Service Training

Audi Q5

Self-Study Programme 433

With the introduction of the Audi Q5, Audi is extending its model range to include a compact SUV that sets new standards in its class. In addition to the Audi Q7 and the Audi A6 allroad quattro, Audi is now introducing a third model for the off-road segment.

The Audi Q5 will be manufactured at the Ingolstadt facility, this being a logical choice of location because the Audi Q5 is based on components used in the Audi A4 '08.

The new Audi Q5 combines the dynamism of a sports saloon with highly variable interior and versatile options for leisure-time and family use. Strong and efficient engines, Quattro permanent all-wheel drive and agile running gear have been brought together to create a superior technology package for both on and off road driving. Highlights such as the innovative S tronic seven-speed dual-clutch gearbox and the Audi drive select driving dynamics system are the evidence that substantiates the Q5's claim to Vorsprung durch Technik. The sportiest SUV in its class, it is dynamic, multifunctional and comfortable.

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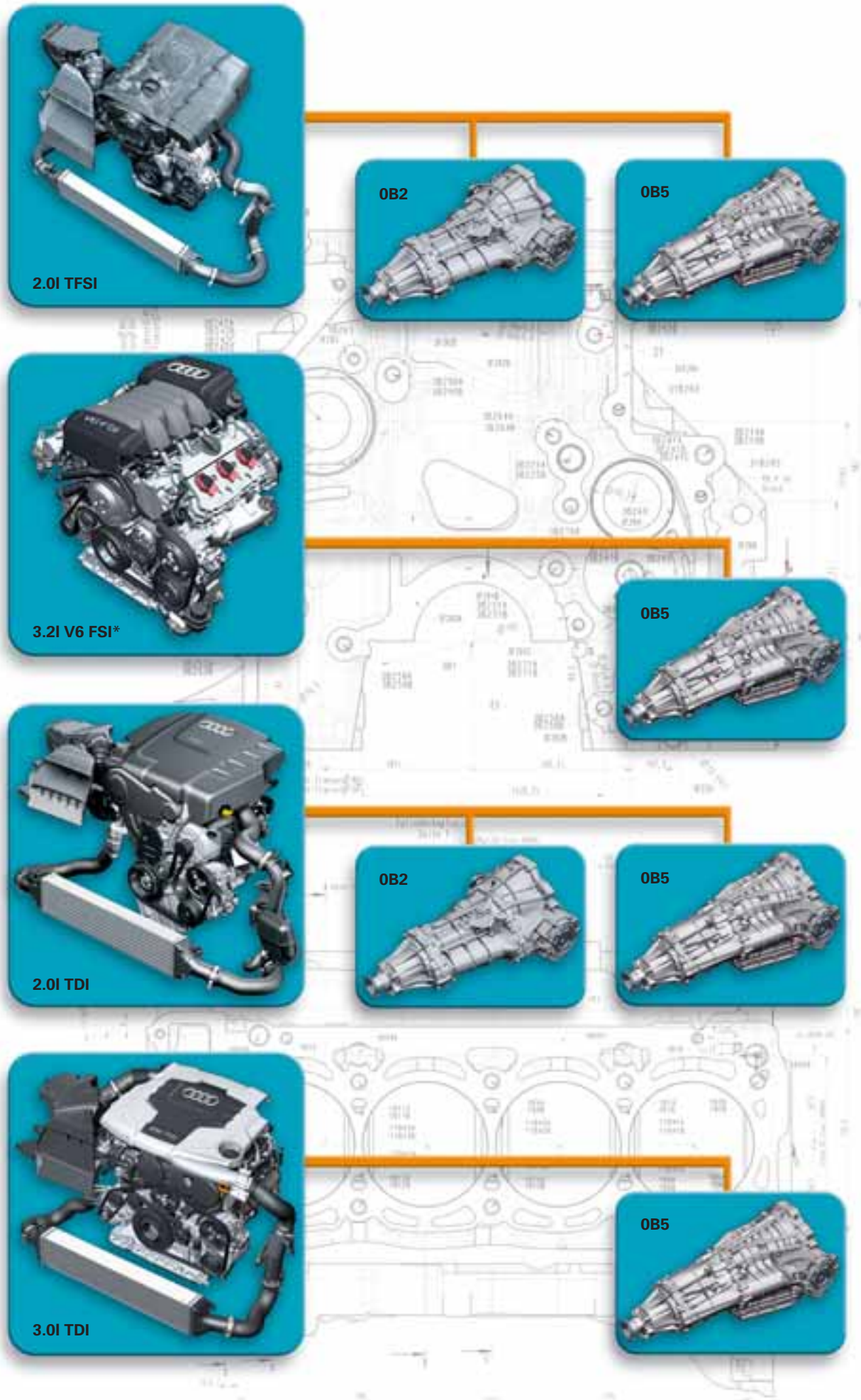
The objectives of this Self-Study Programme

This Self-Study Programme describes the design and function of the new Audi Q5. After you have worked your way through this Self-Study Programme, you will be able to answer the following questions:

- How is the bodyshell designed, and what materials are used?
- Which engines and gearboxes are installed?
- Which modifications have been made to the running gear and the brakes?
- What are the special features of the electrical system?
- How does the air conditioning system in the Audi Q5 function?
- What are the special features of the maintenance concept which have to be kept in mind?

Engine-gearbox combinations



* Not available at market launch

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Contents

Body

Occupant protection

Running gear

Electrical system

Infotainment

Air conditioning

Service

The Self-Study Programme teaches the design and function of new vehicle models, new automotive components or new technologies.

The Self-Study Programme is not a Repair Manual.
The values given are for illustration purposes only and refer to the software version valid at the time of publication of the SSP.

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

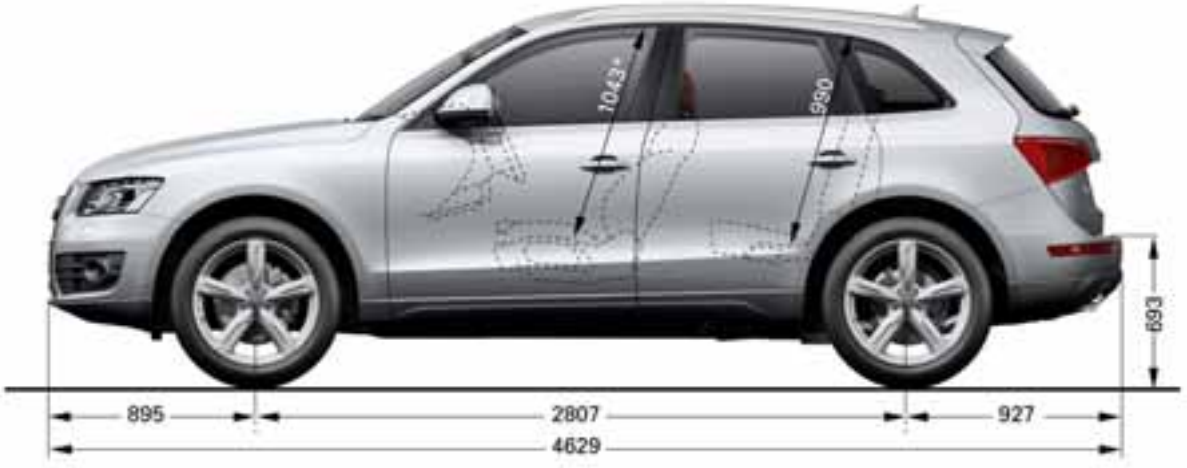
Reference

Note

Summary

Dimensions

433_001



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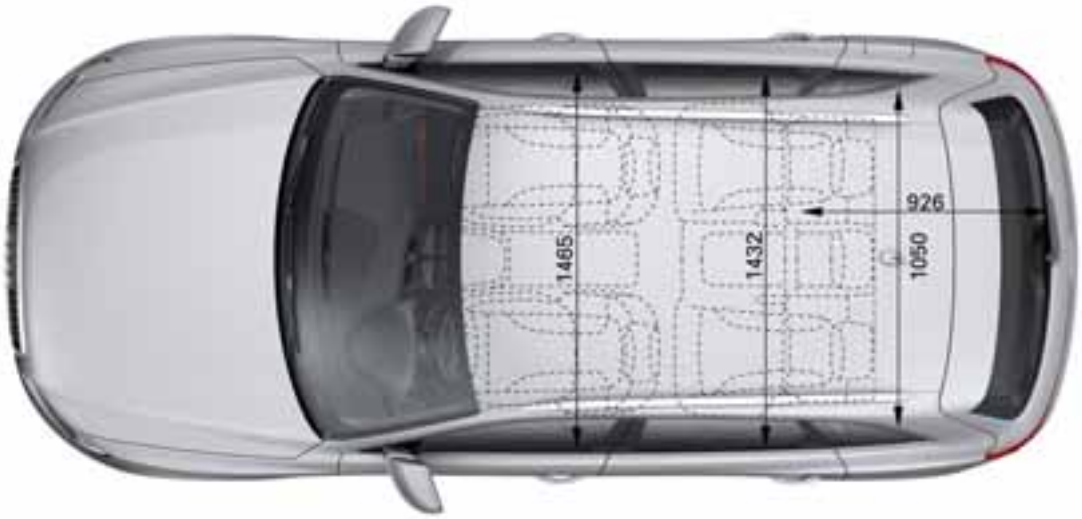
* Max. headroom
Specifications are given in mm
Specified dimensions refer to kerb (unladen) weight of vehicle

** 2400 kg braked on an 8 % gradient
2000 kg braked on a 12 % gradient
750 kg unbraked

Length in mm	4629	**Internal width, front** in mm	1465
Width in mm	1880	**Internal width, rear** in mm	1432
Height in mm	1653	**Headroom, front** in mm	1043
Track width, front in mm	1617	**Headroom, rear** in mm	990
Track width, rear in mm	1613	**Through-loading width** in mm	1050
Wheelbase in mm	2807	**Load sill height** in mm	693
Trailer load in kg**	750/2400/2000	**Luggage capacity** in l	540
Kerb weight in kg	1865	**Fuel tank capacity** in l	75
Max. allowable gross weight in kg	2445	**Drag coefficient** in c_w	0.33

Interior dimensions



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Off-road performance

Wading depth

Max. climb angle

Ground clearance

Overhang angle

Breakover angle

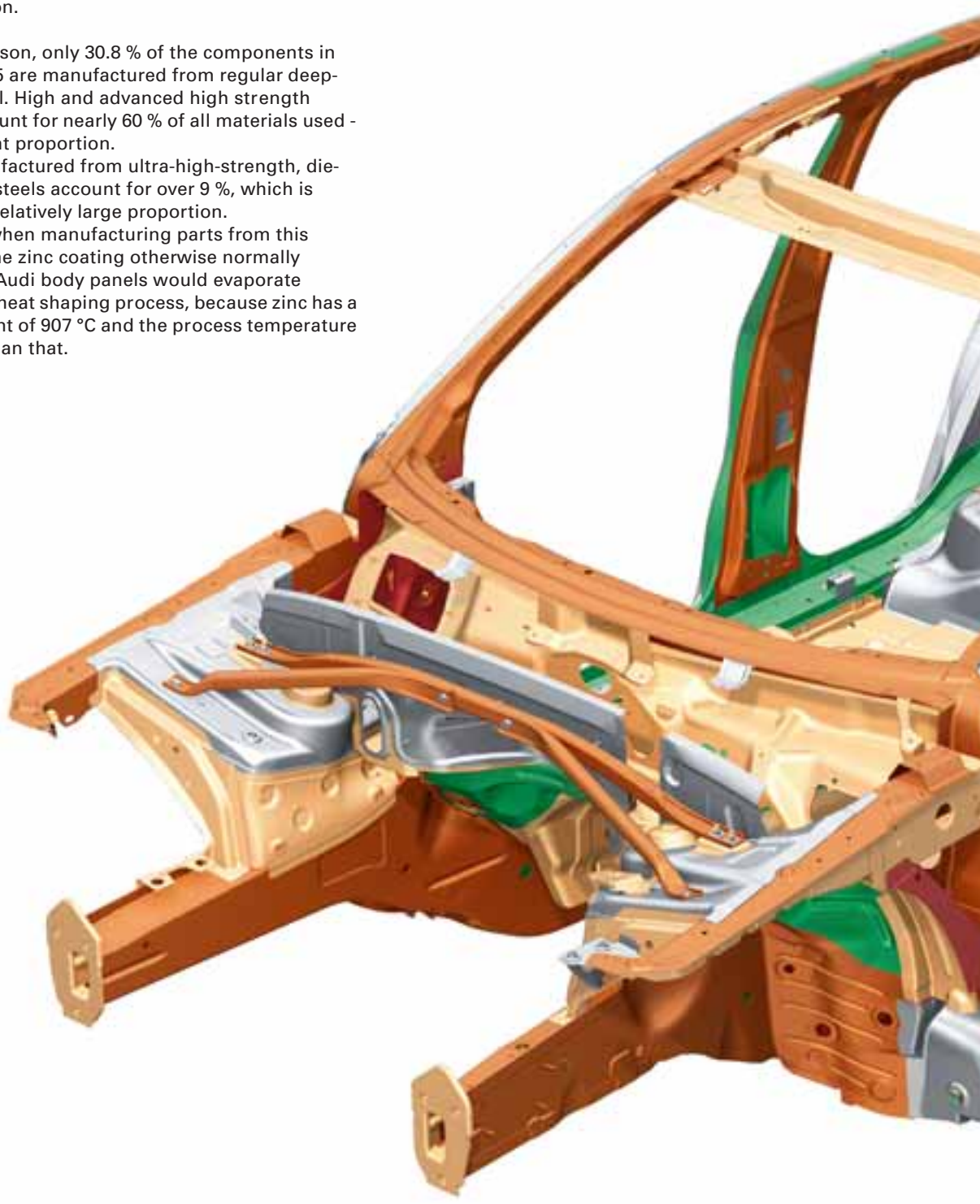
433_019

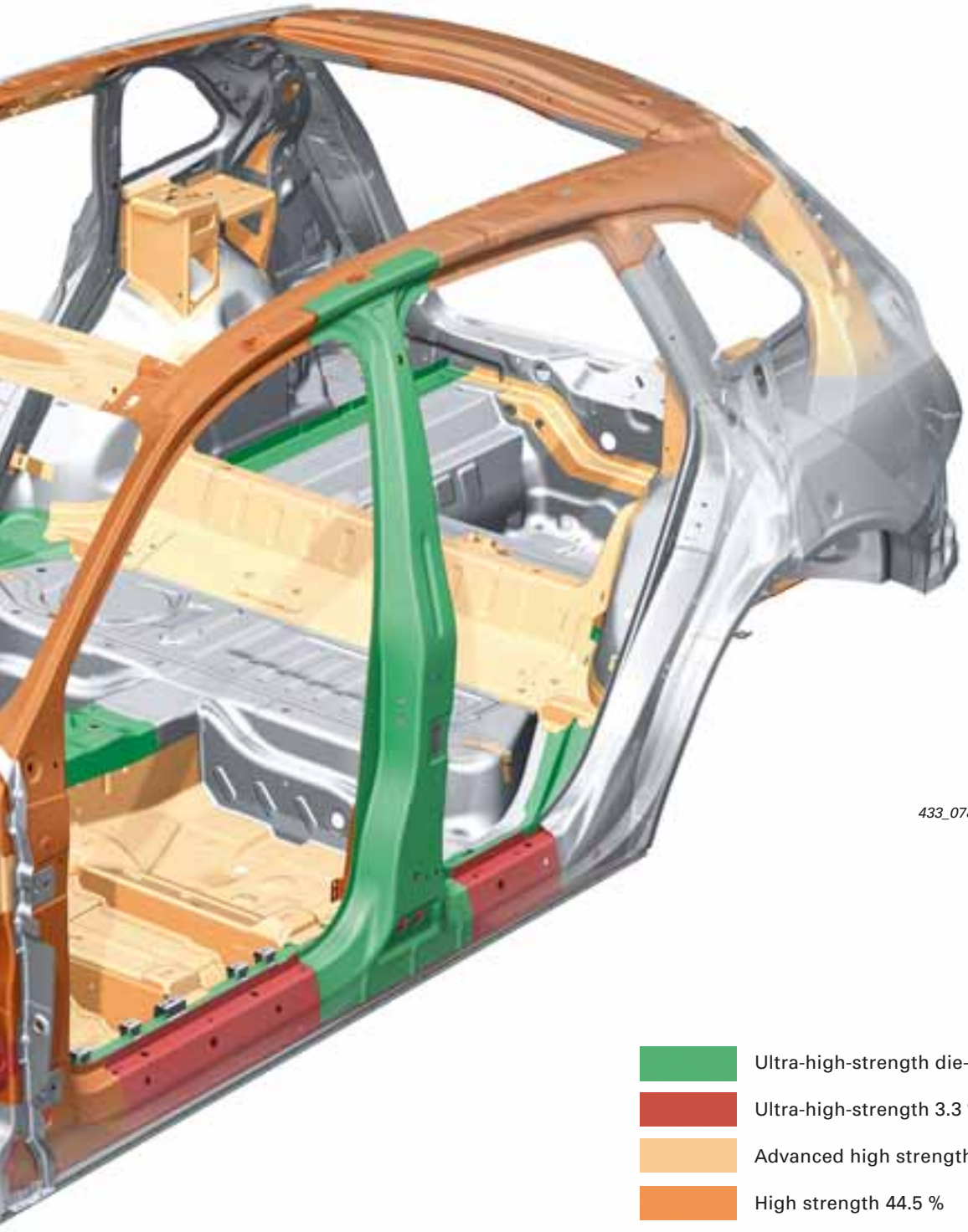
The body of the Audi Q5

The steel body of the Audi Q5 with its function and weight optimised design is yet another example of advanced body design by Audi. To meet the demands on the Audi Q5, the various body components have been made using steel materials designed to optimally absorb the structural and dynamic forces to which the vehicle can be subjected both in day-to-day use and in the event of a collision.

For this reason, only 30.8 % of the components in the Audi Q5 are manufactured from regular deep-drawn steel. High and advanced high strength steels account for nearly 60 % of all materials used - a significant proportion.
Parts manufactured from ultra-high-strength, die-quenched steels account for over 9 %, which is likewise a relatively large proportion.
However, when manufacturing parts from this material, the zinc coating otherwise normally applied to Audi body panels would evaporate during the heat shaping process, because zinc has a boiling point of 907 °C and the process temperature is higher than that.

For this reason, the sheet-metal panels used for making die-quenched body parts are hot-dip coated with aluminium, which also has the advantage of protecting the steel surface against corrosion. Whereas steel was also the material of choice for the doors, the engine hood and tailgate are made of aluminium.





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Ultra-high-strength die-quenched 9.1 %

Ultra-high-strength 3.3 %

Advanced high strength 12.3 %

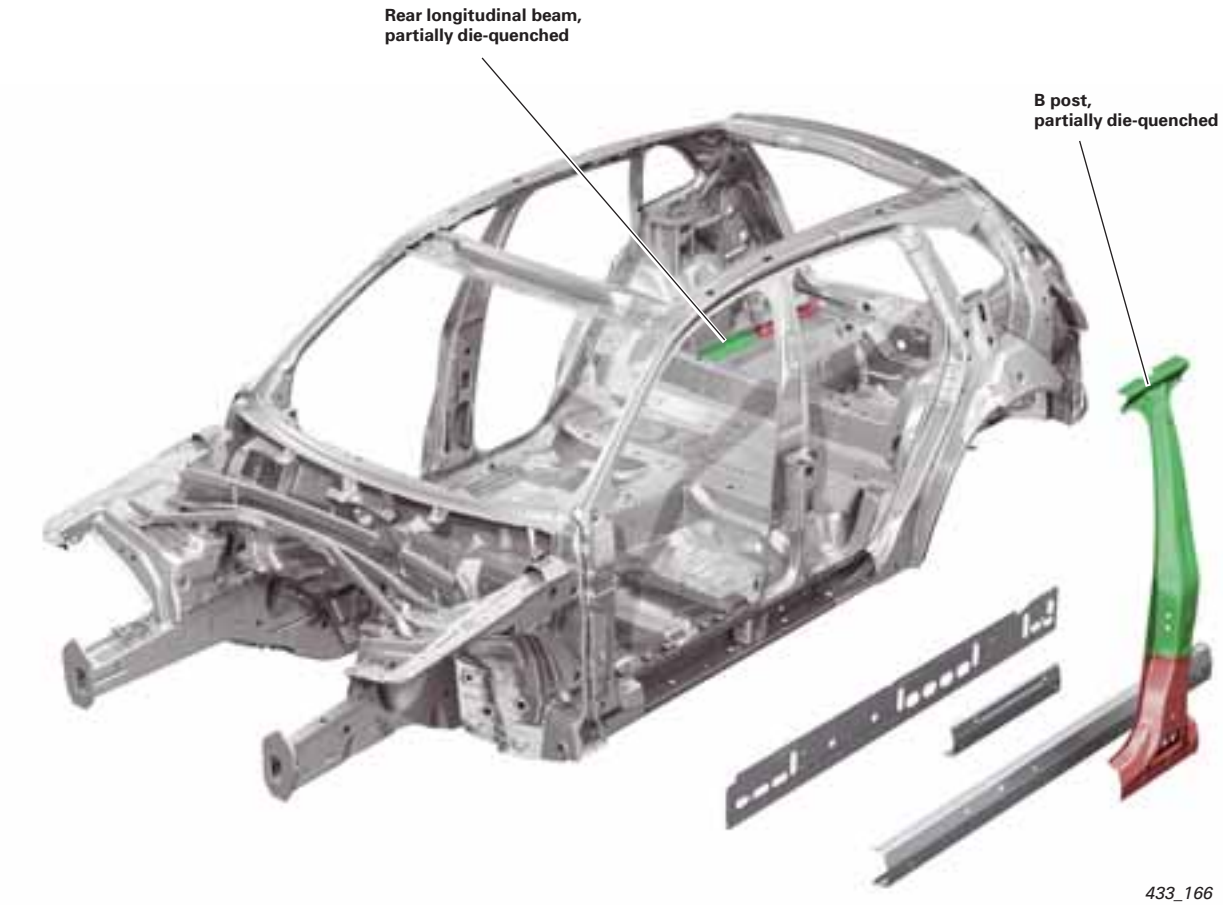
High strength 44.5 %

Regular grade steel 30.8 %

The body of the Audi Q5

To optimise the performance of the B post in a side-impact collision, it is important that the lower section of the post be able to absorb more deformation energy than the upper section - which, ideally, should have a very rigid construction.
This was made possible, e.g. in the Audi A4 '08, through the use of tailored blanks.

The B post in the Audi Q5 is partially heated and then reshaped, as a result of which the upper section of the post has properties an ultra high strength die-quenched steel and the lower section those of an ultra-high-strength steel.
This process is also applied to the rear longitudinal beams. Here, the rearmost section is able to absorb more deformation energy than the more rigid front section of this component.



Repair concepts

The increased use of ultra-high-strength steels necessitates the use of body repair methods adapted specially to suit the properties of the materials. High heat input welding will irreversibly compromise the strength and structure of the component due to microstructural changes in the material.
A body structure thus welded cannot, therefore, reliably meet the requirements.
It is important to apply a very high contact pressure and a precision controlled electrical current during spot welding work on ultra-high-strength die-quenched steels.

Following extensive tests, modern spot welding machines that meet precisely these requirements are now available through Workshop Equipment. MAG gas shielded arc welding may only be performed on these high-grade steels in specific areas, on a case-by-case basis. They are described in the workshop literature. After miscellaneous tests and crash simulations on repaired ultra-high-strength, die-quenched steel body parts of the Audi Q5, Audi has approved two repair points at which MAG welding is permissible:

1. B post upper section (defined cutting position, reinforcement required)

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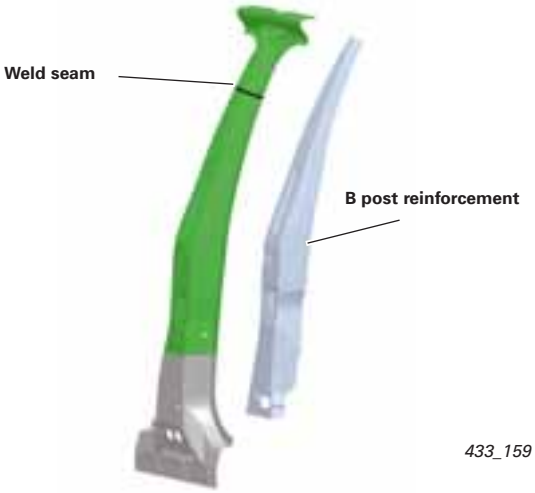

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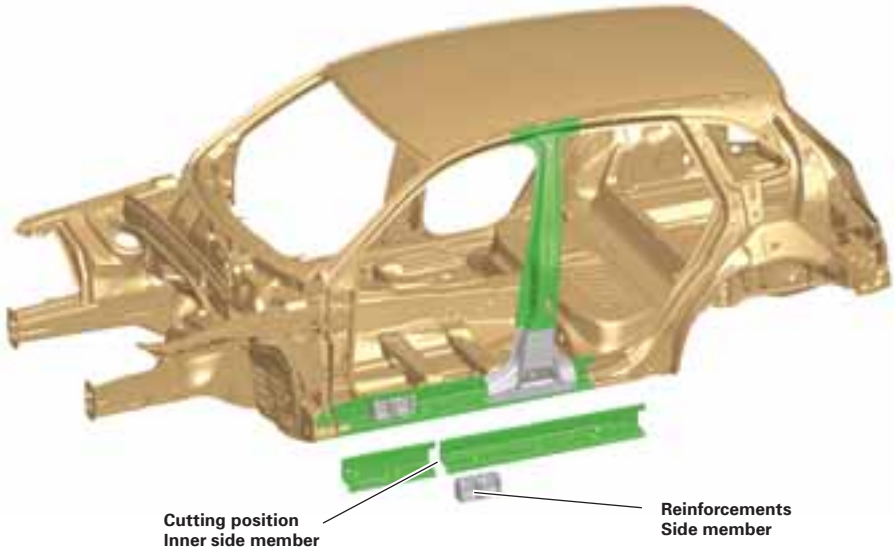
2. Partial replacement of side member/sill at inner front (defined cutting position, reinforcing required)



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Occupant protection system in the Audi Q5

On the following pages you will be provided with an overview of the occupant protection system in the Audi Q5. For further information about the restraint systems in the Audi Q5, please refer to Self-Study Programmes 392 Audi A5 and 409 Audi A4 ’08. The diagrams and illustrations shown in the chapter on "Occupant protection" are intended to aid understanding.

The occupant protection system in the Audi Q5 consists of the following components and systems:

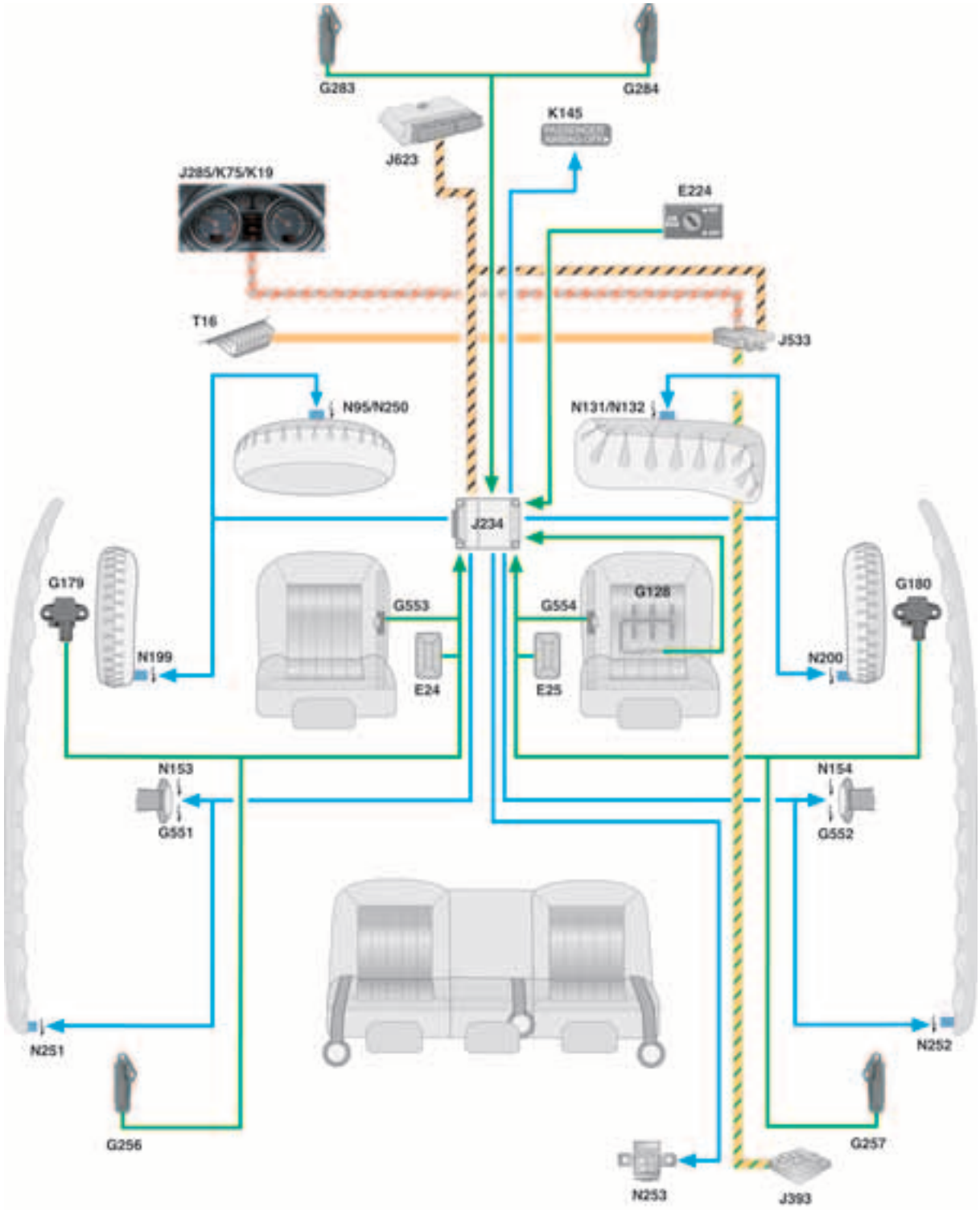
- Airbag control unit
- Driver airbag, adaptive
- Front passenger airbag, adaptive
- Front side airbags
- Head airbags
- Front airbag crash sensors (upfront sensors)
- Crash sensors for side impact detection in the doors
- Crash sensors for side impact detection on the C posts
- Front belt tensioners with adjustable belt force limiters
- Battery disconnect safety device
- Seat belt reminder for driver and front passenger
- Seat belt switch, driver and front passenger side
- Seat occupancy sensor in the front passenger seat
- Driver and front passenger seat position sensors

The vehicle can also be equipped with rear side airbags and/or a key switch for deactivating the front passenger airbag, complete with a warning lamp.

On account of the different requirements and statutory regulations of the various markets on vehicle manufacturers, equipment specifications - particularly for the US market - can vary.

Legend:

E24	Driver side belt switch
E25	Front passenger side belt switch
E224	Airbag disabling key switch, front passenger side (optional)
G128	Seat occupancy sensor, front passenger side
G179	Side airbag crash sensor, driver side (driver door)
G180	Side airbag crash sensor, front passenger side (front passenger door)
G256	Rear side airbag crash sensor, driver side (C post)
G257	Rear side airbag crash sensor, front passenger driver side (C post)
G283	Driver side front airbag crash sensor (left front end)
G284	Front passenger side front airbag crash sensor (right front end)
G551	Belt force limiter, driver side
G552	Belt force limiter, front passenger side
G553	Seat position sensor, driver side
G554	Seat position sensor, front passenger side
J234	Airbag control unit
J285	Control unit with display in dash panel insert
J393	Convenience system central control unit
J533	Data bus diagnostic interface (Gateway)
J623	Engine control unit
K19	Seat belt warning system warning lamp
K75	Airbag warning lamp
K145	PASSENGER AIRBAG OFF warning lamp (optional)
N95	Airbag igniter, driver side
N131	Front passenger side airbag igniter 1
N132	Front passenger side airbag igniter 2
N153	Driver seat belt tensioner igniter -1-
N154	Front passenger seat belt tensioner igniter -1-
N199	Side airbag igniter, driver side
N200	Side airbag igniter, front passenger side
N250	Driver side airbag igniter -2-
N251	Driver side curtain airbag igniter
N252	Front passenger side curtain airbag igniter
N253	Battery isolation igniter
T16	16-pin connector, diagnostic port


G283
G284
J623
K145
J285/K75/K19
E224
T16
J533
N95/N250
N131/N132
J234
G179
G553
G554
G128
G180
N199
E24
E25
N200
N153
G551
N154
G552
N251
N252
G256
G257
N253
J393

433_024

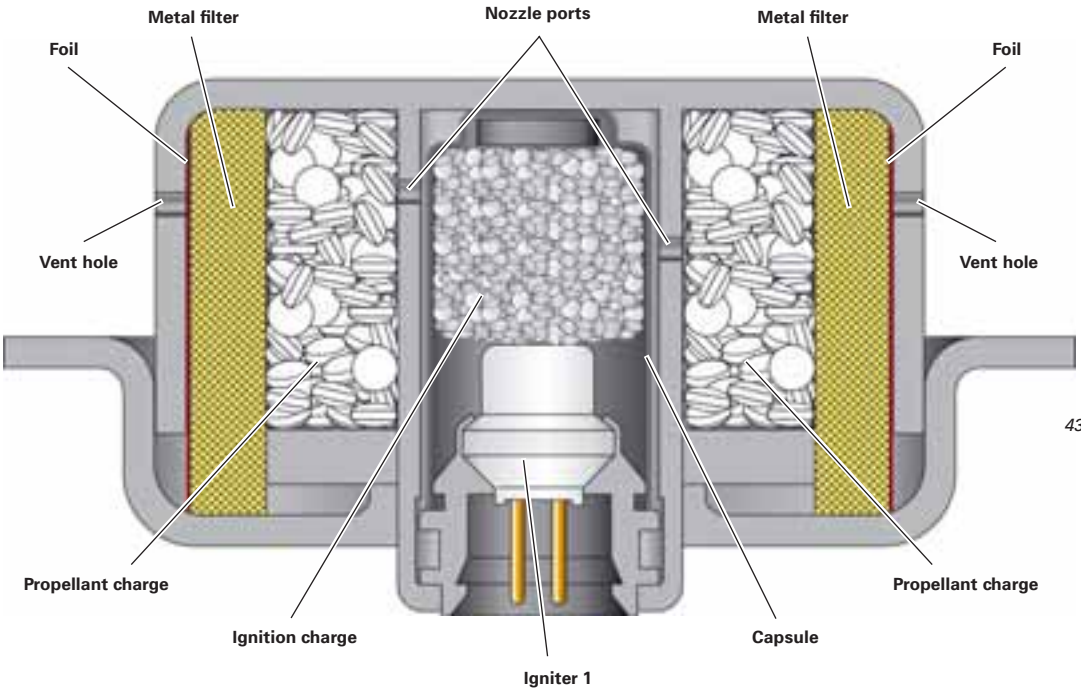
Driver airbag in the Audi Q5

Driver side airbag igniter 1 N95
Driver side airbag igniter -2- N250

All Audi Q5 models distributed world-wide are equipped as standard with an adaptive driver airbag.
This driver airbag has a single-stage solid fuel generator with an additional external igniter.

Igniter 1 is activated electrically by the airbag control unit J234, thus igniting the ignition charge.

Combustion of the ignition charge causes the pressure inside the capsule to increase until it bursts, thereby igniting the propellant charge through the nozzle ports.
If the gas pressure produced by the combustion of the propellant charge exceeds a predefined value, the foil opens the vent holes. The gas is thus free to flow unobstructed through the metal filter to the airbag. The airbag unfolds and is inflated.



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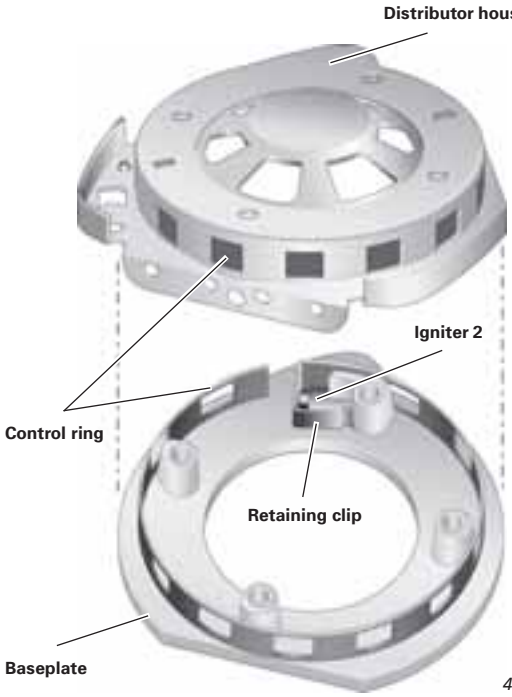
Driver side airbag igniter -2- N250 is located inside the airbag module.
It is integrated in a unit comprising the baseplate, a control ring with ports and the distributor housing.



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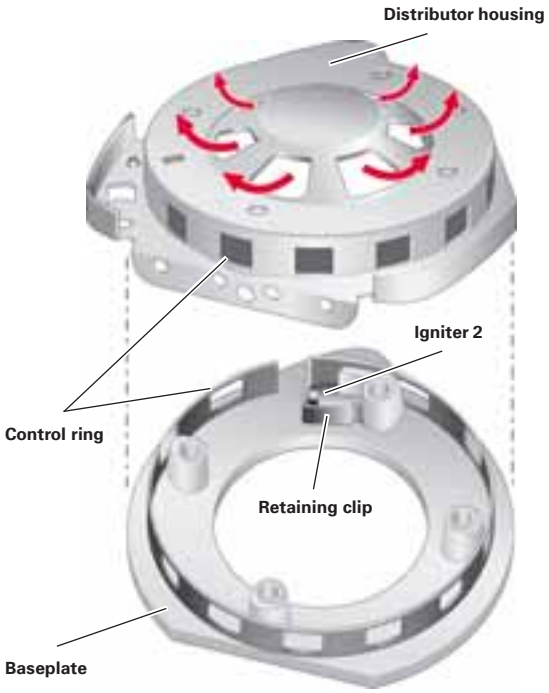
As long as igniter 2 is not activated, the supplementary vent holes in the distributor housing are kept sealed by the control ring.

The gas from the gas generator flows out through the upper ports in the distributor housing and directly into the airbag. A retaining clip holds the control ring in the rest position. This prevents unwanted rotation of the control ring.



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The airbag control unit J234 decides when to activate igniter 2 N250 according to the force of the impact and the driver's seating position.

When igniter 2 is ignited, the developing gas pressure displaces a pin, which in turn rotates the control ring. The supplementary vent holes in the distributor housing are opened.
The residual gas from the gas generator can now partially vent directly into the atmosphere.
The gas discharging from the airbag can also escape into the atmosphere through the orifices in the distributor housing. Thereby, the airbag is not inflated any further and thus "adapted" to the occupants.

433_028

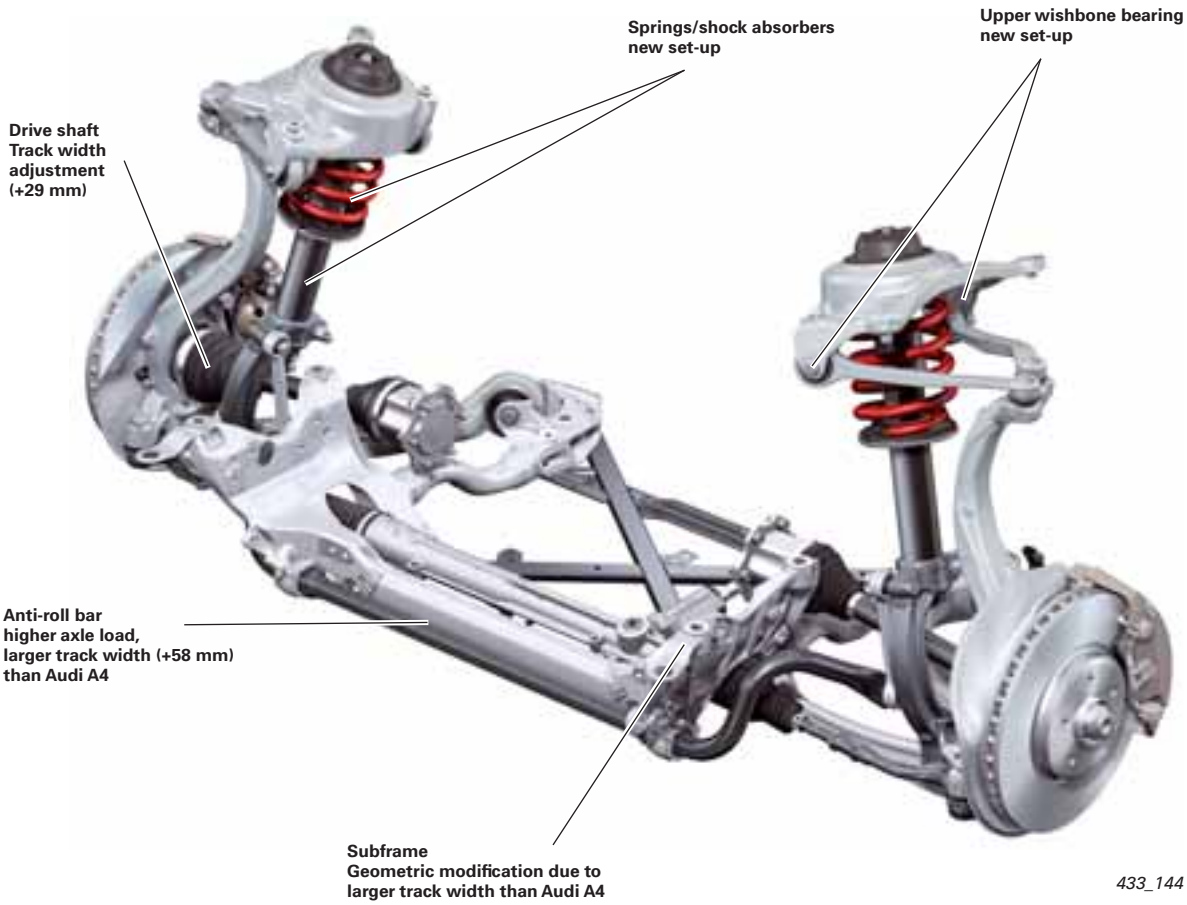
The gas generator of the driver airbag module is oscillatingly mounted in a rubber ring in a fashion depending on model type. This minimises steering wheel vibration.

Axles

The Audi Q5 comes as standard with standard running gear (production control number 1BR) in combination with quattro drive. An electronic damping control system is optionally available in combination with Audi drive select.

Front axle

The front axle design is basically the same as that of the Audi A4 ‘08. The newly developed components are indicated below.



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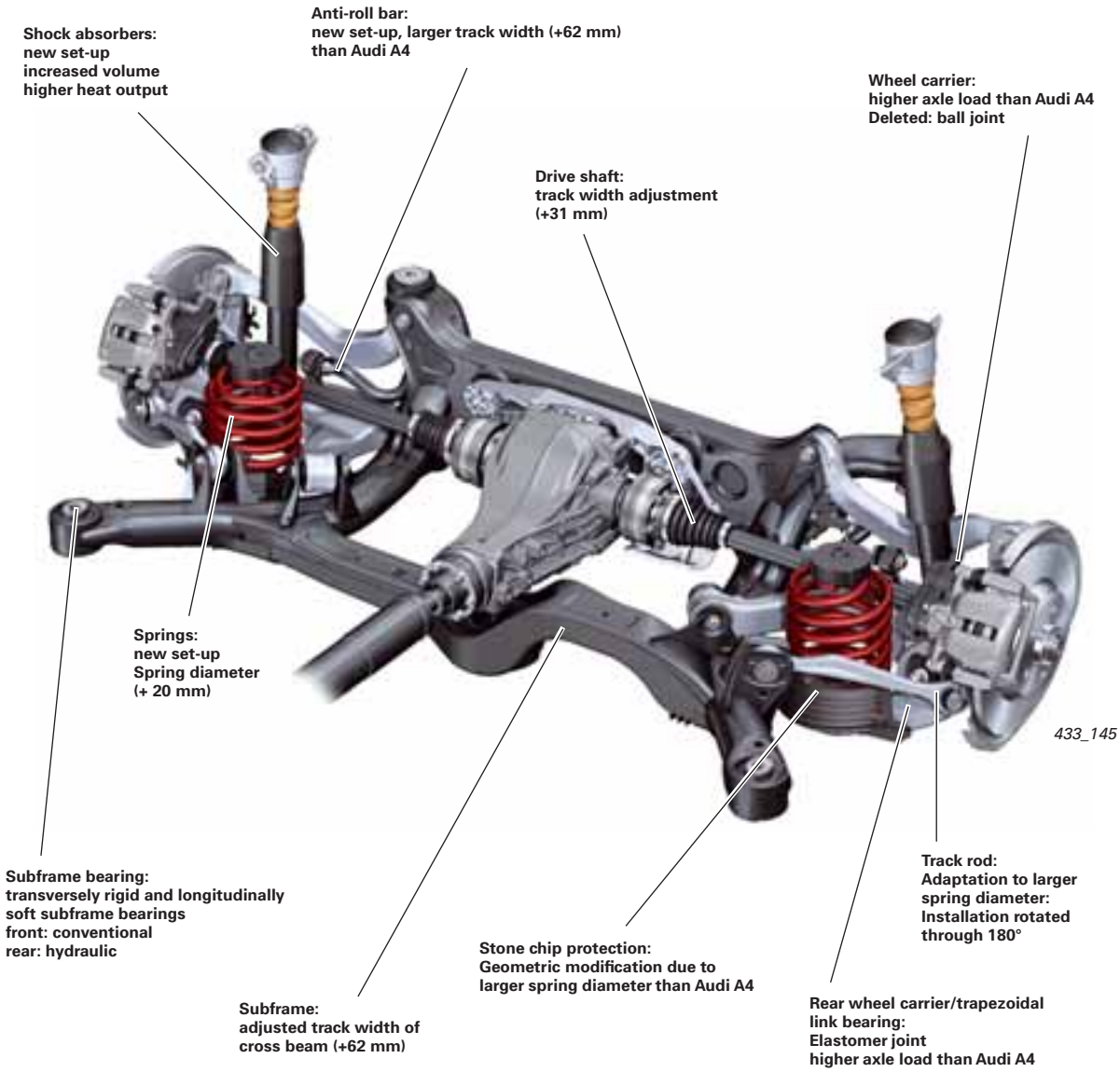
Rear axle

The front axle design is basically the same as that of the Audi A4 ‘08. The newly developed components are indicated below.



Damping control system

The damping control system is available as optional equipment in combination with Audi drive select under production control number 1BL. The damping control system is designed, functions and operated in the same way as the system in the Audi A4 ‘08. The detail modifications to the components are indicated below.

Body acceleration sensors G341 – G343 on the front and rear axles:

Geometric modification due to adaptation to body contour

Front and rear axle shock absorbers:

modified shock absorber set-up

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Level control system senders G76 – G78, G289 on front and rear axles:

Geometric modification due to adaptation to body contour

Shock absorber damping adjustment valves N336 – N339 on front and rear axles:

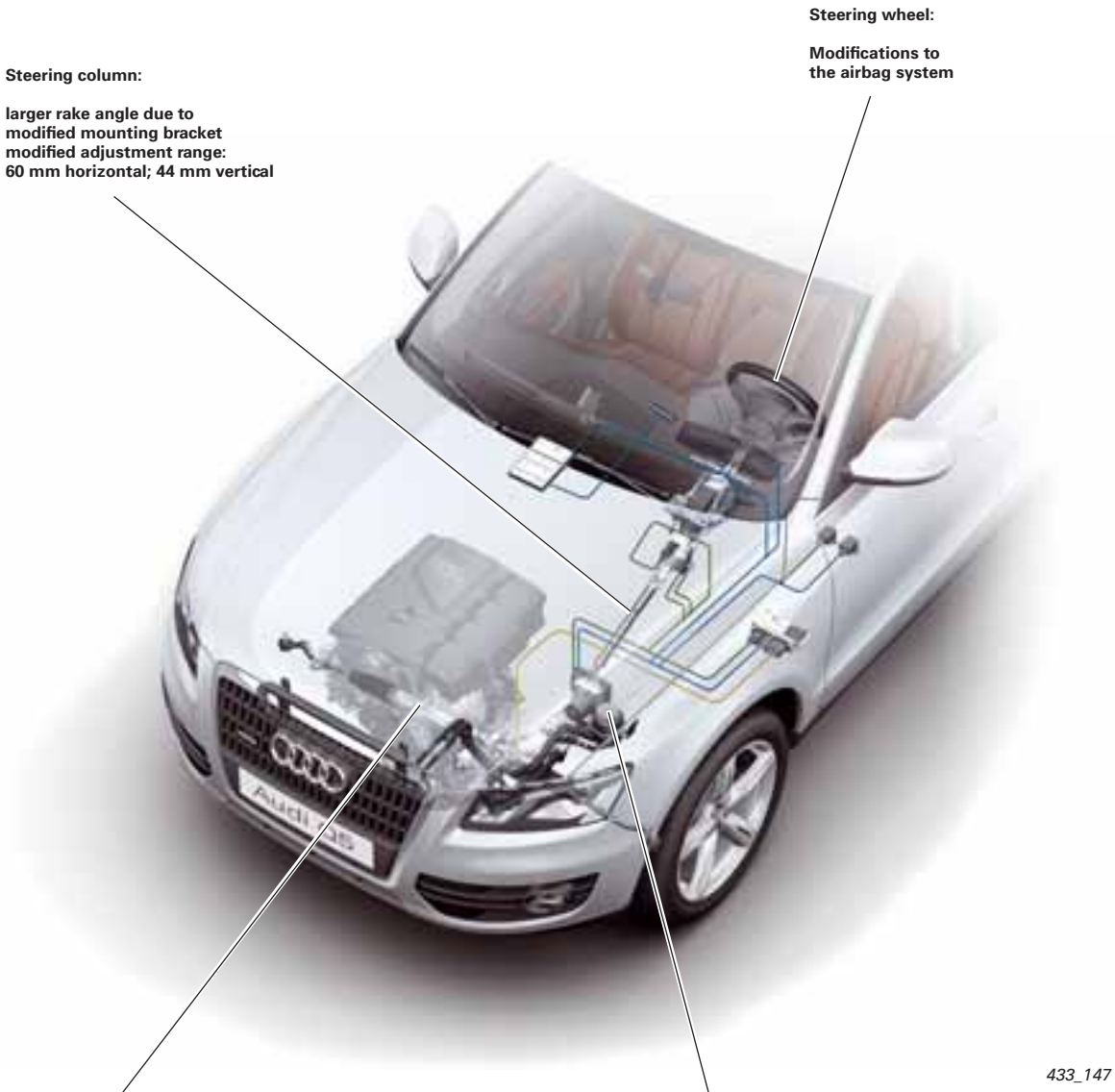
modified set-up

ECD (electronically controlled damping) control unit J250:

Software adjustment

Steering system

The steering system of the Audi Q5 is basically designed and functions in the same way as the steering system in the Audi A4 ‘08. A hydraulic rack and pinion steering system with a mechanically adjustable steering column and power steering lock are used. The speed-sensitive power steering system is standard equipment with engines developing 140 kW or higher. The dynamic steering system already featured in the Audi A4/A5 ‘08 is optionally available in combination with Audi drive select. The detail modifications to the components are indicated below.



Dynamic steering

The dynamic steering system is designed and functions in the same way as the system in the Audi A4 ‘08. The control software in the active steering control unit J792 has been adapted to suit the vehicle's characteristics and the extended conditions of use.

Steering pump

The volume-flow controlled vane steering pumps as used previously in the Audi A4 ‘08 are also used in all models which do not have dynamic steering. Compared to the Audi A4 ‘08, the maximum delivery rate (shut-off point) has been increased to 8.5 l/min from 7.9 l/min to allow for the higher axle load of the Audi Q5.
Models which have dynamic steering come equipped with the steering pump with ECO function as used previously in the Audi A4 ‘08 with dynamic steering.

Volume-flow controlled vane steering pump

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Reference

For detailed information about the design and mode of functioning of the dynamic steering system, please refer to SSP 402 - Dynamic Steering in the Audi A4 ‘08.
For further information about the vane pump, please refer to SSP 394 - Audi A5 - Running Gear.

Brake system

Wheel brakes

The wheel brakes are based on the proven concept of the Audi A4 ‘08. In the Audi Q5, adaptation of the wheel brakes to the higher performance demands (larger wheel diameter, higher kerb weight) is provided by a modified hydraulic transmission. To this end, uprated brake pistons are used in combination with large brake pad surfaces and larger brake discs.

The brake discs have been designed for high cooling capacity by means of special cooling ports and friction interfaces. Special emphasis was placed on systematic lightweight construction during the development process. The front axle is fitted with the proven FBC floating calipers as used previously on the Audi A4 ‘08. This brake caliper concept maximises rigidity and minimises weight by means of composite technology (nodular cast iron floating caliper, aluminium casing).

Reference

For detailed information about the design and mode of functioning of the FBC brake calipers, please refer to SSP 394 Audi A5 - Running Gear.

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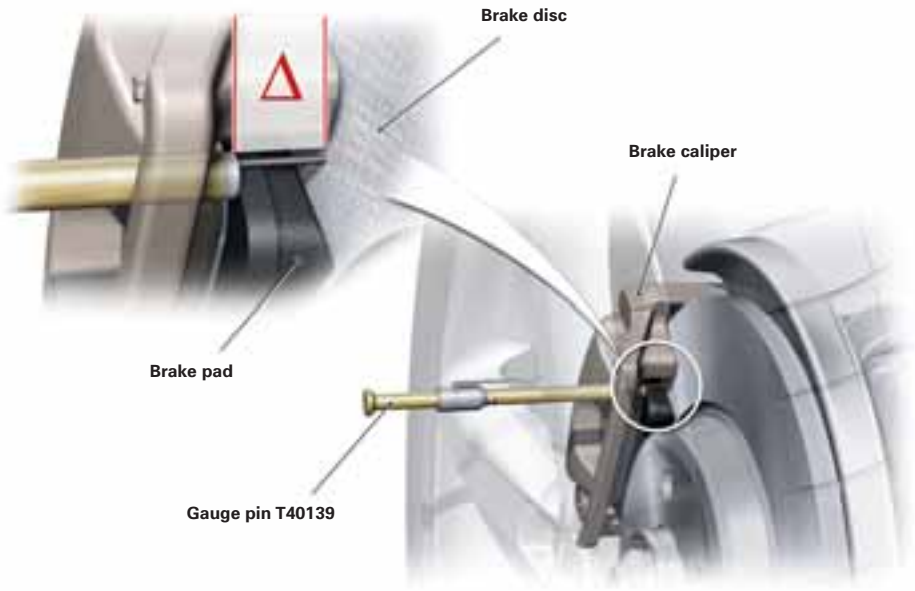
Front axle

Engine	4-cylinder 2.0l TDI 4-cylinder 2.0l TFSI	V6 3.0l TDI V6 3.2l TFSI
Minimum wheel size	16“	17“
Brake type	TRW-FBC-60 16“	TRW-FBC-6017“
Number of pistons	1	1
Piston diameter (mm)	60	60
Brake disc diameter (mm)	320	345

Rear axle

Engine	4-cylinder 2.0l TDI 4-cylinder 2.0l TFSI	V6 3.0l TDI V6 3.0l TDI
Minimum wheel size	16“	17“
Brake type	CII-43-EPB 16“	CII-43-EPB 17“
Number of pistons	1	1
Piston diameter (mm)	43	43
Brake disc diameter (mm)	300	330



The rims and brake calipers have been designed in such a way that the thickness of the brake pads at all wheels can be measured using gauge pin T40139.

Brake system

Electromechanical parking brake

The electromechanical parking brake EPB used in the Audi Q5 is designed and functions in the same way as the system in the Audi A4 ‘08.

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Reference

For detailed information about the design and mode of functioning of the electromechanical parking brake and the brake servo, please refer to SSP 394 - Audi A5 - Running Gear.

Brake servo, master brake cylinder

The brake servo and master brake cylinder of the Audi Q5 are designed and function in the same way as those of the Audi A4 ‘08. The characteristic of the brake servo have been adapted to the modified hydraulic transmission system of the brake system.

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ESP

A new ESP generation by Bosch with the designation ESP Plus is used in the Audi Q5. Compared to the ESP 8.1, the ESP Plus system has been optimised in design and functioning.
The electric pump drive motor has been uprated, thus optimising its dynamic control behaviour.

The basic functions of EBD, ABS, EDL, TCS, ESP, EBC etc. are identical to those of the ESP 8.1.
In addition, there are new functions - which are explained below.

ESP Offroad Mode

The ESP Offroad Mode has been developed specifically for use in rough terrain. When ESP Offroad Mode is active, the ESP control processes are adapted to the offroad conditions. ESP control processes are effected much later, thereby allowing drift movements about the vehicle's vertical axis and partial wheel spin.
This ensures that optimum traction is achieved on soft or loose surfaces.

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ESP Offroad Mode can be activated using the ESP Off switch.
When ESP Offroad Mode is active, "ESP Offroad" is displayed in the driver information system or on the centre display and indicated by the activated ESP symbol.

Brake system

ESP control

Automatic offroad detection

In 2009, for the first time, the existing ESP functions will be extended to include an automatic offroad recognition feature. This feature will be implemented by evaluating the wheel oscillation as indicated by the wheel speed signals.

When offroad conditions are detected, the control characteristics of the ABS, TCS and EDL systems are modified accordingly. Higher slip values are allowed at the wheels.
When braking, for example, partial locking of the wheels causes wedges to form in front of the wheels due to the displacement of loose surface material. These wedges increase motion resistance, i.e. they provide additional braking. If the driver has activated the ESP Offroad Mode using the ESP OFF button, offroad conditions are detected even more quickly than by automatic detection.

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Downhill Assist Control

In the Audi Q7, the function is activated by depressing the foot brake.
In the Audi Q5, the Downhill Assist Control can, for the first time, be activated by a separate switch. Unlike comparable systems of other manufacturers, the system in the Audi Q5 is not preset to a very low constant nominal speed. The control variable is the speed at which the vehicle is travelling on entering the gradient. The system basically functions in the same way as the system in the Q7. Like in the Q7, the function of the EBD is modified when reversing by applying increased braking force to the rear axle. This is detected by the fact that reverse gear is engaged.
Downhill Assist Control is also active when no gear is engaged or the clutch is actuated.

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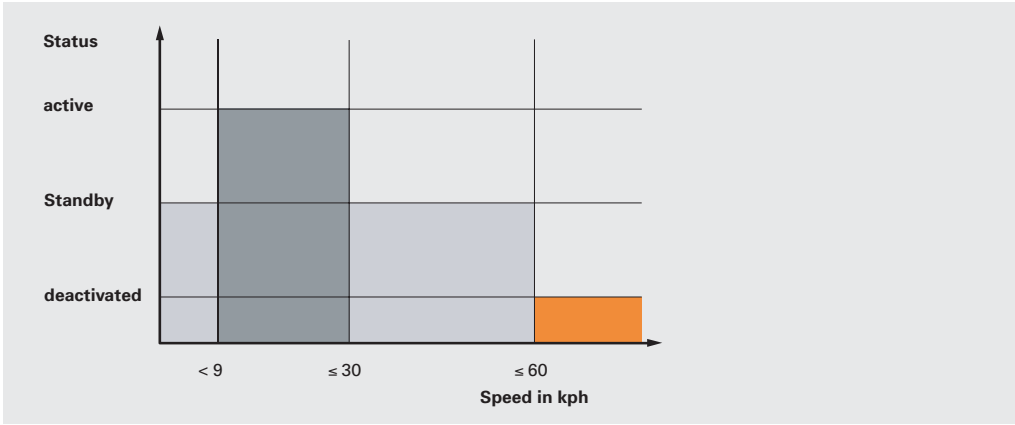
Downhill Assist Control

The intervention range has been extended over the Audi Q7 and, in the case of the Audi Q5, is at speeds of between 9 kph and 30 kph. The function can be switch-operated at speeds of up to 60 kph. The function is automatically deactivated when a speed of 60 kph is exceeded.



When Downhill Assist Control is active and in Standby mode, this is indicated to the driver in the centre display at speeds of up to 30 kph. The LED in the switch lights up when the function is activated at speeds of up to 60 kph.

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Towing vehicle and trailer stabilisation system

The towing vehicle and trailer stabilisation system basically functions in the same way as the system implemented already on other Audi models.
The oscillation within the typical frequency range for a towing vehicle and trailer (approx. 0.5 Hz to 1.5 Hz) is evaluated by the ESP system. If a defined amplitude threshold is exceeded three times in succession, the stabilisation system is activated. Depending on yaw velocity, the towing vehicle and trailer are stabilised in two phase. In the first phase, the wheels are braked asymmetrically.

The aim is to stabilise the towing vehicle and trailer without a large amount of longitudinal deceleration (max. approx. 1.5 m/s^2). If this is insufficient, it is followed by a second phase in which all four wheels are braked with the aim of achieving high longitudinal deceleration (approx. 3.5 m/s^2).
The braking operations are performed below the ABS intervention threshold. An active stabilisation system is indicated by flashing of the ESP warning lamp. At the same time, the brake lights are activated.

Roof rack detection

For the first time in a SUV, the Audi Q5 has the ability to detect a mounted roof rack and take this in account in the ESP control logic. A roof rack has a significant effect on the centre of gravity height of a vehicle. The control characteristics of the ESP system in the Audi Q5 are adapted to the change in centre of gravity height.

A Hall sensor, connected to the ABS control unit/ ESP by a discrete line, is integrated in the standard roof rail.
The cross bars (also standard) have an integrated permanent magnet which triggers a corresponding sensor signal when cross bars are mounted.

Maximum roof load including cross bars 100 kg

Wheels and tyres

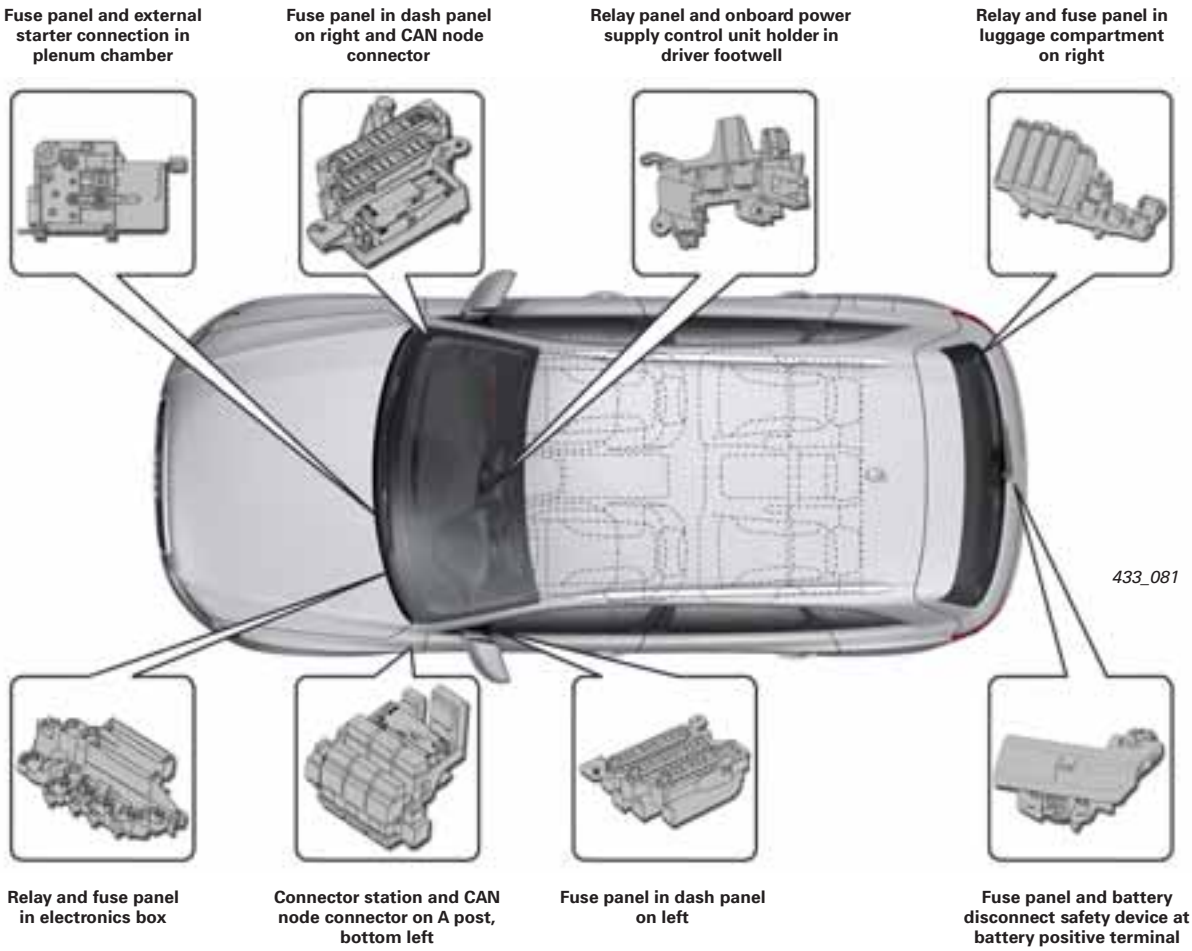
17'' wheels	18'' wheels	19'' wheels	20'' wheels	17'' wheels
8J x 17 ET 39 (1) Forged aluminium wheel, painted 235/65 R17 (basic wheel for all engine versions)	8J x 18 ET 39 (3) Cast aluminium wheel, painted 235/60 R18 (optional for all engine versions)	8J x 19 ET 39 (5) Cast aluminium wheel, painted 235/55 R19 (optional for all engine versions)	8.5J x 20 ET 33 (7) Cast aluminium wheel, painted 255/45 R20 (optional for all engine versions)	7.0J x 17 ET 37 (9) Forged aluminium wheel, painted 235/60 R17 (winter wheel for all engine versions)
8J x 17 ET 39 (2) Cast aluminium wheel, painted 235/65 R17 (optional for all engine versions)	8J x 18 ET 39 (4) Cast aluminium wheel, painted 235/60 R18 (optional for all engine versions)	8J x 19 ET 39 (6) Cast aluminium wheel, polished 235/55 R19 (optional for all engine versions)	8.5J x 20 ET 33 (8) Cast aluminium wheel, Chrome clad 255/45 R20 (optional for all engine versions, available in USA only)	

The Audi Q5 is equipped as standard with a tyre repair kit. A size 195/75-R18 folding wheel is optionally available.

Fuses and relays

The electrical system of the Audi Q5 is basically the same as that of the Audi A4 ‘08.
This applies equally to the installation locations of the fuseboxes and relay panels, the CAN node connectors and the control units.

The gateway, battery monitor control unit, alternator and external starter connection are also the same as for the Audi A4 ‘08.



The following control units are new features of the Audi Q5:

- Rear lid control unit J605*
- Rear lid control unit -2- J756*
- Headlight assist control unit J844**
- Information electronics control unit -1- J749 (vehicles with MOST bus)**
- External radio sources connection R199 (vehicles with infotainment CAN)**
- Four-wheel drive control unit J492***
- Sunroof roller blind control unit J394*

* installed on Audi Q5 only
** dependent on trim version (also featured on the Audi A4 and A5)
*** dependent on trim version (to be rolled out at a later date on models including the Audi A4 and A5)

Reference

For further information, please refer to SSP 395 - Audi A5 – Onboard Power Supply and Networking and SSP 409 Audi A4 ‘08.

Front outside lights

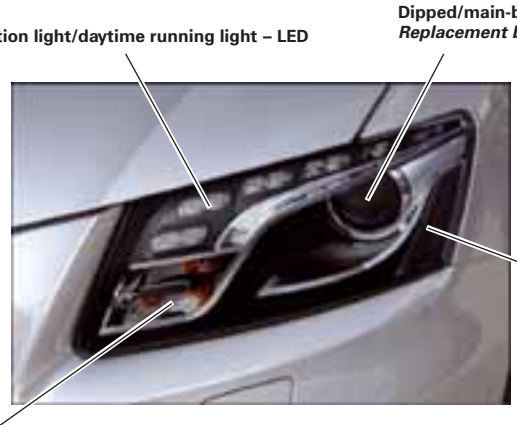
Versions

As with the Audi A4 '08, a distinction is also made between three different headlight versions in the Audi Q5:

- Halogen headlight
- Bi-xenon headlight
- Bi-xenon headlight with adaptive light (dynamic cornering light)

Layout of the lamps in the halogen headlight

Layout of the lamps in the bi-xenon headlight and bi-xenon headlight with adaptive light



* ECE for the European market
** SAE version for the North American market

The headlights on the Audi Q5 are mounted on a bracket which allows them to be moved approx. 50 mm after removing a cover and the headlight mounting screws. Thus, enough space is available for replacing the bulbs. No provision is currently made for the replacement or repair of faulty LEDs.

Note

For further information on the replacement of light bulbs, please refer to the current service literature.

Rear outside lights

Layout of the rear lamps

As with the Audi Q7, a distinction is also made between main rear lights - in the tailgate - and auxiliary rear lights - in the bumper. Since the main rear lights swing upwards with the tailgate when it is opened, a set of fixed auxiliary rear lights must be installed on the rear bumper.

The brake/tail light and the turn signal lamp are housed in the main rear light.

The auxiliary brake/tail lights and turn signals as well as the reversing lights and the rear fog lights are integrated in the auxiliary rear lights.

433_178

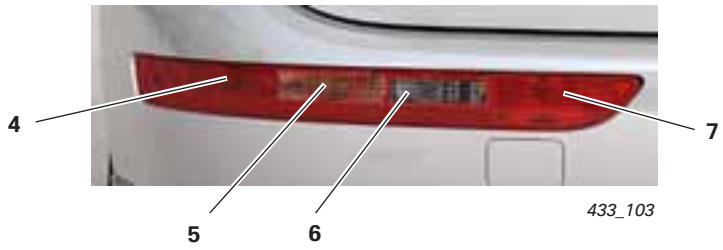
Versions

The rear lights come in various versions:

- Basic version – in combination with the halogen headlight
- LED version in combination with the bi-xenon headlight or bi-xenon headlight with adaptive light
- LED version for North American markets

Rear lights – basic version

433_104



433_103

	Function in the tailgate	Type	Power output	Duty cycle
1	Brake/tail light and parking light	P21W	21 W	Tail light/parking light duty cycle approx. 32 % Brake light 100 %
2	Brake light and tail light	P21W	21 W	Tail light duty cycle approx. 32 % Brake light 100 %
3	Turn signal	PY21W	21 W	

	Function in rear bumper	Type	Power output	Duty cycle
4	Brake/tail light and parking light	W16W	16 W	Tail light/Parking light duty cycle approx. 32 % Brake light 100 % active at switchover
5	Turn signal	PY21W	21 W	Active at switchover
6	Reversing light	W16W	16 W	
7	Rear fog light	W16W	16 W	

Rear outside lights

Versions

Rear lights – LED version

Function in the tailgate		Type	Power output	Duty cycle
1	Brake/tail light and parking light	20 LEDs		Tail light/parking light duty cycle approx. 12 % Brake light 100 %
2	Brake light	6 LEDs		Brake light 100 %
3	Turn signal	24 LEDs		

Function in rear bumper		Type	Power output	Duty cycle
4	Brake/tail light and parking light	W16W	16 W	Tail light/Parking light duty cycle approx. 32 % Brake light 100 % Active at switchover
5	Turn signal	P21W	21 W	Active at switchover
6	Reversing light	W16W	16 W	
7	Rear fog light	W16W	16 W	

Rear lights – LED version for North American markets

Function in the tailgate		Type	Power output	Duty cycle
1	Brake/tail light and parking light	20 LEDs		Tail light/parking light, duty cycle approx. 12 % Brake light 100 %
2	Brake light	6 LEDs		Brake light 100 %
3	Turn signal	24 LEDs		

Function in rear bumper		Type	Power output	Duty cycle
4	Brake/tail light and turn signal	W16W	16 W	Tail light duty cycle approx. 29 % Brake light 100 % Active at switchover
5	Brake/tail light and turn signal	P21W	21 W	Tail light duty cycle approx. 20 % Brake light 100 % Active at switchover
6	Reversing light	W16W	16 W	
7	Rear fog light	W16W	16 W	
8	Side Marker	W5W	5 W	

Activation of the rear lights

Unlike the Audi Q7, all rear lights on the Audi Q5 are activated by the convenience electronics central control unit J393. The J393 is also responsible for switching over the rear lights.
The "third brake light" function is provided by 18 LEDs integrated in the tailgate upper section.

Switchover of the rear lights

Symmetrical switchover on opening the tailgate

When the tailgate is opened, the brake/tail lights and the turn signals are switched over from the main rear lights to the auxiliary rear lights. The lamps in the main rear lights are then deactivated. When the tailgate is closed again, the system switches back to the main rear lights.
The auxiliary rear lights are then deactivated again.

433_101

Asymmetric switchover in the event of lamp failure

In the event of failure of a turn signal/brake light or tail light function, the system switches over asymmetrically to the lamp in the auxiliary rear light, i.e. only the faulty side is switched over. If this occurs, a fault message is indicated via the dash panel insert.
If the system switches over to the auxiliary rear lights because the main rear lights have failed, no attempt is made to switch on the main rear lights again until the next terminal 15 cycle begins.

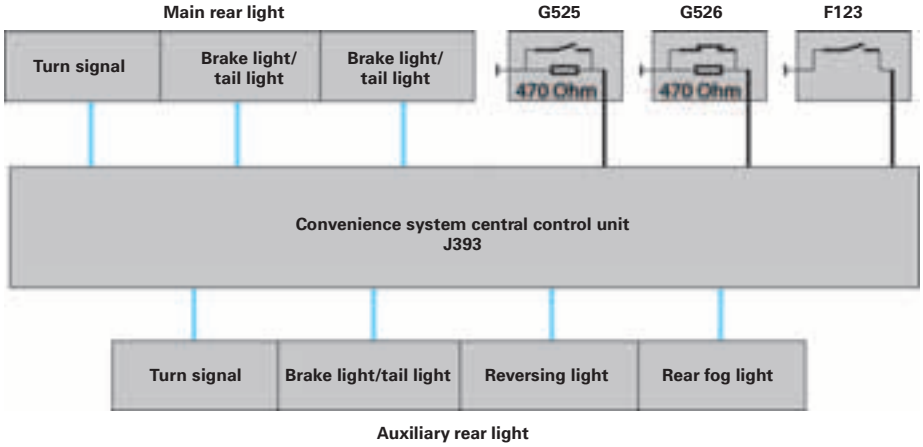
433_100

Functional sequence for the symmetrical switchover of rear lights

Components involved:

- Convenience system central control unit J393
- Rear lid closed sender -1- G525
- Rear lid closed sender -2- G526
- Rear lid contact switch F123
- Main rear lights
- Auxiliary rear lights

The convenience system central control unit J393 recognises the position of the tailgate from the positions (open/closed) of G525, G526 and F123. Unlike with the Audi Q7, the switch position of the F123 is additionally evaluated on the Audi Q5.



433_105

Rear outside lights

Replacing light bulbs

As with the Audi Q7, the light bulbs of the main rear lights can be replaced after removing the covers. To make it easier to grip and rotate the light sockets, a special tool can be found inside the main rear light covers.

In this case, it is not necessary to remove the rear light.
The light bulb replacement procedure described here applies to the basic rear light only.
No provision is made for repair or replacement of individual LEDs in the LED rear light.

433_142

433_143

The auxiliary rear lights must be removed to replace light bulbs. As with the Audi Q7, the screw connection is accessible after removing the cover in the rear bumper.

433_193

Note

For further information on the replacement of light bulbs, please refer to the current service literature.

Audi drive select

Like the Audi A5 and the Audi A4 ‘08, the Audi Q5 is optionally available with the innovative Audi drive select system.
Previously, systems such as the automatic gearbox or the damping control system, could only be controlled separately via the "Sport" setting.
The Audi drive select system now allows multiple systems, the engine, the automatic gearbox, the damping control system, the Servotronic system, the dynamic steering system and the sport differential* to be set at the touch of a button.
In this way, completely individual vehicle's characteristics can be configured. The behaviour of these systems is controlled electronically and can be adjusted to between comfortable and dynamic.

Audi drive select is also referred to in-house or in the service literature as "Charisma". The centrepiece of the system is the Charisma switch module E592, which is used to read in and communicate the driver's input to the onboard power supply control unit J519.

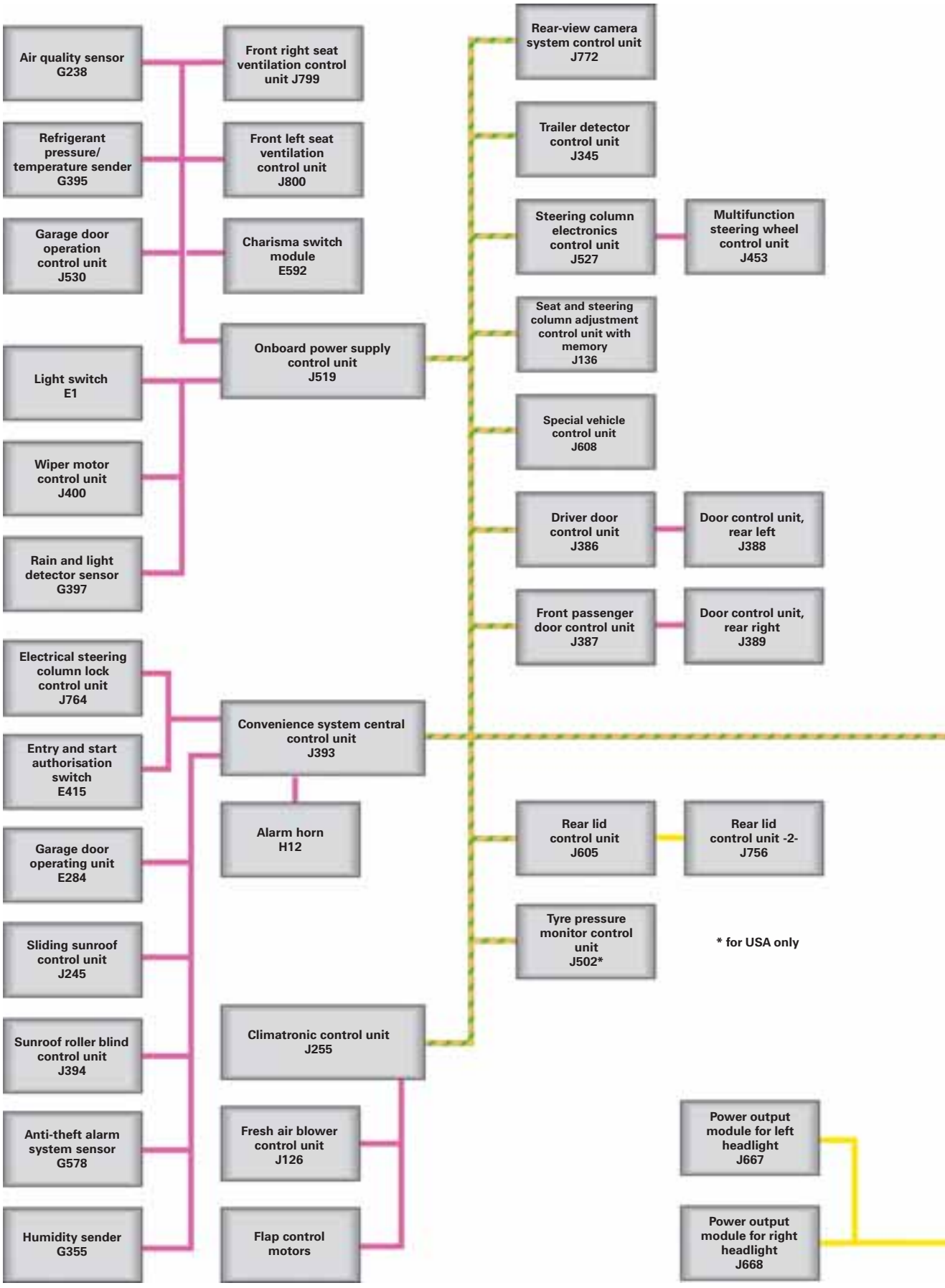
* To be introduced at a later date

Reference

For further information about the Audi drive select system, please refer to SSP 409 Audi A4 ‘08.

	COMFORT	AUTO	DYNAMIC
Engine 	normal	normal	Sport mode
Automatic gearbox 	normal as usual in selector lever position "D"	normal as usual in selector lever position "D"	Sport program
Servotronic 	easy action	normal	firm
Dynamic steering 	comfortable and indirect	sporty and direct	sporty and direct
Damping control system 	comfortable and soft	normal	sporty and firm
Sport differential* 	weak	medium	strong

Networking - vehicles with infotainment CAN



433_106

Powertrain CAN bus

Convenience CAN bus

Dash panel insert/ suspension CAN bus

CAN Extended

Infotainment CAN bus

Diagnostics CAN bus

LIN bus

Sub-bus systems

Control unit with display in dash panel insert J285

Steering angle sender G85

Parallel Park Assist control unit J791

Electric park and handbrake control unit J540

ESP sensor unit G419

ABS control unit J104

Additional heater control unit J364

ESP sensor unit -2- G536

Active steering control unit J792

Four-wheel drive control unit J492

Diagnostic port

Radio R

Data bus diagnostic interface J533

Digital sound package control unit J525

Engine control unit J623

Adaptive cruise control unit J428

Battery monitor control unit J367

Telephone transmitter and receiver unit R36

Airbag control unit J234

Lane departure warning system control unit J759

3-phase AC alternator C

External radio sources connection R199

Automatic gearbox control unit J217

Headlight Assist control unit J844

ECD control unit (electronically controlled damping) J250

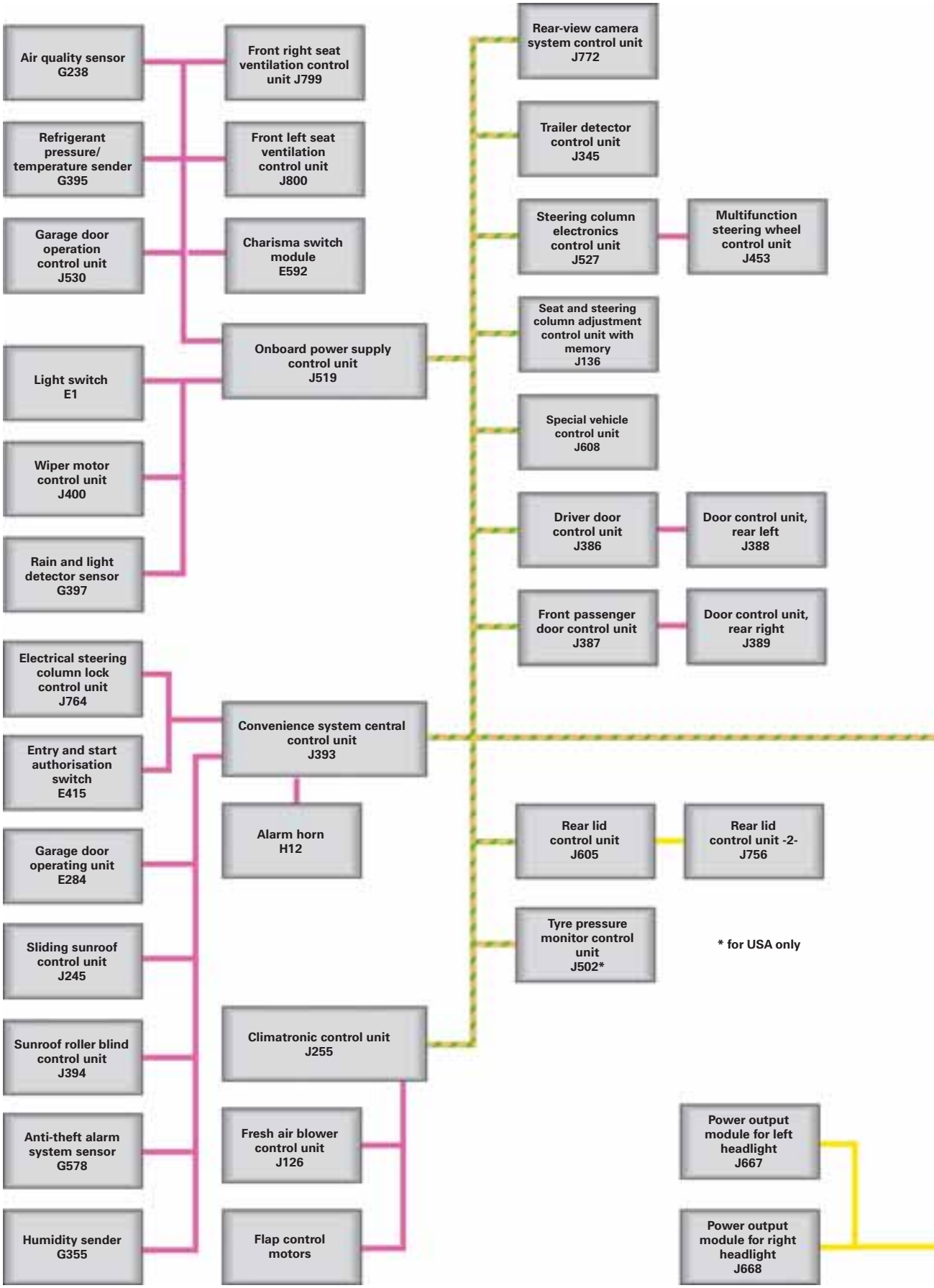
Lane change assistant control unit J769

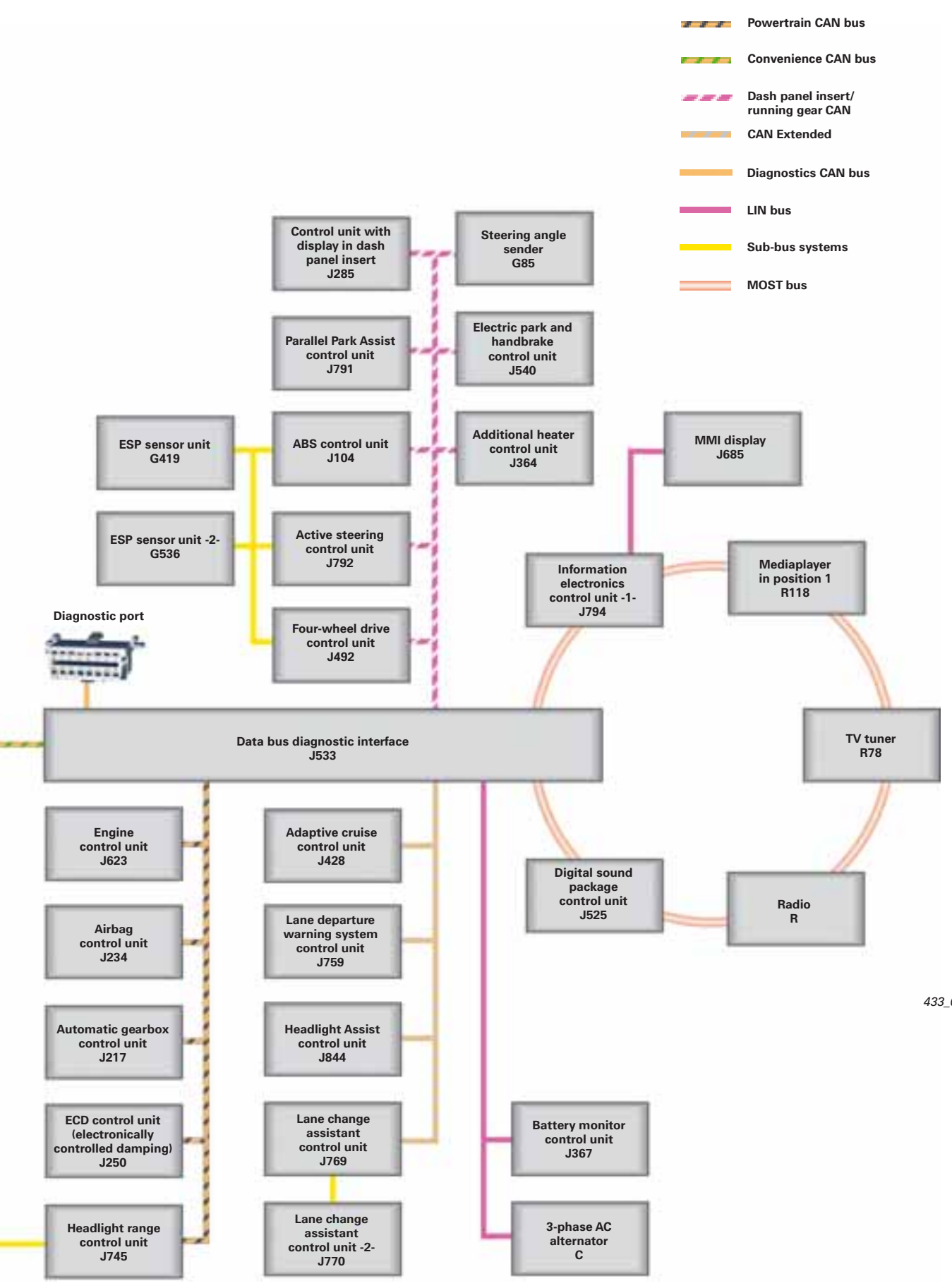
Headlight range control unit J745

Lane change assistant control unit -2- J770

433_051

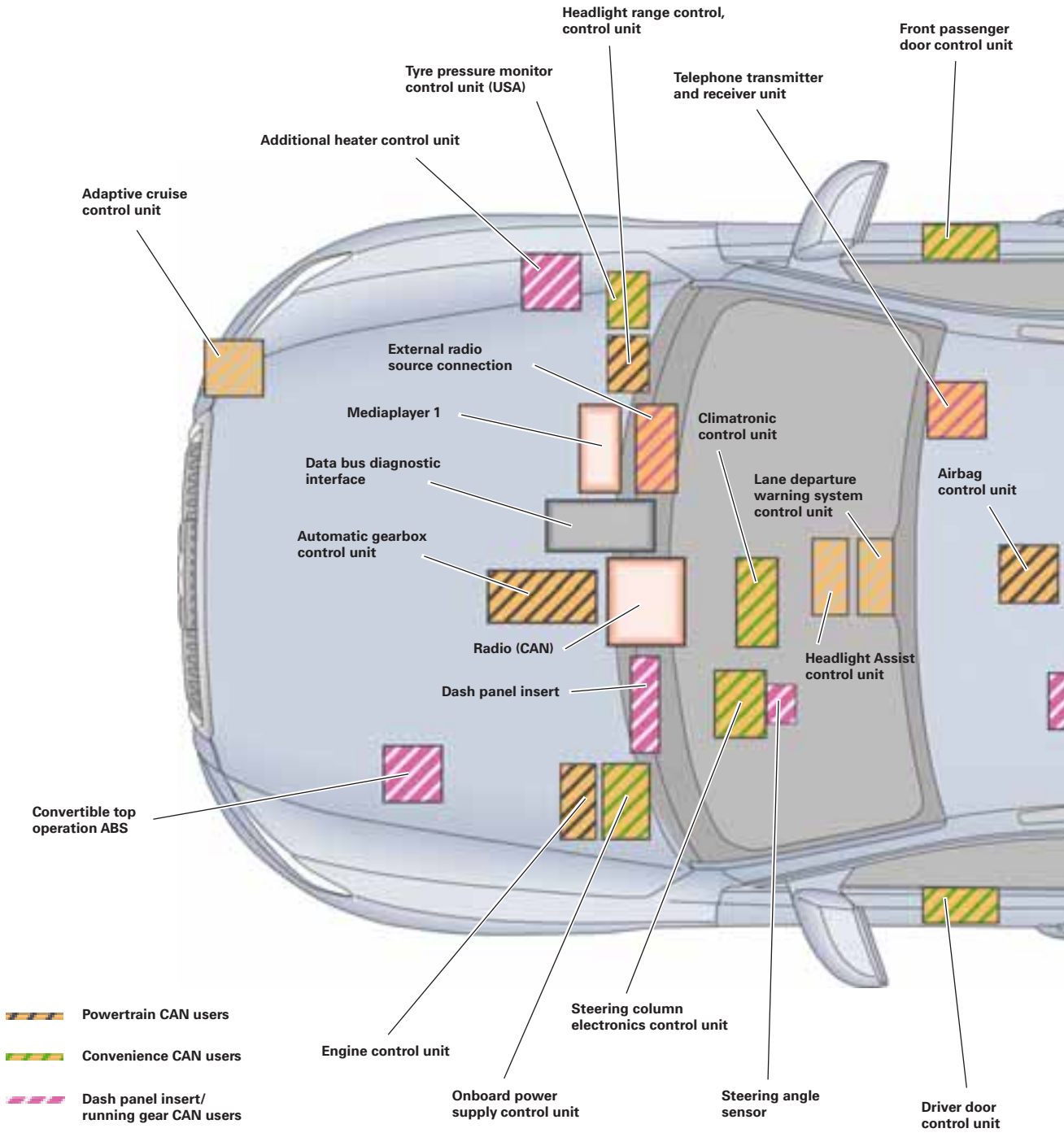
Networking - vehicles with MOST bus

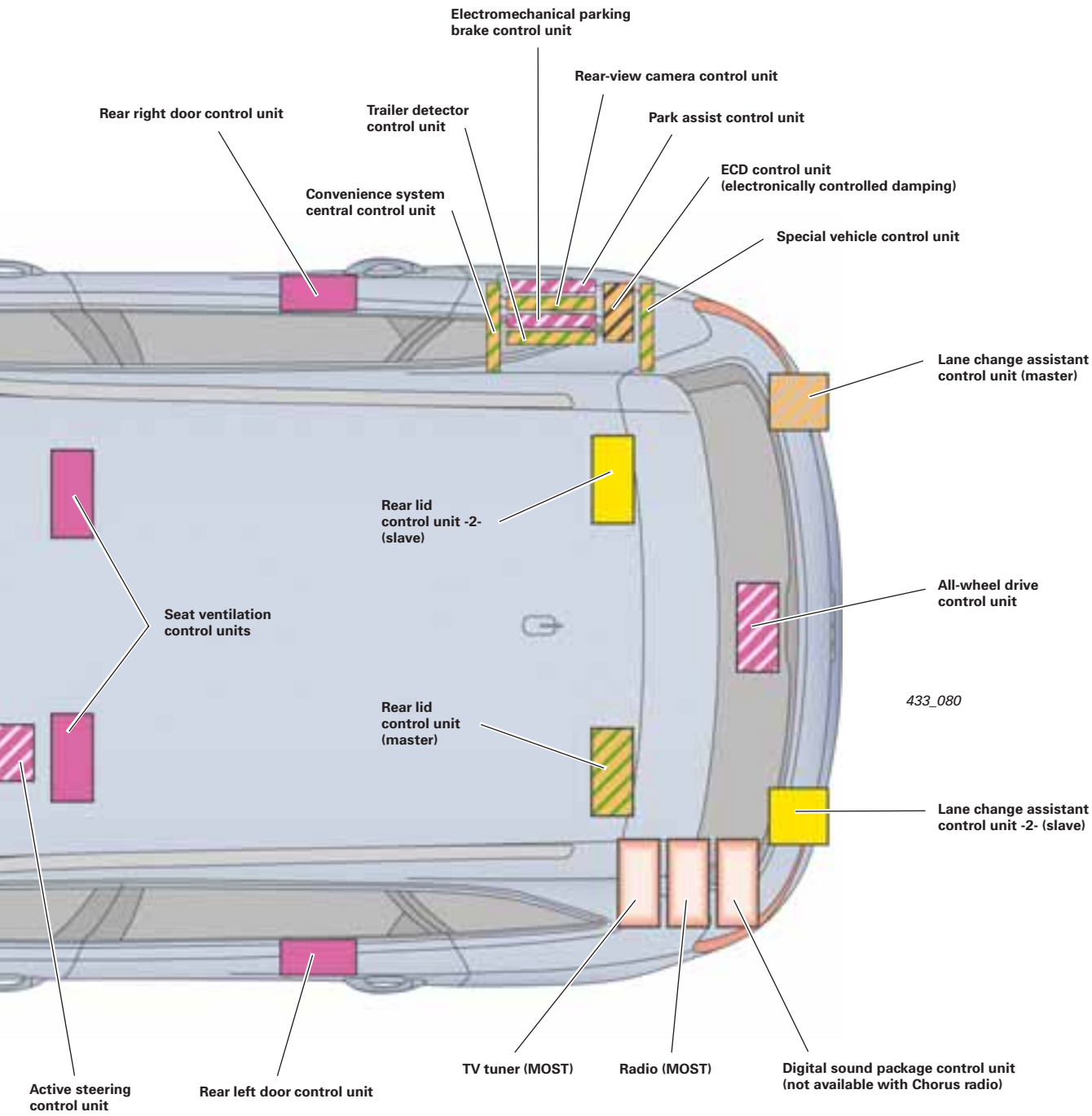



Powertrain CAN bus
Convenience CAN bus
Dash panel insert/ running gear CAN
CAN Extended
Diagnostics CAN bus
LIN bus
Sub-bus systems
MOST bus
Control unit with display in dash panel insert J285
Steering angle sender G85
Parallel Park Assist control unit J791
Electric park and handbrake control unit J540
ESP sensor unit G419
ABS control unit J104
Additional heater control unit J364
MMI display J685
ESP sensor unit -2- G536
Active steering control unit J792
Information electronics control unit -1- J794
Mediaplayer in position 1 R118
Diagnostic port
Four-wheel drive control unit J492
Data bus diagnostic interface J533
TV tuner R78
Engine control unit J623
Adaptive cruise control unit J428
Digital sound package control unit J525
Radio R
Airbag control unit J234
Lane departure warning system control unit J759
Automatic gearbox control unit J217
Headlight Assist control unit J844
ECD control unit (electronically controlled damping) J250
Lane change assistant control unit J769
Battery monitor control unit J367
Headlight range control unit J745
Lane change assistant control unit -2- J770
3-phase AC alternator C

433_067

Installation overview - control units




Electromechanical parking brake control unit
Rear-view camera control unit
Rear right door control unit
Trailer detector control unit
Park assist control unit
ECD control unit (electronically controlled damping)
Convenience system central control unit
Special vehicle control unit
Lane change assistant control unit (master)
Rear lid control unit -2- (slave)
Seat ventilation control units
All-wheel drive control unit
433_080
Rear lid control unit (master)
Lane change assistant control unit -2- (slave)
Active steering control unit
Rear left door control unit
TV tuner (MOST)
Radio (MOST)
Digital sound package control unit (not available with Chorus radio)

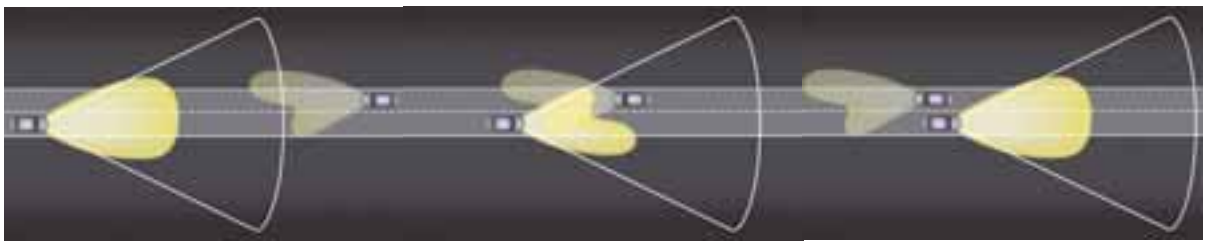
Headlight Assist System

Function

The new Audi Headlight Assist System is available as optional equipment for the Audi Q5. The system offers the driver better visibility in the dark since the main-beam headlights are always switched on, subject to traffic and ambient conditions.

When the camera of the Headlight Assist System detects an oncoming vehicle or traffic ahead, the headlights are dipped in a timely manner in order to avoid dazzling other road users. Once detected vehicles move outside the detection range of the Headlight Assist System again, the headlights are automatically switched back to main beam.

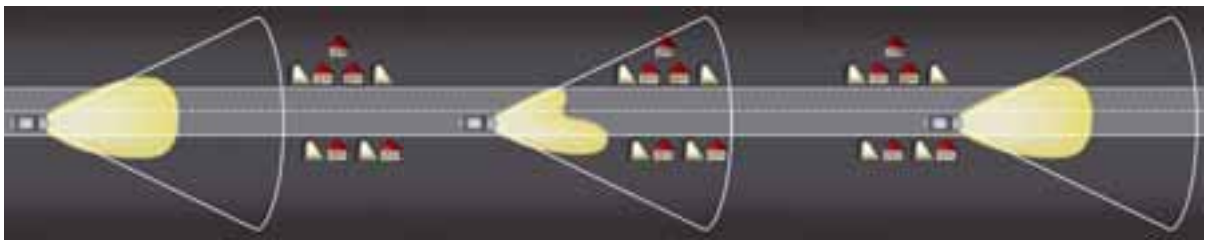
How the Headlight Assist System works when an oncoming vehicle is detected:



433_068 *433_069* *433_070*

The Headlight Assist System detects build-up areas and towns by street lighting, whereupon it dims the headlights to dipped beam. After leaving the built-up area or town, the headlights are automatically switched back to main beam. The system software also has the ability to detect thick fog, in which case it also dims the headlights to dipped beam. The Headlight Assist System maximises the "on" time of the main-beam headlights, and therefore provides better visibility. The driver has less workload and can concentrate better on traffic.

How the Headlight Assist System works when passing through a built-up area:



433_071 *433_072* *433_073*

Note

The Headlight Assist System is a driver Assist System, which assists driving in the dark by automatically switching the main-beam headlights on and off. However, it does not discharge the driver from his duty to make responsible use of the main-beam headlights while driving. For this reason, the driver can manually turn the main-beam headlights on and off at any time - even when Headlight Assist is active.

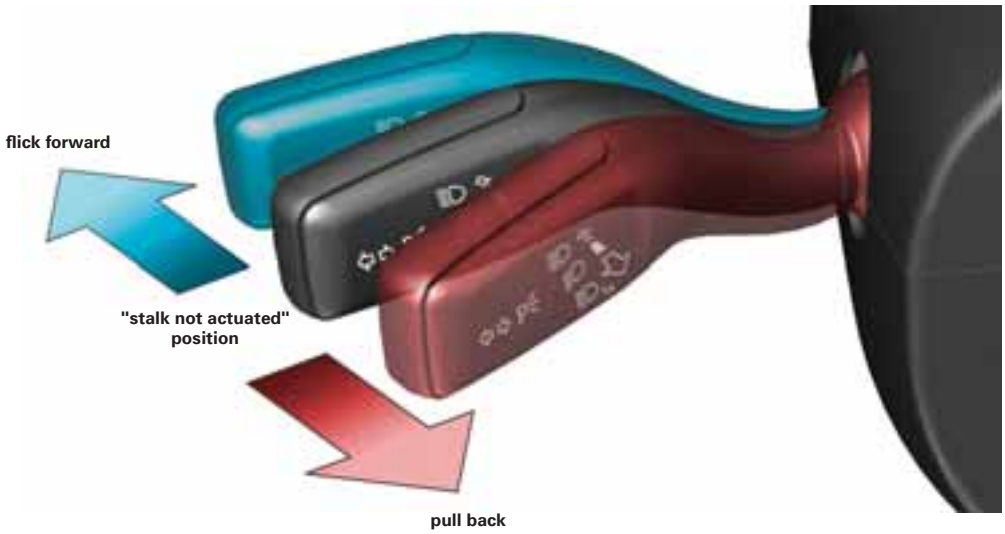
System operation

Activating the Headlight Assist System

To activate the Headlight Assist System, the rotary light switch must be in the "AUTO" position.
The Headlight Assist System can be activated by flicking the main-beam stalk forward. The Headlight Assist System must be reactivated during each terminal 15 cycle.

Deactivating the Headlight Assist System

The Headlight Assist System is permanently deactivated when the rotary light switch is rotated out of the "AUTO" position. Flicking the main-beam stalk forward deactivates the Headlight Assist System until the main-beam stalk is again flicked forward.



433_074

Overriding the Headlight Assist System

The driver can override any decision made by the activated Headlight Assist System (main-beam headlights ON/OFF) at any time.

Main-beam headlights switched on by the Headlight Assist System can be switched off by pulling the main-beam stalk back. This also deactivates the Headlight Assist System.

If the Headlight Assist System has only switched on the dipped headlights, the main-beam headlights can be switched on by flicking the main-beam stalk forwards. This also deactivates Headlight Assist System.

New features of the main-beam stalk

The Audi Q5 has a modified main-beam stalk in the steering column switch.

The new main-beam stalk no longer engages in its end position when it is pushed forward, but returns to its initial position after it is released.

The steering column electronics control unit J527 monitors when the main-beam stalk is flicked forward and pulled back, and processes the information accordingly.

Warning lamp in the dash panel insert

An activated Headlight Assist System is indicated in the dash panel insert in the same position as where the total mileage is displayed when the Headlight Assist System is deactivated.

If the main-beam headlights are "on", the familiar blue main-beam headlight warning lamp in the dash panel insert is lit.This lamp is lit regardless of whether the main-beam headlights have been switched on manually or by the Headlight Assist System.

433_075

Switch-on and switch-off conditions of the automatic main-beam headlights

Switching-on of the main-beam headlights by the Headlight Assist System:

The activated Headlight Assist System switches on the main-beam headlights only if all the following conditions are met:

- The camera of the Headlight Assist System indicates that ambient luminosity has dropped below a preconfigured threshold level,
- the dipped headlights have already been switched "on" at the instruction of the rain and light detector sensor,
- the vehicle is travelling at a speed of greater than 60 kph,
- neither a vehicle ahead nor oncoming traffic has been detected and
- no built-up area has been detected.

Switching-off of the main-beam headlights by the Headlight Assist System:

If the main-beam headlights have been switched on by the Headlight Assist System, they will be switched off again under the following conditions:

- An oncoming vehicle is detected.
- A vehicle is detected ahead.
- A sufficiently illuminated built-up area is detected.
- The vehicle's speed drops below 30 kph.
- The Headlight Assist System clearly detects fog.

Reference

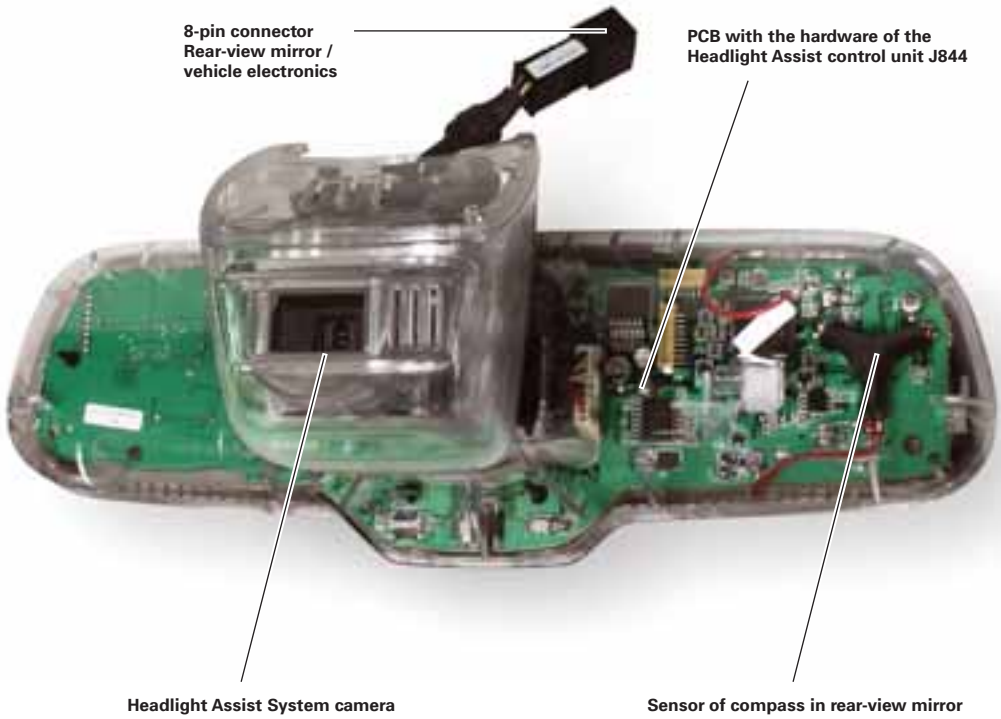
A separate Self-Study Programme (SSP 434) has been published on the topic of "The Audi Headlight Assist System". It also describes how the Headlight Assist System functions in road traffic, the operating logic of the Headlight Assist System when the main-beam stalk is actuated, the system interface to the vehicle electronics, the communication structure (networking) and the diagnostics.

Installation location of the Headlight Assist System

The electronics and optics of the Headlight Assist System are wholly integrated in the rear-view mirror. The camera of the Headlight Assist System is built into the base of the rear-view mirror, which itself is securely mounted on the windscreen. The camera is a special black-and-white camera.

The Headlight Assist control unit J844 is integrated in the actual rear-view mirror, which is mounted movably.The Headlight Assist control unit is an Extended-CAN user and interchanges information with other control units via this bus.

433_076



433_077

Infotainment system overview

Standard	Optional radios	
chorus radio	concert radio	symphony radio
		
		

Standard equipment

Control panel in radio		
Car menu	CAR menu incl. driver assist	
Phase diversity		
	TP memory function	
	SD/MMC memory card reader	
Single-CD drive in radio	Single-CD drive (MP3/WMA) in radio	CD changer (MP3/WMA) in radio
	AUX IN in centre console (deleted if Audi music interface AMI is installed)	
Amplifier in radio 2 x 20 watts for 4 front loudspeakers	Amplifier in radio 4 x 20 watts with 8 loudspeakers, front and rear	

Option

VDA interface for Aftersales mobile phone retrofit (available in Germany to key accounts only)		
	Provision for connecting mobile phone to infotainment CAN bus	
	DAB tuner integrated in radio R	
		Digital satellite radio (SDARS for North America only)
	Audi sound system 10 loudspeakers driven through a six-channel amplifier connected to infotainment CAN	
	Bang & Olufsen sound system 14 loudspeakers driven through a six-channel amplifier connected to infotainment CAN	
	Audi music interface connected to infotainment CAN	

Radio navigation systems

MMI Navigation plus

MMI control panel in the centre console
CAR menu incl. driver assist
Phase diversity
TP memory function
Dual tuner
2 SD/MMC memory card readers
Single DVD drive integrated in J794
Hard drive (for navigation data and music files) integrated in J794
AUX IN in centre console (deleted if AMI is installed)
Amplifier in radio R 4 x 20 watts for 8 loudspeakers, front and rear
Speech control for navigation and telephone

Mobile phone preparation integrated in J794
VDA interface for Aftersales mobile phone retrofit (available in Germany to key accounts only)
TV tuner, hybrid or analogue (depending on market)
Bluetooth car phone integrated in J794
Bluetooth handset
DAB dual tuner (dynamic station list) integrated in radio R
Digital satellite radio (SDARS for North America only) integrated in radio R
Audi sound system 10 loudspeakers driven through a six-channel amplifier integrated in radio R
Bang & Olufsen sound system 14 loudspeakers with a 10-channel amplifier connected to the MOST data bus
Audi music interface integrated in J794

All Audi Q5 models are equipped as standard with the chorus radio with basic sound system. The concert and symphony radio systems are optionally available together with other equipment. The chorus, concert and symphony radio systems are already featured in the Audi A5.

The MMI Navigation plus system - a 3rd generation MMI system - is optional on the Audi Q5. Highlights for the user include the jukebox function, the speech control system with whole-word input and a 3D map display for navigation.

The greatest innovation of the MMI Navigation plus system is the fact that it combines previously independent control units into a single unit - the infotainment electronics control unit -1- J794.

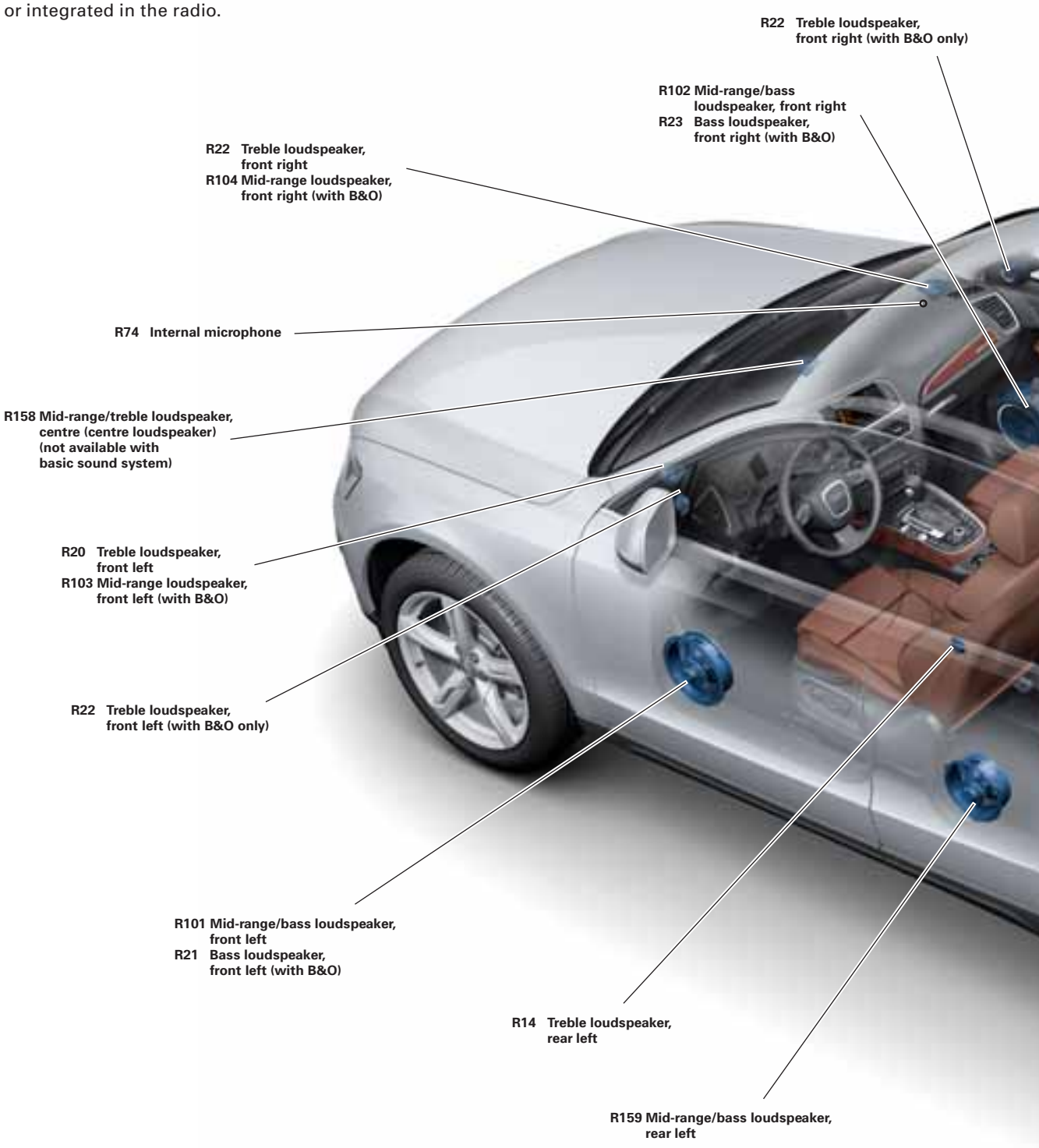
The Audi Sound System and the Bang & Olufsen Sound System are optional.

Reference

For further information about the design and function of the radios, please refer to SSP 392 - Audi A5 and SSP 435 MMI Navigation plus.

Overview - sound systems

Depending on system, up to 14 loudspeakers can be installed.
The associated amplifier can be either an independent control unit or integrated in the radio.



R16 Treble loudspeaker, rear right

R160 Mid-range/bass loudspeaker, rear right

R106 Mid-range loudspeaker, rear right (surround) (with B&O only)

R105 Mid-range loudspeaker, rear left (surround) (with B&O only)

R157 Subwoofer (not available with basic sound system)

433_050

J525 Digital sound package control unit (only available with B&O and infotainment CAN with Audi Sound System)

Sound systems

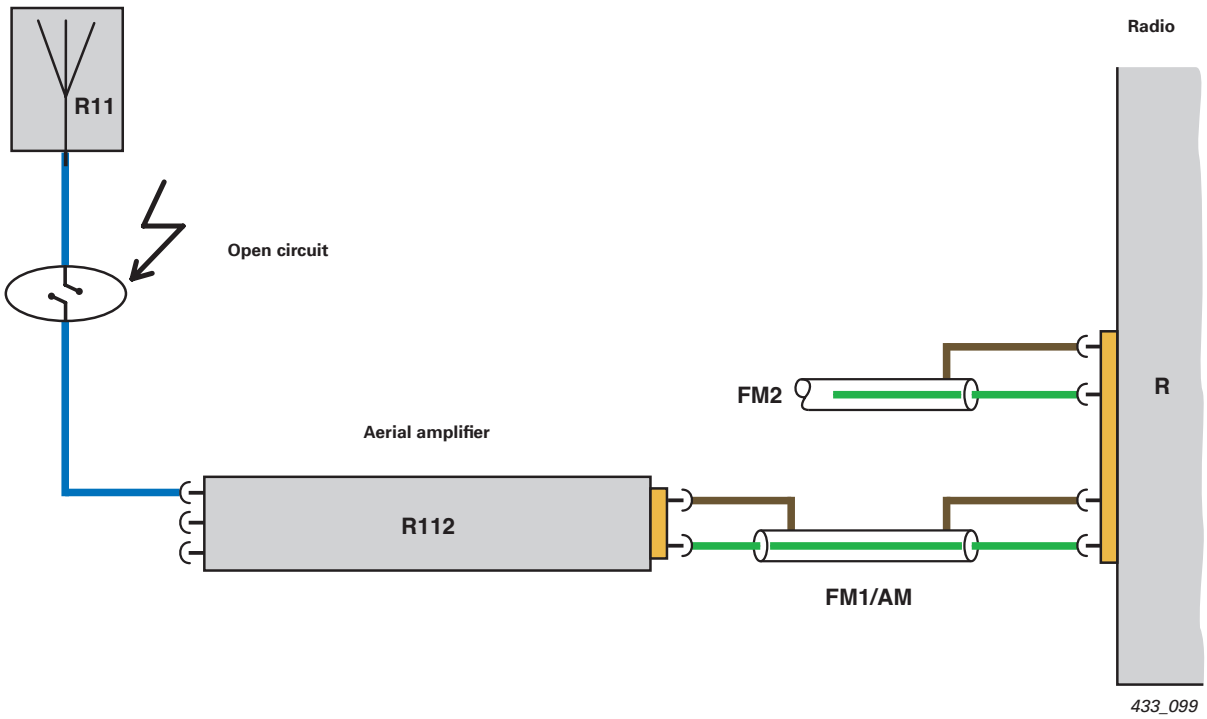
Overview

	Basic sound system	Audi Sound System	Bang & Olufsen Sound System
chorus radio	Amplifier integrated in radio R 2 x 20 watts for 4 front loudspeakers also available depending on country: 40 x 20 watts for 4 x 2 loudspeakers, front and rear	–	–
concert and symphony radios	4 x 20-watts amplifier integrated in radio 4 x 2 loudspeakers, front and rear	180 watts six-channel amplifier in luggage compartment, rear left 4 x 2 loudspeakers, front and rear 1 centre loudspeaker in the dash panel 1 subwoofer in the spare-wheel recess	505 watts 10-channel amplifier in the luggage compartment, rear left 2 x 3 front loudspeakers and 2 x 2 rear loudspeakers 1 centre loudspeaker in the dash panel and 2 surround loudspeakers in the D posts 1 subwoofer in the spare-wheel recess
		Data transfer via infotainment CAN, audio signal transfer via twisted-pair cable	
MMI	4 x 20 watts amplifier integrated in radio 4 x 2 loudspeakers, front and rear	180 watts six-channel amplifier integrated in radio R 4 x 2 loudspeakers, front and rear 1 centre loudspeaker in the dash panel 1 subwoofer in the spare-wheel recess	505 watts 10-channel amplifier in the luggage compartment, rear left 2 x 3 front loudspeakers 2 x 2 rear loudspeakers 1 centre loudspeaker in the dash panel and 2 surround loudspeakers in the D posts 1 subwoofer in the spare-wheel recess
			Data and audio signal transfer via optical MOST bus

Aerial diagnostics

All radio aerials in the Audi Q5 have full self-diagnostic capability. Now open circuits in the aerial system can not only be detected between the tuner and the amplifier. In fact, the new method enables the aerial system to be tested through the amplifier up to the aerial. This has the advantage that a fault is stored in the fault memory if, for example, the connection to the rear window is broken.
This means that there is no need for a laborious analysis of reception strength in order to trace a customer complaint.

Schematic diagram

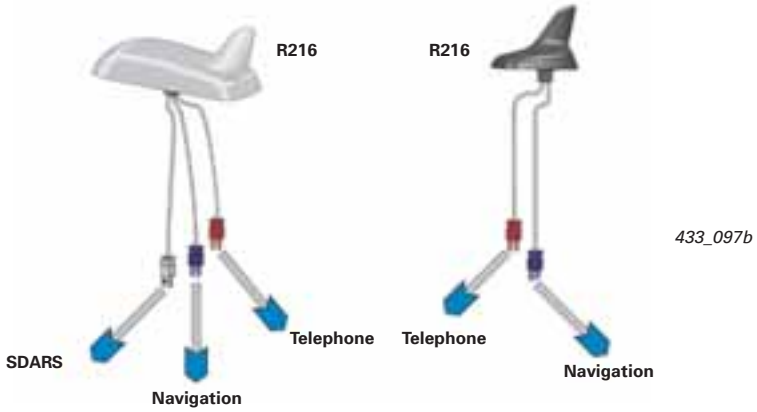


If the above mentioned fault has occurred, the following fault memory entry is made:
Connection between impedance converter and window aerial: open circuit

Aerial system

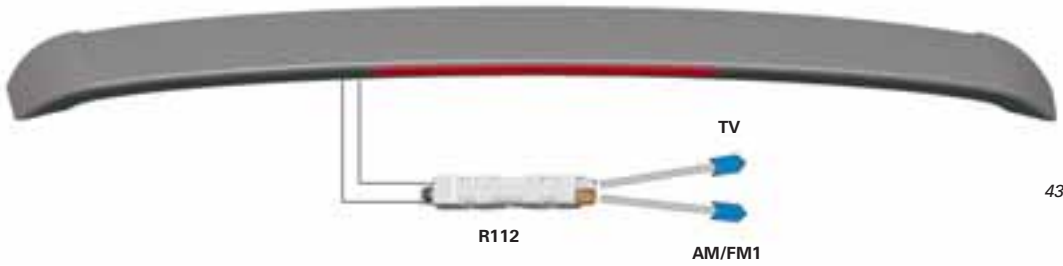
The aerials on the Audi Q5 are distributed among the rear window, the rear spoiler, the rear left side window and the roof aerial.
The amplifiers for the aerials in the rear window and in the roof spoiler are installed on the tailgate.

Aerials



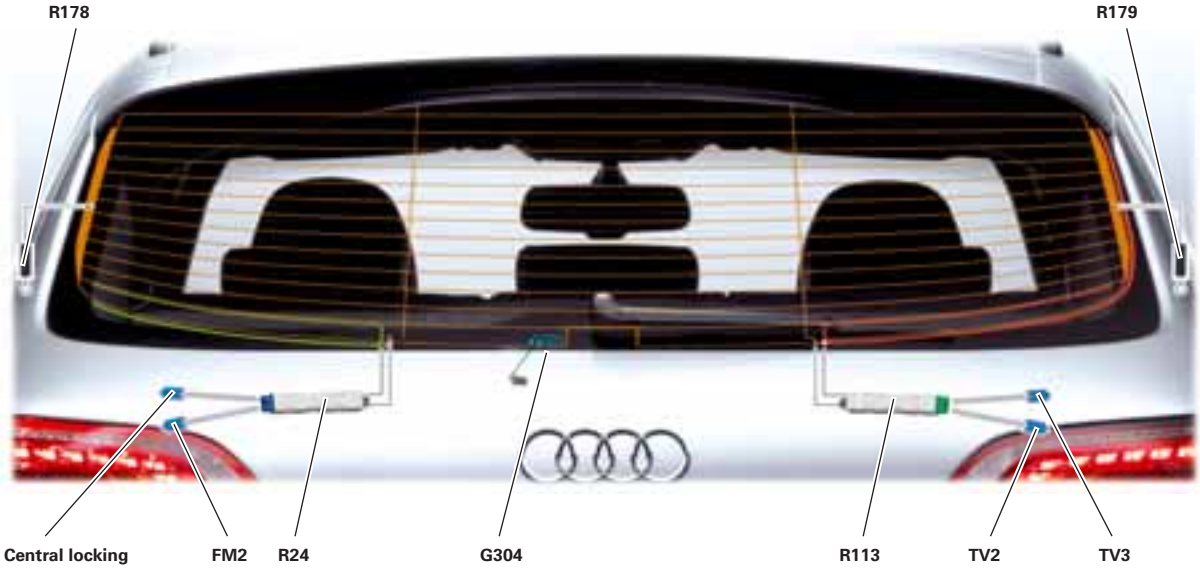
433_097b

Spoiler



433_097c

Rear window



433_097a

The DAB amplifier (left aerial module R108) is located on the D post on the left.
The mobile telephone amplifier R86 is installed behind the right luggage compartment trim in the side panel.

433_097d

Legend

G304	Glass breakage sensor, rear window
R24	Aerial amplifier
R216	Roof aerial
R108	Left aerial module
R112	Aerial amplifier 3
R113	Aerial amplifier 4
R178	Frequency filter for frequency modulation (FM) in the negative lead
R179	Frequency filter for frequency modulation (FM) in the positive lead

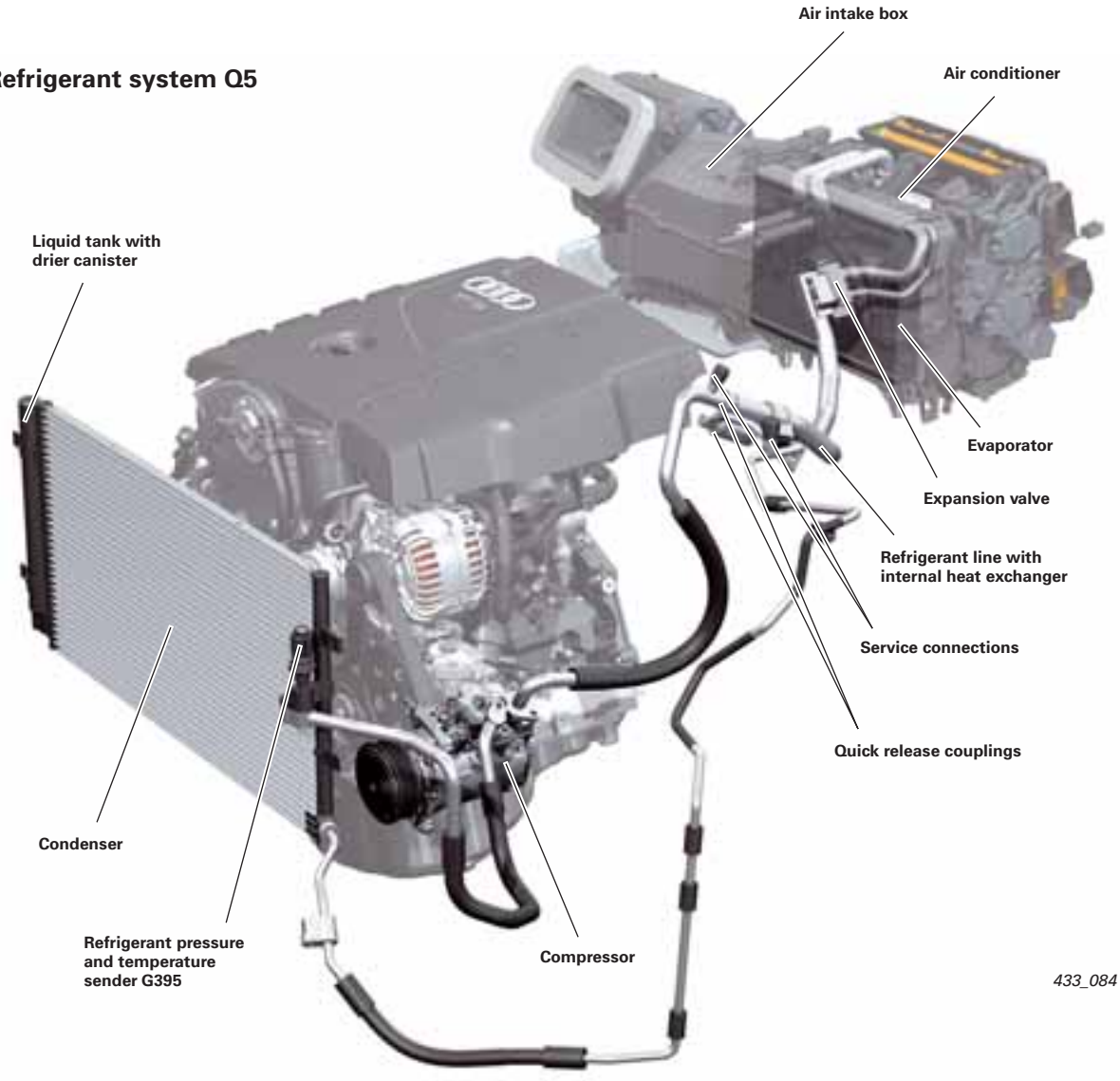
Air conditioning system

The Audi Q5 is equipped as standard with an automatic air conditioning system with ram pressure control, manual air recycle mode, sun position dependent control and key identification.
A three-zone deluxe automatic air conditioning system is optional.

This system allows the temperature to be set separately for the driver, front passenger and rear zones. It also provides the following additional comfort functions for the customer:

- Indirect ventilation
- Automatic air recirculation control
- Moisture sensors

Refrigerant system Q5



The Audi Q5 uses an adapted version of the refrigerant system in the Audi A4/A5.
The internal heat exchanger, which is designed as a coaxial low and high pressure line, increases the efficiency of the thermodynamic circulation process, i.e. the air conditioning system. The lines can be disconnected at the quick release couplings using release tool T40149.

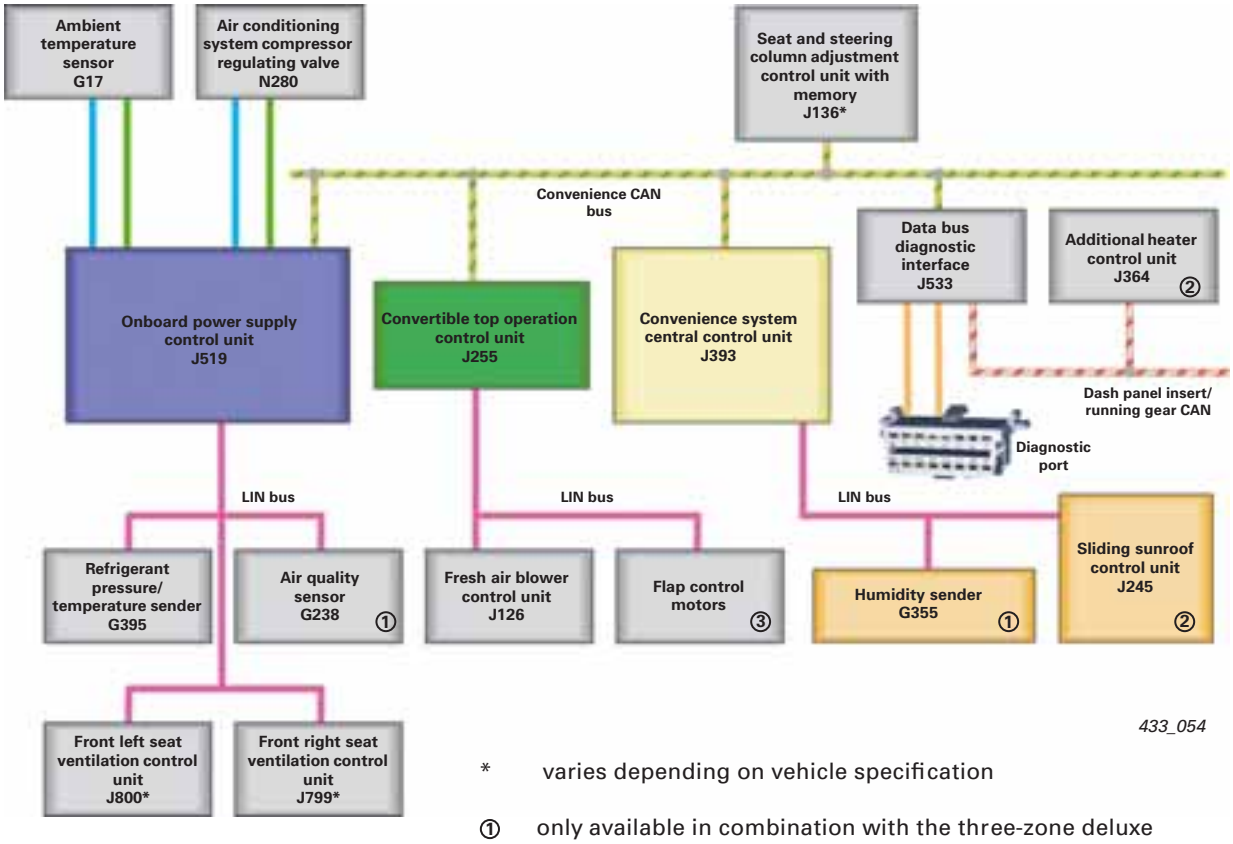
By using a thermally controlled expansion valve, it is possible to install a smaller compressor with equal refrigeration capacity.

Like the system in the Audi A4/A5, the air conditioner is divided into two modules: the air intake box and the air conditioner with air distributor housing.

Electrical connection of the automatic air conditioning system

The electronic components are networked using the same configuration as in the Audi A4 '08 and A5 models. Data from various senders and sensors is read in locally by the onboard power supply control unit J519 or by the convenience system central control unit J393, and made available to the Climatronic control unit J255 via the convenience CAN data bus.

The servomotors of the individual flap drives are identical in design, and therefore can be fitted to any flap. They are connected in series and controlled by way of a separate LIN bus.
The servomotors for the individual flaps are addressed in the basic setting mode of the VAS diagnostic tester.



433_054

* varies depending on vehicle specification

① only available in combination with the three-zone deluxe automatic air conditioning system

② Optional equipment

③ The number and layout of the servomotors between the deluxe automatic air conditioning system and the three-zone deluxe automatic air conditioning system varies

Visualisation of air conditioning settings

As with the Audi A4 '08 and A5, the Climatronic control unit J255 does not have a Set-up button. The automatic air conditioning system set-up function is integrated in the radio or MMI system. After pressing the "CAR" function button and subsequently the "A/C" control button, the Set-up functions are available.
Adjustments to air conditioning settings - e.g. blower level, air distribution or temperature - are displayed to the customer as a pop-up window. The originally selected screen remains open in the background and the adjusted air conditioning setting is displayed in the fore-ground at the side of the screen. Display duration can be adjusted using the diagnostic tester.

Visualisation of air conditioning settings by means of pop-up windows will also be implemented on the Audi A4 and A5 from model year 2009 onwards.

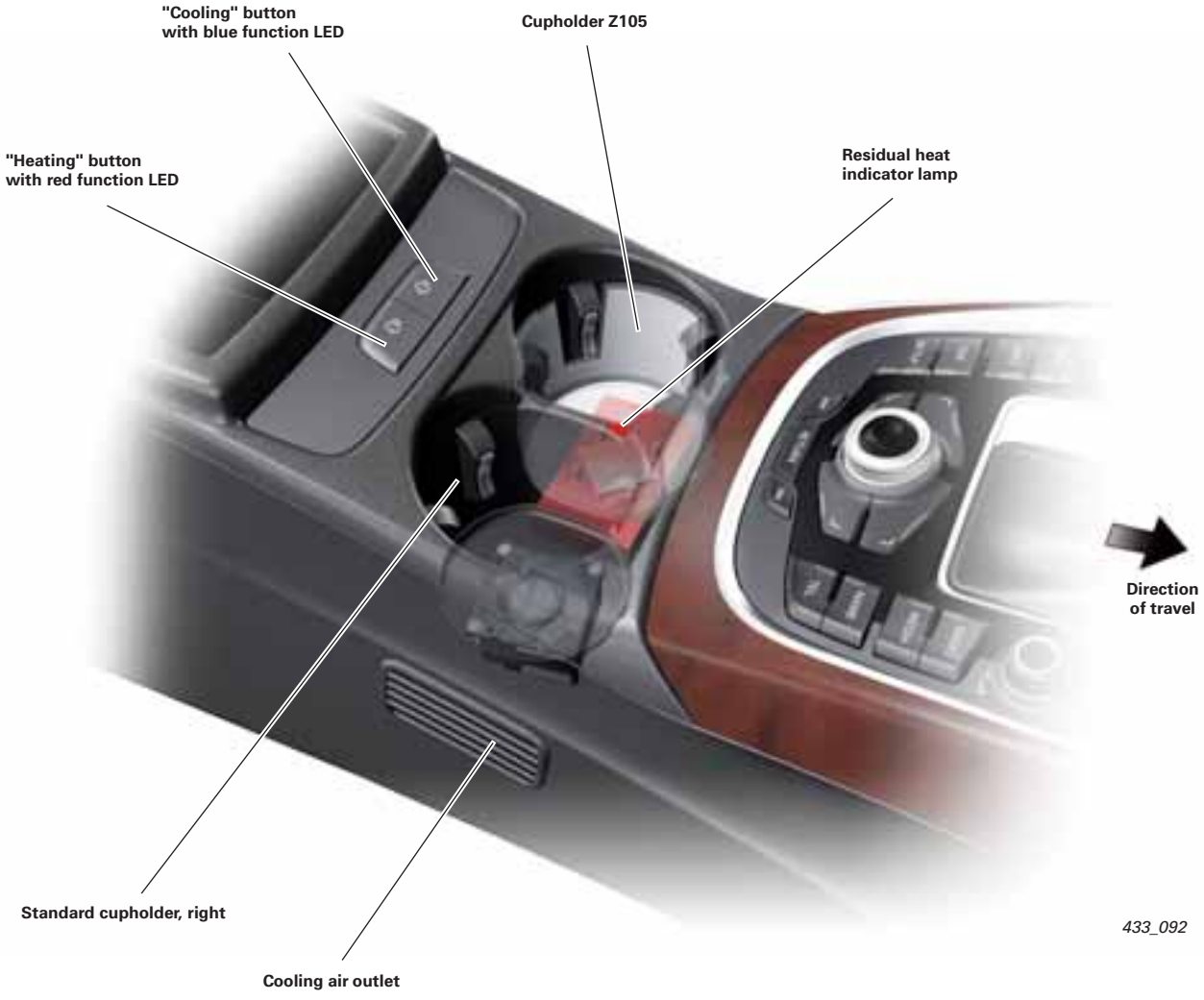
433_079

Heated cupholder Z105

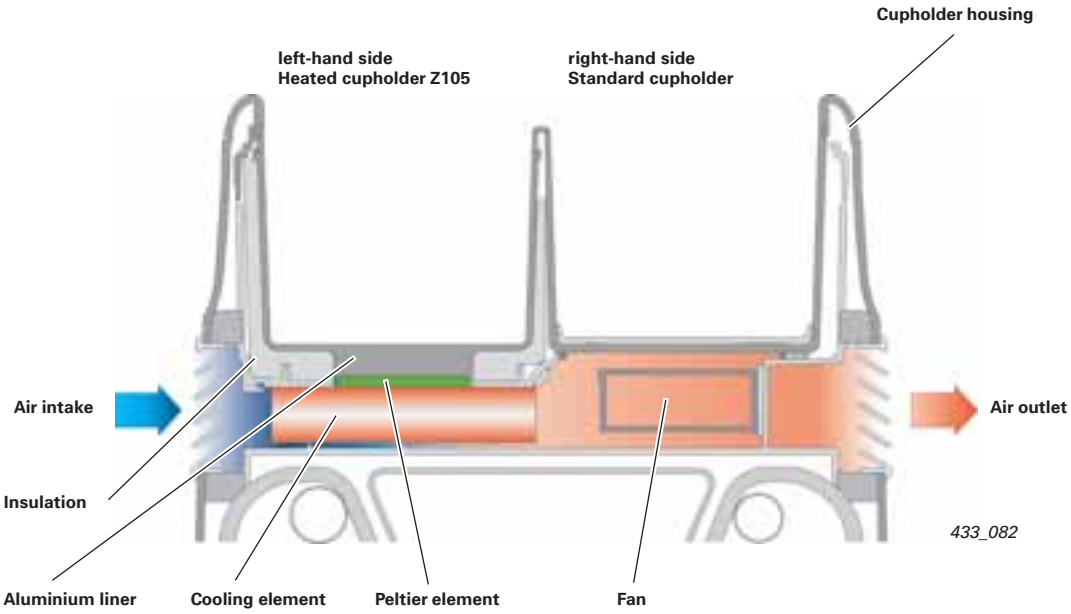
The cupholder Z105 is heatable and coolable.
It is installed in the centre console between the MMI control panel and the armrest.
The Peltier effect is used to control the temperature of the cupholder. Peltier elements consist of a multiple identical, square-shaped p-n type semiconductor junctions connected in series.
This plate-shaped Peltier configuration is sandwiched on both sides, electrically and mechanically, by ceramic plates. When a direct current is applied, one side of the plate heats up while the other side cools down. The heating and cooling sides are inverted by reversing the direction of the electrical current.

The direction of the electrical current can be reversed by using two buttons, which are positioned directly in front of the heated cupholder Z105.

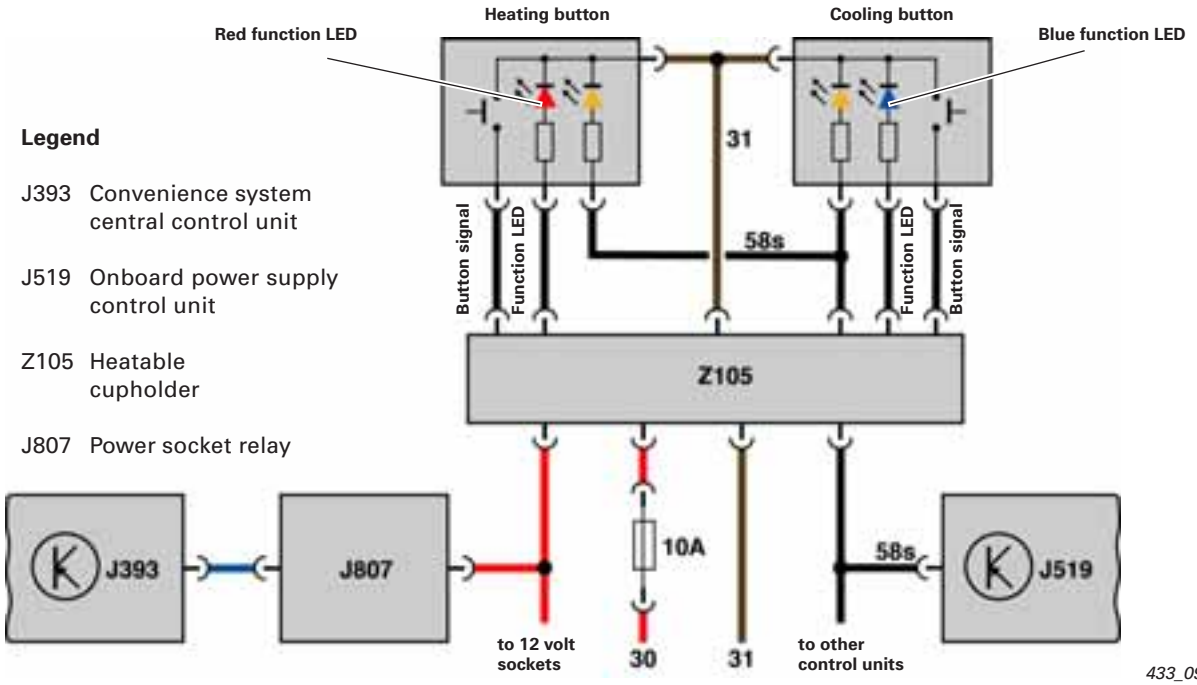
For better cooling, the heat on the heated side of the Peltier element is dissipated by means of a fan. For this purpose, air is induced on the driver's side of the centre console, passed through the cooling element of the cupholder Z105 and vented on the front passenger side.
The heatable and coolable cupholder Z105 has a maximum current draw of 3.5 A with a rated power output of approx. 40 W.



Sectional view of heated cupholder Z105



Integration in the vehicle electrical system



Legend

J393 Convenience system central control unit

J519 Onboard power supply control unit

Z105 Heatable cupholder

J807 Power socket relay

The heatable cupholder Z105 and the accompanying buttons are discretely wired. They are activated via the power socket relay J807.

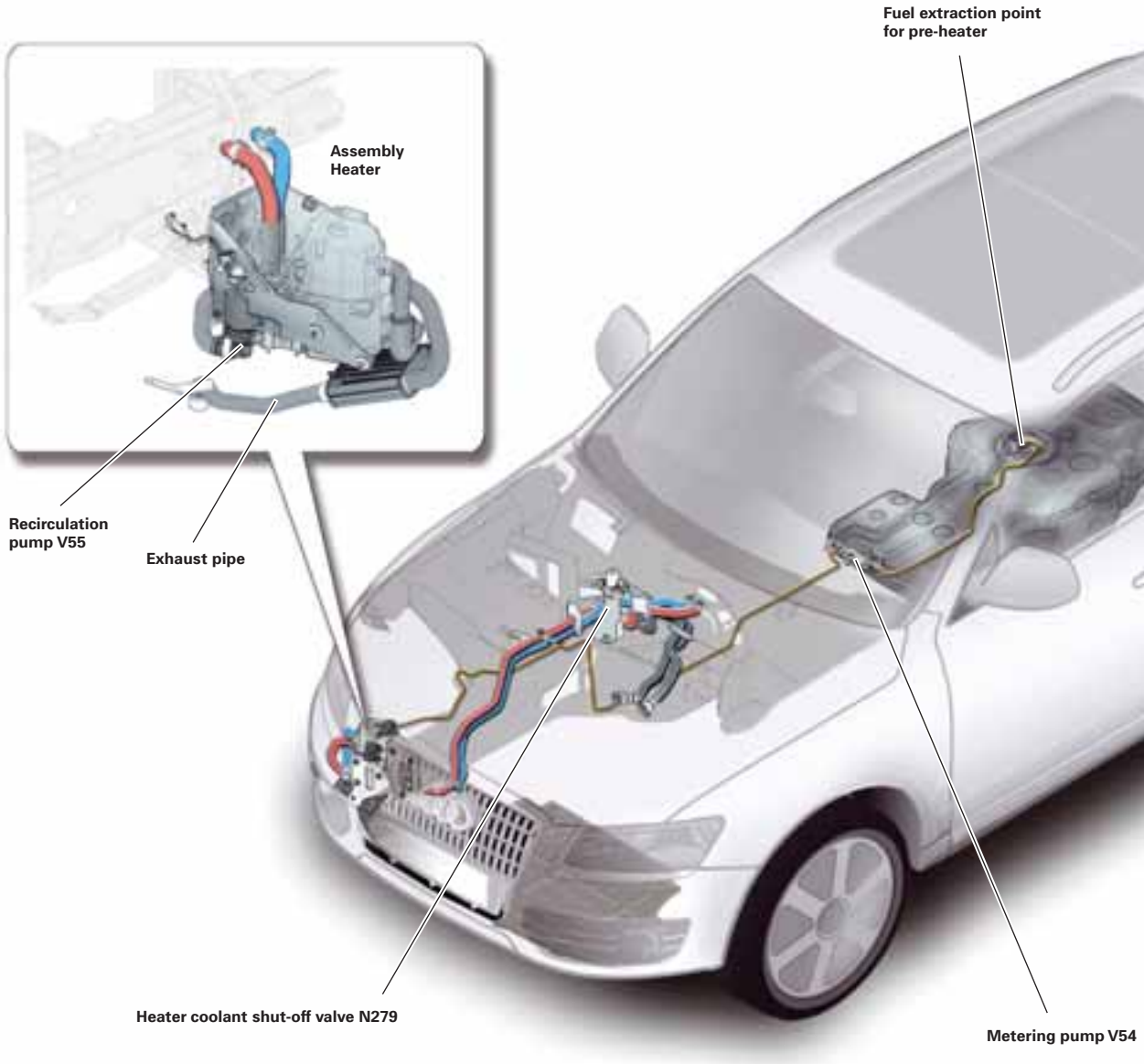
Note

In case of repair, the heatable cupholder Z105 can only be replaced as a complete unit.

Pre-heater

The pre-heater in the Audi Q5 serves primarily to heat the vehicle interior of the vehicle and defrost the windows. For this purpose, vehicles are equipped with a pre-heater and a heater coolant shut-off valve N279.
In pre-heating mode, the valve creates a small water circuit in which water circulates between only the pre-heater and the heat exchanger in the vehicle interior.

A revised solenoid valve with only 3 terminals is used on the Audi Q5.
The additional heater control unit J364 activates the heater coolant shut-off valve N279 until the coolant in the pre-heater reaches the preset temperature or until the engine is running at a speed of greater than 1200 rpm.
When deenergised, the heater coolant shut-off valve N279 is open and coolant flows through the large circuit.

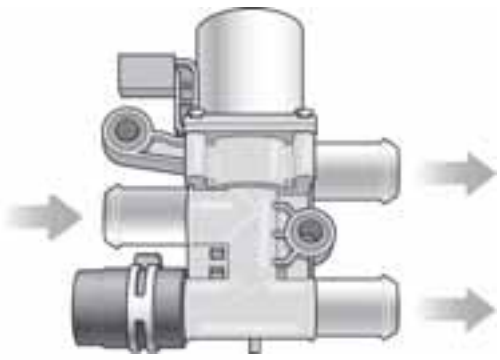


The pre-heater is optional with both petrol and diesel vehicles. All diesel Audi Q5 models are currently supplied with an electric supplementary air heater Z35, even if these vehicles are ordered with a pre-heater. At present the pre-heater is not used as a supplementary heater on the Audi Q5.

Heater coolant shut-off valve N279

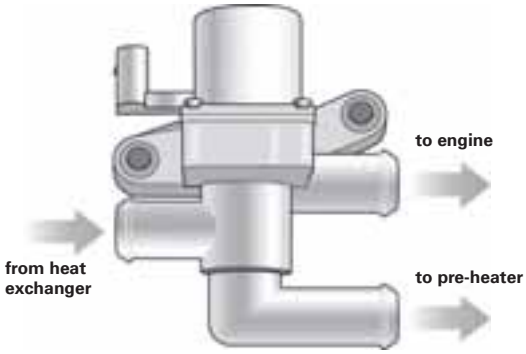
A modified heater coolant shut-off valve N279 is used on the Audi Q5. The new shut-off valve N279 has only 3 outlets. When servicing is necessary, the same procedure applies to both shut-off valves.

Audi A4/A5



433_089

Audi Q5



433_090

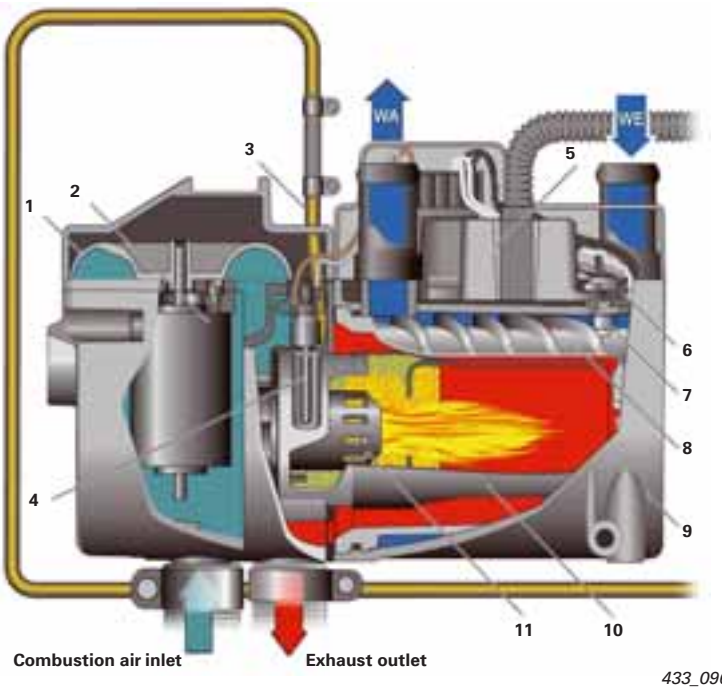
433_085

Note

The pre-heater can be operated as an auxiliary fan. The selected temperature setting on the Climatronic control unit J255 and the actual temperature inside the vehicle decide whether the pre-heater or the auxiliary fan is operated.

Exploded view drawing of the pre-heater

The Eberspächer system operates according to the evaporator principle.



433_096

01 Combustion blower V6
02 Engine
03 Fuel line
04 Heater glow plug Q9
05 Additional heater control unit J364
06 Temperature sensor -2- G587
07 Temperature sensor G18
08 Heat exchanger
09 Water jacket
10 Combustion chamber
11 Burner element

The Advanced Maintenance Concept

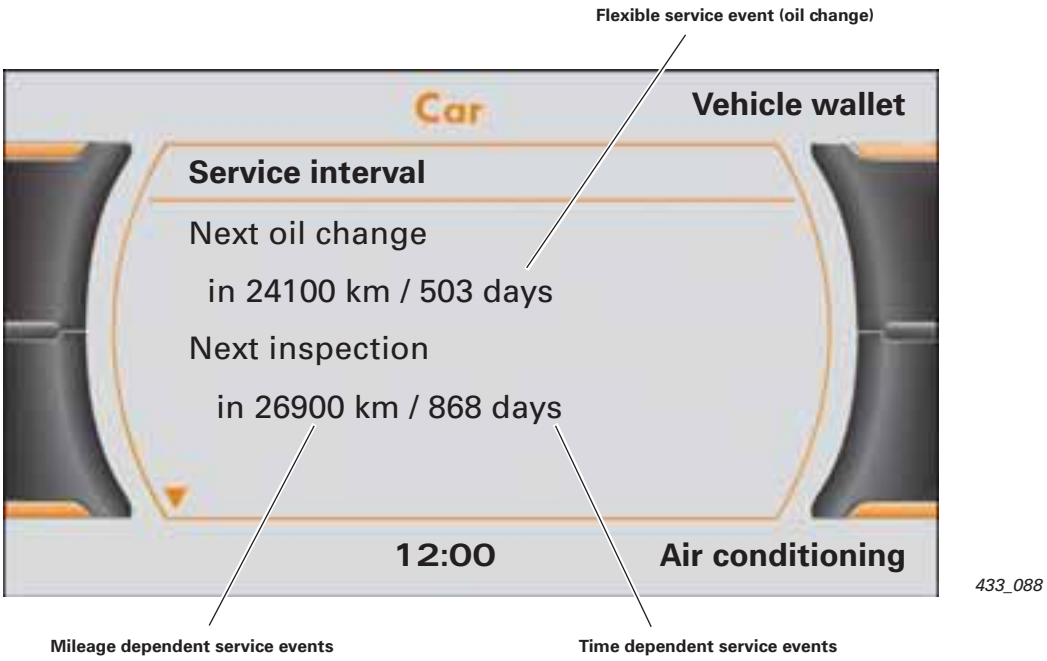
The Advanced Maintenance Concept differentiates between three independent service events.
A distinction is made between a flexible service event, a mileage dependent service event and a time dependent service event.

Previously, mileage and time dependent service events were linked to the oil change, whose interval is flexible.

Under the Advanced Maintenance Concept, the customer is not only reminded of the flexible service event - the oil change - by the Service Interval Display but also of upcoming mileage and time dependent service events.
As usual, this is indicated to the customer via the dash panel insert.

Additional information can be obtained via the "Car" menu in the MMI or via the radio display.
The Advanced Maintenance Concept is used on the following models:

- A3 from model year 2008 onwards
- TT from model year 2008 onwards
- A4 from model year 2008 onwards
- A5
- Q5
- A6 from week 46/08 onwards
- Q7 from week 46/08 onwards
- R8 from model year 2009 onwards



433_088

Since mileage and time dependent service events are now also indicated, process reliability is higher.
The prerequisite for this is that the Service Interval Display is reset correctly.

Only two lines are provided on the display for the three independent service events.

Reference

For further information about the Advanced Maintenance Concept, please refer to SSP 438 Audi - The Advanced Maintenance Concept.

Maintenance Chart

	Audi Q5 2.0l TFSI 155 kW	Audi Q5 3.2l FSI 199 kW	Audi Q5 2.0l TDI 125 kW	Audi Q5 3.0l TDI 176 kW
Motor oil change	flexible, 15,000–30,000 km/2 years			
Inspection	30,000 km/3, 5, 7, ... years			
Pollen filter	30,000 km/2 years			
Air filter	90000 km		60,000 km	
Spark plugs	90000 km			
fuel filter	lifetime		60,000 km	
Timing belt	Chain, lifetime		180,000 km	Chain, lifetime
Brake fluid	first change after 3 years (depending on market), thereafter every 2 years (in accordance with the regular main inspection and emission test cycles)			

Note

As a rule, the information given in the current service literature applies.

Brake fluid

As the Maintenance Chart indicates, the brake fluid change interval has been extended. The first brake fluid change is now due after three years, and thereafter every two years in conjunction with the main inspection and exhaust emission test.
In some markets, the extended oil change intervals already apply to all Audi models from model year '07 onwards, i.e. in conjunction with the market launch of the TT and Q7.
The combined main inspection/emission test interval applies only to Germany.

Oil change

The oil change now involves less work because, unlike previously, the oil can be extracted from all engine types.
It is, therefore, not necessary to remove the soundproofing. The soundproofing now only needs to be removed every 60,000 km in order to check the drive shafts, for example.

Adherence to maintenance intervals

The current maintenance intervals are based on extensive series of tests and are designed to fully utilise the lubricity of the engine oil over the specified cycle.

The defined oil tolerance limits will be exceeded if the maintenance intervals are not adhered to. Over-ageing of the engine oil - caused by residues from the combustion process in the engine - can impair lubricity. This can lead to increased wear of engine parts dependent on lubrication (cylinder liners, piston rings, camshafts, tappets, chain drives etc.).

The Mobility Guarantee does not cover engine damage caused in this way.
The Mobility Guarantee cannot be claimed if, for example, the specified maintenance intervals are exceeded.

Service Key

Since the introduction of the new key concept (Audi A5, A4 ‘08, and the Audi Q5), the ignition key supports a new function - the Service Key.

A rewritable memory chip is integrated in the key and, current vehicle information is written to this chip at certain intervals.

This information can be read out using a special reader, which is connected to the workshop computer via the USB port. The exported data can be displayed on the screen and transferred to the various service systems by means of software. The Service Key therefore helps the service consultant to comply with Service Core Processes, since it eliminates the laborious manual entry of data.

In the first phase of implementation, data can only be written to the key in the vehicle. Data is written to the key once a day at the start of the first trip. Data is also saved to the transponder at a difference of 20 km to the last recorded mileage and when a new warning message is indicated.
A speed threshold of 20 kph and a time threshold of 40 seconds, which must be exceeded, applies to all three storage conditions.

When using the Service Key, the vehicle data from the last key to be read out remains available until a new key is read out or the Service Key program is restarted.

For this reason, please always make sure that you have read out the correct key before using the Service Key functions in the service systems as otherwise you may not be using the correct vehicle data.

433_086

Stored information

The following vehicle information is stored in the Service Key:

- date and time of last update
- vehicle mileage at time of last update
- current information on the service interval
- the transponder ID

Reference

For further information on the Service Key, please refer to SSP 393 - Audi A5 – Convenience Electronics and Driver Assist Systems.

Order acceptance

The service consultant reads the vehicle data out of the Service Key at the dealership and transfers it to the ELSA electronic service information system.
The service consultant recommends necessary service work to the customer based on this data. After the consultation the customer decides what service work he/she wants done. The Maintenance Chart in ELSA provides the basis for this. The ELSA forecast indicates which service work is due next. Bringing forward service events is only recommended if the next service event is due in less than 5,000 km.

Maintenance checklist

Order number	Model	License plate	Date of initial registration
9000016857	8K20QC		2007-06
VIN	**Engine code**	**Mileage (km)**	**Service consultant**
WAUZZZ8K78A000636	CAGA	27235	
Model designation	**Gearbox code**	**Model year**	**Date**
A4 saloon TDI2.0 R4105	JJG	2008	2008-6-30

LongLife Service (with oil change)

Electrical system	OK/ done	NOK	rectified
Check the lighting via the driver information system, and also check the signal horn and license plate light.	☐	☐	☐
LongLife Service (with oil change): Reset	☐	☐	☐
Mileage dependent Audi inspection: ALL due additional work is performed. Yes/No Due at mileage 60000	☐	☐	☐
Time dependent Audi inspection: Enter actual date / due-on date.	☐	☐	☐
Dust-pollen filter/odour-emissions filter: Replace	☐	☐	☐

433_195

The Maintenance Chart is printed by the service consultant and the represents the work order for the mechanic. The item "Reset service display" will be deleted when the Advanced Maintenance Concept is incorporated into the Maintenance Chart.Up to three lines, which must be filled in by the service consultant, are now displayed for this purpose. This space is used for specifying which data must be entered into the adaptation channels of the Service Interval Display by the mechanic.

The three lines of text correspond to the texts which are displayed to the mechanic in "Guided Fault Finding" mode or in "Guided Functions" mode.

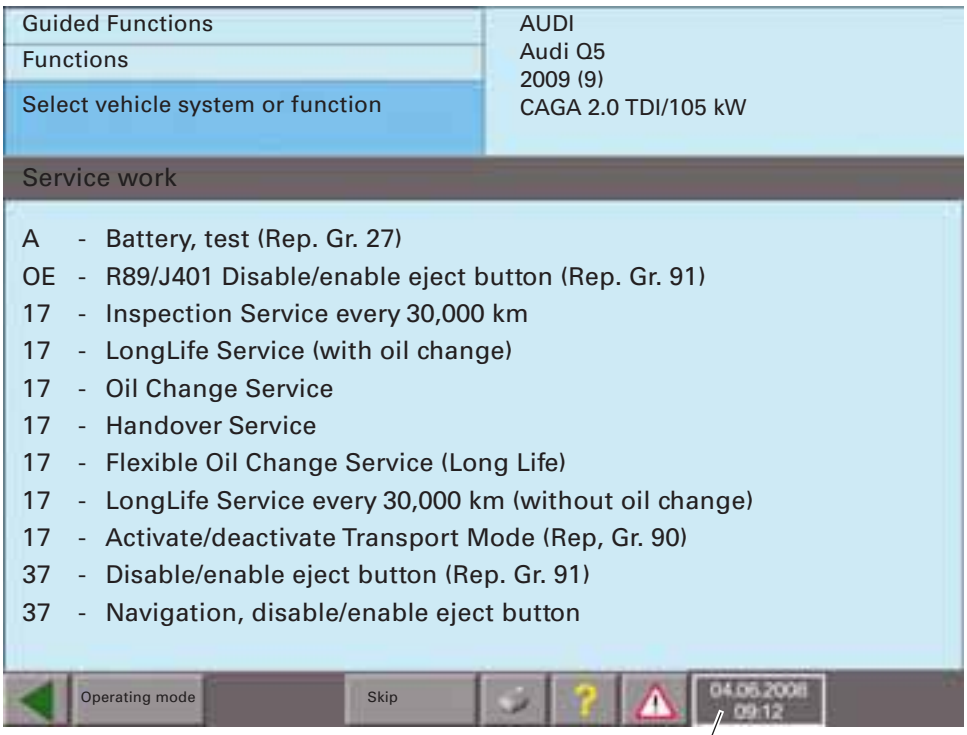
Resetting the Service Interval Display

The Service Interval Display can be reset in the "Guided Fault Finding" mode or "Guided Functions" mode of the diagnostic tester.

The mechanic is guided through the program by the diagnostic tester. The data which must be entered into the Maintenance Chart by the service consultant is essential.

The information as to which service work is to be performed, e.g. the LongLife Service (with oil change) or the inspection Service every 30,000 km etc., is displayed as a heading in the relevant Maintenance Chart on page 1, directly below the vehicle data.

A further requirement for correctly setting the Service Interval Display is that the correct date is indicated on the diagnostic tester's user interface.



433_087

Date and time display

Note

A distinction is now made between the following types of service work:

- LongLife Service (with oil change)
- Flexible Oil Change Service (LongLife)
- LongLife Service every 30,000 km (without oil change)
- Inspection every 30,000 km
- Oil Change Service

Service Plan

The Service Plan has been redesigned and adapted to meet current requirements. It basically serves only as a **record** of work done.

The **Maintenance Chart in ELSA** should be used as a guide to determine which work is needed, whether service events should be combined and how the Service Interval Display should be set.

The "Audi Inspection Service" boxes should only be filled in when the vehicle is configured for or converted to fixed maintenance intervals.

Service records

Audi LongLife Service

- ☐ Oil change
- ☐ Inspection

Audi Inspection Service

- ☐ Oil change
- ☐ Inspection

Additional work

- ☐ Brake fluid
- ☐ Spark plugs
- ☐ Dust and pollen filter
- ☐ Multitronic: Oil
- ☐ Timing belt
- ☐ Air filter
- ☐ Fuel filter
- ☐ Haldex: Oil
- ☐ S tronic: Oil and filter

Mileage Invoice number

Mobility Guarantee until:

Service display

max. km .....

Date and stamp of Audi dealership

Service records

Audi LongLife Service

- ☐ Oil change
- ☐ Inspection

Audi Inspection Service

- ☐ Oil change
- ☐ Inspection

Additional work

- ☐ Brake fluid
- ☐ Spark plugs
- ☐ Dust and pollen filter
- ☐ Multitronic: Oil
- ☐ Timing belt
- ☐ Air filter
- ☐ Fuel filter
- ☐ Haldex: Oil
- ☐ S tronic: Oil and filter

Mileage Invoice number

Mobility Guarantee until:

Service display

max. km .....

Date and stamp of Audi dealership

New workshop equipment for body repairs

VAS 6525

433_179

VAS 6535

433_180

VAS 6545

433_181

VAS 6239A

433_182

VAS 6530

433_183

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Straightening bracket sets:
Basic set: VAS 6442 (Audi A4/A5)
Extension set: VAS 6442/1 (Audi Q5)
Straightening bracket for side gantry gauge:
VAS 5007/41 (Audi Q5)

Self-Study Programmes about the Audi Q5

The following Self-Study Programmes relevant to SSP 433 Audi Q5 have been prepared:

– SSP 434 The Audi Headlight Assist System
– SSP 429 Audi Q5 Engines and Transmissions
– SSP 438 Audi - The Advanced Maintenance Concept

SSP 434 The Audi Headlight Assist System

– Mode of operation of the Headlight Assist System
– The operating logic of the Headlight Assist System
– Displays in the dash panel insert
– Components of the Headlight Assist System

Order number: A07.5S00.50.20

433_190

SSP 429 Audi Q5 Engines and Transmissions

– Engine/oil pump/EGR cooler
– Power transmission
– OB2 gearbox
– OB5 gearbox

Order number: A08.5S00.55.20

433_191

SSP 438 Audi - The Advanced Maintenance Concept

– The Advanced Maintenance Concept
– Adherence to maintenance intervals
– Resetting the Service Interval Display
– Order acceptance

Order number: A08.5S00.54.20

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