SEAT

SSP 166

SEAT IBIZA 2017

TECHNOLOGY TO ENJOY

Technical status 01.17 Due to the constant development and improvement of the product, the data used in this course is subject to possible variations.

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CONTENTS

INTRODUCTION

In 2017, SEAT is presenting the fifth generation of the Ibiza. This model features a major number of new developments with regard to the previous generation.

The illustration shows the aspects that this SSP covers in depth.

The engine/gearbox assembly combines new high-performance and lower-consumption petrol and diesel engines with manual and automatic gearboxes.

For the first time ever in the Ibiza range, air-conditioning is a 2-zone Climatronic to deliver a higher level of comfort to occupants.

In the infotainment system, the new 8-inch display is a noteworthy addition, featuring a new design with glass effect and higher resolution.

The sound systems are different depending on the infotainment system.

The new Beats Audio sound system, which delivers high power and quality sound, is presented as optional.

The running gear offers two axle configurations, the C-EPS-type power steering, three suspension configurations, and optionally the Dual Ride.

The two axle configurations are McPherson strut for the front axle and integrated arms for the rear axle.

The C-EPS-type power steering permits smooth and direct steering control and all the parts are integrated in the steering column.

The three suspension configurations are normal, sport and uneven roads. The differences between them lie in the shock absorbers, springs and anti-roll bars.

The Dual Ride System offers a choice of 2 suspension modes: Sport and Normal. The driver can choose the mode using the Drive Profile.

The Ibiza 2017 can be delivered in the Reference, Style, Xcellence and FR finishes. The difference between the last two is the target customer.

The Xcellence finish is intended for customers who want an elegant vehicle, whereas the FR finish targets customers looking for a dynamic and sporty vehicle.

The equipment on the Ibiza 2017 is very comprehensive, since options from higher categories are also offered, such as the Trailer Hitch and Entry and Start Authorisation.

The electric system features 2 different CAN architectures.

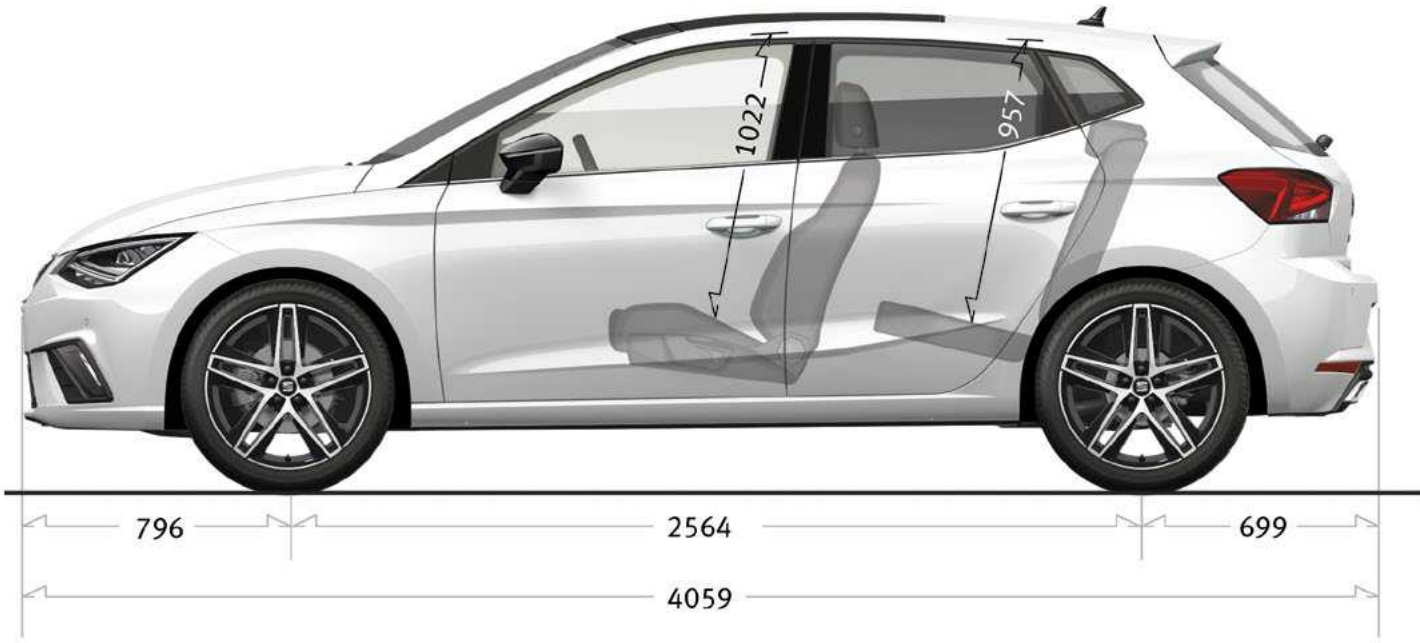
The type of architecture will depend on the number of control units connected to the CAN-Bus lines.

The number of driver assistance systems has also increased, as the Front Assist system, Adaptive Cruise Control (ACC) and Speed Limiter are all available.

The Ibiza 2017 was awarded 5 stars in the EuroNCAP tests thanks to a new airbag management system, Pedestrian Safety, and the use of hot-rolled ultra-high performance steel in the A and B posts.

D166-01

BODY



DIMENSIONS

The Ibiza 2017's body was conceived using the **MQB** Modular Transverse Matrix (*Modularer Querbaukasten* in German). This is the first SEAT A0 segment model based on this platform.

The body design was based on the premise of delivering optimal dynamic behaviour and superior habitability.

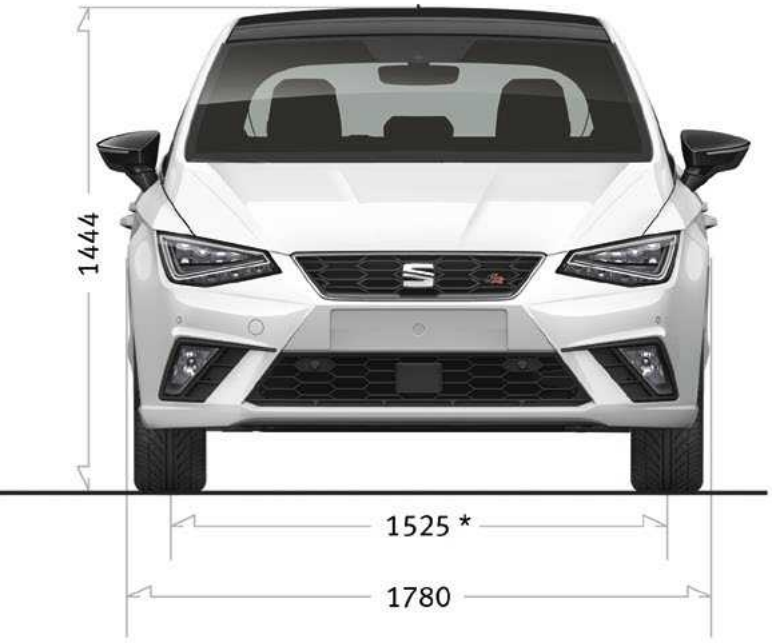
The following features were increased to optimise dynamic behaviour:

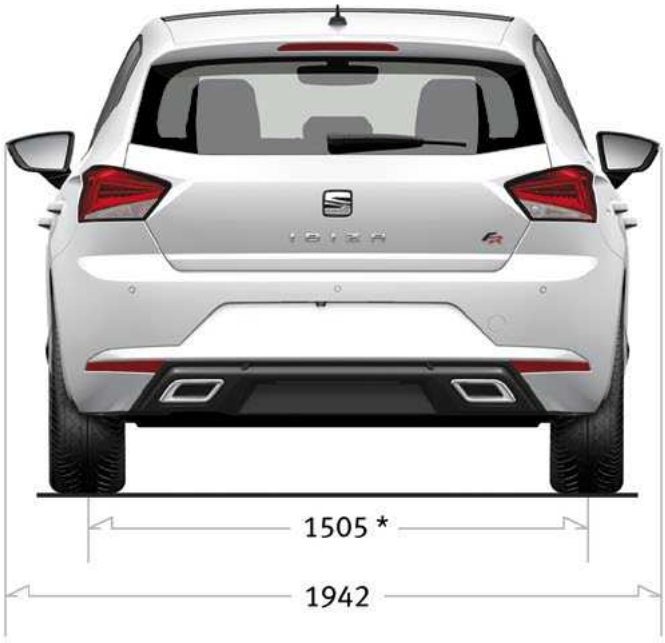
- The **wheelbase**, which measures 2,564 mm.
- The **axle track**, which measures 1,525 mm on the front axle and 1,505 mm on the rear one.

The wheelbase was increased without changing the vehicle's total length. In order to achieve this, the overhangs were reduced.

The improved habitability was achieved by:

- Increasing **body width** to 1,780 mm.
- Reducing **rear seat height** by 17 mm.





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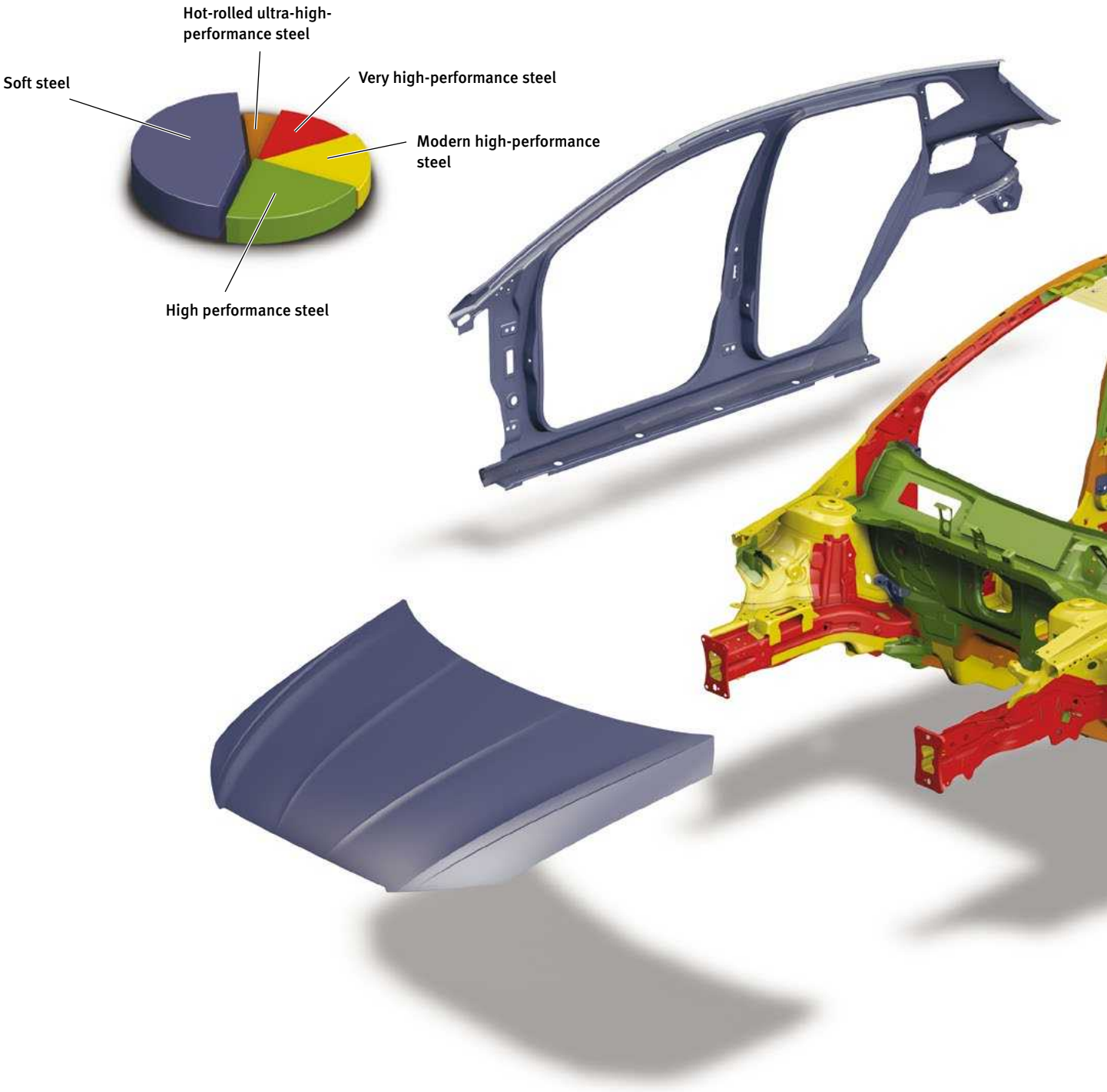
D166-02

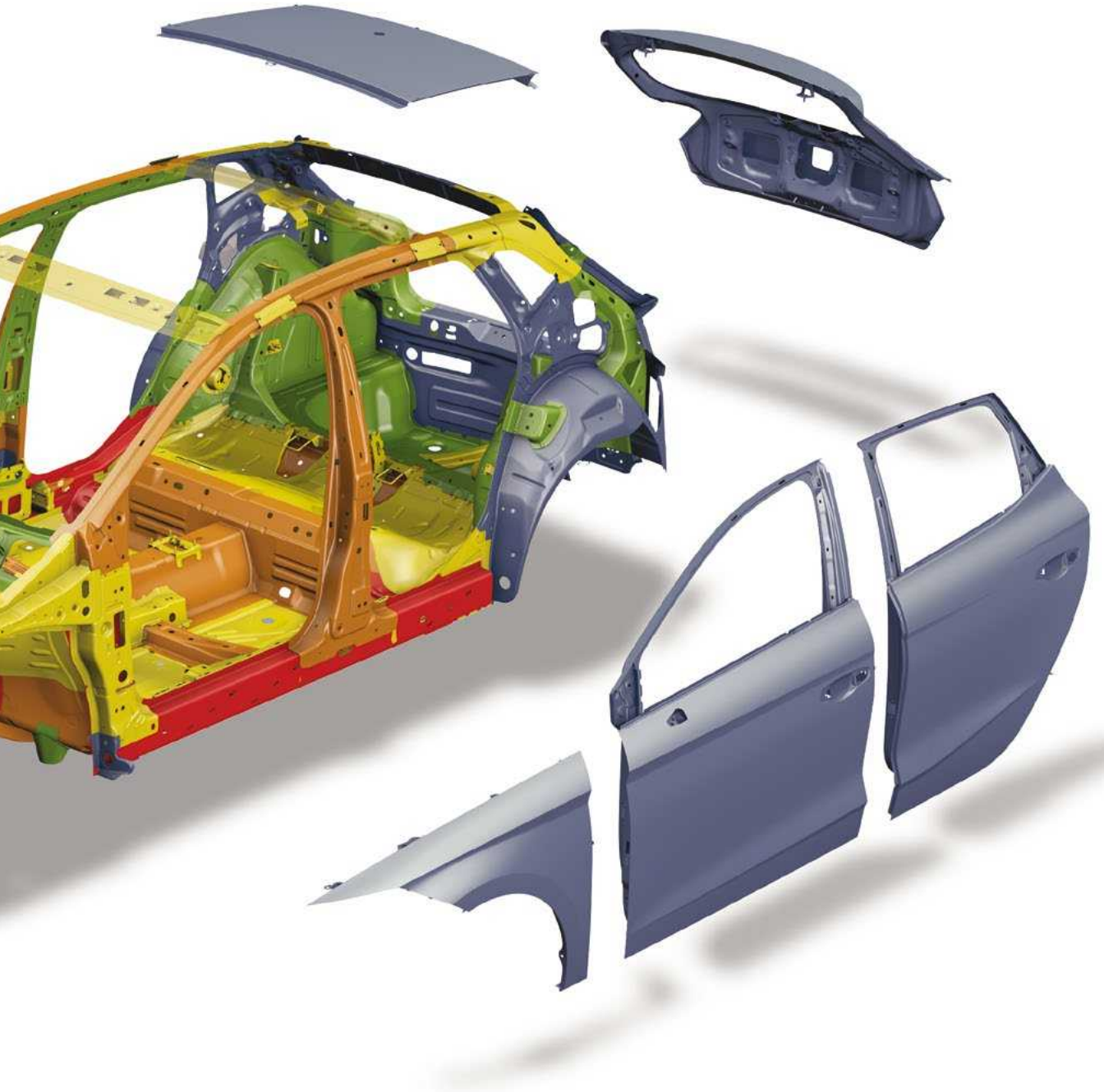
BODY



The Ibiza 2017's body comes in two variants: with normal roof or panoramic sunroof. Both variants were designed to be light and to offer a high degree of protection to the occupants.

Five (5) different types of steel are used:

- / Soft steel.
- / High-performance steel.
- / Modern high-performance steel.
- / Very high-performance steel.
- / Hot-rolled ultra-high-performance steel.

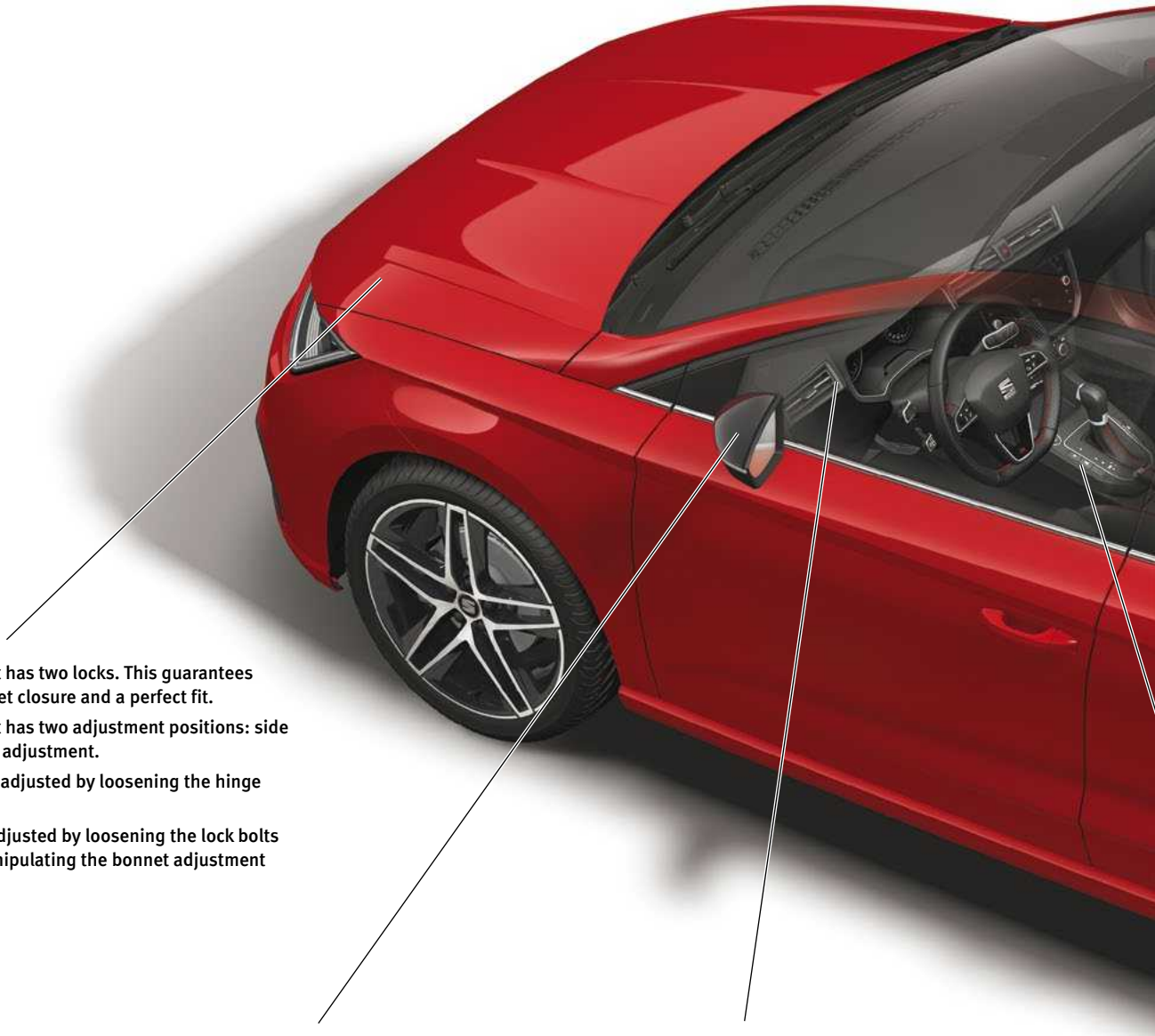


D166-03

The hot-rolled ultra-high-performance steel is assembled on the reinforcement of the A and B posts. This guarantees a rugged interior.

BODY

The illustration depicts the Ibiza 2017's most novel detachable body parts and the main points in the disassembly and assembly processes.



The bonnet has two locks. This guarantees good bonnet closure and a perfect fit.

The bonnet has two adjustment positions: side and height adjustment.

The side is adjusted by loosening the hinge bolts.

Height is adjusted by loosening the lock bolts and by manipulating the bonnet adjustment stops.

The side turn signals are integrated into the exterior mirrors. This provides greater turn signal visibility for other drivers while also imbuing the vehicle with the SEAT personality.

The exterior mirrors are secured to the front door frame with a nut. The electrical connector is located next to the speaker in the front bottom area of the doors.

The dash panel has a centre trim that comes in different colours depending on the finish.

The trim can be removed by removing a screw on the right side of the dash panel and detaching the clips from the front part.

The panoramic sunroof has the control unit independent of the electric motor. The roof is secured to the body by means of PUR adhesive.

The bumpers enhance the vehicle's lines and volume. The design is different depending on the finish.

The bumpers are assembled by securing them to the corresponding guides and are bolted at top and bottom.

The centre console has two switch modules, one on each side of the gear lever.

The switches available on the modules vary depending on the equipment. The central locking, Start/Stop and Drive Profile buttons are located on the left module. The park assist and tyre pressure control buttons are located on the right module.

The switch modules are removed by releasing some side lugs.

D166-04

AIRBAG SYSTEM

The Ibiza 2017 offers 2 airbag configurations: the basic configuration and the complete configuration.

The **basic configuration** has the following parts:

- / Driver airbag.
- / Front passenger airbag.
- / Front seatbelts with tensioner.
- / Seat belt warning for the driver.

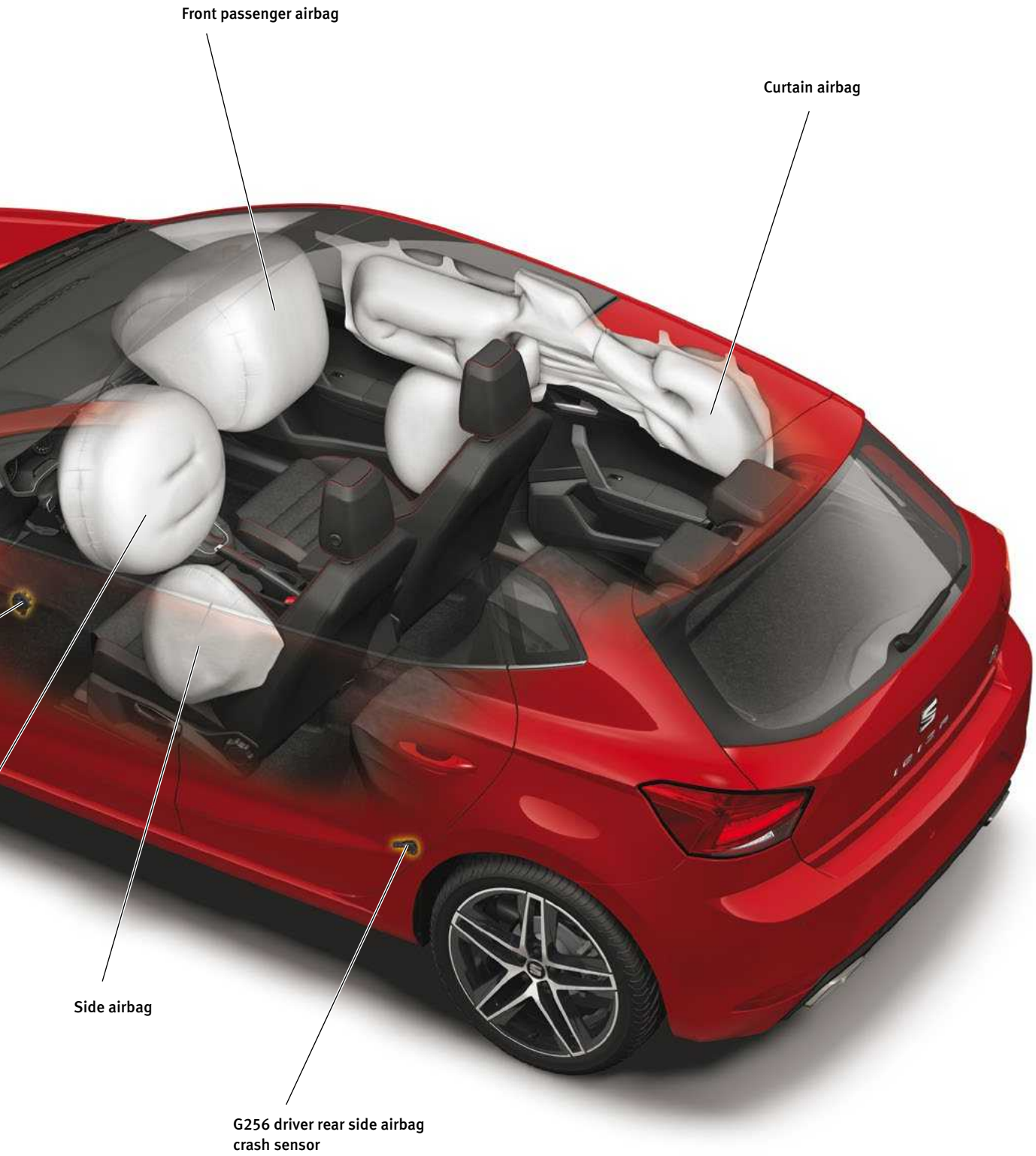
The **complete configuration** also has the following additional parts:

- / Front side airbags.
- / Curtain airbag.
- / Rear side seatbelts with tensioner.
- / Deactivation of the front passenger airbag.
- / Seat belt warning for all occupants.

The **airbags** have been configured to deliver the maximum levels of safety. They are coated with silicone to reduce friction burns in the event of ignition.

Each bag has the following volume:

- / Driver: 60 litres.
- / Front passenger: 105 litres.
- / Side airbags: 16 litres.
- / Curtain airbag: 27 litres.


Front passenger airbag
Curtain airbag
Side airbag
G256 driver rear side airbag crash sensor

D166-05

AIRBAG SYSTEM

The airbag system of the Ibiza 2017 uses the new **VW22** management system manufactured by TRW. This management system has the following characteristics:

- / Faster signal processing.
- / Use of 5 sensors to detect dangerous situations.
- / Inclusion of driver and front passenger side rear seat belt tensioner igniters.
- / Inclusion of the G128 front passenger seat occupant sensor.

The **5 sensors** the control unit uses to detect dangerous situations:

- / The G283 driver front airbag crash sensor.
- / The G179 and G180 side airbag crash sensors.
- / The G256 and G257 rear side airbag crash sensors.

The G283 driver front airbag crash sensor records longitudinal deceleration at the front. It is located at the top of the front lock carrier.

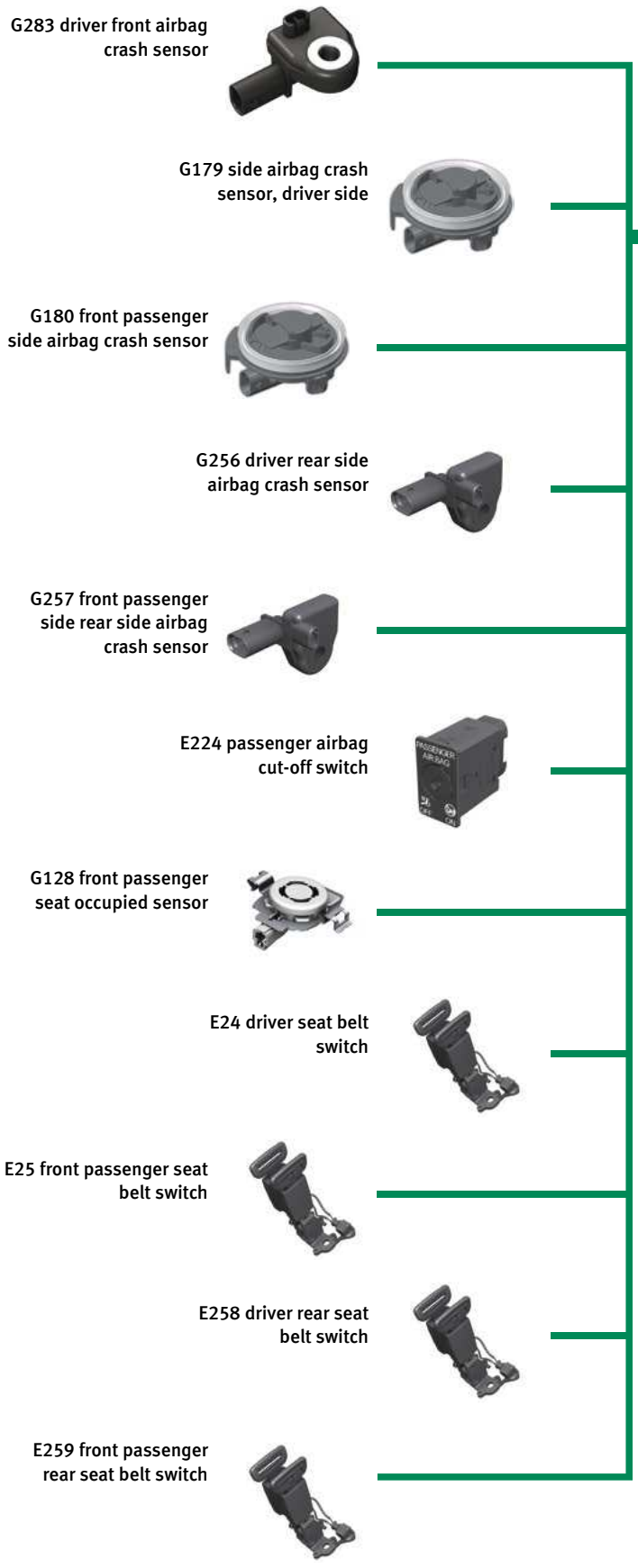
The G179 and G180 side airbag crash sensors record pressure changes inside the front doors.

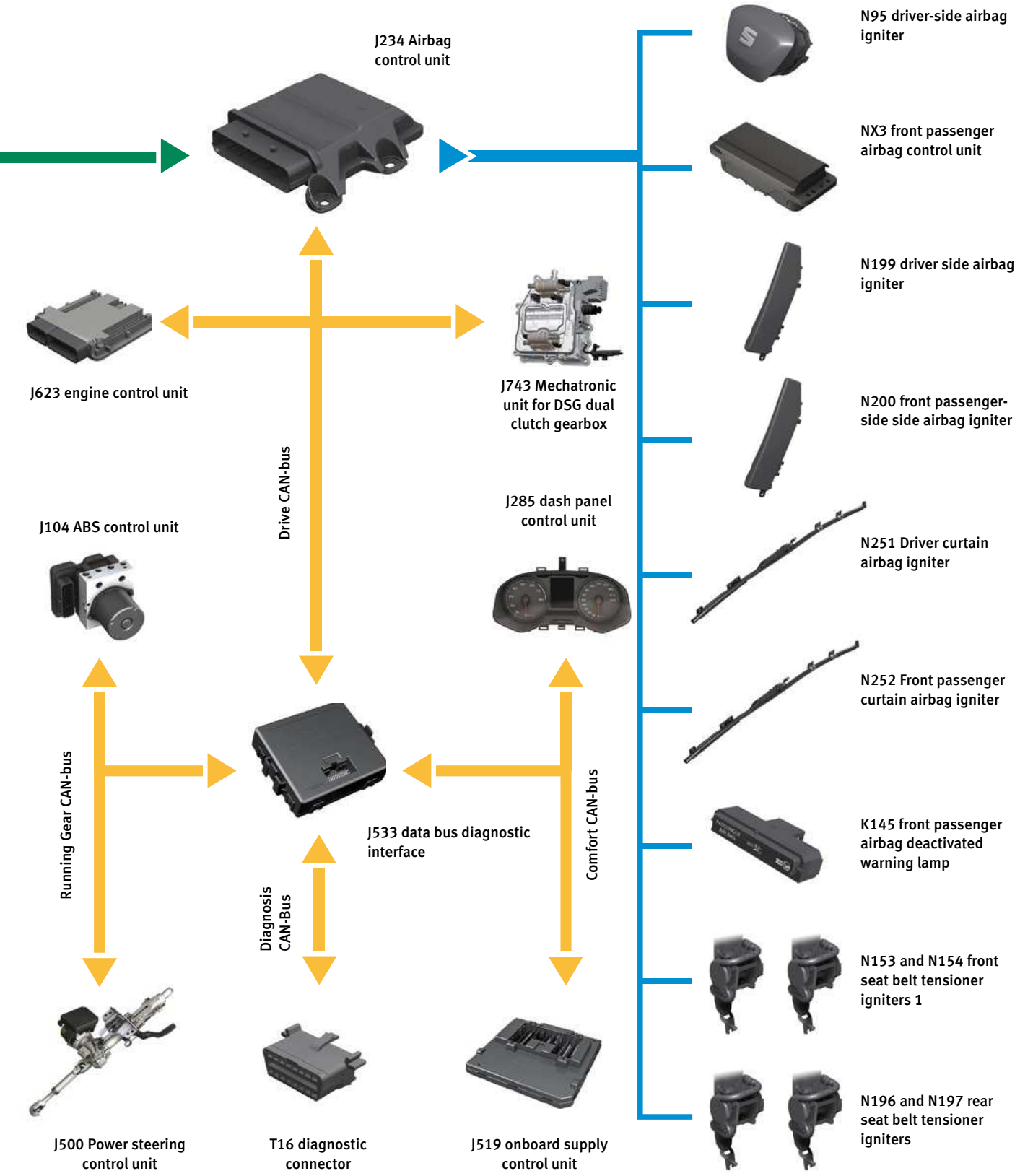
The G256 and G257 rear side airbag crash sensors record lateral acceleration. These sensors are located at the bottom of the C posts.

The **N196 and N197 rear driver and front passenger seat belt tensioner igniters** are located in the C Post and operate according to the recirculating ball principle.

The synoptic chart represented in the image corresponds to a Standard+ data bus architecture. For further information about data bus architectures refer to the electric system section of this SSP.

Note: For further information about the G128 front passenger seat occupant sensor, refer to SSP 163, SEAT Ateca.




J234 Airbag control unit
N95 driver-side airbag igniter
NX3 front passenger airbag control unit
N199 driver side airbag igniter
N200 front passenger-side side airbag igniter
N251 Driver curtain airbag igniter
N252 Front passenger curtain airbag igniter
K145 front passenger airbag deactivated warning lamp
N153 and N154 front seat belt tensioner igniters 1
N196 and N197 rear seat belt tensioner igniters
J623 engine control unit
J743 Mechatronic unit for DSG dual clutch gearbox
Drive CAN-bus
J104 ABS control unit
J285 dash panel control unit
Running Gear CAN-bus
J533 data bus diagnostic interface
Comfort CAN-bus
Diagnosis CAN-Bus
J500 Power steering control unit
T16 diagnostic connector
J519 onboard supply control unit

D166-06

ENGINE/GEARBOX ASSEMBLY

MOTORS	GEARBOXES
1.0 MPI 48 kW (CHYC)	Manual Gearbox 0DF (MQ200-5F) Manual Gearbox 0D0 (MQ200-5F)
1.0 MPI 55 kW (CHYB)	Manual Gearbox 0DF (MQ200-5F) Manual Gearbox 0D0 (MQ200-5F)
1,6 MPI 66 kW (CWVB)	Manual Gearbox 0AF (MQ200-5F))
1,6 MPI 81 kW (CWVA)	Manual Gearbox 0AF (MQ200-5F) Automatic Gearbox 09G (AQ160-6F)
1,0 TSI 70 kW (CHZB, CHZL)	Manual Gearbox 0DF (MQ200-5F)
1,0 TSI 85 kW (CHZJ)	Manual Gearbox 0AJ (MQ200-6F)
1,0 TSI 85 kW (DKJA)	Automatic Gearbox DSG 0CW (DQ200-7F)
1,5 TSI 110 kW (DADA)	Manual Gearbox 02S (MQ250-6F)
1,6 TDi 70 kW (DDYD, DGTD)	Manual Gearbox 0A4 (MQ250-5F)

The Ibiza 2017 offers petrol and diesel engines.

The petrol engines are of the **EA211** family and the new **EA211** Evo family. These families feature injection engines in the inlet manifold and direct injection engines.

The diesel engines are of the **EA288** family.

These engines are of the Common Rail direct injection type.

Depending on the engine, a manual gearbox, automatic gearbox with torque converter or double-clutch automatic gearbox (DSG) can be fitted.

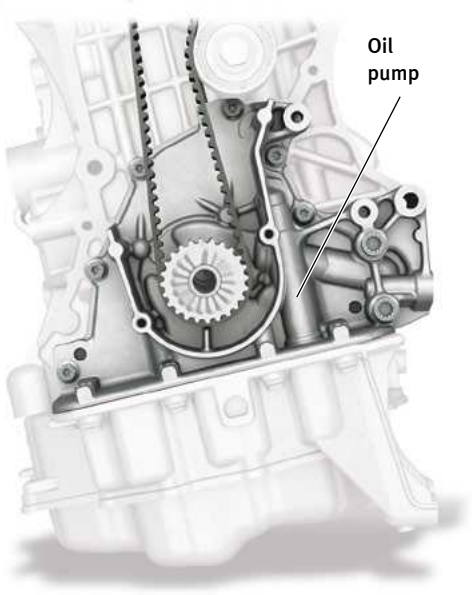
D166-07

Note: The engines and gearboxes offered may vary depending on the market and launch dates.

MPI ENGINES

The multipoint injection (MPI) petrol engines come with displacements of 1.0 and 1.6 l. Among other **characteristics**, they feature a dual camshaft control on the inlet camshaft and a duocentric-type oil pump driven directly by the crankcase.

In the 3-cylinder 1.0 l engines, the camshaft wheels feature tri-oval geometry.



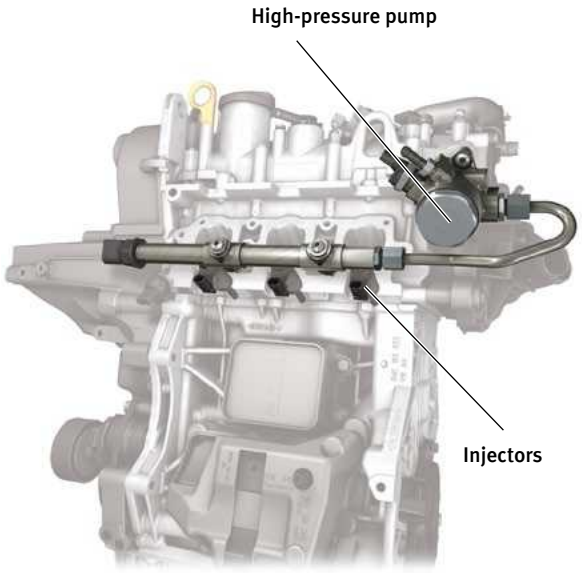
D166-08

ENGINE TECHNICAL DATA	CHYB	CHYC	CWVA	CWVB
Chassis family	EA211	EA211	EA211	EA211
Architecture	3 cylinders	3 cylinders	4 cylinders	4 cylinders
Displacement	999 cm^3	999 cm^3	1,598 cm^3	1,598 cm^3
Cylinder diameter	74.5 mm	74.5 mm	76.5 mm	76.5 mm
Cylinder stroke	76.4 mm	76.4 mm	86.9 mm	86.9 mm
Maximum power	55 kW 6,000 rpm	48 kW 5,000-6,000 rpm	81 kW 5,800 rpm	66 kW 4,250-6,000 rpm
Maximum torque	95 Nm 4,000 rpm	95 Nm 3,000-4,300 rpm	155 Nm 3,800 rpm	155 Nm 3,800-4,000 rpm
Engine management	Motronic ME 17.5.22	Motronic ME 17.5.22	Motronic ME 17.5.22	Motronic ME 17.5.22
Camshaft control	Intake	Intake	Intake	Intake
Emissions standard	EU4 without EOBD/EU6	EU6	EU3/EU5 plus	EU3

TSI ENGINES

The turbocharged stratified injection (TSI) petrol engines are available with displacements of 1.0 and 1.5 l and they share the following **common characteristics**:

- / Direct injection.
- / Exhaust gas turbocharger with electric discharge valve.
- / Non-staggered vane pump with electronic control.
- / G10 Oil pressure sensor with SENT protocol.
- / Air-water intercooler.
- / The **1.5 l TSI** engine with letter code DADA belongs to the new EA211 Evo family. Its main characteristics are explained on the next page.



D166-09

ENGINE TECHNICAL DATA	CHZB	CHZL	CHZJ	DKJA	DADA
Chassis family	EA211	EA211	EA211	EA211	EA211 Evo
Architecture	3 cylinders	3 cylinders	3 cylinders	3 cylinders	4 cylinders
Displacement	999 cm^3	999 cm^3	999 cm^3	999 cm^3	1,495 cm^3
Cylinder diameter	74.5 mm	74.5 mm	74.5 mm	74.5 mm	74.5 mm
Cylinder stroke	76.4 mm	76.4 mm	76.4 mm	76.4 mm	85.7 mm
Maximum power	70 kW 5,000-5,500 rpm	70 kW 5,000-6,500 rpm	85 kW 5,000-5,500 rpm	85 kW 5,000-5,500 rpm	110 kW 5,000 rpm
Maximum torque	160 Nm 1,500-3,500 rpm	175 Nm 1,500-3,500 rpm	200 Nm 2,000-3,500 rpm	200 Nm 2,000-3,500 rpm	250 Nm 1,500-3,500 rpm
Engine management	MED 17.5.21	MED 17.5.21	MED 17.5.21	MED 17.5.21	MG1CS011
Camshaft control	Intake and exhaust	Intake and exhaust	Intake and exhaust	Intake and exhaust	Intake and exhaust
Emissions standard	EU6 plus	EU6 plus	EU6 plus	EU6 ZD	EU6 ZD

Note: For further information about the EA211 family of engines, refer to SSP 161, Engines of the EA211 and EA888 families.

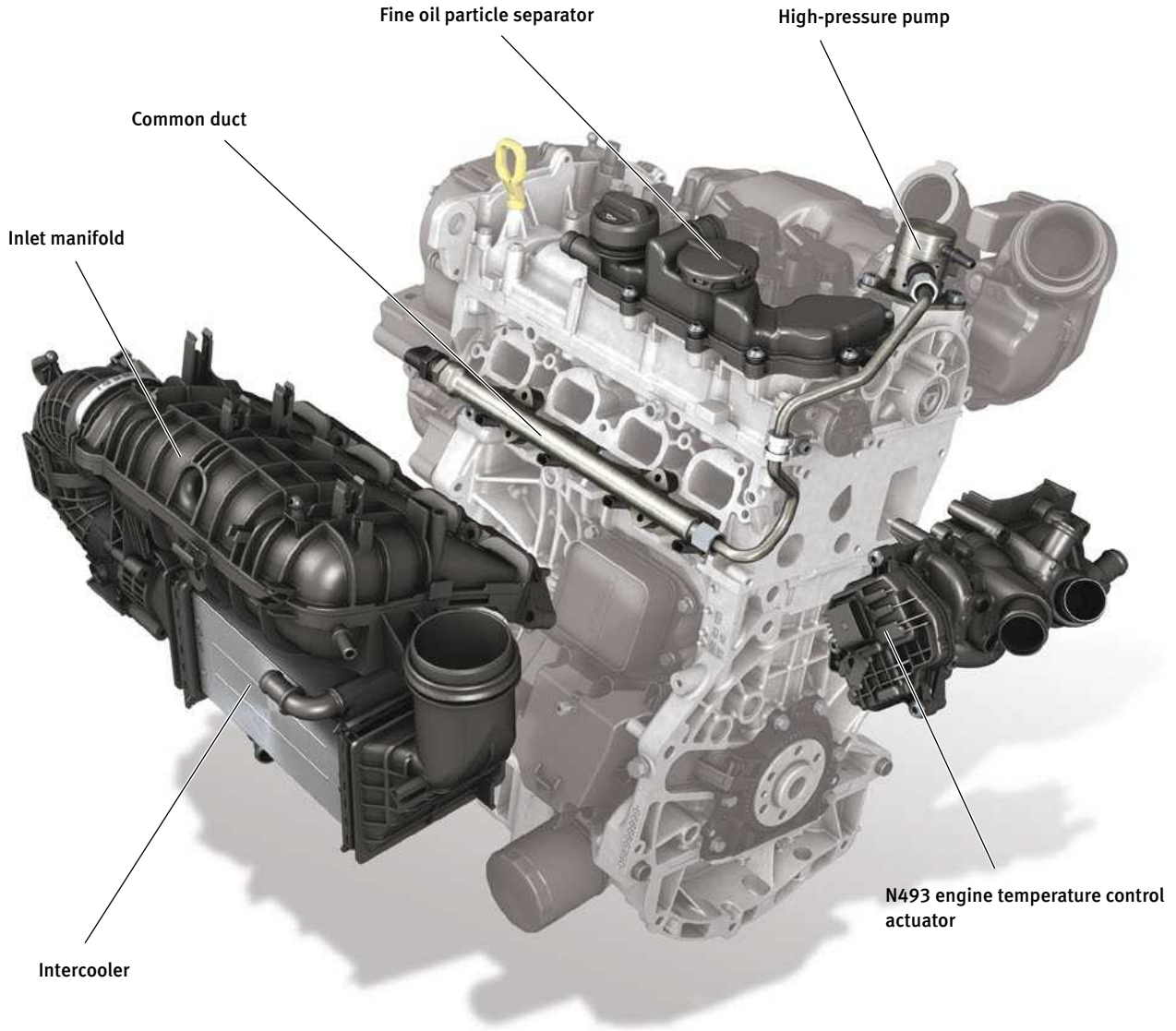
1.5 L TSI ENGINE (DADA)

The 1.5 l TSI engine with letter code DADA belongs to the new **EA211 Evo** family. Its main new features are:

- **Injection system** with a maximum pressure of 350 bar.
- **Newly-designed fine oil separator** located on the inlet side of the cylinder head cover.
- **Intercooler** located before the inlet manifold.
- **Heat management** with N493 engine temperature control actuator.

The coolant flows longitudinally through the intercooler to optimise heat exchange.

The N493 engine temperature control actuator consists of gates that regulate the passage of the coolant to the engine components. These gates are driven and controlled by an electric motor.

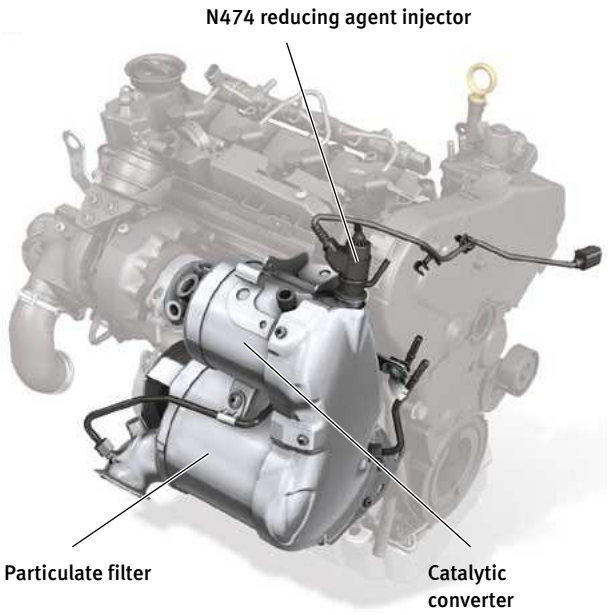


D166-10

TDI ENGINES

All the diesel engines are offered in the 1.6 l displacement and have the following **common characteristics**:

- / Common Rail injection system with electromagnetic injectors.
- / Pressure sensor in cylinder 3.
- / Second-generation selective catalytic reduction (SCR) system.
- / Reducing agent (AdBlue) tank located at the rear right part of the vehicle with filler neck next to the fuel filler neck.



D166-11

ENGINE TECHNICAL DATA	DDYD	DGTD
Chassis family	EA288	EA288
Architecture	4 cylinders	4 cylinders
Displacement	1,598 cm^3	1,598 cm^3
Cylinder diameter	79.5 mm	79.5 mm
Cylinder stroke	80.5 mm	80.5 mm
Maximum power	70 kW 3,000-4,600 rpm	70 kW 2,750-4,600 rpm
Maximum torque	230 Nm 1,400-2,750 rpm	250 Nm 1,500-2,600 rpm
Engine management	DCM 6.2	DCM 6.2
Camshaft control	No	No
Particulate filter	Yes	Yes
SCR system	Yes	Yes
Emissions standard	EU6 ZD	EU6 ZD

Note: For further information about the EA288 family of engines, refer to SSP 162, Engines of the EA288 family.

FRONT AXLE

The front axle is a McPherson axle and consists of the following components:

- Subframe.
- Pendulum support.
- Wheel bearing housing.
- Trapezoidal link.
- Tie rod.
- Anti-roll bar.

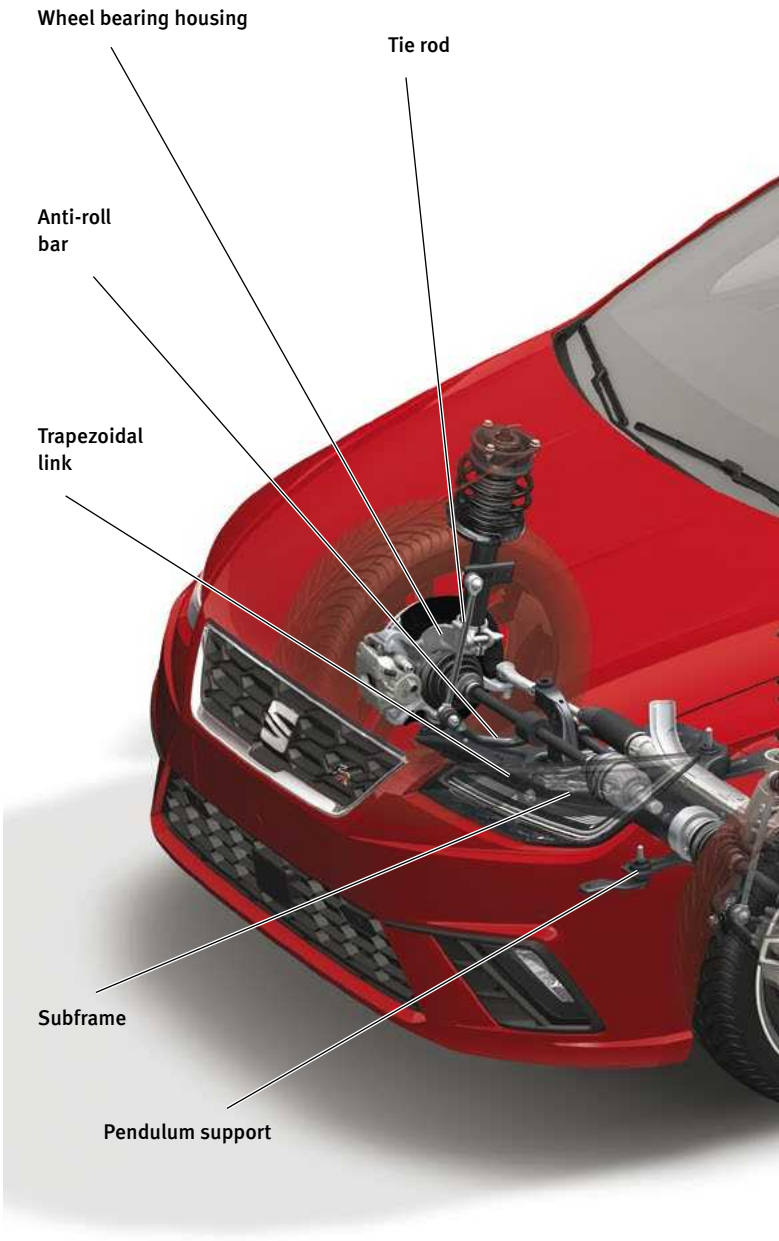
The **wheel bearing housing** carries the following components:

- Suspension strut.
- Half-shaft.
- Ball joint.
- Steering bar.
- Bushing with bearing.
- Brake calliper.

The front axle has two types of setting: convergence and camber compensation.

The **convergence** setting is performed with the nuts on the steering bars.

Camber compensation is performed with the subframe's fastening bolts.



REAR AXLE

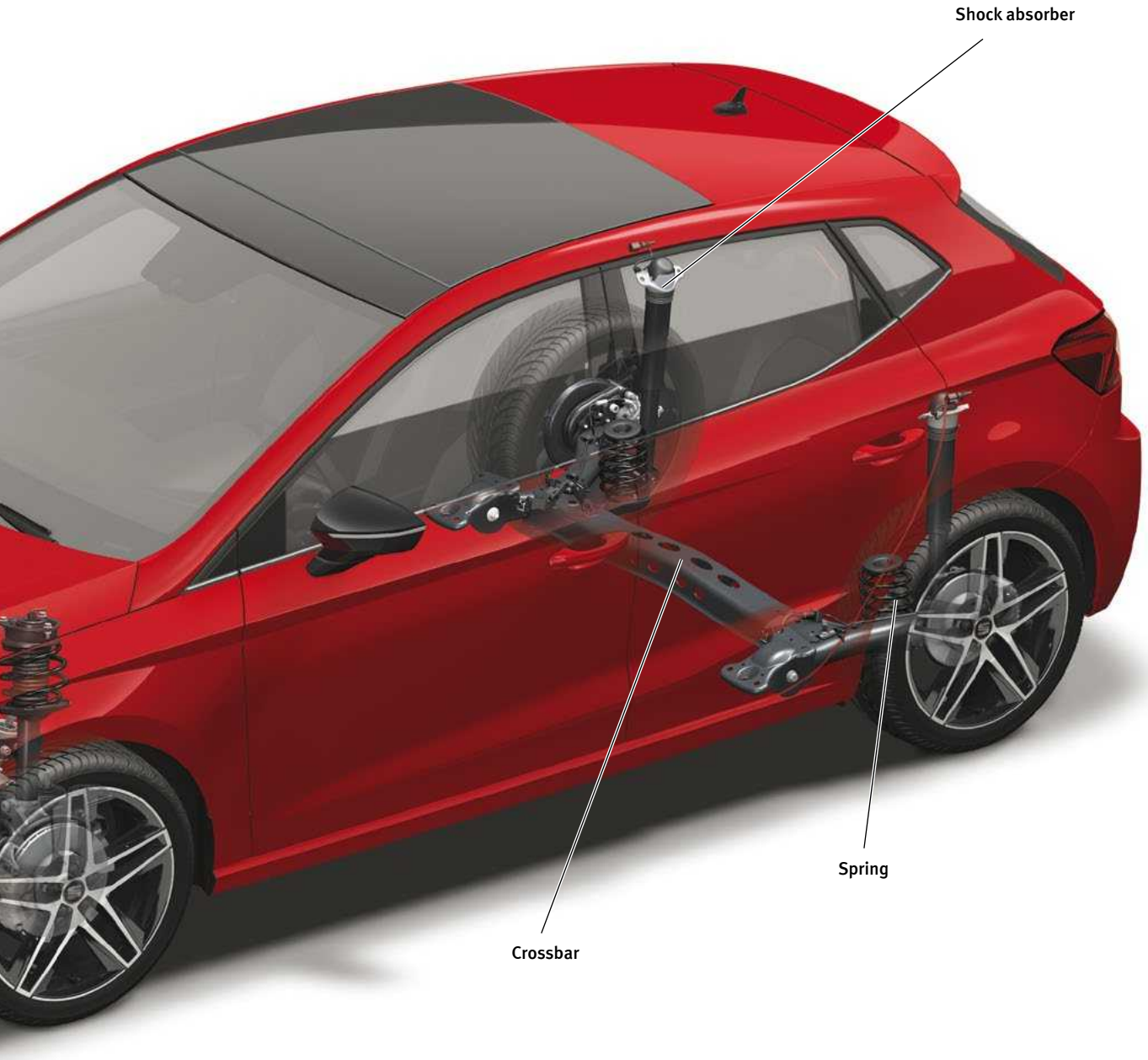
The rear axle is an **integrated arm** axle, the springs and absorbers are assembled and there is no adjustment.

Depending on the engine, drum brakes or brake calipers are fitted, as shown in the table.

ENGINE POWER
Less than 60 kW
Between 60 kW and 70 kW
More than 70 kW

BRAKE SERVO

The brake servo is 10 inches for left-hand drive vehicles. For right-hand drive vehicles, it is of the tandem type and 7 and 8 inches.



FRONT BRAKES		REAR BRAKES	
TYPE	MEASUREMENT	TYPE	MEASUREMENT
Calliper 14” FSIII54	256×22	Drum	203×38
Calliper 14” FSIII54	256×22	Drum	228×42
Calliper 15” FSIII57	276×24	Calliper 14” CI38	230×9

D166-12

BRAKE MANAGEMENT

The Ibiza 2017's braking system uses the new **Bosch 9.2** management system. This management system has the following characteristics:

- / It offers the functions related to the ACC J428 control unit.
- / The J104 ABS control unit has 4 variants.

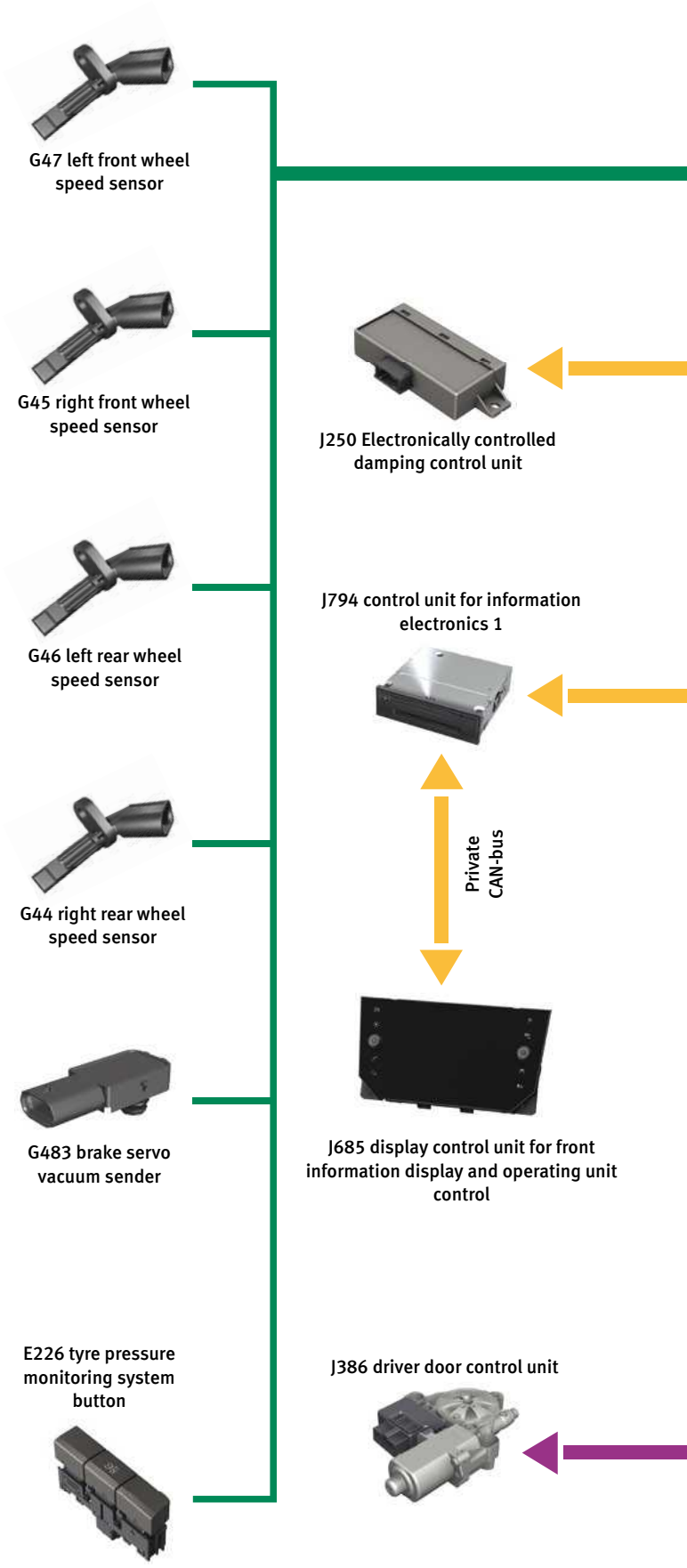
The **functions related to the ACC J428 control unit** are:

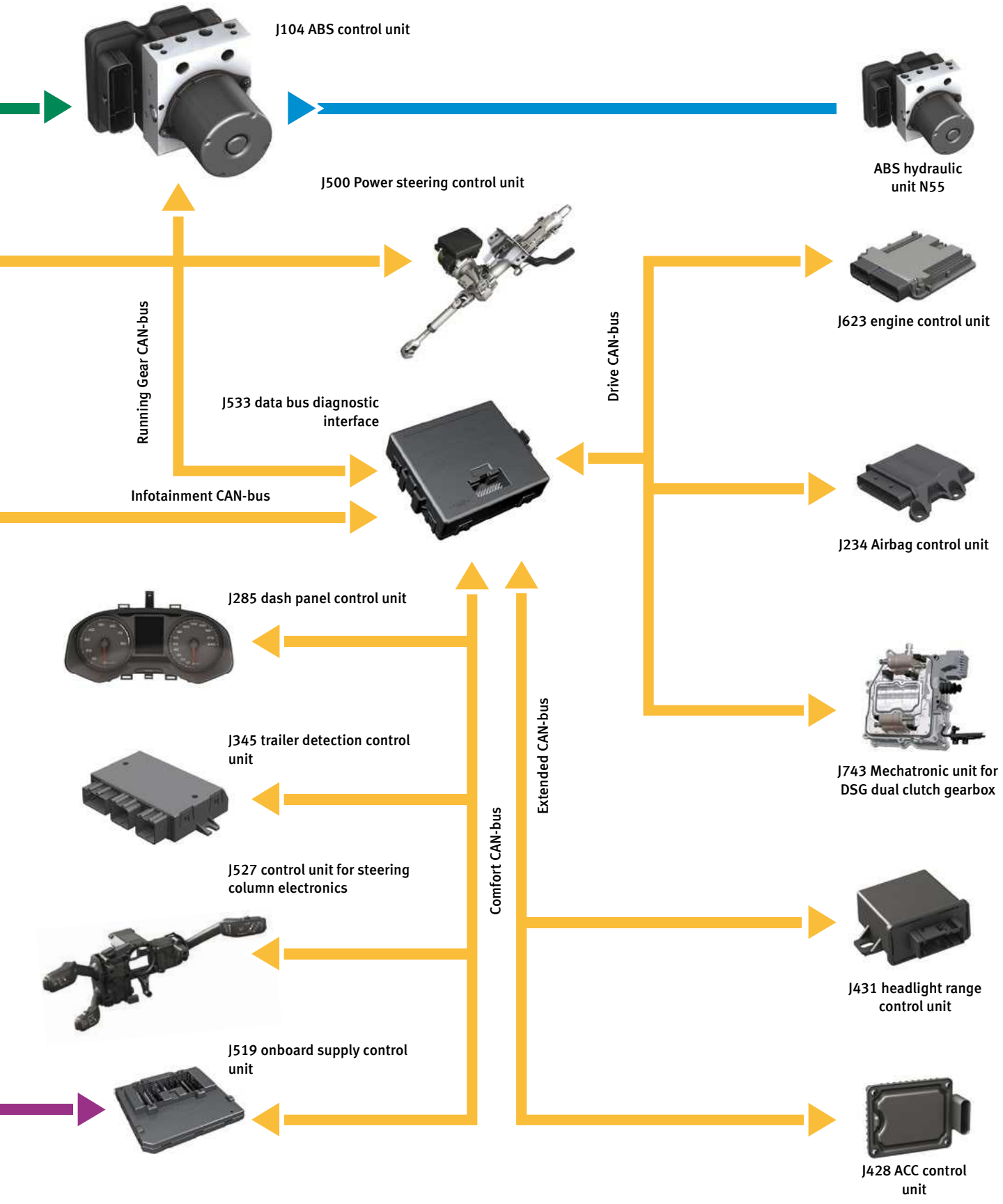
- / Adaptive cruise control (ACC).
- / Front Assist.

The **4 variants** of the ABS J104 control unit depend on the functions taken on. These variants are:

- / ABS only.
- / With ESC.
- / With ESC and Pedestrian Safety.
- / With ESC, Pedestrian Safety and ACC.

The synoptic chart represented in the image corresponds to a Standard+ data bus architecture. For further information about the data bus architectures, refer to the electric system section of this SSP.




J104 ABS control unit
ABS hydraulic unit N55
J500 Power steering control unit
Running Gear CAN-bus
Drive CAN-bus
J623 engine control unit
J533 data bus diagnostic interface
Infotainment CAN-bus
J234 Airbag control unit
J285 dash panel control unit
J743 Mechatronic unit for DSG dual clutch gearbox
J345 trailer detection control unit
Extended CAN-bus
Comfort CAN-bus
J527 control unit for steering column electronics
J431 headlight range control unit
J519 onboard supply control unit
J428 ACC control unit

D166-13

D166-14

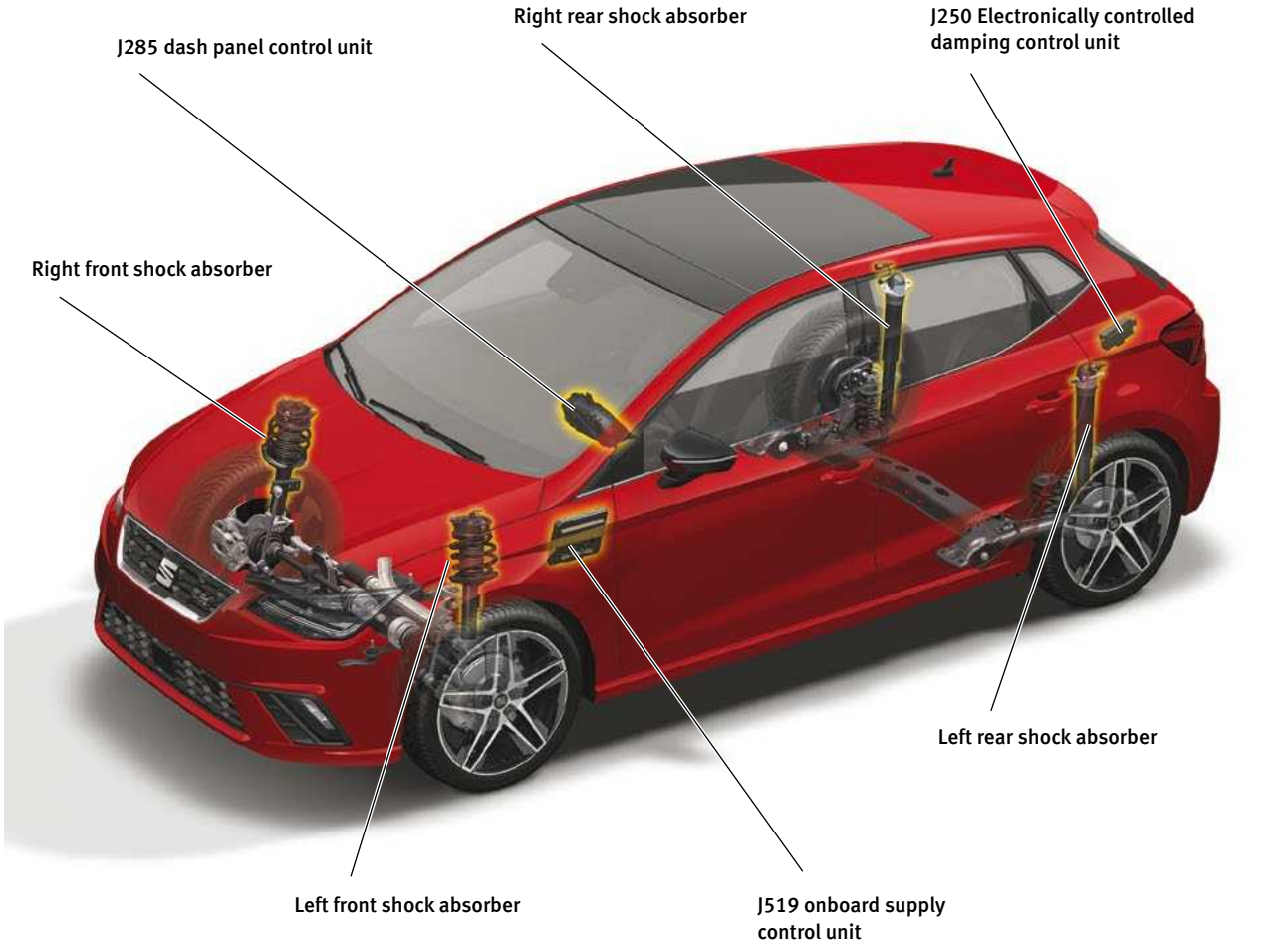
POWER STEERING

The Ibiza 2017 features CEPS (*Column Electronic Power Steering*), which means that all the components are assembled on the steering column.

In this type of power steering, an electric motor transmits the pressure to the steering column with a worm screw and a crown.

With the Drive Profile, the driver can choose from two types of programmed assistance.

Note: For further information about the components and the operation of the C-EPS power steering, refer to SSP 147, Mii Running Gear.



D166-15

DUAL RIDE

The Dual Ride System offers a choice of **2 suspension modes**: Sport and Normal.

The Sport mode provides a firm suspension that is ideal for sporty driving, whereas the Normal mode provides a smoother and more comfortable suspension.

These modes are made possible by the Dual Ride shock absorbers, which have 2 internal oil flows for the expansion and compression stages.

The **components** involved in the Dual Ride are:

- The front and rear shock absorbers.
- The J250 electronically controlled damping control unit.
- The E735 Driver profile selection button.
- The J519 onboard supply control unit.
- The J285 dash panel control unit.

The Dual Ride uses information from other systems and therefore does not have its own sensors.

OPERATION

Suspension mode can be changed with the **Drive Profile**, and can be done in two ways:

- / With the E735 Driver profile selection button located on the centre console.
- / With the infotainment system display.

Besides the suspension mode, the Drive Profile can be used to modify parameters related to engine, power steering, air conditioning, adaptive cruise control (ACC) and automatic gearbox operation.

E735 driver profile selection button

D166-16

CHARACTERISTIC CURVES

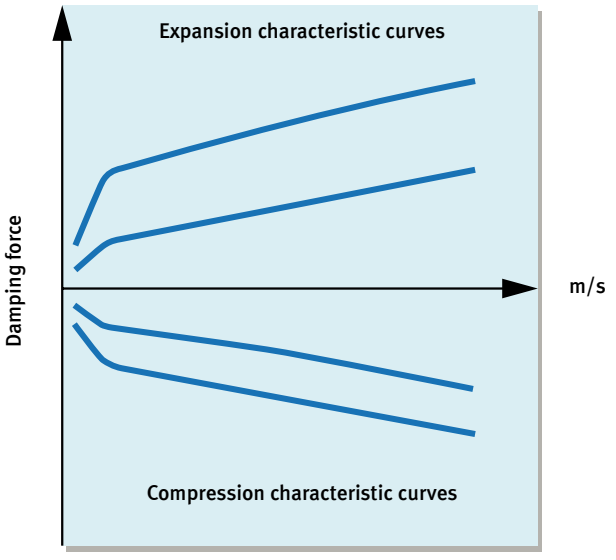
A shock absorber's characteristic curve determines its behaviour. This characteristic curve is determined by several factors, such as the nature of the vehicle or weight distribution.

A conventional shock absorber has a single characteristic curve.

Unlike a conventional shock absorber, the Dual Ride shock absorbers offer **2 characteristic curves** and therefore 2 different behaviours.

In the Sport suspension mode, the characteristic curve gives a rigid shock absorption.

In the Normal suspension mode, the characteristic curve gives a smoother shock absorption.



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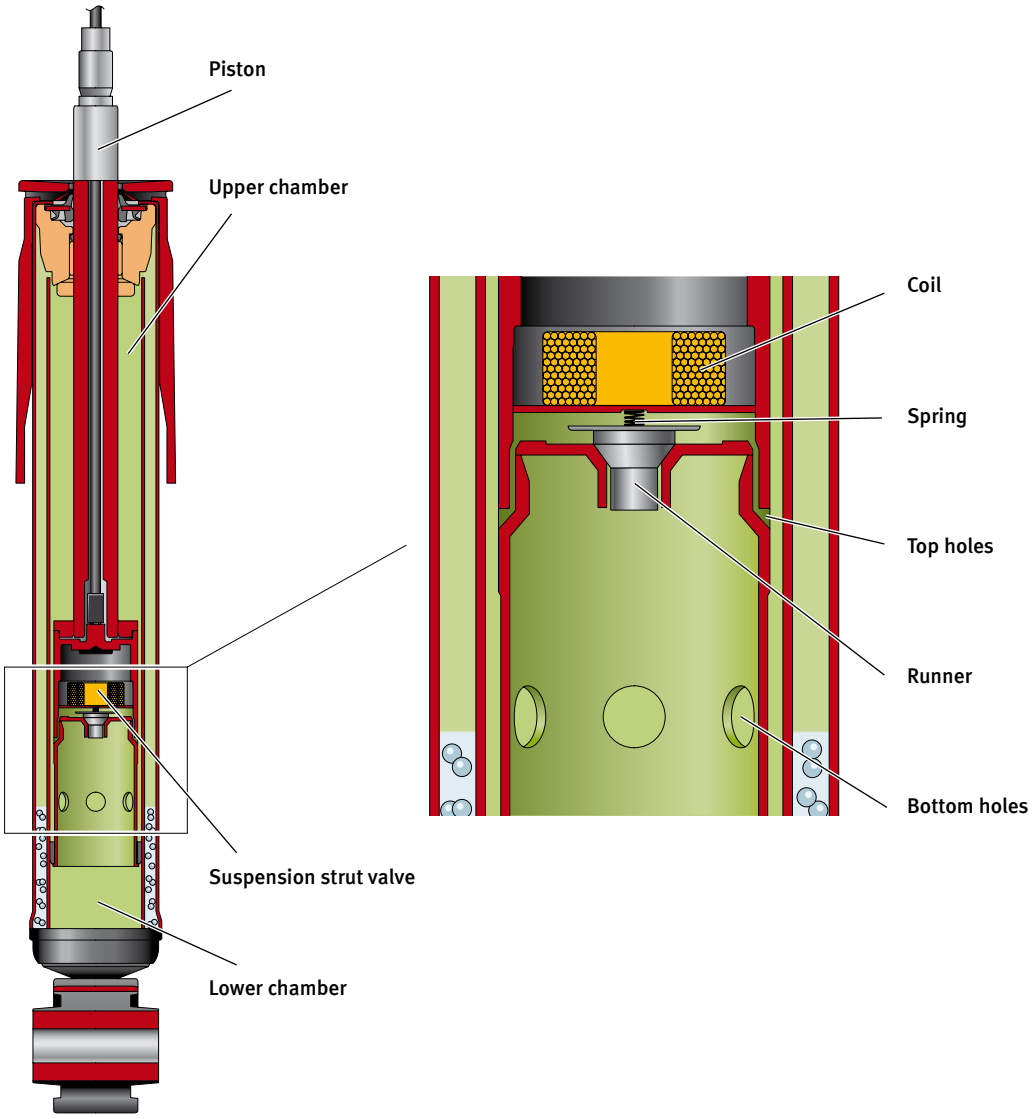


D166-18

STRUCTURE OF THE DUAL RIDE SHOCK ABSORBERS

The Dual Ride shock absorbers have integrated suspension strut valves.

The **main components** of the Dual Ride shock absorbers are:

- / Piston.
- / Suspension strut valve.
- / Upper chamber.
- / Lower chamber.
- / Electric connector.

The **suspension strut valves** are located at the bottom of the shock absorber piston.

These valves consist of a coil, a spring, a runner, top holes and bottom holes.

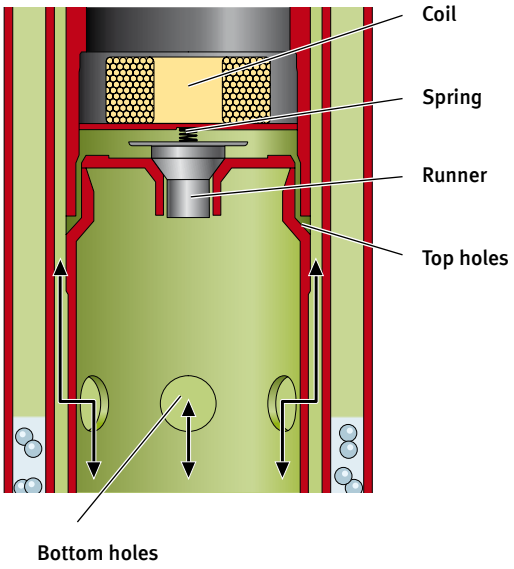
HOW THE DUAL RIDE SHOCK ABSORBERS OPERATE

The position of the suspension strut valves runner determines whether oil passes through the top holes or through the bottom holes. Changing the path of the oil changes the shock absorber's behaviour,

SPORT MODE

In Sport mode, the suspension strut valves are **not activated**.

In this mode, the runner closes the passage of oil through the top chamber through the action of the spring. Thus, the oil can only flow between the top and bottom chambers of the shock absorber through the bottom holes.

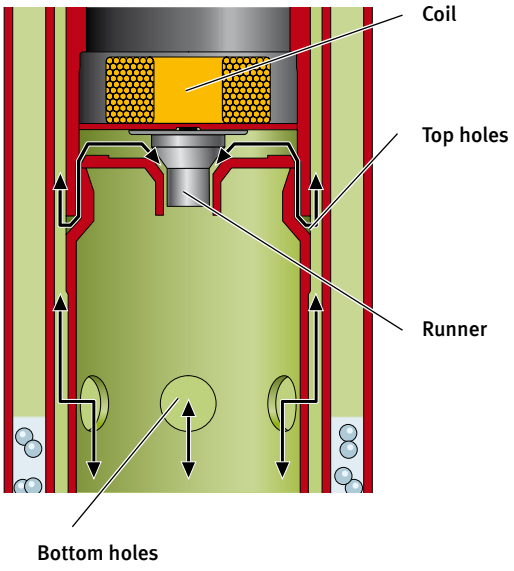


D166-19

NORMAL MODE

In Normal mode, the suspension strut valve coils are **fed** with a current of 0.5 A.

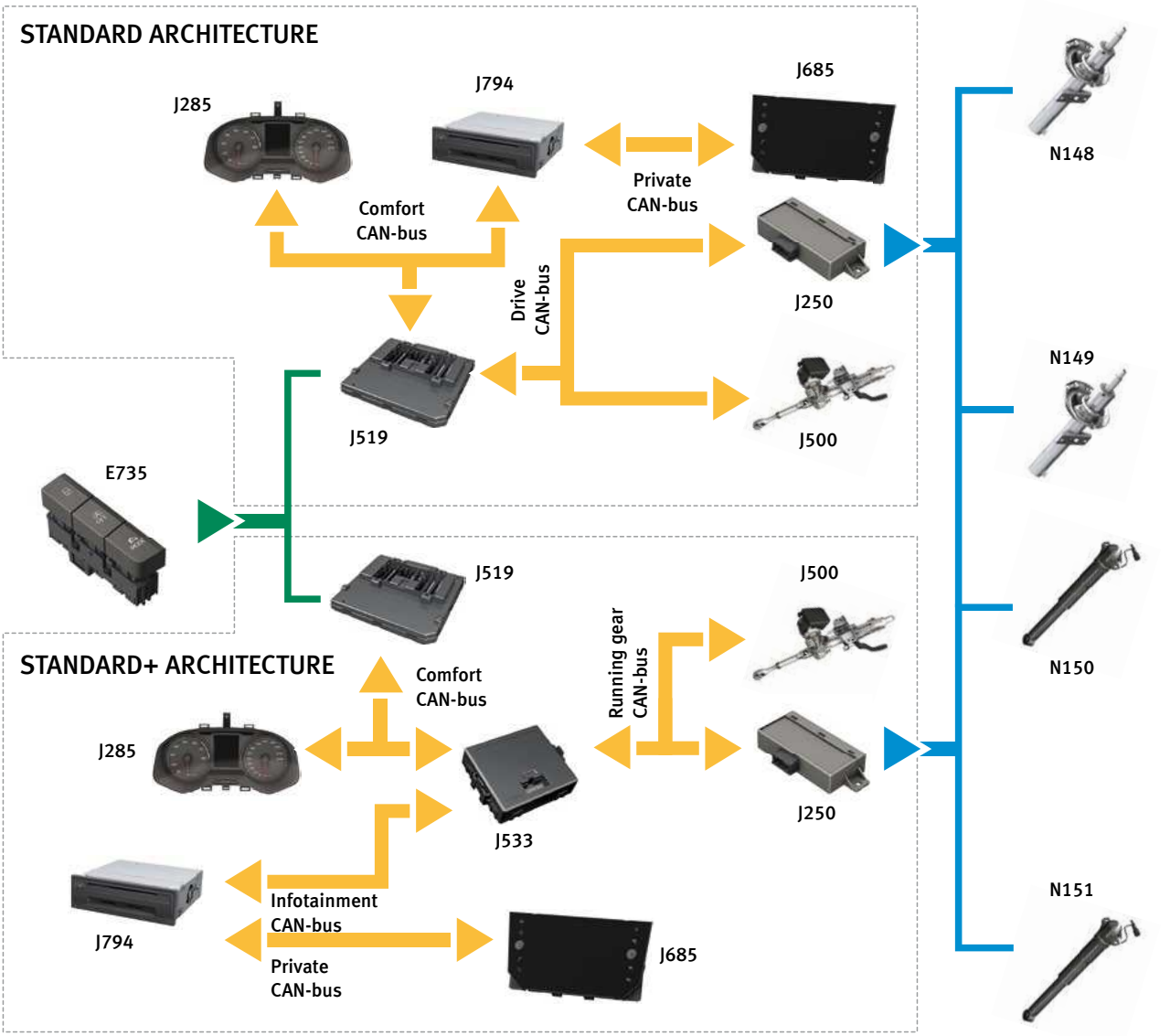
This overcomes the action of the spring and the runner moves in its seating. In this way, the oil flows through the top and bottom chambers of the shock absorber through the top and bottom holes.



D166-20

REPLACEMENT FUNCTION

If any of the switching valves malfunctions, the J250 electronically controlled damping control unit interrupts the supply to all the valves. In this way, the Dual Ride always operates in Sport mode.



D166-21

MANAGEMENT OF THE DUAL RIDE

The J250 electronically controlled damping control unit is responsible for managing the suspension strut valves.

The signal of the mode selected is transmitted from the E735 Driver profile selection button or from the J794 control unit 1 for information electronics.

The signal from the E735 Driver profile selection button is transmitted from the J519 onboard supply control unit through the Comfort CAN-Bus.

The signal from the J794 control unit 1 for information electronics is transmitted differently depending on the data bus architecture. In the Standard data bus architecture it is transmitted through the Comfort CAN-Bus. In the Standard+ data bus architecture it is transmitted through the Infotainment CAN-Bus.

In the Standard architecture, the signal of the mode selected reaches the J250 Electronically controlled damping control unit through the Drive CAN-Bus, and in the Standard+ architecture it reaches it through the Running Gear CAN-Bus.

For further information about the data bus architectures, refer to the electric system section of this SSP.

DRIVING ASSISTANCE SYSTEMS

The Ibiza 2017 has extended the range of driving assistance systems with regard to the previous generation. Depending on the equipment, the following assistants are offered:

- / Drive Profile
- / Parking Aid.
- / Front Assist.
- / Adaptive Cruise Control (ACC)
- / Speed limiter
- / Rear view camera (RVC).

The **Drive Profile** allows the driver to select different driving modes to adapt vehicle behaviour to their preferences.

With the Drive Profile, parameters related to engine, power steering, air conditioning, adaptive cruise control (ACC), automatic gearbox and Dual Ride can be modified.

The **Front Assist** system includes the City Emergency Braking and Pedestrian Safety functions.

The **adaptive cruise control (ACC)** includes the function to avoid overtaking on the right. This function is activated jointly with the ACC.

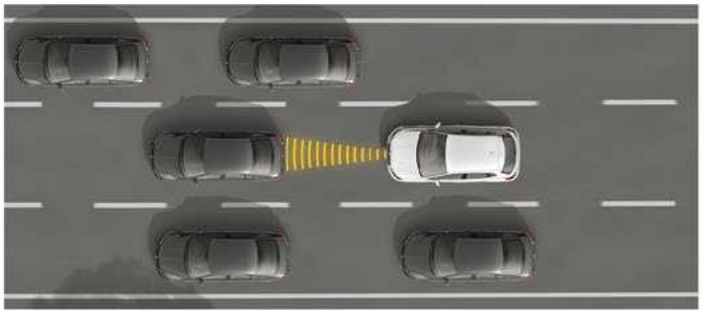
When the ACC is active, if a vehicle in the left lane that is travelling slower is detected, the vehicle decelerates and the programmed distance is maintained.

To return to the programmed speed, you can accelerate manually or change lane until the slower vehicle is on the right.

In left-hand drive countries the right lane is monitored.

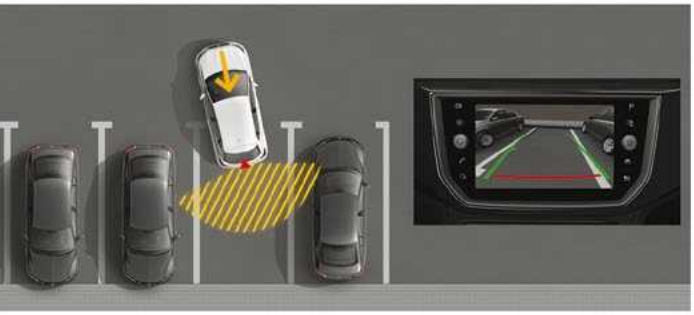
Note: For further information about the driving assistants, refer to SSP 165, SEAT Ateca driver assistance systems.

Adaptive Cruise Control (ACC)

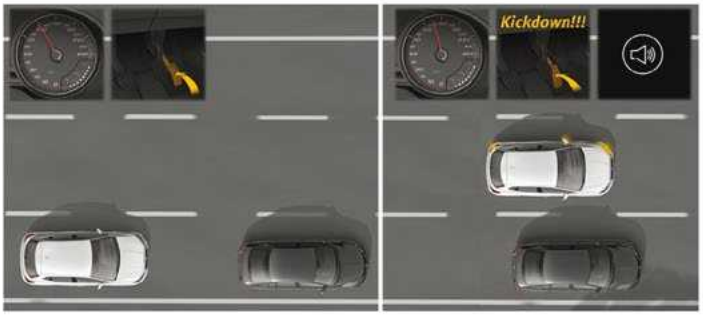


Drive Profile

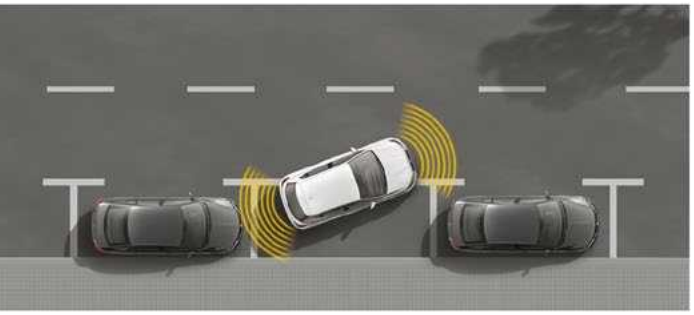
Rear view camera (RVC)



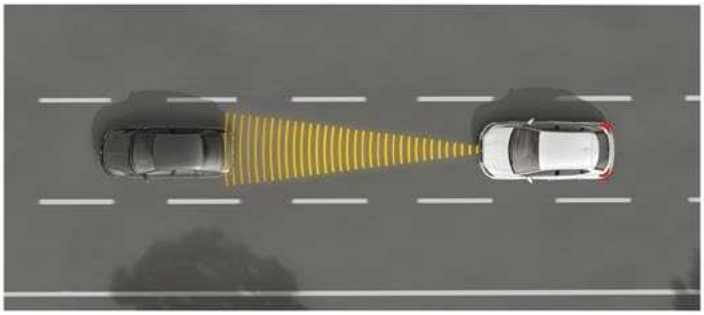
Speed limiter



Parking aid



Front Assist system



D166-22

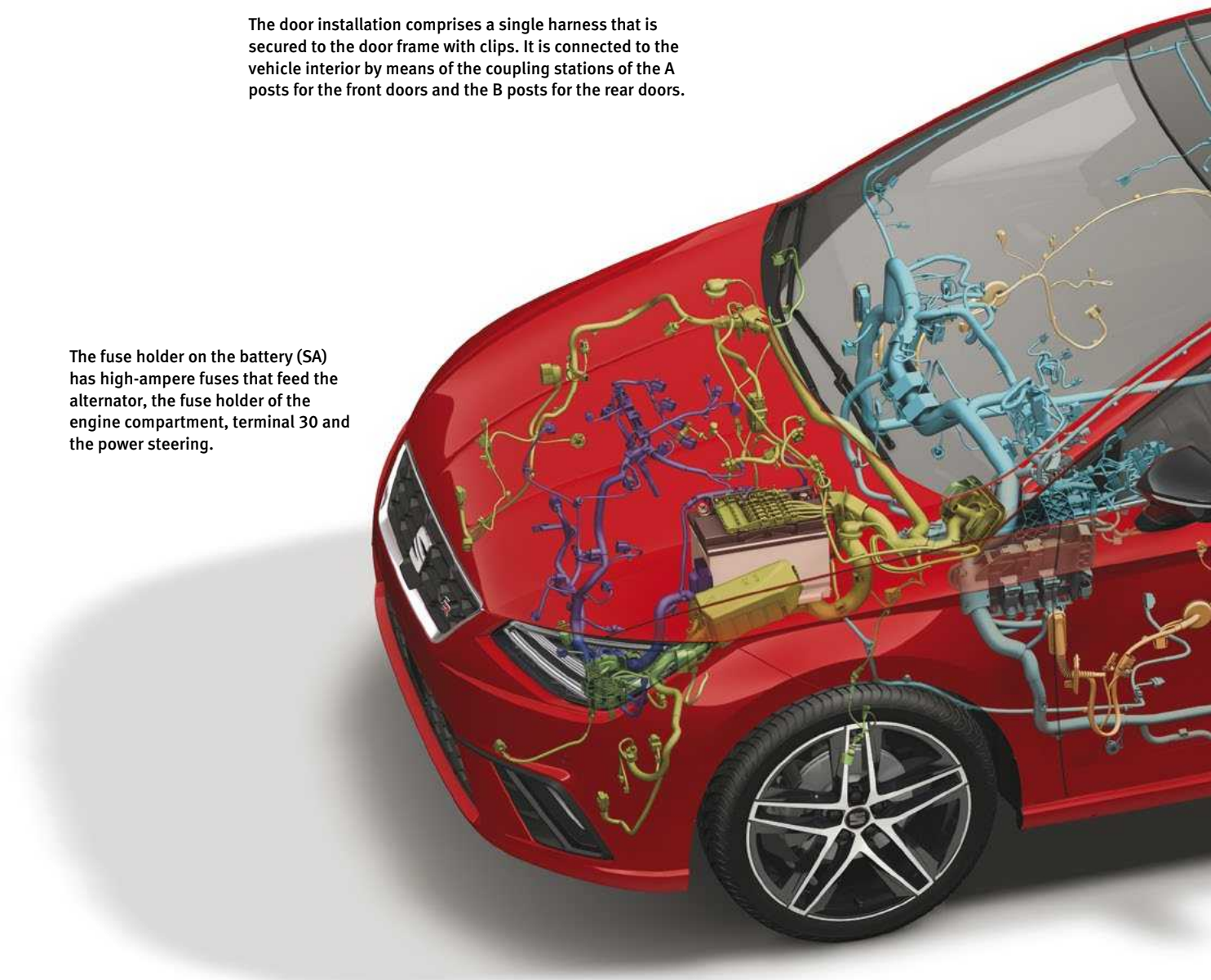
SEAT

ELECTRICAL INSTALLATION

The electric installation of the Ibiza 2017 is characterised mainly by the simplification of the wiring harnesses, and by the fact that it has two separate fuse holders in the engine compartment.

The door installation comprises a single harness that is secured to the door frame with clips. It is connected to the vehicle interior by means of the coupling stations of the A posts for the front doors and the B posts for the rear doors.

The fuse holder on the battery (SA) has high-ampere fuses that feed the alternator, the fuse holder of the engine compartment, terminal 30 and the power steering.



The battery is a lead-acid battery or EFB (*Enhanced Flooded Battery*), depending on the engine.

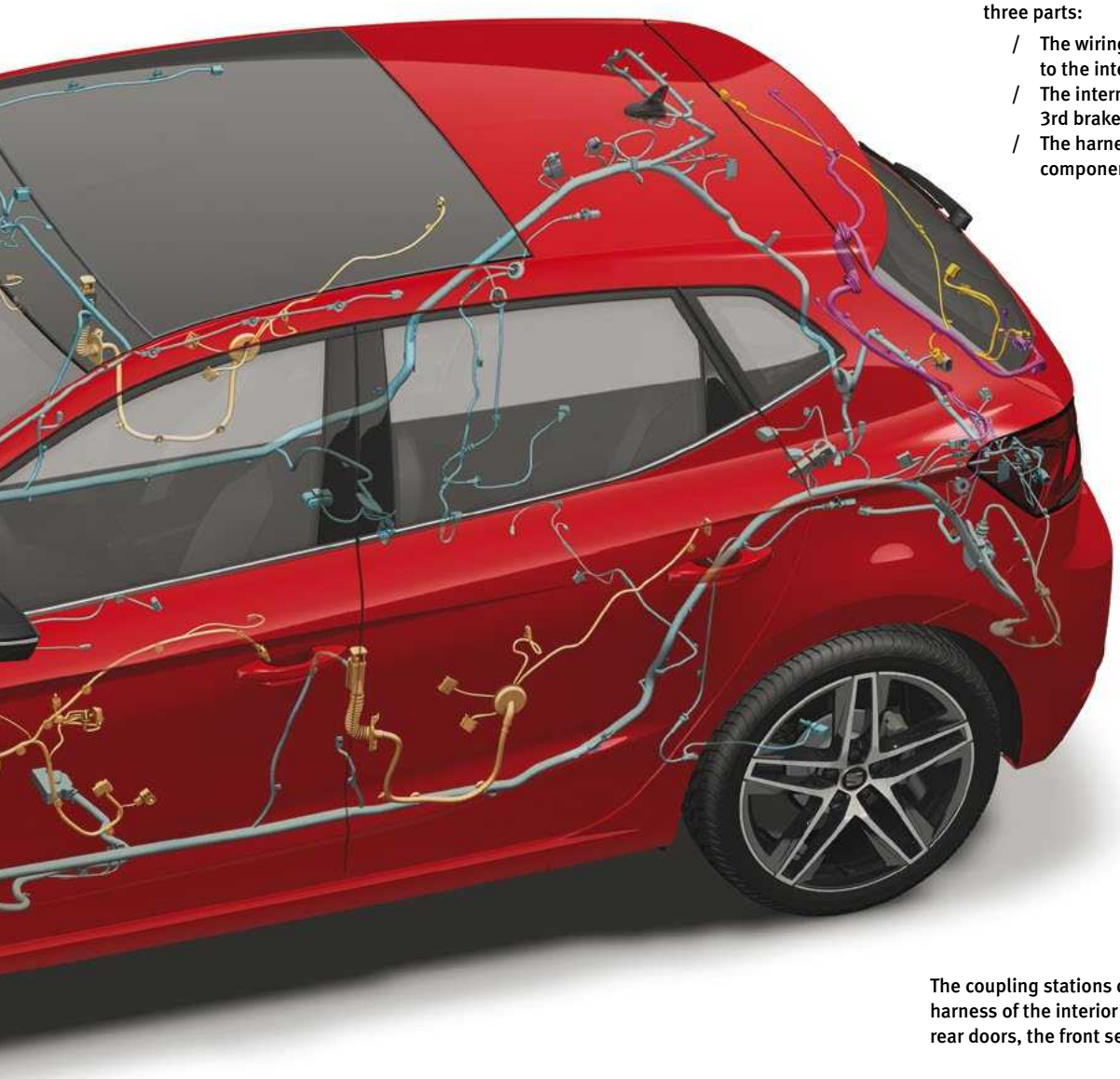
A special nut has been installed on the left front suspension turret in order to perform an emergency start or to connect a charger.

The fuse holder of the engine compartment (SB) is located on the left and has two fuses and relays that power:

- **The radiator fan.**
- **The J623 engine control unit.**
- **The J104 ABS control unit.**
- **The J743 mechatronic unit for DSG dual clutch gearbox.**
- **The engine sensors and actuators.**
- **The additional heating.**

The rear lid wiring harness comprises three parts:

- / The wiring harness that connects to the interior.
- / The intermediate harness for the 3rd brake light.
- / The harness for the rear lid components.



The coupling stations connect the wiring harness of the interior to the front doors, the rear doors, the front seats and the rear lid.

The fuse holder of the interior (SC) has the fuses and relays that power the interior components.

In left-hand drive vehicles, the fuse holder of the interior is located on the left part of the dash panel. In right-hand drive vehicles, it is located on the right part of the dash panel.

D166-23

INTERIOR FUSE HOLDER (SC)

The interior fuse holder (SC) has the following **components** assembled:

- The fuses for the interior components.
- The relays for terminal 15, terminal 75/X and the V5 washer pump.
- The release connector of the interior electric components.

The release connector is located at the bottom of the fuse holder. It is used to disconnect the components of the interior from the SA and SB fuse holders.

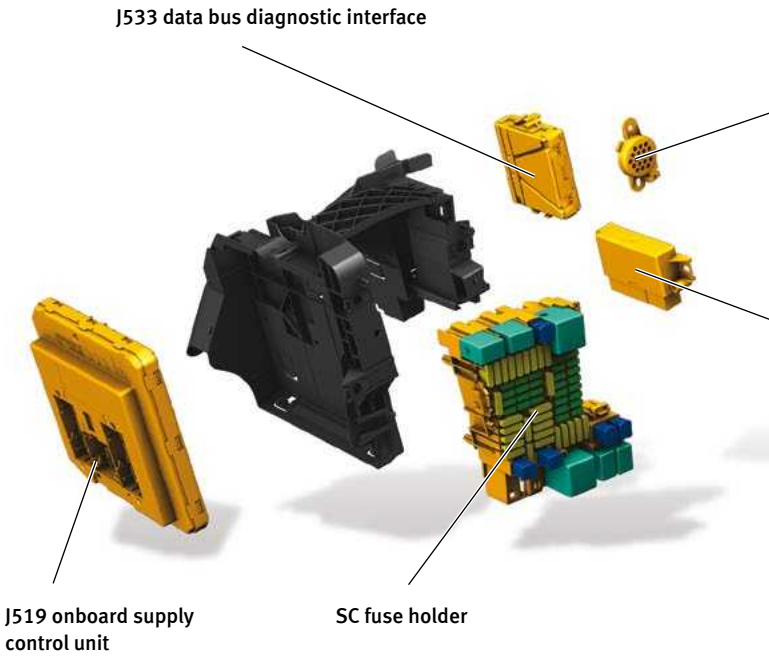
The following **control units** are assembled next to the interior fuse holder (SC):

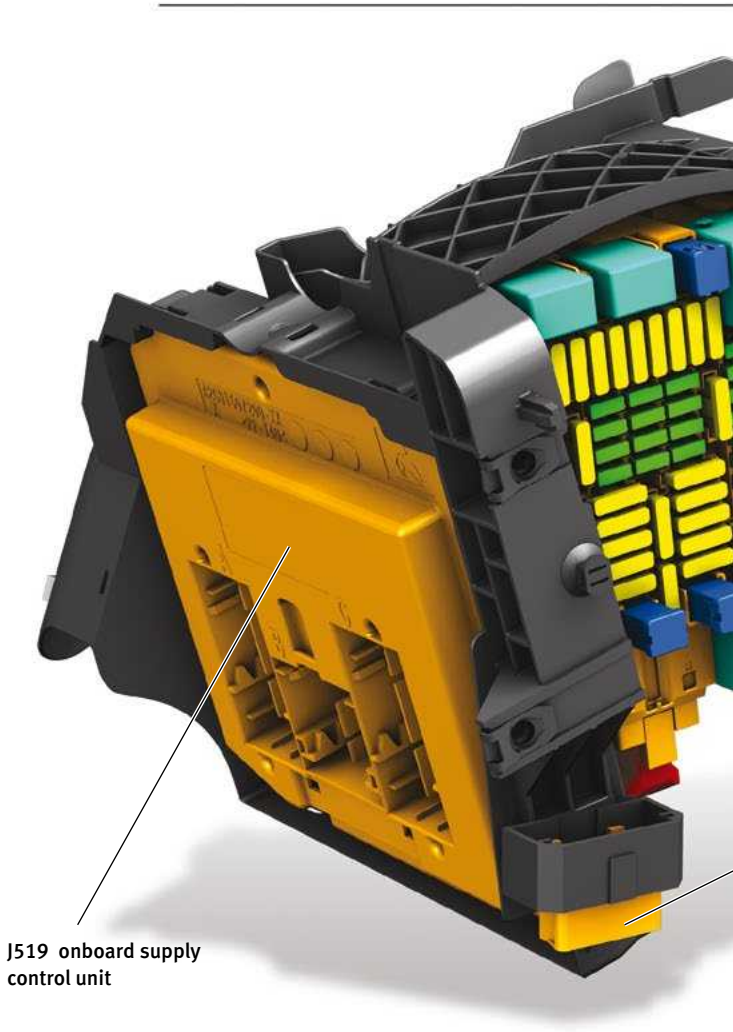
- The J519 onboard supply control unit.
- The J533 data bus diagnostic interface.
- The J446 park assist control unit in left-hand drive vehicles. In right-hand drive vehicles, it is located on the centre of the dash panel.

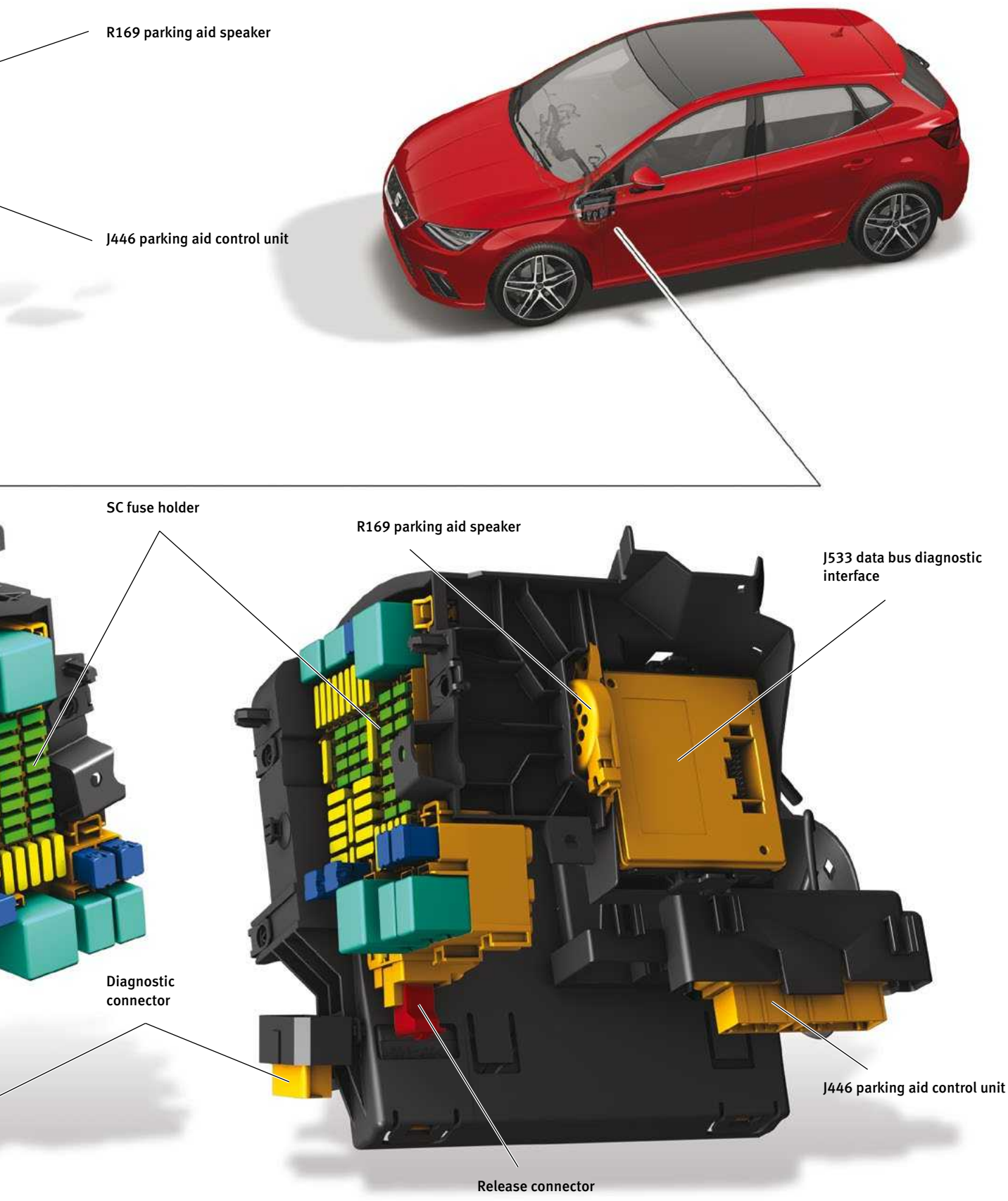
In order to disassemble the J519 onboard supply control unit, the side cover of the dash panel, the sill panel trim and the footwell must be disassembled first.

The J533 data bus diagnostic interface and the J446 park assist control unit are disassembled through the footwell area.

The diagnostic connector is located at the bottom of the interior fuse holder (SC).

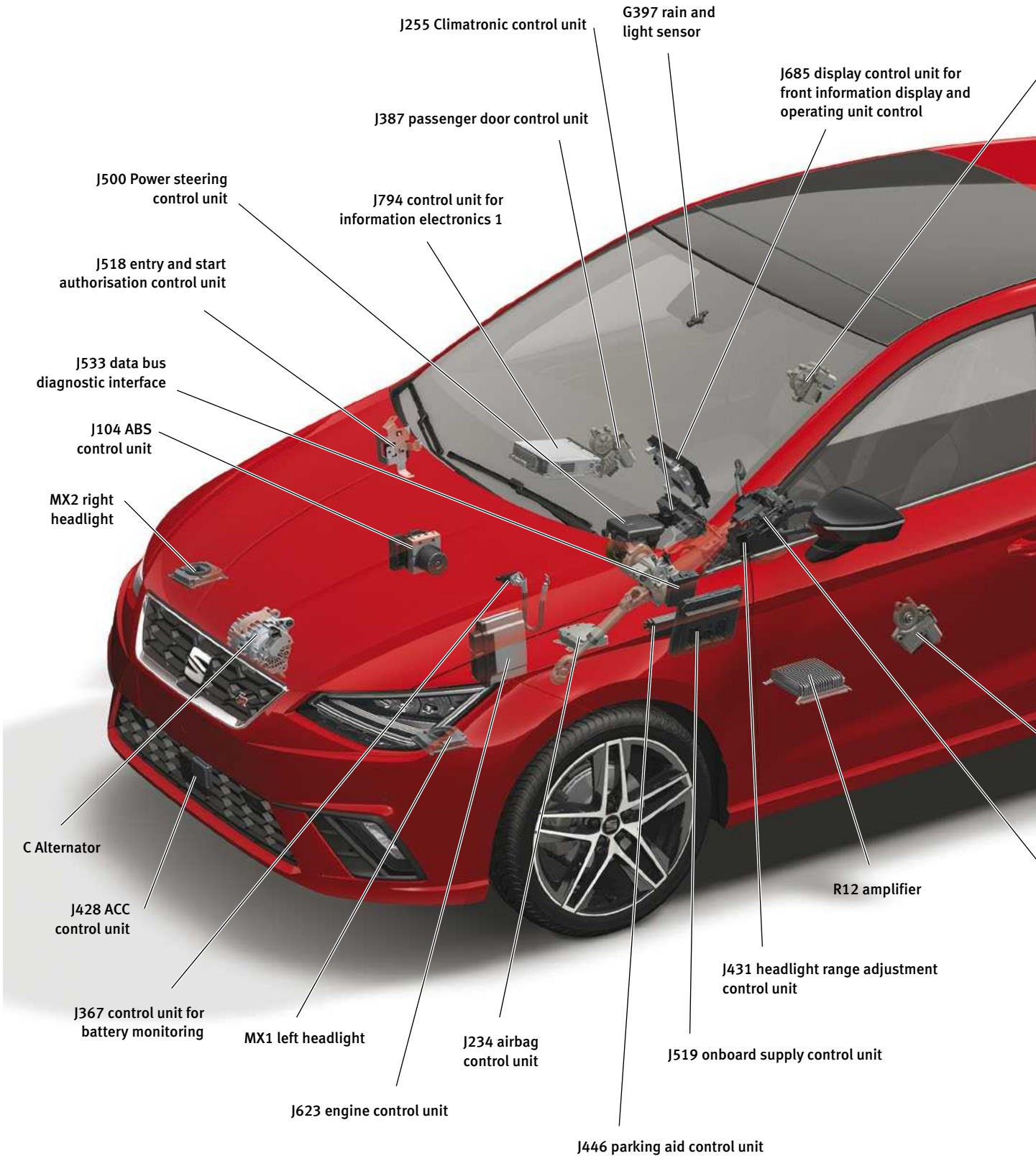





R169 parking aid speaker
J446 parking aid control unit
SC fuse holder
R169 parking aid speaker
J533 data bus diagnostic interface
Diagnostic connector
J446 parking aid control unit
Release connector

D166-24

ELECTRIC SYSTEM



NEW CONTROL UNITS

The Ibiza 2017 has a maximum of 37 control units.

The **new** control units are as follows:

- The J428 ACC control unit.
- The J518 entry and start authorisation control unit.
- The N360 steering column lock actuator.
- The J527 control unit for steering column electronics.
- The J345 trailer detection control unit.
- The R12 amplifier.

Besides the new control units, the following control units have been **modified**:

- The J431 headlight range adjustment control unit, which manages the activation and adjustment of LED headlights.
- The J245 sunroof control unit, which is connected to the CAN-Bus.
- The Gateway, which is either integrated in the J519 on-board supply control unit or presented as the J533 data bus diagnostic interface, depending on the equipment.

D166-25

GATEWAY

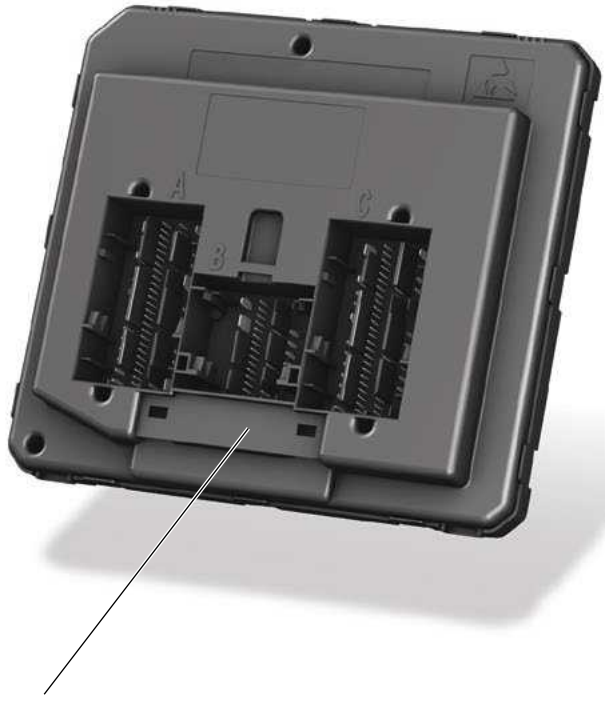
In the Ibiza 2017, the Gateway is presented in two ways:

- / Integrated in the **J519 onboard supply control unit** (PR number AW5).
- / As the **J533 data bus diagnostic interface** (PR number AW4).

The Gateway is presented as the J533 bus diagnostic interface when the vehicle is fitted with adaptive cruise control (ACC) or DSG automatic gearbox. It is necessary because in these cases a great deal of information is transmitted through the CAN-Bus lines.

In both cases, the Gateway diagnosis is performed with steering code 19.

STANDARD ARCHITECTURE



J519 onboard supply control unit

STANDARD+ ARCHITECTURE

J533 data bus diagnostic interface

D166-26

TRANSPORT MODE

The transport mode is a function managed by the Gateway which makes it possible to **protect** the battery's charge while the vehicle is transported from the factory to the Authorised Service.

When transport mode is activated, certain consumers are deactivated, and maximum speed and engine torque delivery are also limited.

When transport mode is activated, this is indicated on the dash panel by means of the message "TRA".

Transport mode is **deactivated and activated** from the Gateway using the ODIS Service diagnostic system.

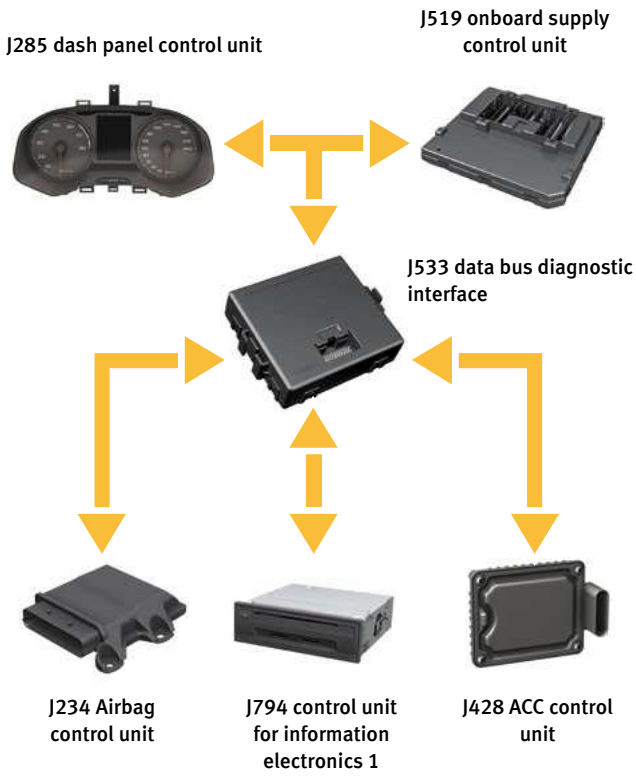
D166-27

COMPONENT PROTECTION

Component protection is a function that prevents the installation of stolen control units in other vehicles.

The **control units** with component protection are:

- The J533 data bus diagnostic interface.
- The J234 airbag control unit.
- The J428 ACC control unit.
- The J519 onboard supply control unit.
- The J285 dash panel control unit.
- And the J794 control unit 1 for information electronics.



D166-28

DATA BUS, STANDARD ARCHITECTURE

The Standard data bus architecture is identified with the PR number **AW5**. In this architecture, the Gateway is integrated in the **J519 onboard supply control unit**, and there are four main CAN-Bus lines, two private CAN-Bus lines and six LIN-Bus lines.

The **main CAN-Bus lines** are:

- / Diagnosis CAN-Bus.
- / Drive CAN-Bus.
- / Extended CAN-Bus.
- / Comfort CAN-Bus.

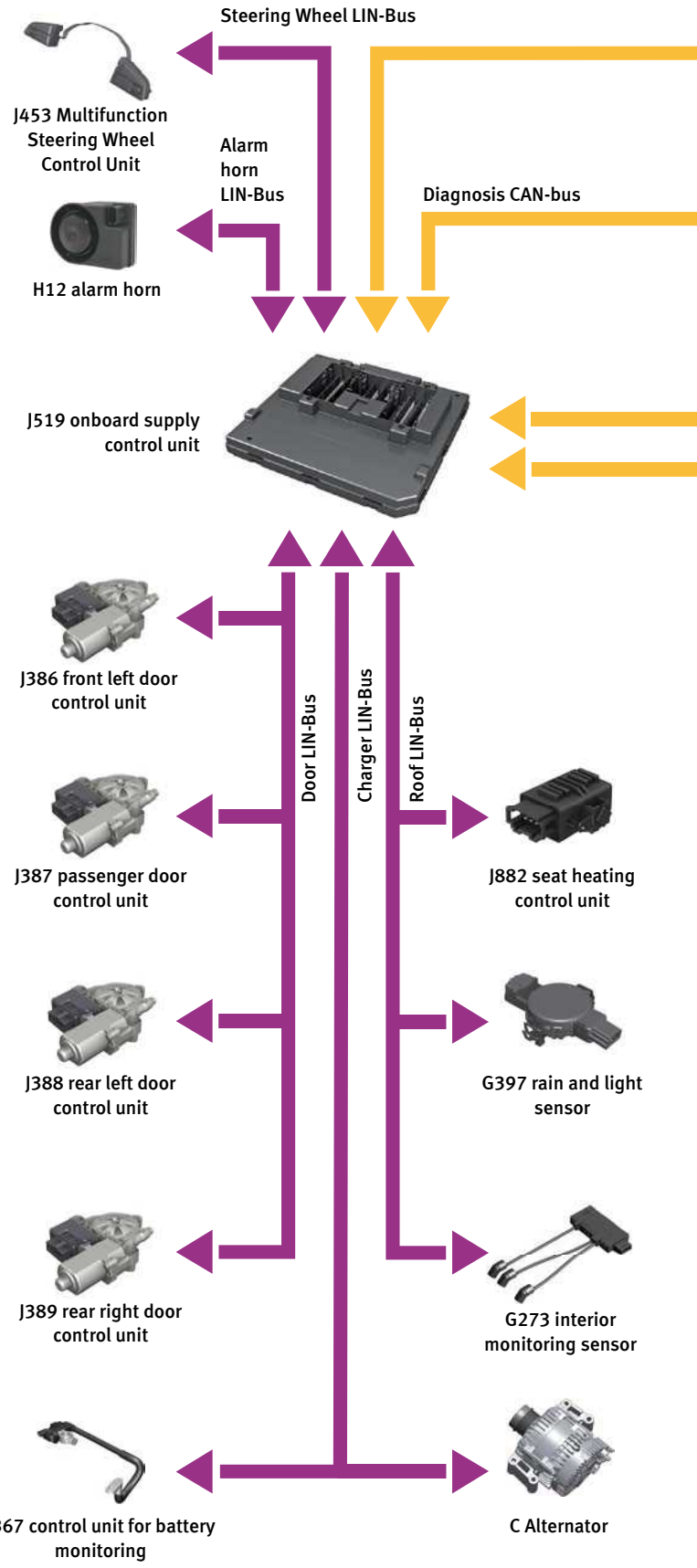
The **private CAN-Bus** lines are used to communicate:

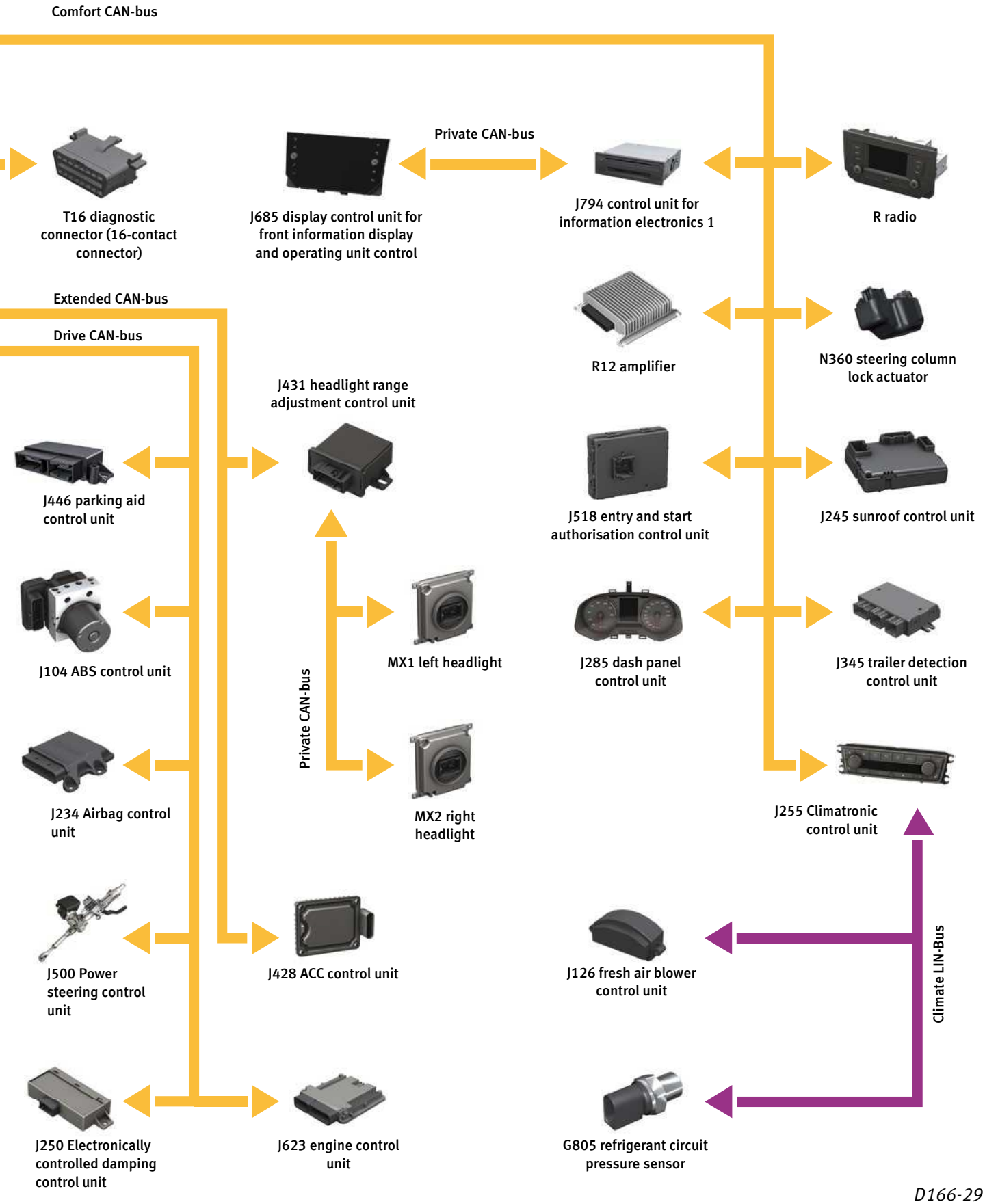
- / The J431 headlight range adjustment control unit and the MX1 and MX2 front headlights.
- / The J794 control unit 1 for information electronics and the J685 display unit for front information display and operating unit control.

The following **LIN-Bus** lines are available:

- / Climate LIN-Bus.
- / Steering Wheel LIN-Bus.
- / Alarm horn LIN-Bus.
- / Roof LIN-Bus.
- / Door LIN-Bus.
- / Charger LIN-Bus.

The J255 Climatronic control unit is the master of the Climate LIN-Bus. The J519 onboard supply control unit is the master of the other LIN-Bus lines.




Comfort CAN-bus
T16 diagnostic connector (16-contact connector)
J685 display control unit for front information display and operating unit control
Private CAN-bus
J794 control unit for information electronics 1
R radio
Extended CAN-bus
Drive CAN-bus
R12 amplifier
N360 steering column lock actuator
J431 headlight range adjustment control unit
J446 parking aid control unit
J518 entry and start authorisation control unit
J245 sunroof control unit
J104 ABS control unit
MX1 left headlight
J285 dash panel control unit
J345 trailer detection control unit
Private CAN-bus
J234 Airbag control unit
MX2 right headlight
J255 Climatronic control unit
J500 Power steering control unit
J428 ACC control unit
J126 fresh air blower control unit
Climate LIN-Bus
J250 Electronically controlled damping control unit
J623 engine control unit
G805 refrigerant circuit pressure sensor

D166-29

DATA BUS, STANDARD+ ARCHITECTURE

The Standard+ data bus architecture is identified with the PR number **AW4**. In this architecture, the Gateway is presented as the **J533 data bus diagnostic interface**.

In the Standard+ architecture, the Running Gear CAN-Bus line, the Infotainment CAN-Bus line and new control units are added.

The following control units are connected to the **Running Gear CAN-Bus** line:

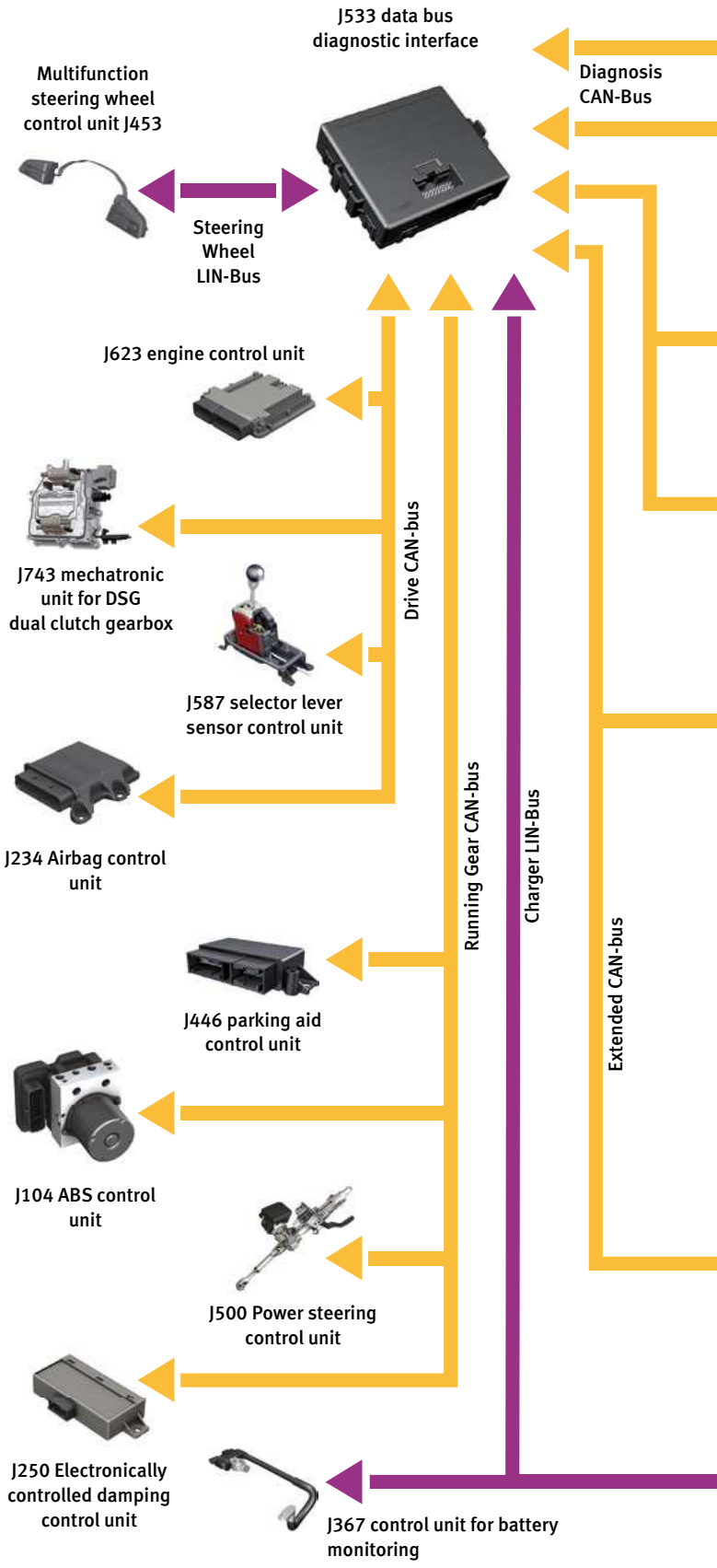
- The J500 power steering control unit.
- The J104 ABS control unit.
- The J250 electronically controlled damping control unit.
- The J446 park assist control unit.

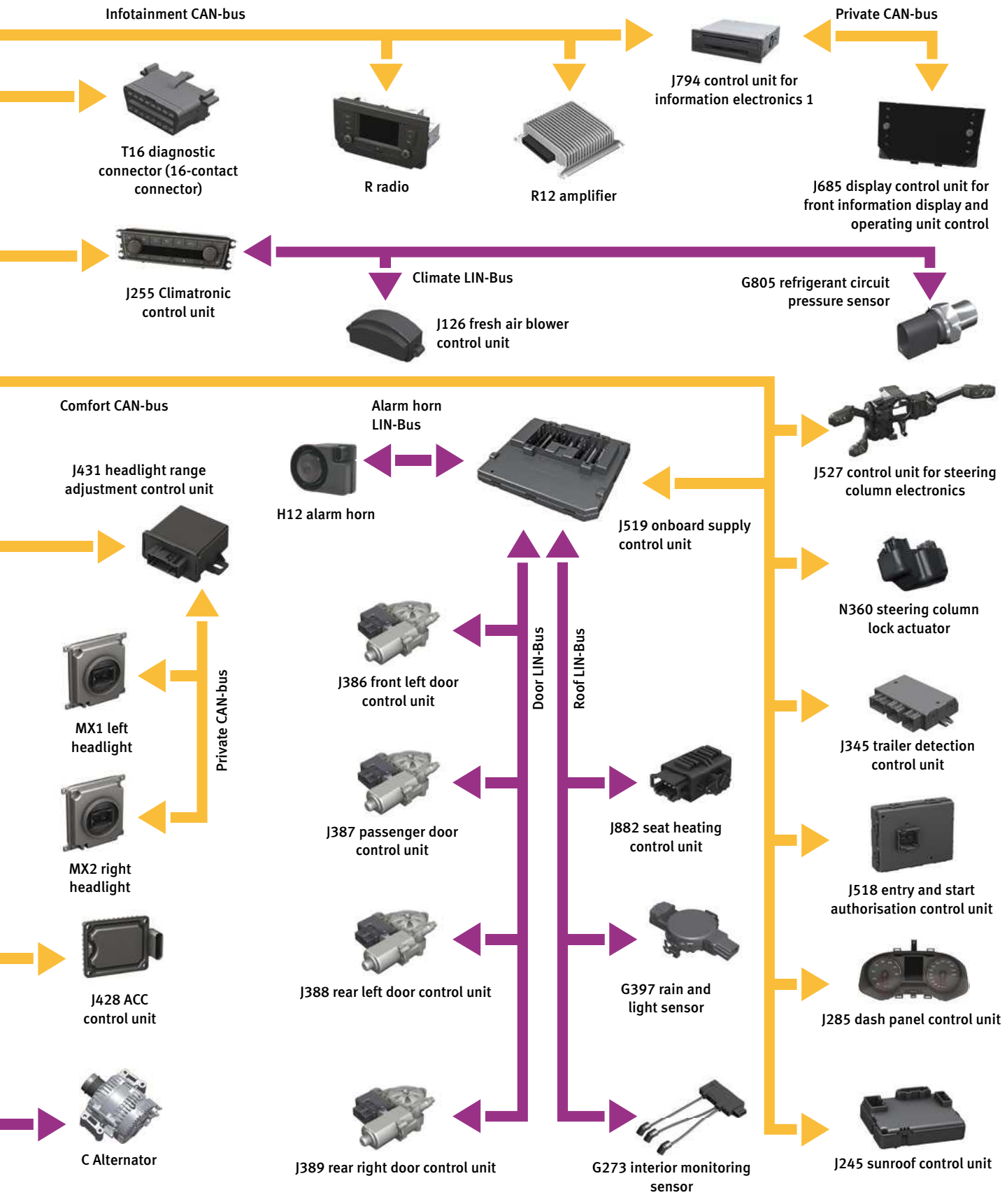
The following control units are connected to the **Infotainment CAN-Bus**:

- The R12 amplifier.
- The R radio.
- The J794 control unit 1 for information electronics.

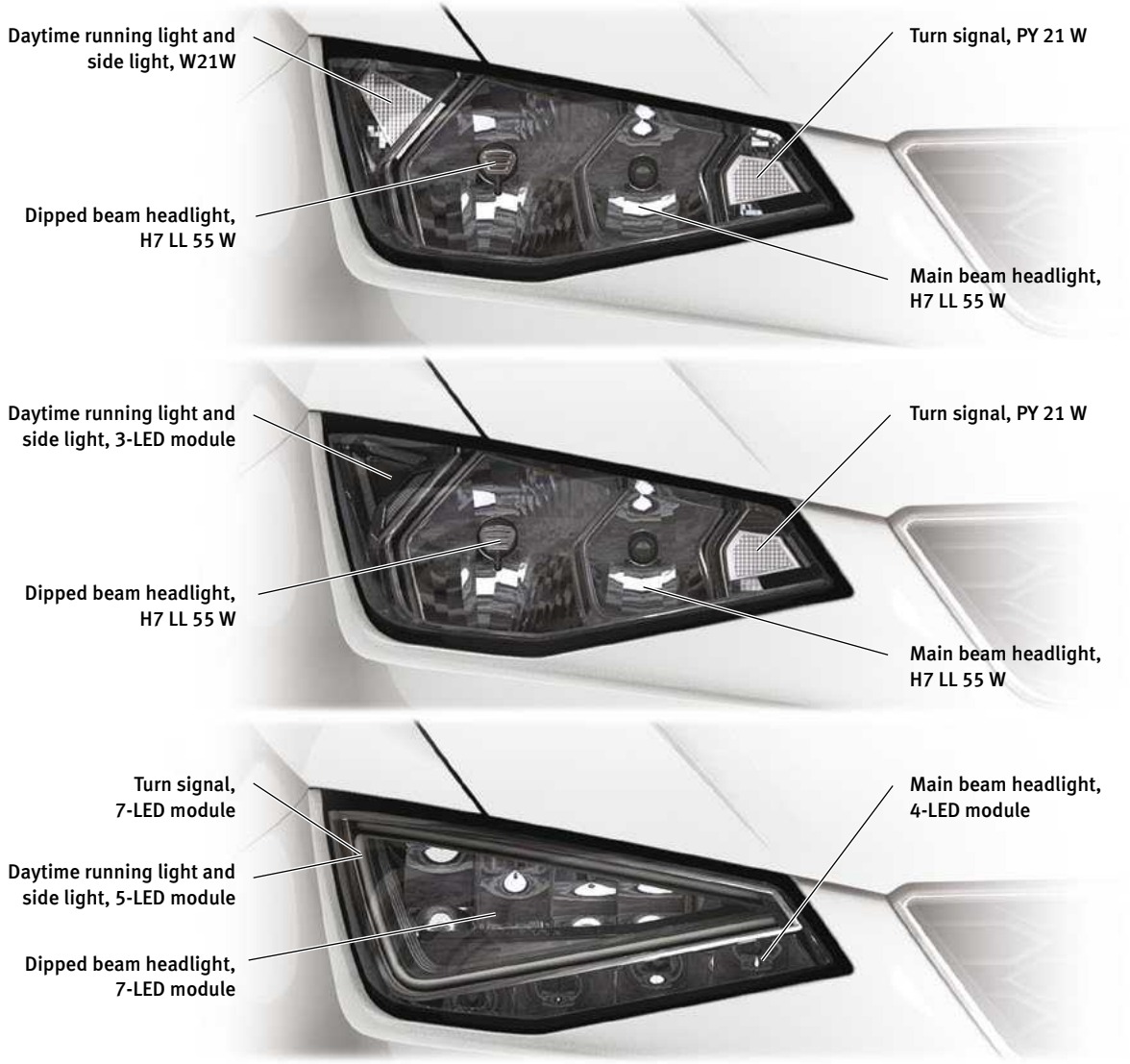
The following **control units** are added:

- The J743 mechatronic unit for dual clutch gearbox to the Drive CAN-Bus line.
- The J587 selector lever sensor control unit to the Drive CAN-Bus line.
- The J527 steering column electronics control unit to the Comfort CAN-Bus line.




Infotainment CAN-bus
Private CAN-bus
T16 diagnostic connector (16-contact connector)
R radio
R12 amplifier
J794 control unit for information electronics 1
J685 display control unit for front information display and operating unit control
J255 Climatronic control unit
Climate LIN-Bus
J126 fresh air blower control unit
G805 refrigerant circuit pressure sensor
Comfort CAN-bus
Alarm horn LIN-Bus
J431 headlight range adjustment control unit
H12 alarm horn
J519 onboard supply control unit
J527 control unit for steering column electronics
N360 steering column lock actuator
J345 trailer detection control unit
J518 entry and start authorisation control unit
J285 dash panel control unit
J245 sunroof control unit
Private CAN-bus
Door LIN-Bus
Roof LIN-Bus
MX1 left headlight
MX2 right headlight
J386 front left door control unit
J387 passenger door control unit
J388 rear left door control unit
J389 rear right door control unit
J882 seat heating control unit
G397 rain and light sensor
G273 interior monitoring sensor
J428 ACC control unit
C Alternator

D166-30



D166-31

FRONT LIGHTS

Three different configurations are offered for the front lights:

- / Halogen headlights with bulb daytime running lights.
- / Halogen headlights with LED daytime running light.
- / Full LED headlights.

The **halogen headlights** are of the double parabolic type in both configurations and use an H7 bulb for the main beam headlights and a long-life H7 bulb for the dipped beam.

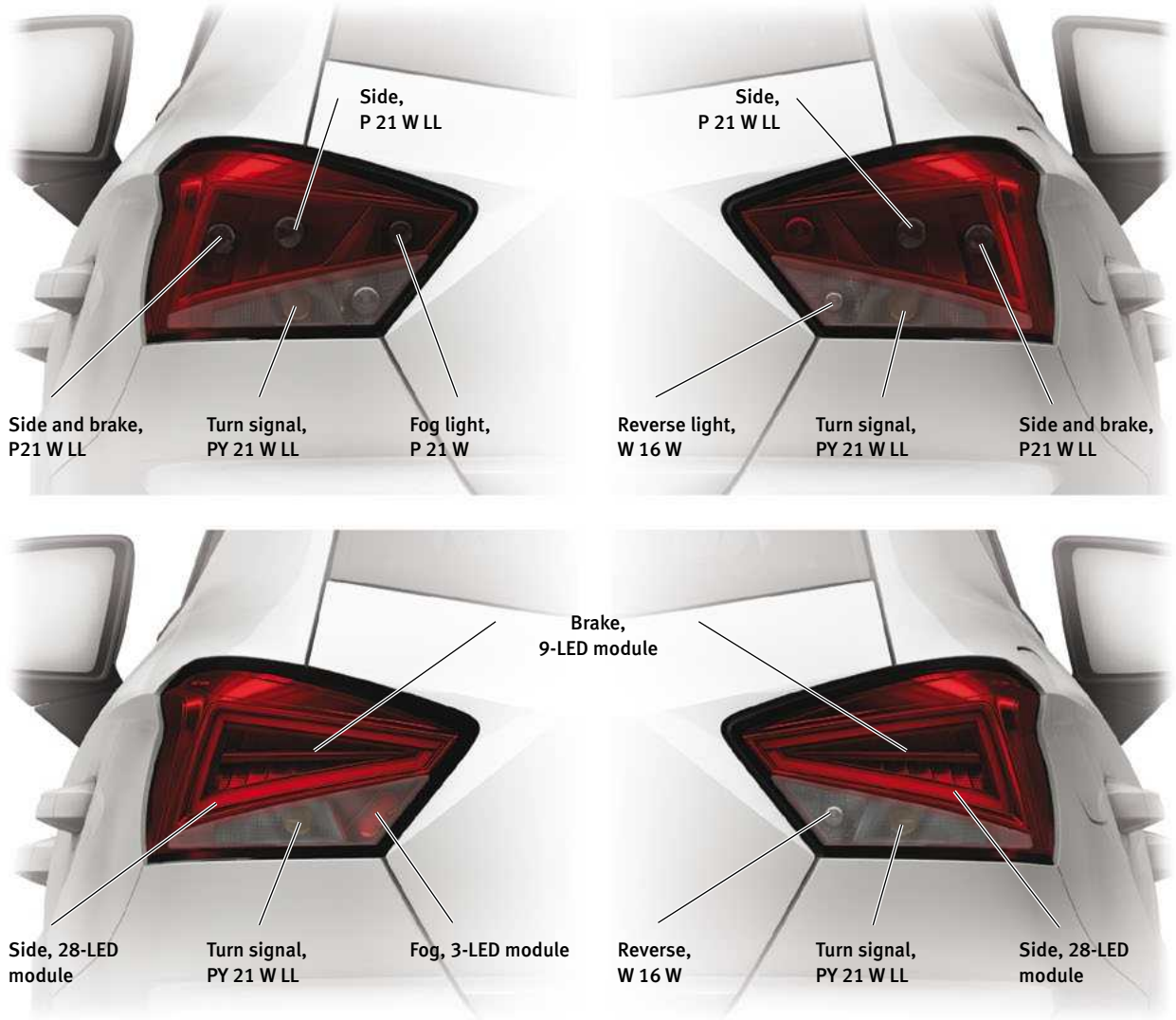
The turn signals use PY21W-type bulbs.

The **Full LED headlights** have the following configuration:

- / One 5-LED module for the daytime running light and for the side light.
- / One 7-LED module for the turn signal.
- / One 7-LED module for the dipped beam.
- / One 4-LED module for the main beam headlights.

The daytime running light, the sidelight and the turn signal light up in the same light compartment.

The fog lights use H8-type 35W halogen bulbs.



D166-32

REAR LIGHTS

The Ibiza 2017 offers two rear light configurations: bulb or LED lights.

Each **light** uses 2 P21W long-life bulbs for the side light.

The bulbs of the outer areas of the lights are also used for the brake light.

LED lights use LED modules for the following lights:

- / Side, with 28 LEDS.
- / Brake, with 9 LEDS.
- / Fog, with 3 LEDS.

The turn signal and the reverse light have the same configuration in both types of light, with a PY21W bulb for the turn signal and a W16W for the reverse light.

The image represents the configurations for a right-hand drive country. Fog and reverse lights are inverted in countries where they drive on the left. In Mexico, the fog light is replaced by an additional reverse light.

BASIC DASH PANEL

MID DASH PANEL

D166-33

DASH PANEL

The dash panel is available in two variants: Basic and Mid.

The new feature in the **Basic** variant is a high-resolution segment display. This means that the display is an LCD with 640 segments.

The coolant temperature display is located on the left side of the display, while the fuel gauge is located on the right.

The **Mid** and Basic versions have the following differences:

- The display is white monochrome TFT.
- The locations of the coolant temperature display and the fuel gauge.

These indicators are integrated in the rev counter and the speedometer, respectively.

D166-34

ENTRY AND START AUTHORISATION

The Ibiza 2017 offers the entry and start authorisation system as optional.

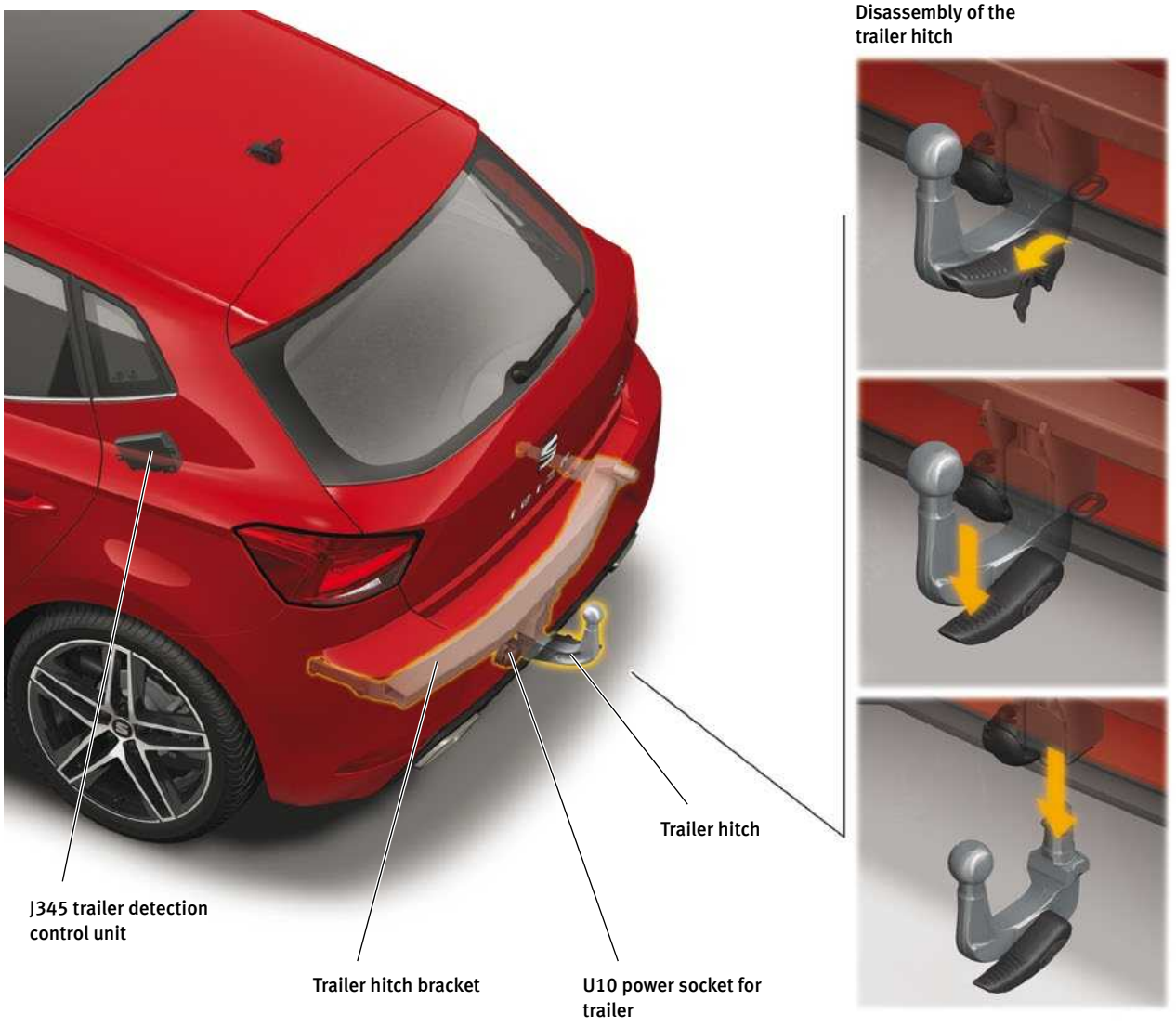
This system allows the driver to access the vehicle and start the engine without having to use the key.

The entry and start system features the following parts:

- / The contact sensors for the exterior handles of the front left or right doors G605 or G606.
- / R136, R138 and R139 interior aerials.
- / The E378 start device button.
- / The J518 entry and start authorisation control unit.
- / The N360 steering column lock actuator.

To access the vehicle, the key must be less than 1.5 metres from the front door handles.

Note: For further information about the entry and start authorisation system, refer to SSP 164, Ateca electric system.



D166-35

TRAILER HITCH

The Ibiza 2017 offers the following trailer hitch combinations:

- / Preparation for trailer hitch (PR number 1D8).
- / Complete installation for trailer hitch (PR number 1D2).

The **preparation for trailer hitch** only includes the J345 trailer detection control unit. The other components are fitted as accessories in the Authorised Service.

The **complete installation for the trailer hitch** comprises the following components:

- / The J345 trailer detection control unit.
- / The trailer hitch bracket.
- / The trailer hitch.
- / The U10 power socket for trailer.

The trailer hitch is assembled and disassembled with a lever and is secured by means of a lock.

INFOTAINMENT

D166-36

The Ibiza 2017 offers **4 infotainment systems** that are based on the *Modular Infotainment Baukasten (MIB)* concept:

- / Media System Touch.
- / Media System Color.
- / Media System Plus.
- / Navigation System.

These infotainment systems are combined with 4 sound systems, including the new **Beats Audio** sound system.

The **Connectivity Box**, a console located in front of the gear lever, is an optional extra. This console performs two functions: it amplifies the telephone signal and provides wireless charging for compatible mobile phones.

Note: For further information about the Connectivity Box, refer to SSP 163, SEAT Ateca.

INFOTAINMENT

The Media System Touch and Media System Color are characterised by their **5-inch** display and are configured so that the display and the control unit form a single component.

The Media System Plus and Navigation System are combined with a new **8-inch** display and their control unit is located in the glove compartment.

Communication between the control unit and the display is by means of a private CAN-Bus line.

	Navigation	CD player (CD audio, MP3, WMA)	Bluetooth (Telephone + Audiostreaming)	Connections for external devices	SD card reader	Control unit
MEDIA SYSTEM TOUCH 				1 USB + Aux-In	1	on screen
MEDIA SYSTEM COLOR 			✓	1 USB + Aux-In	1	on screen
MEDIA SYSTEM PLUS 		✓	✓	2 USB (with Apple chip) + Aux-In	1	in the glove box
NAVIGATION SYSTEM 	✓	✓	✓	2 USB (with Apple chip) + Aux-In	2	in the glove box

The following illustration depicts the characteristics of each infotainment system in grey and the available options in red.

Touchscreen	Comfort functions (Car, Air conditioning, etc.)	Messages on the dash panel	Full Link	Connectivity Box	Reversing camera	Hands-free Bluetooth	Beats Audio	Radio Digital (DAB)
5" monochrome	✓	✓				✓		
Capacitive 5" colour	✓	✓			✓			
Capacitive 8" colour	✓	✓	✓	✓	✓		✓	✓
Capacitive 8" colour	✓	✓	✓	✓	✓		✓	✓

D166-38

MEDIA SYSTEM PLUS AND NAVIGATION SYSTEM DISPLAY

The display of the Media System Plus and Navigation System infotainment systems boasts a new design with glass effect and has the following features:

- A size of 8 inches.
- Capacitive touchscreen.
- 4 tactile buttons on each side.
- A rotary knob on each side.

The **tactile buttons** provide shortcuts to the infotainment system's main functions and to the main menu.

The **rotary knobs** perform the following functions:

- The left rotary knob is used for power on/off and volume control.
- The right rotary knob is used to scroll through the display options and to choose the highlighted option.

D166-39

INFOTAINMENT SYSTEM DISASSEMBLY

All the components of the infotainment system are disassembled with the **T10057 tools**.

To disassemble the Media System Touch and Media System Color systems and the eight-inch display you must first remove the dash panel centre trim.

This trim can be disassembled by removing the screw on the right side and then the clips that secure it to the dash panel.

On the Media System Touch and Media System Color systems, the T10057 tools should be inserted into the visible grooves on the front.

On the 8-inch display, the tools should be inserted into the grooves located on the frame.

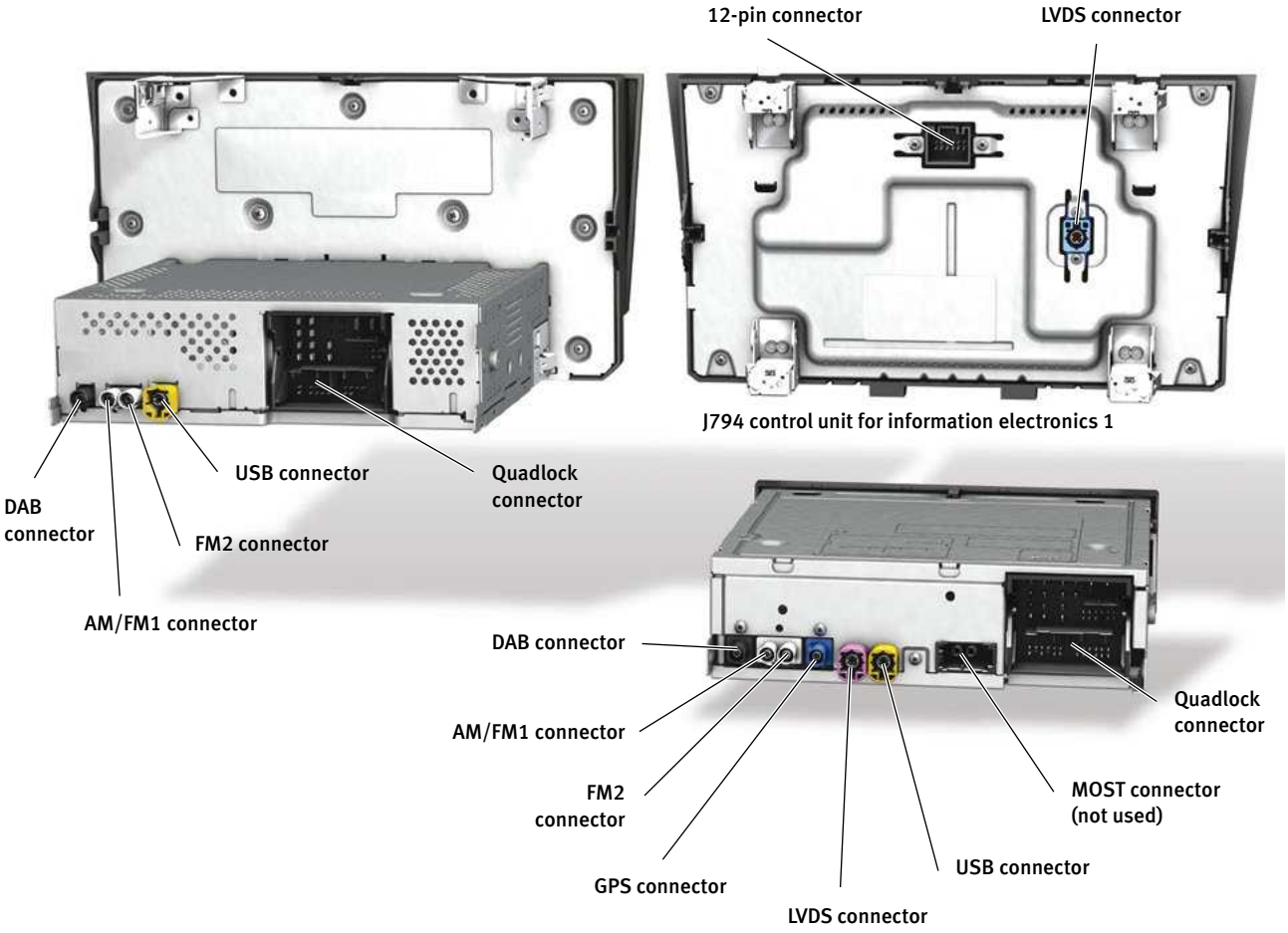
The J794 control unit 1 for information electronics, located in the glove compartment, is disassembled with the same tools, but without the need to remove any other component first.

MEDIA SYSTEM TOUCH AND MEDIA SYSTEM COLOR

R radio

MEDIA SYSTEM PLUS AND NAVIGATION SYSTEM

J685 display control unit for front information display and operating unit control



D166-40

ELECTRIC CONNECTORS

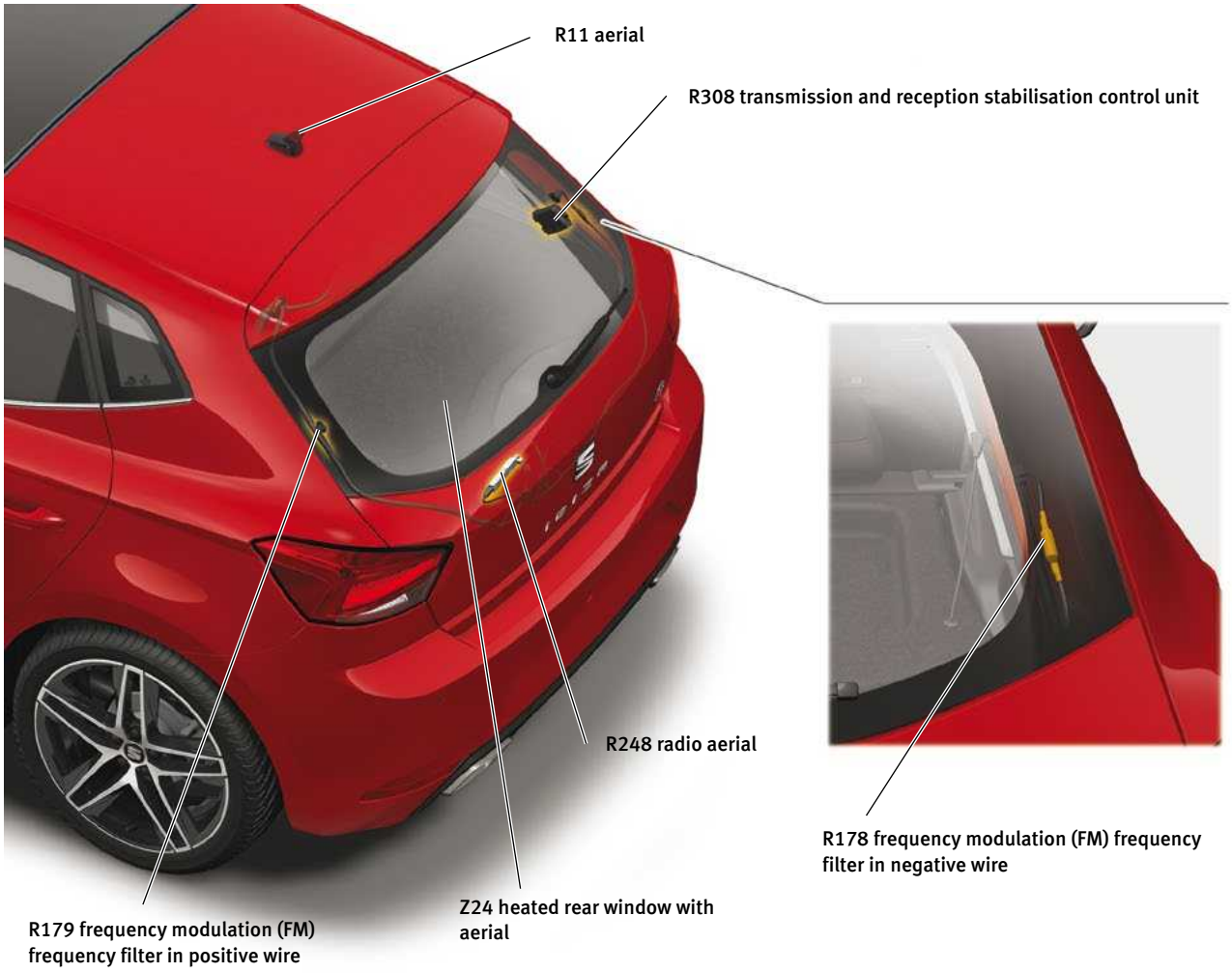
The infotainment systems have one Quadlock-type connector and 5 FAKRA standard-compliant connectors.

The **Quadlock**-type connector is divided into five blocks that perform the following functions:

- / Block A: speaker output.
- / Block B: hands-free microphone input.
- / Block C: external devices (USB, Aux-In).
- / Block D: power supply and earth.
- / Block E: connection to CAN-Bus line.

The **FAKRA connectors** are colour and shape coded and perform the following functions:

- / Black connector: DAB
- / Double white connector: AM/FM, FM2.
- / Connector GPS:
- / Violet connector: connection between the display and the control unit (LVDS).
- / Brown connector: data connection for the USB.



D166-41

AERIAL SYSTEM

The Ibiza 2017 aerial system has been designed to deliver optimal signal reception. To this end, the components are distributed over four zones: the R11 aerial, the Z24 heated rear window with aerial, the rear lid and the right rear side.

The **R11 aerial** is located on the roof. With the full equipment, it comprises the following aerials:

- / Conventional AM/FM1 radio.
- / GPS positioning.
- / Digital Radio (DAB).
- / GSM telephone.

The **Z24 heated rear window with aerial** receives the FM2 signals. To improve reception, the R178 and R179 frequency filters are located on each side of the heated rear window.

The R248 radio aerial is assembled on the **rear lid** and picks up the FM signals from the heated window, amplifies them and relays them to the infotainment system.

The R308 transmission and reception stabilisation control unit is located on the **right rear side** and picks up the signals from the GSM aerial and relays them to the infotainment system.

SOUND SYSTEMS

The Ibiza 2017 has four sound systems, configured specifically for the vehicle's acoustics:

- / 4 speakers in 2 channels.
- / 6 speakers in 4 channels.
- / 6 speakers in 6 channels.
- / Beats Audio.

The Beats Audio sound system is explained in the following pages.

4 SPEAKERS IN 2 CHANNELS

The 4-speaker sound system is offered in combination with the Media System Touch system and delivers a power of **2x20 W**.

In this sound system, the following speakers are available:

- / Two (2) 31-mm-diameter tweeters, heat-welded to 3 points on the upper lining of the A posts.
- / Two (2) 168-mm-diameter woofers, secured with 4 rivets to the front door frames.

The speakers on each side are connected to the infotainment system with a single channel.

6 SPEAKERS IN 4 CHANNELS

This sound system is offered in combination with the Media System Color system and delivers a power of **4x20 W**.

The difference between this sound system and the previous one is the addition of the rear speakers.

These speakers are full range and have a diameter of 168 mm. They are secured to the front door frames with 4 rivets and each of them is connected to the infotainment system with an additional channel.

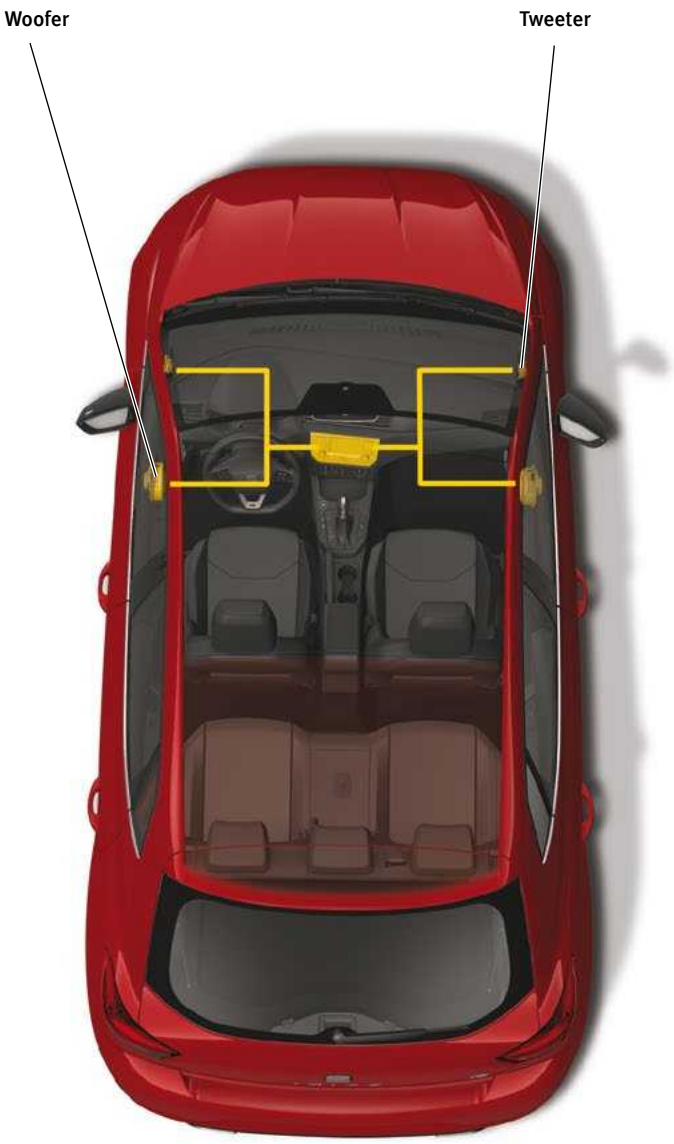
6 SPEAKERS IN 6 CHANNELS

This 6-channel 6-speaker sound system is offered in combination with the Media System Plus and Navigation System and delivers a power of **6x20 W**.

This difference between this sound system and the previous one is the way the speakers are connected to the infotainment system.

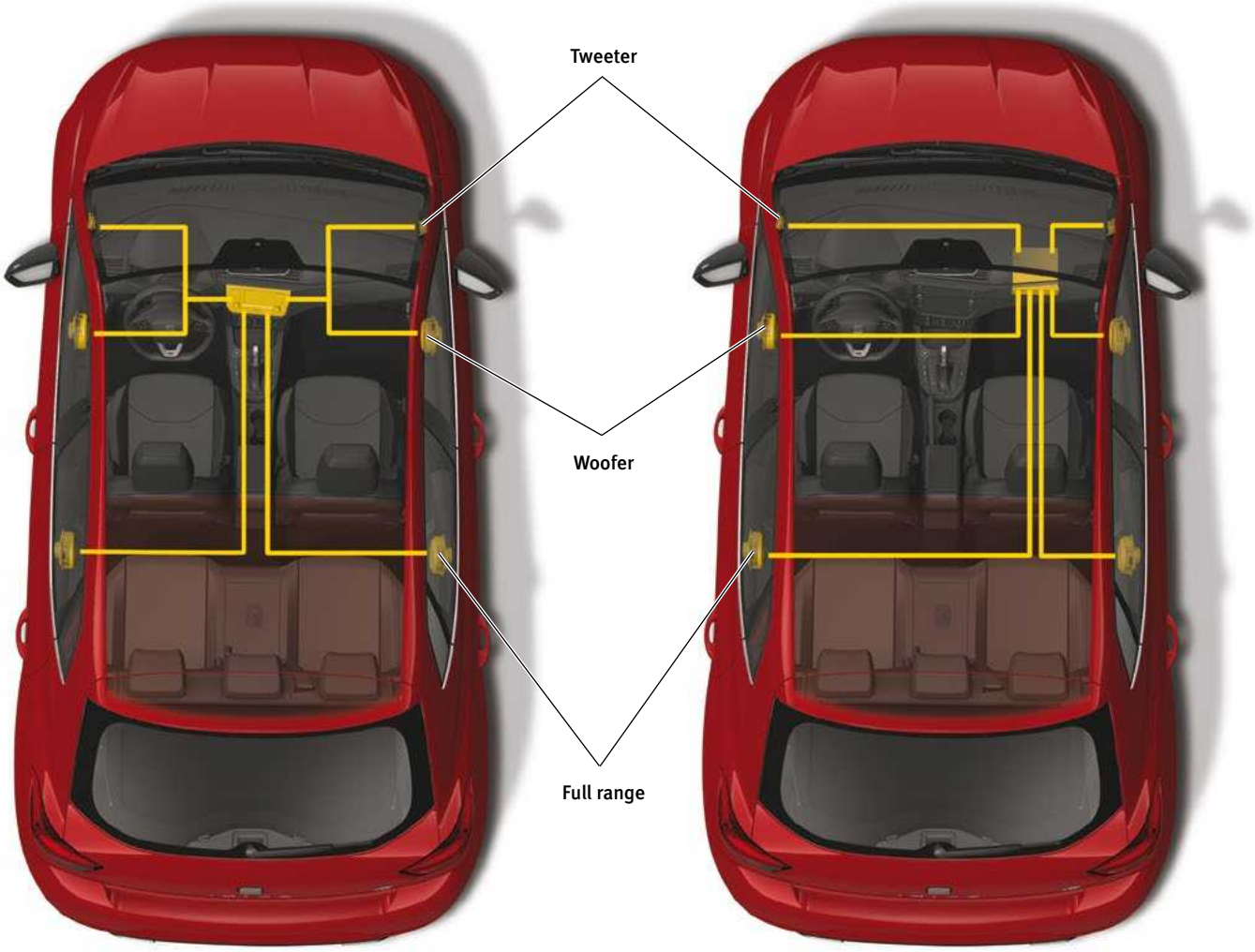
In this sound system, each speaker is connected by means of a specific channel.

4 SPEAKERS IN 2 CHANNELS



6 SPEAKERS IN 4 CHANNELS

6 SPEAKERS IN 6 CHANNELS



D166-42

R12 amplifier

Driver's seat

D166-43

BEATS AUDIO

Beats Audio is an optional sound system available for the Media System Plus and Navigation System that offers powerful high-quality sound.

The Beats Audio sound system consists of the R12 amplifier and seven speakers.

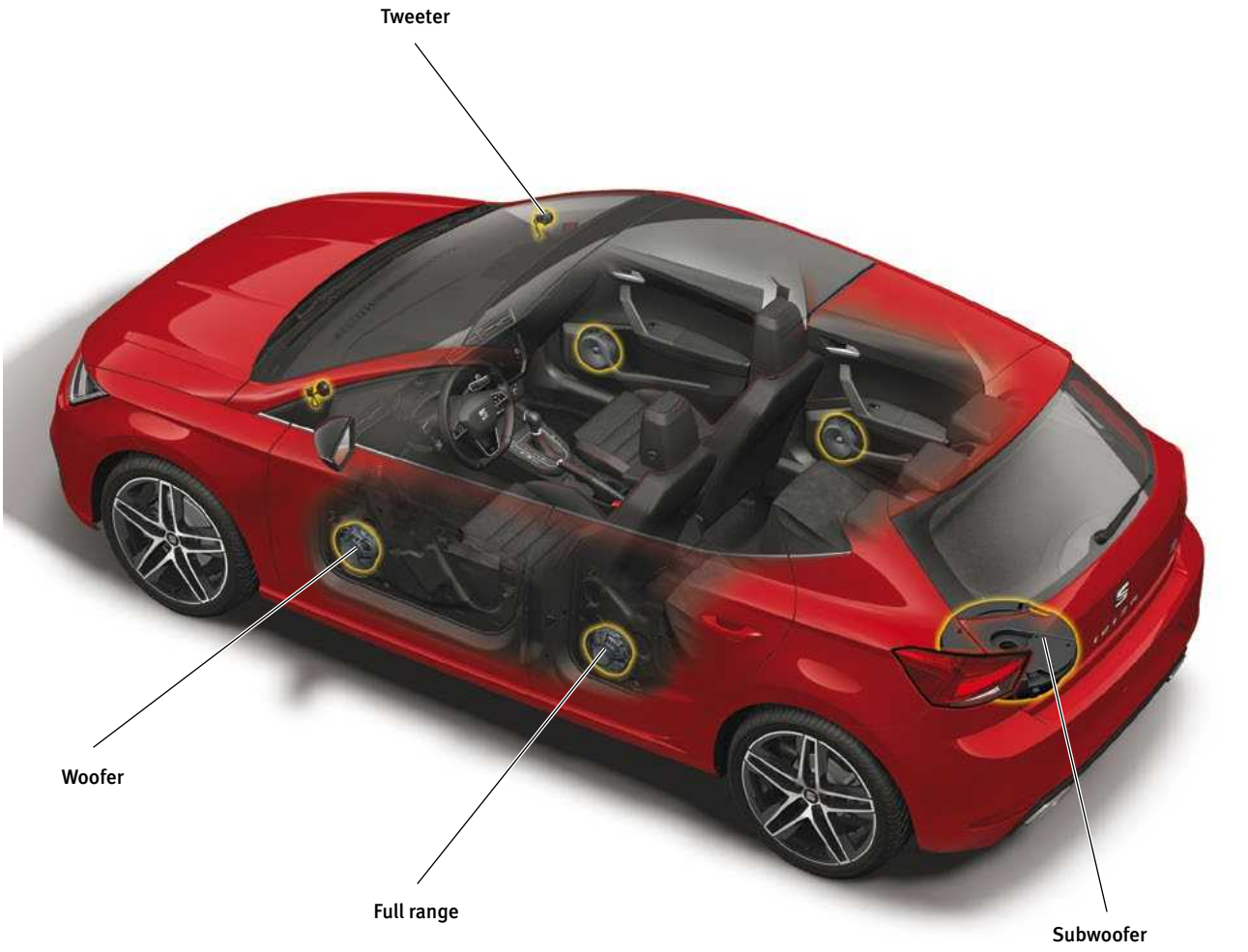
R12 AMPLIFIER

The R12 amplifier is located in a specific housing underneath the driver's seat.

Its main characteristics are as follows:

- / It delivers a rated power of 300 W distributed over 8 channels.
- / The housing is manufactured in aluminium, thus facilitating heat dissipation.
- / It is connected to CAN-Bus.
- / It has 2 specific channels for the subwoofer.

The R12 amplifier can be disassembled once its protective cover has been removed.



D166-44

BEATS AUDIO SPEAKERS

The speakers of the Beats Audio sound system have been configured to deliver greater sound **power** than conventional speakers. To this end, the magnet in each speaker is larger and the membrane is tougher.

The Beats Audio sound system comprises the following **speakers**:

- / 1 subwoofer.
- / 2 front tweeters.
- / 2 rear woofers.
- / 2 rear full ranges.

The **subwoofer** is housed in the spare wheel well and has a 10 l sound board to boost the bass even further.

The connection between the subwoofer and the R12 amplifier is via 2 channels, thus guaranteeing the necessary power to drive the membrane.

The other speakers are housed in the same locations as the 6-channel 6-speaker sound system.

OVERVIEW

The R12 sound amplifier receives and sends signals by means of conventional wires and the CAN-Bus lines.

The signals it **receives** by means of conventional wires are the audio signals at a constant volume from the infotainment system.

The signals it **sends** by means of conventional wires are the signals to the speakers.

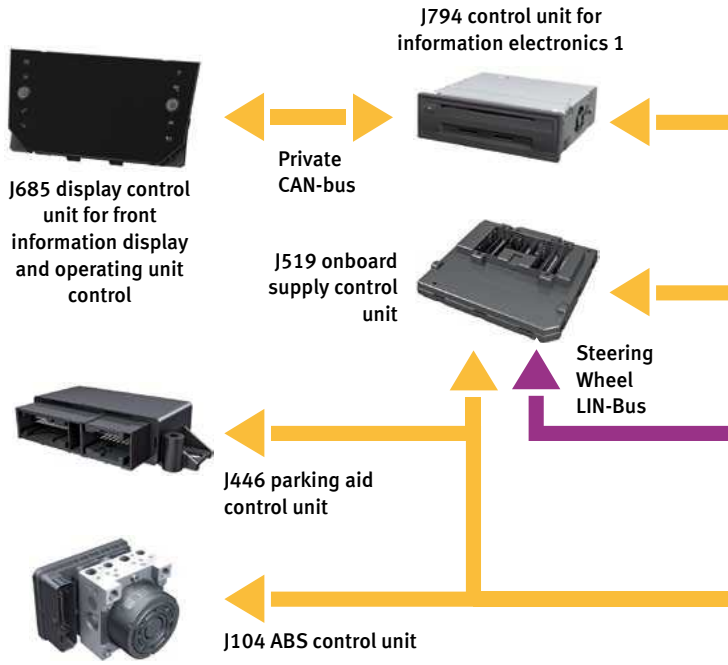
The R12 amplifier is connected to different **CAN-Bus** lines depending on the data bus architecture:

- / In the Standard architecture, it is connected to the Comfort CAN-Bus line.
- / In the Standard+ architecture, it is connected to the Infotainment CAN-Bus line.

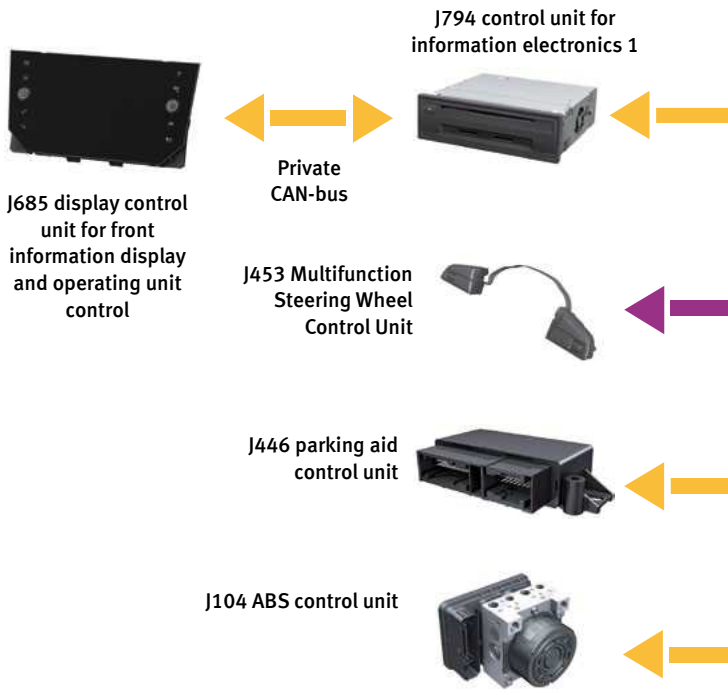
The messages transmitted between the infotainment system and the R12 sound amplifier are of the CAN:BAP type.

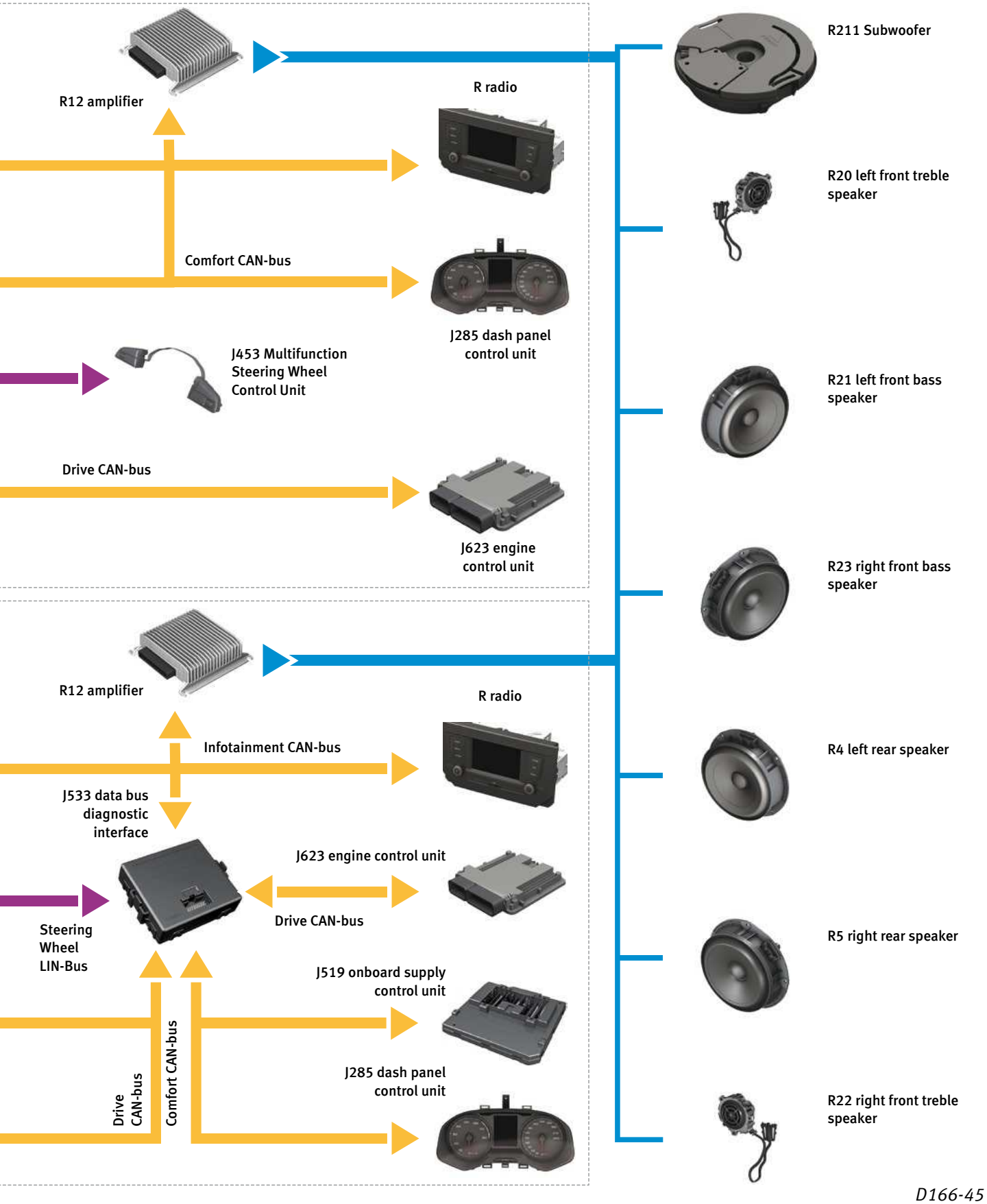
The communication by CAN-Bus between the infotainment system and the R12 amplifier is used to manage the sound. Some examples of messages that are transmitted are volume level, equaliser settings, mute or volume level depending on speed (GALA).

STANDARD ARCHITECTURE



STANDARD+ ARCHITECTURE




R12 amplifier
R radio
Comfort CAN-bus
J285 dash panel control unit
J453 Multifunction Steering Wheel Control Unit
Drive CAN-bus
J623 engine control unit
R211 Subwoofer
R20 left front treble speaker
R21 left front bass speaker
R23 right front bass speaker
R4 left rear speaker
R5 right rear speaker
R22 right front treble speaker
R12 amplifier
R radio
Infotainment CAN-bus
J533 data bus diagnostic interface
J623 engine control unit
Steering Wheel LIN-Bus
Drive CAN-bus
J519 onboard supply control unit
J285 dash panel control unit
Drive CAN-bus
Comfort CAN-bus

D166-45

AIR-CONDITIONING

The Ibiza 2017 has 3 air-conditioning configurations:

- / Heating and fresh air.
- / Manual air-conditioning.
- / Climatronic.

In the **Heating and fresh air and Manual air-conditioning** configurations, temperature selection and air outlet selection are performed mechanically. This is done by two Bowden wires that operate the corresponding flaps directly.

The selection of the V2 fresh air turbine speed is performed electrically with the centre selector of the control unit.

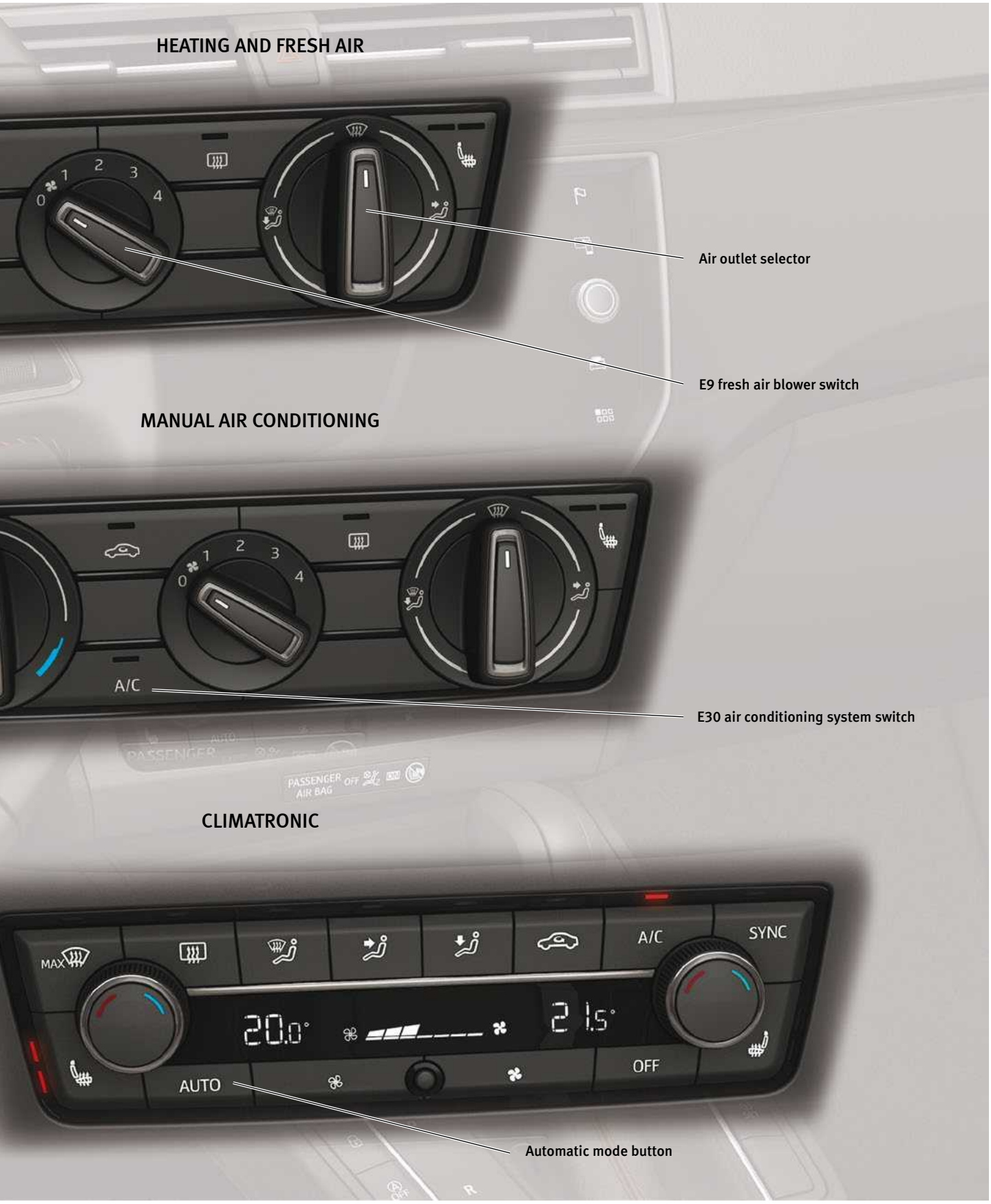
The Ibiza 2017's **Climatronic** has the following characteristics:

- / It offers 2 temperature zones.
- / The pollen filter has an anti-allergen coating.
- / The J255 Climatronic control unit has a new design.

The Climatronic is totally electric. The J255 Climatronic control unit manages all the flaps and the V2 fresh air turbine speed. For this purpose, it takes outside temperature, interior temperature and solar radiation into account.

In "Auto" mode, the system operates the corresponding flaps and adjusts the V2 fresh air turbine speed to achieve the required temperature.

The buttons and regulators on the J255 Climatronic control unit are explained on the next page.


HEATING AND FRESH AIR
Air outlet selector
E9 fresh air blower switch
MANUAL AIR CONDITIONING
A/C
E30 air conditioning system switch
CLIMATRONIC
MAX
A/C
SYNC
20.0°
21.5°
AUTO
OFF
Automatic mode button

D166-46

D166-47

J255 CLIMATRONIC CONTROL UNIT

The J255 Climatronic control unit features a new design and consists of regulators, buttons and an LCD display.

The **regulators** can be used to adjust the temperature of the 2 air-conditioned zones.

The **buttons** can be used to adjust air outlet and speed, switch the air-conditioning compressor on and off, synchronise both air-conditioned zones, activate automatic mode, activate and deactivate the heated rear window or switch off the air-conditioning. If the vehicle has heated seats, they can also be activated and adjusted to 3 power levels.

The LCD display is monochrome and it displays the temperatures of both air-conditioned zones and the speed of the V2 exterior air turbine.


SEAT