GUIDE

FOR FIREFIGHTERS AND RESCUE SERVICE PERSONNEL

Information on rescue operations during extrication from Škoda Auto vehicles that have been involved in an accident

Version dated: 05/2024

ŠKODA

Legal notice:
This guide was created exclusively for firefighters and rescue service personnel who are specially trained in technical assistance after traffic accidents and can therefore carry out the activities described within.
Furthermore, the guide contains information about vehicles intended for sale within the European Union.
It does not contain any information about vehicles intended for sale outside the European Union.
The specifications and special equipment in Škoda vehicles, as in the range of vehicles manufactured by Škoda Auto a.s. are subject to constant changes.
Škoda Auto a.s. therefore explicitly reserves the right to modify or change the content of this guide at any time.
The information reflects the state of knowledge at the time of writing.

Attention:
The information contained in this guide is not intended for end customers or qualified workshops and dealerships.
End customers can find information on the functions of their vehicle, as well as important vehicle and passenger safety information, in the operating manual for the relevant vehicle manufactured by Škoda Auto a.s. Workshops and dealerships receive repair information from their usual sources.

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List of abbreviations

ABC	Extinguishing powder for fire classes A, B and C
AC	Alternating current
AGM	Absorbed Glass Mat battery, a type of accumulator where the electrolyte is absorbed in unwoven fabric made of glass fibres, making it resistant to leaking
BEV	Battery Electric Vehicle, a vehicle propelled by only an electric motor and a traction battery
CAFS	Compressed Air Foam System – a system for producing heavy, compressed, fire retardant foam
CNG	Compressed Natural Gas
CO_2	Carbon dioxide
DC	Direct current
e-TEC	A marketing designation for mHEV
ESG	Enhanced Safety Glass, a toughened type of safety glass
FAQ	Frequently Asked Questions
G-TEC	A vehicle driven by compressed natural gas (CNG)
ISO	International Organization for Standardization
iV	Purely electric or plug-in hybrid Škoda vehicles
Li-ion	Lithium-ion battery
LPG	Liquefied Petroleum Gas
mHEV	mild Hybrid Electric Vehicle, a vehicle with both a combustion engine and an electric engine. The electric engine assists the combustion engine in various situations, such as when taking off or accelerating
NiMH	Nickel-metal hydride battery
PHEV	Plug-in Hybrid Electric Vehicle, a vehicle with both a combustion engine and an electric engine. It is capable of driving on just electricity, as long as the capacity of the traction batteries lasts. It can then be recharged not just via regenerative braking or from the combustion engine, but also from a socket or a charging station.
PPE	Personal protective equipment
RS	Rally Sport, an identifier for sports models of Škoda vehicles
SRS	Supplemental Restraint System, a system of safety components such as airbags or belt pretensioners
VDA	Verband der Automobilindustrie, German Association of the Automotive Industry
VSG	Verbundsicherheitsglas, laminated safety glass

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Preface

The driver, the vehicle, and the surroundings: the interaction of these factors is key for traffic safety.

The vehicle has a number of tasks in the event of an accident, including:

- Ensuring the survival of the occupants through a durable passenger compartment.
- Dissipating the impact energy using intelligent structural concepts and elements.
- Effectively protecting passengers through an optimised restraint system consisting of airbags and seat belts with pretensioners and force limiters.
- Minimising hazards from service fluids and powertrain components via safety systems.

Škoda vehicles have proven in international tests that they are among the safest. However, accidents and the injuries associated with them can never be ruled out. That means a short, fast, and effective chain of rescue is as essential as ever.
This guide takes into consideration vehicle versions and equipment that Škoda Auto a.s. offers directly. Retrofit solutions and conversions are not taken into account.
This guide was created in accordance with ISO 17840 and is intended to help firefighters and rescue service personnel do their jobs by providing necessary information about the technologies used in Škoda vehicles.

Technical innovations such as new materials or new drive technologies require a modified approach when performing a rescue from a vehicle that has been in an accident. The processes and procedures in different countries around the world are usually governed by official service regulations or national laws, or by directives issued by the rescue organisation itself. As a result, if information about a rescue procedure is provided in this guide, it should be considered to be only a suggestion. The information is intended in particular for the training and education of firefighters and rescue workers. Appropriate rescue data sheets for Škoda vehicles are available for use at the scene of an accident.
The latest versions can be found at https://www.skoda-auto.com/services/rescuers, although changes to vehicle designs may be reflected in rescue data sheets with some delay.

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0. Rescue Data Sheets

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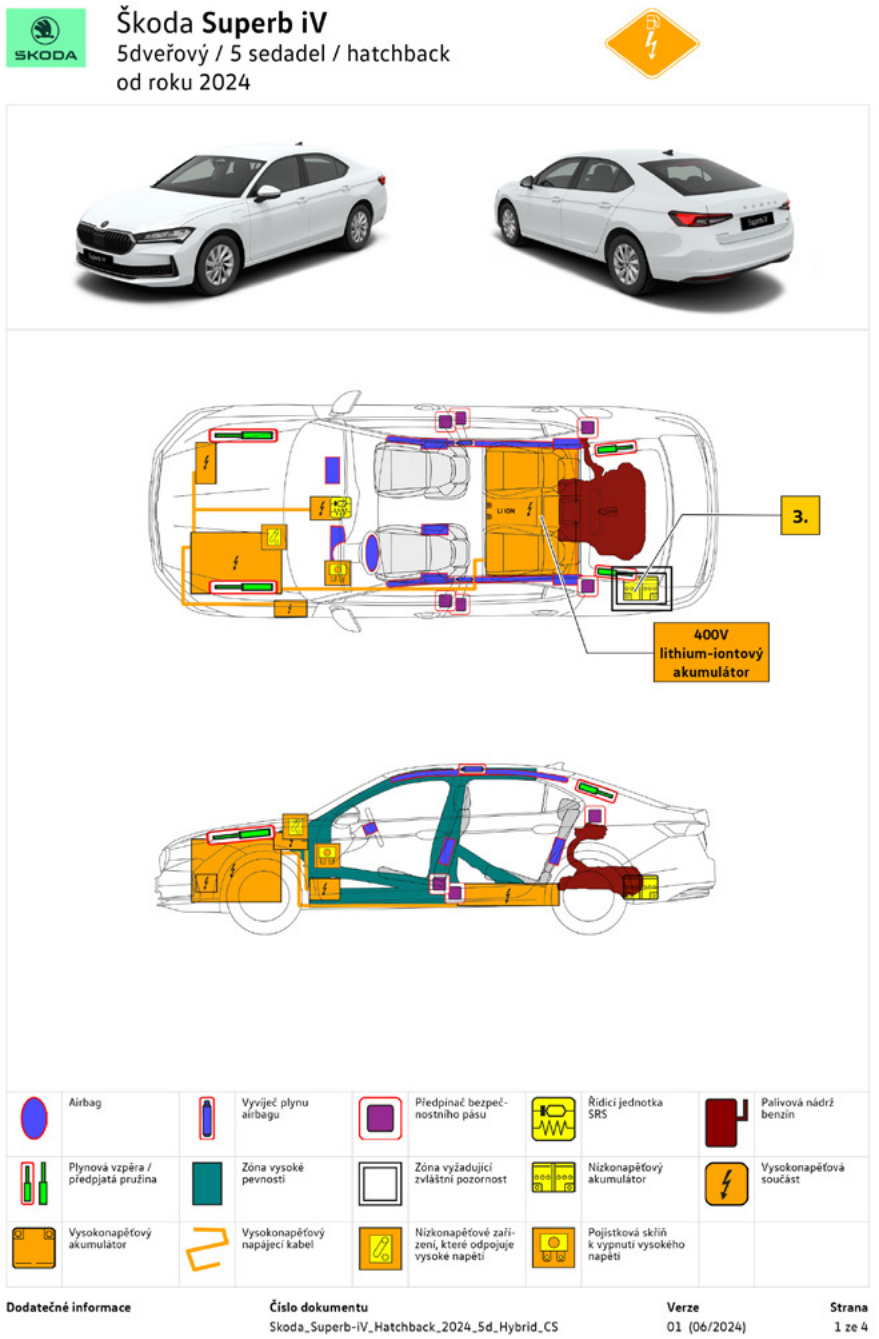
The Škoda brand provides all models and variants of vehicles with rescue data sheets.

Rescue data sheets for all Škoda models can be found in the model overview at https://www.skoda-auto.com/services/rescuers.

The image on the right shows an example of the first page of the rescue data sheet for the Superb model pursuant to standard ISO 17840-2:2019.

	The rescue data sheets for all vehicles placed on the market since 2020 are compiled in accordance with ISO 17840. Vehicles manufactured before that date use rescue data sheets that feature the manufacturer's layout.
	From 2023 all newly created rescue data sheets are published in all EU languages.



Area of Application

This guide for firefighters and rescue service personnel is valid for all vehicles manufactured under the Škoda brand.
The range of models is vast. It covers not only conventional petrol and diesel engines, but also hybrid drives, which is a combination of petrol and electric engines, and purely electric drives.

Škoda's current product range can be found at www.skoda-auto.com or on the website for each country.

Identification of Drive Types

Petrol vehicle	Diesel vehicle
Hybrid vehicle	Electric vehicle

	The type of drive of each individual vehicle is described in the rescue data sheet.

Current Product Range

 Fabia	 Scala	 Kamiq
 Karoq	 Octavia	 Octavia Combi
 Kodiaq	 Superb	 Superb Combi
 Enyaq	 Enyaq Coupé	

1. Identification/Recognition

Distinguishing Features of Škoda Models

Identifying the vehicle model and its drive type is vital for rescue operations after an accident. Depending on the vehicle model or drive type, specific procedures must be taken into account as part of rescue and recovery operations.

Along with the word Škoda or the Škoda logo, models can be identified by their respective body shape, body size and the individual vehicle design.
Identification can be further aided by the model designation and the technology designations on the rear of the vehicle. Such writing is not present, however, if the vehicle was ordered without these features or they were removed later.
The images on this page show examples of where the logo and markings can be found.

Škoda Logo

Škoda logo on the bonnet

Škoda logo on the boot lid

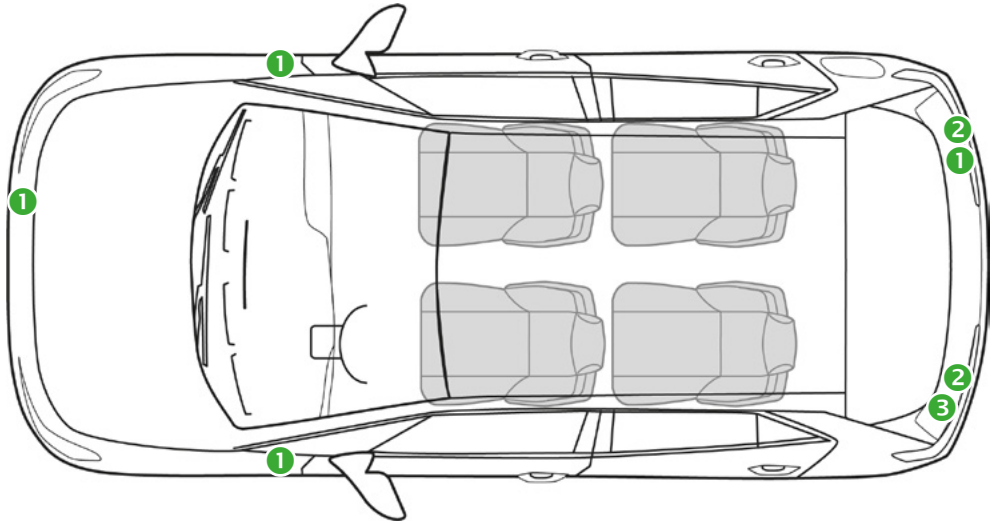
Model Designation

Model designation on the boot lid

Distinguishing Features of Vehicles with Combustion Engines

Škoda models with conventional combustion engines (petrol/diesel) can be identified by the following features.

	The distinguishing features of individual vehicles are described in the rescue data sheets.



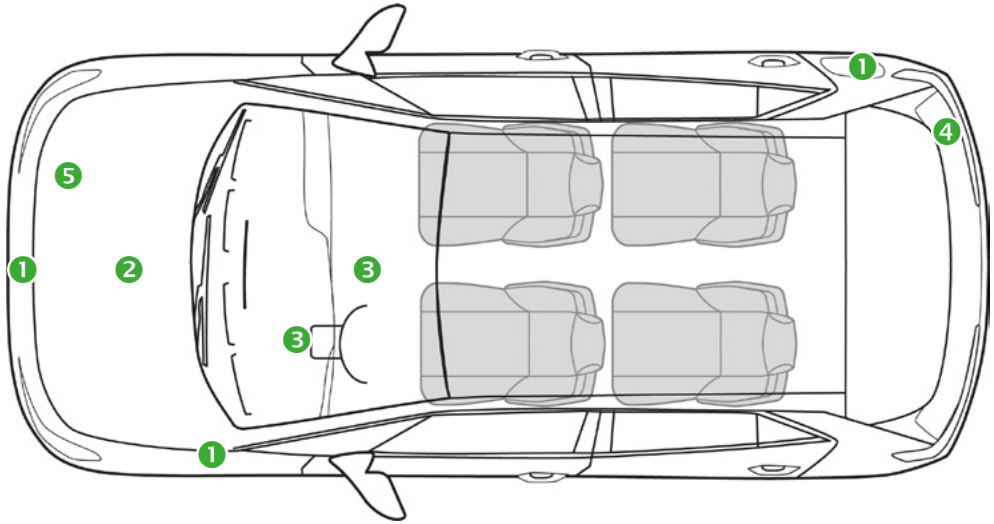
Features on the Vehicle

1. Lettering specifying the model, such as Sportline, RS, e-TEC (for mHEV) etc.
2. A visible exhaust system.
3. Model designation on the left under the rear light.

Distinguishing Features of High-Voltage Vehicles

Škoda models with a high-voltage drive are available with a plug-in hybrid drive (PHEV) or a purely electric drive (BEV).

	An electric motor is quiet. The driver display informs the driver whether the electric drive is turned off (“OFF” or “PARK”) or ready to drive (“READY”).
	The distinguishing features of individual models are described in the rescue data sheets.



Features on the Vehicle

1. Charging sockets in the radiator grille or in the front or rear fender.
2. Orange cables in the engine compartment of the vehicle.
3. E-specific indicators, such as:

- charging indicator on the driver display,
- indicator of driving readiness with the word “READY” on the driver display,
- and “E-mode”/“Driving mode selection” button on the centre console.

4. “iV” on the boot in the bottom right corner.
5. Warning sticker in the engine compartment.

Variants of Electric Vehicles

Electric vehicles pose different hazards to firefighters and rescue workers during rescue operations than vehicles with a conventional drive. It is therefore crucial to quickly identify these vehicles.

Škoda offers different variants of electric vehicles which differ in their primary energy source, voltage, type of electric drive, and electric range.

A distinction is made between the following variant without the ability to charge from an external source:

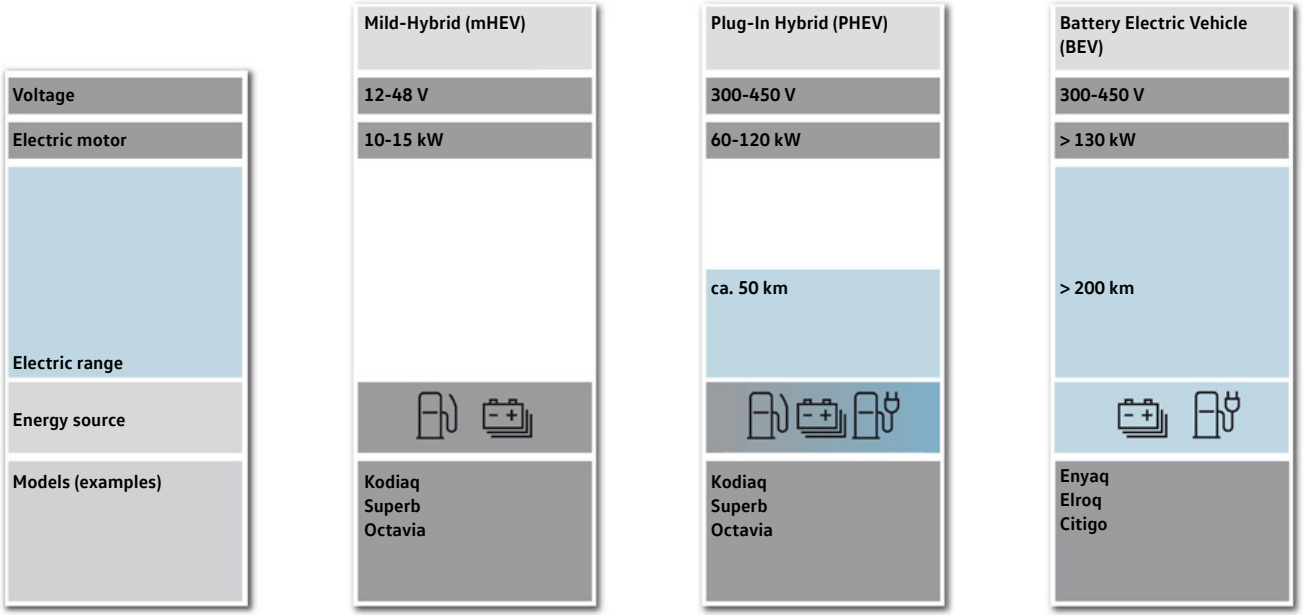
- mild-hybrid electric vehicle (mHEV),

and variants with external charging of the traction battery:

- plug-in hybrid electric vehicle (PHEV),
- battery electric vehicle (BEV).

The table below shows the different electrification concepts. Mild hybrid vehicles (mHEV) with on-board voltage of up to 48 V are not considered high-voltage vehicles. In terms of external look, these Škoda vehicles do not differ from the same respective model with a conventional drive. Vehicles with a BEV or PHEV drive are considered high-voltage vehicles.

Pictograms for Energy Sources	
	Conventional fuels such as petrol or diesel
	Battery operation
	Battery operation with the option to charge the battery externally



Škoda Models with Natural Gas Drive

Vehicles with a natural gas drive differ in some respects from conventional vehicles or LPG vehicles. Knowledge of these differences is extremely important for rescue operations.

Škoda offered various models with a bi-valent drive using petrol/natural gas. These vehicles with a natural gas engine were sold under the designation “G-TEC”. Vehicles with a liquid petroleum gas drive were designated “LPG”.

Aside from various natural gas tanks, these vehicles also feature a small petrol tank.

In order for firefighters and rescue workers to assess the risks and take appropriate measures at the scene of deployment, e.g. a traffic accident, it is of critical importance to be able to identify natural gas vehicles immediately.

	Natural gas (also referred to as CNG – compressed natural gas) must not be mistaken for LPG – liquefied petroleum gas. Liquefied petroleum gas and liquified petroleum gas systems are fundamentally different to natural gas and natural gas systems.
	Škoda manufactured LPG vehicles from 2009 to 2014. Škoda manufactured CNG vehicles from 2014 to 2024. Škoda does not currently offer any CNG or LPG vehicles.

	Further information about natural gas vehicles can be found in chapter 3. Safety Regulations/Preventing Direct Hazards, chapter 5. Stored Energy/Liquids/Gases/Solids, chapter 6. In Case of Fire, chapter 7. In Case of Submersion and chapter 8. Towing/Transportation/Storage.
	Dealing with natural gas vehicles is different to dealing with conventional vehicles. However, any risks can be controlled appropriately and to the same extent if their specifics are known.

Distinguishing Features of Natural Gas Vehicles

Exterior Features of the Vehicle

- Designation on the boot lid.
- Separate natural gas connection, integrated behind the tank flap.

Exterior Features of the Vehicle	
	The word G-TEC on the boot lid
	Natural gas connection at the fuel filler neck
	Label on the top right corner of the rear window  

Škoda Models with LPG Drive

Vehicles with an LPG drive differ from conventional vehicles in several respects. Knowledge of these differences is extremely important for rescue services.

Škoda does not currently offer any vehicles with an LPG drive. These vehicles were available until 2014.
All Škoda vehicles with an LPG drive can be operated using either LPG or petrol. LPG vehicles feature a bivalent drive, i.e. feature both an LPG tank and a standard petrol tank.
In order for firefighters and rescue workers to assess the risks and take appropriate measures at the scene of deployment (e.g. a traffic accident) it is of critical importance to be able to identify LPG vehicles immediately.

	Liquefied petroleum gas (also referred to as LPG) must not be mistaken for natural gas (also referred to as CNG – compressed natural gas). Natural gas and natural gas systems differ in their basic properties from LPG and LPG systems.
	Dealing with LPG vehicles is different to dealing with conventional vehicles. However, any risks can be controlled appropriately and to the same extent if their specifics are known.

Exterior Features of LPG Vehicles

- The word “LPG” on the boot lid.
- Separate LPG connection.

Exterior Features of LPG Vehicles	
	The word “LPG” on the rear window
	An LPG tank in the floor of the boot
	A separate connection on the tank filler neck

2. Immobilisation/Stabilisation/Lifting

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Stabilising or securing a vehicle reduces the risks that may result from unwanted movement of the vehicle after an accident.

Modern vehicle systems such as the start/stop system or Auto Hold function (HOLD button), or new silent drive systems create the impression that the vehicle is switched off.
However, depending on the accident, these systems could lead to the vehicle starting and rolling away unintentionally.
It is therefore recommended to secure the vehicle against movement by deactivating the electric motor (turning off "READY" mode) or combustion engine (switching off using the key or button). For more information, see chapter 3. Safety Regulations/ Preventing Direct Hazards.

Depending on the situation, it is also recommended to secure the vehicle against unwanted movements (rolling, tilting, slipping) by means of wheel chocks, suitable supports, or the attachment of slings.

	In the event of an accident that results in airbag activation, the drives of electric vehicles are deactivated automatically.
	In high-voltage vehicles, it is recommended to locate an accessible cut-out connection point to de-energise the high-voltage system! See also chapter 3. Safety Regulations/Preventing Direct Hazards.
	The recommended procedure for disconnecting the high-voltage system is described in the rescue data sheet for the vehicle in question.

	When the 12 V vehicle battery has been disconnected, all functions of the electrical system stop working (this applies in particular to the warning lights, interior lighting, and electric seat adjustment). For further information, see chapter 4. Access to the Occupants and chapter 9. Important Additional Information.

Securing the Vehicle against Movement

Škoda models are fitted with either a manual or an automatic gearbox (automatic gearbox with a torque converter or a direct shift gearbox). To prevent the vehicle from moving or rolling off, first put the gear lever in “neutral” (for a manual gearbox) or in the “P” position (for an automatic gearbox).

1. Select the correct/appropriate gear.
2. Locate the electric or mechanical parking brake.
3. Apply the barking brake.

	If necessary, secure the vehicle with suitable wheel chocks to prevent it from rolling away unintentionally or secure the wheels with belts.

Vehicle with a conventional engine and automatic gearbox: Apply the electronic parking brake or lift the handbrake

Vehicle with a manual gearbox and a handbrake

If further securing methods are necessary, you can use the following parts of the vehicle: vehicle pillars, members, wheels, axles, towing eyes, or the ball coupling.

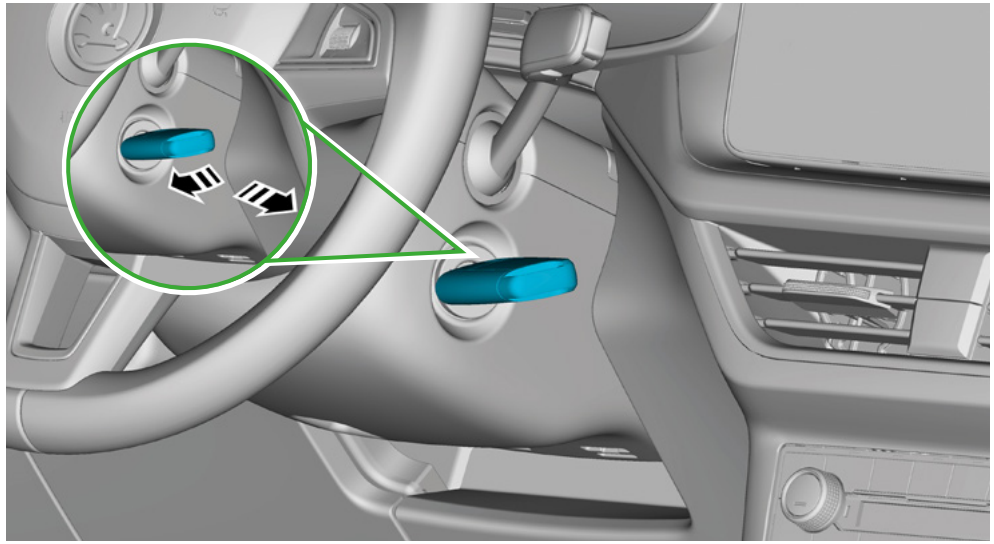
Switching Off the Ignition

Turn the ignition key to the "OFF" position and remove it. Many Škoda models are fitted with a "START - ENGINE - STOP" button. It is located on the steering column.

In addition, the following must be kept in mind:

- The vehicle either has a traditional ignition lock, or
- it may have Keyless Entry, a system where the ignition key simply has to be present somewhere inside the vehicle (e.g. in the driver's pocket or a handbag in the vehicle) to be able to switch on the vehicle.
- If the vehicle uses an ignition key, use it to switch off the vehicle.

If the vehicle uses a "START - ENGINE - STOP" button for vehicle deactivation, press it. Then remove the key from the vehicle and keep it at a minimum distance of 5 metres to prevent accidental activation.



Vehicle with a conventional key

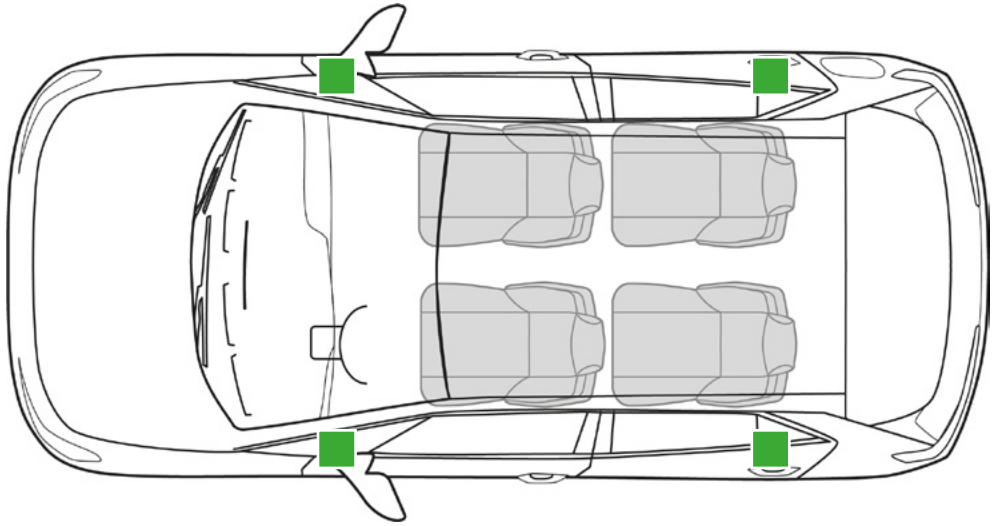
"START-ENGINE-STOP" button on the steering column

⚠	To prevent accidental activation, remove the ignition key from the vehicle. Keep it at a minimum distance of 5 m from the vehicle.
⚠	In conventional vehicles, pressing the "START - ENGINE - STOP" button and the brake pedal at the same time starts the engine. In PHEV and BEV vehicles it instead switches to “READY” mode. Follow the information in the rescue data sheets.
ℹ	In vehicles with a high-voltage drive, the driver display in the instrument cluster provides feedback as to whether the electric drive is switched off (“OFF”/“PARK”) or ready for operation (“READY”).

Lifting the Vehicle

In some cases, it may be necessary to lift the vehicle to rescue injured persons. When doing so, be sure to not damage sensitive parts, such as the high-voltage battery, drive train, fuel tank, or exhaust system.

	Lift or fasten the vehicle using firmly anchored components. Do not use high-voltage components or exhaust systems.
	For deformed vehicles, the firefighters and rescue workers on site must decide at which points to lift the vehicle.
	The vehicle-specific points for lifting are indicated in the rescue data sheets.
	If possible, lift the vehicle by the indicated lifting points.



3. Safety Regulations/Preventing Direct Hazards

The recognition and elimination of hazards to life and limb play a major role in dangerous situations. This chapter describes appropriate preventive measures that minimise risks to accident victims and rescue personnel.

	Liquids and gases may leak from the vehicle, which may lead to dangerous situations. Wear suitable protective clothing and, if possible, avoid contact with these substances during rescue operations and extrication.

In hazardous situations, the following procedure is recommended:

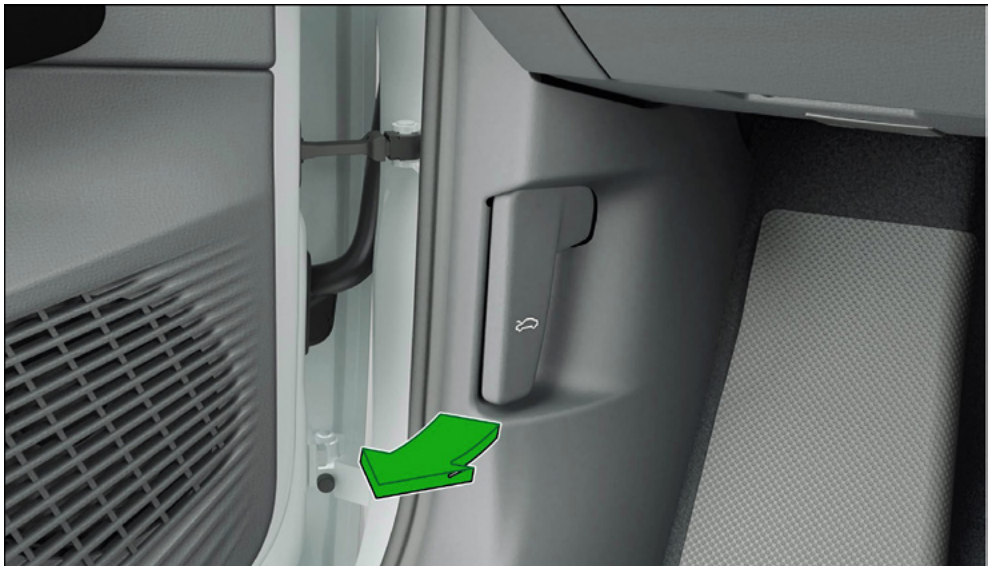
1. Warn the surroundings about the accident
   (switch on hazard warning lights, if they have not activated automatically).
2. Immobilise the vehicle, see chapter 2. Immobilisation/Stabilisation/Lifting.
3. De-energising the vehicle electrical system:
   Deactivating the High Voltage System,
   Disconnecting the 12 V Battery (depending on situation),
   Disconnecting the 48 V Battery.

	In the event of an accident in which airbags are activated, the high-voltage system and the 48 V on-board system are automatically deactivated. The high-voltage system is de-energised approx. 20 seconds after deactivation.

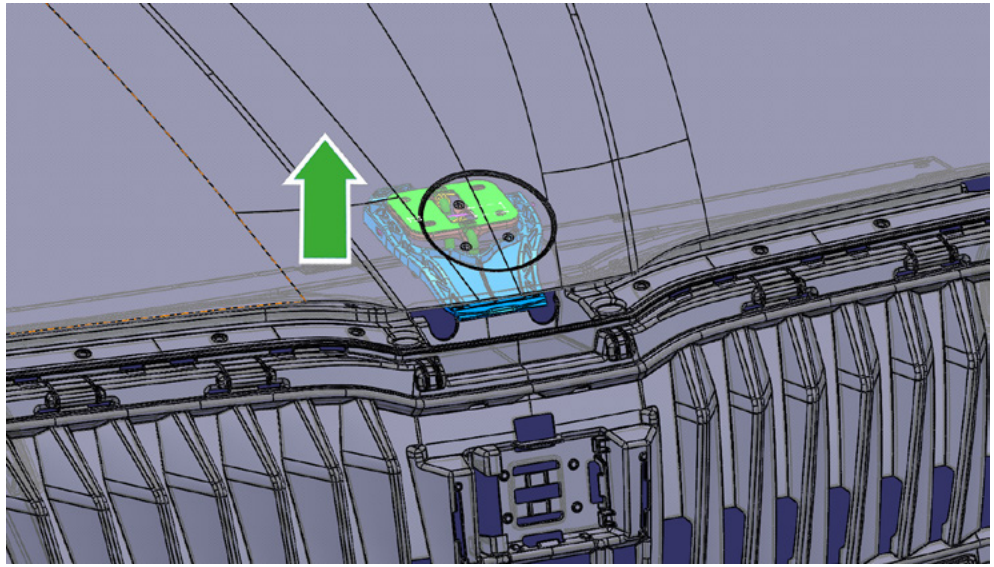
Opening and Closing the Bonnet

Depending on the situation, it may be necessary to open and close the bonnet. The following section describes the standard opening procedure (an analogous procedure applies to a 2-lock system).

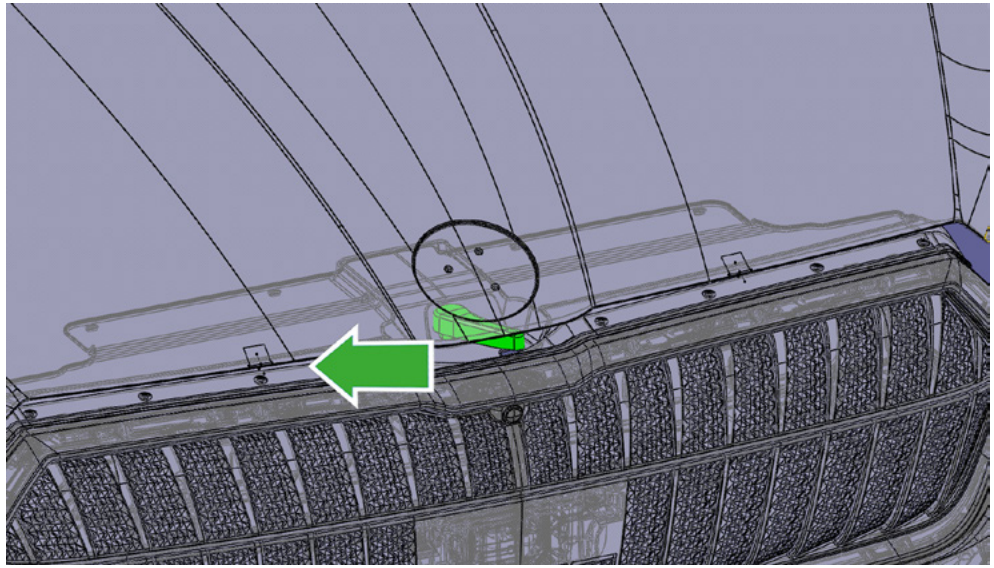
	Additional information can be found in the operating manual for the vehicle.



In the footwell on the driver side: bonnet release lever



On the bonnet: lock release (e.g. Karoq)



On the bonnet: lock release (e.g. Enyaq)

Deactivating the High Voltage System

Škoda models with a battery drive (BEV) or a plug-in hybrid drive (PHEV) are fitted with a high-voltage system with voltage of over 300 V.

The high-voltage system is disconnected from the high-voltage battery immediately when the airbags are activated. The high-voltage system can then only be reactivated in a specialised service centre. The indicator panel may display warnings.
Škoda high-voltage vehicles have several emergency cut-out connections located in the fuse box, in the engine compartment, or at the rear of the vehicle. These provide emergency personnel with an easily accessible way to safely deactivate the high-voltage system. Further information is available on the following pages under Disconnecting the Vehicle from the High-Voltage System.

	An electric motor is quiet. The driver display informs the driver whether the electric drive is turned off (“OFF” or “PARK”) or ready to drive (“READY”).
	Electric vehicles (BEV) can be readied to drive by occupying the driver seat and pressing the brake pedal! Plug-in hybrid vehicles (PHEV) are started by pressing the "START- ENGINE - STOP" button.

	In the event of an accident that results in airbag activation, the high-voltage system is deactivated automatically. The high-voltage system is de-energised approx. 20 seconds after deactivation.
	In all other cases, the high-voltage system can be deactivated at the emergency cut-out connection. Using the emergency cut-out connection prevents accidental restarting of the high-voltage system.

Depending on the circumstances of the accident and the situation at the scene of the accident, the primary emergency cut-out connection in the fuse box may not be accessible (e.g. in the event of a car/truck underride accident). If necessary, the alternative emergency cut-out connection in the vehicle front end or at the rear of the vehicle can be used.

Emergency cut-out connections indicated by yellow or orange tags only carry 12 V from the on-board network, which means they can be safely disconnected by the emergency personnel using the procedure described on the tags.

	Using the emergency cut-out connection only deactivates the high-voltage system. Safety systems such as airbags or belt pretensioners are still supplied with voltage by the 12 V on-board network.
	If the airbag has not been activated, the 12 V electrical equipment may still be supplied with electrical energy from the high-voltage battery via the DC converter.
	Even after deactivating the high-voltage system, there is still energy inside the high-voltage battery. The high-voltage battery must therefore neither be damaged nor opened during rescue procedures.

	Do not touch damaged high-voltage components, and cover them using suitable means, such as an insulating blanket, if necessary. Use personal protective equipment in accordance with local standards.
	The positions of the emergency cut-out connections and the procedure for deactivating the vehicle are provided in the rescue data sheets for each model.

At the Scene of the Accident

Depending on the type of accident, restraint systems, e.g. airbags, may have been activated. The firefighters and rescue workers at the scene of the accident decide how to proceed with the rescue and extrication.

	Rapid or strong smoke development on the crashed vehicle may indicate a thermal reaction of the high-voltage battery, see also Is the high-voltage battery affected by the fire?

Minor Accident

No damage is visible at first and the restraint systems have not been activated.

1. Warn surroundings about the accident.
   Switch on hazard warning lights, set up a warning triangle.
2. Immobilise the vehicle.
   2. Immobilisation/Stabilisation/Lifting
3. Deactivate the high-voltage system by removing the fuse from the fuse box or disconnecting alternative emergency cut-out connections.

Serious Accident

The restraint systems were activated. No damage is visible at first on the high-voltage battery.

1. Warn surroundings about the accident.
   If the hazard warning lights have not activated automatically, activate them; set up a warning triangle.
2. Immobilise the vehicle.
   2. Immobilisation/Stabilisation/Lifting
3. The high-voltage system was deactivated automatically.

	Damage or deformation of the high-voltage battery on the crashed vehicle may indicate a thermal reaction of the high-voltage battery, see also Is the high-voltage battery affected by the fire?
	Depending on the situation, it may be necessary to deactivate the high-voltage system manually at an emergency cut-out connection.

Parked or Stationary Vehicle

If a parked vehicle is damaged by an accident, restraint systems or airbags are generally not activated. The high-voltage system is not automatically deactivated. If the ignition is switched off, no warnings may be displayed on the indicator panel.

1. Deactivate the high-voltage system by removing the fuse from the fuse box.

Vehicle at a Charging Station

If a charging vehicle is damaged by an accident, restraint systems or airbags are generally not activated. The high-voltage system is not deactivated automatically. If the ignition is switched off, no warnings may be displayed on the indicator panel.

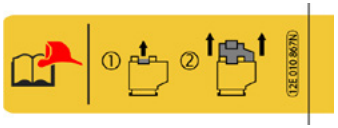
1. Disconnect the charging cable as usual (see the operating manual for the vehicle).
2. Alternatively, see Disconnecting from a Charging Station (Emergency Release).
3. Deactivate the high-voltage system by removing the fuse from the fuse box or disconnecting alternative emergency cut-out connections.

	The high-voltage components are marked with warning signs, see also Warning Labels for High-Voltage Parts of the Vehicle. High-voltage cables are orange.

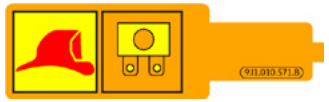
Identification of Emergency Cut-Out Connections

The emergency cut-out connections for deactivating the high-voltage system are marked uniformly on Škoda models. The pictograms on the labels explain the procedure.
Until 2022, the labels were produced and installed into models according to our in-house specifications. Models manufactured after 2023 have new labels introduced in line with Euro NCAP.

Previous Identification

	Indicates the emergency cut-out connection in the passenger compartment (pull out the fuse in the fuse box)
	Indicates the emergency cut-out connection in the engine compartment (open the service connector)
	Indicates the emergency cut-out connection in the boot or rear of the vehicle (disconnect the marked cable)

New Identification for Models Manufactured after 2023

	Indicates the emergency cut-out connection in the passenger compartment (pull out the fuse in the fuse box)
	Indicates the emergency cut-out connection in the engine compartment (open the service connector)
	Indicates the emergency cut-out connection in the boot or rear of the vehicle (disconnect the marked cable)

Disconnecting the Vehicle from the High-Voltage System

	An electric motor is quiet. The driver display informs the driver whether the electric drive is turned off (“OFF” or “PARK”) or ready to drive (“READY”). Follow the information in the relevant rescue data sheets.

If the high-voltage system is to be disconnected manually, observe the following procedure:

1. First use the Disconnecting the High Voltage in the Fuse Box; if this cannot be reached, then use
2. the Disconnecting High Voltage in the Engine Compartment (service connector) or
3. use Emergency Cut-Out Connection at the Rear of the Vehicle.

Current Škoda models feature at least two emergency cut-out connections. One is in the fuse box, the other in the engine compartment. The Enyaq model also features a third cut-out connection in the rear.

Different procedures may be necessary, depending on the vehicle type and equipment. The way in which the vehicle is disabled depends on the accident situation and the vehicle equipment.

	The installation location of the emergency cut-out connections and the required procedures can be found in the Škoda rescue data sheets.
	To be absolutely sure the high-voltage system is disconnected, disconnect the emergency cut-out connection designated by the manufacturer and disconnect the 12 V battery.

Use rescue equipment near high-voltage components with caution and consideration.

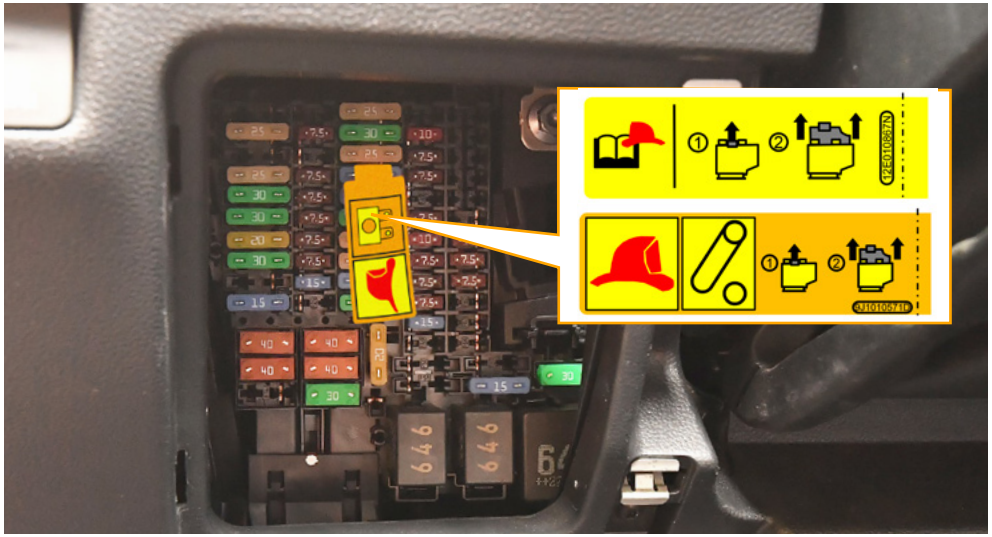
Regardless of whether the vehicle is a hybrid or electric vehicle, the following points always apply in rescue operations in high-voltage vehicles.

	Improper handling of high-voltage components can prove fatal due to high voltage and the associated potential flow of current through the human body.
	Do not perform any work on badly damaged high-voltage components. One of the accessible emergency cut-out connections should also be disconnected. If the airbags have not deployed, the vehicle must be disabled by the firefighters or rescue workers using an emergency cut-out connection. The high-voltage system will de-energise after approx. 20 seconds. If the airbags have deployed, the high-voltage system will have already been switched off and firefighters and rescue workers can act immediately.
	Even after disabling the high-voltage system, there is still electrical energy inside the high-voltage battery. The high-voltage battery must therefore neither be damaged nor opened during the rescue operations. If the high-voltage battery has been damaged during the accident, avoid any contact with the high-voltage battery or any liquids and vapours leaking from it.
	Do not touch damaged high-voltage components and cover them using suitable means if necessary! Use personal protective equipment in accordance with local standards!

Disconnecting the High Voltage in the Fuse Box

Depending on the vehicle model, the fuse box is located in the interior in the area of the dashboard or installed in the boot and marked with a yellow tag. Removing the fuse with this marking will disconnect and deactivate the high-voltage system.

The contacts in the high-voltage battery will open and disconnect the battery from the rest of the high-voltage system, which will then de-energise within 20 s.

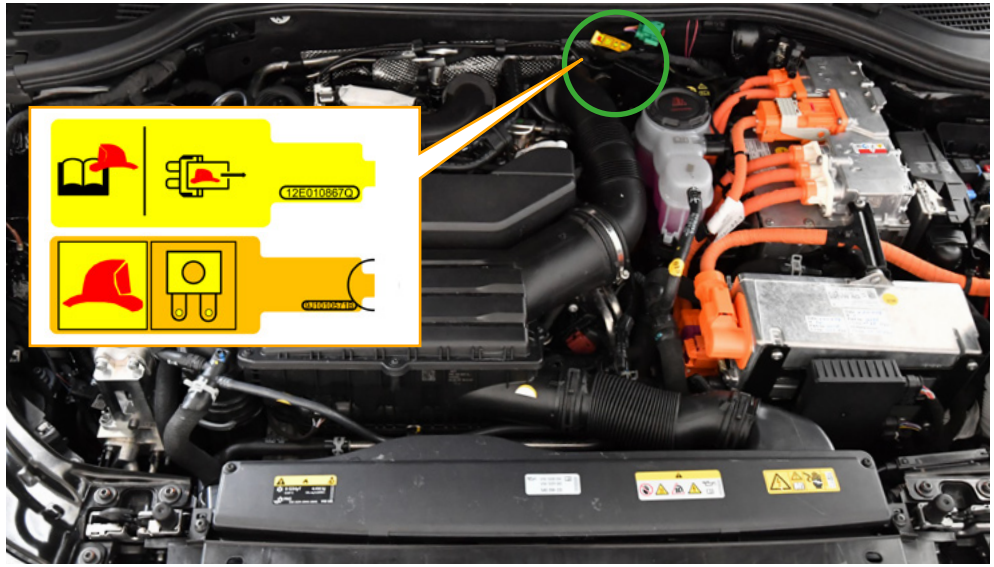


The location for disconnection in the passenger compartment, fuse box in the dashboard, see also New Identification for Models Manufactured after 2023

	Identification/pictogram of the emergency disconnection point in the fuse carrier in the rescue data sheet

Disconnecting High Voltage in the Engine Compartment

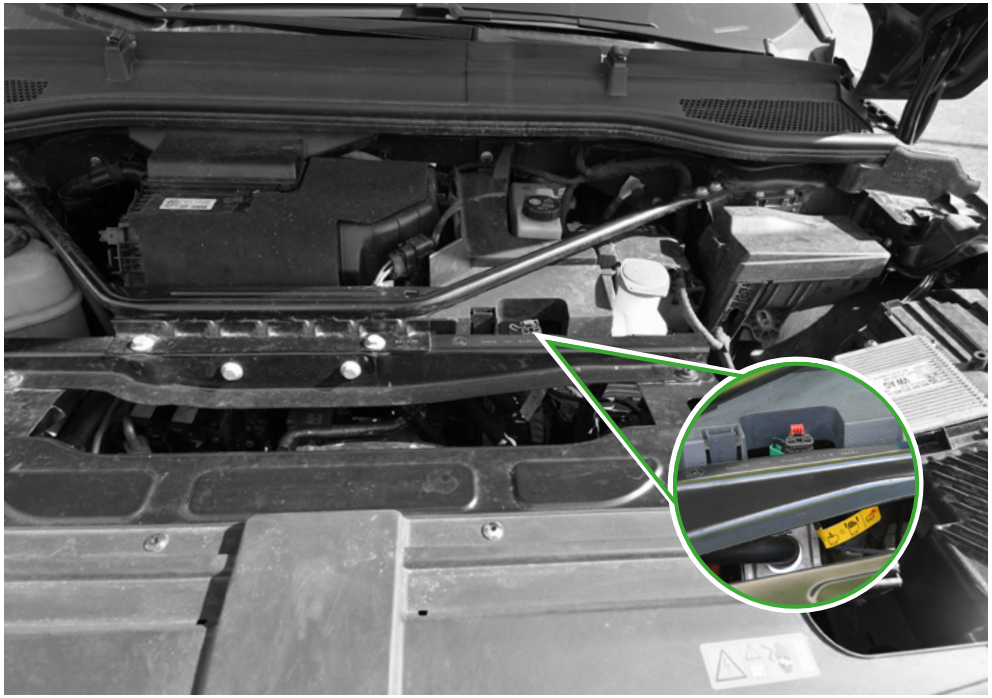
The low-voltage service connector in the front end of the vehicle is used as an emergency cut-out connection for the high-voltage systems in plug-in hybrid electric vehicles (PHEV) and electric vehicles (BEV). The connector has a green housing and a tab for release. The connector is clearly identified as an emergency cut-out connection by a yellow or orange label.
The system can then only be reactivated in a specialised service centre. The vehicle front end is usually accessed by pulling on the Bowden cable in the left front footwell. This unlocks the bonnet, which can then be raised. Please refer to the vehicle operating manual if necessary.



Cut-out connection in the front end of hybrid vehicles (Superb from 2024), see also New Identification for Models Manufactured after 2023

	Identification/pictogram of the emergency cut-out connection in the rescue data sheet

	If the label of the emergency cut-out connection in the vehicle front end is not visible, an additional sticker may be placed near it.



Cut-out connection in the front end of electric vehicles, see also New Identification for Models Manufactured after 2023

Procedure for deactivating the high-voltage system using the emergency cut-out connection:

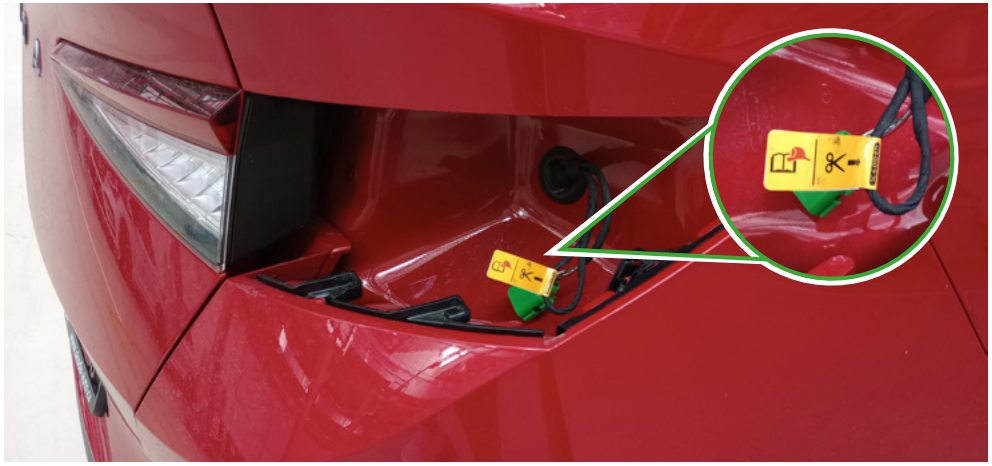
Pull out the red latch.

Keep the red latch pressed and pull out the black latch until you hear a click.

Emergency Cut-Out Connection at the Rear of the Vehicle

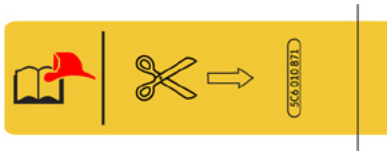
Electric vehicles may have another emergency cut-out connection at the rear of the vehicle.

	Identification/pictogram of the emergency cut-out connection at the rear of the vehicle in the rescue data sheet



Cut-out connection under the rear light, see also **New Identification for Models Manufactured after 2023**

The high-voltage cut-out connection in vehicles manufactured from 2023 is also behind the right rear light



Disconnecting the 12 V Battery

The circumstances at the scene of the accident may require the 12 V vehicle electrical system to be deactivated in order to reduce the risks to accident victims or rescue workers (e.g. subsequent airbag activation).

Depending on the vehicle model, one or more 12 V batteries may be installed in the front or rear of the vehicle.
Disabling the vehicle's electrical system not only reduces the risk of fire caused by short circuits, but also the risk of delayed activation of airbags or belt pretensioners.

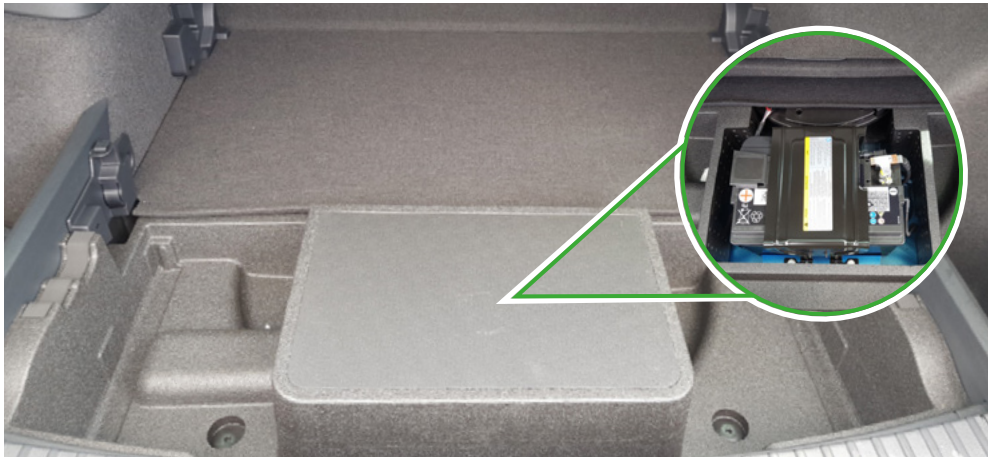
	If multiple vehicle electrical system batteries are installed, all of them must be disconnected to de-energise the vehicle.
	Always disconnect the negative terminal of the battery first, then follow with the positive terminal. To avoid the risk of arcing, the battery terminals should be insulated.
	When the 12 V supply has been disconnected, all functions of the electrical system stop working (this applies in particular to the warning indicator system and electric seat adjustment). For further information, see chapter 4. Access to the Occupants and chapter 9. Important Additional Information.

	The placement and procedure for deactivating the 12 V battery/ on-board system is described in the Škoda rescue data sheets.

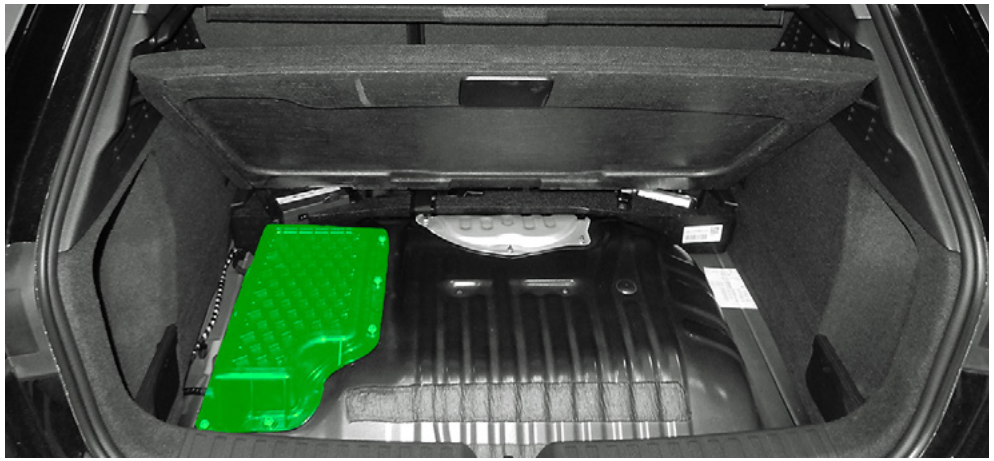
Typical Installation Locations

Depending on the model, the 12 V battery of the electrical system is located in the engine compartment, in the boot, or in the passenger compartment.

Location in the front end of the vehicle (e.g. Kodiaq)

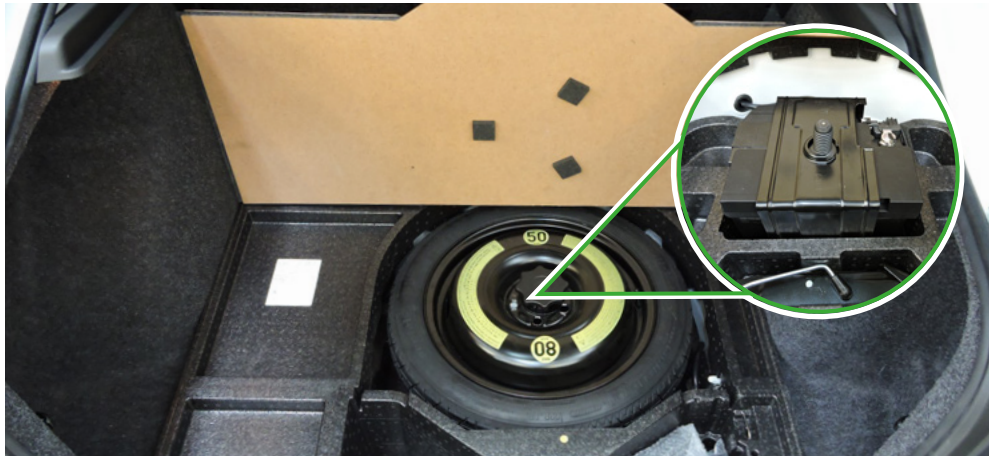


Installation location in the boot under the floor (e.g. Kodiaq)



Installation location in the boot under the floor (e.g. Octavia)

Installation location in the boot (e.g. Superb)



Installation location in the boot under the floor and under the spare tyre (e.g. Rapid)

Disconnecting the 48 V Battery

Modern vehicles feature intelligent drive systems and a variety of driver assist systems. Some of them are operated using an additional 48 V on-board electrical system.

ŠKODA models with a 48 V electrical system are also referred to as mild hybrid vehicles (mHEV) and marked with the word e-TEC on the boot lid. These vehicles are not high-voltage vehicles.

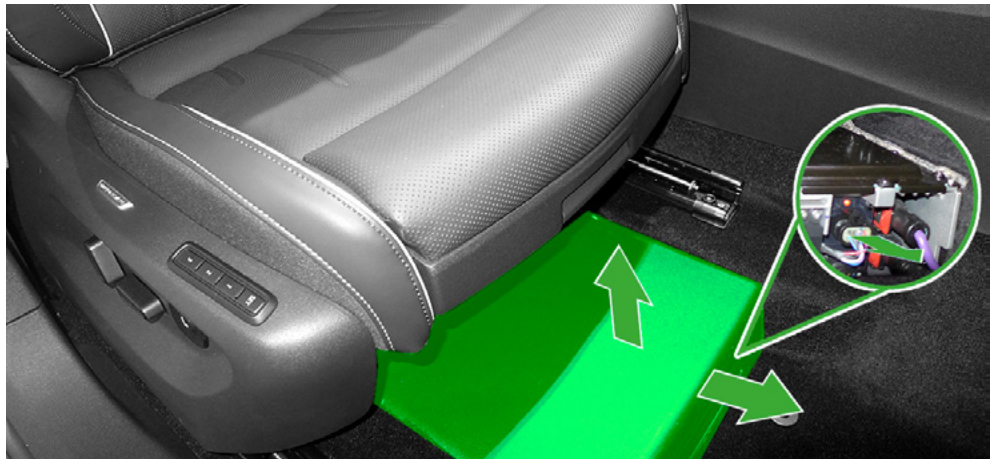
Example of use:

- Advanced Start-Stop mode with a belt-driven starter-alternator.

	In the event of an accident in which airbags are activated, the 48 V electrical system is automatically disabled.
	The 48 V on-board network must be disconnected in order to de-energise the vehicle.

The risks associated with the 48 V power source can be controlled appropriately and to the same extent as with conventional 12 V electrical system batteries if the specifics of these risks are understood.

	When disconnecting the 48 V battery, there is danger of an electric arc! Wear appropriate personal protective equipment!
	When damaged or misused, lithium-ion batteries may self-ignite either immediately or after a delay, or re-ignite even after a fire has been extinguished! Therefore, wear appropriate personal protective equipment!
	The procedure for disconnecting the 48 V battery is described in the rescue data sheets.



Disconnecting the 48 V on-board electrical system in a Superb from 2023 onwards

Disconnecting from a Charging Station (Emergency Release)

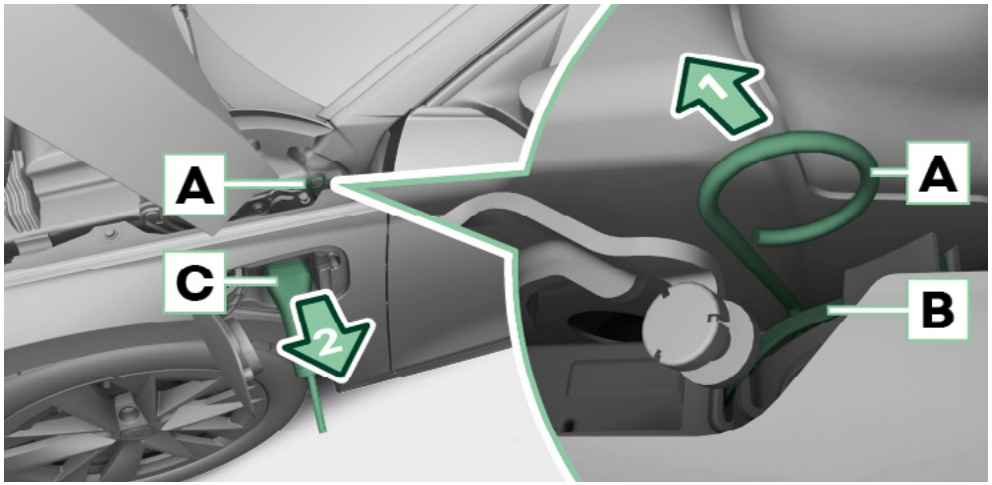
Vehicles parked at a charging station or by a wall box can be disconnected from these in an emergency.

If regular disconnection is not possible, the vehicle can be released manually using the procedure described in the rescue data sheet. The manual release mechanism is always located on the rear of the charging socket.

	The procedure for operating the manual release mechanism for the charging socket is described in the rescue data sheets.

	Public charging stations may be connected to the public power grid at more than 1,000 V. If this is the case, a correspondingly larger safety distance must be observed when responding to fires.
	Follow the tactical and safety procedures for public charging stations and wall boxes.
	The charging connections and the appearance of public and private charging stations differ depending on the manufacturer and country.

Charging stations and wall boxes charge with alternating or direct current. A system that uses direct current (DC) supplies the battery directly.
If alternating voltage (AC) is used to charge the high-voltage battery, the battery is powered via a charger in the vehicle.



Example locations of manual release from a charging station

Natural Gas Drive – Safety Features

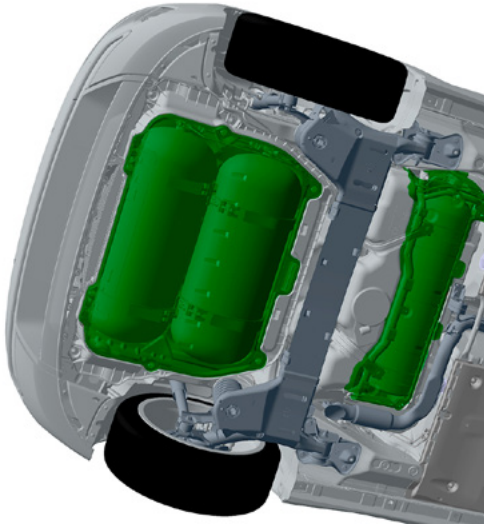
The entire natural gas system has been installed in a way that provides the best possible protection from damage and the effects of weather. The gas tanks are highly stable and heat resistant. The high-pressure pipes and connecting elements are made of seamless stainless steel and are routed outside of the passenger compartment.

In addition to the electromagnetic shut-off valves, the valves of the gas cylinders have an integrated thermal fuse and a flow rate limiter that prevents the uncontrolled escape of gas in case the pipes sustain damage. A non-return valve is also installed in the first valve of the cylinder to prevent gas from flowing from the cylinder back to the filler line.

	The electromagnetic fuel tank shut-off valves are automatically activated in the event of an accident in which the restraint systems are activated.

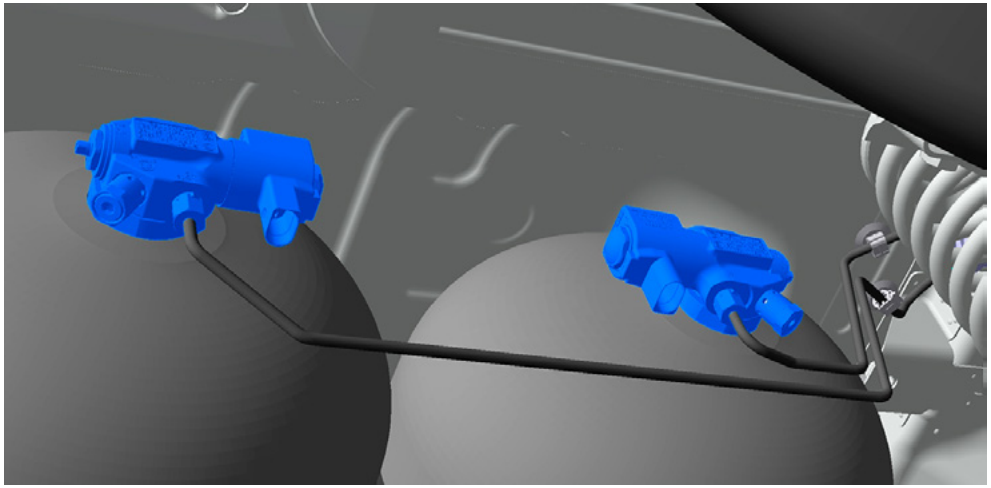
Tank Shut-Off Valve

Removing the tank covers on the underbody:



The tank covers are marked in green in this illustration

Manual Disconnection of Gas Tanks



Locate the gas tank shut-off valves

Turn the shut-off valve clockwise to its limit using a 5 mm open-end wrench, pliers, or a special tool

	The exact procedure required for manual shut-off of the gas tanks is described in the Škoda rescue data sheets.
	Labelling of the CNG tanks in the rescue data sheets.
	Labelling of the CNG shut-off valves in the rescue data sheets.

LPG Drive – Safety Features

Vehicles with an LPG drive differ from conventional vehicles in some respects.

Knowledge of these differences is extremely important for rescue workers.

	Liquefied petroleum gas (also referred to as LPG or liquid petroleum gas) must not be mistaken for natural gas (also referred to as CNG or compressed natural gas). Natural gas and natural gas devices differ in their basic properties from LPG and LPG devices.

The entire LPG system has been installed in a way that provides the best possible protection from damage and the effects of weather. The gas tanks are highly stable and heat resistant. The high-pressure pipes and connecting elements are made of copper/stainless steel and are routed outside of the passenger compartment.

Along with the electromagnetic shut-off valve, the tank has integrated overpressure protection. Furthermore, a non-return valve is installed in the filler stop valve, which prevents the gas from flowing back from the gas tank and into the filler line.

Tank Shut-Off Valve

The fuel tank shut-off valve is an electromagnetic valve and is opened by the gas control unit during LPG operation.

	The valve closes automatically when the system switches over to petrol mode, when the engine is switched off, in the event of an accident involving activation of the airbags and/or seat belts, or if the voltage supply fails.

4. Access to the Occupants

Version dated: 05/2024

Access to the occupants plays a central role in rescue activities after an accident.

Depending on the situation, firefighters and rescue workers have various options to gain access to the occupants.

Unlocking the Vehicle Doors

Locked doors (exterior door handle non-functional) can be usually unlocked as follows:

- using the remote control buttons,
- using the lock/unlock button inside the vehicle,
- using an emergency key on the door lock cylinder,
- for vehicles with Kessy - advanced by pulling on the handle (key must be present),
- using the MyŠkoda mobile app.

Unlock button on the vehicle key's remote control

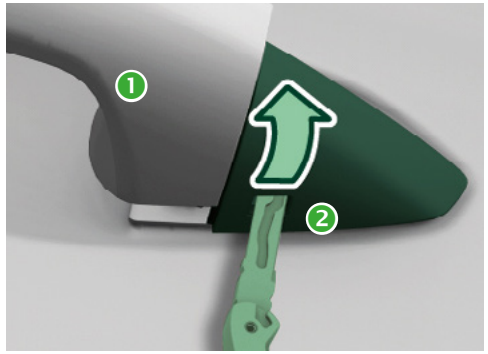
Unlock button on the dashboard

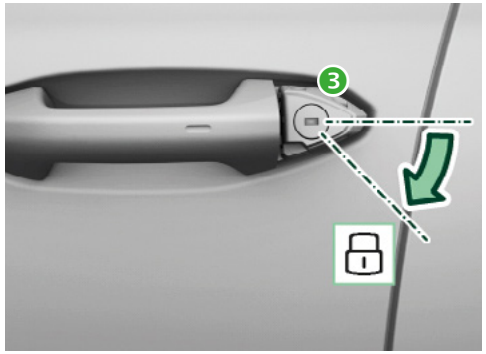
	Vehicle- or equipment-specific information can be found in the operating manual for the vehicle or in the model-specific rescue data sheets.
	After an accident accompanied by airbag activation, all vehicle doors and the boot lid are automatically unlocked. The doors can be opened by pulling on the exterior door handle.

Exterior Door Handles

To open the door, pull on the handle.

	After an accident accompanied by airbag activation, all vehicle doors and the boot lid are automatically unlocked. The bonnet remains closed.
	After serious accidents, it may be necessary to use extrication equipment.
	When the childproof lock is activated, opening the doors of the 2nd seat row is not possible from inside. To open the door from the inside, the childproof lock must first be deactivated mechanically or electrically. See Mechanical and Electric Childproof Lock.



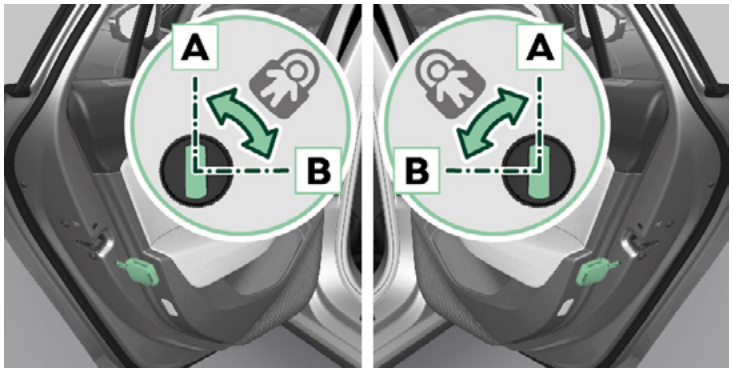


In special situations, the vehicle can be manually unlocked and opened from the outside as follows using a manual key:

1. Pull on the handle of the left front door and hold it in place.
2. Insert the key bit into the opening on the underside of the cap and prise it off.
3. Insert the key bit into the door lock and unlock the vehicle by turning the key.
4. If you want to open the door, pull firmly on the handle of the driver-side door.

If necessary, the vehicle doors can also be unlocked and opened from the inside using the interior door handle.

Mechanical and Electric Childproof Lock



Deactivation of the mechanical childproof lock using the key

Deactivation of the electric childproof lock using the button in the door trim

Interior Door Handles

The doors can be opened from the interior by pulling on the interior door handle. The interior door handles can be accessed:

- through an adjacent door (from the interior of the vehicle),
- by opening the window using remote control buttons in the door trim,
- by opening the window by holding the unlock button on the vehicle key's remote control,
- by removing the window.

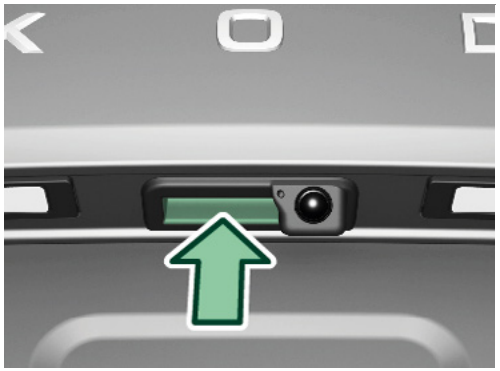
Pull on the door handle and open the door

	There is a risk of injury if the windows are broken! Wear appropriate personal protective equipment!
	Electric operation of the windows of the 2nd seat row may be turned off using the button in the door trim. In this case, the window cannot be opened.

	On later models, the windows automatically roll down slightly after accidents with activated airbags. If necessary, it is possible to reach into the interior through the gap and break the window outwards.
	When the childproof lock is activated, opening the doors of the 2nd seat row is not possible from inside. To open the door from the inside, the childproof lock must first be deactivated mechanically or electrically. See Mechanical and Electric Childproof Lock.

Access via Boot Lid

Depending on the equipment variant, the boot lid can be unlocked as follows:



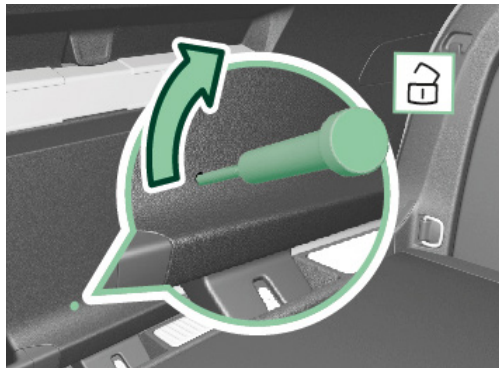
Handle on the boot lid

Button on the remote control

Button in the door trim on the driver side

If the vehicle is unlocked, the boot lid can be opened using the handle integrated in the lid. Some models also feature an electrically operated boot lid that is opened using a button on the driver side.

	After an accident accompanied by airbag activation, all vehicle doors and the boot lid are automatically unlocked. The bonnet remains closed.
	If the 12 V supply is interrupted, the boot lid cannot be opened even though it is unlocked.
	If necessary, the boot lid can be opened manually from the inside. Reference the operating manual for the vehicle in question.

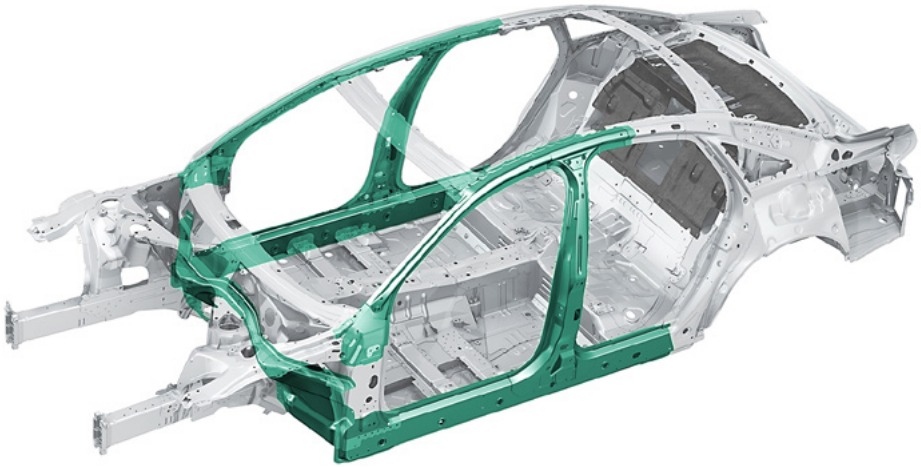


Unlocking the boot lid from the boot interior

Body Reinforcements

A high level of safety for the vehicle occupants is achieved in particular by a rigidly designed passenger compartment.

The rigidity of the body is achieved by using high-strength and hot-formed steels with larger wall thicknesses in a multi-shell structure.



Body with reinforced passenger compartment

The reinforced areas are indicated in the model-specific rescue data sheets. Rescue activities in these areas require the use of extrication equipment.

	Cutting high-strength or hot-formed steels can result in sharp edges! Wear appropriate personal protective equipment!
	Avoid sensitive components such as airbags, fuel tanks, cables, or high-voltage components. Information about the position of reinforcements can be found in the vehicle-specific rescue data sheets.
	High-strength areas of the vehicle are indicated in green in the rescue data sheets.

B-Pillar

The B-pillar is reinforced in particular using high-strength and hot-formed steels and a multi-shell structure with a large cross-section.

The B-pillar is additionally reinforced near the belt height adjuster. These areas are therefore not suitable for cutting through the body.

B-pillar with multi-shell structure

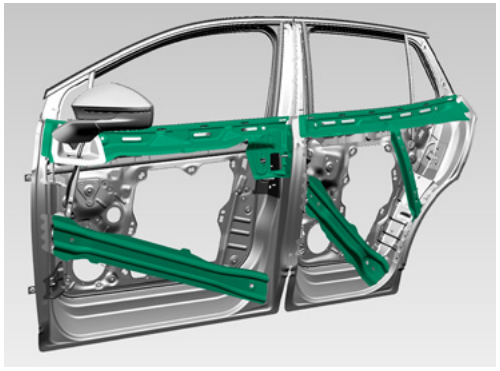
	The easiest point to cut through the B-pillar is the area above the belt height adjuster! The pillar can also be cut through in the lower area. However, note that the cross-section of this part of the pillar is very large and that the belt pretensioner is usually located here.
	Always observe the instructions in the rescue data sheets!

Side Members

The side members are reinforced using high-strength and multi-shell steels. These increase safety in the event of side collisions. Electric vehicles in particular feature reinforced side members to protect the high-voltage battery.

Protection of the Door against Impact

Impact protection in the door area of Škoda vehicles consists of steel tubes or steel profiles. The tubes or sections are arranged horizontally or diagonally behind the outer door panels.
The high-strength sections can be cut through with powerful extrication equipment. Above the door lock are steel reinforcements, which provide the vehicle with support in the event of a head-on or side collision, while the steel reinforcements below the door lock are relevant in the case of a side impact.



Side impact protection in the doors

	A crash tube may be installed in the front doors to better protect the vehicle occupants in the event of a head-on or side collision.
	The location of particular reinforcements can be found in the rescue data sheet for the vehicle.

	Indication of high-strength areas in the rescue data sheets

Glazing

The windows in Škoda vehicles are made of toughened or laminated safety glass.

The windscreen is always made of laminated safety glass (VSG) and the side and rear windows are made of toughened safety glass (ESG) or laminated safety glass (VSG), depending on the specifications. Roofs with panoramic sliding windows in Škoda vehicles are always made of toughened safety glass.

Toughened Safety Glass (ESG)

Toughened safety glass (ESG) is thermally pretreated glass that can withstand high loads. If the load is too high, the glass breaks into many fragments. Toughened safety glass is used for side windows, rear windows, and sliding sunroofs.

	Intact windows can suddenly shatter during rescue work on a vehicle. Depending on the accident and the scope of emergency work, the windows should be removed first. Panes can be removed by concentrated load, such as by using an automatic punch or an emergency hammer. The windows should first be secured by a special film or adhesive tape.

Laminated Safety Glass (VSG)

Laminated safety glass consists of two panes of glass with a layer of PVC film in between. The glass remains largely intact when damaged. It is used for windscreens, panoramic sunroofs, and sometimes also for side windows. Windscreens are bonded to the body with adhesive.

	Since VSG windows cannot suddenly shatter, they only need to be removed if it is necessary for rescue work. VSG panes can be removed using a special glass saw.

Toughened safety glass

Laminated safety glass

	Protect the occupants and rescue workers from glass shards before removing glass panes.
	Information about installed window versions in later models is also described in the respective rescue data sheets.

Driver Seat and Steering Wheel Adjustment Mechanisms

Depending on the situation at the scene of an accident, firefighters and rescue workers decide whether it is necessary to adjust the seats or the steering wheel to rescue the occupants.

Mechanical adjustment of the steering column

① Unlocking the steering column
② Steering column adjustment

The seat systems and steering column in Škoda vehicles may be operated mechanically or electrically. The steering column can be adjusted mechanically.
It may also be necessary to remove headrests.
To rescue occupants from the second and third row of seats, it may be necessary to move the front seats forward and fold down the backrests, or remove individual seats.

	If using extrication equipment inside the vehicle, be sure not to damage sensitive parts such as the high-voltage battery or pyrotechnic belt pretensioners.
	After an accident accompanied by airbag activation, all vehicle doors and the boot lid are automatically unlocked. The bonnet remains closed.
	Depending on the vehicle specifications, electrically operated seats may be equipped with an Easy Entry function. This function automatically moves the seat away from the steering wheel.
	To extricate passengers, operate the electrically operated comfort systems before disconnecting the battery. The systems will not work afterwards.

Electric seat adjustment

① **Lumbar support adjustment**
② **Seat adjustment**
③ **Backrest adjustment**

Electrically Operated Comfort Systems

Depending on the model series and vehicle specifications, Škoda vehicles feature a range of electrically operated convenience systems, such as:

- electrically operated windows,
- electrically controlled sliding sunroof,
- electric seat adjustment,
- electric unlocking, opening, and closing of the boot.

If the 12 V battery/batteries (on-board network) is/are disconnected, these systems can no longer be used!

	The battery may only be reconnected to the vehicle electrical system by service centre personnel.

5. Stored Energy/Liquids/Gases/Solids

Škoda vehicles carry a wide range of service fluids. Reacting appropriately and taking suitable action to prevent a hazard is only possible if the hazard is identified during the rescue procedure.

	With all the energy carried or stored (pyrotechnic belt pretensioners, airbags, fuels, gases, etc.) there is a risk of extensive discharge after an accident.
	Always wear suitable protective equipment when handling leaking operating fluids.

Main Carried Service Fluids

 Brake fluid

 Grease (petroleum jelly)

 Gearbox oil

 Hydraulic oil

 Air-conditioning fluid

 Compressor oil

 Preservation oil

 Refrigerant

 Fuel

 Steering gear oil

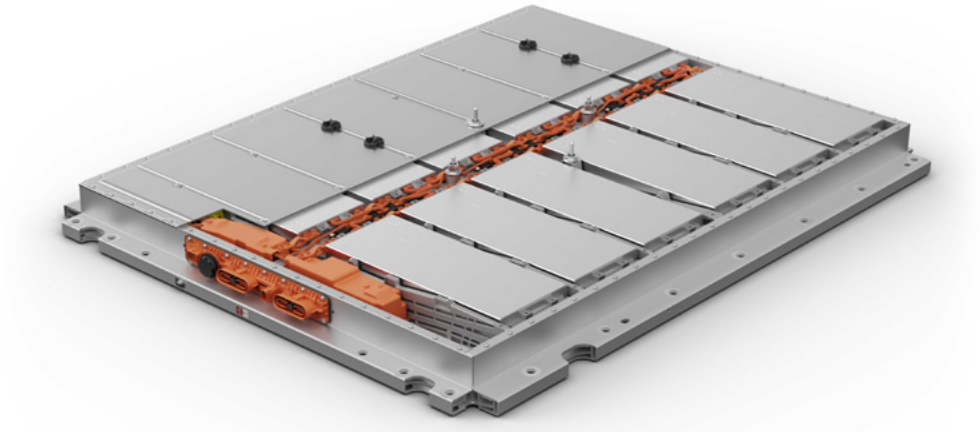
 Engine oil

 Reducing agent for NO_2 (AdBlue)

 Windscreen washer fluid

Warning Labels for High-Voltage Parts of the Vehicle

Part of the safety concept of high-voltage vehicles is extensive warning labelling.



Example of a high-voltage battery in the Enyaq model

All high-voltage components are labelled with clear warning labels. An exception to this is the high-voltage cables, which are immediately recognisable by their orange warning colour.

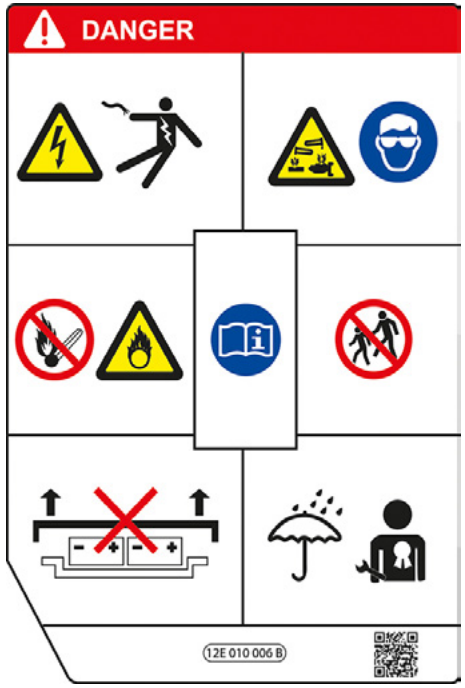
Generally, three types of warning labels are used:

- a yellow warning label with a warning symbol for electrical voltage,
- a warning label with the word “Danger” on a red background,
- labels with a special warning for people with pacemakers.

Yellow labels are either placed directly on the high-voltage component, placed near the high-voltage component, or placed on the cover under which the high-voltage components are installed.

Warning labels with the word “Danger” indicate the high-voltage components directly.

Examples of warning labels in high-voltage vehicles:



High-Voltage On-Board Electrical Network

The classification of high-voltage components or the high-voltage electrical system in a vehicle is dependent on the type of voltage, either AC or DC.

Alternating voltages (AC) above a supply voltage of 30 V and direct voltages (DC) with a supply voltage of over 60 V are generally referred to as high-voltage components, a high-voltage on-board network, or a high-voltage vehicle electrical system.

Definition of terms based on vehicle construction (e.g. Škoda)

- Low voltage: up to 60 V (usually 12 V or 48 V for passenger vehicles).
- High voltage: from 60 V to approx. 1,000 V.

	Even though the terms are based on the voltage, the actual danger from direct contact with electrical energy is the strength of the current that flows through the human body in a closed circuit. This means that, even at low voltage, contact with electrical energy can present a danger to life when the current rating is sufficiently high.
	Do not touch, cut, or open high-voltage components and high-voltage batteries! Wear appropriate personal protective equipment!
	Only a few electrical components in high-voltage vehicles are operated using high voltage (e.g. high-voltage battery, high-voltage cables, power and control electronics for the electric drive, the electric motor/alternator, the air-conditioning compressor, on-board charger). All other electrical components, such as lighting, vehicle electronics, etc. are supplied with power by the 12 V on-board electrical network.

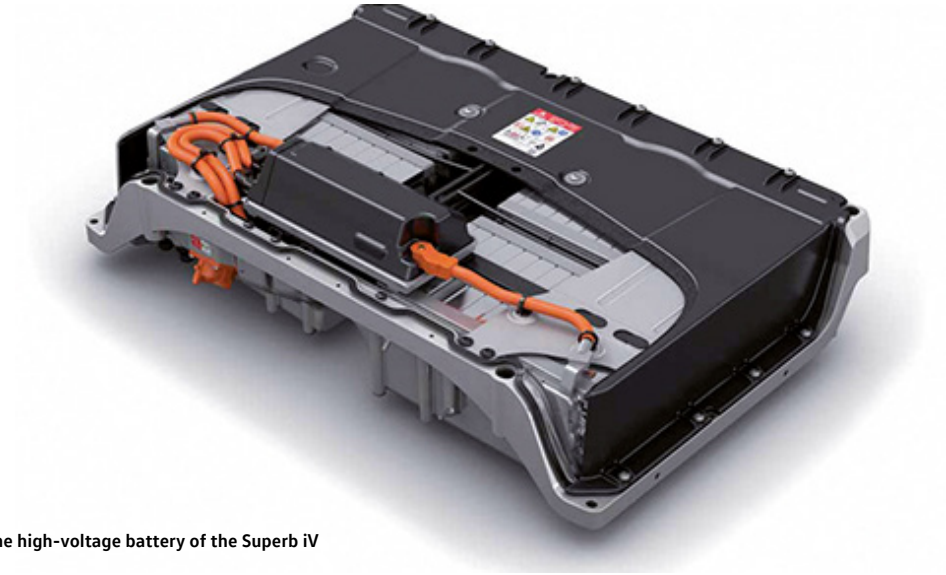
High-voltage batteries are rechargeable accumulators. Various types of batteries are used, depending on the manufacturer and the vehicle. They differ in the chemical composition of the battery cells for the anode, the cathode, and the electrolyte, as well as in the shape of the cells (round, prismatic, pouch). Lithium-ion batteries (Li-ion) are currently used, for example.
The sizes and installation locations of high-voltage batteries differ depending on the type of vehicle.
A fully electric vehicle requires a larger high-voltage battery than a hybrid vehicle.
The following battery concepts and installation locations of high-voltage batteries are currently in use:

- below almost the entire underbody,
- below the underbody in front of the rear axle,
- between the axles.

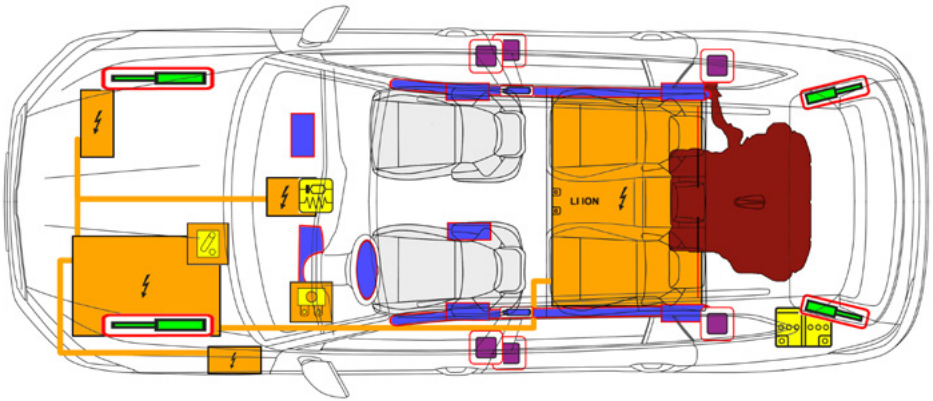
A high-voltage battery consists of many battery modules, which in turn consist of the battery cells themselves.
All high-voltage batteries are structurally protected in order to, for example, minimise the risk of electrolyte escaping from damaged battery cells.
In the event of an accident, the high-voltage battery is mechanically protected. This protection directs most of the impact energy into the vehicle structure.

	In addition to the high-voltage battery, Škoda electric vehicles also have one or more 12 V electrical system batteries.

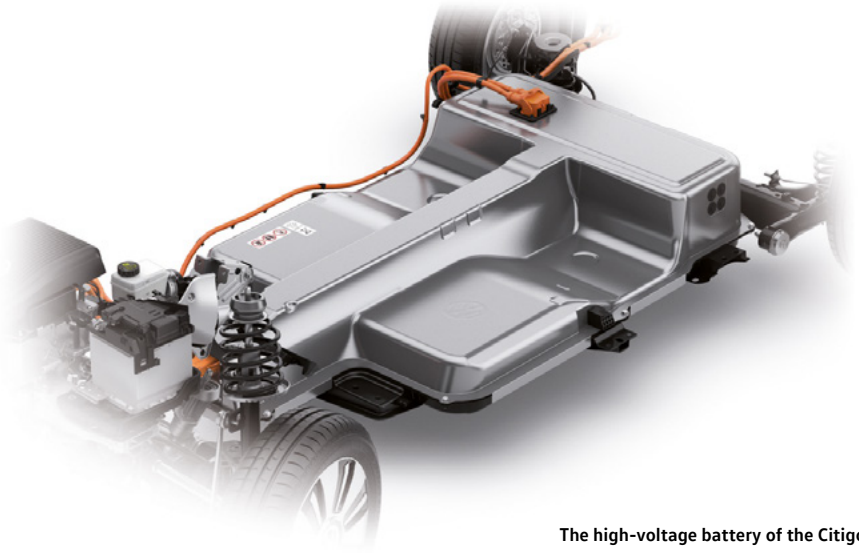
Battery Concepts



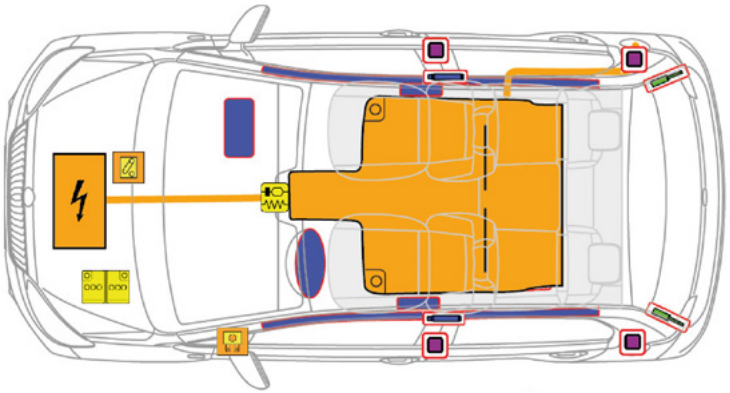
The high-voltage battery of the Superb iV



Installation location of the high-voltage battery in the Superb iV

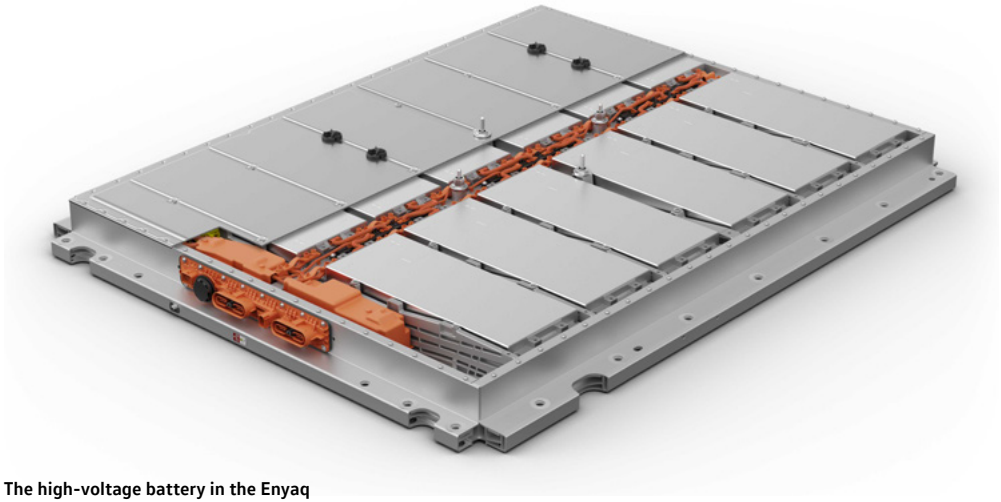


The high-voltage battery of the Citigo-e iV

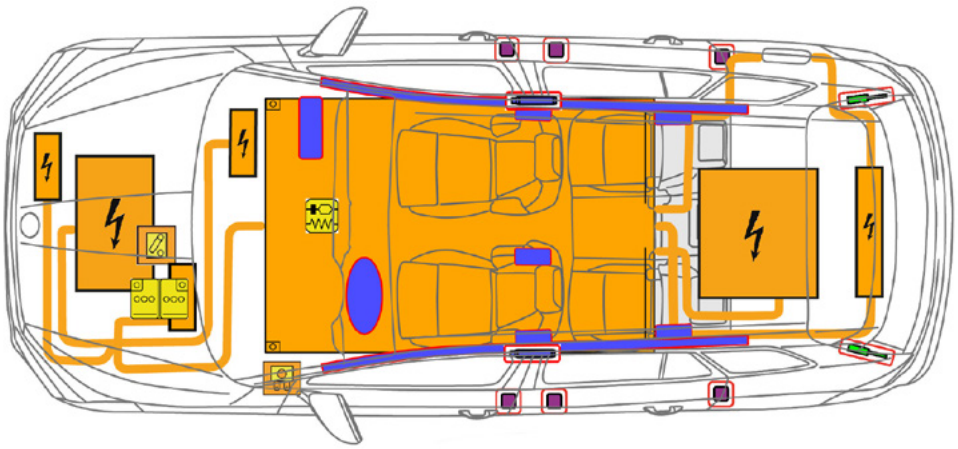


Installation location of the high-voltage battery in the Citigo-e iV

Battery Concepts



The high-voltage battery in the Enyaq



Installation location of the high-voltage battery in the Enyaq

Air-Conditioning

The air-conditioning systems use refrigerants R134 a, R1234 yf, and R744 (CO_2). More detailed information on the different refrigerants can be found on the following web-site:

www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index.jsp

Cooling System for the High-Voltage Battery

Under normal operating conditions, there is no danger of exposure to the contents of the battery.

	If refrigerant escapes from the battery cooling system, there is a risk of thermal reaction in the high-voltage battery. Monitor the temperature of the high voltage battery!
	In the event of outgassing of the high-voltage battery, toxic vapours may form. Wear appropriate personal protective equipment!
	Vehicle-specific information is also described in the respective rescue data sheets.

12 V Battery for the On-Board Electrical Network

Škoda passenger vehicles primarily use 12 V lead batteries with acid electrolyte. The 12 V lead-acid batteries differ in terms of technology: either entirely leak proof (black housing and AGM lettering on the label) or not leak-proof in the event of damage to the housing (identifiable by a black lid and transparent housing). Both technologies use sulphuric acid as the electrolyte.

	The battery may contain a highly explosive gas mixture. Keep flames, sparks and open lights at a safe distance from the battery and do not smoke in the vicinity of the battery! Wear appropriate personal protective equipment!
	“Explosive” label on the battery.
	Escaping acid electrolyte from the battery can cause severe burns to skin.
	Vehicle-specific information is also described in the respective rescue data sheets.

Battery with Absorbed Electrolyte

Batteries with an absorbent glass mat, known as AGM batteries, are used in vehicles with a Start-Stop system and regenerative braking. Glass mat batteries are batteries where the sulphuric acid is absorbed in a separator in the form of a glass mat (AGM). This type of battery can be identified by the lettering AGM on the lid and by their entirely black housing.

	Escaping acid electrolyte from the battery can cause severe burns to skin.
	Vehicle-specific information is also described in the respective rescue data sheets.

Lithium-Ion Battery (48 V)

Some Škoda models (e.g. mHEV models with a belt-driven starter-alternator) use lithium-ion batteries with a voltage of 48 V.

	Lithium-ion batteries may self-ignite or re-ignite after fire-fighting measures! Wear appropriate personal protective equipment!
	Escaping acid electrolyte from the battery can cause severe burns to skin.
	In the event of outgassing of a lithium-ion battery, toxic vapours may form. Wear appropriate personal protective equipment!
	Vehicle-specific information is also described in the respective rescue data sheets.

Further information is available from the German Central Electrical Engineering and Electronics Industry Association (Zentralverband Elektrotechnik- und Elektronindustrie e.V., Fachverband Batterien), www.zvei.org/verband/fachverbaende/batterien.

Flammable Materials

Examples of these include:

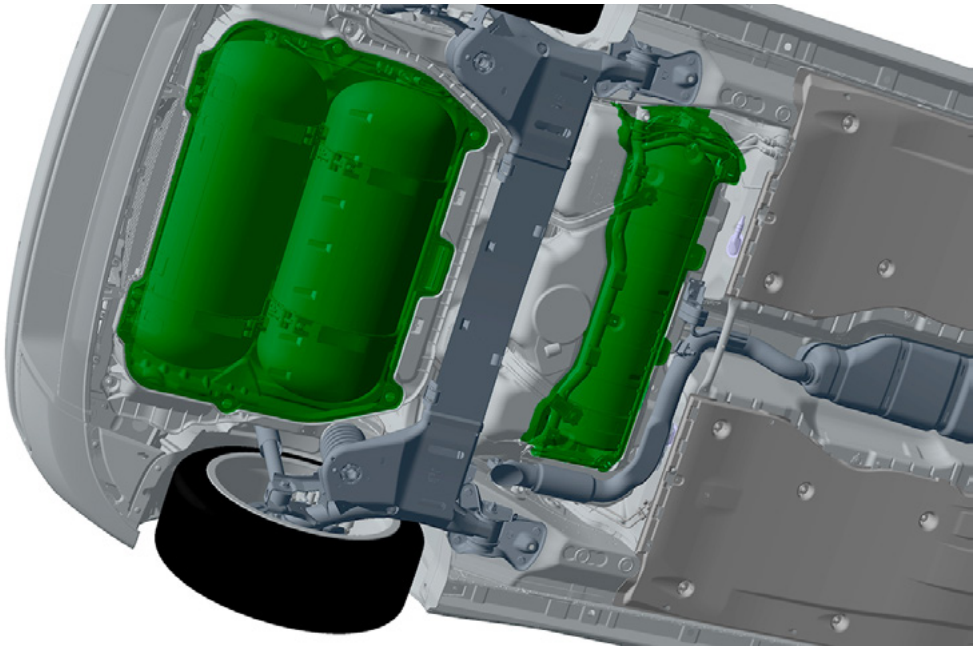
- plastics,
- electrolytes,
- resins,
- magnesium,
- gases or other flammable liquids.

Resins are used for bonding carbon fibres. Magnesium components are found in the engine compartment.

	Avoid skin contact with and inhalation of electrolyte vapours, as electrolyte is combustible, corrosive, and irritating. Wear appropriate personal protective equipment!
	Contaminated extinguishing water must be dealt with according to the national procedures for firefighters and rescue service personnel.

Physical Properties of Natural Gas

Dealing with natural gas vehicles (CNG) is different to dealing with conventional vehicles. However, these dangers are controllable if the specifics of these vehicles are understood.



The gas tanks in current Škoda models can be made of steel or carbon fibre.

- Natural gas that is used in vehicles, among other places, is mixed with an odourant. This allows any escape of natural gas to be determined before the lower explosion limit is reached.
- Natural gas is lighter than air (density ratio of natural gas/air is approx. 0.6) and therefore dissipates quickly outdoors!
- When mixed with air, natural gas is explosive at concentrations from 4 % to 17 %.
- Ignition temperature is approx. 640 °C.

	Labelling of vehicles with a CNG drive in rescue data sheets.
	Avoid skin contact and inhalation of broken carbon fibres.

Physical Properties of Liquefied Petroleum Gas (also known as Liquid Petroleum Gas or LPG)

Vehicles with an LPG drive differ from conventional vehicles in some respects.

Knowledge of these differences is extremely important for rescue workers.

- An odourant with a pungent smell is added to LPG for use in vehicles.
- LPG in its gaseous form is heavier than air (the density ratio of LPG/air is approx. 1.55) and accumulates in depressions and open shafts (e.g. waste water shafts and sewers).
- LPG liquefies at a pressure of 8 bar, whereby its volume decreases considerably (1/260th of its original volume).
- When mixed with air, LPG is explosive at concentrations from 1.4 % to 10.9 %.
- Ignition temperature is approx. 460 °C.

	Liquefied petroleum gas (also referred to as LPG or liquid petroleum gas) must not be mistaken for natural gas (also referred to as CNG or compressed natural gas). Natural gas and natural gas systems differ in their basic properties from LPG and LPG systems.

Safety Equipment

The entire LPG system is installed in a way that provides the best possible protection from damage. The gas tanks are highly stable and heat resistant. All high-pressure pipes and connecting elements are made of copper/stainless steel and are routed primarily outside of the passenger compartment.

Along with the electromagnetic shut-off valve, the tank has integrated overpressure protection. Furthermore, a non-return valve is installed in the filler stop valve, which prevents the gas from flowing back from the gas tank and into the filler line.

Tank Shut-Off Valve

The fuel tank shut-off valve is an electromagnetic valve and is opened by the gas control unit during LPG operation.

	The valve closes automatically when the system switches over to petrol operation, when the engine is switched off, in the event of an accident with activation of the airbags and/or seat belts pretensioner, or if the voltage supply fails.

6. In Case of Fire

Version dated: 05/2024

General Information on Vehicle Fires

In principle, all country-specific regulations and tactical procedures for fire-fighting valid in the country must be observed. If possible, fire must be prevented from spreading to fuel tanks or battery systems.

All the usual and familiar extinguishing agents such as water, foam, CO_2, or powder can be used.
Which extinguishing agent is to be used with which extinguishing method can only be decided at the location of the accident, and is highly dependent on the specific situation and the equipment available.

	If the airbags did not deploy during the accident, they may deploy in the event of a vehicle fire.

Fire in High-Voltage Vehicles

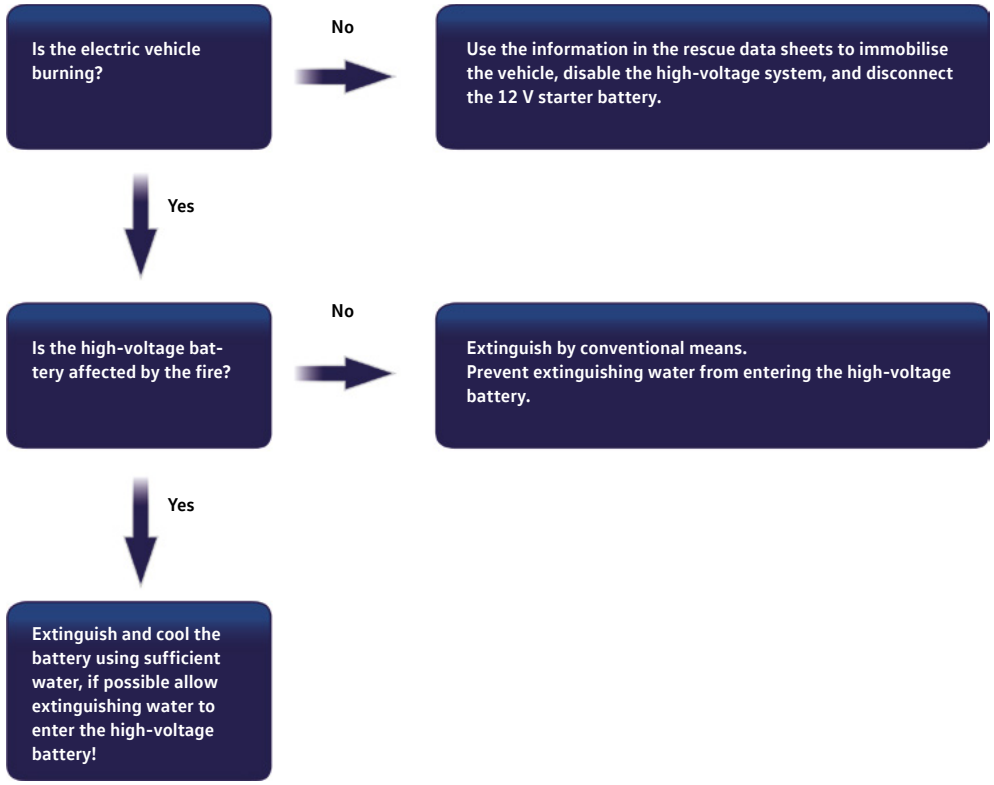
Dealing with high-voltage vehicles is usually no more dangerous than dealing with petrol or diesel vehicles, however a number of points may differ. Knowledge of these differences can be important for rescue operations in the event of accidents involving passenger vehicles.

The following distinction must be made in the event of a vehicle fire with high-voltage vehicles:

- **Vehicle fire without danger to the battery systems with flammable electrolyte:**
  As is the case for a passenger vehicle with a conventional drive, all conventional and familiar extinguishing agents such as water, foam, CO_2, or powder can be used in case of a "normal" fire in a hybrid or electric vehicle (BEV, without the high-voltage battery catching fire) depending on requirements and/or availability.

- **Vehicle fire with danger to the battery systems with flammable electrolyte:**
  Smoke, flying sparks, or flames rising from the battery may indicate that the lithium-ion battery contributed to the creation of the fire.
  When a high-voltage battery catches fire, it should be extinguished with water whenever possible and then cooled.
  Ensure that sufficient water is used in this case, and that the extinguishing water enters the high-voltage battery through the openings caused by the fire or collision.
  A dispersed jet of water should be aimed at the battery as directly as possible.
  The installation position of the high-voltage battery can be found in the rescue data sheet for the respective model.

The decision about which measures are suitable is made at the deployment site by the fire brigade, and is highly dependent on the current situation (e.g. progress of the fire and time at which the fire brigade arrives) and the equipment available.



Flow chart for fires in electric vehicles

If severe damage occurs (e.g. dented, broken, or cracked housing), a lithium-ion battery may react to water or fire immediately or after a delay. Therefore, when working on a crashed vehicle with a lithium-ion battery, check for signs of a reaction (e.g. smoke, heat, noise, sparks, etc.).

In the event of a reaction by the lithium-ion battery, protective measures must be taken. Just like in conventional vehicles, fires in electric or hybrid vehicles result in the creation of smoke hazardous to human health. Therefore, suitable personal protective equipment is recommended.

6. In Case of Fire

In the event of a fire, outgassing of the high-voltage battery should be expected. The battery features mechanical safety mechanisms that open, for example, in the event of an increase in temperature or pressure due to a fire, and therefore result in deliberate “outgassing” and pressure release.

Vehicles with a high-voltage battery and burning high-voltage batteries can be extinguished. According to the document “Unfallhilfe Retten und Bergen” (Rescue and Extrication after Accidents) issued by the German Association of the Automotive Industry (VDA), water is the preferred extinguishing agent and the firefighting procedure does not fundamentally differ from the procedure for a conventional vehicle.

If the fire also affects the high-voltage battery, large quantities of water are required to cool or extinguish an undamaged high-voltage battery that is reacting.

Following a reaction, the lithium-ion battery must be cooled with water until it has reached approximately ambient temperature. The use of a thermal imaging camera or an IR thermometer is recommended.

	Dangerous voltages may be present even after the fire is extinguished.
	Batteries which are not completely burnt out may re-ignite. Extinguished vehicles must be moved to a safe place and may need to be kept under obsevation.
	A sufficient safe distance must be maintained. Corresponding self-contained respiratory protection equipment must be worn!
	Vapours and gases can be suppressed by dispersed jets of water.

	The rupturing of exposed defective cells with an accompanying exothermic reaction cannot be ruled out.
	A fire may even break out some time after the high-voltage battery has been damaged, as there may be a residual risk of delayed fire. This is particularly the case if the high-voltage batteries units are damaged (see also chapter 8. Towing/Transportation/ Storage). An electrical hazard also still persists. High-voltage components must not be touched and suitable personal protective equipment must be worn. High-voltage cables may become damaged by heat.
	Further information can be found in the respective rescue data sheets.
	The method sheet of the Fire Brigade Firefighting Code will newly include that the battery should be cooled for at least 48 hours (e.g. in water).

Fire in Natural Gas Vehicles

Dealing with natural gas vehicles is usually no more dangerous than dealing with petrol or diesel vehicles; there are, however, certain special features that must be observed during rescue operations.

In the event of a vehicle fire in which the natural gas tanks are exposed to heat, the thermal fuses will react at a temperature of approx. 110°C and the natural gas will discharge in a defined way, which will then ignite and burn off. When the natural gas tank is full, releasing the natural gas takes approx. 90 seconds until the tank is empty.

Vehicles may be equipped with one or more gas tanks. The time it takes for a specific tank to release/burn off cannot be determined precisely. As soon as no more natural gas is being released, conventional firefighting can begin. If the natural gas tanks are not affected by the fire (e.g. in the event of a fire in the engine compartment), fire-fighting can also be initiated immediately.

	If the overpressure protection activates, the gas escapes through a pressure relief valve. If the vehicle is standing on its wheels, the flow is gas is directed downwards towards the ground. If the vehicle is lying on its side or on its roof, flames may shoot out to the side or upwards. Maintain a safe distance from the vehicle. If possible, approach from the front of the vehicle.
	Personal protective equipment must be worn, including self-contained breathing apparatus!
	If the airbags did not deploy during the accident, they may deploy in the event of a vehicle fire.

	Maintain an adequate safe distance.
	Further information can be found in the respective rescue data sheets.

Fire in LPG Vehicles

In the event of a vehicle fire in which the LPG tank is also exposed to heat, the overpressure protection responds at a pressure of 27.5 bar. A pulse discharge of LPG occurs, which then ignites and burns off.

If the LPG tanks are not affected by the fire (e.g. in the event of a fire in the engine compartment), conventional firefighting can be initiated immediately.

	If the overpressure protection activates, the gas escapes through a pressure relief valve. If the vehicle is standing on its wheels, the flow is gas is directed downwards towards the ground. If the vehicle is lying on its side or on its roof, flames may shoot out to the side or upwards. Maintain a safe distance from the vehicle. If possible, approach from the front of the vehicle.
	If possible, cool the tank from the housing to prevent it from heating up before the overpressure protection responds. Continue cooling the tank even when the overpressure protection responds.
	Personal protective equipment must be worn, including self-contained breathing apparatus!
	If the airbags did not deploy during the accident, they may deploy in the event of a vehicle fire.
	Maintain an adequate safe distance.

	The response of the overpressure protection can be identified by a loud discharge noise (hissing)!
	Further information can be found in the respective rescue data sheets.

7. In Case of Submersion

Version dated: 05/2024

Vehicle underwater

A vehicle that is immersed in water must be dealt with in the same way as a damaged vehicle that has been in an accident.
Observe safety and security regulations, and follow the procedure to eliminate immediate dangers, see chapter 3. Safety Regulations/Preventing Direct Hazards.

High-Voltage Vehicle underwater

- When it is in water, the high-voltage system does not present an increased risk of electric shock.
- The same instructions apply as in chapter 3. Safety Regulations/Preventing Direct Hazards.
- The extrication procedure is the same as for conventional vehicles.

Source: Verband der Automobilindustrie (VDA) (German Association of the Automotive Industry), Unfallhilfe & Bergen bei Fahrzeugen mit Hochvolt-Systemen (Accident assistance and recovery of vehicles with high voltage systems), FAQ.

	In the event that water enters the high-voltage battery, electrolysis may be triggered and cause ignition of explosive gas.
	The high-voltage system must be deactivated (see chapter 3. Safety Regulations/Preventing Direct Hazards). Wear appropriate personal protective equipment!
	If the vehicle is underwater for an extended period, Disconnecting the 12 V Battery or Disconnecting the 48 V Battery is recommended to prevent electrolysis.
	Allow the water drain after recovery of the vehicle.

LPG/CNG Vehicle underwater

- The same instructions apply as in chapter 3. Safety Regulations/Preventing Direct Hazards.
- The extrication procedure is the same as for conventional vehicles.

Allow the water drain after recovery of the vehicle.

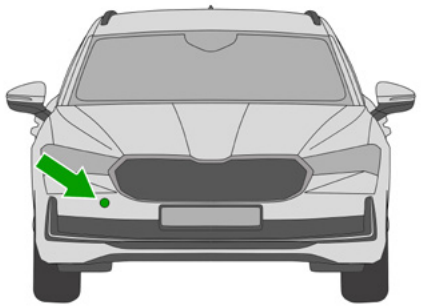
	If gas escapes, close the tank shut-off valves (see chapter 3. Safety Regulations/Preventing Direct Hazards).

8. Towing/Transportation/Storage

Version dated: 05/2024

Recovering Vehicles Involved in Accidents

When loading, transporting, and storing, follow the instructions in the rescue data sheets.



Example illustration (front towing eye)

Example illustration (rear towing eye)

	The firefighters and rescue workers on site decide on the respective procedure.

Recovering High-Voltage Vehicles from a Dangerous Area

Vehicles with high-voltage batteries should generally be transported on flatbed vehicles.

The high-voltage system must be disabled before transport (see chapter 3. Safety Regulations/Preventing Direct Hazards).

Before transporting the vehicle away (e.g. by a towing company), the condition of the lithium-ion battery should be checked. The vehicle may only be loaded and transported if the vehicle does not show any signs of a chemical reaction near the lithium-ion high-voltage battery for an extended period; see the flow chart on the next page.

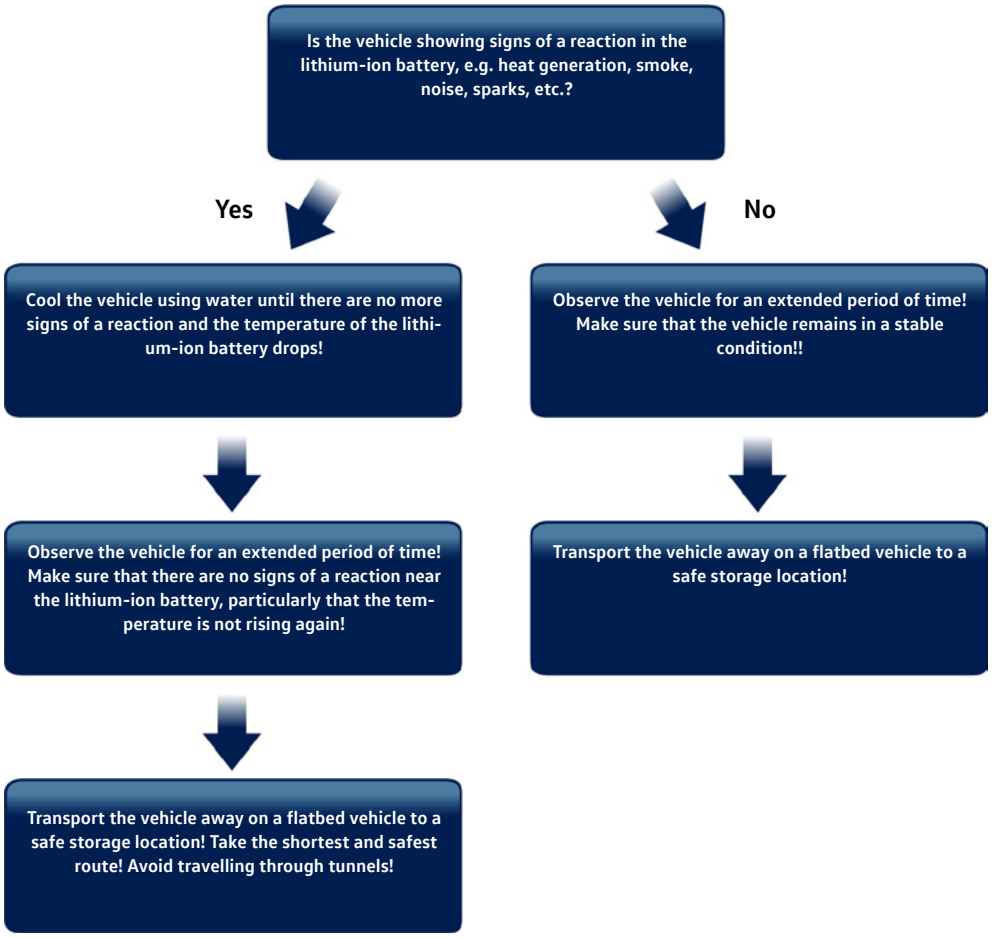
If a vehicle that has been in an accident has a damaged battery, or the battery exhibits anomalies, wait until the reaction of the lithium-ion battery has abated before loading, so that no further reaction occurs during transport; see the flow chart on the next page. The shortest and safest route possible must be taken. Travelling through tunnels should be avoided.
If needed, or when in doubt, it may be necessary to have the transport vehicle accompanied by a fire engine.
Vehicles with a damaged high-voltage battery should be transported to a safe storage location.

After transport, an electric or hybrid vehicle that has been in an accident should not be parked in enclosed buildings, but outdoors at a sufficient distance from other vehicles, buildings, and combustible objects or materials.

Once at the storage location, the vehicle should preferably be placed in a designated “quarantine area”. Since there is still, theoretically, the potential for a chemical reaction in the lithium-ion battery in an open space, a vehicle that was involved in an accident must be parked in a suitable location. The parking space must be marked accordingly (signs/fencing).
A minimum distance of five metres from other vehicles, buildings, or flammable objects must be maintained. The distance can be reduced by taking appropriate measures, e.g. fire barriers etc.
The responsible persons at the towing company, the service centre and, if relevant, the scrapyard must be made aware of the specifics and risks presented by the given vehicle model!

	Lithium-ion batteries may self-ignite or re-ignite after fire-fighting measures!
	In the event that a vehicle that has been in an accident has a damaged high-voltage battery or the battery exhibits anomalies: deactivate the high voltage system (see chapter 3. Safety Regulations/Preventing Direct Hazards). Park the vehicle at a safe distance of at least 5 metres from buildings and other vehicles (quarantine area).
	When loading the vehicle, take care not to damage the high-voltage components. If possible, lift the vehicle at the indicated lifting points.
	Vibration during transport may cause high-voltage batteries to re-ignite.

	Recommendations for specific vehicles can be found in their rescue data sheets.
	If possible, monitor any changes in temperature for an extended period using corresponding devices, e.g. an IR camera!
	To transport the high-voltage battery or its parts separately from the vehicle it is recommended to use a large metal container, e.g. a container. The condition of the high-voltage battery must be observed (e.g. development of smoke, noise, sparks, heat generation) and the container must be prepared to be flooded if necessary.
	For more information, see chapter 5. Stored Energy/Liquids/Gases/Solids (lithium-ion battery disconnected from the vehicle).



Flow chart for towing electric vehicles

Recovering natural gas vehicles from a dangerous area

When loading, transporting, and storing, follow the instructions in the rescue data sheets. The natural gas tanks must be manually shut off before transport, see chapter 3. Safety Regulations/Preventing Direct Hazards.

	Do not tow a damaged vehicle by the drive axles.
	When towing and parking the vehicle, be careful not to damage the gas tanks.
	If gas escapes, manually close the tank shut-off valves (see chapter 3. Safety Regulations/Preventing Direct Hazards).
	Recommendations for specific vehicles can be found in their rescue data sheets.

9. Important Additional Information

Version dated: 05/2024

Modern vehicles have extensive passenger protection systems which can vary depending on the vehicle type and specifications.

Airbags

A modern vehicle with maximum specifications includes these components:

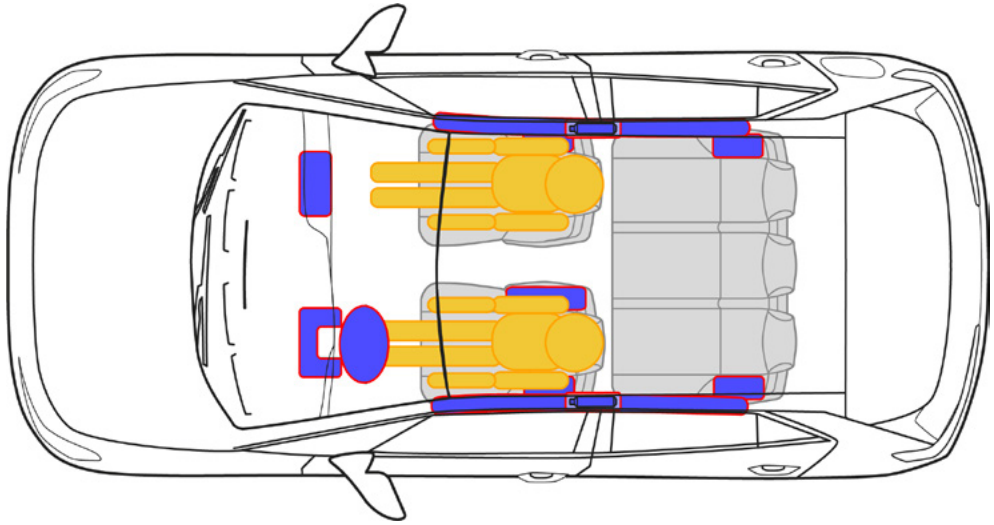
- airbags,
- airbag control unit,
- sensors,
- belt pretensioners.

Airbags are activated by pyrotechnics. The software in the airbag control unit evaluates the deceleration or acceleration of the vehicle and determines whether the restraint systems need to be activated.
In addition to the sensors in the airbag control unit, deceleration and acceleration during an accident is detected by external sensors, e.g. in the base of the B/C-pillar.
Only once the information from all sensors has been evaluated does the software in the airbag control unit decide whether and when to activate the restraint system.
Depending on the severity of the accident, it may only deploy the belt pretensioners or the pretensioners together with the airbags, for example.

The control unit is indicated in rescue data sheets as follows:

	Identification of the airbag control unit in the rescue data sheets

Only those safety systems which protect in the specific type of accident are activated.



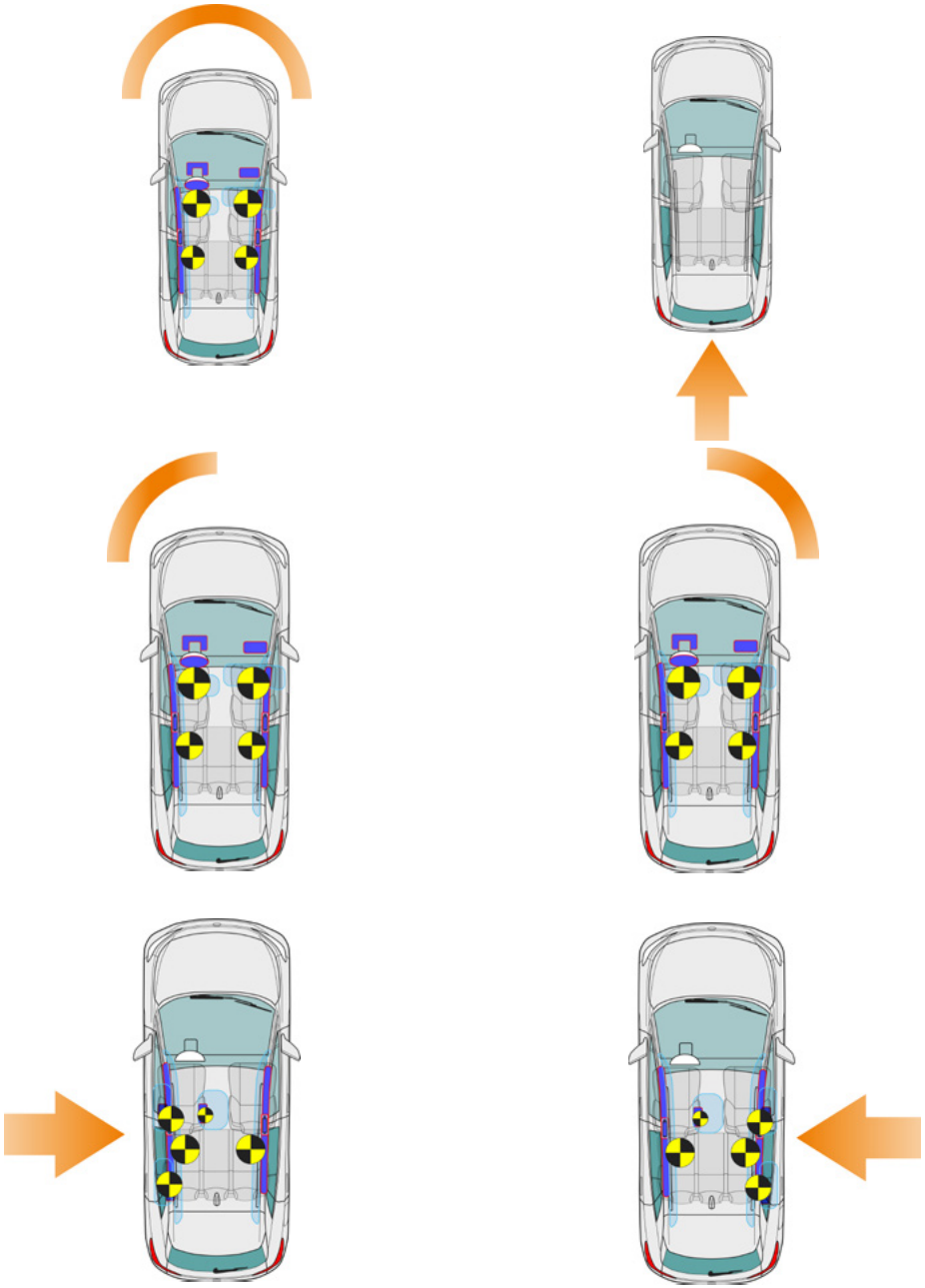
Airbags in modern vehicles

When the restraint systems in the vehicle activate, the airbag control unit sends a signal which other units in the vehicle respond to by:

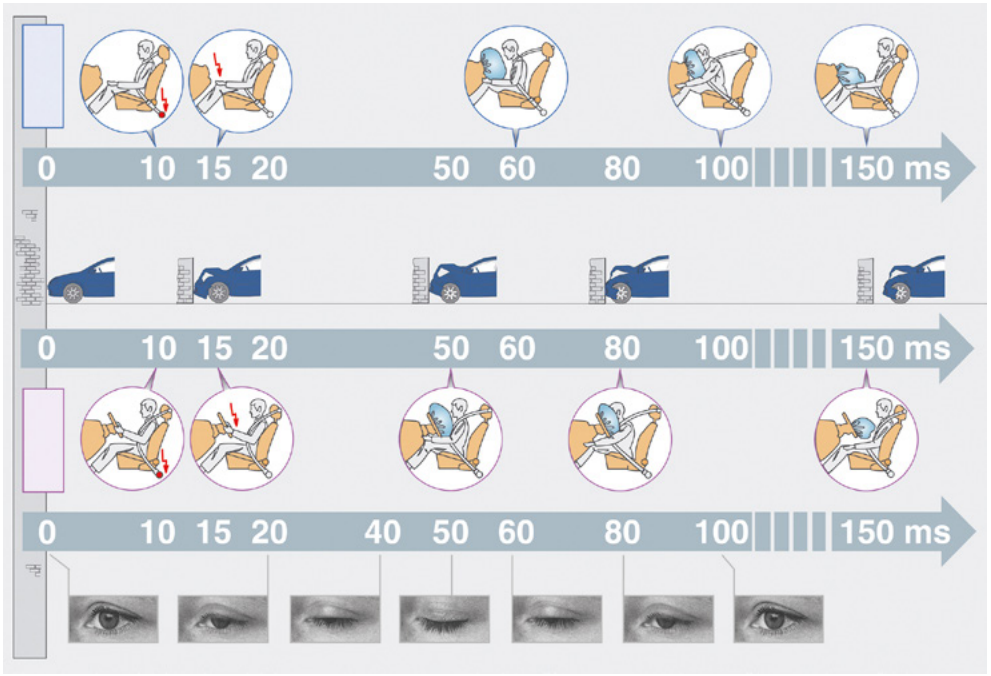
- emergency releasing the central locking,
- switching on the interior lights,
- switching off the fuel pump,
- switching on the hazard warning lights,
- transmitting a signal to start an eCall,
- slightly opening the windows after the accident,
- switching off the air-conditioning,
- disconnecting the high-voltage traction battery in BEV/PHEV; disconnecting the 48 V battery in mHEV,
- locking the movement of electric/semi-electric seats.

After activating, the airbag gas generator generates the amount of gas needed to fill the airbags within milliseconds. In the event of a serious accident, the inflated airbags protect passengers who are wearing seat belts from striking the interior parts of the vehicle (e.g. the steering wheel, dashboard, etc.).
Gas generators of various designs and with various methods of gas generation are used depending on the installation location and requirements.

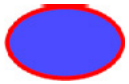
The safety systems are activated depending on the type of accident or direction of impact



The safety systems are activated depending on the type of accident or direction of impact (ms = milliseconds)



Airbags are indicated in the rescue data sheets as symbols or outlines as follows:

	Driver front airbag, front passenger front airbag, driver side airbag, front passenger side airbag, centre airbag, knee airbag, curtain airbag, and rear side airbag.
	Airbag activation.

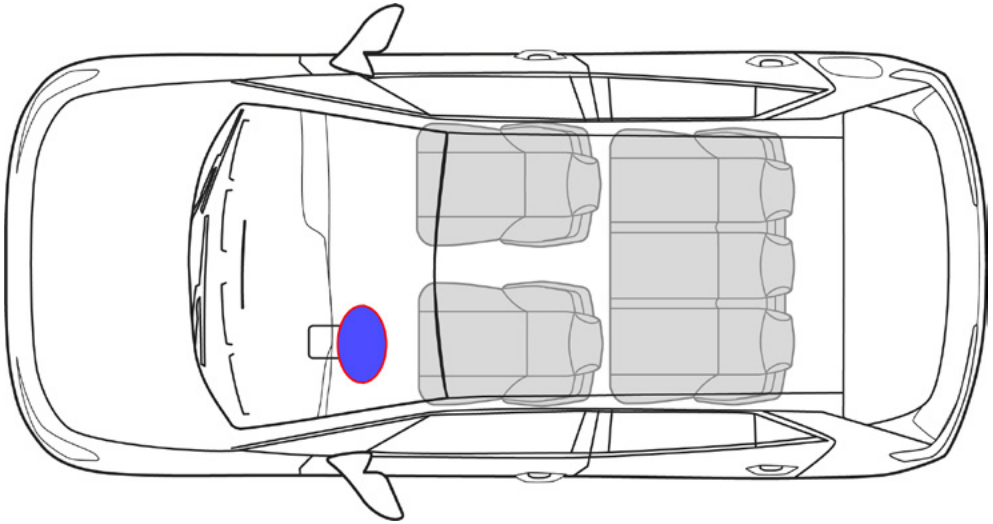
Front Airbags

Driver Airbag

The driver airbag module essentially consists of a cap, the airbag, and a gas generator. It is fitted into the steering wheel and electrically connected to the airbag control unit via a connector and cables.

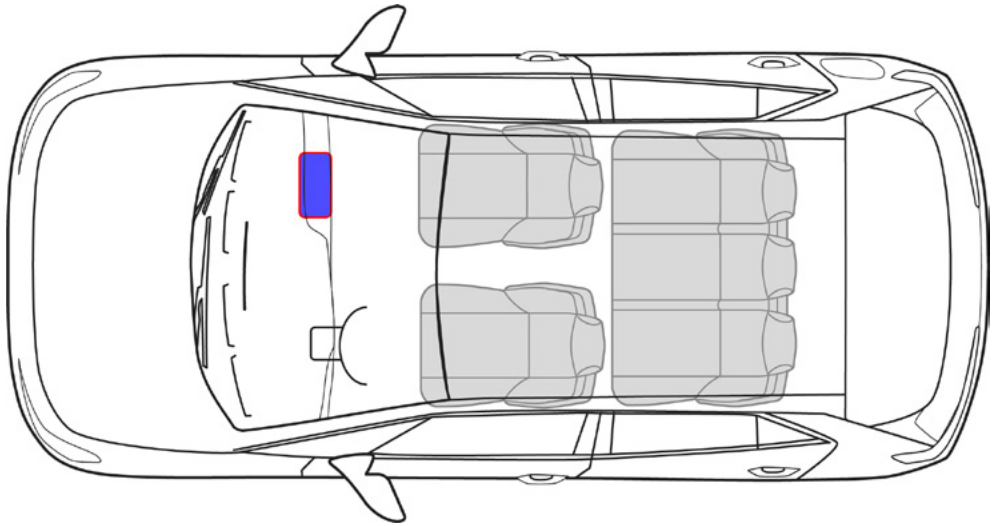
The airbag is folded under the cap and its shape and size are designed so that it creates a protective zone between the driver and the steering wheel when inflated. The driver airbag is inflated by a gas generator (also known as an inflator). The unfolding airbag breaks the cap on the steering wheel along a defined seam and fills with gas in tens of milliseconds. The entire process from activation of the gas generator to a fully inflated airbag only takes a few tens of milliseconds.

The kinetic energy generated by the upper body impacting the airbag is dispersed by allowing the gas to escape through vents on the back.



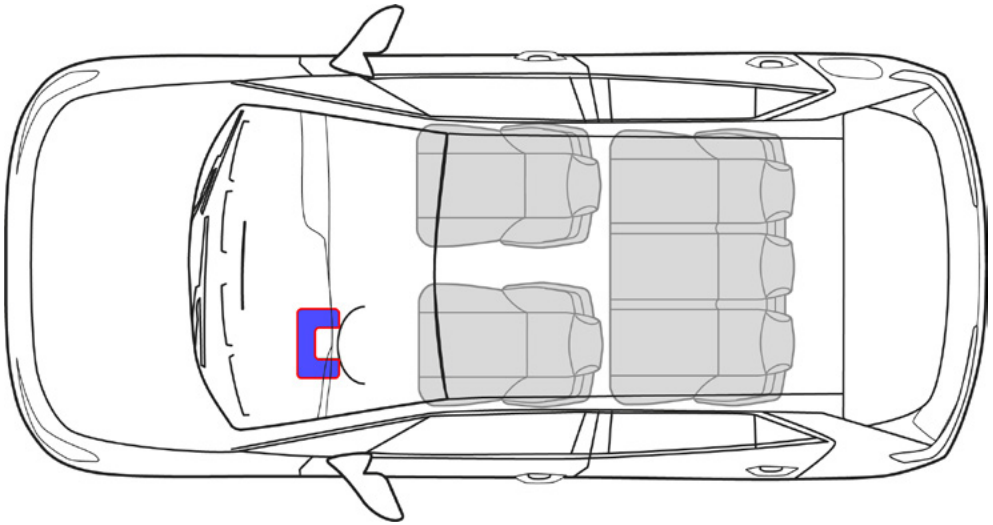
Front Passenger Airbag

The airbag module for the front passenger is located in the dashboard in front of the passenger seat. Due to the higher distance between the airbag module and the passenger, the front passenger airbag has a much larger volume. The effect, process, and timeline of activation of the front passenger airbag are comparable to those of the driver airbag.



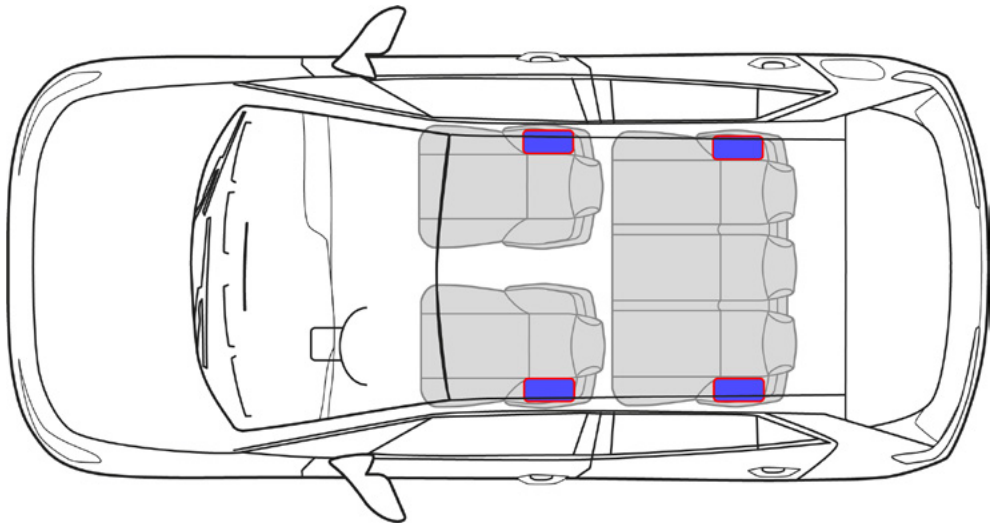
Knee Airbag

The design of the knee airbag is similar to that of the front passenger airbag. It is located in the dashboard trim in the driver footwell.
The knee airbag deploys together with the driver airbag. Knee airbags are inflated via single-stage gas generators.
The deployment of the knee airbag reduces the occupants' risk of knee and thigh injury.



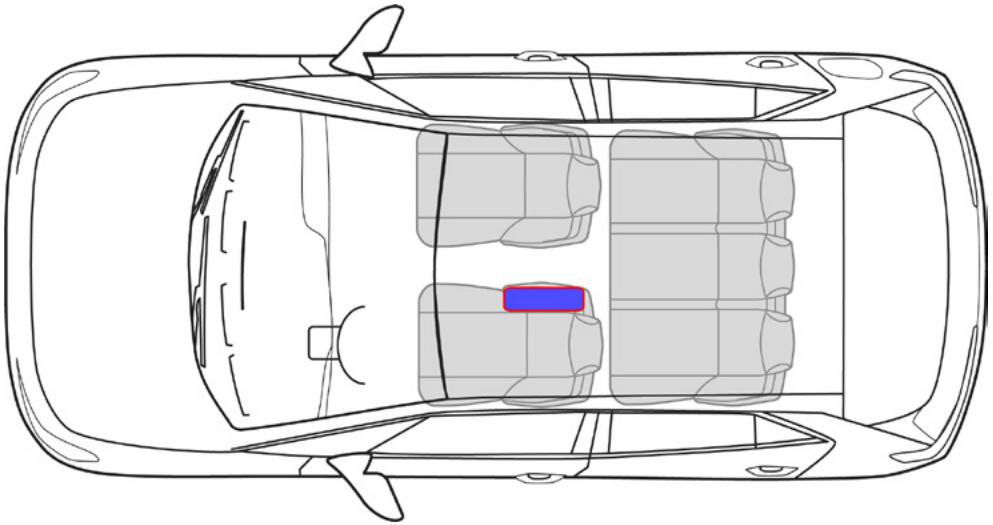
Side Airbag

Side airbags protect the chest and pelvis of passengers in a lateral collision and reduce the biomechanical load. They inflate at the side of the seat in the area between the occupant's chest and the door trim. With this, they distribute the biomechanical load on the passenger more evenly.
The side airbags are installed in the backrest of the driver and front passenger seats. In some Škoda models, they are also fitted on the outer sides of the 2nd row of seats.



Centre Airbag

Centre airbags are installed in the driver seat armrest on the central tunnel side. They prevent a collision between the heads of the driver and the front passenger, and prevent the driver from being thrown too far to the passenger side if it is unoccupied.

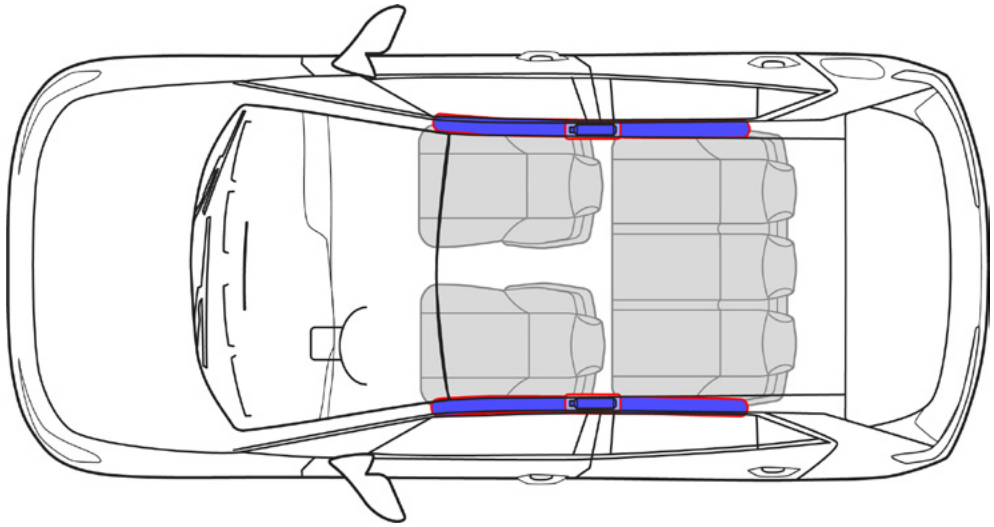


Curtain Airbag

Curtain airbags protect the head in the event of a side impact. They consist of a large airbag in the roof lining which usually extends from the A-pillar to the C-pillar.

Depending on the vehicle model, the gas generators may be installed in the roof near the B-pillar, between the B- and C-pillars, between the C- and D-pillars, or even in the rear roof area. The exact installation position is described in the rescue data sheets. In contrast to the front and side airbags, the curtain airbag can retain its internal pressure for some time after being deployed. This is to provide protection if the vehicle subsequently overturns or secondary collisions occur.

Both the side and curtain airbags are deployed by the airbag control unit when a set limit is reached. A side impact is detected by lateral acceleration sensors or pressure sensors in the doors.



Airbag Gas Generators

Solid Propellant Gas Generators

The solid propellant gas generator consist of a housing containing a solid propellant charge with an ignition unit. When the solid propellant is ignited, the combustion generates gas which fills the airbag. The gas is not dangerous to the occupants.

Process:

- The airbag control unit activates the igniter.
- The propellant charge ignites and generates gas.
- The generated gas flows through a metal filter into the airbag.

Hybrid Gas Generators

Hybrid gas generators consist of a housing containing a highly compressed gas, a solid propellant charge assembly, and an ignition unit. The design and shape of the generator housing are adapted to the specific installation conditions. These generators are usually tubular. The main components are the pressure vessel with the airbag gas and the (solid) propellant charge, which is integrated into the pressure vessel or mounted onto it. The solid propellant is used in tablet or pellet form. The stored and compressed gas is a mixture of inert gases, e.g. argon and helium. Depending on the gas generator design, it is pressurised to between 200 bar and 800 bar.

- When the solid propellant charge is ignited, it opens the pressure vessel. The gas from the solid propellant mixes with the inert gases and creates a mixture that expands and fills the airbag. The igniter is activated by the airbag control unit and ignites the propellant charge.

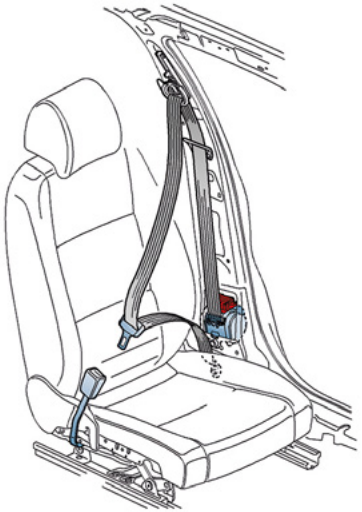
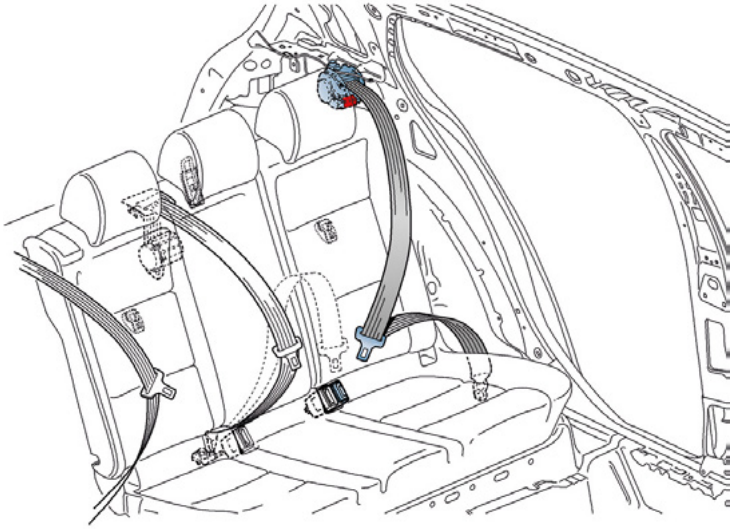
	Do not damage the gas generators during rescue operations. The compressed gas in the pressure vessel and the pyrotechnic propellants may pose a hazard to rescue workers and the occupants.

Seat Belt Pretensioner

In the event of a crash, belt pretensioners retract the belt in the opposite direction to which it is being pulled, thus reducing slack (the gap between the belt and the body). This prevents the occupants from being thrown forwards (relative to the direction of movement of the vehicle) in the early stages of an accident. A belt pretensioner is capable of retracting the seat belt by up to 200 mm within 10 milliseconds. Belt pretensioners are integrated in the belt system. However, they may be installed in different locations depending on the type of vehicle (for example, in the B-pillar, in the side member beside the seat, or on the outside of the back seat) and have different principles of function. In some cases, there may even be two belt tensioners per seat.

	If it is possible based on the circumstances, try to not damage the belt pretensioners during rescue operations. Avoid interfering with the area where they are fitted.
	The belt also locks if the vehicle is at a steep angle, has overturned, or if the belt pretensioner has been damaged in the accident.
	Unactivated belt tensioners with mechanical activation can still activate, even after the battery has been disconnected.
	If the situation allows, the seat belt should be removed or cut as soon as possible.
	Identification of belt pretensioners in the rescue data sheets.

Variants of Seat Belt Pretensioner Installation

Variant	Place of installation
	**Variant 1** In the case of a front compact pretensioner, the automatic seat belt retractor and the belt pretensioner with electric or mechanical ignition trigger form a single unit and are installed in the B-pillar. **Installation variant 1 – compact belt pretensioner in the B-pillar**
	**Variant 2** In a rear compact pretensioner, the automatic seat belt retractor and the belt pretensioner with electric or mechanical ignition trigger form a single unit and are installed behind or next to the back seat backrest. **Installation variant 2 – rear compact belt pretensioner behind the headrest**

Variants of Seat Belt Pretensioner Installation

Variant	Place of installation
	**Variant 3** The automatic seat belt retractor and the belt pretensioner are installed independently of each other. The belt pretensioner with electric or mechanical ignition trigger is mounted on the side member/B-pillar. **Installation variant 3 – belt pretensioner in the side member/B-pillar area**

10. Explanation of Pictograms Used

Components, functions, and measures that need to be taken into account during a rescue operation are indicated by special pictograms.

Pictograms:

- indicate, together with the rescue data sheet illustrations, where the respective components/functions are located in the vehicle (for details, see ISO 17840-2:2019),
- indicate a specific function or danger; they can be used in the sections of the additional pages of the rescue data sheet, or the chapters of the guide for rescue service personnel,
- indicate the type of drive and
- indicate firefighting measures.

Importance:
1 = information that is essential for the rescue depending on the vehicle type/model
2 = supplementary information that facilitates rescue measures

The following tables list the pictograms used by Škoda for passenger cars.

	A number of pictograms may be adapted to reflect the actual size and shape. A combination of simple shapes may also be used.

Pictograms Relevant for Identification

Examples of identifying the drive type

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Attention: These pictograms are used for petrol and electric drive systems.

Pictograms Regarding Access to the Engine Compartment/Boot

Name/Meaning/Reference:
Bonnet

Function/description:
Identifies the control that opens the compartment outside the interior at the front of the vehicle.

Importance: 2

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Boot

Identifies the control that opens the compartment outside the interior at the rear of the vehicle.

Importance: 2

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Pictograms for Deactivation of a Vehicle (without a High-Voltage System)

Device to shut down power in a vehicle

All power sources in the vehicle are switched off using:
- ignition key,
- ignition button,
- measure in the engine compartment,
- measure on the dashboard,
- disconnection of the battery,
- other measures.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Remove the key for the central locking system

Attention: remove the Keyless Entry key from the vehicle so that the engine cannot be accidentally started.
A safe distance may be specified.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Air intake

Identifies an air intake that can admit CO_2 to stop the engine.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Pictograms for Deactivation of the High-Voltage System of a Vehicle (BEV and PHEV)

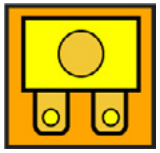
- **Orange = high-voltage system (voltage class B)**
- **Yellow = control of the high-voltage system by a low-voltage system**
- **Orange frame = method of deactivating a high-voltage vehicle**

Dangerous voltage

Indicates hazards caused by dangerous voltages.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

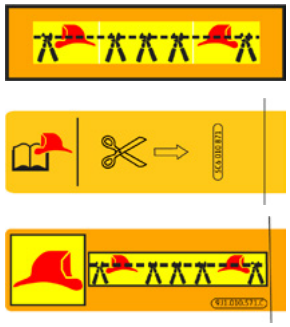


Fuse box to disable high voltage

Identifies the low-voltage fuse that controls the high-voltage system.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.



Cable cut

Identifies which cable to cut in order to disconnect the high-voltage components from the power network. Indicates that the cable must be cut at two separate points. The size and proportions may be adapted to the intended purpose.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Pictograms for Deactivation of the High-Voltage System of a Vehicle (BEV and PHEV)

High-voltage device that disconnects high voltage

Identifies a device that disconnects the high-voltage system, as well as the personal protective equipment (PPE) that may need to be used.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the rescue data sheet.

Low-voltage device that disconnects high voltage

Identifies a low-voltage device that disconnects the high-voltage system.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Pictograms regarding access to occupants

Steering wheel, tilt control

Identifies the control for adjusting the steering wheel inclination up or down. The pictogram may have a frame to distinguish it from the background.

Importance: 2

Used for:
- Illustration in the guide for rescue service personnel.

Pictograms regarding access to occupants

Seat height adjustment

Identifies the control for adjusting the seat height up or down. The pictogram may have a frame to distinguish it from the background.

Importance: 2

Used for:
- Illustration in the guide for rescue service personnel.

Seat adjustment, longitudinal

Identifies the control for moving the seat forwards or backwards. The pictogram may have a frame to distinguish it from the background.

Importance: 2

Used for:
- Illustration in the guide for rescue service personnel.

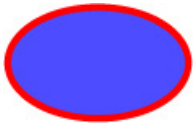
Lifting point; central support

Identifies the points on the vehicle that the manufacturer deems suitable for placing a jack or support.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Other pictograms related to the vehicle



Airbag

Identifies an airbag.

Airbag variants, e.g.:
- driver front airbag,
- front passenger front airbag,
- side airbag,
- curtain airbag,
- knee airbag,
- centre airbag.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Airbag gas generator

Identifies a gas generator for an airbag.

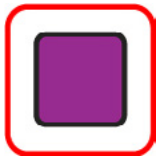
The pictogram shows the location of a gas generator, e.g. for curtain airbags.

This symbol is not used for conventional airbag systems with integrated gas generators, such as the driver front airbag in the steering wheel, the front passenger front airbag in the dashboard, the side airbags, or the knee airbags.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Other pictograms related to the vehicle



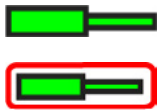
Seat belt pretensioner

Identifies a seat belt pretensioner.

If a seat has more than one belt pretensioner (e.g. for hip and shoulder belts), all belt pretensioner positions should be indicated with a pictogram.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.



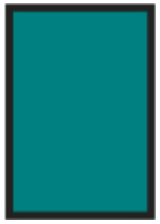
Gas strut / preloaded spring

Identifies a gas strut.

The pictogram can be modified to reflect the actual size and shape.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.



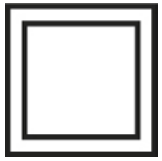
High-strength zone

Areas on the body with extra strong plates.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Other pictograms related to the vehicle



Zone requiring special attention

Identifies an area to which particular attention should be paid.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Carbon structure

Information that the vehicle body contains carbon. Indicates that there is a risk of inhalation and that appropriate PPE must be used.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Left-hand drive

Identifies a left-hand drive vehicle.

For use in the header of the rescue data sheet. The colour may be changed to stand out from the background of the header.

Importance: 1

Used for:
- Illustration in the rescue data sheet.

Other pictograms related to the vehicle

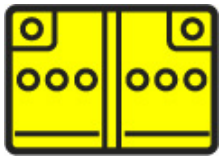
Right-hand drive

Identifies a right-hand drive vehicle.

For use in the header of the rescue data sheet. The colour may be changed to stand out from the background of the header.

Importance: 1

Used for:
- Illustration in the rescue data sheet.



Low-voltage battery

Identifies a low-voltage battery.

If it is not a conventional battery, the battery technology should also be indicated (e.g. Li-ion or NiMH).

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

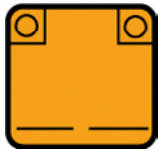
SRS control unit

Identifies an SRS control unit.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Other pictograms related to the vehicle



High-voltage battery

Identifies a high-voltage battery.

The battery technology should also be indicated (e.g. Li-ion or NiMH). Optionally, the nominal voltage of the battery may be indicated.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

High-voltage component

Identifies a high-voltage part of the vehicle.

The lightning bolt symbol may be omitted if there is not enough space.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

High-voltage power cable

Identifies a high-voltage cable.

It should be possible to distinguish high-voltage components from the high-voltage battery. The key and the pictogram graphics should match each other with regard to the line concept used for the frames.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Other pictograms related to the vehicle

Fuel tank content – diesel

Indicates the tank content with a defined colour.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Fuel tank content – petrol/ethanol

Indicates the tank content with a defined colour.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Gas tank with gas type indication (CNG)

Indicates the tank content with a defined colour and name of the type of gas.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Manual gas shut-off valve with gas type indication (CNG)

Indicates the manual gas shut-off valve with a defined colour and name of the type of gas.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Other pictograms related to the vehicle

Automatic gas pressure relief valve with gas type indication (CNG)

Indicates the device that controls gas overpressure in the tank with a defined colour and name of the type of gas.

- Controlled pressure (pressure relief device)
- Temperature regulation (temperature-controlled pressure relief device)

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Gas tank with gas type indication (LPG)

Indicates the tank content with a defined colour and name of the type of gas.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Manual gas shut-off valve with gas type indication (LPG)

Indicates the manual gas shut-off valve with a defined colour and name of the type of gas.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Other pictograms related to the vehicle

Automatic gas pressure relief valve with gas type indication (LPG)

Indicates the device that controls gas overpressure in the tank with a defined colour and name of the type of gas.

- Controlled pressure (pressure relief device)
- Temperature regulation (temperature-controlled pressure relief device)

Importance: 1

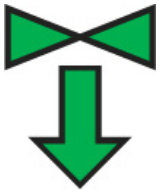
Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Gas pipe (general)

Identifies a gas line with a defined colour.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.



Direction of gas pressure relief valve with gas type indication (LPG)

Indicates the direction of the gas safety valve in an illustration with a defined colour.

Importance: 1

Used for:
- Illustration in the rescue data sheet.

Other pictograms related to the vehicle

Air-conditioning component

Identifies an air-conditioning component with a defined colour.

The refrigerant must be specified on some of the other pages and the rescue data sheet (e.g. fluorinated hydrocarbons with CO_2).

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Air-conditioning pipe

Identifies a gas line with a defined colour.

The type or designation of the refrigerant must be identified (e.g. fluorinated hydrocarbons with CO_2).

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Firefighting and Safety Pictograms

General warning sign

Indicates a general warning.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Firefighting and Safety Pictograms

Warning – electricity

Warns against electricity and dangerous voltage.

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Warning, low temperature

Indicates hazards caused by low temperature, e.g. frostbite from cold gases (e.g. air conditioning gas).

Importance: 1

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Use infrared thermal camera

Indicates that an infrared thermal camera should be used to detect a fire.

Importance: 2

Used for:
- Illustration in the rescue data sheet.
- Illustration in the guide for rescue service personnel.

Firefighting and Safety Pictograms

Special battery access

Special access through which water can be poured into the high-voltage battery of an electric vehicle.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Use water to extinguish fire

Indicates that a fire must be extinguished with water.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Use wet foam to extinguish fire

Indicates that a fire must be extinguished with wet compressed air foam. A system in which foam and air are constantly mixed under pressure with the water from the fire extinguishing centrifugal pump (CAFS).
When using wet compressed air foam, the nominal ratio of foam volume to air volume in the CAFS system is between 1:3 and 1:10.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Firefighting and Safety Pictograms

Use dry foam to extinguish fire

Indicates that a fire must be extinguished with dry compressed air foam. A system in which foam and air are constantly mixed under pressure with the water from the fire extinguishing centrifugal pump (CAFS). When using dry compressed air foam, the nominal ratio of foam volume to air volume in the CAFS system is larger than 1:10.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Use ABC powder to extinguish fire

Indicates that a fire must be extinguished with ABC powder.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Do not extinguish with water

Prohibits the use of water to extinguish a fire.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Warning symbols

Explosive

Indicates a risk of explosion.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Flammable

Indicates danger due to flammability.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Gases under pressure

Indicates danger due to pressurised gases.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Oxidising

Indicates danger due to flammable substances.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Warning symbols

Corrosive

Indicates danger due to corrosive substances.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Hazardous to human health

Indicates a hazard to human health.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Acute toxicity

Indicates danger due to acute toxicity.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Environmental hazard

Indicates a risk of endangering the environment.

Importance: 1

Used for:
- Illustration in the rescue data sheets.
- Illustration in the guide for rescue service personnel.

Symbols used in this guide

Warning regarding explosive substances

ISO 7010

Attention

General information