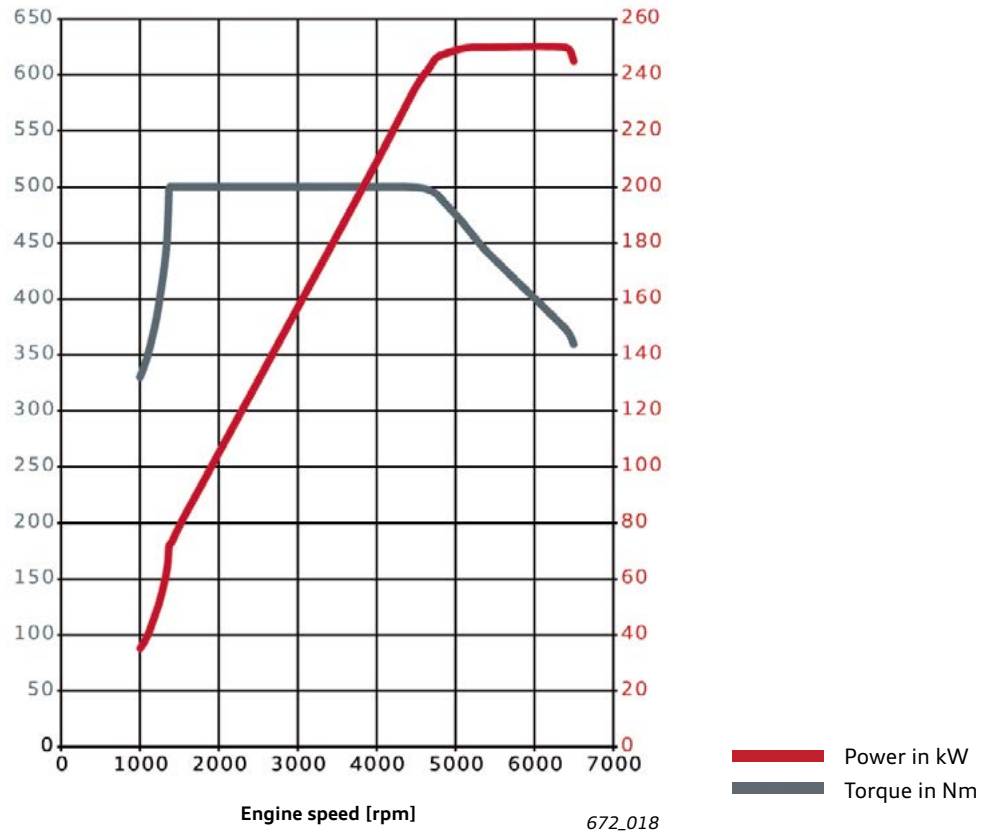
Colored marking

672\_014

# Engine

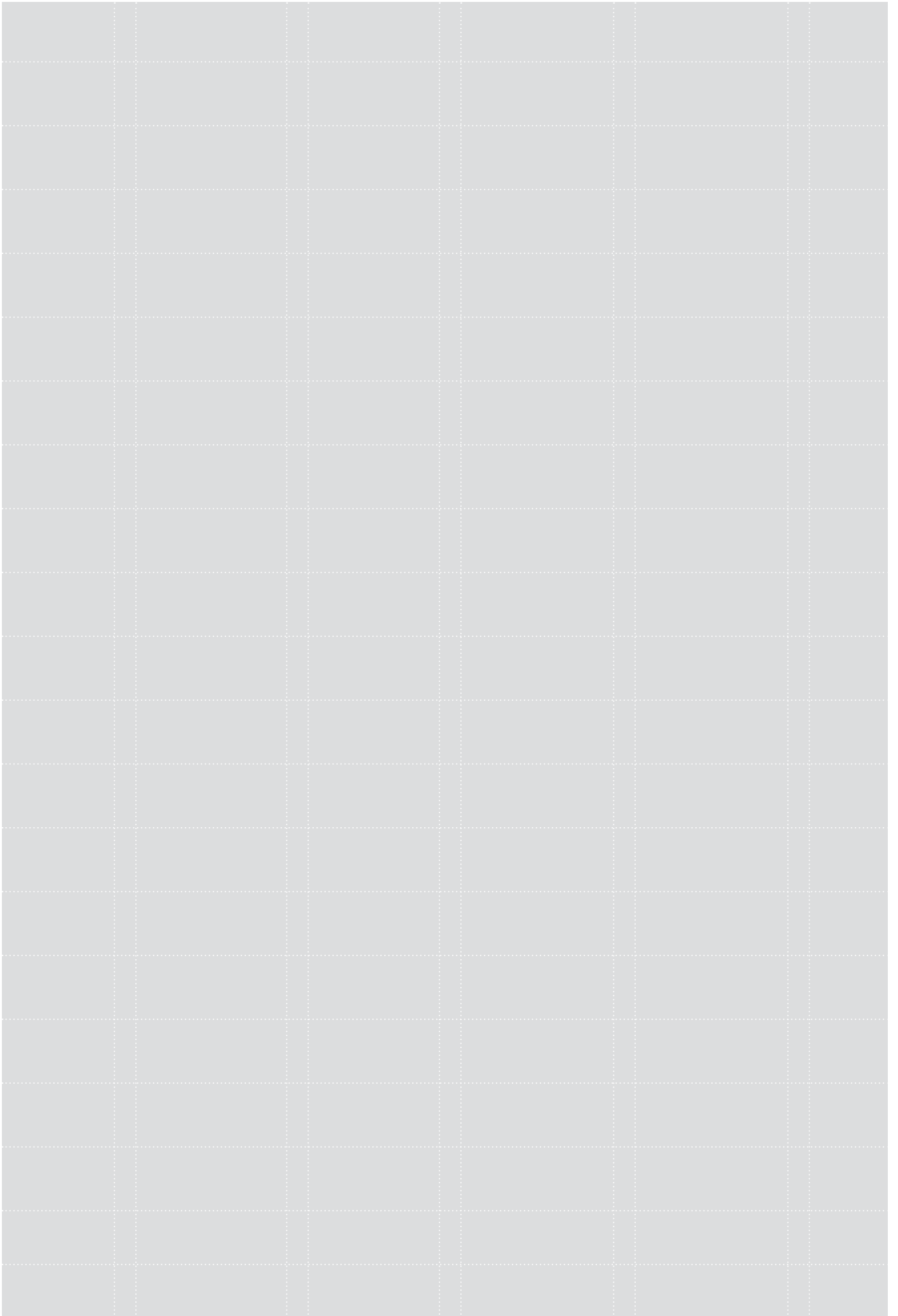
Torque/power curve of  
3.0 ltr. TFSI engine EA839

Engine with code DCBD



672\_018

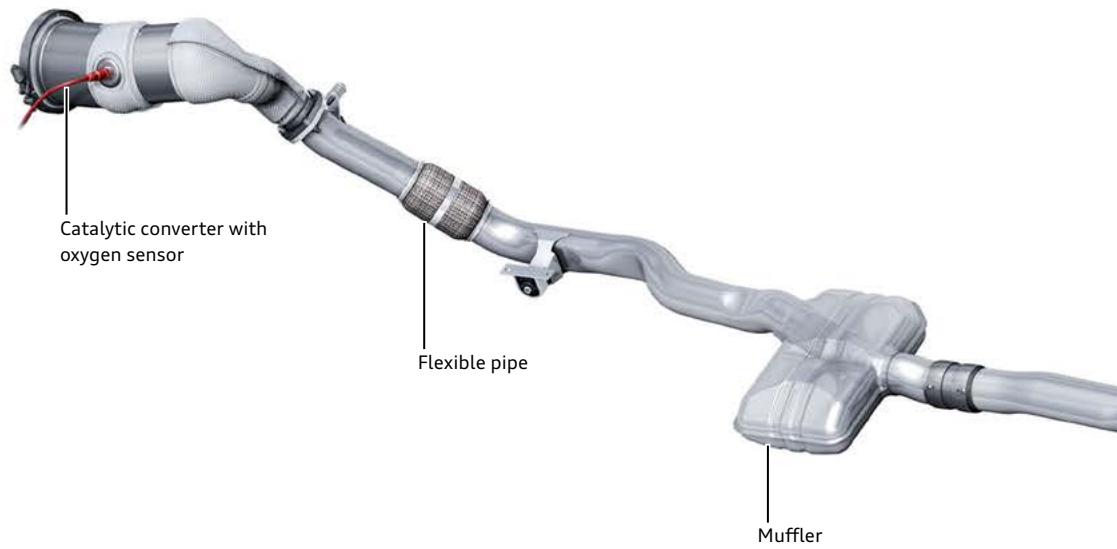
Features	Technical data
Engine code	DCBD
Type	V6 engine with 90° V angle
Capacity in cm <sup>3</sup>	2995
Stroke in mm	89.0
Bore in mm	84.5
Number of valves per cylinder	4
Firing order	1-4-3-6-2-5
Compression ratio	11.2 : 1
Power output at rpm	340 hp (250 kW)
Torque at rpm	369 lb ft (500 Nm) at 1500 - 5300
Fuel	Premium unleaded
Turbocharging	Turbocharger with wastegate
Engine management	Bosch MDG 1
Max. injection pressure	3626 psi (250 bar)
Emission control	2 close-coupled ceramic catalytic converters, Oxygen sensors before and after catalytic converter
Emission standard	LEV 3 / Tier 3
Concept	Mild hybrid (48 V)



# Exhaust system

## Overview

V6 TFSI



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### Reference



For further information on the exhaust system used, please refer to eSelf-Study Program [920173, The Audi 3.0l V6 TFSI EA839 Engine](#).

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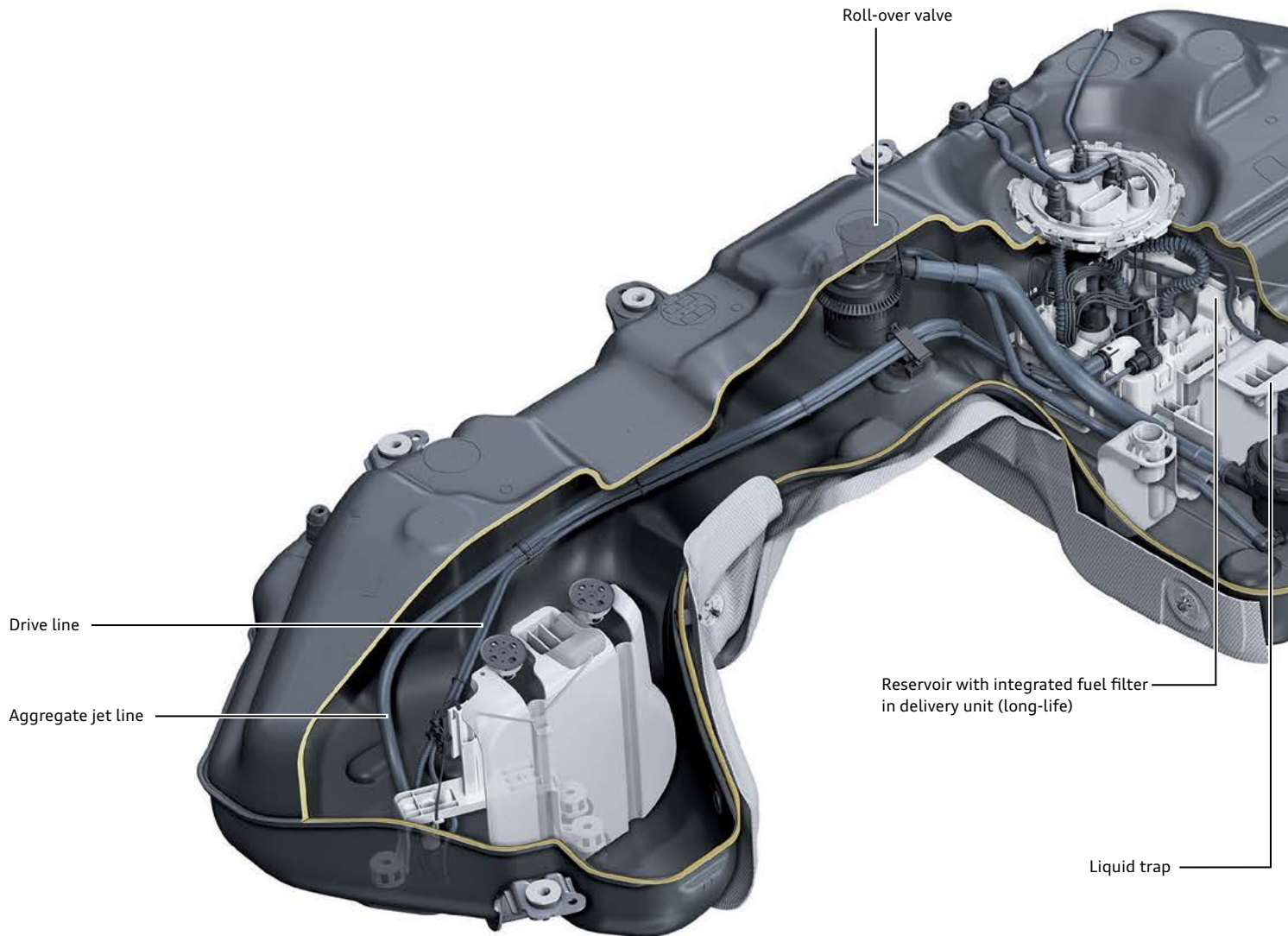


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## Fuel tank

The Q8 is equipped with a 22.4 gal (85 l) fuel tank.

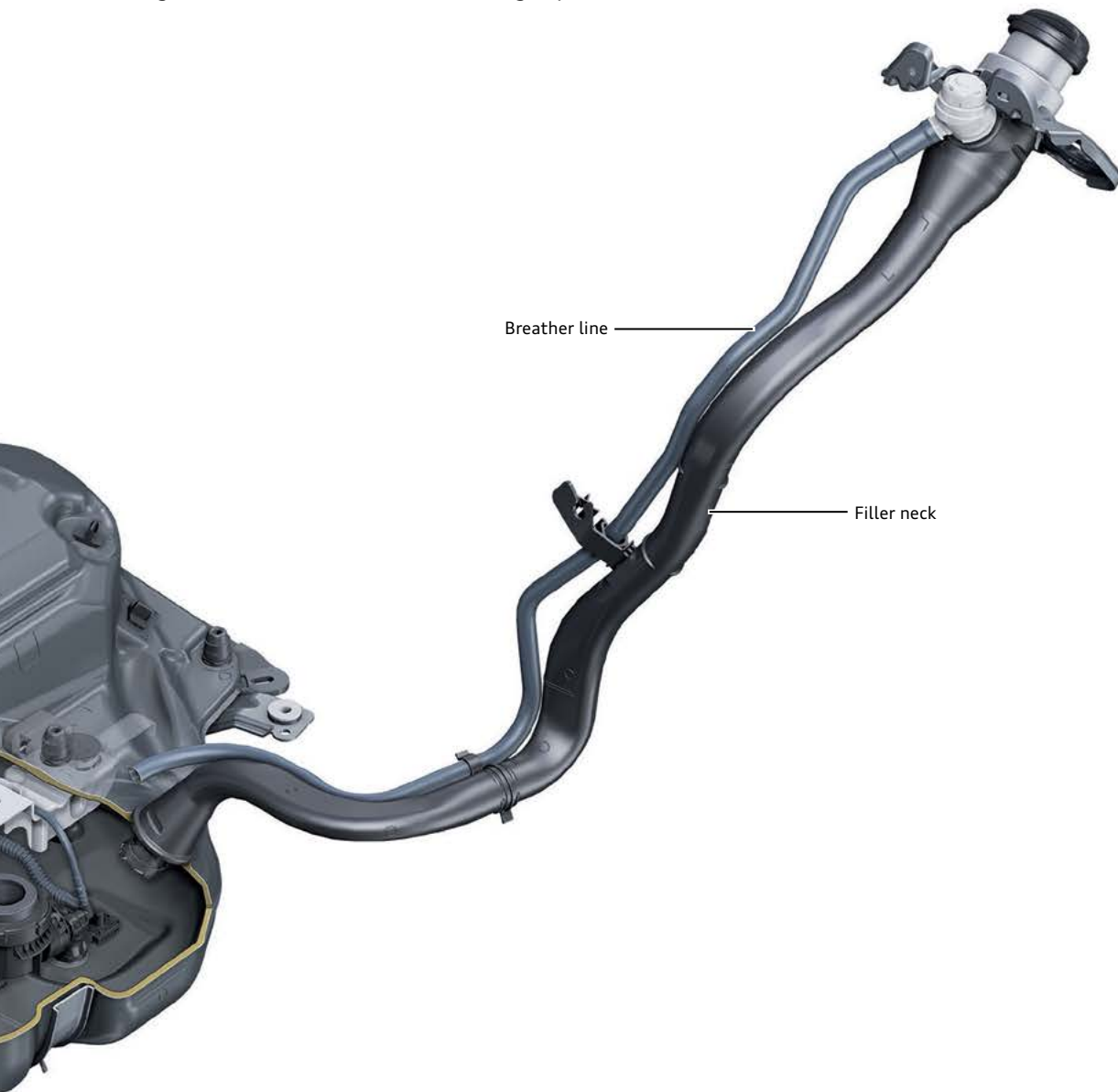




## How the tank is emptied

When the vehicle is being driven, fuel is initially pumped into the main chamber by the suction-jet pump in the side chamber of the fuel tank, and from there to the engine. The fuel is pumped from the main chamber to the side chamber through the drive line (small diameter, high speed).

Using the Venturi effect, the fuel is conveyed from the side chamber to the main chamber via the aggregate jet line (large diameter, lower speed).

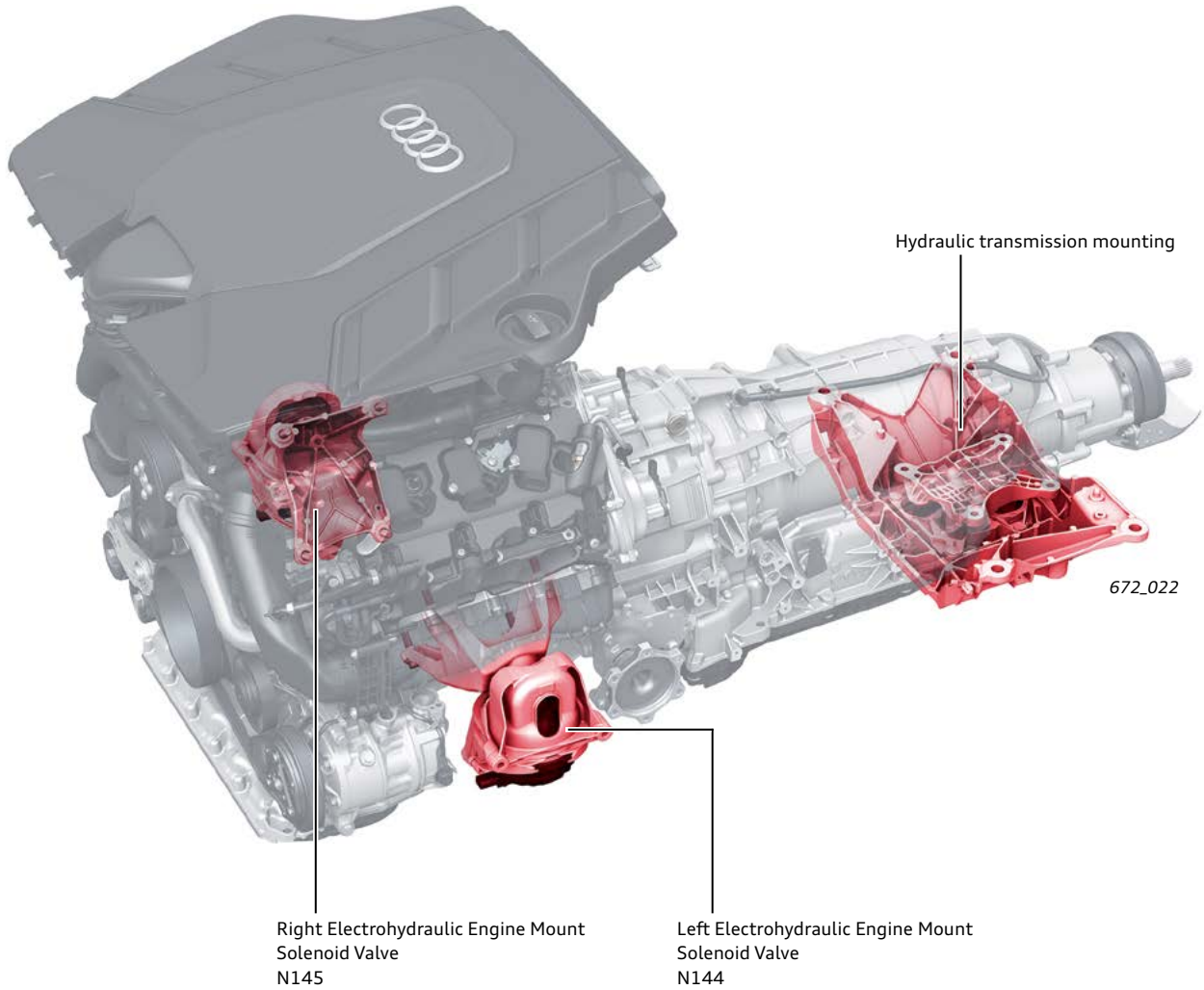


672\_021

## Engine mounting

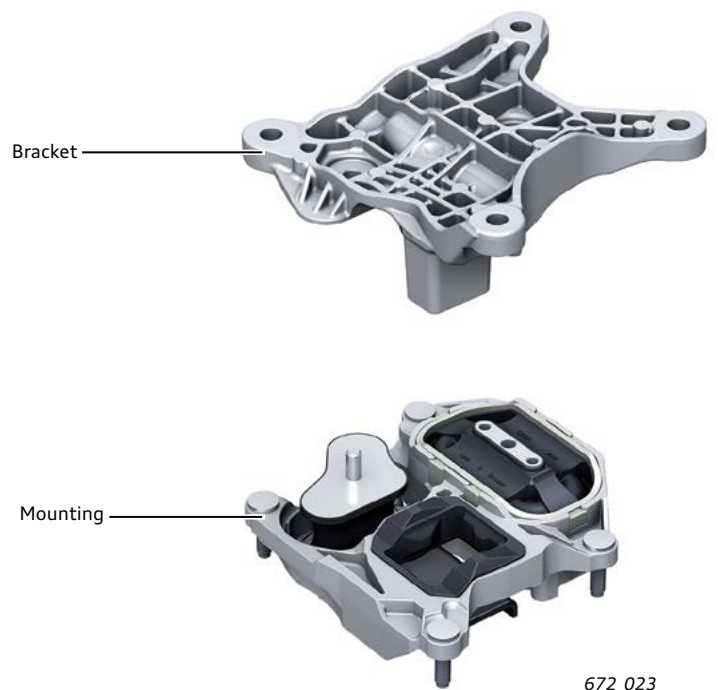
The 3.0l V6 TFSI engine has a three-point engine mounting (two mounts on the engine and one on the transmission). The familiar switchable electrohydraulic engine mountings are used on the V6 TFSI.

### V6 TFSI



### Hydraulic transmission mounting

The hydraulic transmission mounting is installed at the rear section of the transmission and counteracts the drive forces. The hydraulic action improves vibration damping for a smoother ride.



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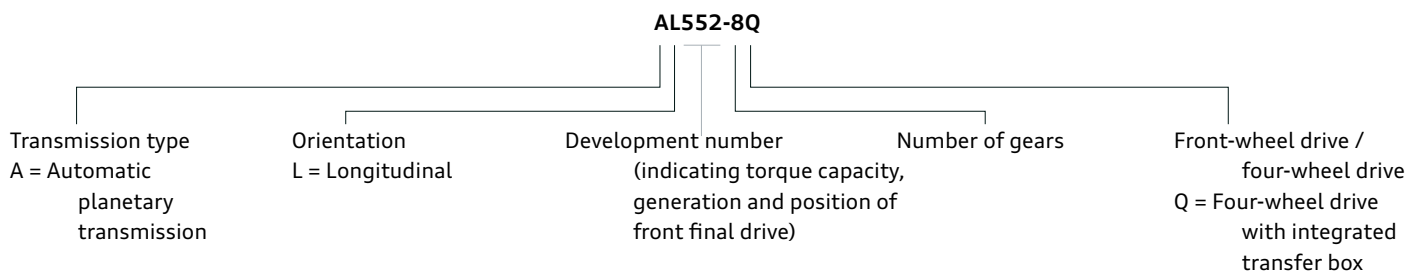
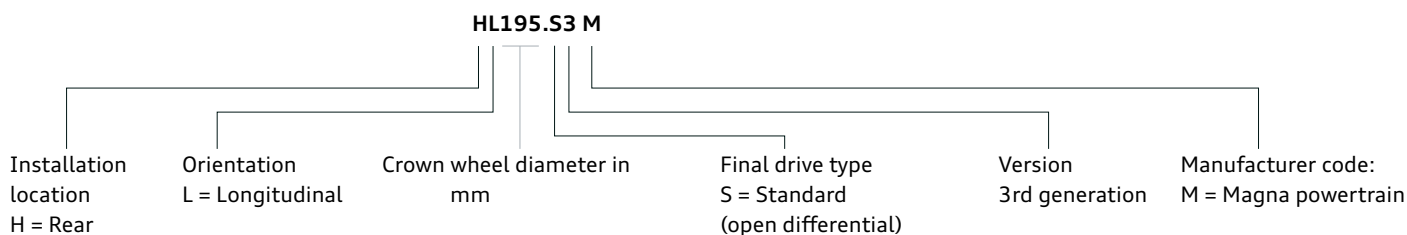
**Engine/Transmission  
Combination**

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**3.0 ltr. TFSI, EA839 series**

Engine code

DCBD

8-speed automatic transmission OD5  
AL552-8QRear final drive OG2  
HL195.S3 M  
PR No...: GH1<sup>1)</sup>**Key to manufacturer code designation****8-speed automatic transmission****Rear final drive**

The Audi Q8 is only available with an automatic transmission.

<sup>1)</sup> Production number GH1: basic rear final drive (open differential)

# Power transmission

## Overview

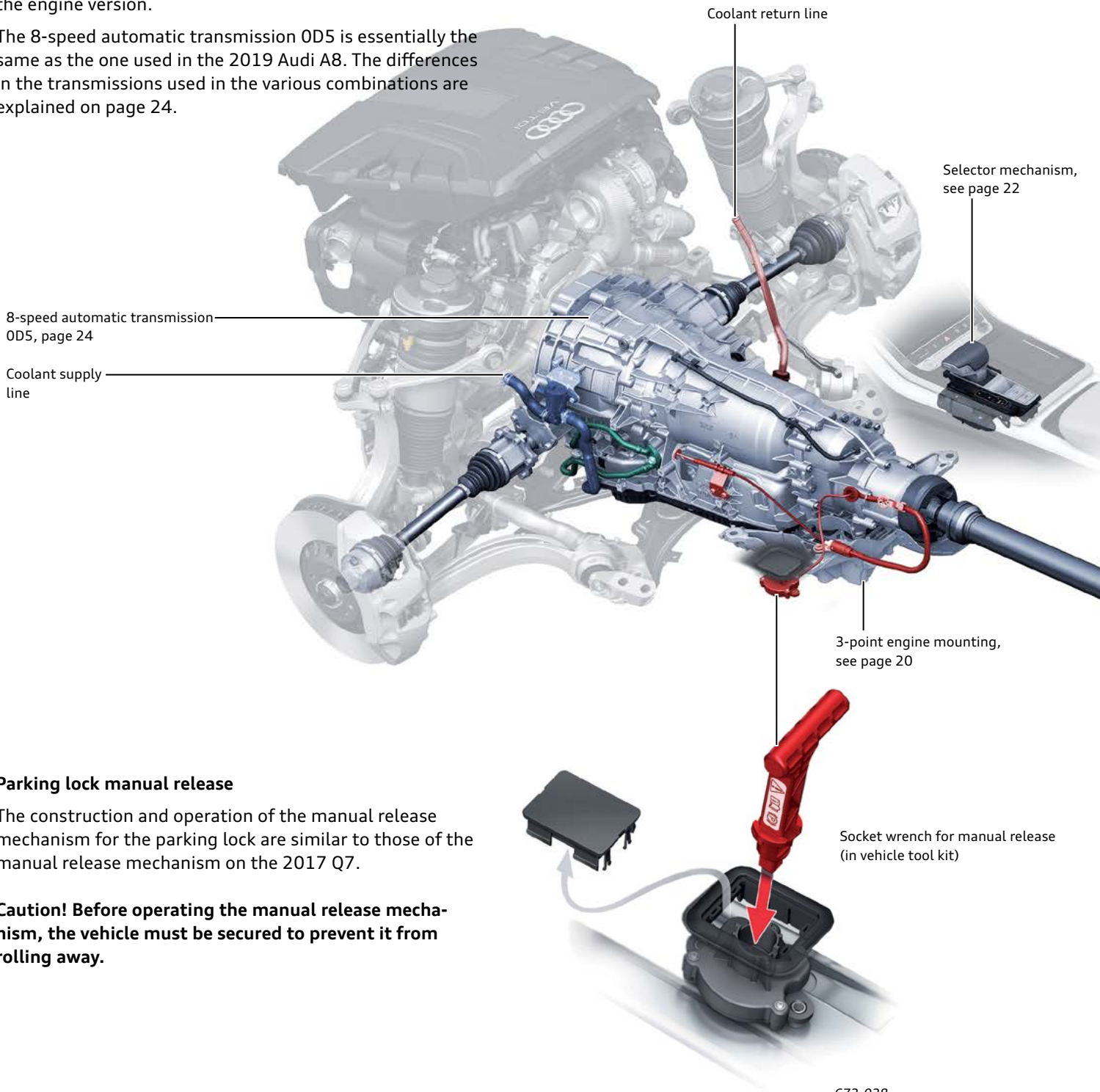
At market launch, the Audi Q8 will be introduced with the 8-speed automatic transmission OD5 and rear final drive OG2. This drive version, which features a self-locking center differential in the OD5 transmission and open differential on the rear axle, is already used on the 2017 Audi Q7. Please see eSelf-Study Program [990163, The 2017 Audi Q7 Introduction](#).

It will be possible to order a sport differential as an optional extra at a later time for the Audi Q8, depending on the engine version.

The 8-speed automatic transmission OD5 is essentially the same as the one used in the 2019 Audi A8. The differences in the transmissions used in the various combinations are explained on page 24.

The selector mechanism has been adapted from the 2019 Audi A8. It transmits the driver's commands using full shift-by-wire technology. The function and design of the mechanism are described in eSelf-Study Program [990163, The 2017 Audi Q7 Introduction](#).

The actuation of the parking lock is electrohydraulic. The layout of the manual release mechanism is similar to that of the 2017 Q7 but has been slightly modified.





## Rear final drive OG2

At market launch, all Audi Q8 vehicles will be equipped with the rear final drive OG2. The rear final drive OG2 features an open differential and has the internal factory designation HL195.S3.

The rear final drive OG2 is installed using a 4-point mounting on the subframe. The radial bonded rubber mountings (not including the additional mounting) must be installed in a specified position according to the instructions in the Repair Manual.

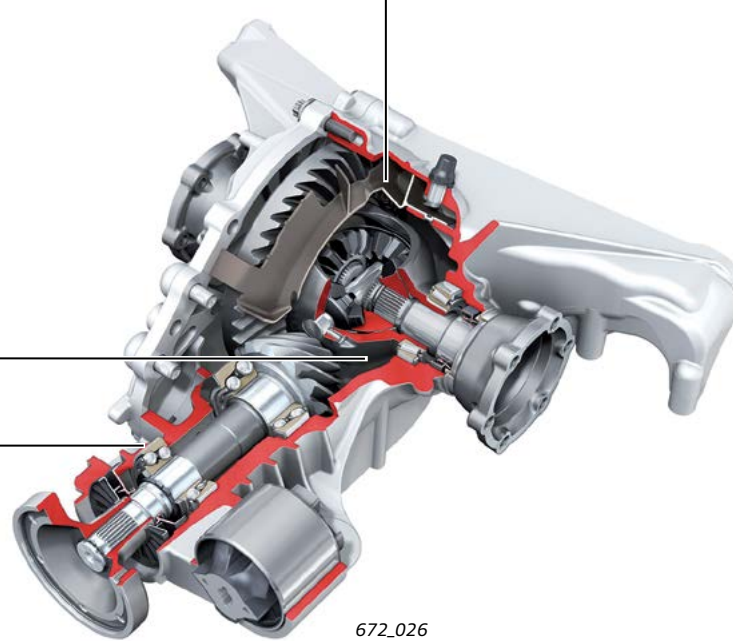
### Rear final drive OG2

- › With measures to increase efficiency.

Oil deflector for precise lubrication; enables oil level to be reduced, which in turn reduces churning losses

Low-viscosity gear oil reduces frictional losses

Low-friction, two-row radial angular contact ball bearings



672\_026

Propshaft

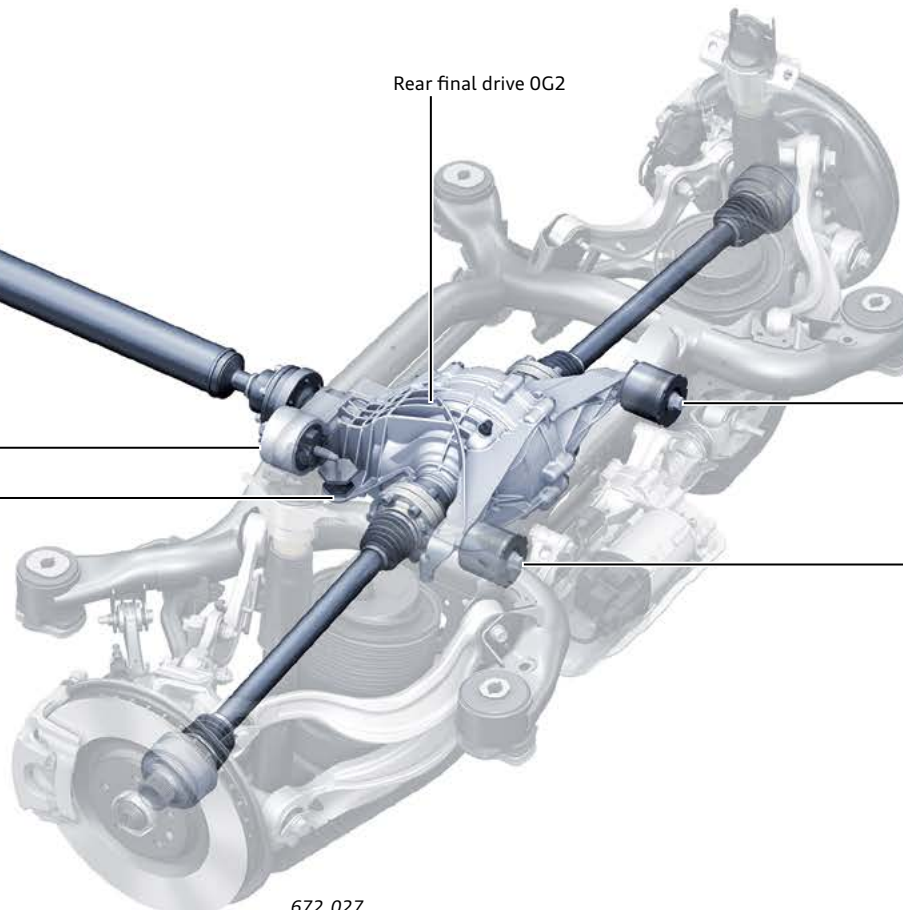
Rear final drive OG2

Bonded rubber bushing

Additional mounting

Bonded rubber bushing

Bonded rubber bushing



672\_027

# Selector mechanism

The selector mechanism of the 2019 Q8 is the same as the 2019 A8. It features full shift-by-wire (SBW) and park-by-wire (PBW) functionality.

The technology featured in this selector mechanism was introduced in the 2017 Audi Q7 in model year 2016 and can now be found in the following models:

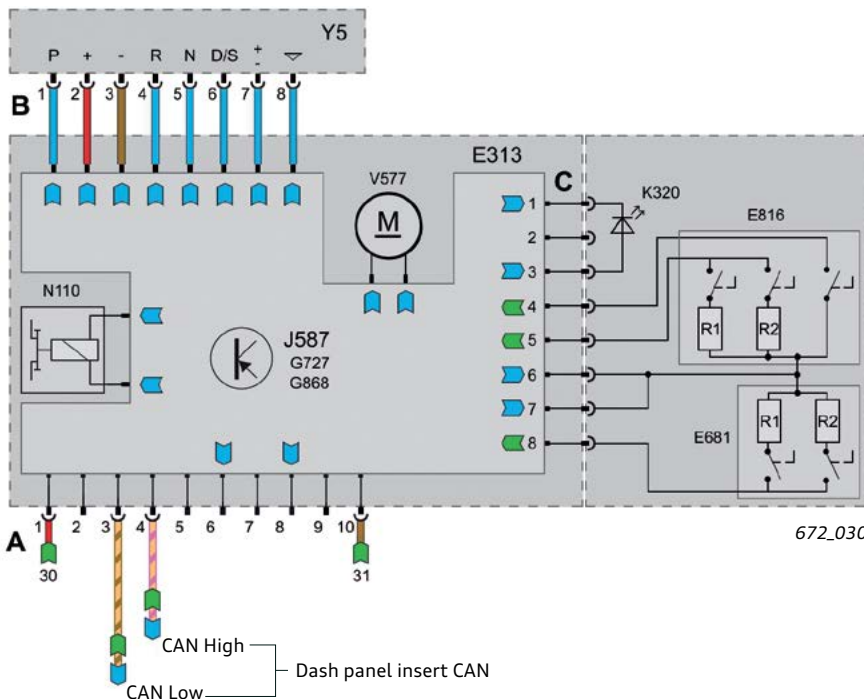
- > 2017 R8.
- > 2017 A4.
- > 2018 Q5.
- > 2017 Q7.
- > 2019 A8.

The design has been modified to suit the vehicle's interior in each case.



672\_029

## Function diagram – selector mechanism



### E313 Selector Lever, has the following:

- G727** Selector Lever Position Sensor
- G868** Transverse Selector Lever Lock Sensor
- J587** Selector Lever Sensor System Control Module
- N110** Shift Lock Solenoid
- V577** Transverse Selector Lever Lock Motor

The complete unit must be replaced if one of these components is defective.

- E681** Selector Lever Release Button
- E816** Parking Lock Button
- K320** Parking Lock Indicator Lamp
- Y5** Selector Lever Transmission Range Display

The Y adapter **VAS 642 001** enables measurement between Selector Lever E313 and Selector Level Transmission Range Display Y5.

### Reference

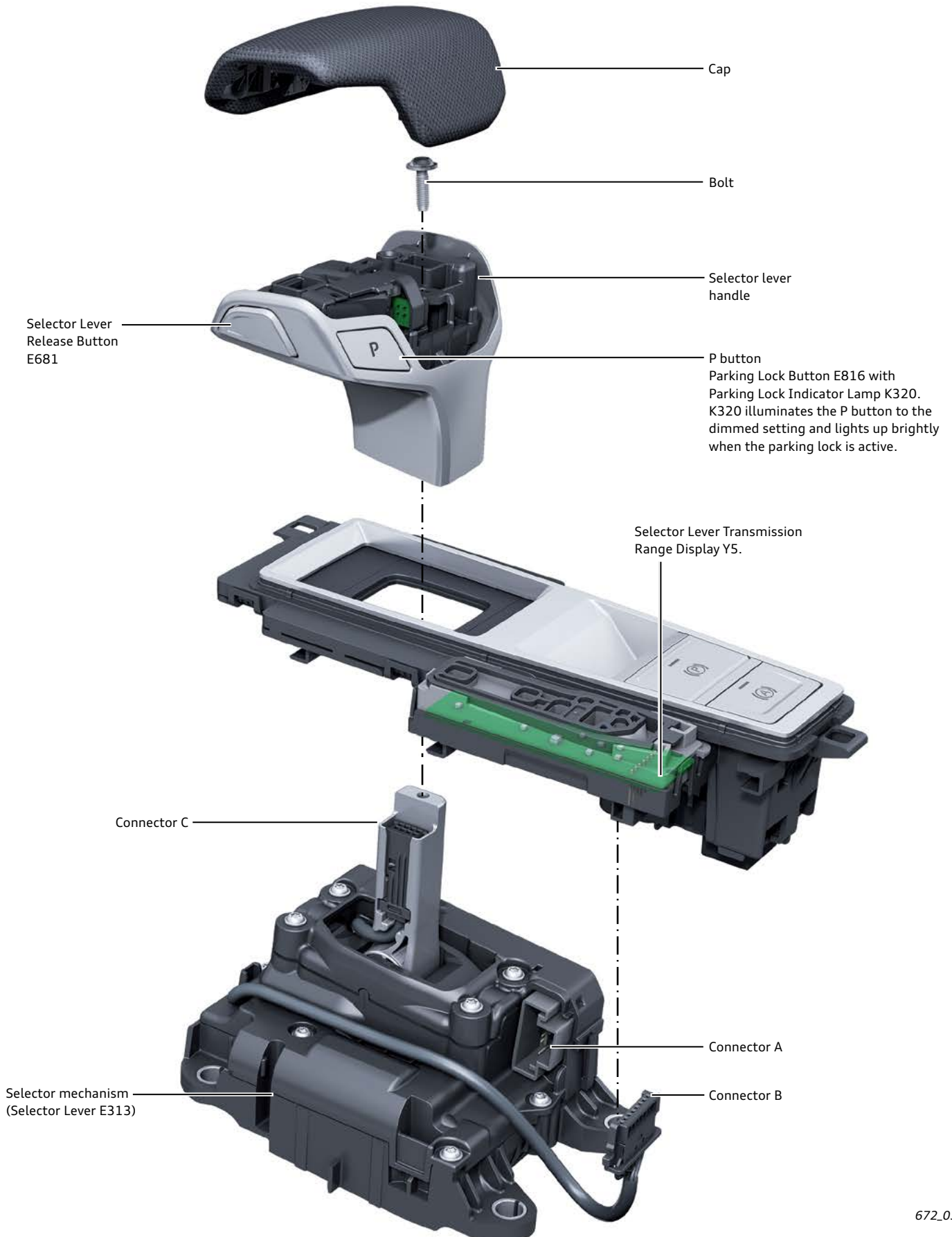


For important information on the selector mechanism concept and operation, please refer to eSSPs [990163, The 2017 Audi Q7 Introduction](#); [950173, The 0BZ 7-speed Dual Clutch S tronic Transmission in the 2017 R8](#) and [990493, The 2019 Audi A8 Introduction](#).

## Exchange of information between selector mechanism and Transmission Control Module J217

Data is exchanged between the selector mechanism and the transmission via the gateway.

Selector Lever Sensor System Control Module J587 communicates via the dash panel insert CAN;  
 Transmission Control Module J217 communicates via the FlexRay with the gateway (J533).



# 8-speed automatic transmission OD5

The 8-speed automatic transmission OD5 is an enhanced version of the 8-speed automatic transmission 0BK which was first used in the 2011 Audi A8.

The OD5 transmission made its debut on the 2017 Audi Q7. It has the internal Audi works designation AL552-8Q. The manufacturer, ZF-Getriebe GmbH, uses the designation 8HP65A.

The OD5 transmission is rated for peak input torque of 516 lb ft (700 Nm).

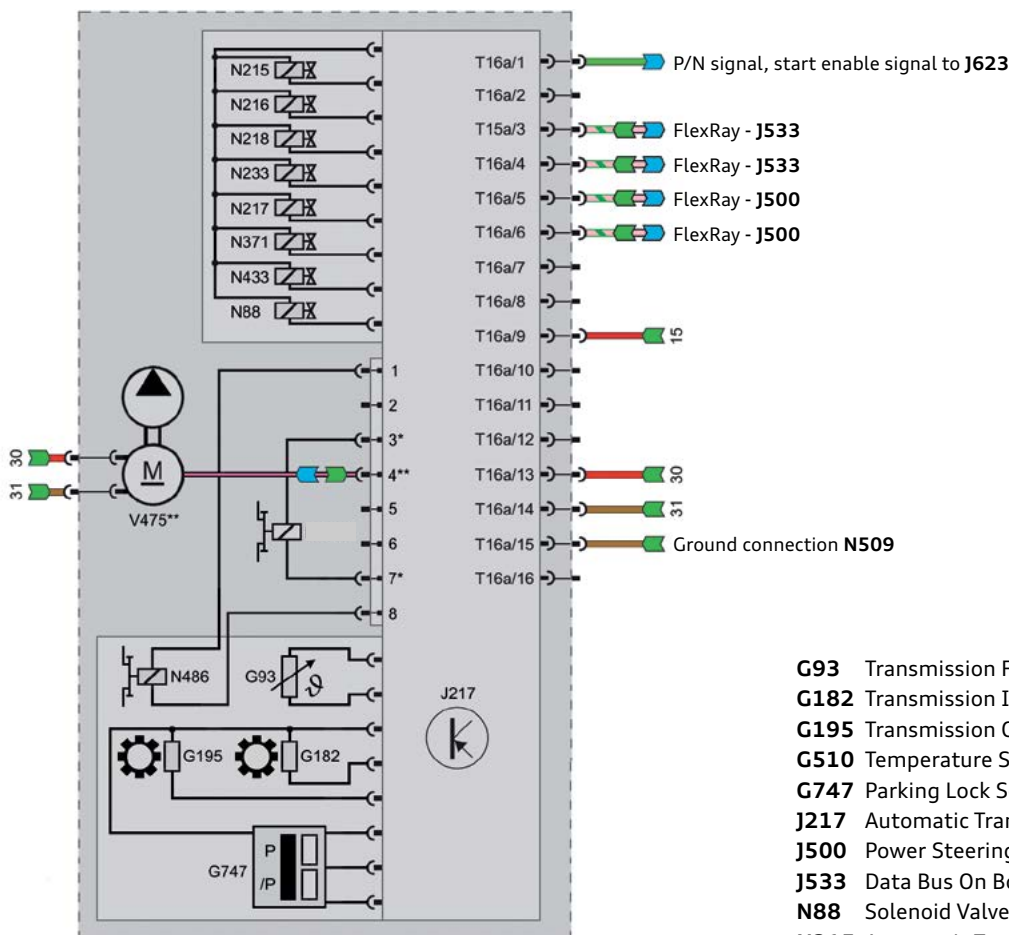
The transmission setup can be adjusted via Audi drive select in the usual way; refer to page 29.

The OD5 transmission in the Audi Q8 has the following features:

- > There is no longer an oil pump in the transfer case; refer to “Lubrication of transfer box” page 26.
- > Dual angular contact ball bearings to minimize friction on pinion shaft in front final drive.
- > Low-viscosity gear oil in front final drive; refer to “Oil systems/lubrication” page 69 on page 26.
- > Vehicles which have a start/stop are equipped with a hydraulic pulse accumulator (HPA).
- > On vehicles with MHEV technology, the transmission is equipped with an auxiliary hydraulic pump 1 for transmission oil V475.

## Function diagram, exchange of information and data

The Transmission Control Module of the OD5 transmission communicates with the vehicle via the FlexRay data bus.



672\_032

**Key:**

- Ground wire
- Positive wire
- Signal wire
- LIN bus
- ➡ Output
- ➡ Input

- G93** Transmission Fluid Temperature Sensor
- G182** Transmission Input Speed Sensor
- G195** Transmission Output Speed Sensor
- G510** Temperature Sensor in Control Module
- G747** Parking Lock Sensor
- J217** Automatic Transmission Control Module
- J500** Power Steering Control Module
- J533** Data Bus On Board Diagnostic Interface
- N88** Solenoid Valve 1
- N215** Automatic Transmission Pressure Regulating Valve 1
- N216** Automatic Transmission Pressure Regulating Valve 2
- N217** Automatic Transmission Pressure Regulating Valve 3
- N218** Automatic Transmission Pressure Regulating Valve 4
- N233** Automatic Transmission Pressure Regulating Valve 5
- N371** Automatic Transmission Pressure Regulating Valve 6
- N443** Automatic Transmission Pressure Regulating Valve 7
- N486** Parking Lock Solenoid
- N509** Transmission Fluid Cooling Valve
- \*\* V475** Transmission Fluid Auxiliary Hydraulic Pump 1 (only on vehicles with MHEV technology)



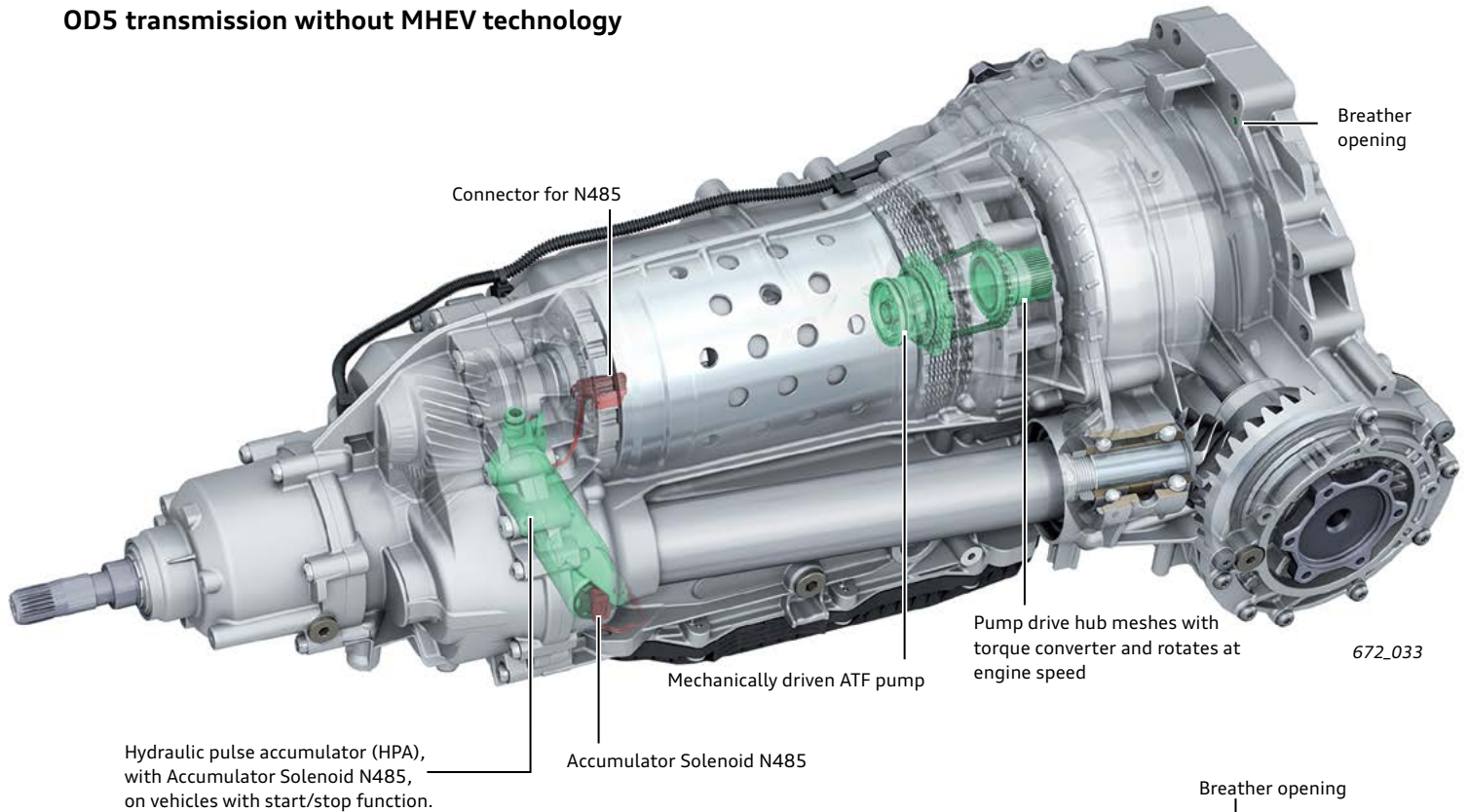
## ATF supply unit

On all OD5 transmissions, ATF is supplied primarily via the mechanically driven ATF pump.

On vehicles with the start/stop function but without MHEV technology, the transmission is equipped with a hydraulic pulse accumulator (HPA). The HPA assists with the hydraulic supply for the transmission in start/stop mode.

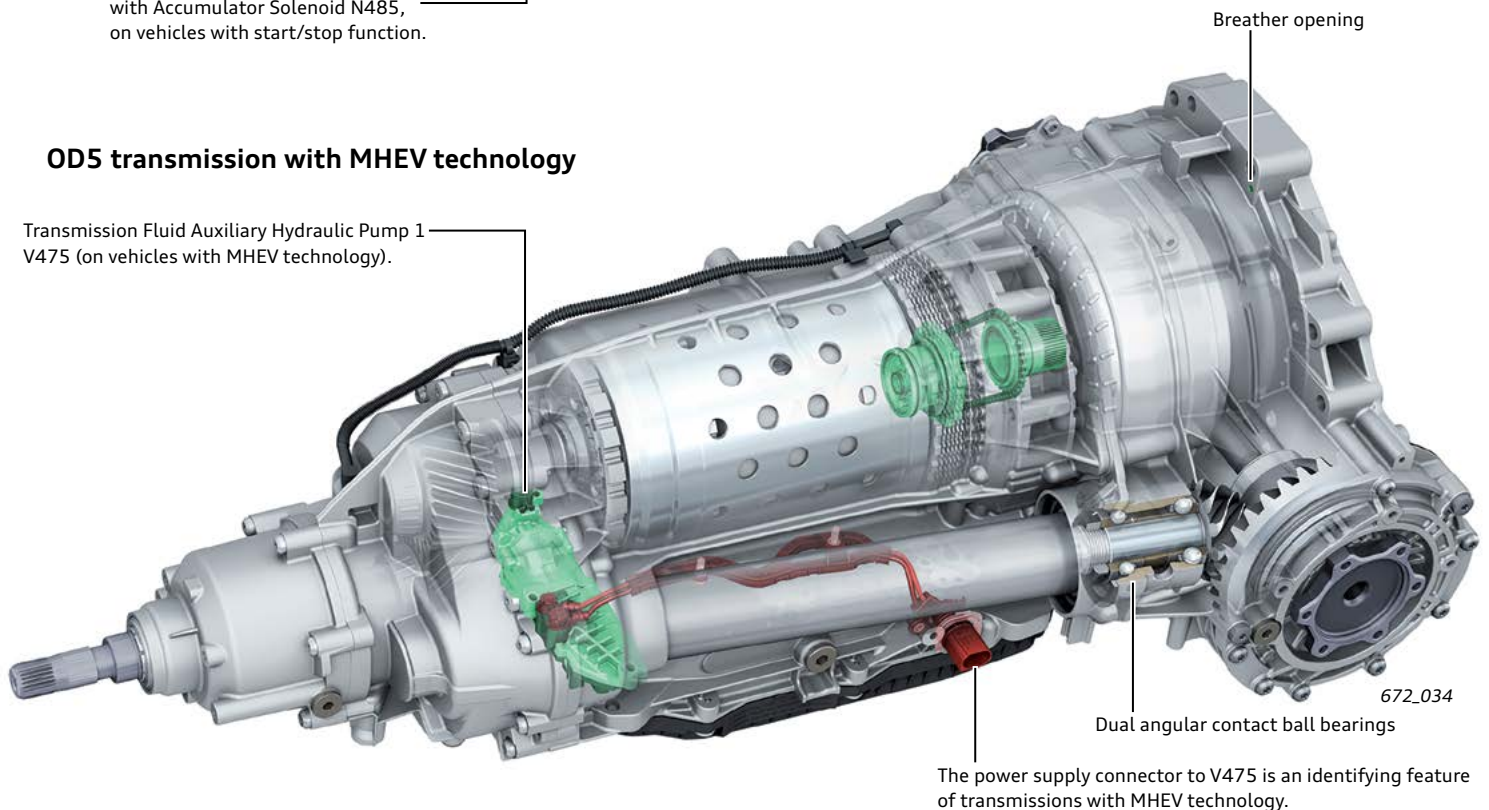
On vehicles with MHEV technology, Transmission Fluid Auxiliary Hydraulic Pump 1 V475 is installed in place of a hydraulic pulse accumulator. It assumes the task of the HPA and, additionally, performs the hydraulic supply for the transmission when the engine is switched off in coasting mode. Refer to page 30.

## OD5 transmission without MHEV technology



## OD5 transmission with MHEV technology

Transmission Fluid Auxiliary Hydraulic Pump 1 V475 (on vehicles with MHEV technology).



### Reference

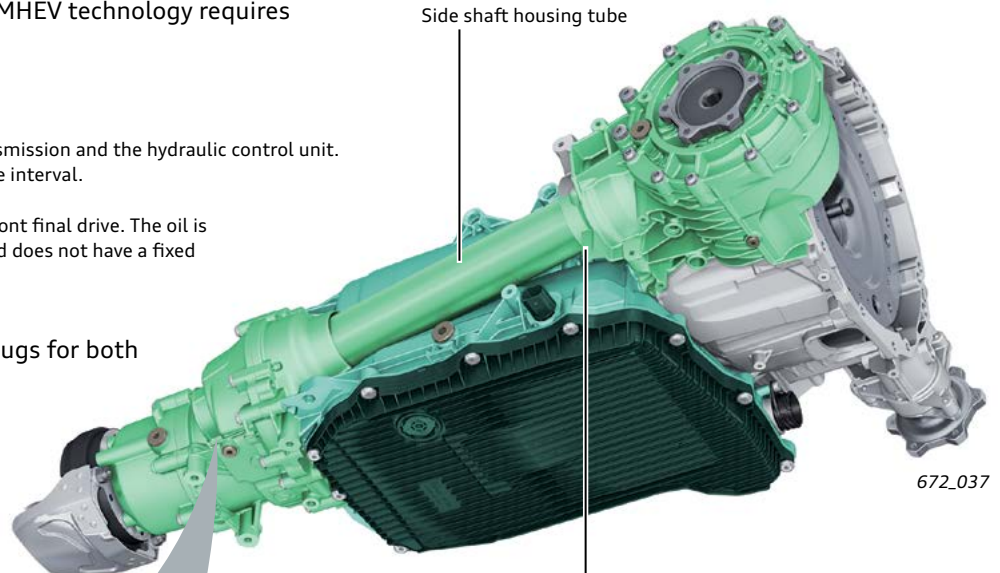
For detailed information about the technology of the OD5 transmission, please refer to eSSP [950103](#), [2011 Audi A8 Power Transmission](#), eSSP [990163](#), [The 2017 Audi Q7 Introduction](#), eSSP [990493](#), [The 2019 Audi A8 Introduction](#).

## Oil systems / lubrication

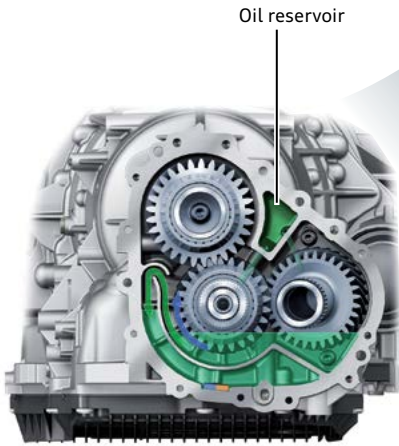
The OD5 transmission of the Q8 MHEV technology requires two types of lubricating oil.

- ATF system for the planetary transmission and the hydraulic control unit. Does not have a fixed maintenance interval.
- Oil system for transfer case and front final drive. The oil is supplemented with STURACO<sup>1)</sup> and does not have a fixed maintenance interval.

The filler, inspection and drain plugs for both oil systems are identical.



No oil weep hole can be seen in this location

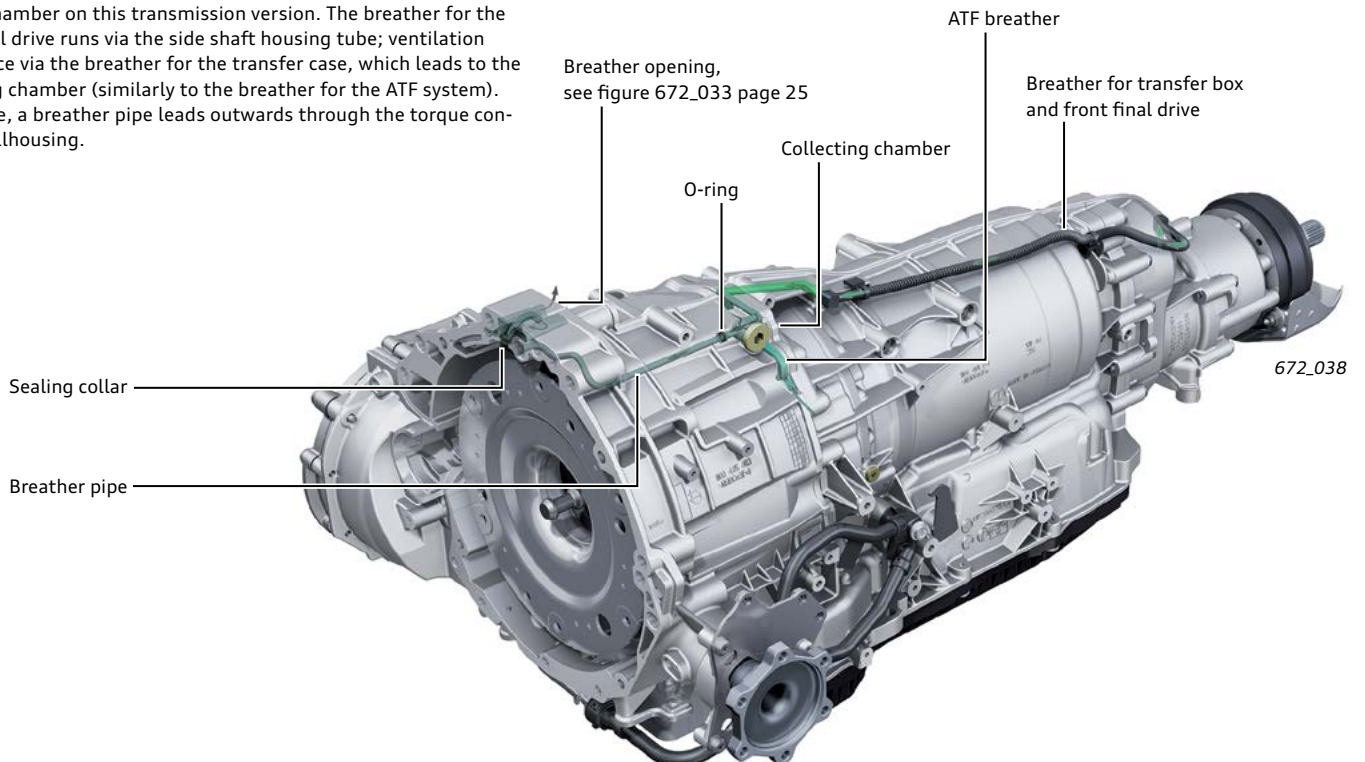


### Lubrication of transfer case

The OD5 transmission installed in the Q8 does not have a mechanical oil pump for lubrication of the transfer case (as was the case on older 8-speed automatic transmissions). Lubrication of the transfer is provided by the gear wheels running in the oil in the oil pan. The oil reservoir shown in the illustration is filled with oil which sprays from the gear wheels; its function is to distribute the oil.

### Transmission breather

There is no breather passage from the front final drive to the collecting chamber on this transmission version. The breather for the front final drive runs via the side shaft housing tube; ventilation takes place via the breather for the transfer case, which leads to the collecting chamber (similarly to the breather for the ATF system). From here, a breather pipe leads outwards through the torque converter bellhousing.





## Oil systems / lubrication

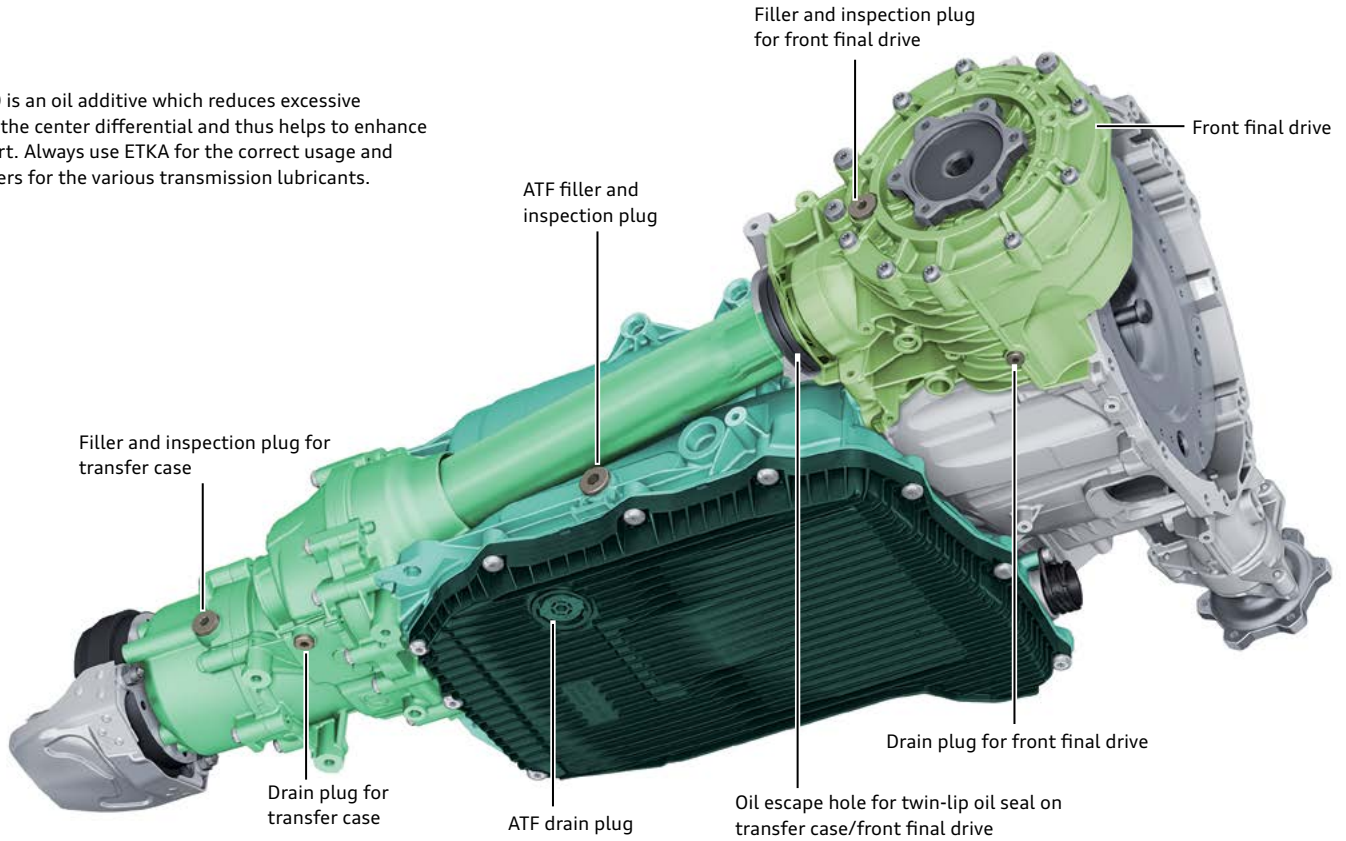
The OD5 transmission of the Q8 without MHEV technology requires three types of lubricating oil.

**ATF system for the planetary transmission and the hydraulic control unit.** Does not have a fixed maintenance interval.

**Oil system for transfer case and front final drive.** The oil is supplemented with STURACO<sup>1)</sup> and does not have a fixed maintenance interval.

**Oil system for front final drive.** The new low-viscosity gear oil does not have a fixed maintenance interval and must not be mixed with the previously used gear oil. To prevent them from being mixed up, the new gear oil has a red/violet color.

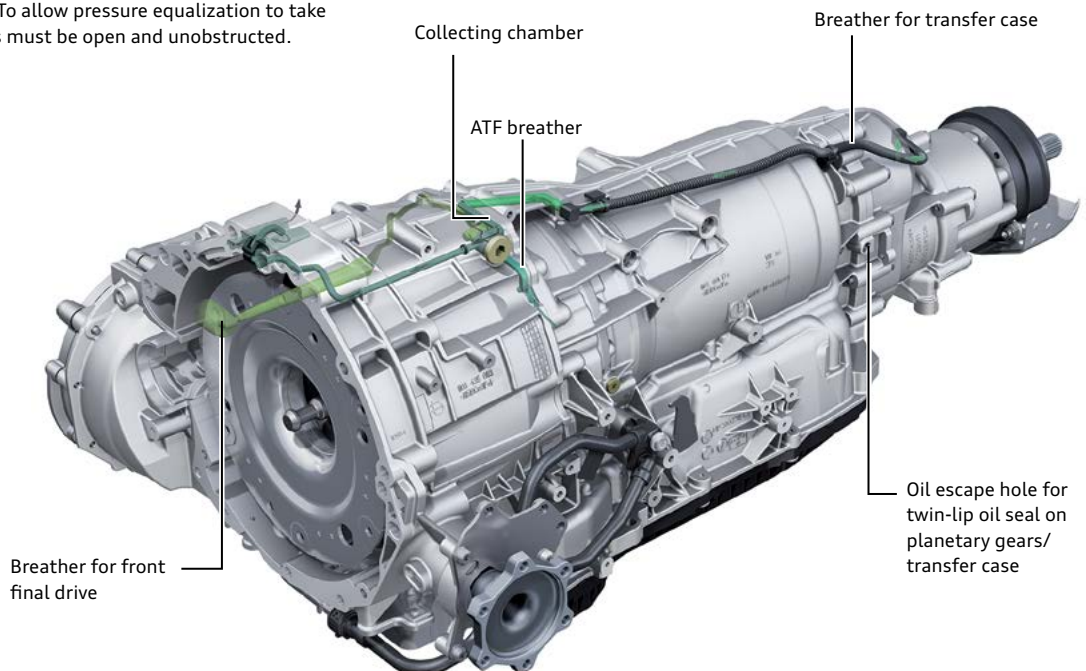
<sup>1)</sup> STURACO is an oil additive which reduces excessive stresses in the center differential and thus helps to enhance ride comfort. Always use ETKA for the correct usage and part numbers for the various transmission lubricants.



## Transmission breather

Ventilation of the front final drive, the transfer box and the ATF system is performed via the collecting chamber. From here, a breather pipe leads outwards through the torque converter bell-housing; refer to figure 672\_033 page 25

When heating or cooling the transmission, pressure equalization is performed via the breather. To allow pressure equalization to take place, the breather openings must be open and unobstructed.



## ATF temperature regulation

ATF temperature regulation in the 2019 Q8 for the North American Region is referred to as a single-circuit system.

As on the 2017 Audi Q7, the ATF heat exchanger is supplied with coolant by a circuit which is switched in parallel with the large engine coolant circuit. The coolant circuit is controlled by Transmission Fluid Cooling Valve N509.

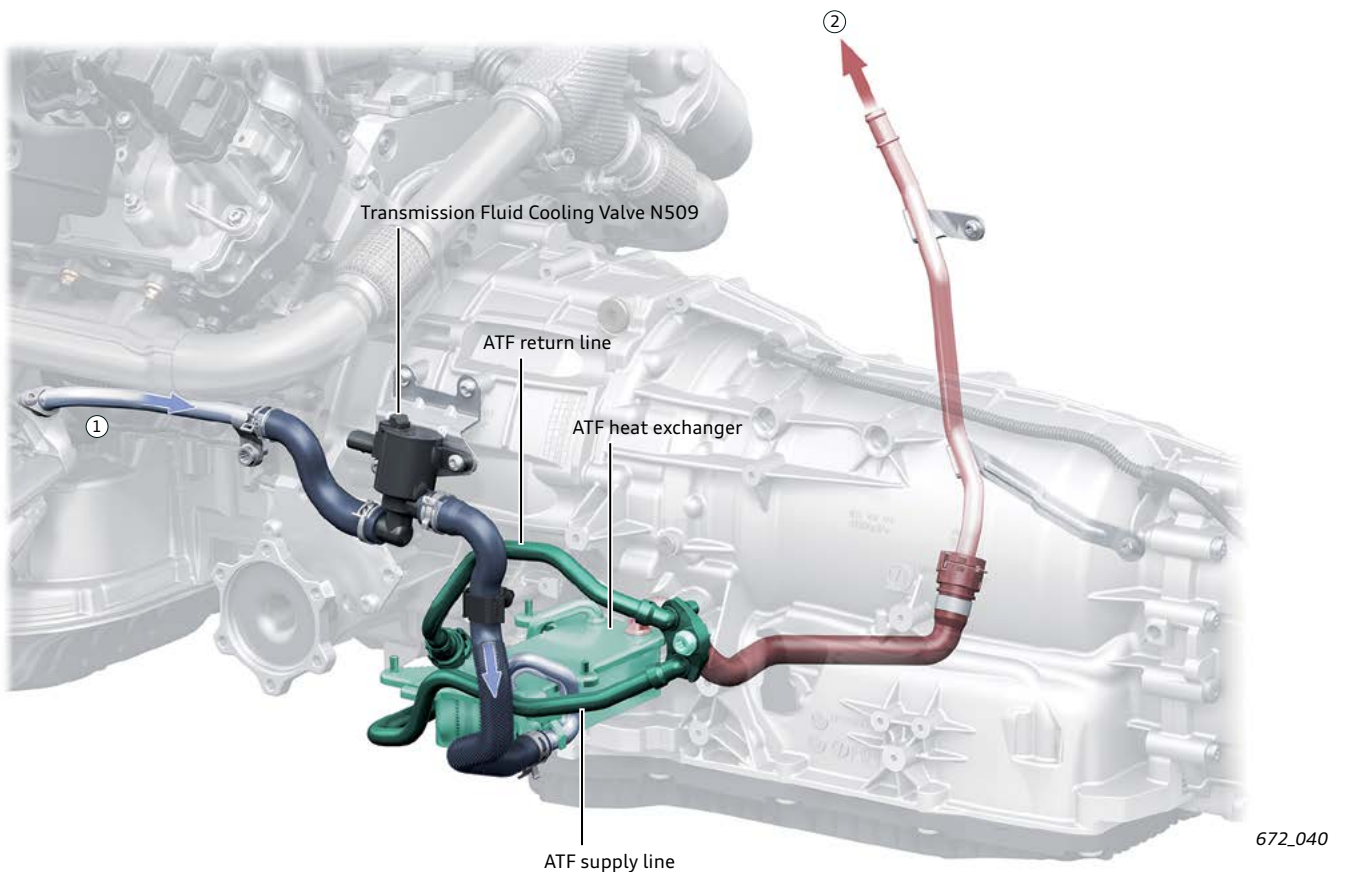
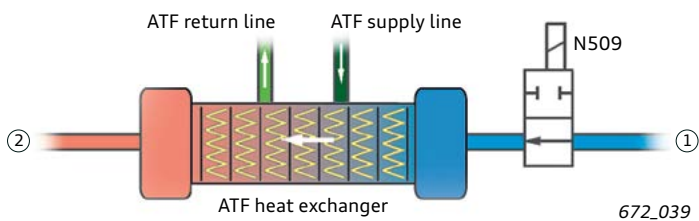
### Engine warm-up phase (N509 closed)

During the engine warm-up phase, valve N509 is supplied with current and is closed. The ATF heat exchanger is not supplied with coolant. The coolant therefore does not lose any heat to the ATF, which means that the engine is quicker to reach its operating temperature. The thermal management system of the ECM decides when valve N509 should be reopened. The criteria for opening valve N509 are outside temperature, engine temperature, ATF temperature, engine speed and the heat requested by the climate control system.

### Heating and cooling the ATF (N509 open)

If the engine has reached its operating temperature and there is sufficient heat available for all requirements, valve N509 is opened. The ATF heat exchanger is then supplied with warm coolant from the large engine coolant circuit. The ATF is heated up and its viscosity is reduced, which in turn improves the efficiency of the transmission.

Heating of the ATF will continue for as long as the temperature of the engine coolant is higher than that of the ATF. As soon as the temperature of the ATF exceeds that of the engine coolant, it starts to lose heat to the coolant and is cooled down.



# Functions influencing transmission control

## Audi drive select

Audi drive select allows the driver to choose between different vehicle driving modes. The Audi drive select modes specified below can be selected via the Audi drive select button or via the MMI.

Transmission setups are tailored to the customer's requirements in a way which varies from country to country. For this reason, only typical differences between the various modes can be described here.

The proportion of time spent driving in each Audi drive select mode can be viewed using the VAS Scan Tool.

These times do not have any effect in terms of recognizing the type of driver and therefore do not permit any conclusions to be drawn about the driver's driving style.



672\_043

## offroad

In offroad mode, the transmission control system assists driving in rough terrain by using adapted functions.

Gear selection follows a fixed shift program without driver type recognition. Gears are shifted late, similarly to transmission position **S**. Transmission position **S** is not available, but manual shifting is possible in tiptronic mode (manual mode M).

Automatic upshifting of the transmission is deactivated in tiptronic mode (M1-8)<sup>1)</sup>. The engine revs up to the rpm limit without shifting up. This prevents unwanted continuous up-and-down shifting.

The deactivation of automatic upshifting allows the engine to stop on a hill at maximum revs. Even if traction is lost briefly, the gear is held to ensure that the full drive torque is available when the wheels regain full traction.

The deactivation of automatic upshifting allows the full braking effect of the engine to be utilized when driving downhill. To protect the engine against over-revving, the transmission shifts up before a defined engine speed is reached.

If the ignition is switched off and then on again, vehicles with air suspension are restarted in the Audi drive select mode **allroad** and in transmission position **D**. Vehicles with steel suspension are restarted in **auto** mode and in transmission position **D**.

## allroad

The **allroad** mode does not have any effect on the transmission setup.

## comfort

The transmission control system operates in a similar way to **auto** mode.

## auto

Shift point selection in transmission positions D and S is performed according to the characteristic curves of the driver type recognition.

To do this, the driver's driving style is evaluated. The manner in which the accelerator and brake pedals are operated and the lateral and longitudinal acceleration occurring within defined time frames are taken into account.

Accordingly, an efficient driving style leads to early upshifts and late downshifts. A sporty driving style results in later upshifts and earlier downshifts.

Transmission position **D**, (D1-8)<sup>1)</sup>:

Shift point selection is performed with an emphasis on comfort, while taking driver type recognition into account.

Transmission position **S**, (S1-8)<sup>1)</sup>:

In transmission position **S**, the transmission control system is in the sport program. Shift points are selected with an emphasis on a sporty driving style, while taking driver type recognition into account; they are adapted to the engine power range. The shift times vary from normal (with barely perceptible shifts) to short (with perceptible shifts).

If the vehicle is equipped with an efficiency assist system, no driver information is provided via the efficiency assist's symbols in the sport program.

## dynamic

If **dynamic** mode is selected, the transmission control module activates the sport program (transmission position **S**). In **dynamic** mode, it is possible to shift to **D** at any time.

## individual

In individual mode, the driver can freely select the transmission setup irrespective of other vehicle systems.

The menu item **Drive system** covers both the engine and the transmission. Via this menu item, the options **efficient**, **balanced** or **sporty** can be selected.

These options correspond to the Audi drive select modes as follows:

- › **Efficient** corresponds to the Audi drive select mode **efficiency**.
- › **Balanced** corresponds to the Audi drive select mode **auto**.
- › **Sporty** corresponds to the Audi drive select mode **dynamic**.

<sup>1)</sup>In the instrument cluster, the selected gear is shown next to the transmission positions **D**, **E**, **S** and **M**. In certain markets such as the USA and Canada, the selected gear is not shown in transmission positions **D** and **E**.

<sup>2)</sup>The **efficiency** mode is not available on all vehicles. Availability depends on the engine/transmission combination and on which specific market the vehicles are configured for. **This mode is not available in the North American Region.**

## Coasting mode

All versions of the OD5 transmission in the Audi Q8 support coasting mode. On vehicles with **Mild Hybrid Electric Vehicle** (MHEV) technology, the auxiliary hydraulic pump 1 for transmission oil V475 enables the engine to be switched off.

Switching off the engine additionally saves fuel on vehicles with MHEV technology. However, certain circumstances may cause the engine not to be switched off, such as:

- › If a defined engine temperature has not been reached.
- › In the event of a corresponding request from the climate control if required by engine operation due to ESC regulation.
- › During an adaptation routine in the engine management system.

If the activation criteria described on the next page are fulfilled, the power flow between the engine and the transmission is interrupted. In coasting mode the vehicle uses the available kinetic energy and rolls along without any engine braking effect. Only transmission position **D** or **E** is displayed in the gear indicator; the gears are not shown.

Depending on the speed at which the vehicle is traveling, the gears are preselected with the power flow interrupted. The transmission has five selector elements; the following ones serve as separator elements:

- › 8th gear: > 3000 rpm transmission output speed: clutch D.
- › 8th gear: < 3000 rpm transmission output speed: brake A.
- › 7th, 6th, 5th and 4th gears: clutch D.
- › 3rd and 2nd gears: clutch E.
- › 1st gear: clutch C.

So that the gears can be preselected with the engine switched off, Transmission Fluid Auxiliary Hydraulic Pump 1 V475 is required. V475 ensures the necessary ATF supply while the engine is switched off. Refer to figure ATF supply unit page 25.

There is a particular feature in 4th and 7th gears: If the vehicle is in one of these gears, the coasting function is activated if clutch D is opened.

However, when preselecting gears the 4th and 7th gears are skipped, as critical speeds may occur in the transmission in these gears if clutch D is opened.

If, for example, the coasting function is activated in 8th gear and the vehicle slows down gradually, the vehicle remains in 8th gear until it is possible to shift to 6th gear.

A similar procedure is followed for 4th gear; the vehicle remains in 5th gear until it is possible to shift to 3rd gear.



### Note

In coasting mode with the engine switched off, a delayed acceleration response may be noticed, as the engine may need to be started before acceleration and the corresponding separator element may need to be closed.



**Activation criteria:**

- > The intelligent coasting mode must be activated via the MMI display<sup>2)</sup>.
- > ESC must be active.
- > Transmission position **D** or **E** must be selected.
- > Vehicle is traveling at a speed of between 34 mph and 100 mph (55 km/h and 160 km/h).
- > Overrun mode (accelerator pedal not applied).
- > Uphill gradient <3%<sup>1)</sup> and downhill gradient <4%<sup>1)</sup>, the gradient of the road is detected by the longitudinal acceleration sensor of the brake electronics.
- > Activation by efficiency assist<sup>3)</sup> depending on the situation: If the vehicle is equipped with a navigation system<sup>4)</sup> and the optional adaptive cruise assist, the efficiency assist is able to activate the coasting function to suit the situation if the cruise control function is active. For this purpose, the efficiency assist uses the route data from the navigation system and data from the front camera.

**Deactivation criteria:**

- > Uphill or downhill gradient > 10%<sup>1)</sup>
- > Speed:
  - > >105 mph (170 km/h)<sup>1)</sup>
  - > <5 mph (8 km/h)<sup>1)</sup> (if brake is not applied<sup>5)</sup>)
- > Accelerator pedal applied
- > Brake pedal applied:
  - > >19 mph (30 km/h)<sup>1)</sup> as soon as brake light switch is activated
  - > <19 mph (30 km/h)<sup>1)</sup> if a specified brake pressure threshold is exceeded
- > ESC is deactivated.
- > Transmission position **S** is selected.
- > Tiptronic mode is activated via the tiptronic gate or via the tiptronic switch in the steering wheel.
- > Deactivation by efficiency assist<sup>3)</sup> depending on the situation: If the vehicle is equipped with a navigation system<sup>4)</sup> and the optional adaptive cruise assist, the efficiency assist is able to deactivate the coasting function to suit the situation if the cruise control function is activated.

This takes place depending on the vehicle's speed, for example, if the vehicle is approaching a built-up area or a roundabout. Coasting mode is also deactivated when the vehicle is approaching other road users.

- > On vehicles with MHEV technology: in the event that no assistance can be provided by Transmission Fluid Auxiliary Hydraulic Pump 1 V475 due to overload protection or a fault.

<sup>1)</sup> The stated values are approximate and are provided without obligation. They may vary depending on the vehicle version.

<sup>2)</sup> On the MMI display, the efficiency assist with the "Intelligent coasting" and "Predictive messages" functions can be selected under Car => Driver assist => Efficiency assist. These functions can be activated or deactivated here. The intelligent coasting mode is also available on vehicles without a navigation system. The efficiency assist determines, based on the situation, whether the coasting function is activated or whether recuperation should take place via the starter-alternator in overrun mode.

Predictive messages can only be provided with the assistance of the navigation system. These messages are displayed in the form of a symbol to instruct the driver to take his/her foot off the accelerator as soon as there is a situation ahead which requires a lower speed.

<sup>3)</sup> The efficiency assist is a standard component of the engine management system.

<sup>4)</sup> The navigation system is optional; it is not available in certain markets. If the vehicle is equipped with a navigation system, data relating to the route ahead are used.

<sup>5)</sup> If the brake is applied and the brake pressure is below a specified threshold, the coasting mode remains active until the vehicle comes to a stop.

## Start/stop function

The start/stop function is activated automatically every time the ignition is switched on. It helps to save fuel and reduce CO<sub>2</sub> emissions.

If the requirements for start/stop operation are fulfilled, the engine is switched off automatically if the brakes are applied and the vehicle's speed drops below 14 mph (22 km/h)<sup>1)</sup>. One of these requirements is that the selector lever is not in position **R**.

If necessary, the engine is switched on again automatically. The requirements for this are a very short starting time and that the vehicle must be ready to drive off quickly.

Transmission Fluid Auxiliary Hydraulic Pump 1 V475 (on vehicles with MHEV technology) ensure that the Audi Q8 is ready to drive off quickly.

If assistance ceases to be provided by V475, the start/stop function is deactivated and is no longer available.

## Downhill speed control

The downhill speed control helps the driver to maintain a constant speed when driving on downhill gradients. For this purpose, the transmission selects a gear which is suitable for the gradient so that the speed selected when the brakes are applied can be maintained using the engine braking effect.

Depending on physical limitations, it may be necessary to additionally correct the vehicle's speed using the brake pedal.

The downhill speed control function is deactivated again as soon as the gradient lessens or the accelerator pedal is applied.

On appropriate gradients, the downhill speed control function is activated in transmission positions **D** and **S** if the brake pedal is applied or if the cruise control system is activated.

## Special features of the steering wheel tiptronic function

- › After a long pull of the Tip- paddle lever, the transmission changes down into the lowest possible gear.
- › After a long pull of the Tip+ paddle lever, the transmission switches from temporary tiptronic mode to automatic mode.
- › If a system fault occurs in the selector mechanism, transmission positions **P**, **R**, **N** and **D** can be selected by simultaneously pulling **both** paddle levers, provided that the vehicle is stationary and the brake is applied.
- › The “tiptronic in **D/S**” function with which manual shifts can be performed at any time is available.
- › The “Activation of coasting via Tip+” has been deactivated in favor of a clearer function assignment for the steering wheel tiptronic function on the Audi Q8. It is still possible to deactivate coasting with the – paddle lever however.

<sup>1)</sup> The stated values are approximate and are provided without obligation. They may vary depending on the vehicle version.



### Reference

For further detailed information on the neutral idle control function in the OD5 transmission, please refer to eSelf-Study Program [990163, The 2017 Audi Q7 Introduction](#).

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# Service

## Towing the vehicle

If a vehicle with an OB5 transmission needs towing, the usual restrictions for automatic transmissions apply:

- › Activate the manual release mechanism for the parking lock
- › Maximum towing speed 31 mph (50 km/h)
- › Maximum towing distance 31 m (50 km)
- › Do not tow the vehicle with the front or rear axle raised off the ground

### Reason

When the engine is not running, the oil pump is not driven and certain parts of the transmission are not lubricated. Failure to comply with the requirements for towing can therefore result in serious damage to the transmission.

## Transmission warning/indicator lamps



672\_044

If the red transmission warning lamp appears in the instrument cluster, the driver is instructed not to drive any further.



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If the yellow transmission indicator lamp appears in the instrument cluster, it is generally possible to continue driving the vehicle. A corresponding driver message informs the driver of what to do.

### Diagnosis

The electrical/electronic components as well as the control operations of the OD5 are diagnosed using Address Word 0002 via the VAS Scan Tool.



#### Note

The downhill speed control function cannot overcome the physical limitations of the vehicle and therefore cannot maintain a set speed in all conditions. The driver must always be ready to apply the brakes!



#### Reference

For descriptions and notes about towing and towing a trailer, refer to the Owner's Manual.  
For detailed and up-to-date information on the warning and indicator lamps, refer to the Owner's Manual.

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# Running gear

## Overview

The running gear on the Audi Q8 is based on the MLBevo platform, which was also the basis for development of the Audi A4, A5, Q5, A6, A7, Q7 and A8. Due to the axle loads and vehicle dimensions, the Audi Q8 uses major MLBevo system components from the 2017 Audi Q7.

The basic specification is steel spring running gear with electronic damping control. Adaptive air suspension and adaptive air suspension sport are optionally available. Four-wheel steering like the system used on the 2017 Audi Q7 is optional.



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**The running gear for all Audi Q8 vehicles comes with the quattro drive system.**

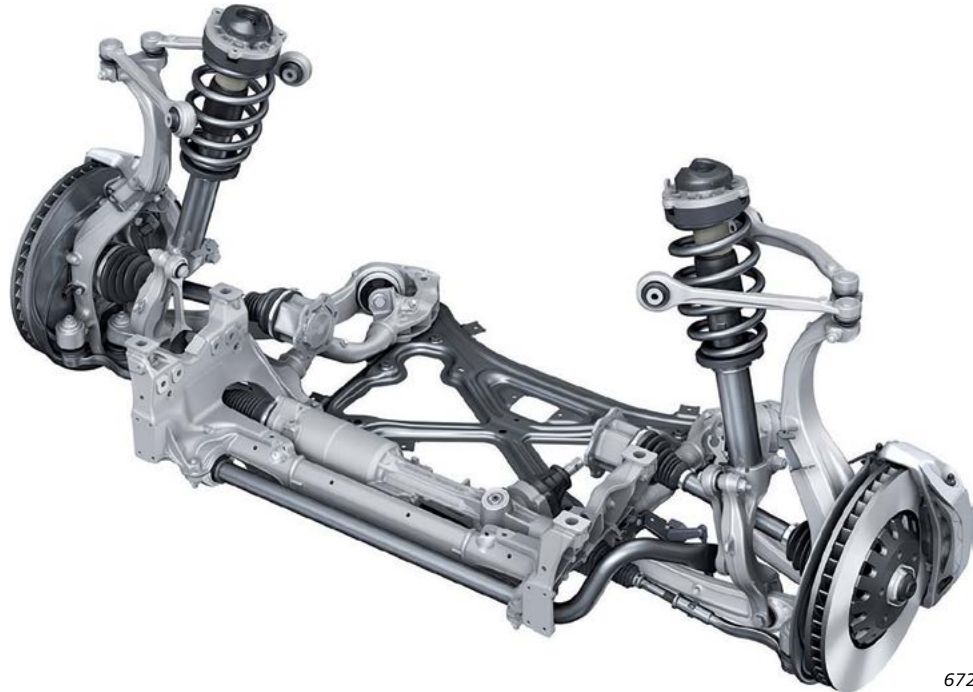
Running gear versions	Features
Suspension with air springs and damping control (1BL)	This suspension system is standard equipment.
Adaptive air suspension with air springs and damping control (1BK)	This suspension will be available at a later date.

# Axles

## Front axle

The front axle is based on the proven design principle of the five-link suspension. The main system components are identical parts to those of the 2017 Q7.

The track width is the same on both models.

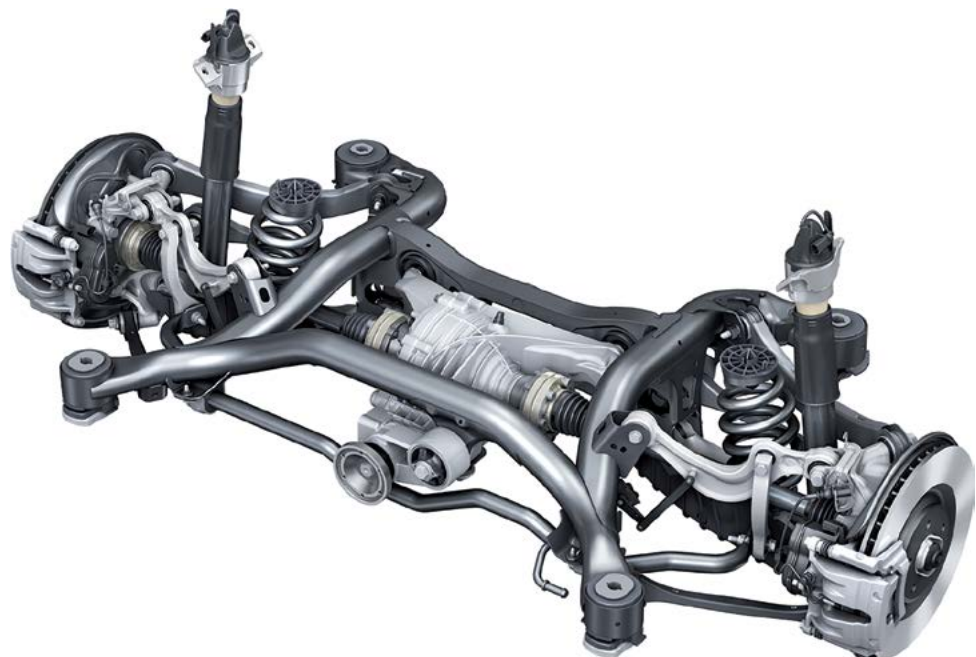


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## Rear axle

The Audi Q8 has a five-link rear axle. The main system components are identical parts to those on the 2017 Audi Q7.

The track width is also identical for both models. The four-wheel steering system already used in the 2017 Audi Q7 is available as an option.



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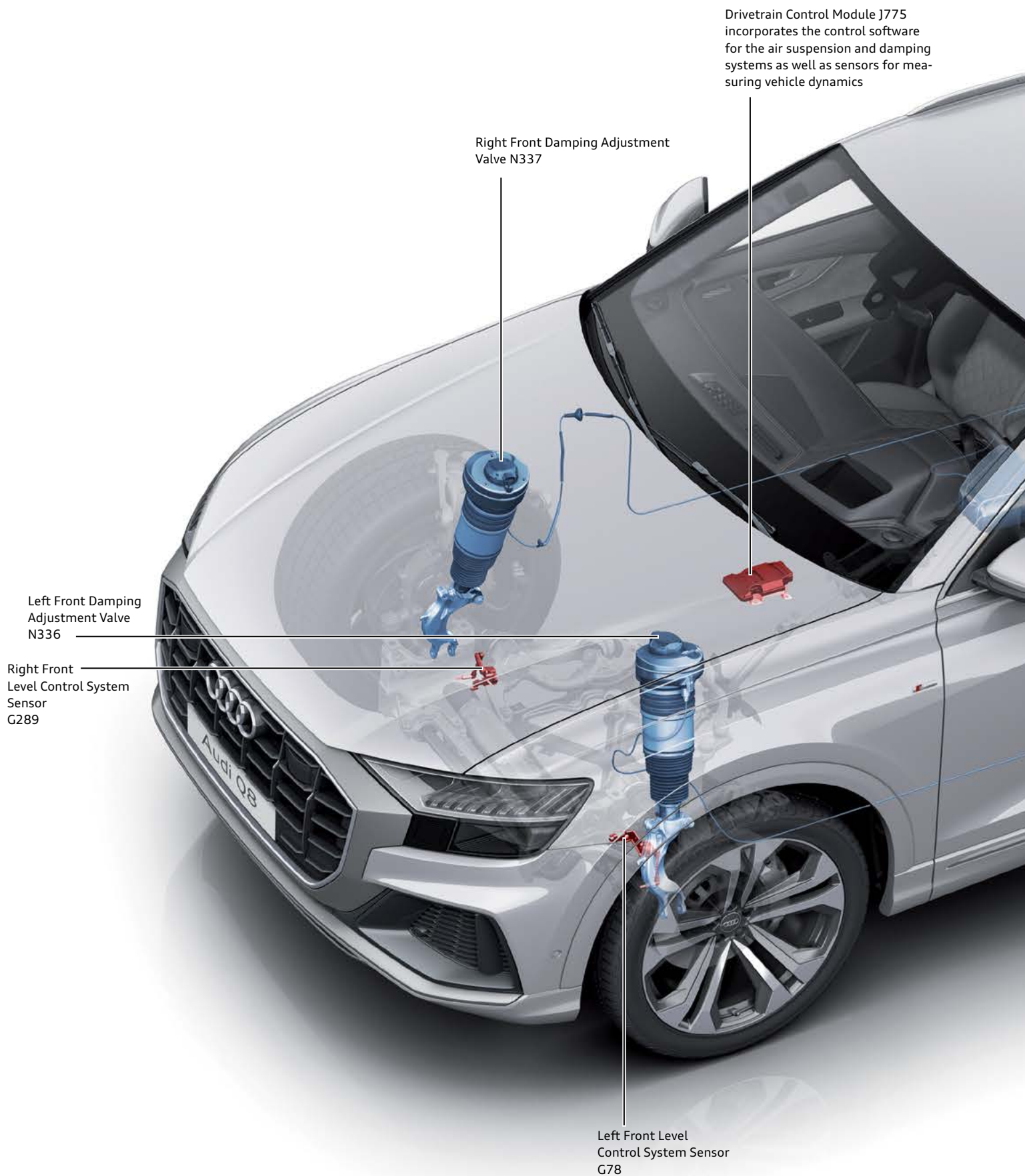
### Reference

For detailed information on the system components and the running gear setup, please refer to eSelf-Study Program [960163, The 2017 Audi Q7 Running Gear and Suspension System](#).

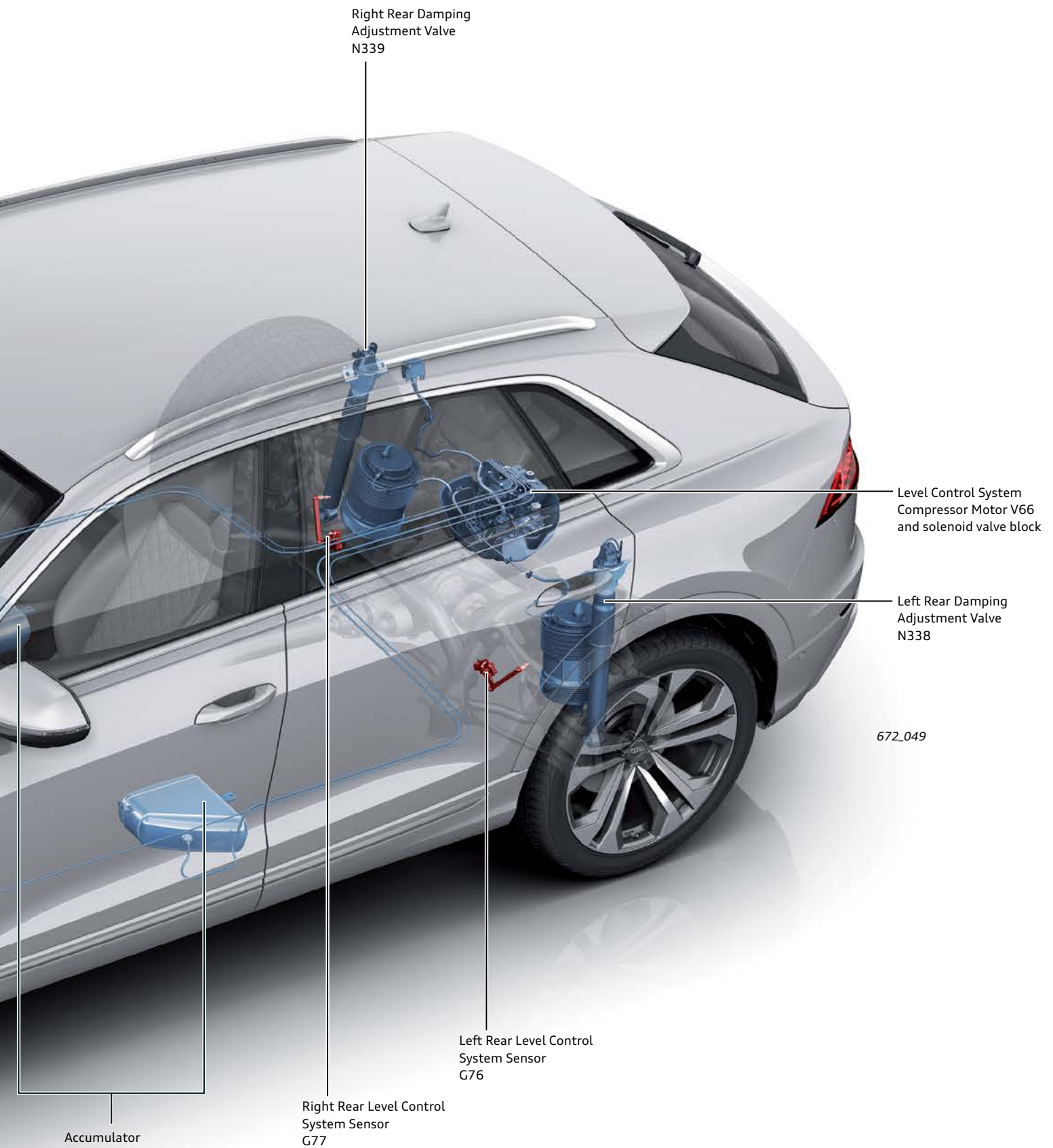


## Adaptive air suspension

In terms of design, operation and servicing requirements, the adaptive air suspension system is identical to that used in the 2017 Q7. The general way in which the system works is identical for both models, although there are differences in the control characteristics.





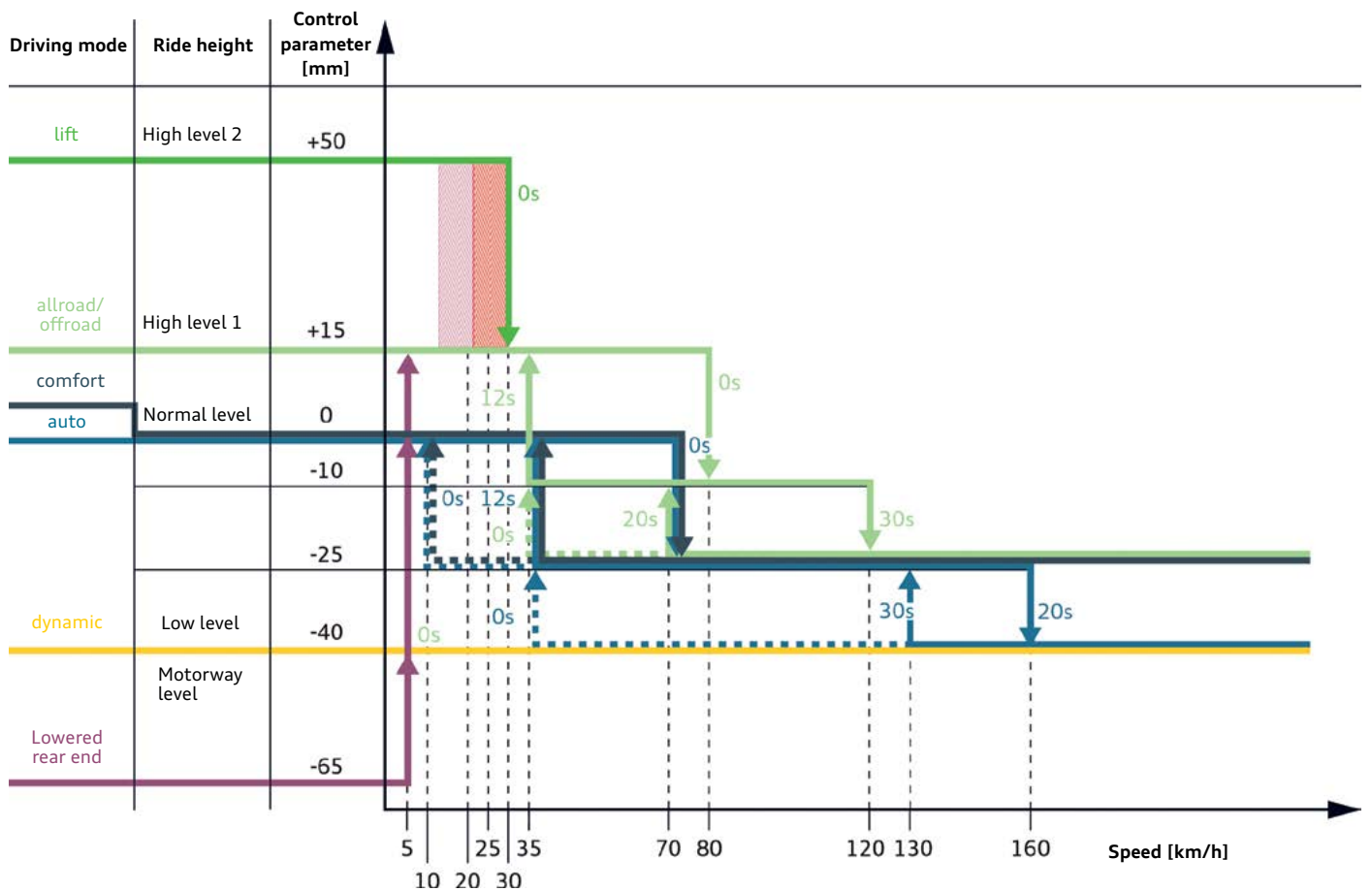


**Reference**



For detailed information, please refer to eSelf-Study Program [960163, The 2017 Audi Q7 Running Gear and Suspension System](#).

## Control characteristics of adaptive air suspension (1BK)



672\_050

### Key:

- Selection lock
- Hysteresis of selection lock

XXs = waiting time before control operation

The illustration shows the control strategy for the air suspension systems. By selecting the preferred driving mode in Audi drive select, the driver determines the vehicle's ride height and dynamic characteristics. At the same time, different ride heights are also automatically set within the selected driving mode, depending on the current vehicle speed. An example of this can be seen in "auto" mode: If the vehicle is currently set to a different ride height, the normal level is set by changing the volume of air in the air springs if the mode is selected when the vehicle is stationary or traveling at a speed below 44 mph (70 km/h). If the vehicle subsequently exceeds a speed of 43 mph (70 km/h), the ride height will immediately be lowered by 25 mm.

If the speed then increases further to at least 100 mph (160 km/h) and remains there for 20 seconds, the ride height will be lowered again by a further 0.5 in (15 mm). If the speed is subsequently reduced again and the vehicle is driven at a speed between 80 mph and 22 mph (130 km/h and 35 km/h) for a duration of 30 seconds, the ride height is raised by 0.5 in (15 mm) to the ride height previously set. If the speed is reduced to a value between 22 mph and 6 mph (35 km/h and 10 km/h), the ride height is raised immediately by 0.5 in (15 mm). If the speed drops below 6 mph (10 km/h), the vehicle is raised again to the normal level specified for "auto" mode. In addition to comfort- and dynamics-related advantages, the lowering of the ride height primarily aims to improve aerodynamics and therefore reduce fuel consumption.

## Steering system

The 2019 Audi Q8 uses the same electro-mechanical power steering system (EPS) as the 2017 Audi Q7. The steering ratio has been modified to suit the requirements specific to the Q8.

On vehicles without four-wheel steering, a variable steering ratio is used ( $i = 14.6$  in center position) by the progressive steering system. On vehicles with four-wheel steering, the ratio is:  $i = 13.3$ .

An electrically adjustable steering column is standard equipment for the 2019 Q8. It has been adapted from the 2017 Q7.

The horizontal adjustment range is approximately 2.7 in (68 mm); the vertical range is approximately 1.6 in (40 mm). An electronic steering column lock is only fitted in vehicles for markets with greater anti-theft protection requirements (for example, Sweden and Great Britain).



672\_051



### Reference

For detailed information on components carried over from other models, refer to eSelf-Study Program [960163, The 2017 Audi Q7 Running Gear and Suspension System](#).

## Brake system

The brake system on the Audi Q8 is based on the 18" brake system used on the 2017 Q7. As with the current A8, Q7, Q5 and A4 models, the brakes on the front and rear axles of the Audi Q8 have separate but non-diagonal brake circuits.

The brake calipers are also available in red.

Engine 3.0 ltr. TFSI	Front axle	Rear axle
Minimum wheel size	18"	18"
Type of brakes	AKE fixed caliper brakes	ZF TRW floating caliper brakes PC 44 HE
Number of pistons	6	1
Piston diameter (mm)	30-36-38	44
Brake disc diameter	375 mm	350 mm
Brake disc thickness	36 mm	28 mm



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AKE fixed caliper brake used on the front axle



672\_053

TRW floating caliper brake used on the rear axle



## Brake servo

A size 9/9 tandem brake servo is used on the Audi Q8 in left-hand and right-hand drive markets alike. The brake servo is the same as the 2017 Q7.

On vehicles with 48 V electrical system (mild hybrid), a pedal travel sensor is installed instead of the brake light switch. This sensor's signal is used for regulating recuperation under braking.



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## Electromechanical parking brake (EPB)

The EPB of the Q8 was also adapted from the 2017 Q7. The control software is located in ABS Control Module J104.

The controls and service requirements relevant to the EPB are identical on both models.



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## ESC

ESP 9 is featured on the Audi Q8. The brake pressure is generated by hydraulic pumps with six pistons. On vehicles equipped with the adaptive cruise assist system, two additional sensors measure the brake pressure in both brake circuits. As a general rule, data is transmitted via FlexRay. On vehicles equipped with channels A and B, communication takes place via both channels.



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### Reference

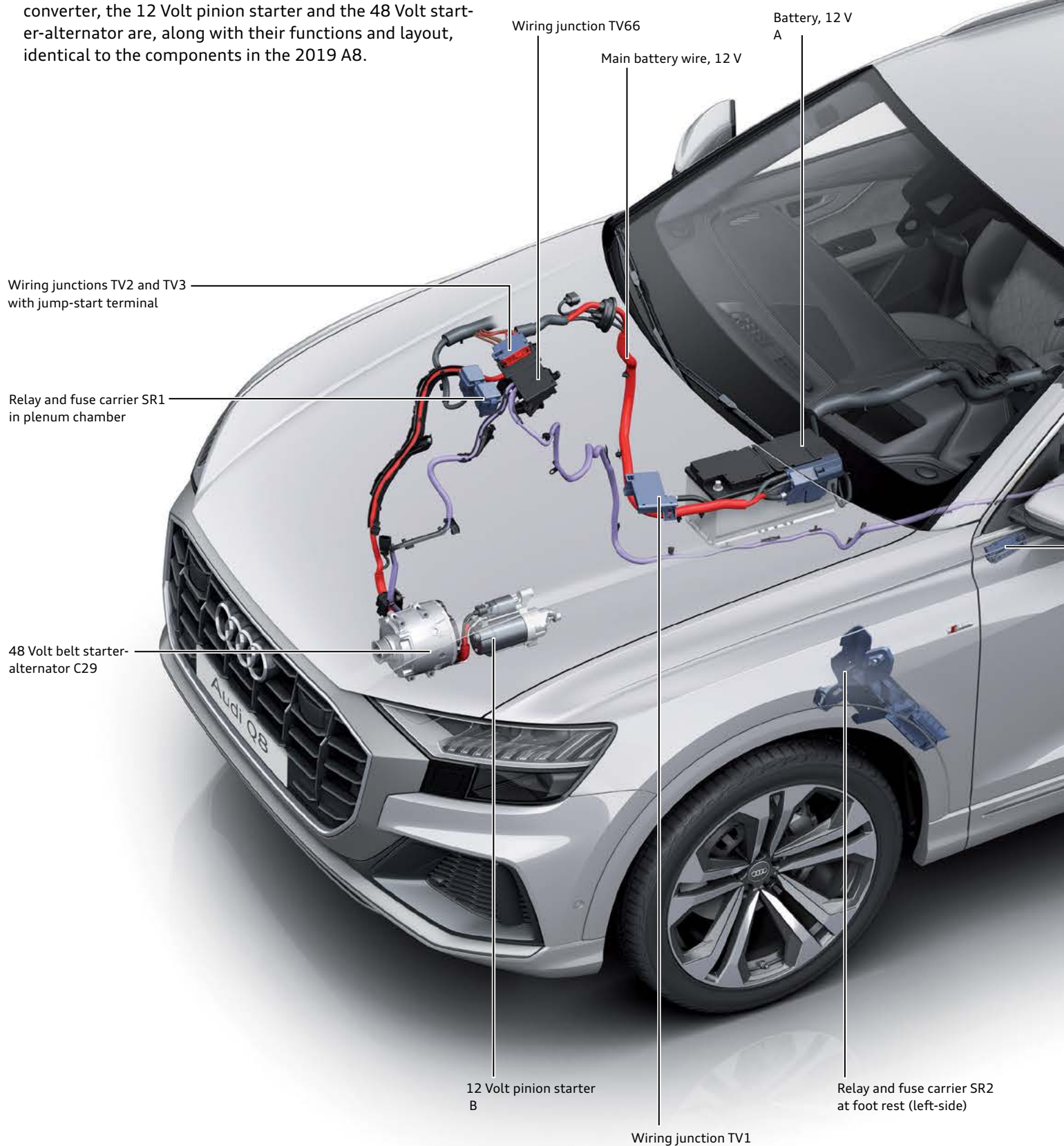
For detailed information about the brake system of the Q8, please refer to eSelf-Study Programs [960163, The 2017 Audi Q7 Running Gear](#) and [960293, The 2019 Audi A8 Running Gear and Suspension Systems](#).

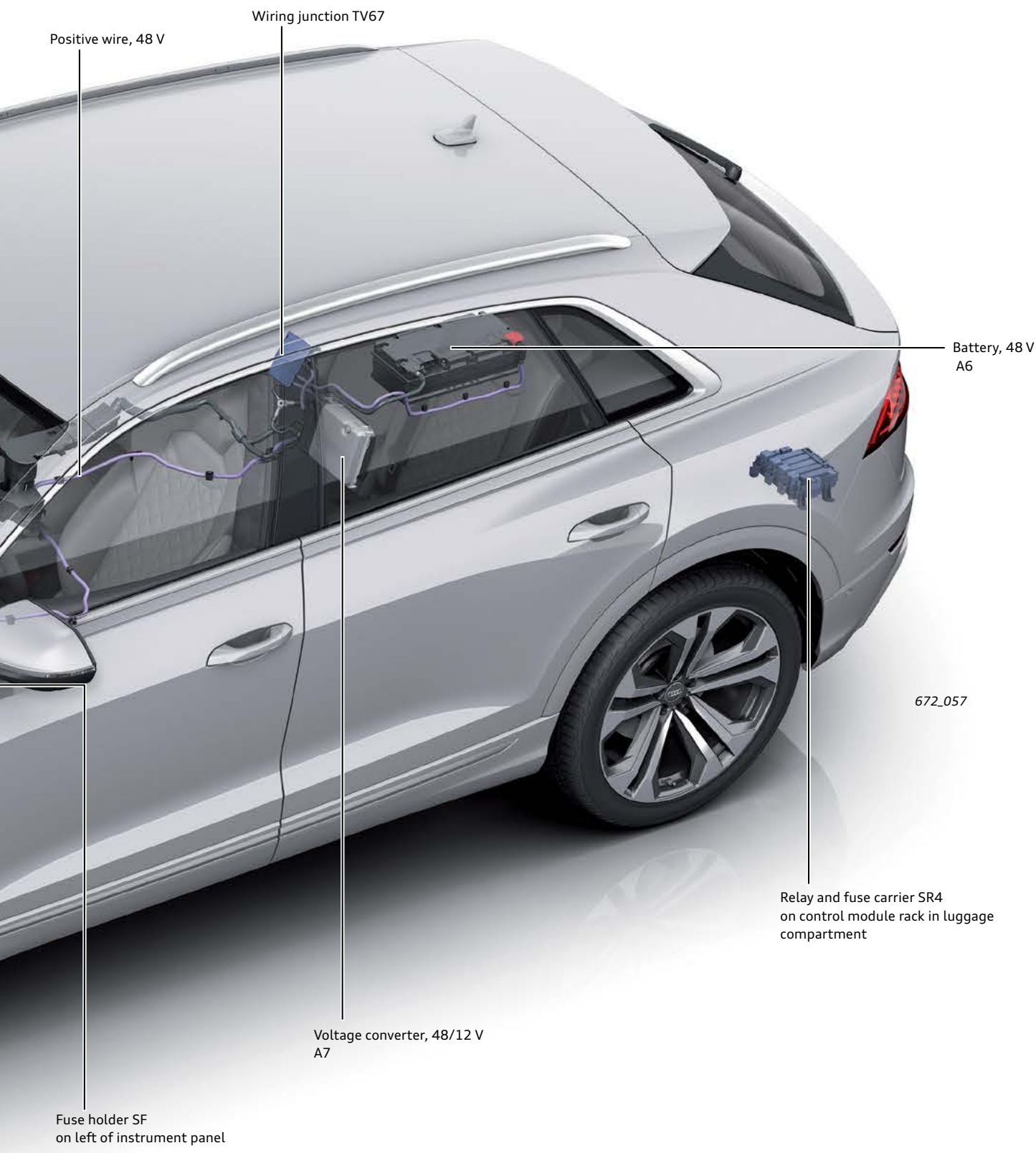
# Electrics and electronics

## 48 Volt MHEV electrical system

The electrical system of the Q8 is similar to the system of the 2019 A8 although the installation locations of the relays, fuse carriers and control modules are more comparable to those of the 2017 Q7.

The Audi Q8 is a 48 Volt mild hybrid electric vehicle (48V MHEV). All Audi MHEVs are equipped with both a traditional battery and a lithium ion battery and starter-alternator. Fully electric driving is not possible with the Audi Q8 MHEV. The installation locations of the batteries, the voltage converter, the 12 Volt pinion starter and the 48 Volt starter-alternator are, along with their functions and layout, identical to the components in the 2019 A8.





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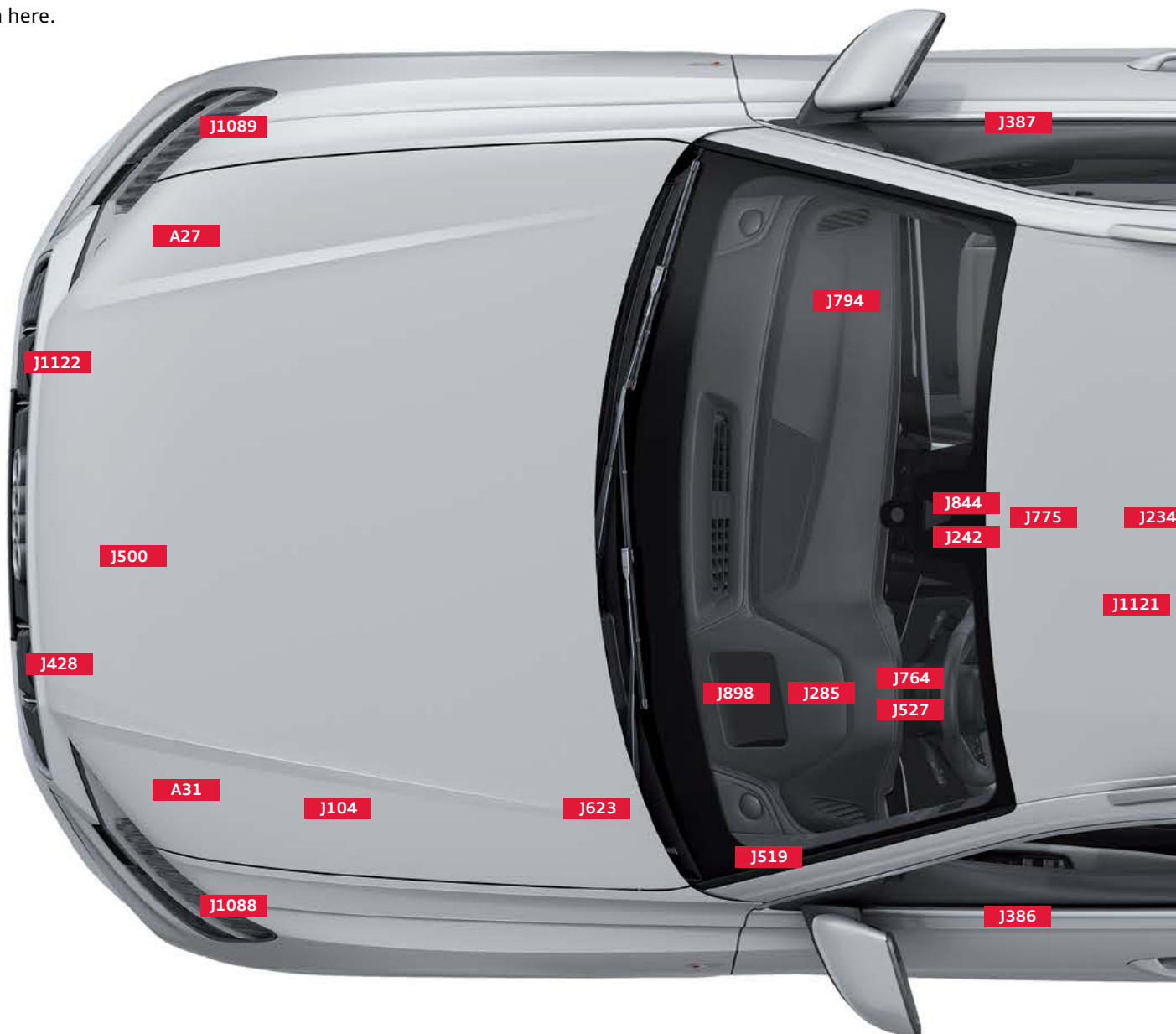
**Reference**

For descriptions of the mild hybrid functions, refer to eSelf-Study Program [970293, The 2019 Audi A8 Electrics and Electronics.](#)

# Networking

## Installation locations of control modules

Some of the control modules shown in this overview are optional and/or country-specific equipment. For reasons of clarity, not all control modules installed in the vehicle can be shown here.



<b>A6</b>	Battery, 48 V	<b>J386</b>	Drive Door Control Module
<b>A7</b>	Voltage converter (48 V/12 V)	<b>J387</b>	Front Passenger Door Control Module
<b>A27</b>	Right LED Headlamp Power Output Module 1	<b>J393</b>	Comfort System Central Control Module
<b>A31</b>	Left LED Headlamp Power Output Module 1	<b>J428</b>	Adaptive Cruise Control Module
<b>E265</b>	Rear A/C Display Control Head	<b>J500</b>	Power Steering Control Module
<b>J104</b>	ABS Control Module	<b>J502</b>	Tire Pressure Monitoring Control Module
<b>J136</b>	Memory Seat/Steering Column Adjustment Control Module	<b>J519</b>	Vehicle Electrical System Control Module
<b>J234</b>	Airbag Control Module	<b>J521</b>	Front Passenger Memory Seat Control Module
<b>J245</b>	Sunroof Control Module	<b>J525</b>	Digital Sound System Control Module
<b>J285</b>	Instrument Cluster Control Module	<b>J527</b>	Steering Column Electronics Control Module
<b>J345</b>	Towing Recognition Control Module	<b>J533</b>	Data Bus On Board Diagnostic Interface



### Reference

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

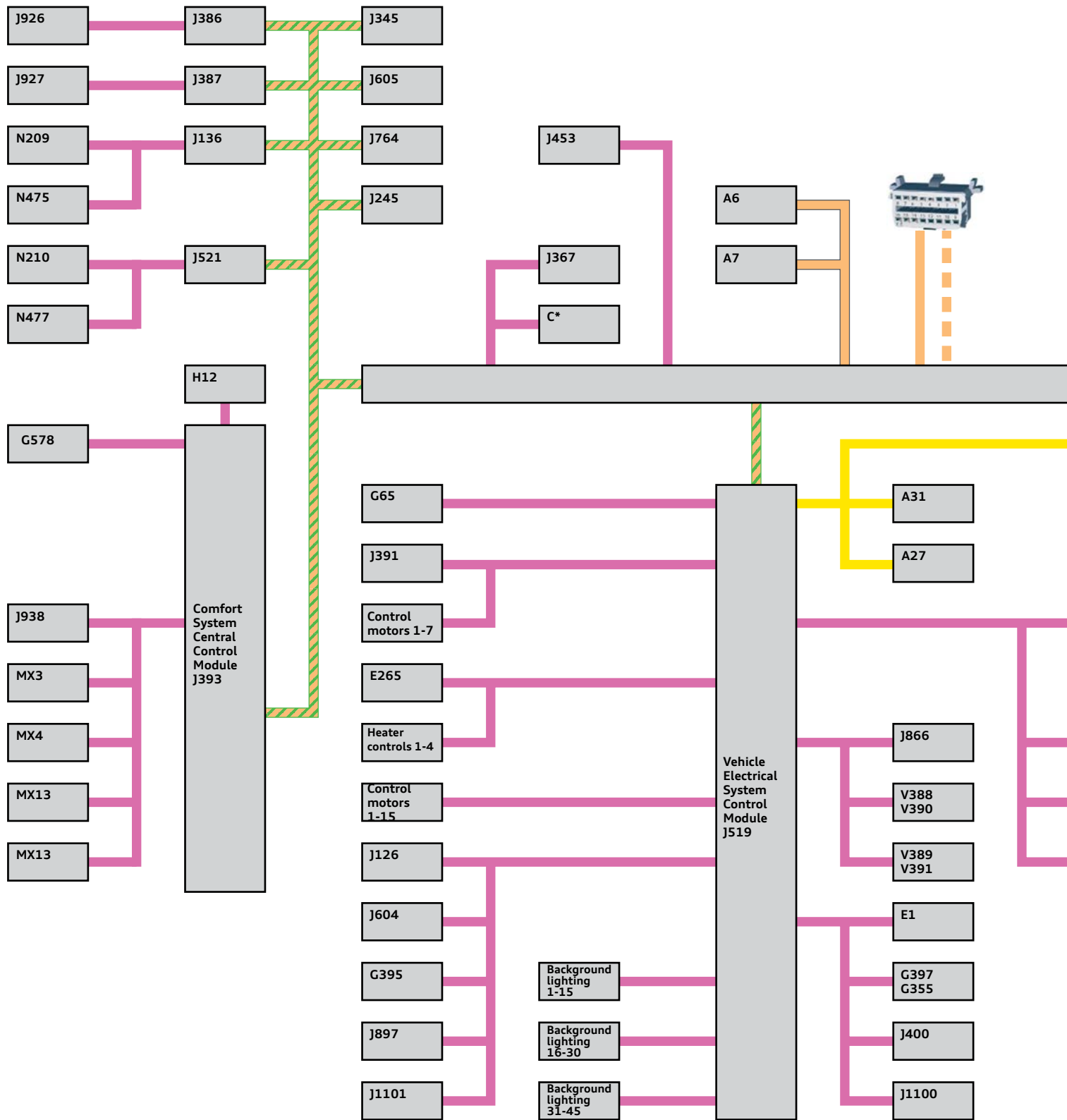




672\_058

<b>J605</b>	Rear Lid Control Module	<b>J927</b>	Passenger Side Rear Door Control Module
<b>J623</b>	Engine Control Module	<b>J949</b>	Control Module for Emergency Call Module and Communication Unit
<b>J764</b>	Electronic Steering Column Lock Control Module	<b>J1019</b>	Rear Axle Steering Control Module
<b>J769</b>	Lane Change Assistance Control Module	<b>J1088</b>	Control Module for Left Front Object Detection Radar Sensor
<b>J770</b>	Lane Change Assistance Control Module 2	<b>J1089</b>	Control Module for Right Front Object Detection Radar Sensor
<b>J772</b>	Rearview Camera System Control Module	<b>J1121</b>	Driver Assistance Systems Control Module
<b>J775</b>	Drivetrain Control Module	<b>J1122</b>	Laser Distance Regulation Control Module
<b>J794</b>	Information Electronics Control Module 1	<b>R242</b>	Driver Assistance Systems Front Camera
<b>J844</b>	Automatic High Beam Assist Control Module		
<b>J853</b>	Night Vision System Control Module		
<b>J898</b>	Windshield Projection Head Up Display Control Module		
<b>J926</b>	Driver Side Rear Door Control Module		

# Topology

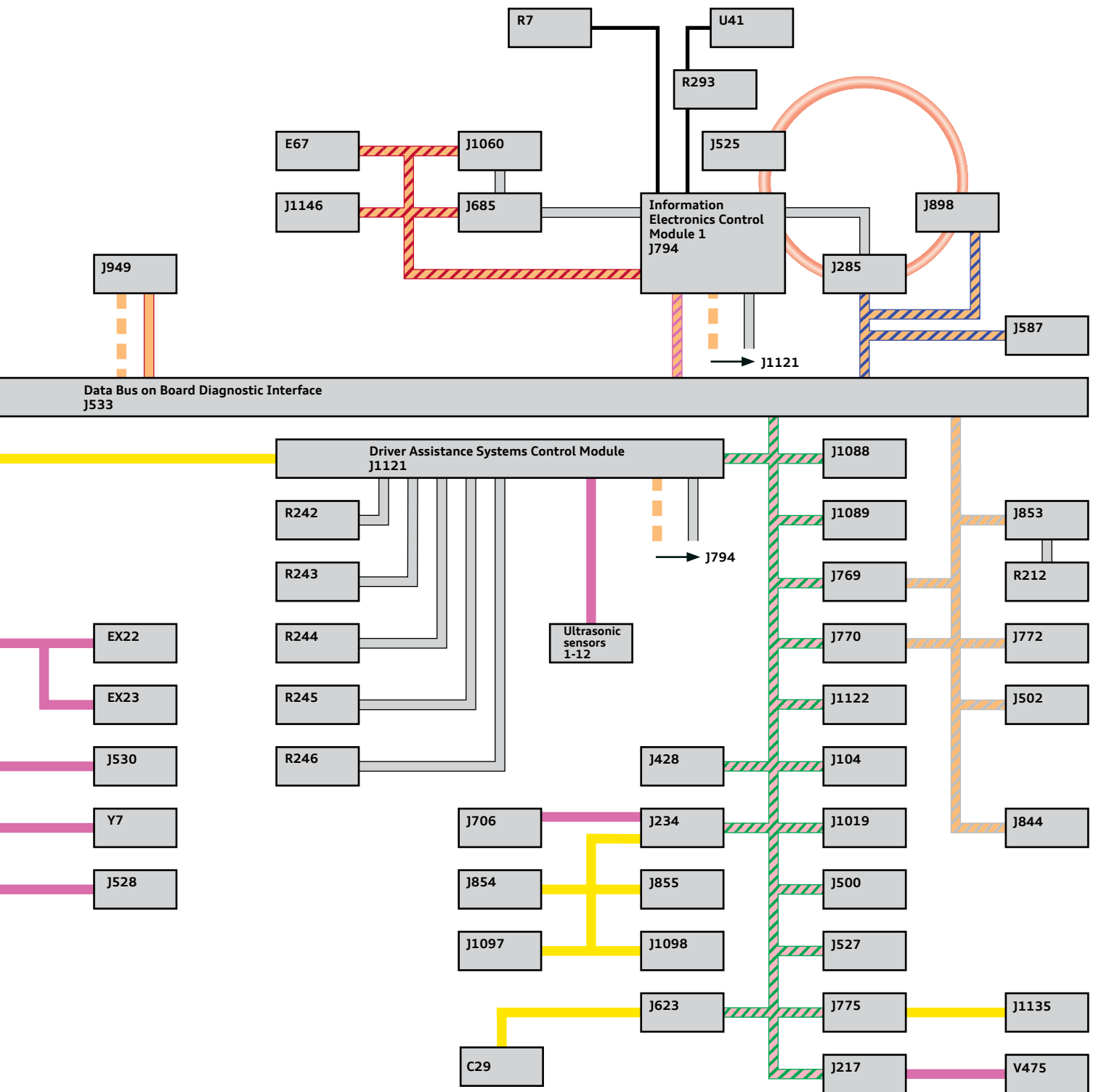


**Key:**

- |  |                             |   |                                       |
|--|-----------------------------|---|---------------------------------------|
|  | Convenience CAN             |  | Diagnostics CAN                       |
|  | Hybrid CAN                  |  | FlexRay                               |
|  | Extended CAN                |  | Modular infotainment matrix CAN (MIB) |
|  | Infotainment CAN            |  | LIN bus                               |
|  | Sub-bus systems/private CAN |  | USB wires                             |
|  | MOST bus                    |  | Ethernet                              |
|  | LVDS                        |  | Convenience CAN 2                     |
|  | Dash panel insert CAN       |  | Connect CAN                           |

In this diagram, the FlexRay topology does not mirror the actual configuration of the control modules.

The order of the control modules in the MOST ring in this illustration is also not identical to the actual sequence.



672\_059

**Key:**


<b>A6</b>	Battery, 48 V	<b>J866</b>	Power Adjustable Steering Column Control Module
<b>A7</b>	Voltage Converter (48 V/12 V)	<b>J897</b>	Ionize Control Module
<b>A27</b>	Output Module 1 for Right LED Headlight	<b>J898</b>	Windshield Projection Head Up Display Control Module
<b>A31</b>	Output Module 1 for Left LED Headlight	<b>J926</b>	Driver Side Rear Door Control Module
<b>C</b>	Alternator	<b>J927</b>	Passenger Side Rear Door Control Module
<b>C29</b>	Starter-Alternator	<b>J938</b>	Power Rear Lid Opening Control Module
<b>E1</b>	Lightswitch	<b>J949</b>	Control Module for Emergency Call Module and Communication Unit
<b>E67</b>	Driver Side Volume Regulator	<b>J1019</b>	Rear Axle Steering Control Module
<b>E265</b>	Rear A/C Display Control Head	<b>J1060</b>	Front Information Display Control Head 2
<b>EX22</b>	Switch Module in Instrument Panel, Center	<b>J1088</b>	Control Module for Left Front Object Detection Radar Sensor
<b>EX23</b>	Center Console Switch Module 1	<b>J1089</b>	Control Module for Right Front Object Detection Radar Sensor
<b>G65</b>	High Pressure Sensor	<b>J1097</b>	Left Rear Seat Belt Tensioner Control Module
<b>G355</b>	Humidity Sensor	<b>J1098</b>	Right Rear Seat Belt Tensioner Control Module
<b>G395</b>	A/C Pressure/Temperature Sensor 1	<b>J1100</b>	Windshield Washer Pump Control Module
<b>G397</b>	Rain/Light Recognition Sensor	<b>J1101</b>	Fragrance Diffuser System Control Module
<b>G578</b>	Anti-Theft Alarm System Sensor	<b>J1122</b>	Laser Distance Regulation Control Module
<b>H12</b>	Alarm Horn	<b>J1135</b>	Level Control System Compressor Electronics
<b>J104</b>	ABS Control Module	<b>J1146</b>	Mobile Device Charger 1
<b>J126</b>	Fresh Air Blower Control Module	<b>MX3</b>	Left Tail Lamp
<b>J136</b>	Memory Seat/Steering Column Adjustment Control Module	<b>MX4</b>	Right Tail Lamp
<b>J217</b>	Transmission Control Module	<b>MX13</b>	Center Tail Lamp
<b>J234</b>	Airbag Control Module	<b>N209</b>	Driver Lumbar Support Adjustment Valve Block
<b>J245</b>	Sunroof Control Module	<b>N210</b>	Front Passenger Lumbar Support Adjustment Valve Block
<b>J285</b>	Instrument Cluster Control Module	<b>N475</b>	Valve Block 1 in Driver Seat
<b>J345</b>	Towing Recognition Control Module	<b>N477</b>	Valve Block 1 in Front Passenger Seat
<b>J367</b>	Battery Monitoring Control Module	<b>R7</b>	DVD Player
<b>J386</b>	Driver Door Control Module	<b>R212</b>	Night Vision System Camera
<b>J387</b>	Front Passenger Door Control Module	<b>R242</b>	Driver Assistance Systems Front Camera
<b>J391</b>	Rear Fresh Air Blower Control Module	<b>R243</b>	Front Peripheral Camera
<b>J400</b>	Wiper Motor Control Module	<b>R244</b>	Left Peripheral Camera
<b>J428</b>	Adaptive Cruise Control Module	<b>R245</b>	Right Peripheral Camera
<b>J453</b>	Multifunction Steering Wheel Control Module	<b>R246</b>	Rear Peripheral Camera
<b>J500</b>	Power Steering Control Module	<b>R293</b>	USB Distributor
<b>J502</b>	Tire Pressure Monitoring Control Module	<b>U41</b>	USB Connection 1
<b>J521</b>	Front Passenger Memory Seat Control Module	<b>V388</b>	Driver Seat Backrest Blower Fan
<b>J525</b>	Digital Sound System Control Module	<b>V389</b>	Front Passenger Seat Backrest Blower Fan
<b>J527</b>	Steering Column Electronics Control Module	<b>V390</b>	Driver Seat Cushion Blower Fan
<b>J528</b>	Roof Electronics Control Module	<b>V391</b>	Front Passenger Seat Cushion Blower Fan
<b>J530</b>	Garage Door Opener Control Module	<b>V475</b>	Transmission Fluid Auxiliary Hydraulic Pump 1
<b>J587</b>	Selector Lever Sensor System Control Module	<b>Y7</b>	Automatic Dimming Interior Rearview Mirror
<b>J605</b>	Rear Lid Control Module		
<b>J623</b>	Engine Control Module		
<b>J685</b>	Front Information Display Control Head		
<b>J706</b>	Passenger Occupant Detection System Control Module		
<b>J764</b>	Electronic Steering Column Lock Control Module		
<b>J769</b>	Lane Change Assistance Control Module		
<b>J770</b>	Lane Change Assistance Control Module 2		
<b>J772</b>	Rearview Camera System Control Module		
<b>J775</b>	Drivetrain Control Module		
<b>J844</b>	Automatic High Beam Assist Control Module		
<b>J853</b>	Night Vision System Control Module		
<b>J854</b>	Left Front Seat Belt Tensioner Control Module		
<b>J855</b>	Right Front Seat Belt Tensioner Control Module		



## Bus systems used on the Audi Q8

The bus systems used in the Audi Q8 are adapted from the 2019 Audi A8.

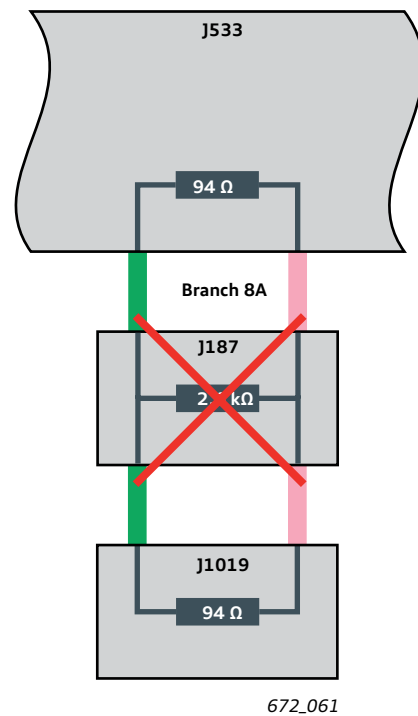
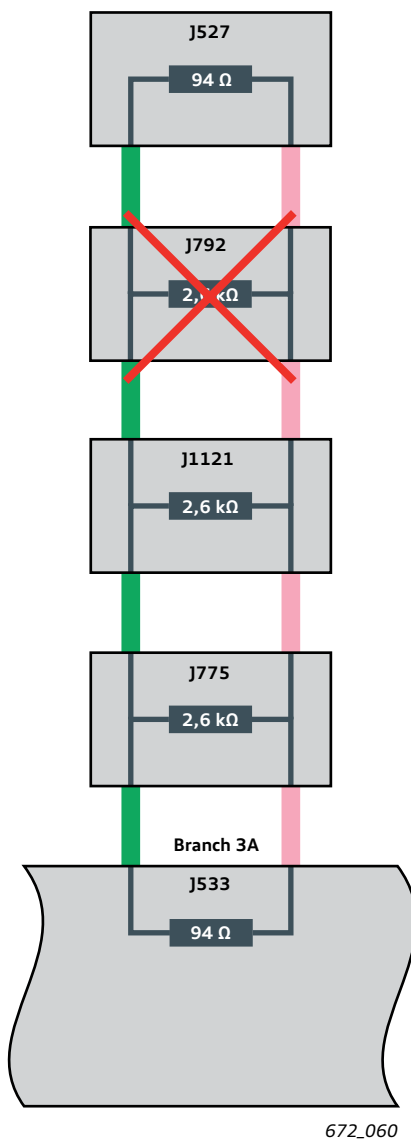
The only new feature is the connect CAN, which connects Control Module for Emergency Call Module and Communication Unit J949 to the gateway.

Bus systems	Wire color	Configuration	Data transfer rate
Connect CAN		Electrical bus system	500 kbit/s

The FlexRay topology of the Audi Q8 is similar to that of the 2019 Audi A8. The exceptions are differences in branch 3A and 8A.

Active Steering Control Module J792 and Differential Lock Control Module J187 are not used on the Audi Q8.

## FlexRay



### Key:

- J527** Steering Column Electronics Control Module
- J533** Data Bus On Board Diagnostic Interface
- J775** Drivetrain Control Module
- J1019** Rear Axle Steering Control Module
- J1121** Driver Assistance Systems Control Module



### Reference

For further information on bus systems, please refer to Self-Study Program [970293, The 2019 Audi A8 Electrics and Electronics](#).

# Exterior lighting

## Headlights

### LED headlights (PR No.: 8IT + 8G1/8G0)

Available as ECE<sup>1)</sup> and SAE<sup>2)</sup> version

The illustration shows the left headlight in the ECE<sup>1)</sup> version.



672\_062

#### Lighting functions:

- > Daytime running light (1).
- > Marker light (1).
- > Low beam (2).
- > High beam (3).
- > All-weather light (4).
- > Turn signal (1).
- > Side marker light (SAE only<sup>2)</sup>, not illustrated).

#### Special features of the lighting functions

On the SAE<sup>2)</sup> version, the daytime running lights are switched off during the turn signal procedure. During the light phase of the turn signal, the LEDs light up in yellow; during the dark phase, the white LEDs of the marker light are active.

#### Equipment

The LED headlights can be combined with the high beam assist and a headlight washer system as options.

#### Service

The control module installed on the outside of the headlight housing can be replaced in the event of a fault. In the event of damage to the upper and inner headlight attachments, repair tabs can be attached to the headlight housing.

#### Coming home/leaving home function

When it is dark, the entry/exit lighting illuminates the area around the vehicle when the driver unlocks the vehicle and after the ignition has been switched off and the driver's door has been opened. The entry/exit lighting only takes effect when it is dark and when the light switch is in the AUTO position. The function activates the low beam, the marker lights and the tail lights.

#### Headlight range adjustment

The LED headlights on the Audi Q8 are equipped with automatic dynamic headlight range adjustment.

<sup>1)</sup> ECE = for the European market

<sup>2)</sup> SAE = for the North American market

## HD matrix LED headlights (PR No.: 8IT + 8G5)

Available as ECE<sup>1)</sup> and SAE<sup>2)</sup> version

The illustration shows the left headlight in the ECE<sup>1)</sup> version.



672\_063

### Lighting functions:

- › Daytime running light (1).
- › Marker light (1).
- › Low beam (2).
- › High beam spot light (3).
- › Matrix beam main beam (5).
- › Dynamic turn signal (1).
- › All-weather light (4).
- › Low beam (4).
- › Intersection light (4).
- › Highway light.
- › Cornering light.
- › Intersection light (in combination with navigation system).
- › Side marker light (SAE only<sup>2)</sup>, not illustrated).

### Special features of the lighting functions

On the SAE<sup>2)</sup> version, the daytime running lights are switched off during the turn signal procedure. During the light phase of the turn signal, the LEDs light up in yellow; during the dark phase, the white LEDs of the marker light are active.

### Equipment

A headlight washer system is standard on the Q8 with HD matrix LED headlights.

### Service

The control module installed on the outside of the headlight housing can be replaced in the event of a fault. In the event of damage to the upper and inner headlight attachments, repair tabs can be attached to the headlight housings.

### Coming home/leaving home function

On Audi Q8 vehicles with HD matrix LED headlights, the entry/exit lighting involves the low beam being switched on as well as dynamic activation of the marker lights and the tail lights, with the marker light and tail light LEDs being activated at different moments.

### Headlight range adjustment

The HD matrix LED headlights are equipped with automatic dynamic headlight range adjustment.

# Tail lights

## General description

The tail lights on the Audi Q8 are in three sections; one tail light each on the left and right sides and a light unit which covers the entire width of the trunk lid.

LEDs are used for all light functions. The tail lights are activated via Comfort System Central Control Module J393.



## Versions

The tail lights appear in the three following versions:

- > LED tail lights: PR No. 8SK (ECE<sup>1</sup>) only)
- > LED tail lights with sequential turn signals: PR No. 8SP (SAE<sup>2</sup>) only) (only on Prestige models)
- > LED tail lights with sequential turn signals and dynamic tail lights: PR No. 8SQ (ECE<sup>1</sup>) and SAE<sup>2</sup>)

<sup>1</sup>) ECE = for the European market

<sup>2</sup>) SAE = for the North American market



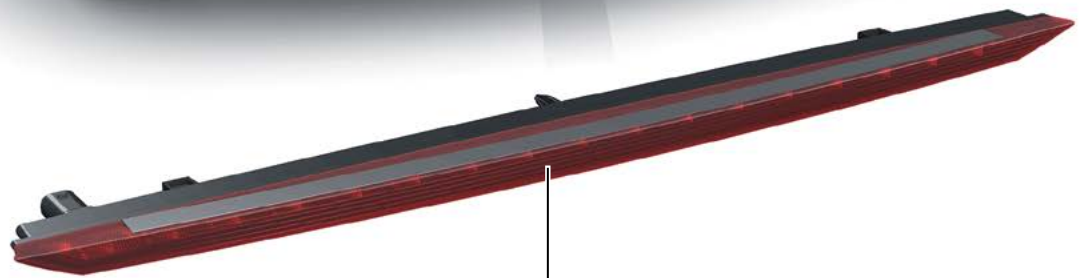
## High-mounted brake light

On the Audi Q8, the high-mounted brake light is integrated in the rear spoiler. It is not possible to replace individual LEDs.

In the event of a fault, the high-mounted brake light must be replaced as a complete unit after the rear spoiler has been removed.



672\_065



High-Mounted Brake Lamp Bulb  
M25

# Convenience electronics

## Overview

Many convenience related functions of the Audi Q8 have been adapted from other vehicles of the second generation MLBevo platform.

The list of items below is overview of the various convenience-related equipment on the Audi Q8.

### Central locking

The following ways of locking/unlocking the vehicle using the central locking system are possible:

- > Using the vehicle key.
- > Via sensors in all four door handles.
- > Using the lock cylinder on the driver's door.
- > Using the central locking switch inside the vehicle.

### Rear lid operation

- > The rear lid can be opened and closed electrically. The rear lid can be opened and closed via sensors by using a kicking movement ("foot gesture").

### Steering wheel

- > The Audi Q8 comes with a multifunction steering wheel as standard. An electrically adjustable steering column is standard equipment.

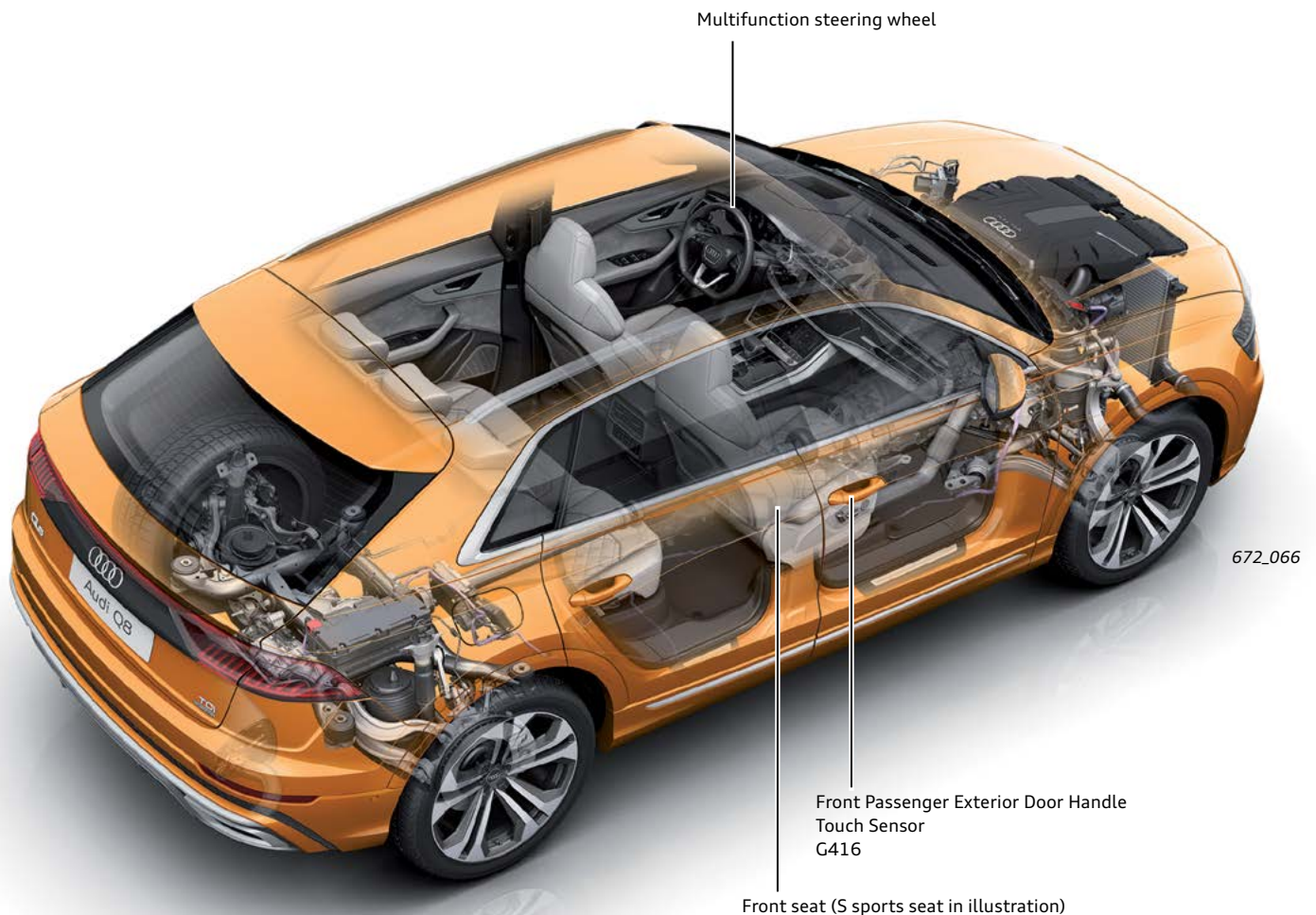
### Seats

There are different types of front seats:

- > The available seats are the basic seat, sports seat and individual contour seat. The front seats can be ordered with electrical adjustment, seat ventilation, massage function and memory function as options. The rear seats can only be adjusted manually in the longitudinal direction and the seat rake of the backrest can be adjusted.

### Garage door opener

- > Up to eight systems (for example: garage doors, property gates, exterior and interior lighting, alarm systems) can now be programmed on garage door opener. The customer can also operate the various systems more conveniently using a GPS link.



## Rear view mirrors

### Exterior mirror

The Audi Q8 comes as standard with electrically adjustable and heated exterior mirrors with an electric folding function. The driver can also choose to have the mirrors folded in automatically when locking the vehicle.

### Optional functions of exterior mirrors

- › Automatic anti-glare
- › Tilting function for exterior mirror on passenger side:  
When reverse gear is selected, the exterior mirror glass on the passenger side is tilted downwards automatically so that the driver has a view of the curb and the wheel in proximity to the curb.  
The mirror returns from this position into the original position under the following circumstances:
  - › If the ignition is switched off (= terminal 15 OFF).
  - › As soon as the car is driven forwards at a speed of over 10 mph (15 km/h).
  - › If the rotary knob is no longer in the "front passenger exterior mirror adjustment" position.

### Exterior mirror heating

- › To heat up the exterior mirrors, the mirror selection switch must be set for heater activation.

### Temperature characteristics for exterior mirror heating

- › If the outside temperature is below 41 F° (+5 C°), the exterior mirrors are supplied with full heating power for approximately three minutes.
- › If the outside temperature is above 41 F° (+5 C°), the exterior mirrors are supplied with full heating power for approximately two minutes.  
Following this short use of full heating power, heating of the exterior mirrors continues depending on the speed of the vehicle and the outside temperature:
  - › If the weather is dry, the mirror surface is heated to approximately 68 F° (20 C°).
  - › If it is raining, the mirror surface is heated to approximately 86 F° (30 C°).

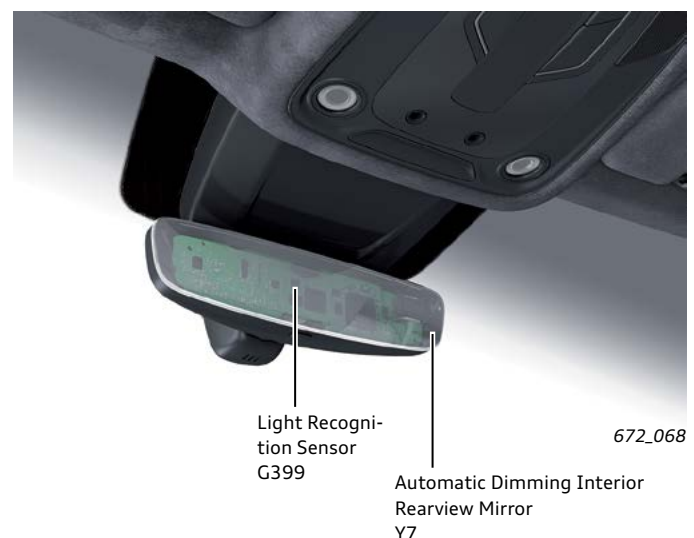
When servicing the vehicle, it must be noted that the mirror surface temperatures cannot be measured reliably. This is due to the technical structure of the exterior mirrors and the temperature tolerances which may occur for all heated surfaces under certain ambient conditions.

### Frameless interior mirror

The Audi Q8 features the frameless automatic anti-glare mirror. This protects the driver from being glare by the headlights of following vehicles thanks to the automatic anti-glare function.

The light from the headlight beams of vehicles behind is detected with the help of a photo cell and the interior mirror is dimmed automatically. For the North American market, the frameless interior mirror also has a compass display in the mirror glass.

If the interior lighting is switched on or reverse gear is engaged, the automatic anti-glare mirror is not dimmed.



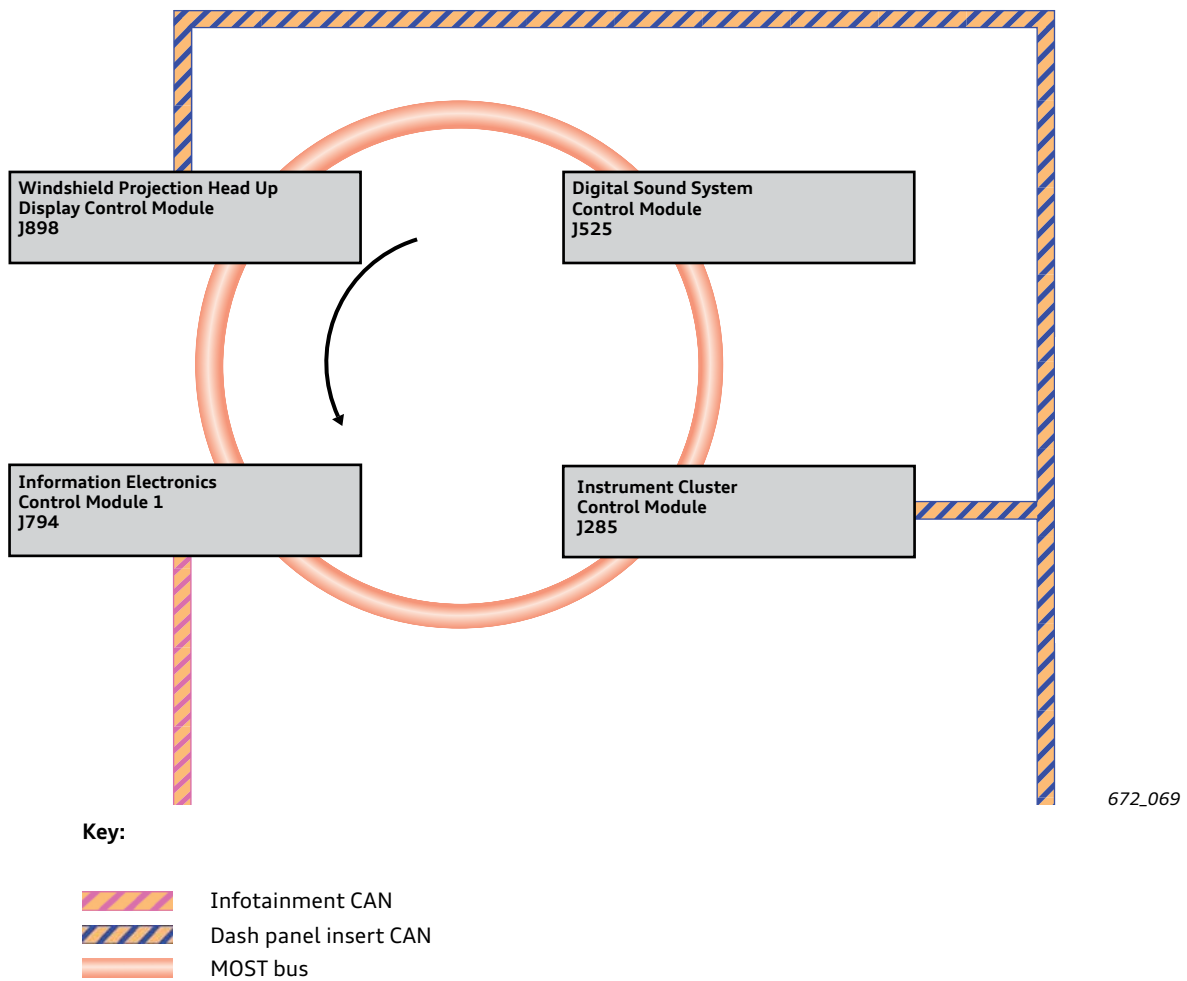
## MOST bus

The sequence of control modules in the MOST bus is the same as the sequence from the Audi A6, A7 and A8. Whether the five control modules in the illustration are actually connected to the MOST bus depends on the equipment installed on the vehicle in question.

On the Audi Q8, Windshield Projection Head Up Display Control Module J898 is a node of both the dash panel insert CAN and the MOST data bus.

By connecting the head-up display to the optical data bus, it is possible to visualize the detailed intersection map for the driver in the head-up display as well.

### Order of MOST bus ring nodes





## Interior lighting

Interior lighting package QQ1 is standard equipment on the 2019 Q8 for the North American Region. It has two LED roof modules with capacitor controlled reading lights.

LEDs are also used for the two make-up lights and on the entry lights and interior door handle lights.

The glove compartment light and the footwell and luggage compartment lights also feature LED technology.

Lighting package QQ2 is standard equipment on Premium Plus and Prestige models.

	Background lighting package QQ0	Contour/background lighting package QQ2
LED roof module, front/rear, incl. reading lights	✓ (capacitor controlled)	✓ (capacitor controlled)
Contour lighting for front/rear doors	✗	RGB
Background door lighting, front/rear	✗	RGB
Surround lighting from exterior door handles, front/rear	✗	✓
Make-up lights	✓	✓
Entry lights, front/rear	✓	✓
Interior door handle, front/rear	✓	✓
Door warning lamps	passive	passive
Illuminated sill panel trim	front/rear via equipment lines and as individual option	
Contour lighting for front center console	✗	RGB
Background lighting for front center console	✗	RGB
quattro badge or Audi rings incl. contour line on passenger side	✗	RGB
Background lighting for dash panel	✗	RGB
Glove box light	✓	✓
Footwell lighting, front/rear	✓	✓
Luggage compartment light, right/left	✓	✓

# Comfort System Central Control Module J393

## Brief description of J393 (BCM2)

- > Address Word 0046.
- > Node of convenience CAN data bus.

### Has the following master functions:

- > Central locking system master.
- > Immobilizer master.
- > LIN master for:
  - > LIN1: Anti-Theft Alarm System Sensor G578.
  - > LIN2: Alarm Horn H12.
  - > LIN3: Power Rear Lid Opening Control Module J938, tail lights.
- > Terminal management.
- > Entry and start authorization.

## Further integrated functions

- > Central locking.
- > Anti-theft alarm system.
- > Activation of rear exterior lighting.
- > Heated rear window.
- > Turn signal control.
- > Rear lid release and luggage compartment lighting control.
- > Tank filler flap locking.
- > Power latching system for rear lid.
- > Activation of sliding sunroof.
- > Activation of sunroof sun blind.
- > Electronic steering column lock.
- > Sensor-operated rear lid opening.
- > Tank sensor management.
- > Automatic activation of hazard warning lights and unlocking of doors in an accident in which the crash sensor is activated.

J393 is the Q8 immobilizer master module (Address Word 0005 is no longer used). The central locking antenna is integrated on the control module printed circuit.



# Instrument clusters

The 2019 Audi Q8 features the Audi virtual cockpit as standard equipment.

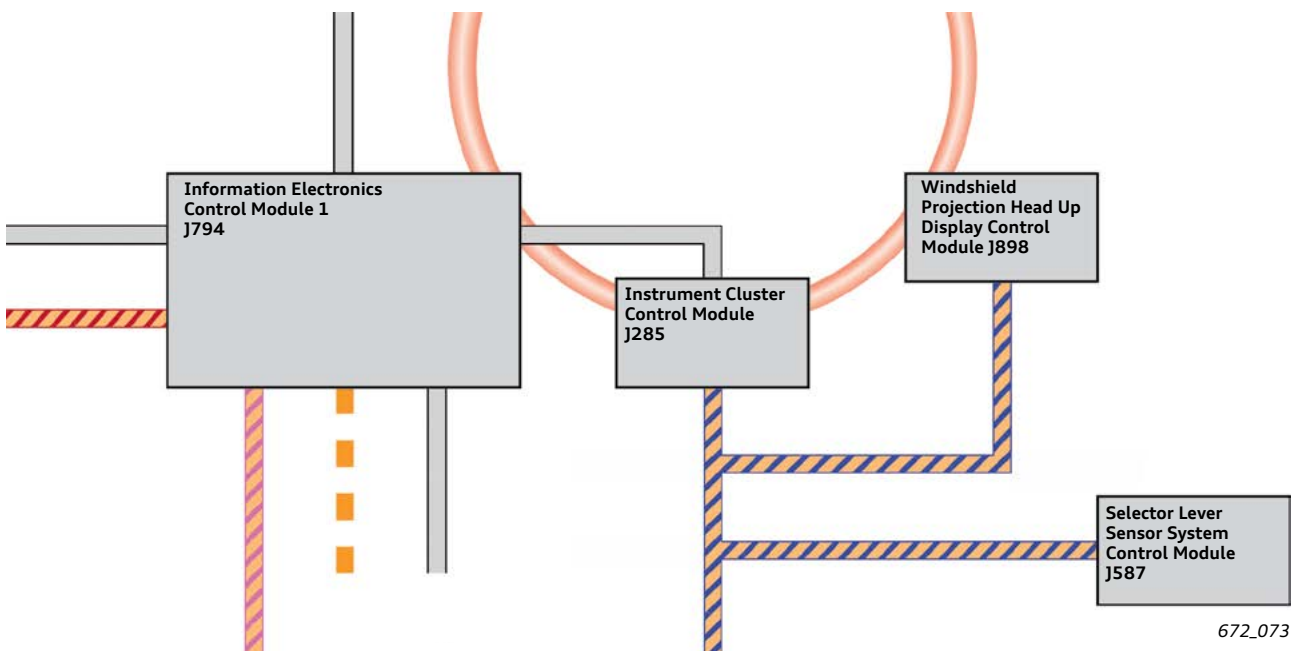
As well as being connected to the MOST bus, the Audi virtual cockpit also has an LVDS wire. This wire creates a direct connection between Information Electronics Control Module 1 J794 and Instrument Cluster Control Module J285. The large navigation map and the detailed intersection maps are transmitted via this connection.

Standard view with large displays for speedometer and tachometer



Audi virtual cockpit

672\_072



672\_073

**Key:**

- Infotainment CAN
- Dash panel insert CAN
- MOST bus
- LVDS
- Modular infotainment matrix CAN (MIB)
- Ethernet

# Climate control

## Note:

At the market launch of the 2019 Audi Q8, the climate control system will use refrigerant R-1234yf.

In addition to the newly introduced fragrance diffuser and air ionization system, the Audi Q8 has a 3-zone or 4-zone air conditioner.

## Overview

### Fragrance diffuser system

The fragrance diffuser system with two different fragrance types is offered for the Audi Q8. The fragrances are kept in cylindrical vials in Fragrance Diffuser System Functional Unit GX43.

A small blower guides the fragrance from the vial into the front air outlets at the side via small air hoses. In addition to the fragrance type, four levels of intensity can be selected.

### Air ionization system

An air ionization system is used in the Audi Q8 to improve the air quality. The system works by negatively charging a limited number of air particles. The charged air particles are distributed in the vehicle interior via the front air outlets at the side.

These anions neutralize the dust and similar very small particles that they attract.

### Back massage

A back massage function is offered for the front seats of the Audi Q8.

The following massage programs can be activated:

- > Wave.
- > Pulse.
- > Stretch.
- > Rest.
- > Shoulder.
- > Activation.
- > Revitalization.



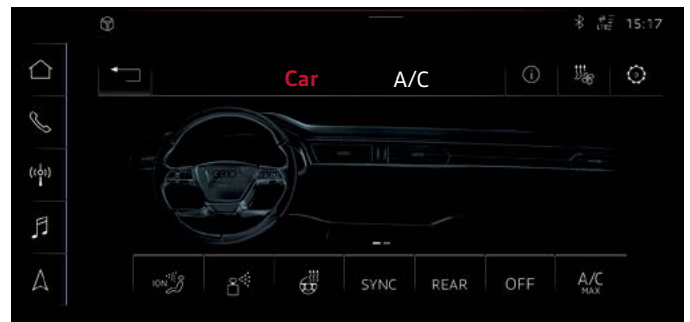
## Front controls

Like the 2019 A8, the climate control system of the Q8 is controlled by Vehicle Electrical System Control Module 1 J519. Climatronic Control Module J255 is no longer installed.

Communication between J519 and the climate control components is done via a LIN bus system. The climate control system is operated through two touch displays: the upper MMI display and the lower display located in the center console. Climate control functions in the top MMI display can be accessed via the Car menu.

Depending on the equipment installed, the MMI display can be used to select the following functions and their settings:

- > Ionization.
- > Fragrance.
- > Steering wheel heating.
- > Synchronization for driver/passenger side.
- > Climate control for rear passengers/for rear.
- > Auxiliary climate control.
- > Climate control (A/C MAX, A/C OFF, A/C eco).



672\_074

## Rear controls

- > 3-zone climate control.
  - > Rear operating unit with digital temperature display and buttons for seat heating.
- > 4-zone climate control.
  - > Rear touch operating unit including climate control regulation and seat heating, permanently installed in the center console.

### 3-zone climate control

Rear A/C Display Control Head E265 controls the 3-zone climate control in the rear of the vehicle. The seat heating can be set on this operating unit in addition to the rear passenger compartment temperature.



672\_075

### 4-zone climate control

Rear A/C Display Control Head E265 for the 4-zone climate control system equipped with a sensory surface. It is operated by touch.

The following settings can be made:

- > Temperature.
- > Blower speed.
- > Air distribution.
- > Automatic climate control.
- > Climate control on/off.
- > Seat heating.



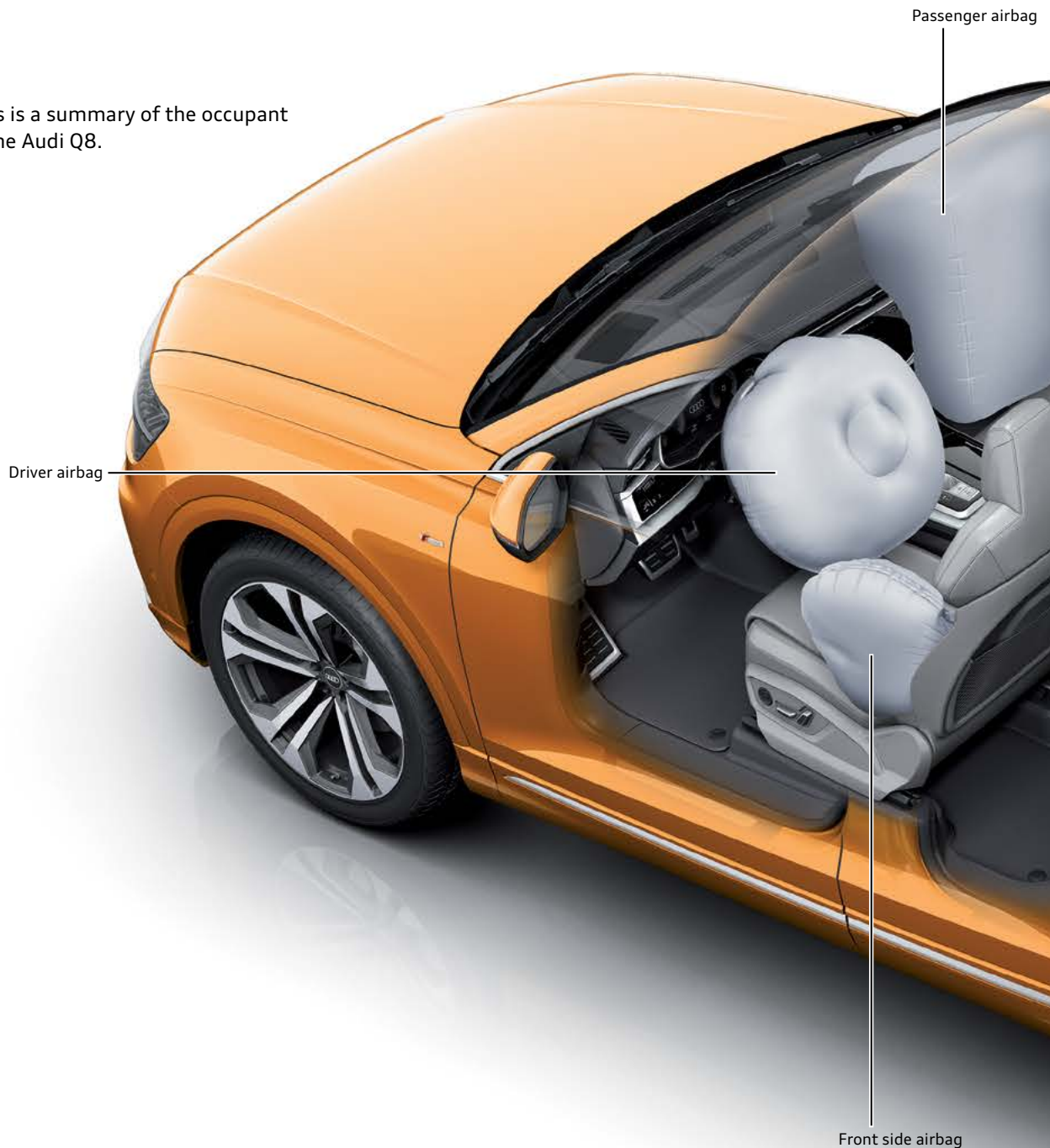
672\_076

# Safety and driver assist systems

## Overview

### Passive safety

On the following pages is a summary of the occupant protection system in the Audi Q8.



## Components

The Audi Q8 may include the following components and systems:

- > Airbag control module
- > Adaptive driver airbag
- > Adaptive passenger airbag (two-stage passenger airbag)
- > Front side airbags
- > Side airbags for seat row 2
- > Curtain airbags
- > Crash sensors for front airbags
- > Crash sensors for side impact detection in doors
- > Crash sensors for side impact detection in C-pillars
- > Crash sensors for side impact detection in B-pillars
- > Front belt retractors with pyrotechnic belt tensioners
- > Front belt retractors with electric belt tensioners
- > Front belt retractors with switchable belt force limiters
- > Belt retractors for seat row 2 with pyrotechnic belt tensioners for driver and passenger side
- > Belt retractors for seat row 2 with electric belt tensioners for driver and passenger side
- > Front lap belt tensioners for driver and passenger sides
- > Seat belt warning for all seats
- > Seat-occupied recognition system in passenger seat
- > Seat-occupied recognition system for seat row 2
- > Front passenger airbag warning lamp (OFF and ON)
- > Seat position detection for driver and passenger
- > Battery isolator, 12 Volt electrical system
- > Battery isolator, 48 Volt sub-system



672\_077

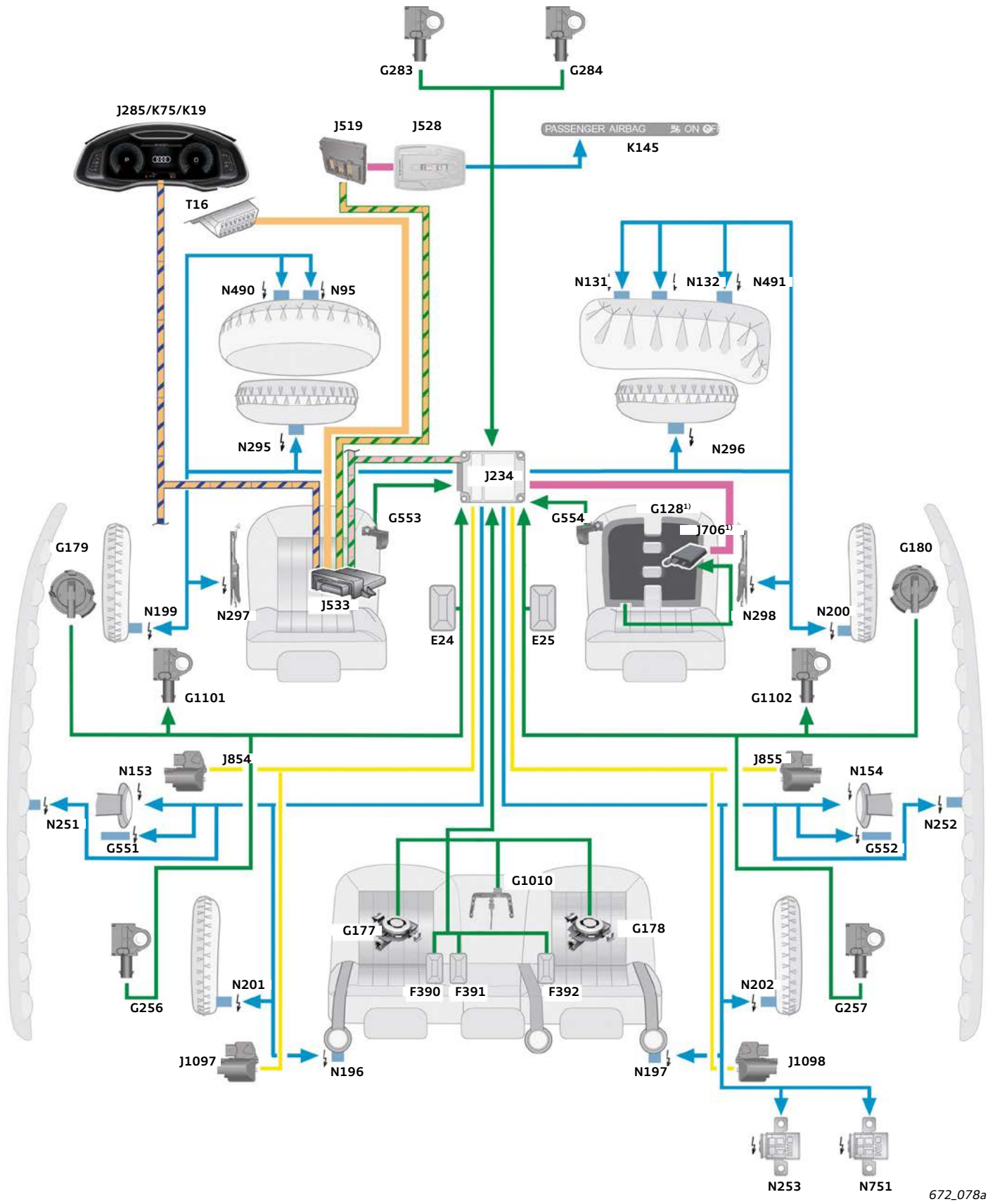


**Note**

The images in this section are schematic representations and are provided only to aid understanding.



# System overview



672\_078a

**Key:**

- |  |                            |   |                   |   |               |
|--|----------------------------|---|-------------------|---|---------------|
|  | Diagnostics CAN            |  | FlexRay           |  | Input signal  |
|  | Dash panel insert CAN      |  | LIN bus           |  | Output signal |
|  | Sub-bus system/private CAN |  | Convenience CAN 2 |   |               |



## Additional equipment

Equipment may vary due to the different demands and legal requirements that are made of vehicle manufacturers in the markets.

### Key to figure on page 64:

<b>E24</b>	Driver Seat Belt Switch	<b>K19</b>	Seat Belt Indicator Lamp
<b>E25</b>	Front Passenger Seat Belt Switch	<b>K75</b>	Airbag Indicator Lamp
<b>F390</b>	Driver Side Second Row Seat Belt Switch	<b>K145</b>	Front Passenger Airbag -Disabled- Indicator Lamp (both ON and OFF status of passenger airbag is indicated)
<b>F391</b>	Center Second Row Seat Belt Switch		
<b>F392</b>	Passenger Side Second Row Seat Belt Switch	<b>N95</b>	Drive Airbag Igniter
<b>G128</b>	Passenger Seat Occupant Detection Sensor	<b>N131</b>	Front Passenger Airbag Igniter 1
<b>G177</b>	Driver Side Rear Seat Occupant Detection Sensor	<b>N132</b>	Front Passenger Airbag Igniter 2
<b>G178</b>	Passenger Side Rear Seat Occupant Detection Sensor	<b>N153</b>	Driver Seat Belt Tensioner Igniter 1
<b>G179</b>	Driver Thorax Airbag Crash Sensor	<b>N154</b>	Front Passenger Seat Belt Tensioner Igniter 1
<b>G180</b>	Front Passenger Thorax Airbag Crash Sensor	<b>N196</b>	Driver Side Rear Seat Belt Tensioner Igniter
<b>G256</b>	Driver Side Rear Thorax Airbag Crash Sensor	<b>N197</b>	Passenger Side Rear Seat Belt Tensioner Igniter
<b>G257</b>	Passenger Side Rear Thorax Airbag Crash Sensor	<b>N199</b>	Driver Thorax Airbag Igniter
<b>G283</b>	Driver Front Airbag Crash Sensor	<b>N200</b>	Front Passenger Thorax Airbag Igniter
<b>G284</b>	Passenger Side Front Airbag Crash Sensor	<b>N201</b>	Driver Side Rear Thorax Airbag Igniter
<b>G551</b>	Driver Belt Force Limiter	<b>N202</b>	Passenger Side Rear Thorax Airbag Igniter
<b>G552</b>	Front Passenger Belt Force Limiter	<b>N251</b>	Driver Head Curtain Airbag Igniter
<b>G553</b>	Driver Seat Position Sensor	<b>N252</b>	Front Passenger Head Curtain Airbag Igniter
<b>G554</b>	Front Passenger Seat Position Sensor	<b>N253</b>	Battery Interrupt Igniter
<b>G1010</b>	Rear Center Seat Occupant Detection Sensor	<b>N295</b>	Driver Knee Airbag Igniter
<b>G1101</b>	Thorax Airbag Crash Sensor in the Driver Side B-Pillar	<b>N296</b>	Front Passenger Knee Airbag Igniter
<b>G1102</b>	Thorax Airbag Crash Sensor in the Front Passenger Side B-Pillar	<b>N297</b>	Driver Seat Belt Tensioner Igniter 2 (lap belt tensioner)
		<b>N490</b>	Driver Airbag Release Valve Igniter
		<b>N491</b>	Front Passenger Airbag Release Valve Igniter
		<b>N751</b>	Battery Interrupt Igniter, 48 Volt
<b>J234</b>	Airbag Control Module		
<b>J285</b>	Instrument Cluster Control Module	<b>T16</b>	Data Link Connector
<b>J519</b>	Vehicle Electrical System Control Module 1		
<b>J528</b>	Roof Electronics Control Module		
<b>J533</b>	Data Bus On Board Diagnostic Interface		
<b>J706</b>	Passenger Occupant Detection System Control Module		
<b>J854</b>	Left Front Seat Belt Tensioner Control Module		
<b>J855</b>	Right Front Seat Belt Tensioner Control Module		
<b>J1097</b>	Left Rear Seat Belt Tensioner Control Module		
<b>J1098</b>	Right Rear Seat Belt Tensioner Control Module		

### <sup>1)</sup> Vehicles for the North American region (NAR):

Passenger Seat Occupant Detection Sensor G128 is connected to Passenger Occupant Detection System Control Module J706 via a discrete wire. The control module communicates with Airbag Control Module J234 via a LIN bus wire.

## Airbag Control Module J234

Airbag Control Module J234 of the Q8 is the same generation module used in the 2019 Audi A8. For details of the equipment specification, refer to the system overview on page 64.



672\_079

## Active safety

### Audi pre sense

Depending on the vehicle equipment, the Audi Q8 may feature the following Audi pre sense functions:

- > Audi pre sense basic.
- > Audi pre sense rear.
- > Audi pre sense side.
- > Audi pre sense front.
- > Audi pre sense Collision avoidance assist.
- > Audi pre sense turn-off assist.



672\_080



### Reference

For further information on the Airbag Control Module J234 and Audi pre sense, please refer to eSelf-Study Program [990493\\_The 2019 Audi A8 Introduction](#).

## Side crash sensors

The Audi Q8 is equipped with a total of six external crash sensors for detecting side collisions (in the Y direction): two pressure sensors and four acceleration sensors.

The signals from these crash sensors are used to determine the severity of the accident and as a plausibility check for side impacts.

For details of vehicle equipment related to occupant protection, please also refer to the system overview on page 64.

The designations for the side crash sensors are as follows:

- › G179 Driver Thorax Airbag Crash Sensor (pressure sensor in the door).
- › G180 Front Passenger Thorax Airbag Crash Sensor (pressure sensor in the door).
- › G256 Driver Side Rear Thorax Airbag Crash Sensor (acceleration sensor on the C-pillar).
- › G257 Passenger Side Rear Thorax Airbag Crash Sensor (acceleration sensor on the C-pillar).
- › G1101 Thorax Airbag Crash Sensor in the Driver Side B-Pillar (acceleration sensor on the B-pillar).
- › G1102 Thorax Airbag Crash Sensor in the Front Passenger Side B-Pillar (acceleration sensor on the B-pillar).



672\_081

Driver Thorax Airbag Crash Sensor G179

Thorax Airbag Crash Sensor in the Driver Side B-Pillar G1101

Driver Side Rear Thorax Airbag Crash Sensor G256



Pressure sensor in the door

672\_082



Acceleration sensor on C- and B-pillars

672\_083

## Laser Distance Regulation Control Module J1122

The laser scanner first introduced on the 2019 A8 is also used on the 2019 Q8.

It is located in the upper portion of the grill to the right of the Audi rings. It's higher location compared to the A8 is compensated by the software configuration. The laser scanner takes over functions previously provided by a second radar unit.

Adjustment of the laser scanner is done using a special target board. The procedure is the same as that of the 2019 Audi A8.

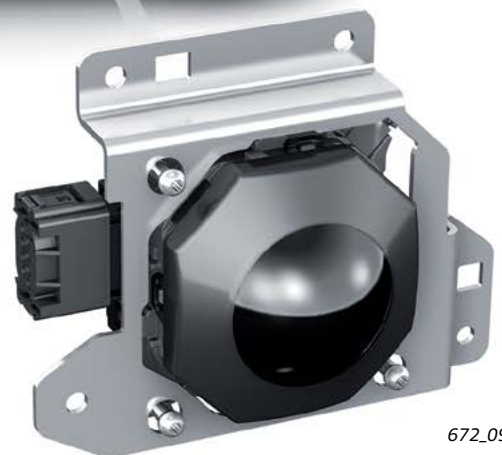
## Adaptive Cruise Control Module J428 (ACC)

The fourth generation of Adaptive Cruise Control Module J428 works the same and is serviced the same as in the 2019 A8. It is installed in the upper portion of the grill to the left of the Audi rings.

J428 communicates via FlexRay channel B.



Laser Distance Regulation Control Module J1122



Adaptive Cruise Control Module J428 (ACC)

672\_092



### Reference

For detailed information on the design and function of the laser scanner, please refer to eSelf-Study Program [990393, The 2019 Audi A8 Driver Assistance Systems](#).

For further information on J428, please refer to eSelf-Study Program [990393, The 2019 Audi A8 Driver Assistance Systems](#), and [979443, Audi ACC Systems](#). Information is also available in the wheel alignment software and the VAS Scan Tool.



# Infotainment and Audi connect

## Introduction and overview of versions

The Audi Q8 features the MIB2+ version of the modular infotainment matrix. It is based on the 2+ High version; MIB2+ High for short.

The following Audi connect infotainment services may be available:

- > Connected radio.
- > Navigation data update (4 times per year online or via SD card via myAudi portal).
- > Online routing.
- > Online news (customized).
- > Online traffic information.
- > Twitter.
- > Weather.
- > Online traffic sign information.
- > Hazard alerts.
- > Fuel prices.
- > Parking information.
- > Travel information.
- > Destination entry via myAudi app.
- > Google Earth.
- > Google POI search via speech control.
- > Messages.
- > E-mail.

If the vehicle is equipped with Audi connect vehicle related services (IW3), the following services may be available:

- > Audi emergency call.
- > Online roadside assistance.
- > Audi service request.
- > Vehicle status report (for example mileage, fuel tank level, etc.).
- > Remote locking/unlocking.
- > Parking position.

### MMI navigation plus (I8T + 7UG)



10.1" touch display (top) with 1540 x 720 pixels

8.6" touch display (bottom) with 1280 x 660 pixels

Audi virtual cockpit (9S8)

3D navigation system on SSD (7UG)

AM/FM radio

Connected radio (Internet radio)

Satellite radio for North America (Sirius) (QV3)

Bluetooth interface (9ZX)

UMTS/LTE data module (EL3)<sup>1</sup> including Audi connect (IT3)<sup>2</sup>

Emergency call & Audi connect vehicle-related services (IW3)<sup>3</sup>

Single DVD drive (7D5) (optional on Prestige)

Audi music interface in rear with 2 USB sockets (UF8)

Audi phone box including wireless charging (9ZE)<sup>4</sup>

Audi phone box light (for wireless charging only) (9ZV)<sup>4/5</sup>

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

Bang & Olufsen Advanced Sound System with 3D sound (8RF)

DAB digital radio (QV3)<sup>6</sup>

### Reference



For further information on MIB2+, please refer to eSelf-Study Program [990293, The 2019 Audi A8 Infotainment and Audi Connect Systems](#).

## MIB2+ High with navigation system

The MIB2+ High system with navigation is standard equipment on the 2019 Q8.

Information Electronics Control Module 1 J794 is installed under the instrument panel behind the glove box.

On the MMI navigation plus system, the active surface area of the MMI display is 10.1 inches.



Front Information Display Control Head J685 with MMI navigation plus

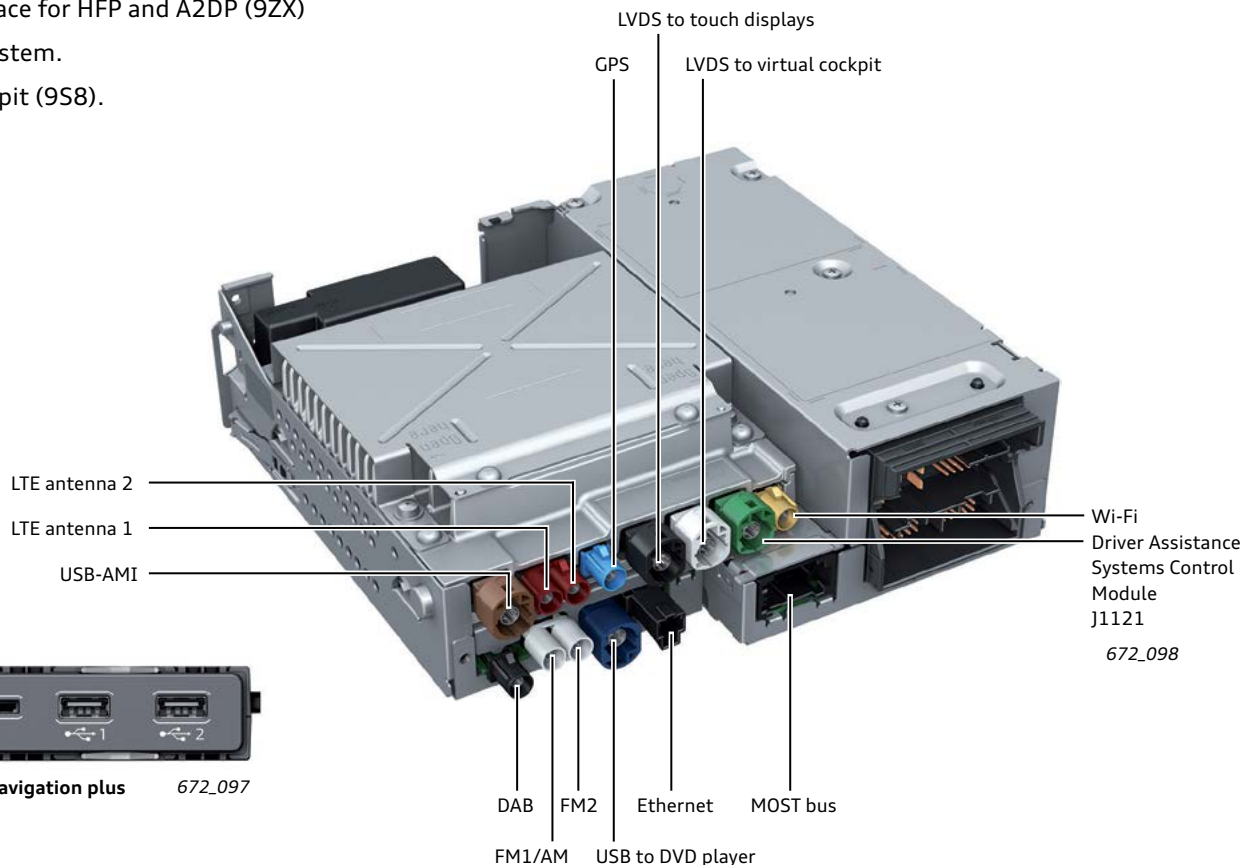
672\_096

### The following equipment is standard:

- > Radio with phase diversity, FM dual tuner (very high frequency) and AM tuner (medium wave) and background tuner.
- > Connected radio.
- > SDARS tuner (North America digital radio) (QV3)
- > Audi music interface with 1 SDXC card reader, 2 USB sockets (UF7) and, depending on country, 1 SIM card reader (EL3).
- > 3D navigation with data on SSD and improved 3D city center models (7UG).
- > LTE-enabled mobile network module, possible data transfer rates of up to 300 Mbit/s (EL3).
- > Emergency call and Audi connect vehicle-related services (IW3), depending on country.
- > Bluetooth interface for HFP and A2DP (9ZX)
- > Speech dialog system.
- > Audi virtual cockpit (9S8).

### The following additional equipment can be ordered:

- > Single DVD drive (7D5)
- > Audi music interface in rear with 2 USB sockets (UF8)
- > Audi smartphone interface (IU1)
- > Bang & Olufsen Advanced Sound System with 3D sound and 1920 W (8RF)
- > Preparation for Rear Seat Entertainment (9WQ)

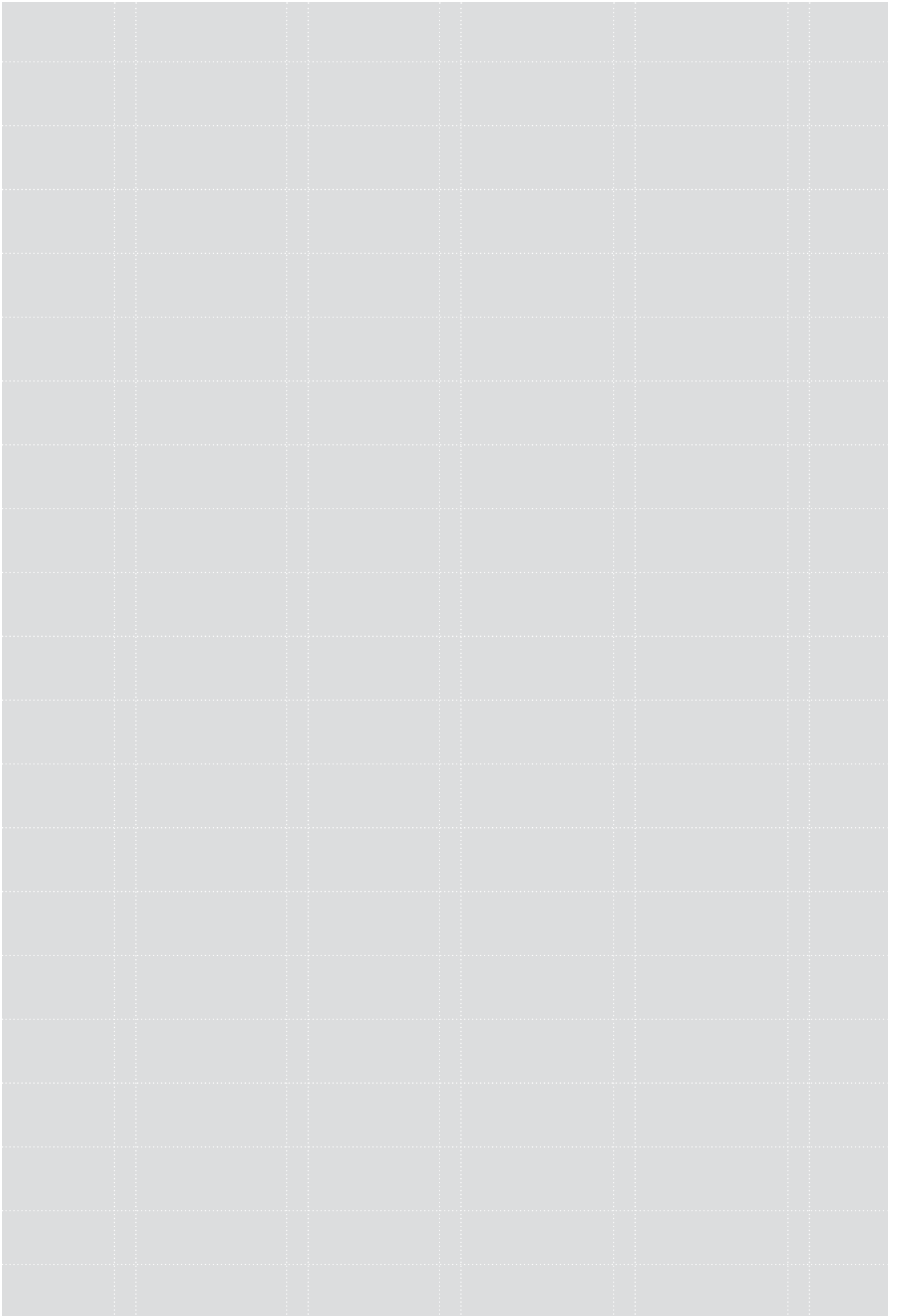


672\_098



Connections on MMI navigation plus

672\_097

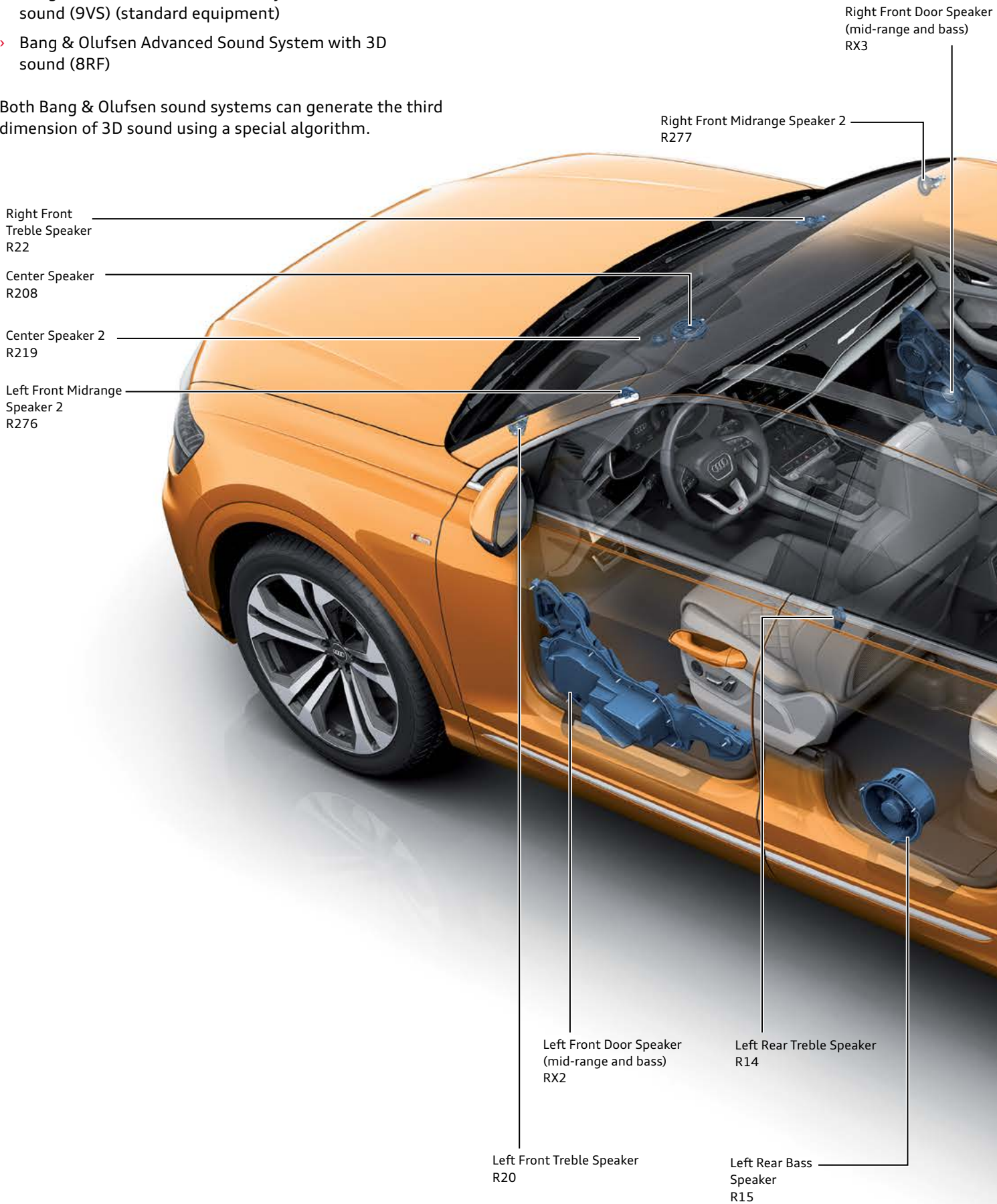


# Sound systems

The following sound systems are available for the Audi Q8

- > Bang & Olufsen Premium Sound System with 3D sound (9VS) (standard equipment)
- > Bang & Olufsen Advanced Sound System with 3D sound (8RF)

Both Bang & Olufsen sound systems can generate the third dimension of 3D sound using a special algorithm.





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

The Bang & Olufsen Premium Sound System (9VS) provides the customer with a 15-channel sound system. It can reach a total power output of 730 W.

The premium sound system requires two speakers to generate the 3D sound. They are installed in the A-pillars.





## Bang & Olufsen Advanced Sound System with 3D sound (8RF)

The best sound quality experience for customers is provided by the Bang & Olufsen Advanced Sound System. This system has 23 channels and reaches a total power output of 1920 W.

The Bang & Olufsen Advanced Sound System requires four speakers to generate the 3D sound. Two of these are in the A-pillars and two are in the headliner in front of the rear handles.

On the Bang & Olufsen Advanced Sound System, the two treble speakers in the dash panel are retractable, as in the Audi A8.

Right Front Treble Speaker  
R22

Center Speaker R208

Center Speaker 2  
R219

Left Front Midrange Speaker 2  
R276

Right Front Door Speaker  
(mid-range and bass)  
RX3

Right Front Midrange Speaker 2  
R277

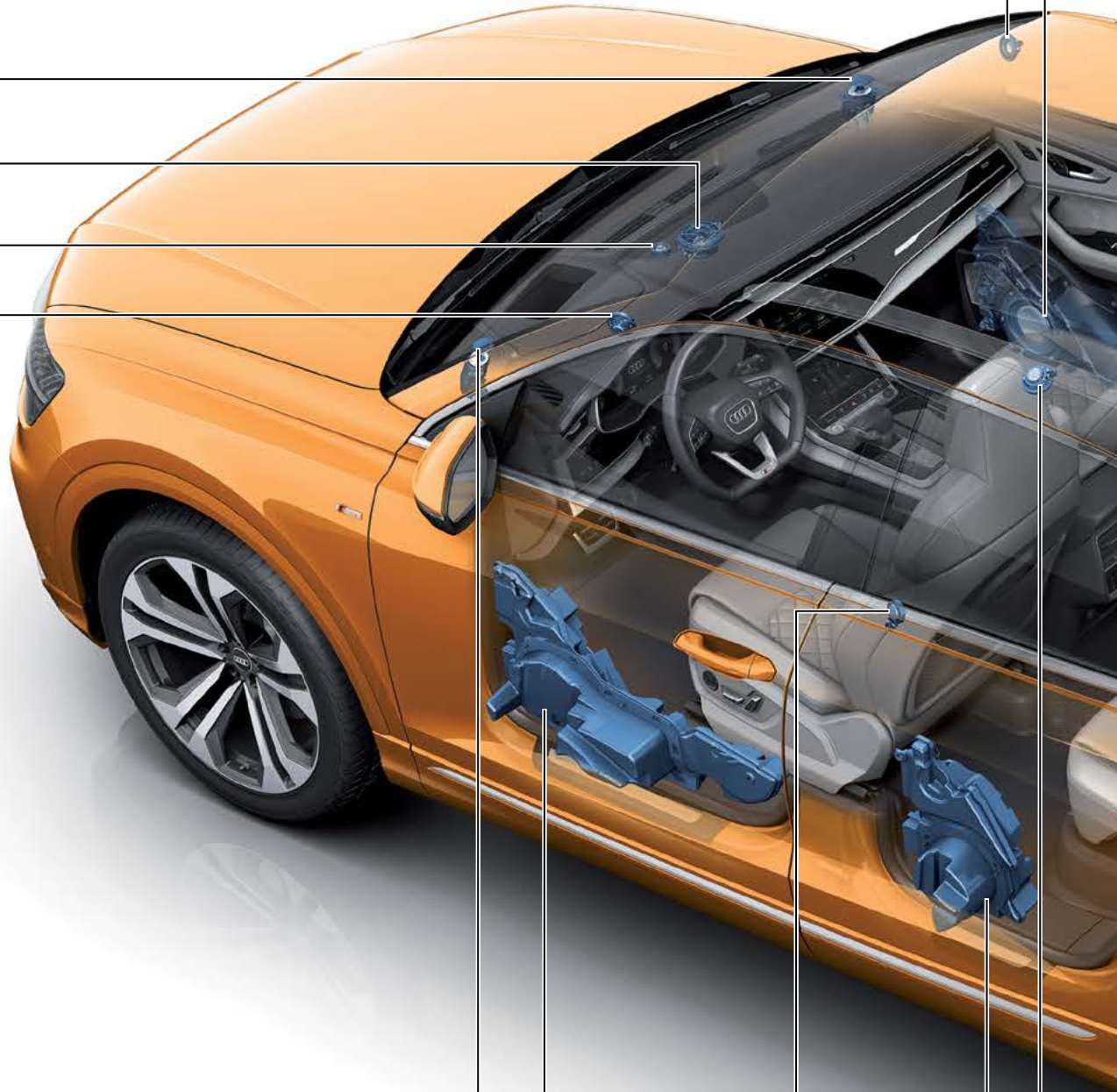
Left Front Door Speaker  
(mid-range and bass)  
RX2

Left Rear Treble Speaker  
R14

Left Front Treble Speaker  
R20

Left Rear Door Speaker  
(mid-range and bass)  
RX15

Left Rear Midrange Speaker 2  
R341



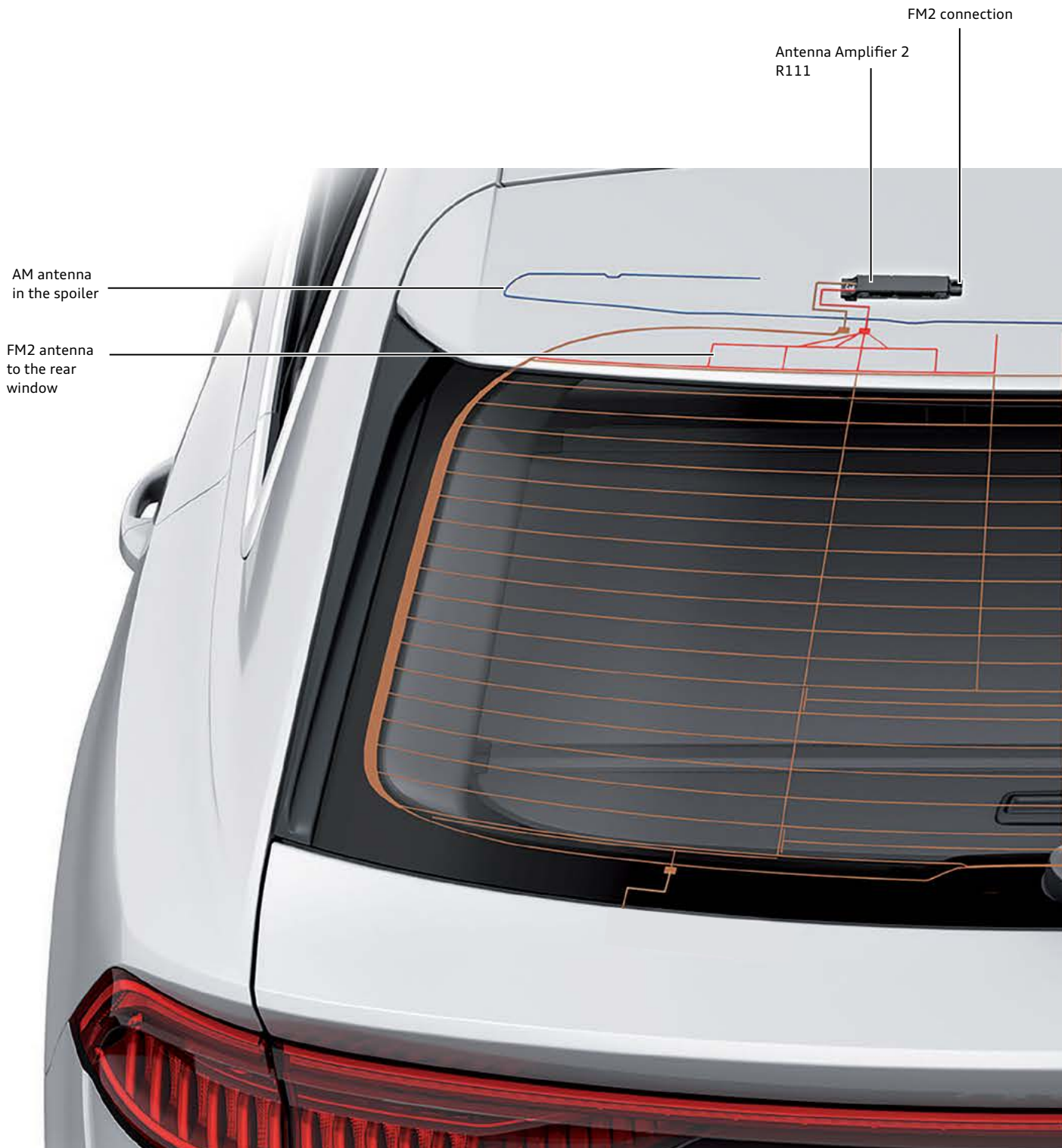




# Antennas

## Rear window

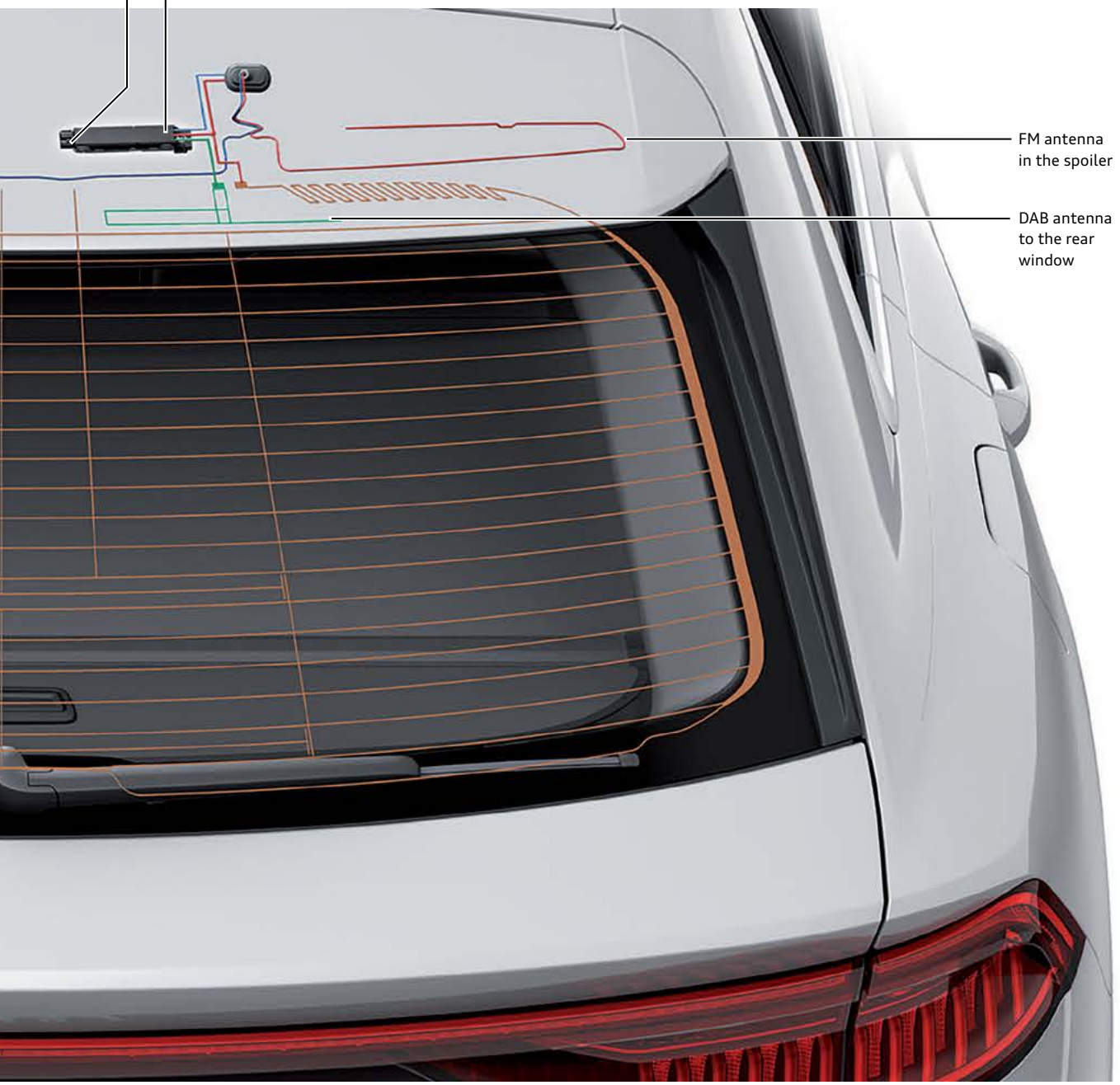
The antennas and amplifiers installed are dependent on the vehicle equipment.





Antenna Amplifier 4  
R113  
DAB antenna

672\_101



FM1/AM/DAB connection

Antenna Amplifier  
R24

FM antenna  
in the spoiler

DAB antenna  
to the rear  
window

672\_102



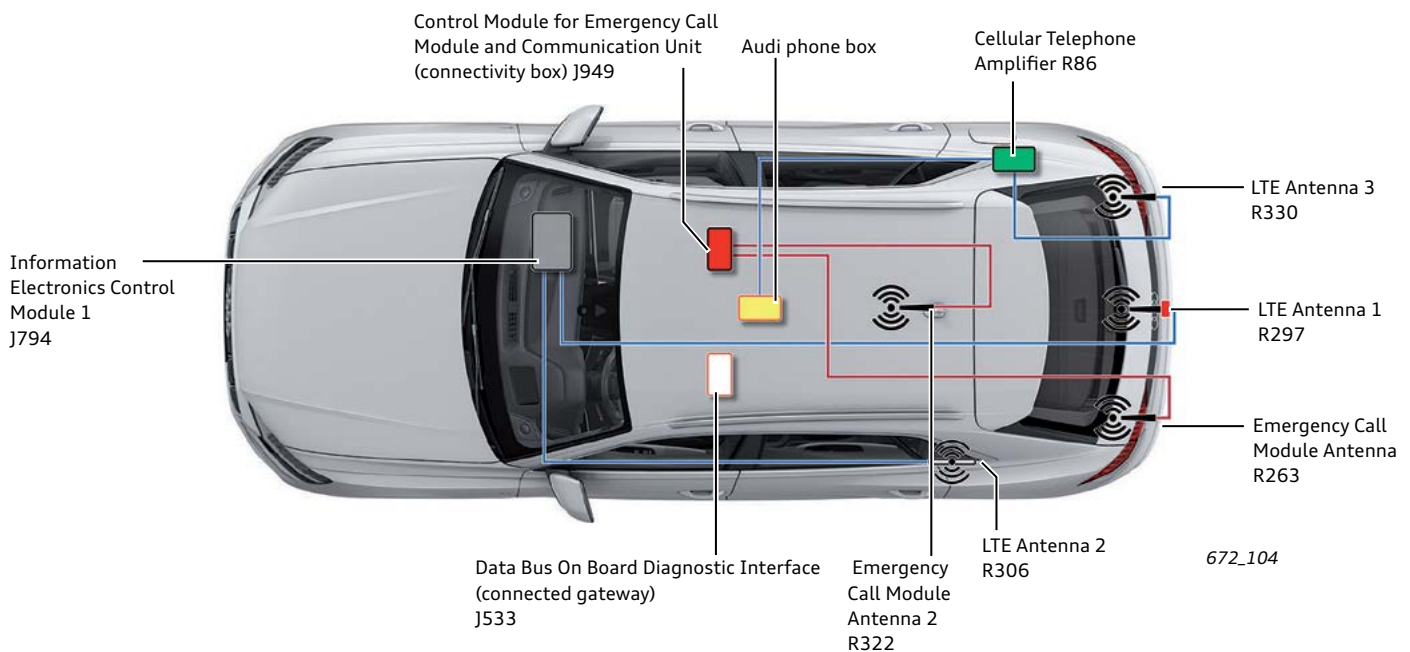
## Mobile phone antennas (country-specific)

The mobile phone antennas in the Audi Q8 are located on the roof, in the rear bumper and, depending on vehicle equipment and version, in the area of the automatic belt retractor on the left side of the second row of seats. In the illustrations that follow, both possible versions are shown with the maximum level of equipment for antennas.

### Mobile phone Control Module for Emergency Call Module and Communication Unit J949 (connectivity box)

This control module (also referred to as the connectivity box) is being introduced for the first time in the North American market.

It is connected permanently to Emergency Call Module Antenna R263 (main antenna) and Emergency Call Module Antenna 2 R322 in the roof antenna.

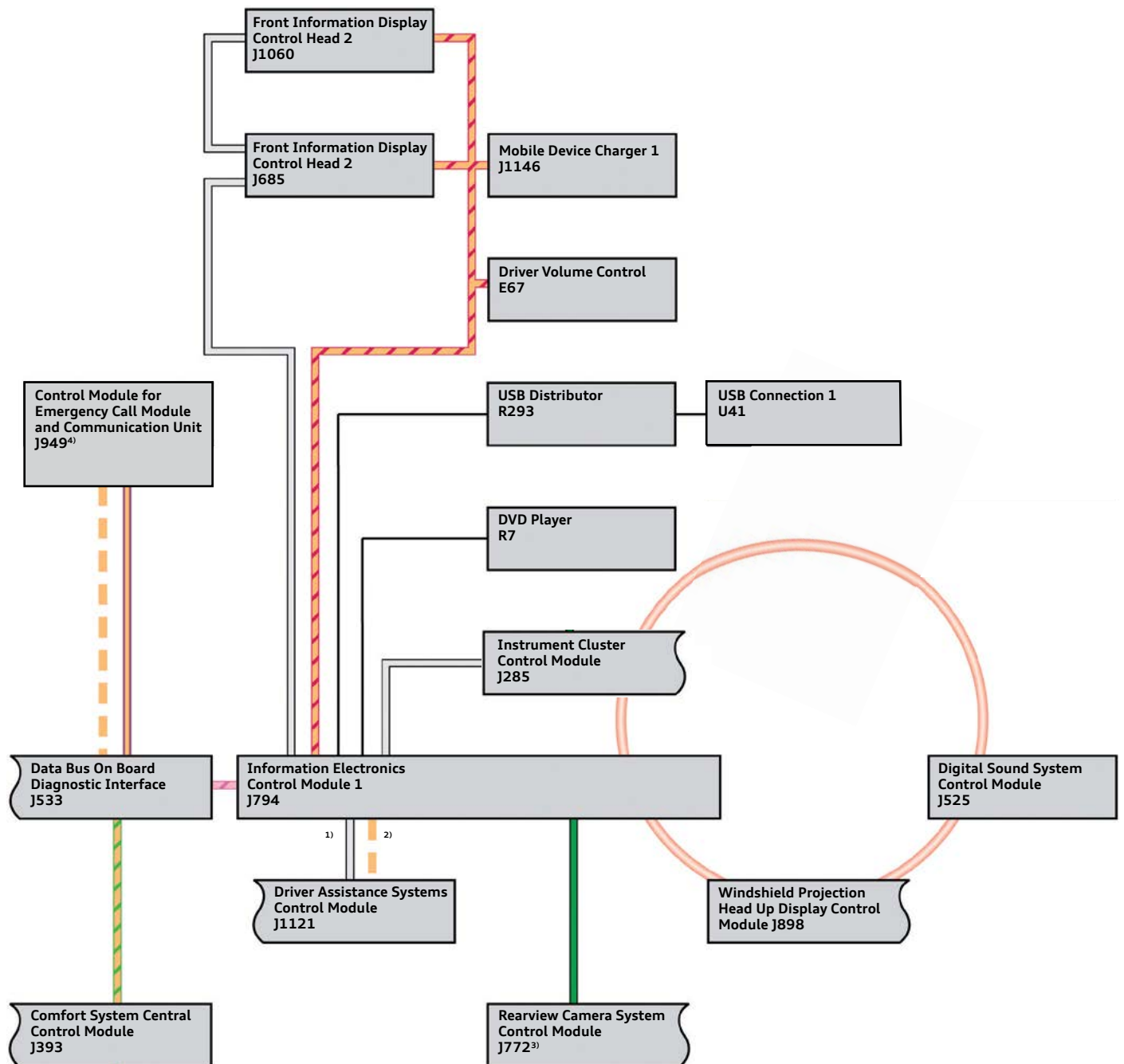


### Reference

For further information on the antenna filter in J533 and Control Module for Emergency Call Module and Communication Unit J949, please refer to eSelf-Study Program [990593, The 2019 Audi A7 Introduction](#).

# Networking

## Topology



672\_105

### Key:

	Convenience CAN		LVDS
	Infotainment CAN		USB wires
	Modular infotainment matrix (MIB) CAN		Ethernet
	Sub-bus systems/private CAN		Composite video
	MOST bus		Connect CAN

- 1) Connection only present if surround view cameras installed
- 2) Only installed from control module version B onwards
- 3) Not installed if surround view cameras installed
- 4) Depending on country



### Reference

For information on displays and operation, please refer to eSelf-Study Program [990593, The 2019 Audi A7 Introduction](#).

## Online system update

The Audi Q8 is equipped with the Audi connect service “online system update” from market launch onwards.

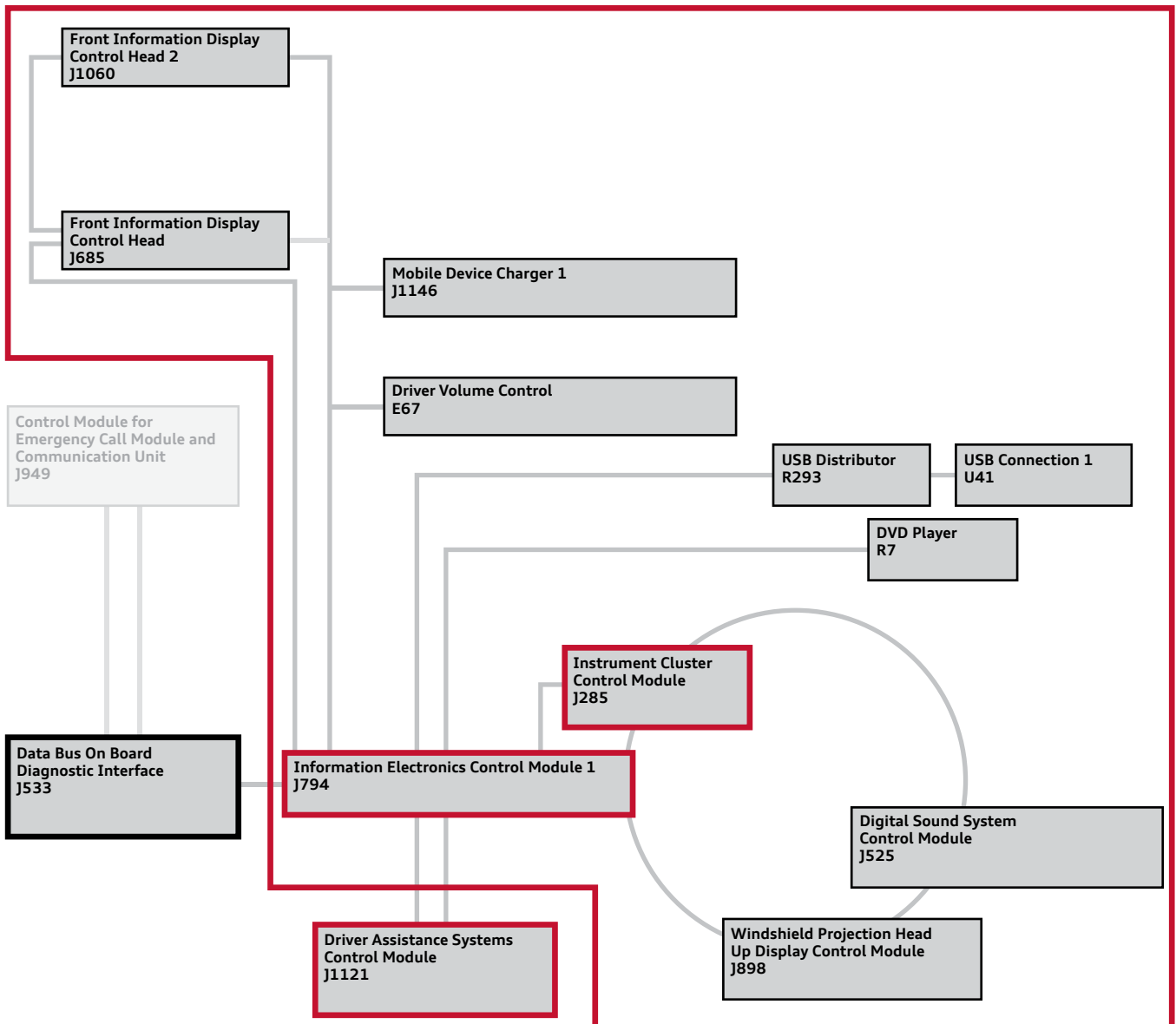
“Online system update” is a vehicle-related service which – unlike all other Audi connect services – does not have a limited licence period.

## Scope of service, process for downloading and installing

If a software update is necessary for a control module which is configured for this service, the update is performed over the air, meaning that the customer does not need to bring the vehicle into the workshop.

The following control modules are currently configured for this service:

- › Data Bus On Board Diagnostic Interface J533.
- › Information Electronics Control Module 1 J794.
- › All infotainment-related control units.
- › Instrument Cluster Control Module J285.
- › Driver Assistance Systems Control J1121.

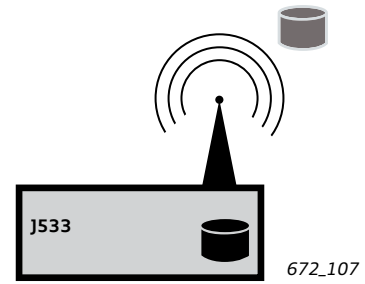


Control modules which can currently be updated, using the Audi Q8 as an example

672\_106

## Download and temporary storage of update files

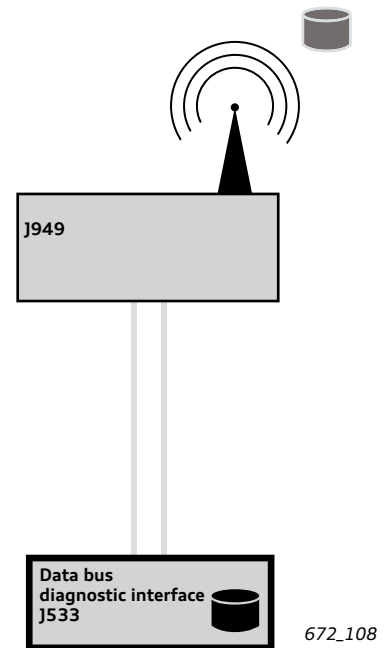
If the target control module J533 (connected gateway), the update files are downloaded via J533 itself.



Download and temporary storage of update files for connected gateway

If the vehicle has module J949, the download is performed via J949.

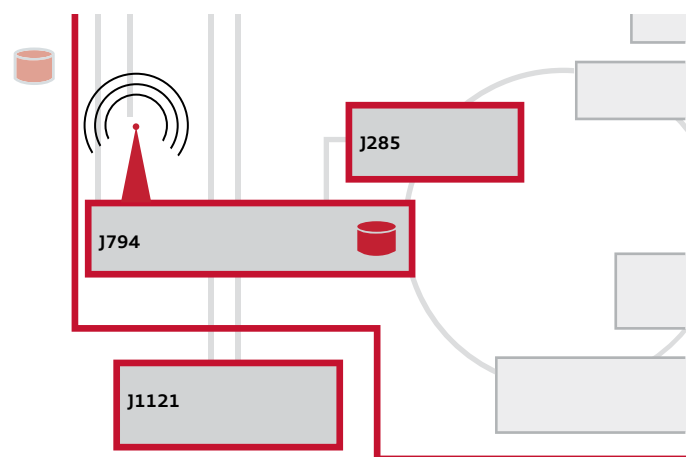
In both cases, the update files are stored temporarily in J533.



Download and temporary storage of update files for connected gateway in vehicles with J949

If the target control module is listed below, the download is performed via Information Electronics Control Module 1 J794:

- > Information Electronics Control Module 1 J794.
- > Any another infotainment-related control module.
- > Instrument Cluster Control Module J285 (virtual cockpit).
- > Driver Assistance Systems Control Module J1121.



Download and temporary storage of update files for infotainment-related control modules, virtual cockpit and driver assist systems control module



## Requirements for download and installation

The following requirements must be met so that a system update can be performed:

- > The person performing the update is the key user in the vehicle.
- > The vehicle has a data connection (for download).
- > The ignition is switched off (so that installation can be started).



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## Online system update in the service portlet

In the future, the dealer will be able to use the service portlet to check the download and installation status of updates on corresponding vehicles. A detailed overview will give the dealer precise information on this topic.

If the customer wishes software updates to be performed by the dealer, the dealer can take over the process at any time.

Service name	Booking status	Services status	Expiry date	Configuration required	Last backend communication
Hazard alert	✓	n/a	01/01/2021	No	
Hybrid radio	✓	n/a		No	
Navigation with Google Earth™	✓	n/a	01/01/2021	No	
Online breakdown call	✓	●	01/01/2028	No	
Online news (individual)	✓	n/a	01/01/2021	No	
<b>Online system update</b>	✓	n/a		No	20/04/2018 11:14
Available Updates		Status	Date		
SP04-01		Download finished and ready for installation	20/04/2018		
Update History		Status	Date		
There has been no successfully downloaded update before.					
Point-of-interest search (POI) with voice control	✓	●	01/01/2021	No	
Remote auxiliary heating	✓	●	01/01/2021	No	
Remote lock & unlock	✓	●	01/01/2021	No	

Confidential data is displayed in the Service Portlet. Service Portlet | User manual | Service Portlet FAQ | Contact Service Desk

672\_111



### Reference

Further information on the Audi connect service “Online system update” can be found in the Service TV film of the same name on Audi Training Online.

# Inspection and maintenance

	<b>3.0 ltr. TFSI engine</b>
Engine oil change	TBD
Inspection	TBD
Pollen filter change interval	TBD
Air filter change interval	TBD
Brake fluid change interval	TBD
Spark plug change interval	TBD
Fuel filter change interval	No scheduled maintenance
Valve gear	Chain (maintenance-free)
ATF change interval	TBD
Air ionization system flacons for Fragrance Diffuser System Functional Unit GX43	TBD

# Knowledge assessment

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

The Knowledge Assessment is required for Certification credit.

You can find this Knowledge Assessment at: [www.accessaudi.com](http://www.accessaudi.com)

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

- > Click on the “App Links”
- > Click on the “Academy site CRC”

Click on the Course Catalog Search and select “990793B The 2019 Audi Q8 Introduction”

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

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

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