Training, Technology

SSP709 The ID.3

Ladies and gentlemen, colleagues,

This Self-study Programme will provide you with an overview of the function and design of the ID.3.
References to further descriptions are given in many places. As a rule, you will find the detailed descriptions in the contents of existing Self-study Programmes.

This time, due to the extraordinary situation of the coronavirus pandemic, you will also find the descriptions of the functions and designs for the ID.3 in the Volkswagen Training Technology presentations that your training manager will provide for you.

Thank you.

Your Qualification Technology
Volkswagen Academy Sales & Service

Introduction

The ID.3 - a departure into a new era Following the Beetle and the Golf, the ID.3 begins the third defining model generation at Volkswagen.
It is the first electric vehicle from the ID. family, built on the basis of the new modular electric drive matrix (MEB), that has achieved carbon-neutrality.

Networking with the Internet, digital display and control elements, natural voice control and other pioneering technologies signal the beginning of a new era.

Intelligent, innovative and sustainable – the ID.3

Important notes on using SSP Gen5!

This Self-study Programme provides you with an overview of the functions and designs of the ID.3.

Introduction

Notes on use

You will find an explanation of how to use the new online Self-study Programmes under the heading ‘Help’ in the menu.

Notes on content

Self-study Programmes are used to teach users about the design and function of new developments. Please use the respective workshop information for up-to-date test, adjustment and repair instructions.
The contents will not be updated.

Legal note

This Self-study Programme provides you with an overview of the functions and designs of the ID.3.

Production site

zero IMPACT FACTORY

The Volkswagen ID.3 1ST has been built in Zwickau since 4 November 2019.

Zwickau is playing a key role with the start of production:
for the first time, a large car factory has been completely re-equipped for electric mobility. In the final expansion stage from 2021, the Zwickau plant will build six electric models for three Group brands with a volume of up to 330,000 vehicles per year. The site is thus developing into Europe's largest and most efficient electric car factory and is leading the way in the transformation of Volkswagen's global production network.

Product features of the ID.3

The innovative and striking product features are:

- Heat pump for extending range and carbon dioxide (R744) as a refrigerant.
- We Connect ID. app
- QR code enrolment
- Rear lid manufactured from plastic
- Air Care Climatronic with 2-zone temperature control
- Rear axle drive
- Provision for bicycle carrier
- Three-phase current drive in different battery power levels
- Five-link rear axle
- Lighting scenarios for entry and exit lighting
- Rear drum brakes with electromechanical parking brake, EPB
- Centre airbag in front of driver seat backrest
- Connective cruise control, c-ACC
- Single-pinion power steering, speed-dependent
- Modular high-voltage battery

The equipment varies from country to country.

Exterior

The exterior of the **ID.3 1ST** is characterised among other things by the following features:

- Illuminated light strips in front trim on the left and right of the front VW badge*
- Panoramic glass sunroof*
- 18" to 20" alloy wheel rims

- Large roof spoiler
- LED headlights with automatic switching function
- LED tail light clusters

* Possible additions to basic equipment

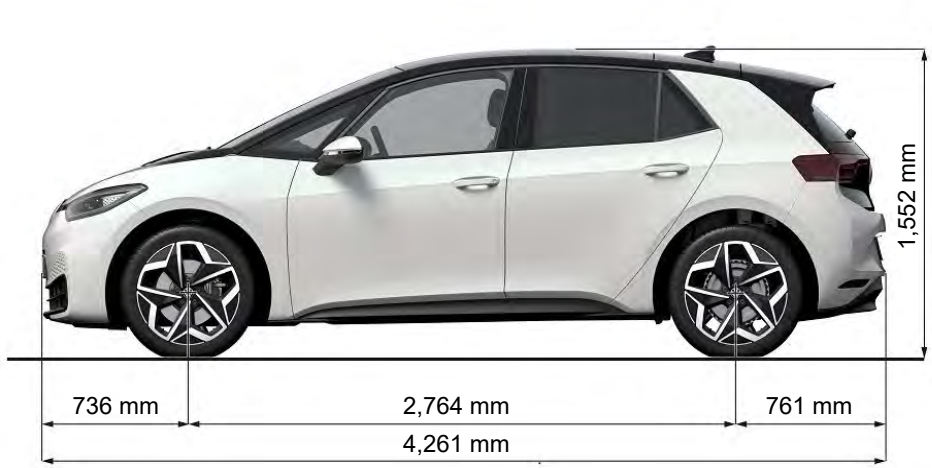
Interior

The interior of the **ID.3 1ST** has the following features:

- ID. Light, light strip in the front area of the dash panel
- Multifunction steering wheel
- Front armrests
- 10" display and control panel with integrated temperature and volume adjustment
- 5.3" dash panel insert with integrated driving mode selector
- Background lighting using up to 10 colours
- Pedals featuring “Play & Pause” design

Technical data

Exterior dimensions and weights



Weights and further data

Gross vehicle weight rating:	2,270 kg
Kerb weight according to DIN*:	1,730 kg

Turning circle:	10.2 m
Ground clearance:	150 mm
Drag coefficient**:	0.267 Cd

* DIN Deutsches Institut für Normung (German Institute for Standardisation)
** According to equipment

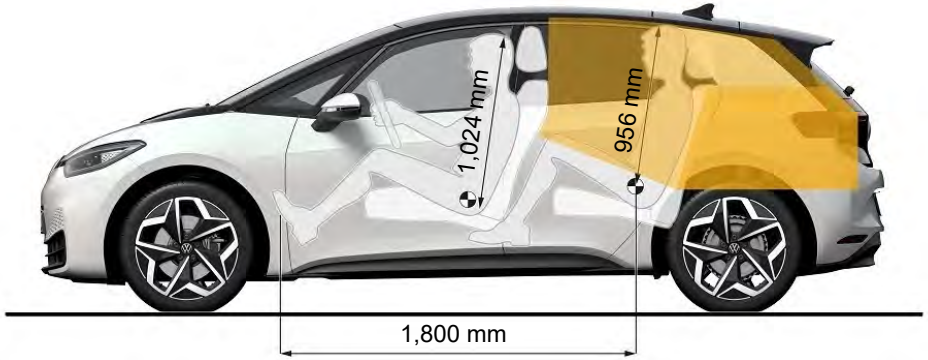
Technical data

Exterior dimensions and weights

The data for the ID.3 1ST is based on a five-seater model in the basic equipment version with 150 kW output and a 58 kWh high-voltage battery, a 1-speed gearbox and 215/55 R18 tyres without driver.

Technical data

Interior dimensions and capacities



Volumes and load-through hatch

Luggage compartment volume:	385 litres
Luggage compartment volume with rear seat backrest folded down:	1,267 litres
Through-load width between wheel housings:	1,001 mm

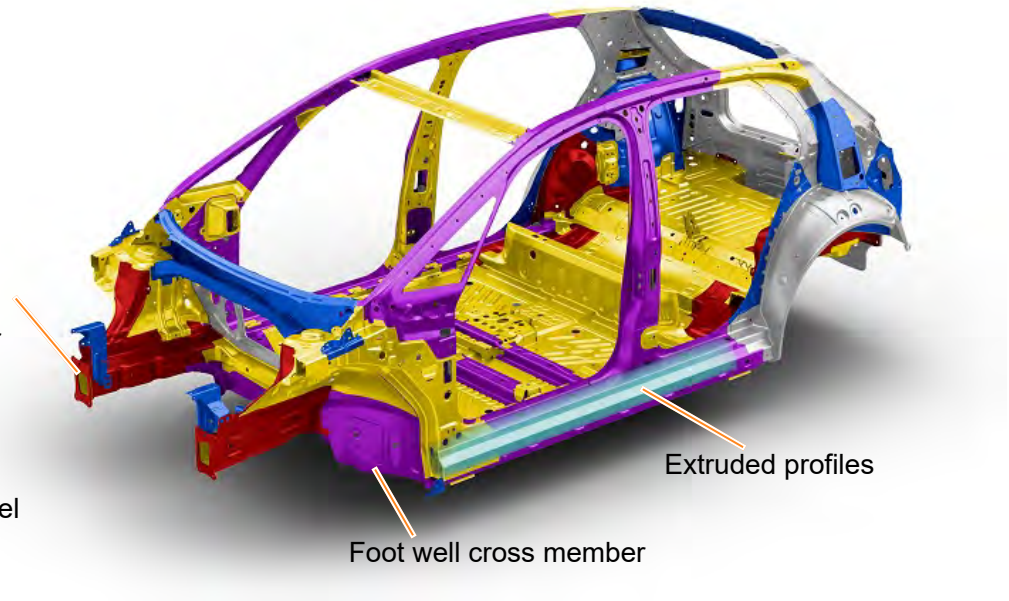
Weight of high-voltage battery:	375 kg
Nominal energy (net):	58 kWh
Max. output/ max. torque:	150 kW 245 Nm

Body structure

Overview of body structure

The body of the ID.3 is an all-new design.
The new strategy of the modular electric drive matrix (MEB) forms the basis of the floor. The wheelbase is longer and the overhangs at the front and rear are shorter compared with the MQB. The drive battery is installed flat on the vehicle floor between the front and rear axles. It is protected by additional reinforcements in the side members. This has been achieved by fitting extruded profiles made from aluminium inside the side members.

The vehicle floor has been designed to provide space to install the battery. The front longitudinal members are connected directly to the ultra-high strength hot-formed footwell cross member.

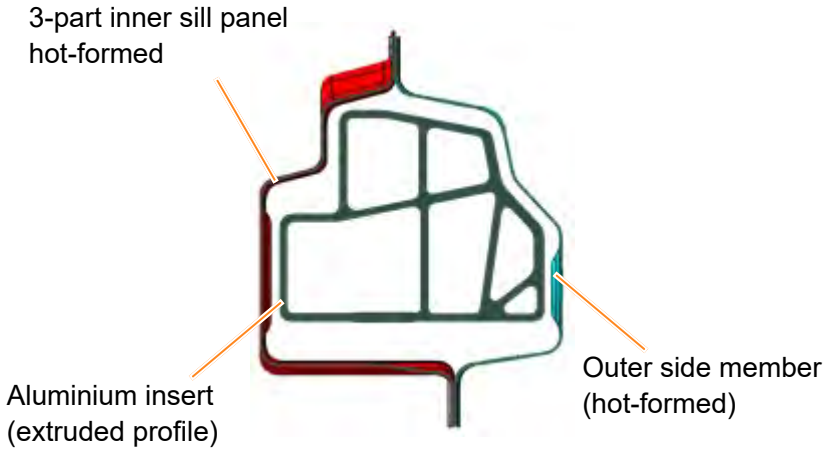


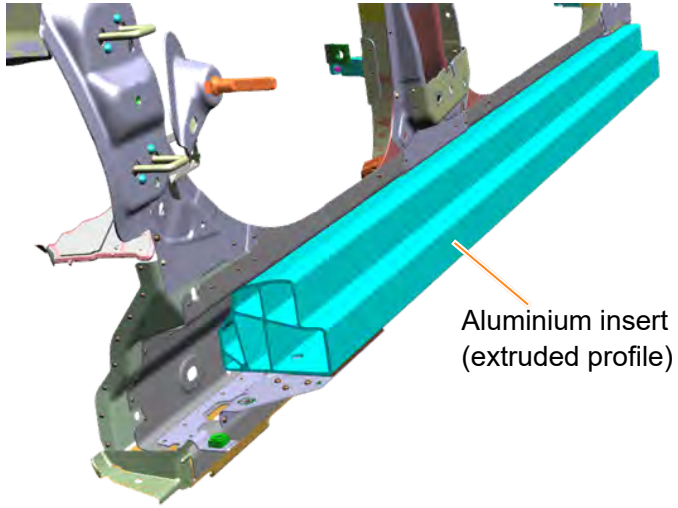
< 160 MPa	Mild steel	< 1,000 MPa	Ultra-high-strength steel
< 220 MPa	High-strength steel	> 1,000 MPa	Hot-formed steel
< 420 MPa	Extra-high-strength steel		Aluminium

Body structure

Extruded profile

Installing the battery on the vehicle floor leads to a lower centre of gravity, a more balanced weight distribution in the body and thus better driving dynamics. The seat position of the occupants is slightly higher.
A large amount of space is available in the interior because conventional components like a combustion engine, gearbox, transmission tunnel, fuel tank and exhaust system are omitted. The electric drive motors are located directly on the driven axles which saves space and further lowers the centre of gravity.





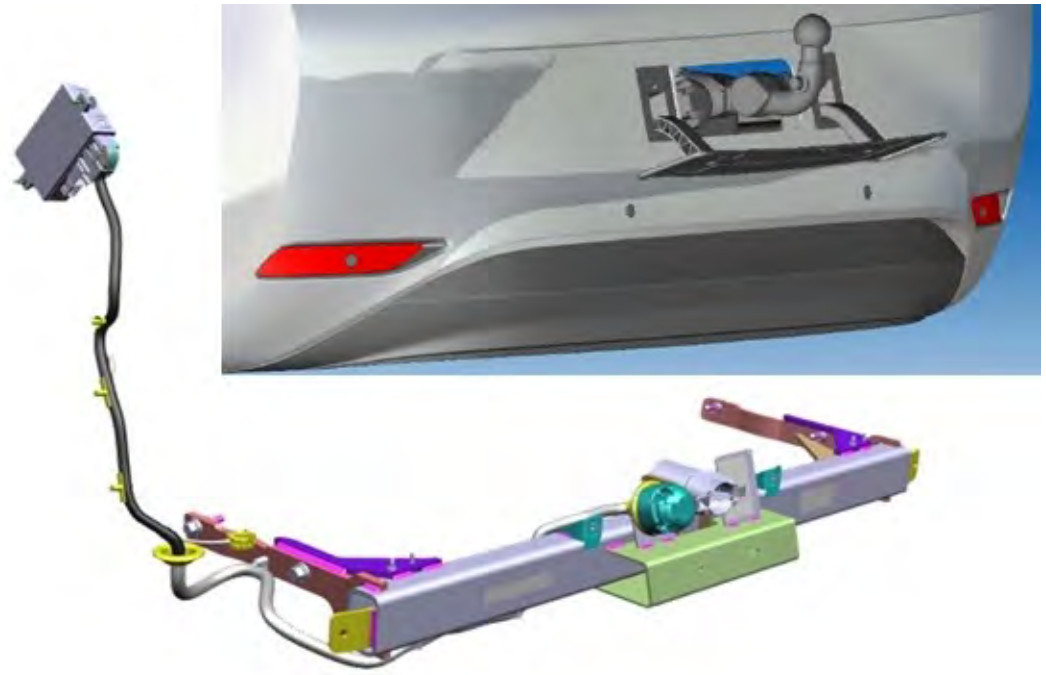
Rear lid

The rear lid on the ID.3 is made from plastic for the first time at Volkswagen

- The ID.3 has a one-piece rear lid with integrated spoiler on the upper sides.
- The trim panel below the spoiler is clipped in place and holds the third brake light.
- The side spoilers (“aerodecks”) on the rear lid are bolted and glued.
- The rear lid is opened with the new type of pivoting badge (featuring new 2D emblem). The optional camera is integrated into the badge.
- The design element on the rear lid does not have a function.
- The rear lid on the vehicle is always painted black.

Bicycle rack preparation for ID.3

The preparation is exclusively for mounting the bicycle rack and may be neither used for towing nor for hitching a trailer!
A sticker warning against misuse is located on the hinged number plate. The hinged number plate folds down allowing you to access the mounting for the ball head and to then fit it. You will also need to remove the sealing plug. The bicycle rack preparation can be fitted on all models except for the version with the 82 kWh battery.



Occupant protection

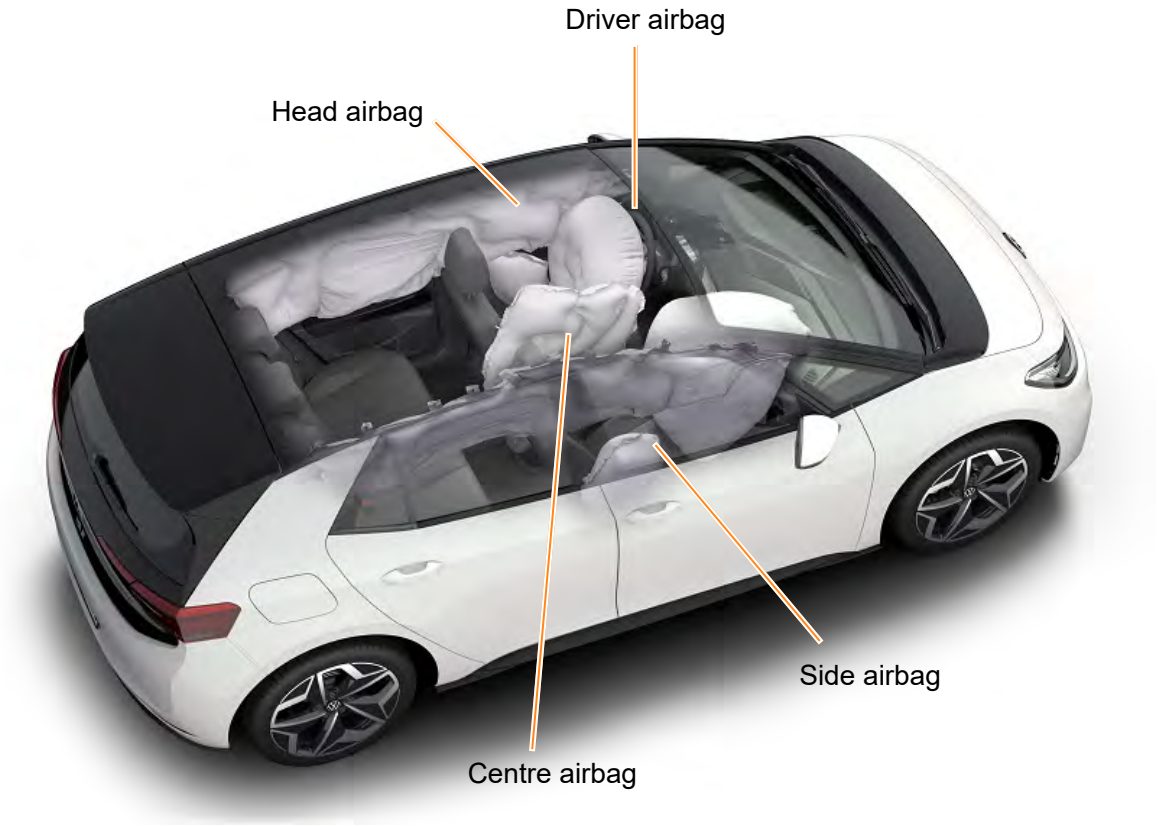
The ID.3 comes with the maximum range of safety features. Numerous assist systems ensure the highest possible level of safety and comfort. The new far-side centre airbag will now provide more protection in accidents. It deploys above the centre console between the front occupants in fractions of a second. This airbag is installed in the front of the driver seat backrest and protects the heads, shoulders and upper bodies of the driver and front passenger. The centre airbag is triggered in all side collisions.

All equipment lines have the following as standard:

- Driver and front passenger airbag
- Front side airbag
- Centre airbag in driver seat
- Head airbags (curtain) front and rear
- Belt tensioners on front and outer rear seats
- Reversible belt tensioners with single-stage belt force limiters at front
- TopTether

Active safety:

- Multicollision brake 2.0
- Front Assist
- PreCrash basic



1-speed gearbox 0MH – mechanical system

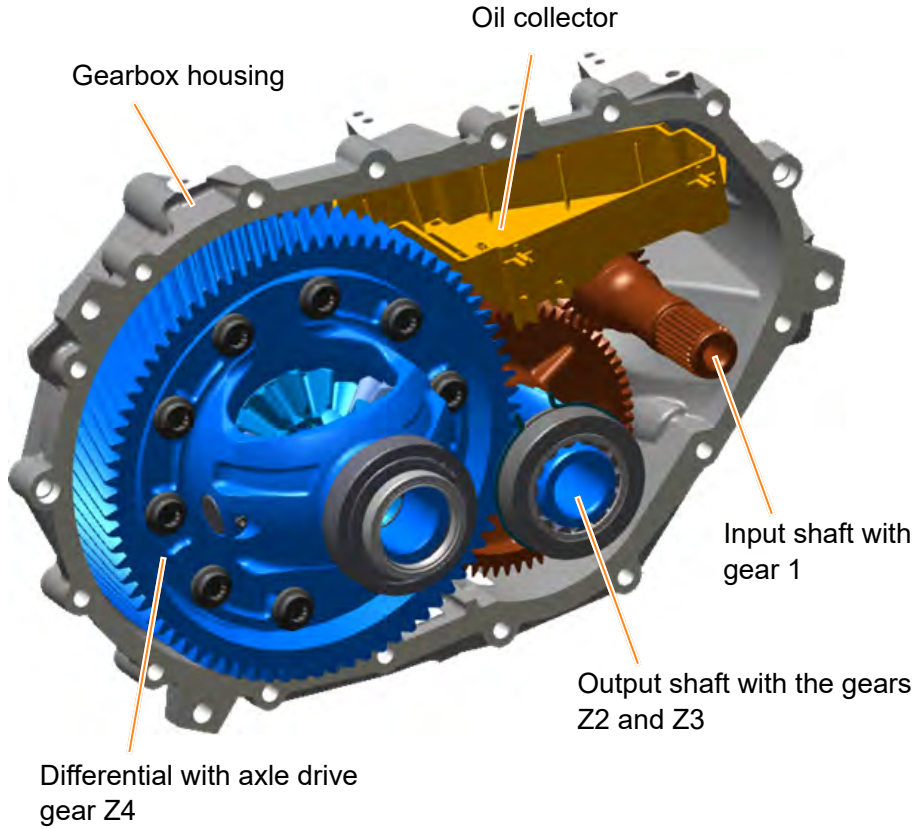
General design

The 1-speed gearbox 0MH is installed on the three-phase current drive VX54 on the rear axle of the modular electric drive matrix (MEB). Compared with the e-Golf gearbox, the gearbox is considerably more compact and lighter while being more durable. The gearbox design has not changed from the familiar form. There is no longer a parking lock in the gearbox. This task is performed by the electromechanical parking brake (EPB).

The following parts are fitted in the gearbox 0MH:

- Input shaft with gear wheel Z1
- Output shaft with the gears Z2 and Z3
- Differential with axle drive gear Z4
- Oil collector

The output shaft allows to the overall ratio to be formed over two steps (Z1 with Z2 and then Z3 with Z4). The advantage of this set-up is a compact and lightweight design.



You will find further information on the ID.3 gearbox in the presentation:
“The 1-speed gearbox 0MH”

1-speed gearbox 0MH – mechanical system

Technical data

Workshop/internal designation	1-gear gearbox 0MH/EQ310-1P
Gearbox code	UMG (ID.3)
Number of gears	1
Transmission steps	2
Transmission ratios	Total: 11.53 Step 1: 2.957 (Z1=23; Z2=68) Step 2: 3.9 (Z3=20; Z4=78)
Maximum input torque	310 Nm
Maximum input speed	16,000 rpm
Total weight	21.4 kg
Oil quantity/maintenance	0.8l + 0.1l/maintenance
Input shafts	Splined connection

1-speed gearbox 0MH – operation

Driving mode selection + parking brake

You select the driving mode via the driving mode selector on the steering column switch module with the steering column electronics control unit J527.
The electromechanical parking brake is activated with the button E538.
The button is connected directly to the ABS control unit J104.

Steering column switch module with J527

Driving mode selector

Driving mode selector

The driving mode selector is turned to select a gear. Two pressure points can be overcome in both directions of rotation. If you turn it one pressure point upwards, the forward gear **D** is selected. If you turn it again in that direction, it switches from driving mode **D** to **B** and vice versa.
If you turn the switch one pressure point downwards from this driving mode, driving mode **N** will be activated. If you turn past two pressure points at once, the **R** driving mode is selected. If, when turning upwards, you pass two pressure points at once, the **D/B** driving mode you previously deselected will be active again. This fast change allows the vehicle to be rocked free.
No matter whether one or two pressure points are overcome, the driving mode selector always springs back to the initial position.
The electromechanical parking brake is engaged by pressing the button E538 or by using the Auto P function.

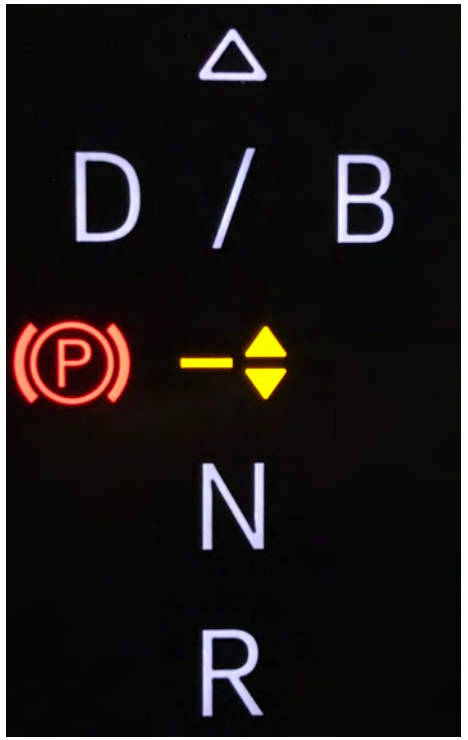
Driving mode selector Button E538

Driving mode display

Driving mode display Y6 in “control unit with display unit for driver information system J1254”:

The active driving mode is highlighted in amber next to the display. Inactive driving modes are white.

D – Continuous setting for forward travel – The electric drive is in the normal programme (automatic energy recovery when ECO assist system is activated).
B – High energy recovery during overrun.
P – The driven wheels are locked by the electromechanical parking brake.
N – The electric drive is in neutral position. No power is transferred to the wheels and the braking effect of the electric drive is not available.
R – Reverse gear is engaged.



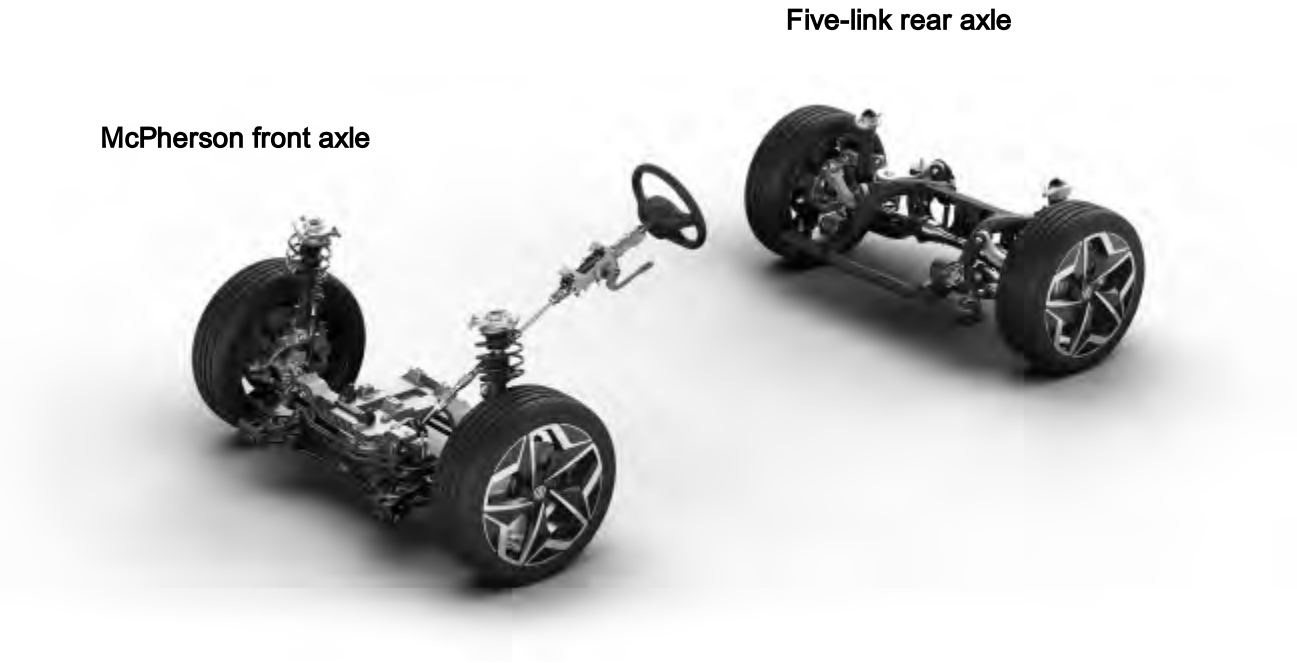
Overview of running gear

The illustration shows important standard and optional running gear equipment for the ID.3.

- McPherson strut front suspension
- New five-link rear axle
- New electromechanical power steering, progressive and speed-dependent
- ABS/ESC, manufacturer ZF-TRW
- Front disc brakes
- Rear drum brakes with electromechanical parking brake
- Tyres with manufacturer’s mark

The ID.3 can be equipped with the following versions of the running gear:

- Normal running gear
- Sports running gear (15 mm lower compared with normal running gear)
- Dynamic Chassis Control, DCC (not lowered)



You will find further information on the ID.3 running gear in the presentation:
“Running gear and driver assist systems ID.3”

Overview of driver assist systems

The illustration shows the standard and optional driver assist systems for the ID.3.

Adaptive cruise control – ACC
- Predictive cruise control system p-ACC
- Connective cruise control system c-ACC

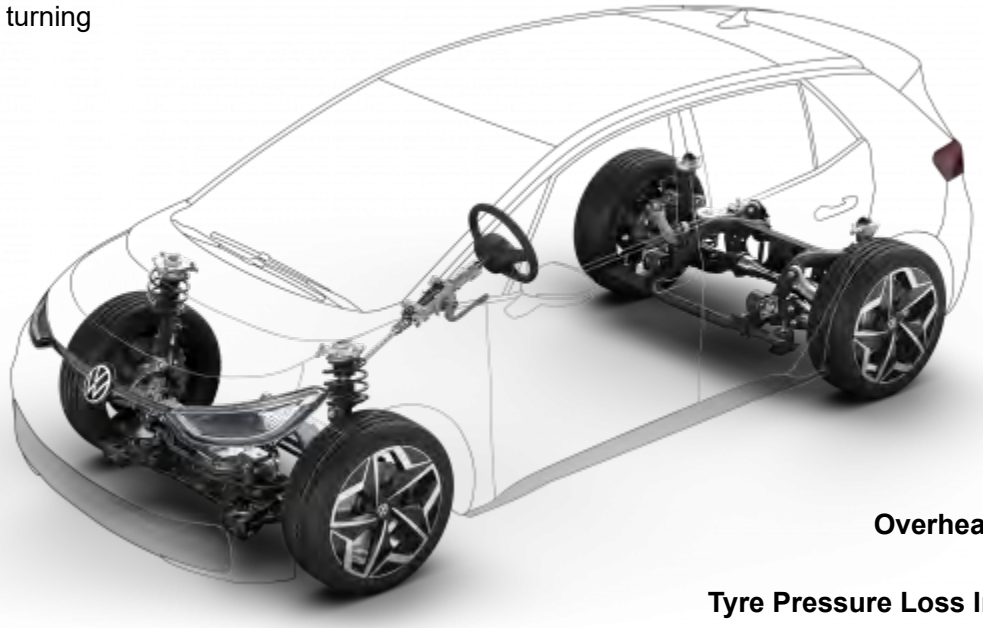
Emergency braking function – Front Assist
- Pedestrian detection/Cyclist Monitoring
- Distance warning
- Oncoming vehicle braking when turning
- Swerve support

Multicollision brake

Lane change assist – Side Assist

Lane departure warning – Lane Assist
- Emergency Assist
- Traffic Jam/Roadwork Lane Assist

Rear Traffic Alert



Reversing camera - Rear View camera

Driver Alert System

Parking aid – PDC
– Rear manoeuvre braking

Travel Assist

Car2x

Overhead view camera – Area View

Traffic sign detection

Tyre Pressure Loss Indicator – TPLI

You will find further information on the driver assist systems in the Self-study programmes:
SSP 596 “The Passat 2020 – Electrics and Driver Assist Systems”
SSP 702 “The Golf 2020 – Running Gear and Driver Assist Systems”

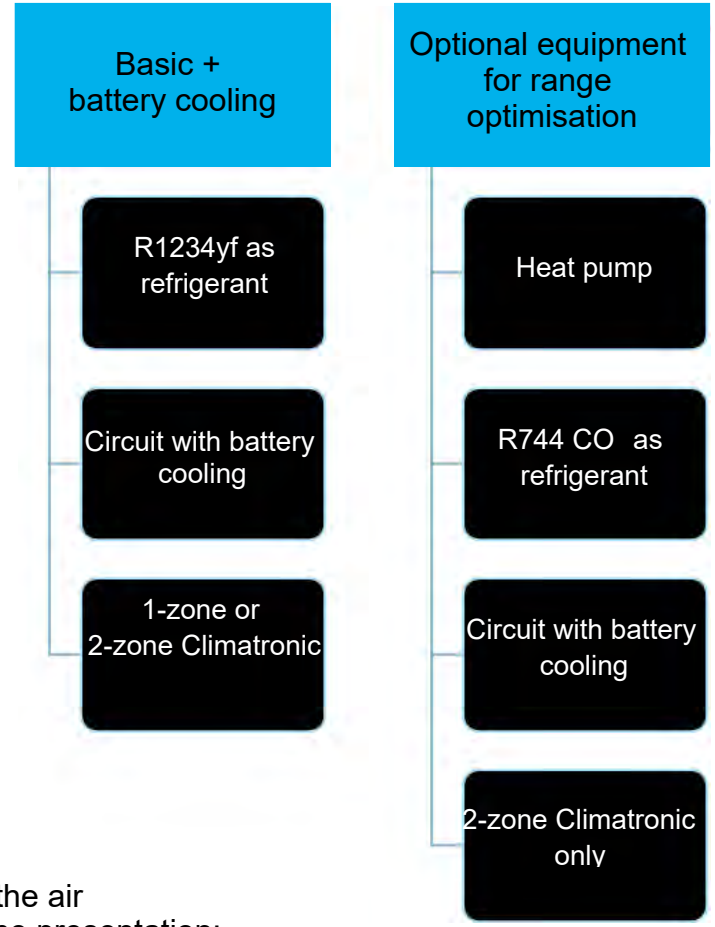
Air conditioning and heat pump in the ID. family

The ID.3, as well as all subsequent derivatives from the modular electric drive matrix (MEB), will come with two different air conditioning systems.

- There will be a 1-zone Climatronic system as a basic version. This can be flashed with a software upgrade to turn it into a two-zone Climatronic ("We upgrade" from spring 2021).
- A 2-zone Climatronic comes as standard in some equipment lines or it can be ordered as optional equipment.

Both of these variants have refrigerant circuits using the familiar R1234yf refrigerant. They have a battery cooling function in the refrigerant circuit via the “Chiller” heat exchanger for high-voltage battery.

A heat pump system using carbon dioxide as a refrigerant is being offered as an option for the first time in the ID.3 to optimise the range. This variant is available for the ID.3 only as a 2-zone Climatronic system.

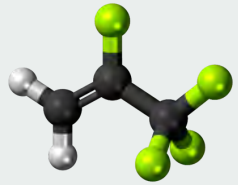


Further information on the properties of the two refrigerants.

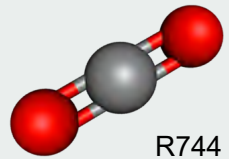
You will find further information on the air conditioning system in the ID.3 in the presentation: “Air conditioning ID.3 family”

Properties of refrigerant

Characteristics	R744	R1234yf
Chemical formula	CO_2	$C_3H_2F_4$
Chemical designation	Carbon dioxide	Tetrafluoropropene
Boiling point (at 1 bar absolute)	-78.7°C	-29.5°C
Critical point	30.980°C/73.75 bar	94.7°C/33.82 bar
Greenhouse effect (GWP value)	Factor 1	approx. 4x higher than CO_2
Refrigerant type	Natural	Synthetic
Flammability	Non-flammable	Flammable
Colour	Colourless	Colourless
Odour	No inherent odour	Slight inherent odour



R1234yf



R744

The refrigerants R12 (dichlorodifluoromethane), R134a (tetrafluoroethane) and R1234yf (tetrafluoropropene) were previously used at Volkswagen. The Volkswagen ID.3 also sees the introduction of a new refrigerant.
It is carbon dioxide. The chemical formula is CO_2 and is listed with the designation R744. It contains neither fluorine nor chlorine and is produced in a series of natural processes. CO_2 does not harm the earth's ozone layer. CO_2 is a colourless, non-flammable gas and is chemically inert in combination with other elements. Carbon dioxide is heavier than air. It is a substance present in nature that is available at low cost. Air conditioning systems using CO_2 operate at approximately 10 times the pressure of air conditioning systems with the refrigerants previously used. The refrigerant is used with a gas purity of at least 4.0. The water proportion in the gas therefore needs to be less than 10 ppm.

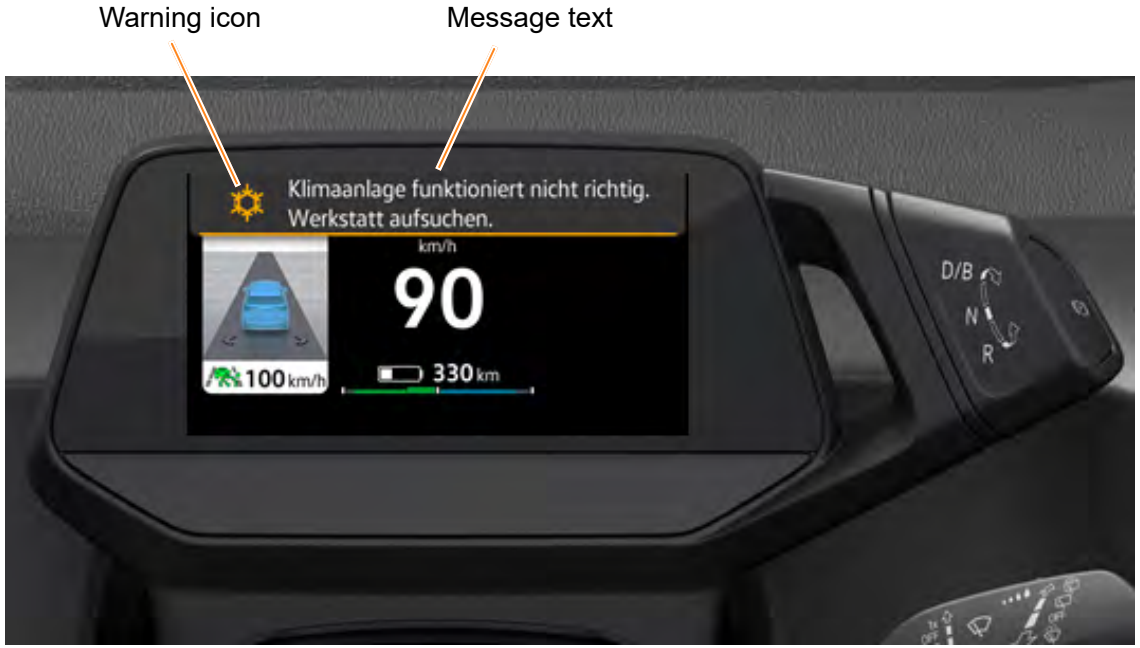
CO_2 as refrigerant in the heat pump

Information messages for sensor for interior carbon dioxide concentration G929

- Air conditioning faulty – seek service Icon colour yellow/signal tone 1x long
- Ventilate vehicle via windows
  Icon colour yellow/signal tone 1x long
- Urgently ventilate vehicle via windows or leave vehicle
  Icon colour red/signal tone 3x short with repeat

Information message for air conditioning in general:

- Vehicle overheated! Air conditioning necessary
  Icon colour white/no signal tone



ID.3 innovative info display

CO_2 as refrigerant in the heat pump

Air conditioning faulty – seek service:

There can be various reasons for this error message.

- Fault in CO_2 sensor that is recognised for longer than 10 seconds
- Fault in fresh air and air recirculation flap
- Fault in blower

CO_2 as refrigerant in the heat pump

Ventilating vehicle via windows:

- CO_2 sensor signals an increased CO_2 concentration between 1.5% and 2.5% vol. in interior.

CO_2 as refrigerant in the heat pump

Urgently ventilate vehicle using windows or leave vehicle:

- CO_2 sensor signals an increased CO_2 concentration above 2.5% vol. in the interior.

Carbon dioxide is not considered to be poisonous, but higher concentrations of 3–5% in breathing air can cause headaches, dizziness, drowsiness, sleepiness and nausea. Concentrations above 5% in breathing air can lead to loss of coordination skills and unconsciousness. Concentrations above 8% in breathing air lead to respiratory arrest and death. Always observe the latest information on this in ElsaPro > Air conditioning systems with R744 refrigerant > General Information.

CO_2 as refrigerant in the heat pump

Vehicle overheated! Air conditioning necessary:

- ICASe (“In Car Application Server” – currently still two high-performance control units) too hot. Air conditioning is activated.

Approx. 80% of the vehicle’s computing power is bundled in these control units. The remaining control units have been more or less downgraded to output stages with data bus connections.

Climatronic operation

General operation

The all-new look continues seamlessly through the interior. Futuristic, comfortable and clearly laid out at one and the same time.

All Climatronic functions are simple and quick to activate thanks to the intuitive operation via a large touchscreen on the right, the centre ID. cockpit and the light and visibility cluster on the left.

Operation using the infotainment system

All functions of the 1-zone and 2-zone Climatronic can be operated using the centre touchscreen. The direct access button below the screen allows you to open the air conditioning menu directly and quickly.

In the header of the air conditioning operating display, you can select three air conditioning menus:

- Smart Climate (only with 2-zone Climatronic)
- Classic Climate
- Air Care

Direct access button – centre switch module in dash panel EX22

Air conditioning menu button

More information about the air conditioner menus can be found here:

Smart Climate

Classic Climate

Air Care

Smart Climate menu

In the “Smart Climate” menu, only one of the listed functions can be active at one time.

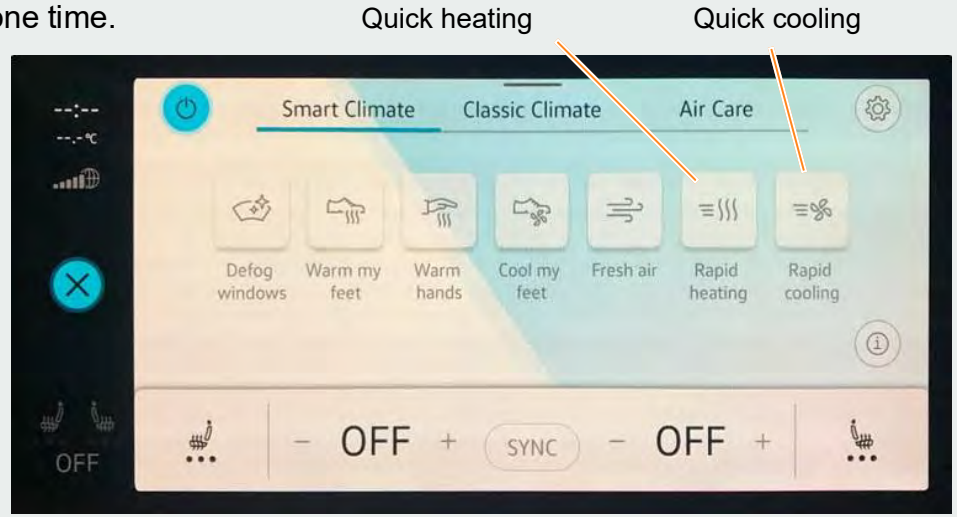
Defog windows:
- Air flow to the windscreen is increased as required
- Blower temperature increased as required
- Increase in air drying by reducing the evaporator temperature

Warm my feet:
- Increase in air flow to footwell
- Increase in blower temperature

Warm hands:
- Increase in air flow to the person
- Increase in the blower temperature

Cool my feet:
- Increase in air flow to footwell
- Decrease in blower temperature

Fresh air:
- Increase in air flow (without changing the air distribution)
- Decrease in the blower temperature
- Switch-over from automatic/manual air recirculation mode to fresh air mode (manual activation of the air recirculation mode while the “Fresh Air" function is active ends the function).



Rapid heating:
- Maximum heating output by a PTC air heater in the air conditioning unit with 6 kW output without a focus on saving energy

Rapid cooling:
- Maximum cooling output of AC system without a focus on saving energy

Classic Climate menu

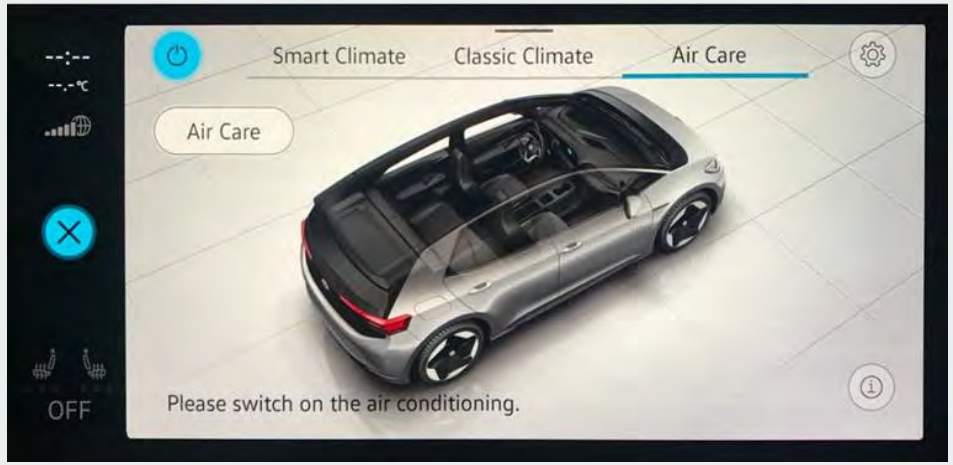
ID.3 drivers will find all the familiar air conditioning system buttons and functions in the “Classic Climate” menu shown on the touchscreen.

If the Climatronic system is switched off, it can be activated using the familiar ON/OFF function or using the defrost function button in the light and visibility cluster.

The temperature regulation for the seat heating can also be switched on and adjusted by means of a “two-finger touch” in the area of the temperature selection touch buttons on the right and left under the screen.

Air Care menu

This Climatronic menu uses an air quality sensor with active biogenic filter. This special filter is even more efficient than traditional pollen filters. The active biogenic filter also stops fungal spores and minute allergens from entering. When you activate the Air Care function in the Air Care Climatronic operating menu, the fresh air is drawn in. Then, most importantly, the proportion of recirculated air in the interior is mixed and cleaned in such a way that the air quality in the car remains on a constantly high level and the filter is used optimally.
In addition, an air quality sensor detects if the ambient air is polluted with certain harmful substances.
If necessary, the Air Care Climatronic then switches completely to air recirculation mode so that, for example, the exhaust gases from other vehicles do not enter the interior.



Operating unit for lighting EX59

The defrost and heated rear window functions have been incorporated into the light and visibility cluster thanks to the changed air conditioning menu navigation. This pools all light and visibility functions into one central touch control which is easy for the driver to reach.

Windscreen defrost function on/off

Heated rear window on/off

Voice control

The self-explanatory operation in the ID.3 is optionally supported by a natural voice control feature. The system is easy to activate by saying “Hello ID. ...” (the wake-up phrase) or by pressing the Voice button on the steering wheel. The ID.3 now responds by saying, for example, “Yes?” and “What would you like to do?” and reacts intuitively to voice commands such as “I feel cold” when the 2-zone Climatronic is installed. New digital microphones not only perfect voice recognition and the voice quality (when making phone calls), but also pinpoint who the person speaking is (driver or front passenger).

ID.3 fitting locations

Heater and air conditioning system control unit J979

The heater and air conditioning system control unit is located to the right of the air conditioning unit underneath the dash panel (left-hand drive models).

Vehicle interior temperature sensor G1090

The vehicle interior temperature sensor is located centrally between the centre vent and the storage compartment in the centre console.

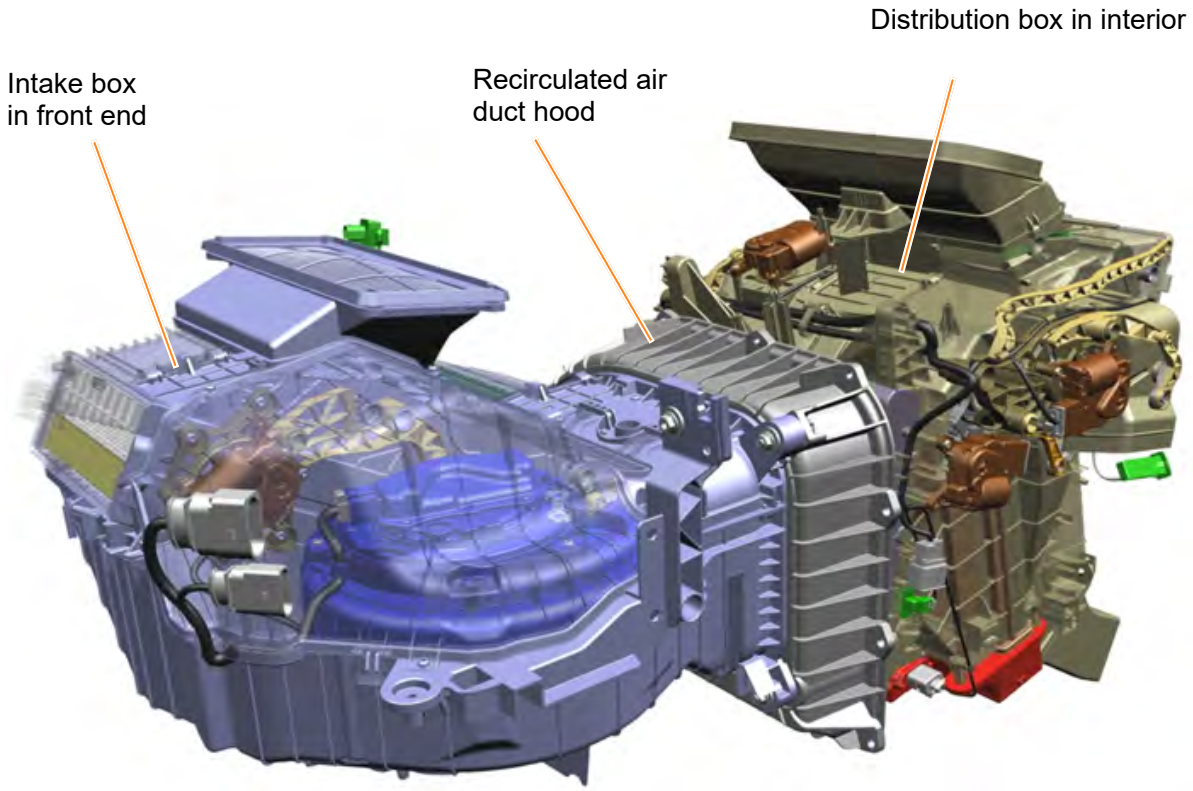
Heater and air conditioning system control unit J979

Vehicle interior temperature sensor G1090

Heater and air conditioning unit R1234yf/R744

2-part basic concept

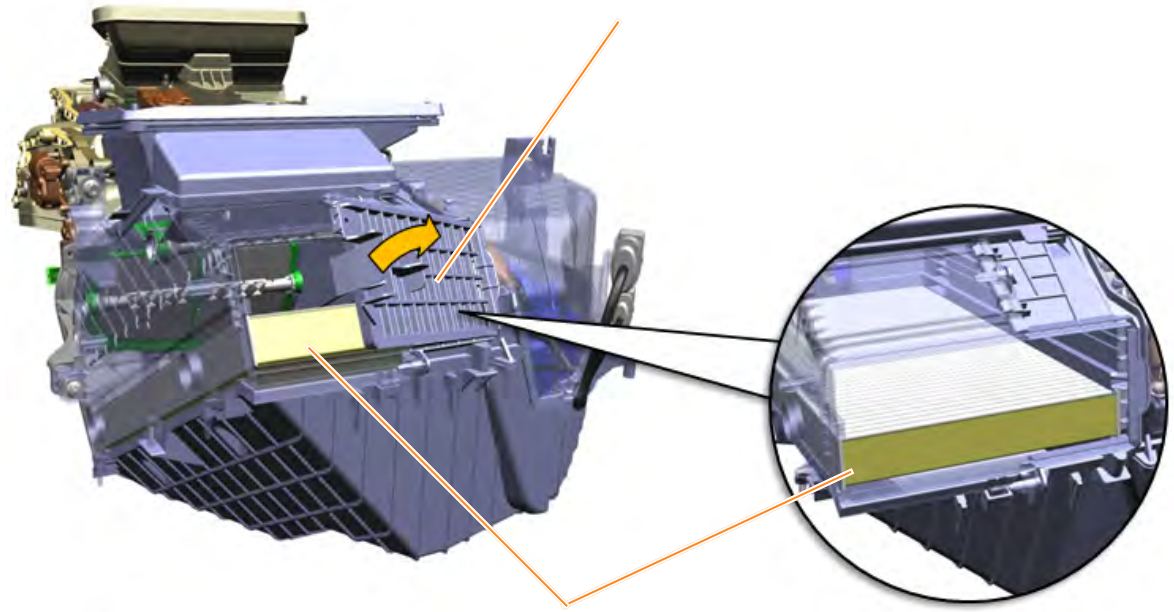
The modular electric drive matrix has a fundamentally newly defined heater and air conditioning unit.
The basic concept is now two-piece and consists of the intake box in the front end and the distribution box in the interior. The package dimension in the interior is thus optimised. The interior heating is exclusively implemented with a PTC air heating element and/or the additionally installed heating gas cooler (only with R744).



Removing the interior filter

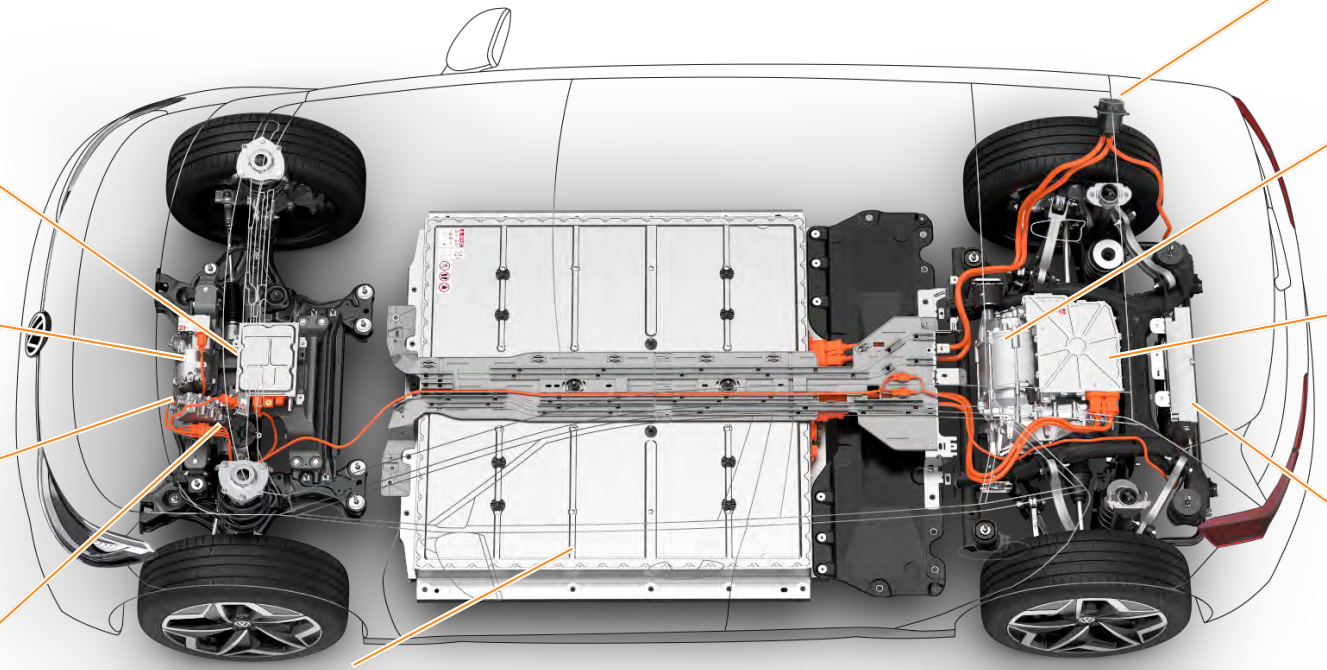
Unclip the cover for the dust and pollen filter and remove. The filter can now be removed and renewed.

The filter mounting in the air intake box is intended for the installation of two filters.
At present, only one filter with allergenic coating is fitted in Europe.
The double filter is currently installed only in China. One filter is an activated charcoal filter and the other is a standard filter element.



Overview of high-voltage components

The illustration shows the fitting locations of the high-voltage components in the ID.3.



Voltage converter
A19

Air conditioner compressor
VX81

PTC heater element 3
Z132

High-voltage heater (PTC)
ZX17

High-voltage battery 1
AX2

High-voltage battery charging socket 1
UX4

Three-phase current drive
VX54

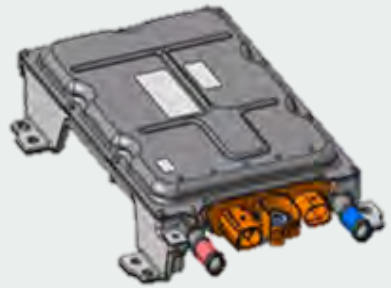
Power and control electronics for electric drive
JX1

Charging unit 1 for high-voltage battery
AX4

You will find detailed information on the high-voltage system in the ID.3 in the presentation: “High-voltage Technology ID.3”

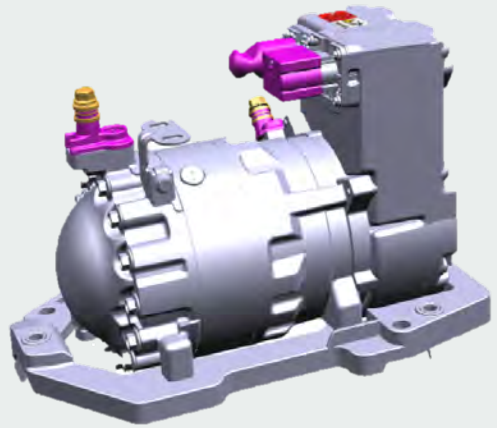
Overview of high-voltage components

The voltage converter supplies the 12-volt electrical system with voltage and takes care of the pre-charging of the capacitor in the power and control electronics for electric drive. It serves as a second energy source and its de-energised state must also be verified following the de-energisation procedure.



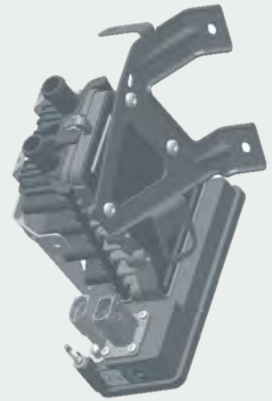
Overview of high-voltage components

It is integrated into the high-voltage system and is used for both the interior and the high-voltage battery as necessary.



Overview of high-voltage components

The high-voltage heater heats the coolant for the high-voltage battery and is used for active heating. It is controlled by the battery regulation control unit J840 with a LIN bus.



Overview of high-voltage components

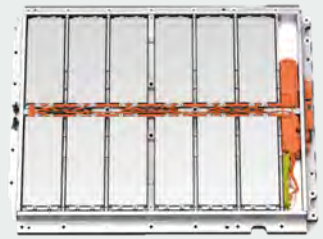
The high-voltage heater (PTC) is an air heater and consists of the high-voltage heater (PTC) Z115 and the control unit. It has an output of up to 6,000 watts and can be regulated in three stages. The master is the air conditioning control unit.

Overview of high-voltage components

The high-voltage battery is a lithium-ion battery. This is installed on the vehicle underbody. The advantages of this are a low centre of gravity and optimised weight distribution. The high-voltage battery 1 AX2 supplies the electrical energy for driving and is offered in two variants.
A 45 (48) kWh battery will follow at a later date.

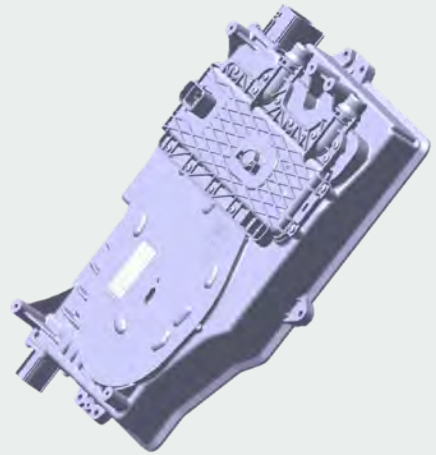
58 (62) kWh

77 (82) kWh



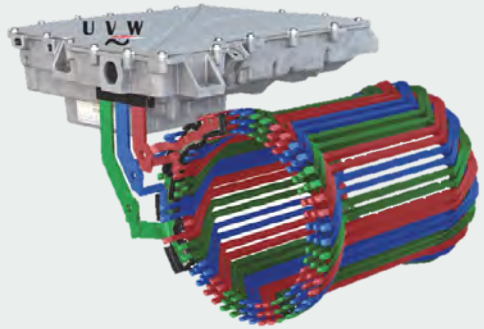
Overview of high-voltage components

The charging unit is installed in the rear end of the ID.3. It converts the alternating current from the charging connection into a direct current for charging the high-voltage battery. It is available with two output levels: 7.2 kW and 11 kW.



Overview of high-voltage components

The power and control electronics for electric drive JX1 converts the customer's power requirement into electrical signals. The power electronics control the three-phase current drive with these signals. The DC voltage from the high-voltage battery is converted into a three-phase AC voltage for this purpose.



Overview of high-voltage components

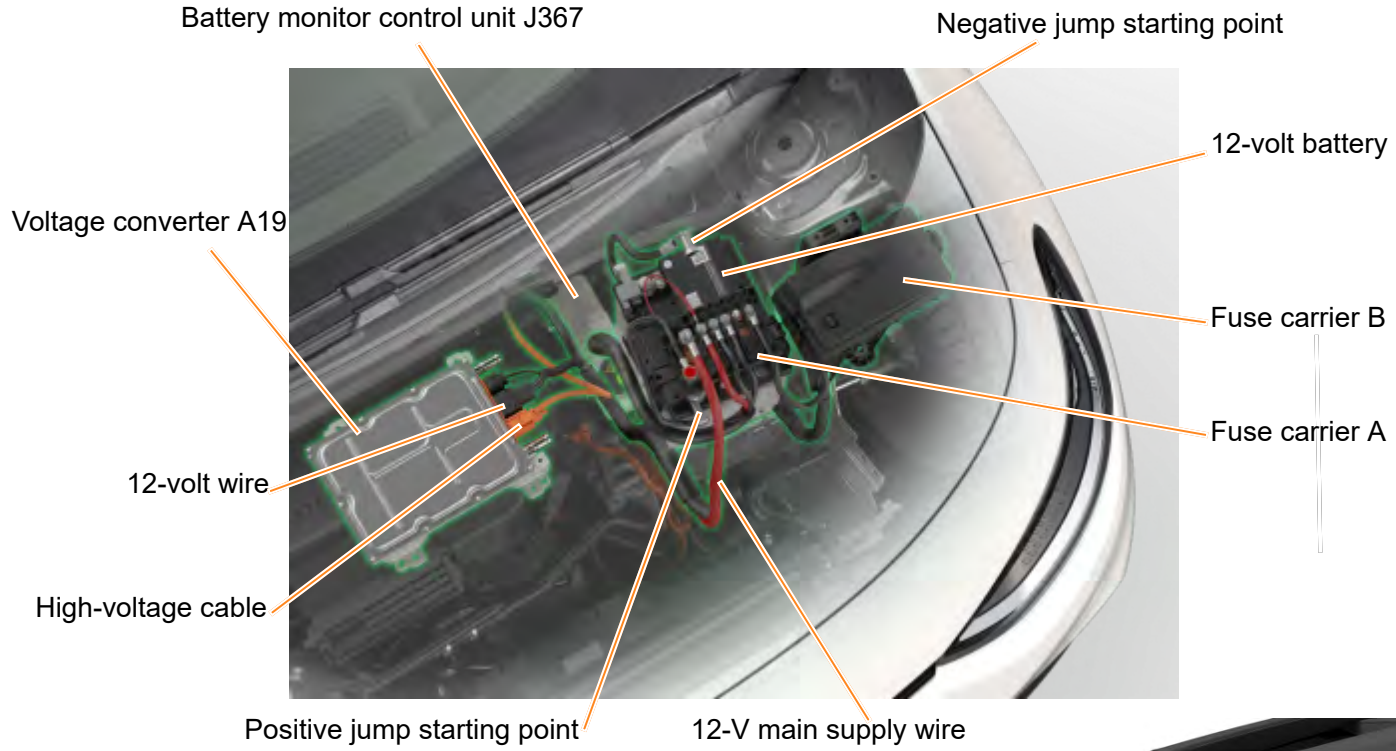
The three-phase current drive can drive the vehicle as an electric motor or charge the high-voltage battery as an alternator.
The three-phase current drive is fitted in two different output levels (software). Basic 107 kW and performance 150 kW.

Overview of high-voltage components

The high-voltage battery can be charged via the charging socket. There is a choice of AC voltage and DC voltage connection.

Onboard supply

In the ID.3, the 12-volt vehicle electrical system is supplied by the high-voltage battery via the water-cooled voltage converter A19.
The participation of the 12-volt battery is indispensable for the starting procedure. The high-voltage battery is disconnected from the high-voltage circuit when the vehicle is locked. During the starting procedure, the high-voltage battery is first connected to the high-voltage circuit with the aid of the 12-volt battery.
Therefore an electric vehicle with discharged 12-volt battery cannot be started.
The 12-volt battery is a 51-Ah wet battery.



You will find further information on wet batteries in SSP 504 “Vehicle Batteries”.
The majority of control units in the ID.3 are supplied via terminal 30.

Networking in the ID.3

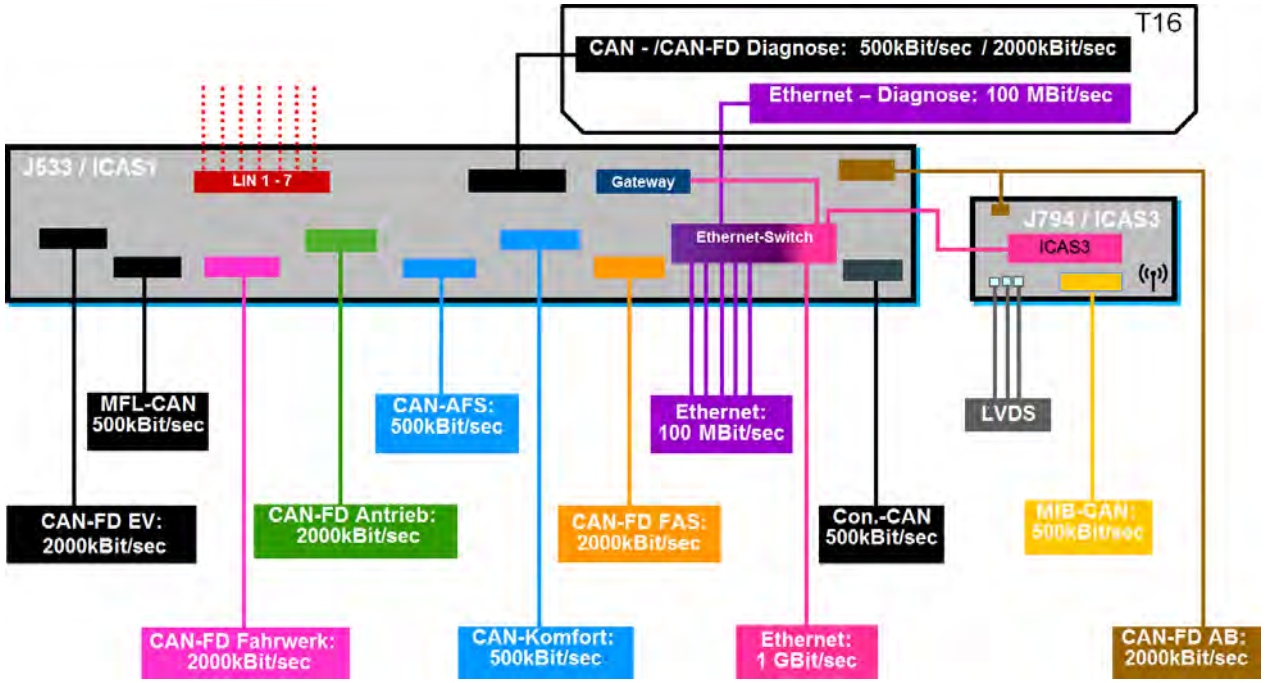
It uses central control units both
for the diagnostics requirements (ICAS1) and for the Infotainment system (ICAS3). In addition to the J533 diagnostic gateway for data bus (address 19), ICAS1 also contains further addressable modules.

The following bus systems are being introduced at Volkswagen with the ID.3:

- Connectivity CAN (Con)
- Display and operation CAN (AB)
- Sub CAN multifunction steering wheel (MFL)
- Ethernet with 1 Gb/sec

The previous CAN AFS sub bus is connected directly to the ICAS1 in this case.
The 1 Gb/sec Ethernet is used for fast vehicle data transmission.

The diagnostic CAN with 500/2,000 kbit/sec and the Ethernet with 100 Mbit/sec are connected to the diagnostic connector (T16).



Key for networking

Networking in the ID.3

- ICAS: In-Car Application Server (central control unit)
- CAN-FD: CAN with flexible data rate (500 and 2,000 kbit/sec)
- Ethernet Switch: Ethernet switch module
- CAN-AFS: Advanced Frontlighting System (light functions)
- CAN-FD EV: electric vehicle (high-voltage functions)
- CAN-FD AB: display and operation
- CAN-FAS: driver assist systems
- Con.-CAN: connectivity (for vehicle access functions, Kessy)
- MIB-CAN: modular infotainment matrix
- MFL-CAN: multifunction steering wheel
- LVDS: low voltage differential signalling (high data rates for graphics function)

Exterior lighting

Headlights

Two headlight variants are available for the ID.3:

- Basic
- IQ. Light matrix LED

“Basic” headlight

“High” headlight

“Basic” light configuration

“High” light configuration

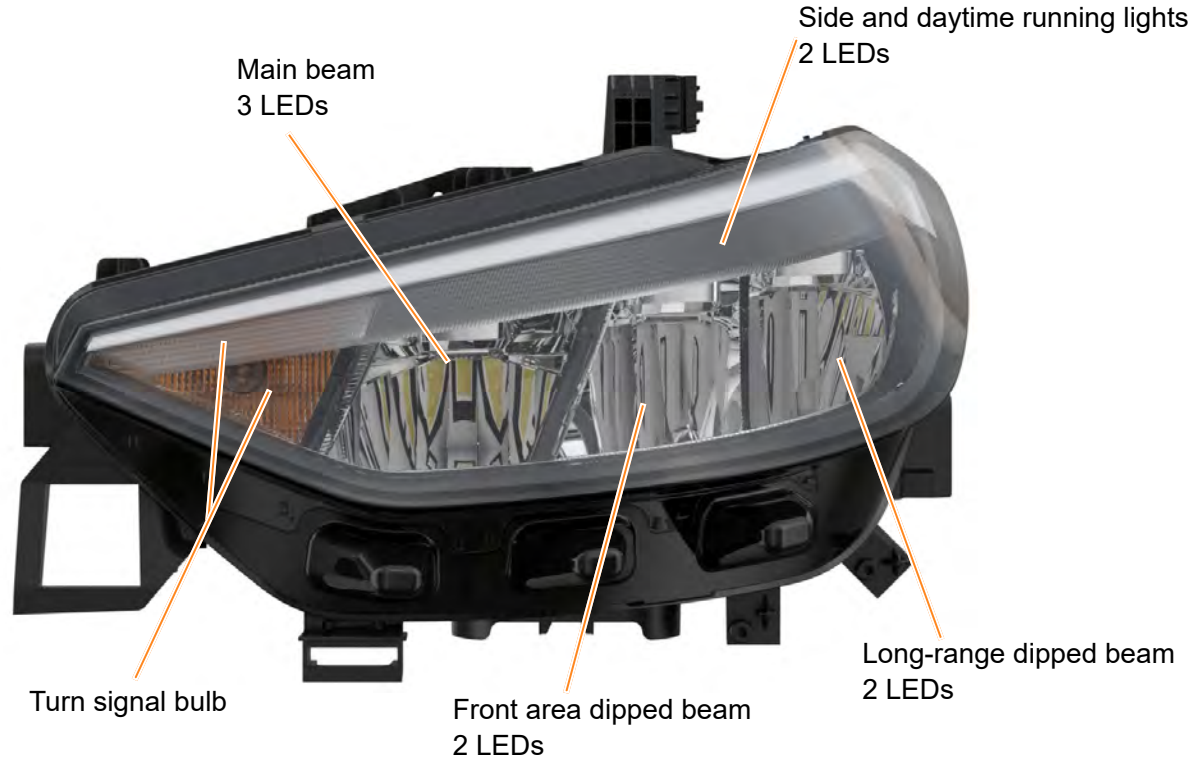
Headlights

The “Basic” headlight uses reflector and lens technology.

It has LEDs as lamps. The turn signal uses bulb technology.

The headlight range control is adjusted via the Infotainment system in the vehicle.

A main beam assist function is an equipment variant.



Headlights

The “High” matrix LED headlight has been designed to feature LED technology only. It uses matrix technology.

It has the following functions in addition to the light functions from the “Basic” headlight:

- Dynamic cornering lights
- Cornering lights
- All-weather lights
- City lights
- Dipped headlights
- Motorway lights

Headlights

“Basic” light configuration

The daytime running and side lights use the same LEDs. These LEDs are activated at maximum level for daytime running lights and are dimmed for the dipped beam, side light and turn signal functions.

Headlights

“High” light configuration

The daytime running, side and parking lights use the same LEDs in the headlights. The LED light strip in the front trim is activated in addition for the side light function.

Furthermore, the LED light strip is used for the dipped beam light functions and during the entry and exit animation.

Link to animation

Both the LEDs in the matrix module and those in the additional main beam are used for the main beam function.

Tail light clusters

Two tail light clusters using LED technology are available:

- “Basic”
- “High”

The tail light clusters are fitted in the side panel.

“Basic” tail light cluster

“High” tail light cluster

“Basic” light configuration

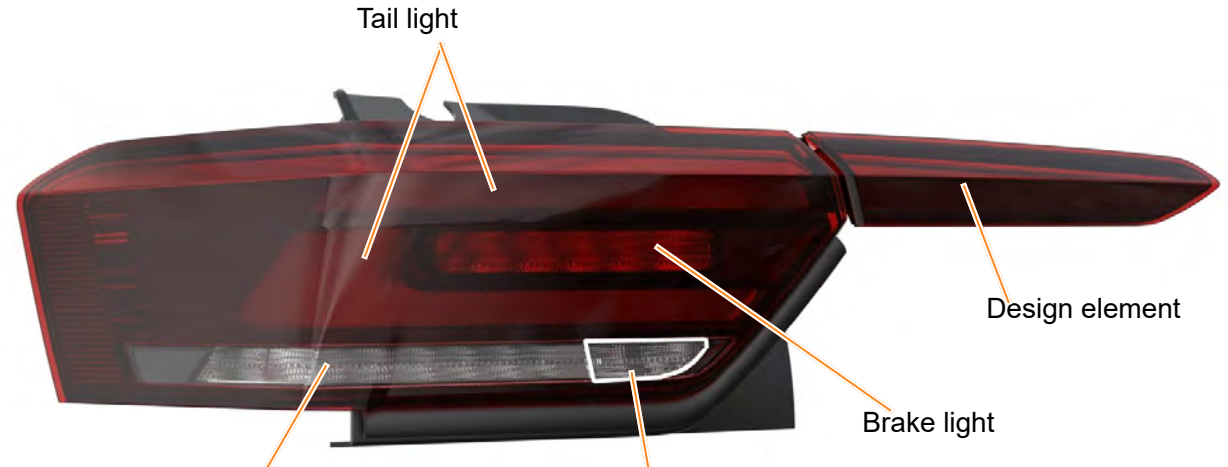
“High” light configuration

Tail light clusters

"Basic" tail light cluster

A design element without light function is located in the rear lid.

The rear fog light has been integrated into the bumper cover.

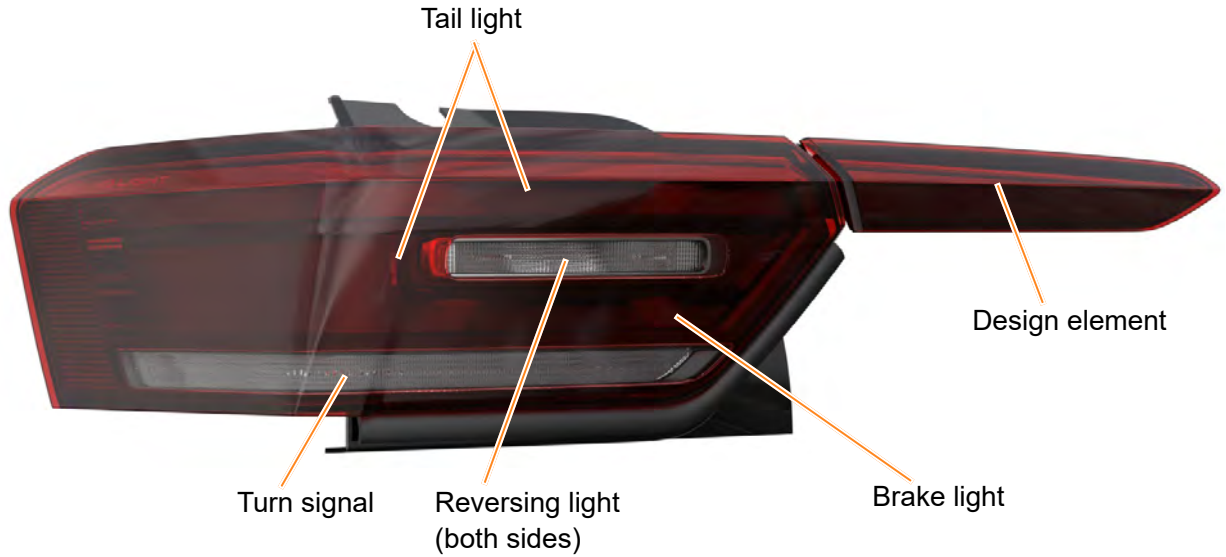


Rear fog light

Tail light clusters

"High" tail light cluster

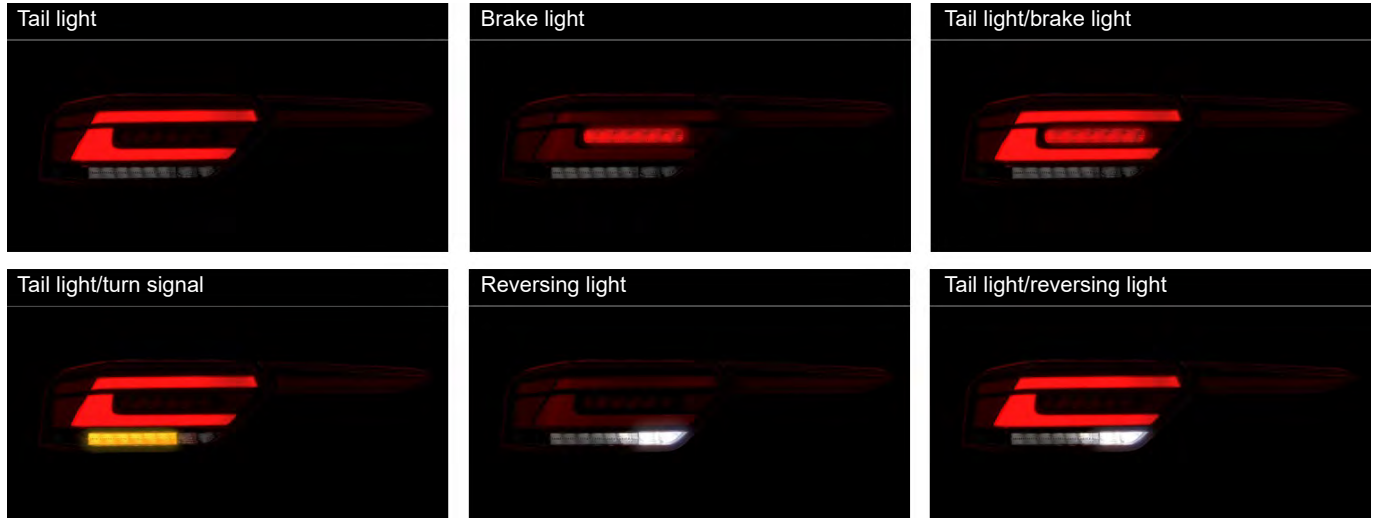
A design element without light function is located in the rear lid.
The rear fog light has been integrated into the bumper cover.
Two entry/exit animations can be selected on the Infotainment system.



Rear fog light

Tail light clusters

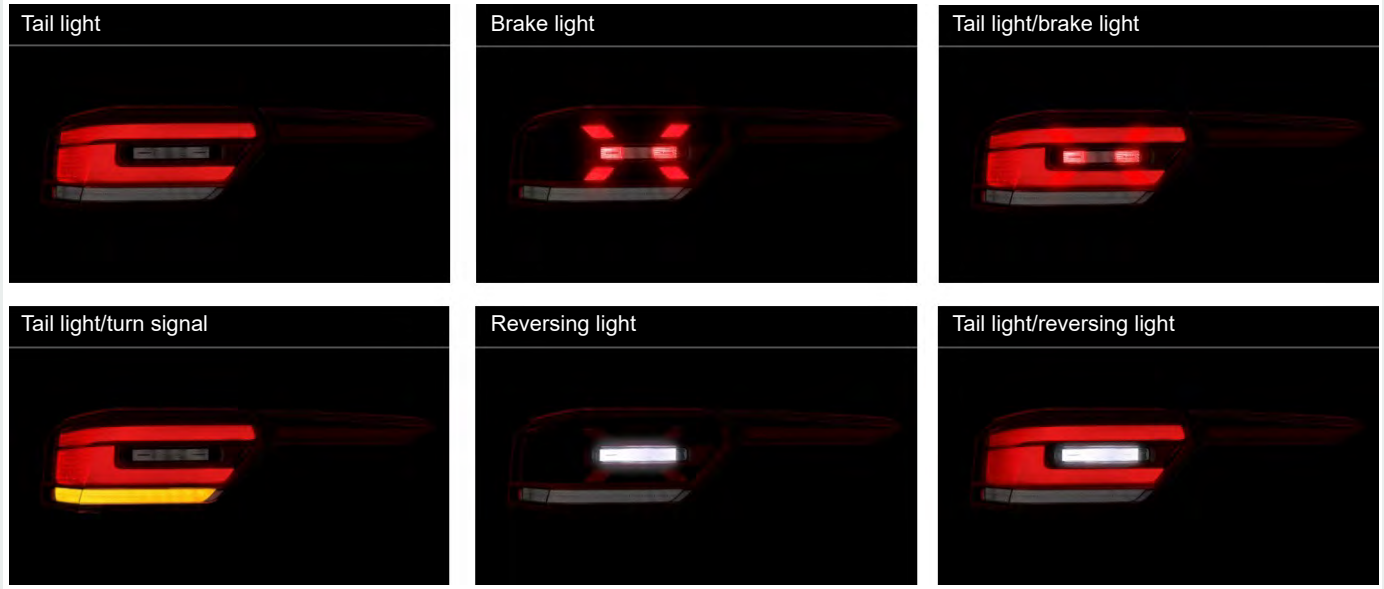
“Basic” light configuration



Tail light clusters

“High”

The turn signal can be switched from standard to dynamic turn signal on the Infotainment system.



Background lighting

The ID.3 has background lighting to illuminate different areas of the vehicle interior.
The colour of the lighting has two background lighting options either with 10 colours or with 30 colours. Both variants of the background lighting with 10 colours or 30 colours offer both preconfigured lighting profiles and also the option of individually configuring the background lighting in single colours. The single colours can also be assigned to the individual zones of the vehicle interior.

These areas in the vehicle interior are illuminated in the selected colour:

- The control clusters on the doors
- The trim strip in the instrument panel
- The mobile telephone storage compartment

The Infotainment system adopts the selected colour of the dash panel contour lighting.

Background lighting

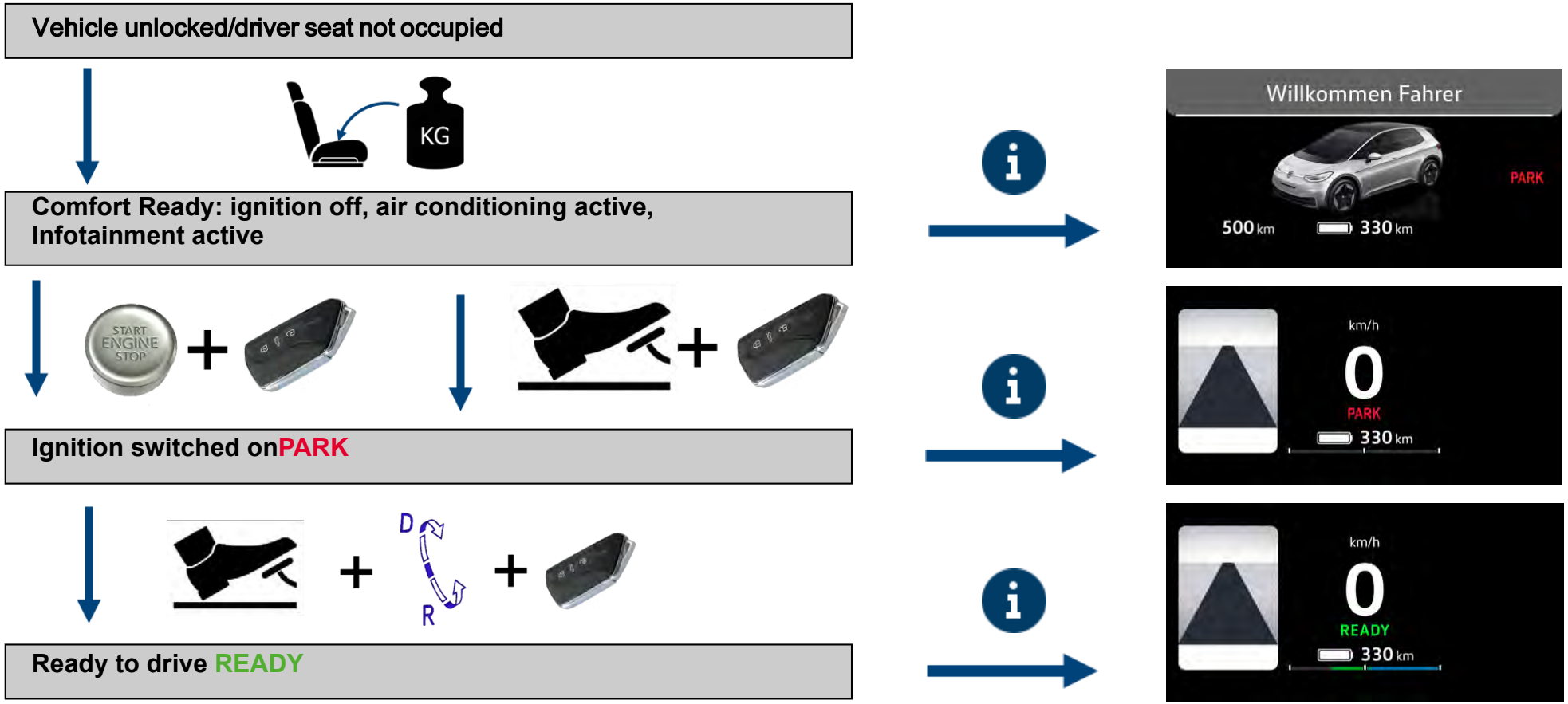
The brightness and colour of the background lighting are selected in the vehicle settings on the Infotainment system.
The ambient lighting goes out either when you lock the vehicle or automatically several minutes after the ignition has been switched off.
The automatic switch-off prevents the 12-volt battery discharging.

The equipment options for the background lighting in the ID.3:

- QQ8 – 10-colour background lighting
- QQ9 – 30-colour background lighting and multi-coloured background lighting in the mobile telephone compartment
- 3D2 – cup holder illumination is only fitted with the High centre console

Terminal control

The terminal control in the MEB is controlled by the J533 (ICAS1) and the J519. The J533 takes on the master function and J519 is responsible for reading the ignition starter button and for activating the terminal 15 relay.



Terminal control

The “Comfort Ready” state has been implemented in addition to the familiar vehicle states (e.g. terminal S and terminal 15). This state allows the driver to operate the Infotainment system and the air conditioning in the vehicle when the ignition is switched off. Comfort Ready is activated when the seat occupied sensor in the driver seat detects a weight. The vehicle key does not have to be inside the vehicle.
The high-voltage circuit is audibly closed upon activation. The “Welcome driver” message is displayed in the dash panel insert.

Terminal control

There are two options for activating the ignition: via the ignition starter button or by pressing the brake pedal. The display in the dash panel insert switches to the standard view, in addition, all control displays are shown briefly. The word PARK informs the driver that the parking brake has been activated.

Terminal control

To make the vehicle ready to drive, the driver needs to press the brake pedal and select a gear. The word READY will then appear in the dash panel insert. The vehicle will slowly start to roll once the driver lifts their foot off the pedal.

Multifunction steering wheel

The controls for the driver assist systems are located on the left-hand side of the steering wheel and the controls for media playback on the right-hand side.
The most important new features are:

- Touch buttons: the conventional buttons and rocker switches have been replaced by touch buttons on the multifunction steering wheel for the ID.3.
- Sliding and two-step operation: new digital functions like sliding and two-step operation are supported.
- Black panel effect: individual symbols on the touch buttons can be displayed and hidden.

ID. Light

Functional scope

Supportive display for the following functions:

- Welcome & farewell
- Locking and unlocking
- Charging process
- Navigation
- Voice control
- Incoming telephone call
- Braking request from Front Assist
- Activation of absolute reserve mode (when battery charge level is very low)

Absolute reserve mode is activated when the battery charge level is very low to save energy. It is possible to continue driving with reduced maximum speed and convenience consumers switched off.

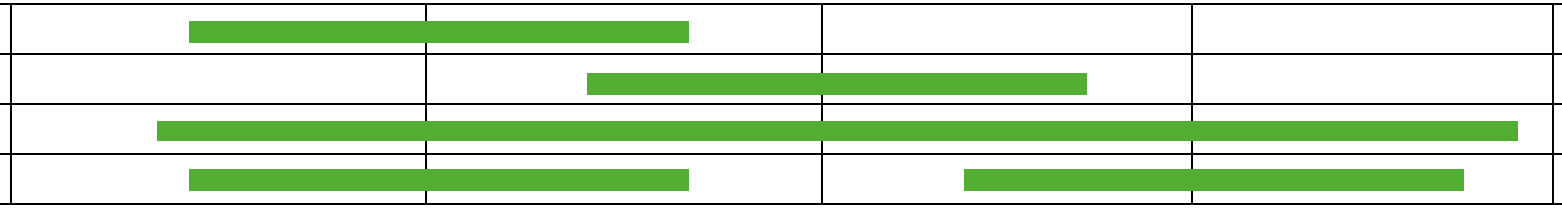
ID. Light

“ID. Light” is a light strip that stretches across the entire dash panel and has a functional as well as an emotionalising task. Animated light patterns are displayed with the aid of RGB LEDs. It is part of the ID.3 standard equipment. The ID.Light is controlled by J794 and rounds off the ID.3 display system. It is used exclusively as a secondary display for the vehicle functions and has a supplementary and supporting effect.

ID. Light

Display area assignments

The individual functions use different display areas along the light strip. The animations are shown in the indicated areas.

Driver centred		A
Vehicle centred		B
Across complete width		C
Note for driver or front passenger		D

Welcome & goodbye	A, C
Lock and unlock	C
Charging process	C
Navigation	C
Voice control	D
Incoming telephone call	B
Braking request	C
Absolute reserve mode	C

ID. Light

Display area assignments

The individual functions use different display areas along the light strip. They are shown in the video below.

Dash panel insert

J1254 – control unit with display unit for driver information system

- Display diagonal 5.3"
- Display resolution: 800 x 400 pixels
- Graphics content provided via ICAS 3
- Integrated driving mode display using LEDs next to the display
- Now only four warning lights in form of LEDs
- Subscriber on display and operation CAN bus

Control unit with display unit for driver information system J1254

Dash panel insert

The functions of J1254 differ greatly from the functions known from MQB dash panel inserts. For example, Infotainment content, vehicle status and driving data are not displayed. Furthermore, the control unit is not an immobiliser or component protection subscriber.

Dash panel insert

The display is located in a combined housing with the driving mode selector and the parking brake button. The component does not have its own loudspeaker. All information and warning tones are output on the main loudspeaker.

Dash panel insert

View

The driver can switch between three views with the VIEW touch control on the multifunction steering wheel:

- Standard
- Navigation
- Driver assist systems

The vehicle always starts in the standard view. The following information can be shown in the display area:

- Warning lamps
- Pop-up warning and information messages
- Current speed
- Battery charge level and remaining range
- Available power and currently used power (blue bar)
- Energy recovery availability and current energy recovery intensity (green bar)
- Driver assist systems
- Navigation

Standard view

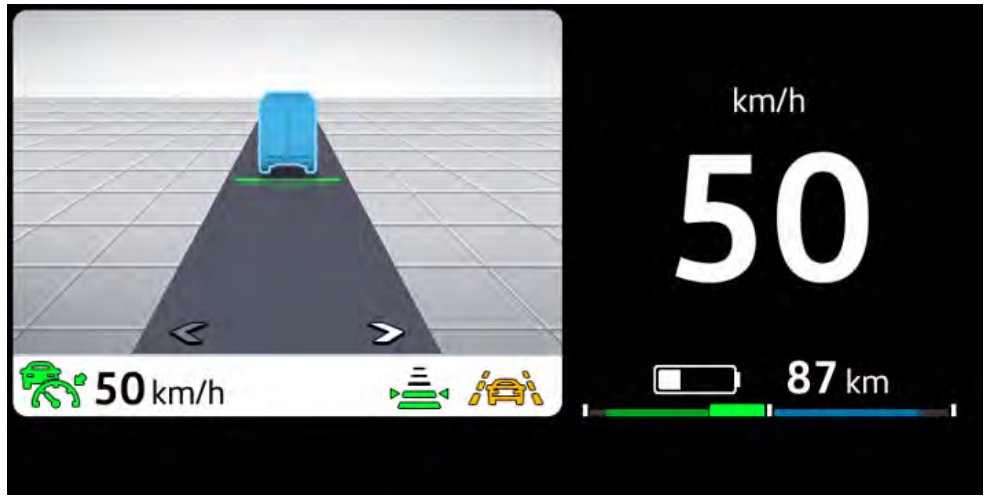
VIEW touch control

Click the arrow to see further examples

Navigation view

Click the arrow to see further examples

Dash panel insert



Driver assist systems view

Click the arrow to see further examples

Radio navigation

Discover Pro navigation system

- Display and control panel with 10" screen diagonal
- Screen resolution: 1,560 x 700 pixels
- Control unit behind glove compartment
- Homescreen 2.0
- Display of navigation map on display and control panel
- Contactless gesture control
- Touch slider (touch-sensitive strip as used in Golf 2020)
- FM & DAB+ radio reception
- Optional head-up display
  (AR functions available at a later date)
- Data bus connections:
  - Ethernet 1 Gbit/s
  - Display and operation CAN bus

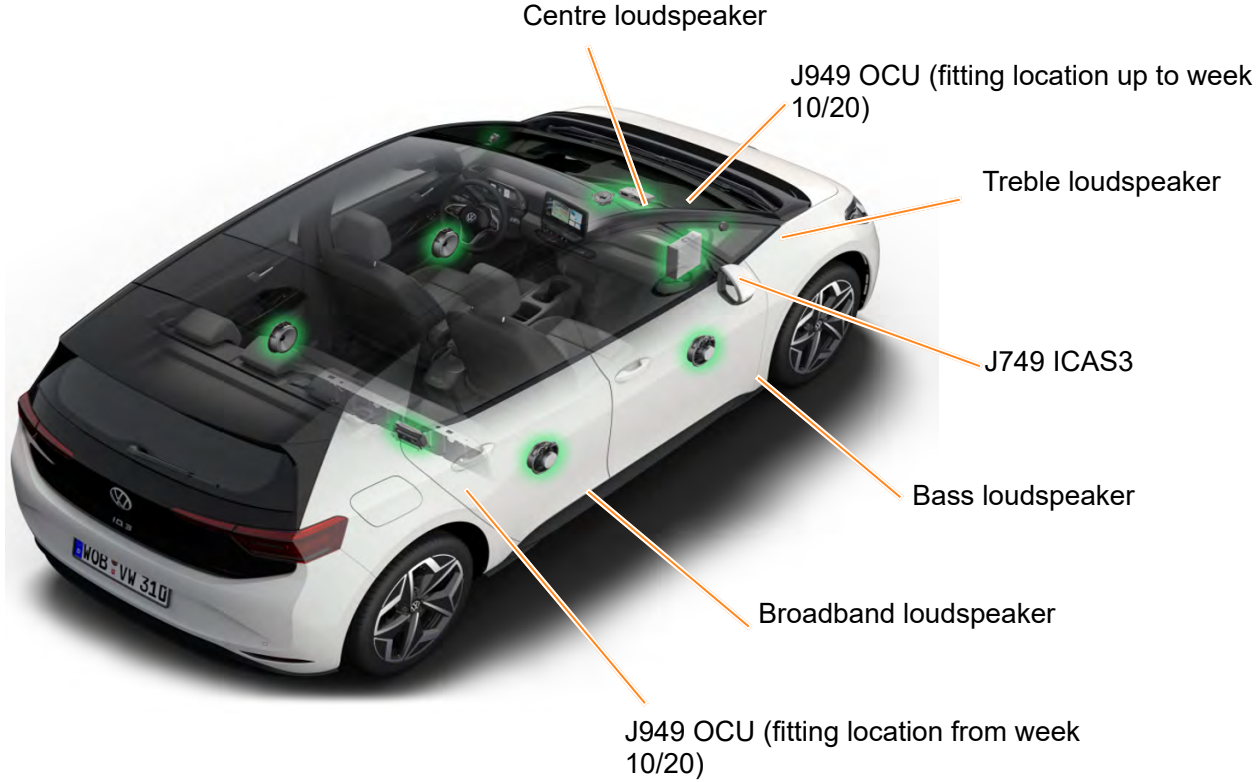
Sound system

Two sound systems are available for the ID.3:

- Basic sound: 4+1 loudspeakers
- Sound package: 6+1 loudspeakers

The standard centre loudspeaker has two functions: it is used both for music playback and for emergency call communication. To ensure it functions in an emergency, it is connected to the emergency call module control unit and communication unit J949 (OCU). The remaining loudspeakers are supplied with power by the 4-channel amplifier of the information electronics J794 (ICAS3).
The sound system loudspeakers are used for all acoustic warnings in the vehicle (parking aid and dash panel insert).

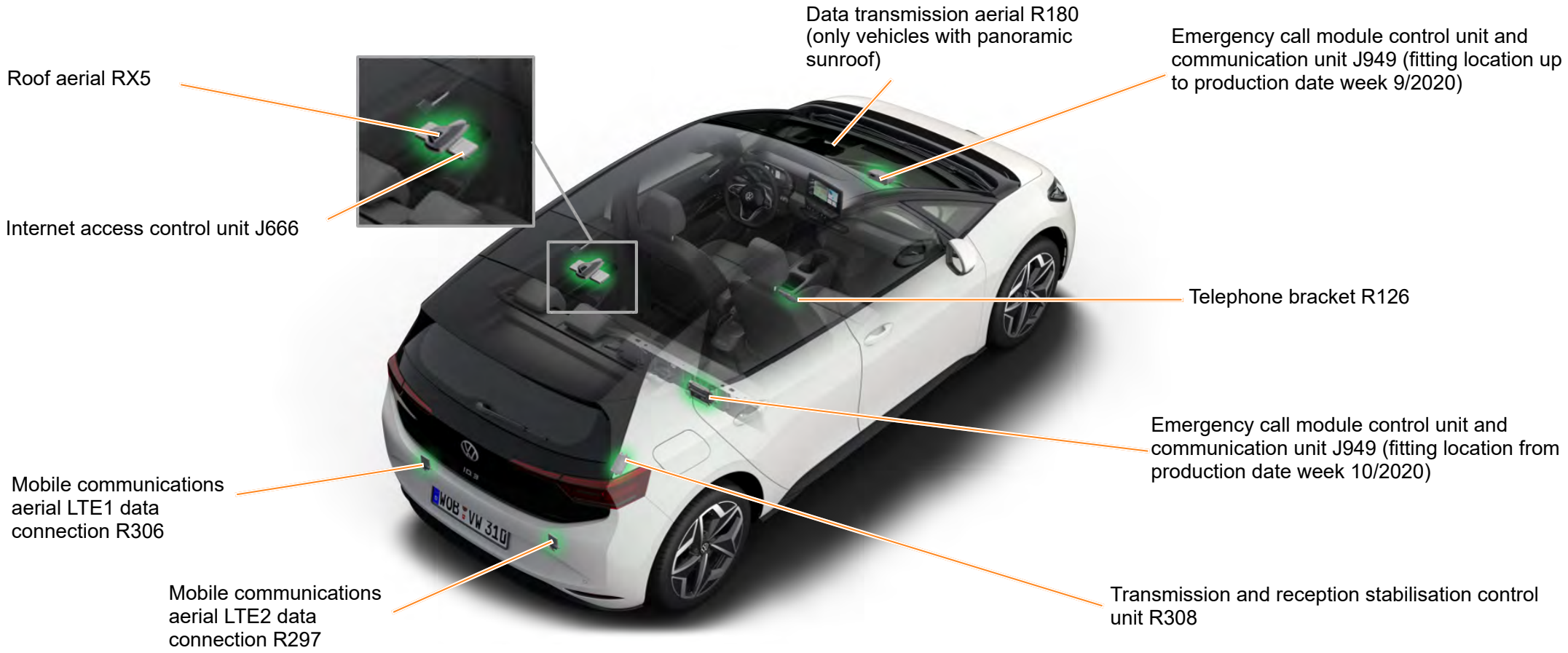
Loudspeakers		
	Basic sound	**Sound package**
Front treble	✓	✓
Front bass	✓	✓
Centre	✓	✓
Rear broadband	-	✓



Aerial systems

Mobile communicationsaerials

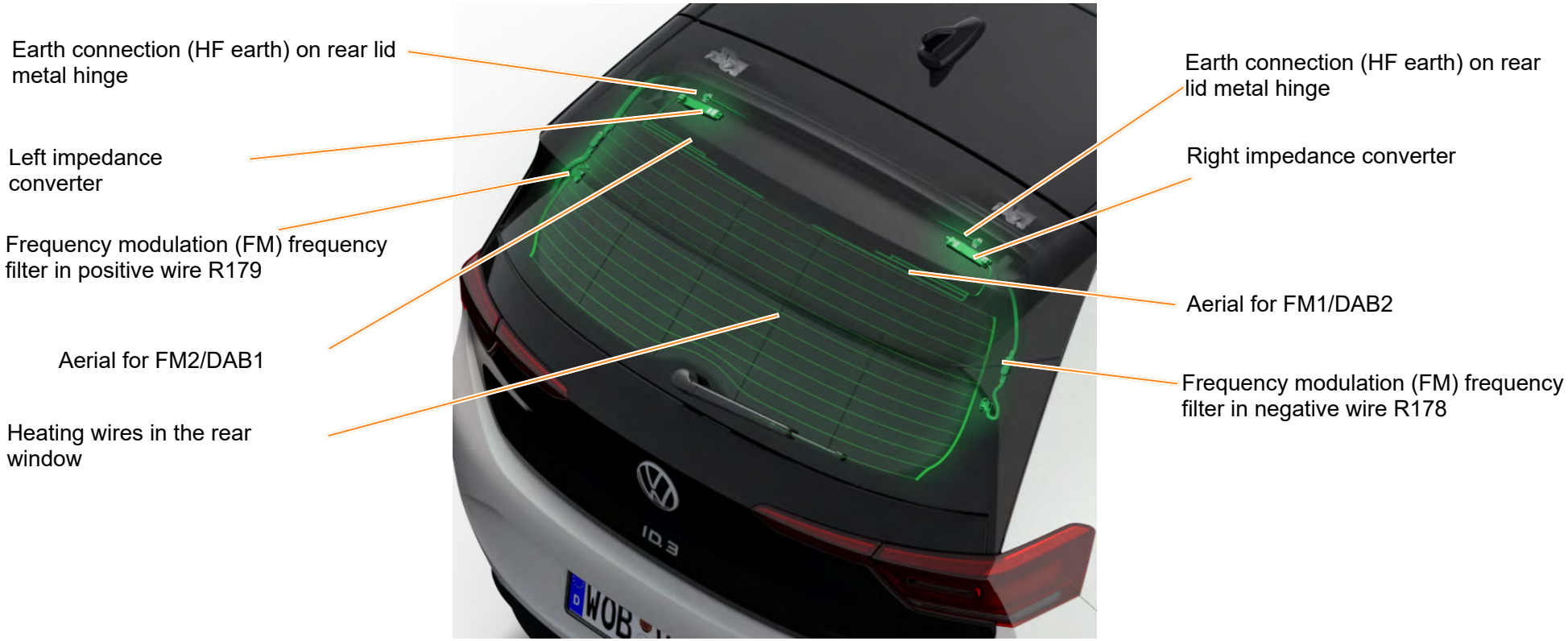
The illustration shows the mobile communications aerials. In vehicles with a panoramic sunroof, the data transmission aerial R180 is fitted above the front camera in addition to the roof aerial RX5.



Aerial systems

Radio aerials

The illustration shows the aerials for radio reception. The ID.3 has a plastic rear lid. Therefore, the earth connection for the two impedance converters is formed by using a bolted connection on the metal hinge for the rear lid.



AR head-up display

The use of an augmented reality head-up display (AR HUD) in a car is a world first.It expands the windscreen head-up display function (wHUD) as used in the Golf 2020 and the Touareg with augmented reality functions.
Augmented reality enhances the real-world environment. This involves displaying a long-distance range in addition to the familiar close range.
In the long-distance range, animated information is projected directly into the windscreen field of vision. From the driver's viewpoint, it therefore appears to be on the road.

For example, the following graphical information is displayed:

- Lane Assist information
- Adaptive cruise control information (ACC)
- Manoeuvre arrows for navigation

The illustration shows a Lane Assist display as an example. You can see further examples of the display in the long-distance range by using the arrow buttons below.

In the ID.3 1ST, it will be possible to activate the display of the long-distance range at a later date with a flash procedure at workshops.

Click the arrow to see further examples

AR head-up display

Click the arrow to see further examples

AR head-up display

Example of an ACC display

Click the arrow to see further examples

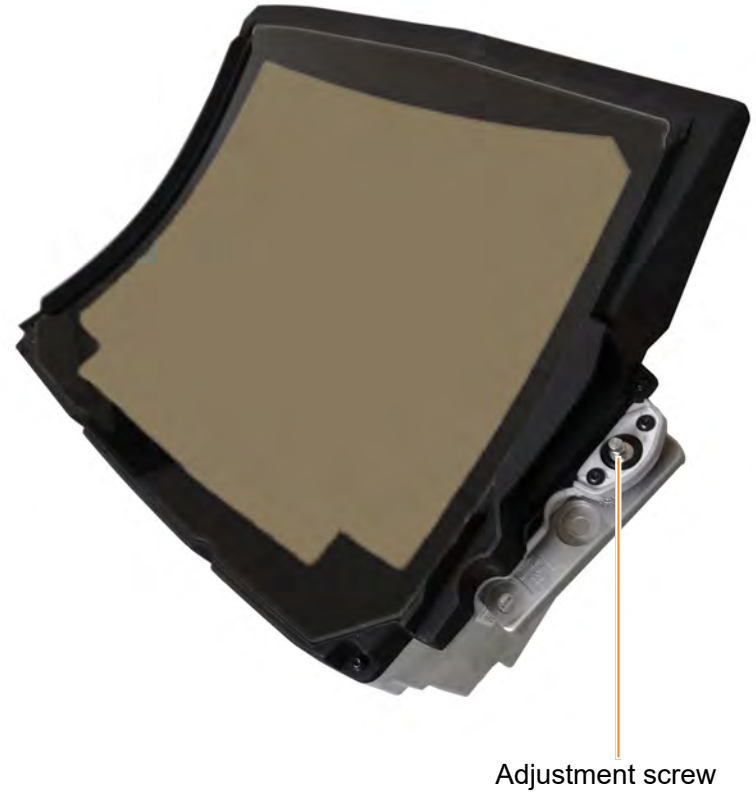
AR head-up display

Manoeuvre arrow during active route guidance

Click the arrow to see further examples

Service and operation

- The projection height and tilt can be adjusted for the individual seat height in the corresponding Infotainment menu.
- Clean the HUD only with a soft cloth and a mild cleaning agent. Microfibre cloths can scratch the HUD.
- The windscreen needs to be removed before the HUD can be removed.
- After body assembly work in the area of the HUD, calibration must be performed with the aid of the calibration board VAS 6430. The HUD housing is calibrated with adjustment screws during this procedure.



Mobile online services

The ID.3 features fourth-generation mobile online services. The vehicle is always online with the fourth-generation online connectivity unit (OCU4). This means that it is not necessary to establish an Internet connection using a separate SIM card, hotspot or Car-Stick.

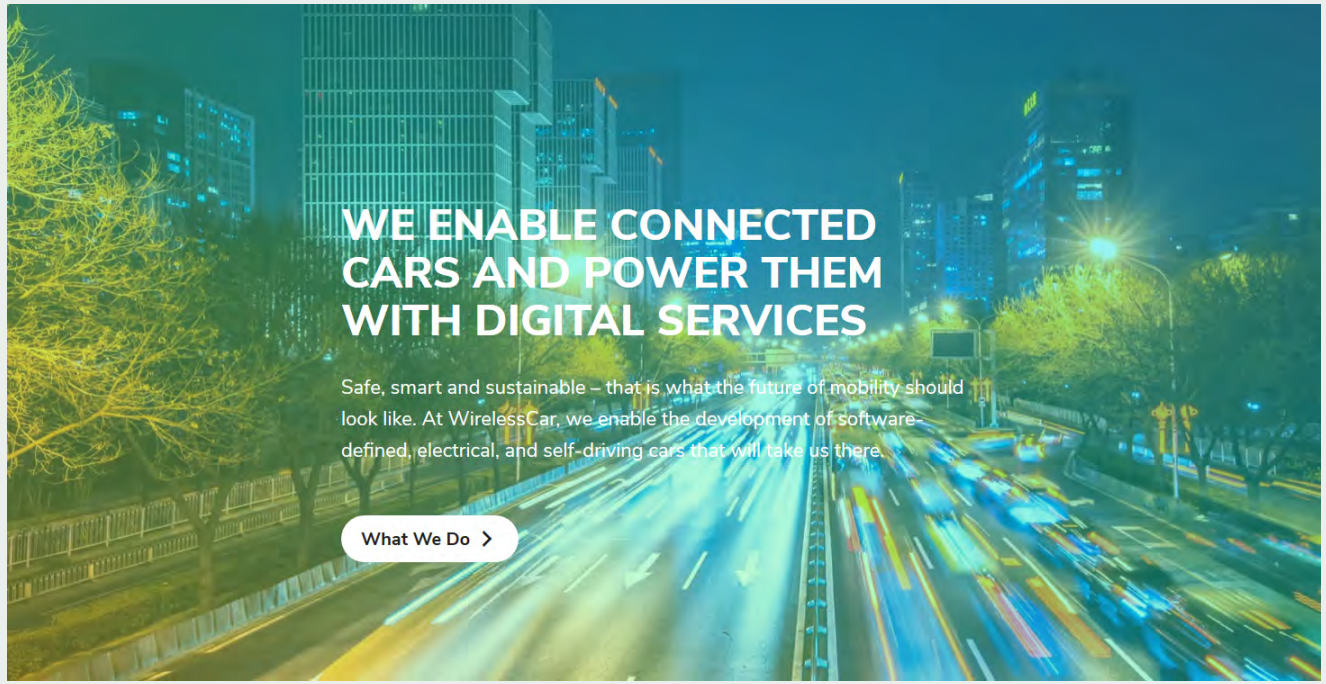
Volkswagen covers the costs for the Internet connection. The enrolment has been further simplified and can now be performed with a QR code (film "We Connect Start Enrolment in the ID.").

- **We Connect Start services**
- **WirelessCar back end**
- **We Connect ID. app**
- **myVolkswagen portal**

WirelessCar back end

The ID.3 is the first vehicle from Volkswagen that communicates with the new back end provided by WirelessCar.

WirelessCar



We Connect in the ID.3

The “We Connect Start” service package expands the online functions of the vehicle and the Infotainment system.

It offers additional online services that make using and driving the vehicle more convenient.

With the exception of the eCall Emergency System, this service package is valid for a limited period, and can be extended in the In-Car Shop and on the “myVolkswagen” portal.

We Connect Start

- Charging Stations
- eCall Emergency System
- Charging
- Online Map Update
- Online Traffic Information
- Air Conditioning

We Connect ID. app

A new app has been developed specially for use of the online services in the ID.3. It has been optimised for the ID.3 service portfolio and is the ideal companion for all ID.3 customers.

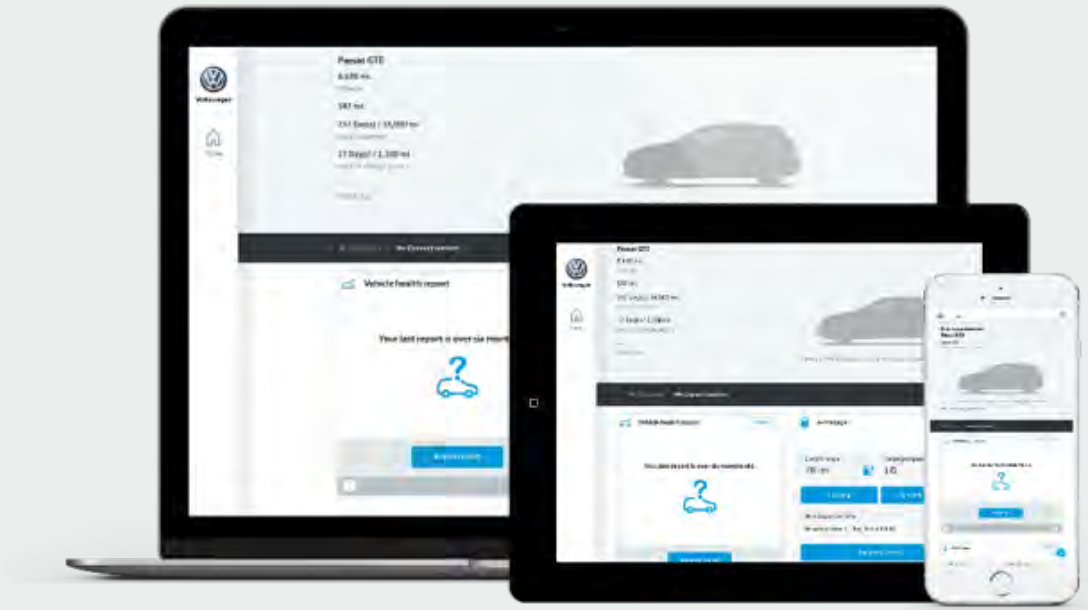
In addition to the familiar services, the We Charge service has been integrated into the We Connect ID. app.

Using the We Charge charging card, customers can easily authenticate themselves, charge their vehicle and then pay at charging stations.
You will find further information on We Charge in the "We Charge" web-based training.

myVolkswagen

You can access the customer portal at the web address www.volkswagen.de (country-specific).

Personal information, account settings and personal settings can be edited on myVolkswagen.



MEB service concept

The ID.3 is the first vehicle to be based on the modular electric drive matrix (MEB).
The overview shows the corresponding service concept that will also apply to subsequent ID. models.

Europe

The inspection interval is two years like the brake fluid change and the dust and pollen filter renewal.

ID.3						
Years	1	2	3	4	5	6
Kilometres	There are no kilometre limits.					
Inspection						

For more information,
please use the “Maintenance Tables” and
“Maintenance Manual” in ElsaPro.

Markets with difficult operating conditions

In parts of the world where operating conditions are difficult, for example, due to heat or dust, there will be an annual inspection service.
The dust and pollen filter is renewed annually and the brake fluid is changed every two years.

Years*	1	2	3	4	5	6
Kilometres/ miles*	In some countries and regions, there are different kilometre/mile limits.					
Inspection						

* Depending on which occurs first

Thank you very much for your interest.