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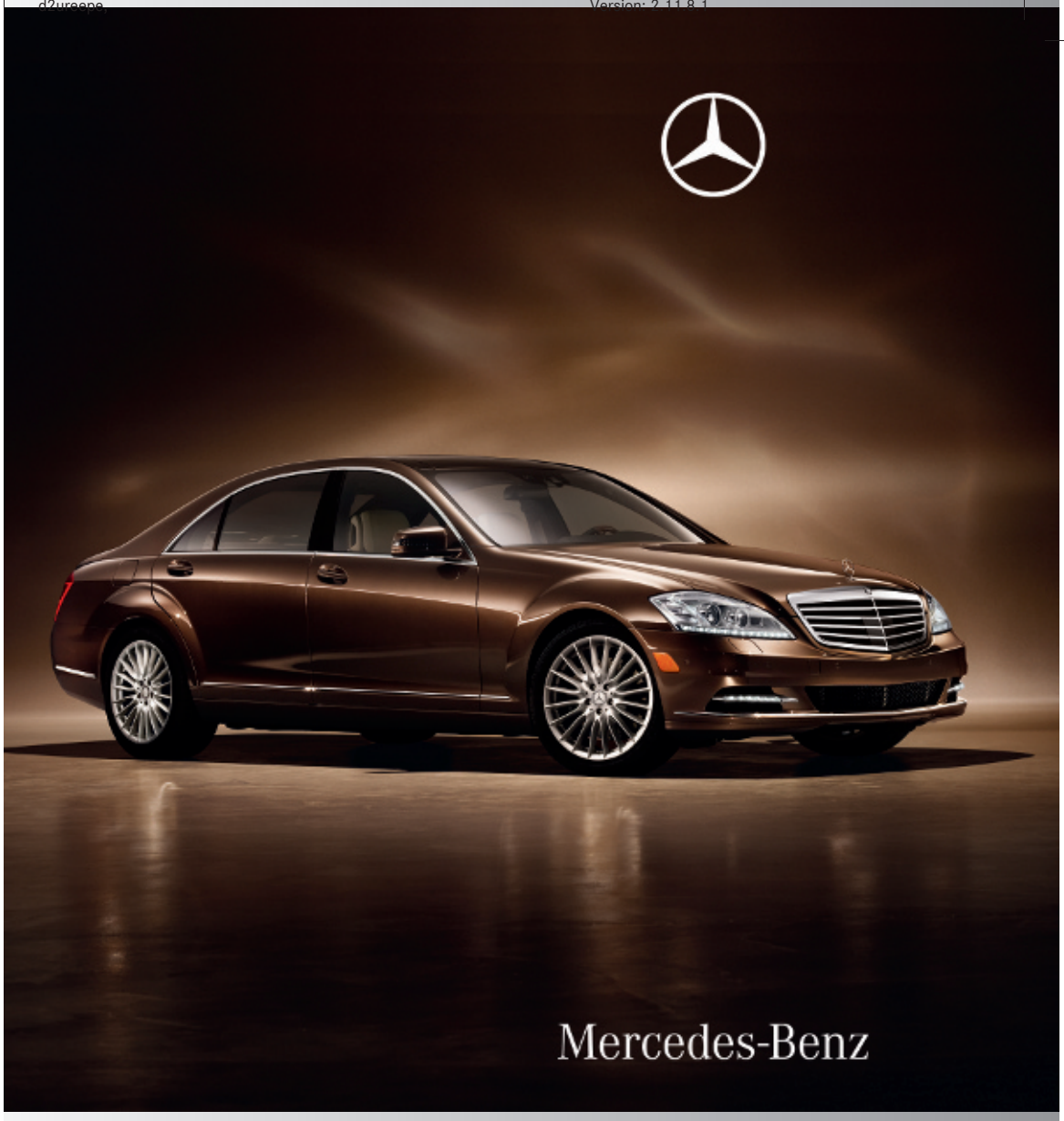
Version: 2.11.8.1



S 400 HYBRID

Supplemental Operating Instructions

Symbols

The following symbols are found in this Supplemental Operating Instructions Booklet:

⚠ Warning!

Warning notices draw your attention to hazards that may endanger your health or life, or the health or life of others.

! Highlights hazards that may result in damage to your vehicle.

i Helpful hints or further information you may find useful.

▶ This symbol points to instructions for you to follow.

▶ A number of these symbols appearing in succession indicates a multiple-step procedure.

▷ page This symbol tells you where to look for further information on a topic.

▷▷ This continuation symbol marks a warning or procedure which is continued on the next page.

`Display` Text in displays, such as the control system, are printed in the type shown here.

Our company and staff congratulate you on the purchase of your new Mercedes-Benz.

Your selection of our product is a demonstration of your trust in our company name. Furthermore, it exemplifies your desire to own an automobile that will be as easy as possible to operate and provide years of service.

Your Mercedes-Benz represents the efforts of many skilled engineers and craftsmen. To help assure your driving pleasure, and also the safety of you and your passengers, we ask you to make a small investment of time:

- Please read this manual carefully, then return it to your vehicle where it will be handy for your reference.
- Please follow the recommendations contained in this manual. They are designed to acquaint you with the operation of your Mercedes-Benz.
- Please pay attention to the warnings and cautions contained in this manual. They are designed to help improve the safety of the vehicle operator and occupants.

We extend our best wishes for many miles of safe, pleasurable driving.

Mercedes-Benz USA, LLC

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Enviromental protection

Have the high-voltage battery disposed of in an environment-friendly manner by an authorized Mercedes-Benz Center.

⚠ Warning!
The HYBRID system is energized by high voltage. The components of the HYBRID system are indicated by yellow warning labels. High-voltage cables are orange-colored.

You could be seriously or even fatally injured when you

- tamper with components or high-voltage cables of the HYBRID system
- touch components or high-voltage cables of the HYBRID system after the vehicle has been involved in an accident
- touch damaged components of the HYBRID system

Do not remove the high-voltage battery of the HYBRID system. Have the high-voltage battery disposed of in an environment-friendly manner by an authorized Mercedes-Benz Center.

ⓘ For more information on the high-voltage battery, see (▷ page 26).

Operating safety

⚠ Warning!
When your vehicle is in electric drive mode the engine produces significantly lower noise levels. Other motorists or pedestriants, especially those who are visually or hearing impaired, may be unable to hear your vehicle while it is in motion. This is particularly true when driving at lower speeds and during parking maneuvers. At all times, it is the responsibility of the driver to be aware of their surroundings, especially in these low speed situtations. Otherwise other road users could be seriously or fatally injured.

⚠ Warning!
Have all work on the vehicle, especially safety-related work, work on safety-relevant systems, work on the HYBRID system as well as maintenance work, carried out by an authorized Mercedes-Benz Center.

ⓘ For more information on operating safety, refer to the Operator's Manual.

Vehicle modifications

⚠ Warning!
Improper work on the HYBRID system or modifications of the vehicle can cause vehicle systems to cease functioning properly. You could lose control over the vehicle and cause an accident.

Therefore, have work on the HYBRID system and modifications of the vehicle such as installation or modification of vehicle equipment carried out by an authorized Mercedes-Benz Center

ⓘ For more information on operating safety, refer to the Operator's Manual.

Trailer hitch

! Retrofitting the vehicle with a trailer hitch is not permissible. Damage caused by retrofitting the vehicle with a trailer hitch is not covered by the Mercedes-Benz Limited Warranty.

Proper use of the vehicle

Proper use of the vehicle requires that you are familiar with the following information and rules:

- the safety precautions in this manual
- the “Technical data” section in this manual
- the Operator's Manual
- traffic rules and regulations
- motor vehicle laws and safety standards

Safety notes

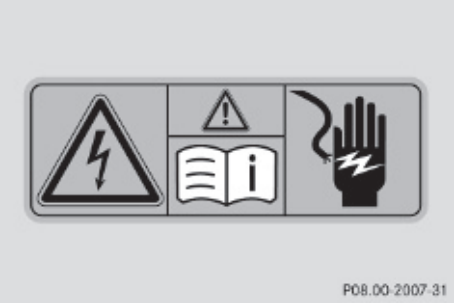
Warning labels

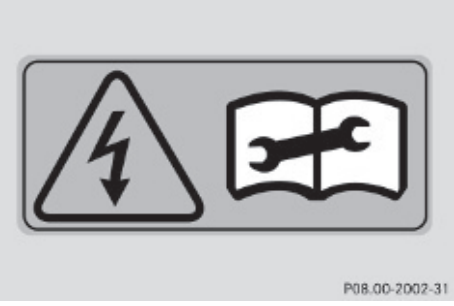
⚠ Warning!

Various warning labels are attached to your vehicle. These warning labels are intended to make you and others aware of various risks. Do not remove any of these warning labels unless explicitly instructed to do so by information on the label itself. Removing warning labels may cause you and others to be unaware of certain risks which may result in an accident and/or personal injury.

Danger of electric shock

The components of the HYBRID system are indicated by yellow warning labels to make you aware of high voltage. High-voltage cables are orange-colored.





⚠ Warning!

The HYBRID system is energized by high voltage.

You could be seriously or even fatally injured when you

- tamper with components or high-voltage cables of the HYBRID system
- touch components or high-voltage cables of the HYBRID system after the vehicle has been involved in an accident
- touch damaged components of the HYBRID system

Do not remove covers of components of the HYBRID system that carry the yellow warning label. Do not tamper with any components or with the orange high-voltage cables of the HYBRID system.

Engine compartment

Before opening the hood do the following:

- ▶ Engage the electronic parking brake.
- ▶ Shift the automatic transmission into park position **P**.
- ▶ Switch off the ignition.
  The green or yellow READY indicator lamp (▷ page 16) in the instrument cluster goes out.
- ▶ Remove the SmartKey from the starter switch or remove the SmartKey with KEYLESS-GO from the vehicle.
- ▶ Observe the safety notes on the danger of electric shock in this manual.
- ▶ Observe the safety notes regarding the hood in the Operator's Manual.

Automatic HYBRID system switch-off

The HYBRID system switches off automatically if

- the Supplemental Restraint System (SRS) activates the restraint systems in an accident
- a short circuit in the HYBRID system is detected
- a plug connection of the HYBRID system is disconnected

These measures help to prevent you from coming into contact with high voltage.

High-voltage battery

⚠ Warning!

The high-voltage battery of the HYBRID system is located in the engine compartment on the passenger side of the front wall. When the pressure inside the high-voltage battery exceeds a certain value, for example in case of a vehicle fire, inflammable gas will escape via a duct. The inflammable gas escapes to an area close to the passenger-side front wheel. This prevents the high-voltage battery from exploding.

Stay away from this area of the vehicle.

Driving safety systems

ABS (Antilock Brake System)

Braking

When the ABS engages during braking, the ABS/ESC warning lamp in the instrument cluster (▷ page 14) flashes. The brake pedal will pulsate only in certain situations, for example on a slippery road.

ⓘ For more information on the ABS, refer to the Operator's Manual.

RBS (Recuperative Brake System)

The RBS supports you while braking by electronic controlled brake boost and allows for regeneration of braking energy. RBS must be activated when the vehicle is parked each time before driving off.

▶ Make sure the automatic transmission is in park position **P**.
▶ Switch on the ignition.
▶ Apply the brake pedal fully and release it. The RBS is activated.

While you activate the RBS, less brake pedal pressure than usual is required and the brake pedal travel is longer. When you release the brake pedal, the brake pedal travel is as usual again.

For more information on the RBS, see (▷ page 12).

⚠ Warning!

If the RBS malfunctions, the yellow RBS warning lamp RBS and/or the red brake warning lamp BRAKE (USA only) or (Canada only) in the instrument cluster comes on. Read and observe the messages in the multifunction display that may appear. Find the subentry “Malfunction” of the entry “RBS (Recuperative Brake System)” in the index of this manual and follow the steps described in that section.

⚠ Warning!

If the RBS malfunctions, less brake pedal pressure than usual may be required and the brake pedal travel may be longer. The brake system still functions with full effectiveness. If required, you have to depress the brake pedal further. Adapt your speed and driving accordingly.

⚠ Warning!

Have work on the RBS, e.g. brake pad replacement, carried out by qualified technicians only.

When working on the RBS, certain precautions must be taken, e.g. when putting the brake system back into service.

Contact an authorized Mercedes-Benz Center. Service conducted by qualified technicians is required particularly for safety-relevant work and work on safety-relevant systems such as the RBS.

For more information on the braking system and for driving instructions, refer to the Operator's Manual.

BAS (Brake Assist System)

If you apply the brakes very quickly, the RBS provides full brake boost as fast as possible. In doing so, less brake pedal pressure than usual is required and the brake pedal travel is longer.

- Apply continuous full braking pressure until the emergency braking situation is over. The ABS will prevent the wheels from locking.

For more information on the BAS, refer to the Operator's Manual.

Driving systems

Cruise control/DISTRONIC PLUS*

When the cruise control or the DISTRONIC PLUS brake the vehicle, the brake pedal is not depressed.

For information on driving with the DISTRONIC PLUS, see (▷ page 18).

For more information on the cruise control and the DISTRONIC PLUS, refer to the Operator's Manual.

* optional

Introduction

The HYBRID technology combines an economical combustion engine with a powerful electric drive. The HYBRID system selects the most efficient operating mode for each driving situation automatically. You can drive the vehicle in the usual manner.

The HYBRID system turns the combustion engine off when stopping as often as possible in order to save fuel. You will just have to continue to keep the brake pedal depressed or to activate the HOLD function. Thus, the engine should normally never run at idle speed.

When you remove the foot from the brake pedal or accelerate when the HOLD function is activated, the combustion engine starts automatically. You can drive off as usual.

⚠ Warning!

When the green READY indicator lamp in the instrument cluster is on while the combustion engine is off, the combustion engine has been turned off automatically. All vehicle systems continue to be active. When you open the driver's door, unbuckle the seat belt, or take your foot off of the brake pedal, the combustion engine starts automatically. The vehicle could start to drive off. An accident causing serious or even fatal personal injury to you and/or others could be the result.

Therefore, always do the following before leaving the vehicle:

- Engage the electronic parking brake.
- Shift the automatic transmission into park position **P**.
- Switch off the ignition. The green or yellow READY indicator lamp goes out.

Driving off and accelerating consumes the most energy. Thus, the electric drive supports the combustion engine with the energy stored in the high-voltage battery. The energy is also used for semi-electrical driving, for operation of the electric compressor of the cooling system and to support the 12-volt on-board power supply. The hybrid drive thereby contributes significantly to the fuel economy of your vehicle.

For information on driving and parking, see (▷ page 16).

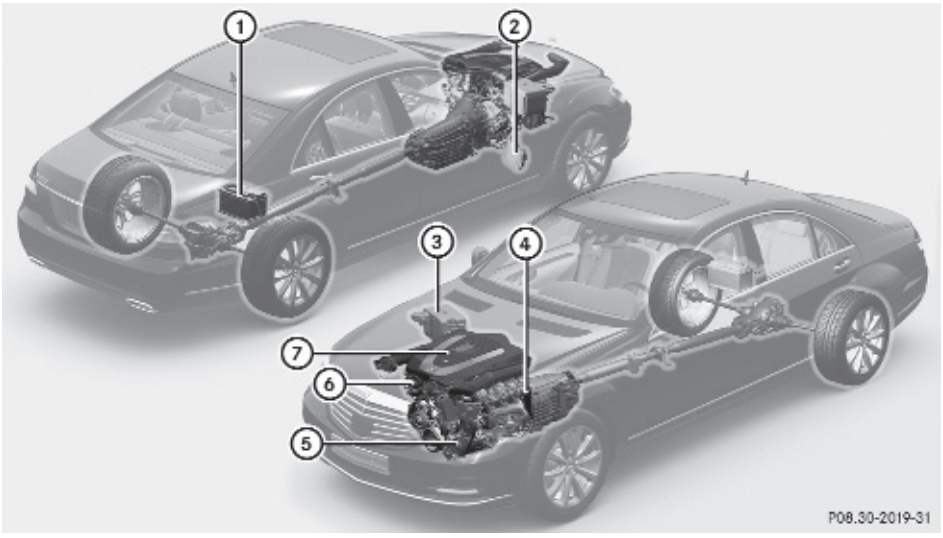
The current operating mode of the HYBRID system can be displayed in the multifunction display and in the COMAND display (▷ page 14).

The COMAND can also display a chart of the fuel consumption and the electric power that has been generated (▷ page 16).

RBS

With the RBS activated (▷ page 10), the electric drive functions as a generator when coasting and braking. HYBRID converts the energy of movement into electric power and stores it in the high-voltage battery. The high-voltage battery does not require additional charging by other means.

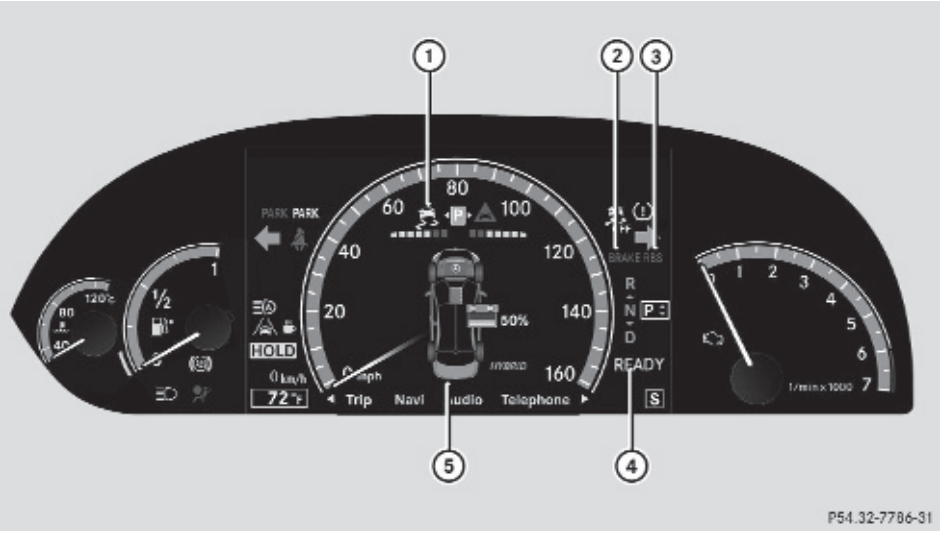
Overview HYBRID system



	Component
①	12-volt battery
②	Voltage transformer (transforms the voltage of the 12-volt battery and the high-voltage battery in both directions for best possible power management)
③	High-voltage battery

	Component
④	Electric drive
⑤	Electric refrigerant compressor for the climate control system
⑥	Power electronics (control the high-voltage system)
⑦	Combustion engine

Instrument cluster



	Function	Page
①	ABS/ESC warning lamp	10, 24
②	BRAKE Brake warning lamp, USA only	24
	Brake warning lamp, Canada only	24
③	RBS Recuperative Brake System (RBS) warning lamp	24
④	Green or yellow READY indicator lamp for the HYBRID system	16
⑤	**Multifunction display with:** Charging level high-voltage battery	15

Control system and COMAND

ⓘ For information on the instrument cluster control system and COMAND operation, refer to the Operator's Manual.

The current operating mode of the HYBRID system can be displayed in the multifunction display and in the COMAND.

The COMAND can also display a chart of the fuel consumption and the electric power that has been generated (▷ page 16).

Selecting submenu in the multifunction display

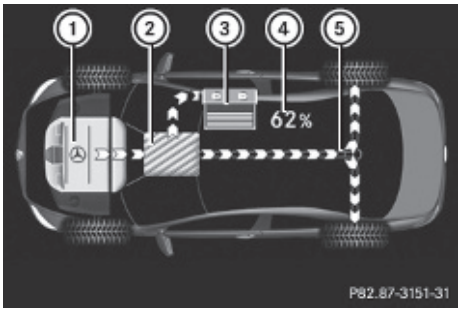
Use the buttons on the multifunction steering wheel.

- ▶ Press button ◀ or ▶ to select the Trip menu.
- ▶ Press button ▲ or ▼ to select the HYBRID menu.

Selecting submenu in the COMAND display

- ▶ Select Vehicle → Hybrid → Energy.

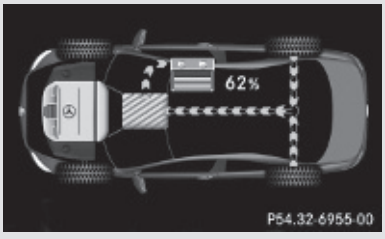
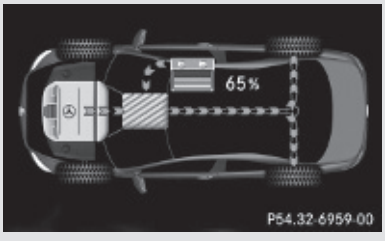
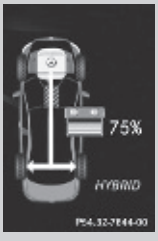
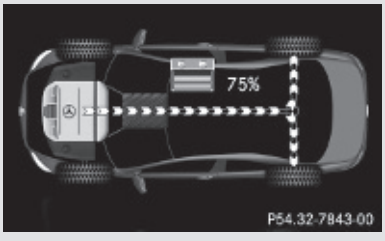
Multifunction display and COMAND display examples



Example illustration: Operating mode display

① Combustion engine
② Electric drive
③ High-voltage battery
④ Charging condition of high-voltage battery in percent
⑤ Flow of energy

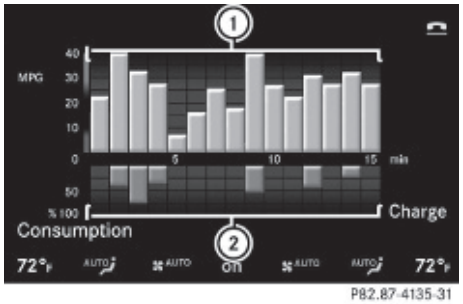
The HYBRID components that are currently active are highlighted in the multifunction display and the COMAND display.

Multifunction display	COMAND display	Operating mode
		The electric drive functions as a generator when coasting and braking. HYBRID converts the energy of movement into electric power and stores it in the high-voltage battery. The arrows that indicate the flow of energy are green.
		Boost effect – the electric drive supports the combustion engine when driving off and when accelerating. The arrows that indicate the flow of energy are red.
		Normal driving – the combustion engine powers the vehicle. The arrows that indicate the flow of energy are white.

Displaying fuel consumption and generated electric power

The COMAND display indicates the fuel consumption and the generated electric power for the last 15 minutes of driving.

▶ Select Vehicle → Hybrid → Consumption.



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① Fuel consumption

② Generated electric power

Each bar in the chart represents the average value for 1 minute.

Average fuel consumption ① can differ from the fuel consumption that is displayed in the From Start submenu in the Trip menu.

Resetting values

The values are reset together when resetting the trip computer in the From Start submenu. Refer to the Operator's Manual.

Driving and parking

Safety notes

⚠ Warning!

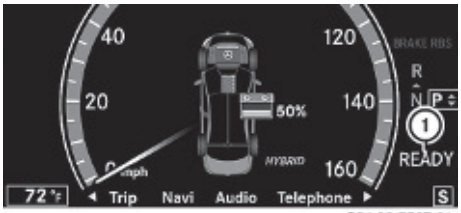
When your vehicle is in electric drive mode the engine produces significantly lower noise levels. Other motorists or pedestriants, especially those who are visually or hearing impaired, may be unable to hear your vehicle while it is in motion. This is particularly true when driving at lower speeds and during parking maneuvers. At all times, it is the responsibility of the driver to be aware of their surroundings, especially in these low speed situtations. Otherwise other road users could be seriously or fatally injured.

⚠ Warning!

Make sure absolutely no objects are obstructing the pedals' range of movement. Keep the driver's footwell clear of all obstacles. If there are any floormats or carpets in the footwell, make sure the pedals still have sufficient clearance.

During sudden driving or braking maneuvers the objects could get caught between or under the pedals. You could then no longer brake or accelerate. This could lead to accidents and injury.

Starting the engine



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① Green or yellow READY indicator lamp

▶ Switch on the ignition.

▶ Apply the brake pedal fully and release it to activate the RBS.
The RBS is activated. For more information on the RBS, see (▷ page 10).

▶ Observe the notes on "Starting the engine" in the Operator's Manual and start the combustion engine.
The vehicle is operational when the green or yellow READY indicator lamp ① is illuminated.

ECO Start/Stop function

When the green READY indicator lamp ① in the instrument cluster is on, the combustion engine turns off automatically when

- you stop the vehicle and keep the brake pedal depressed
- you activate the HOLD function

All vehicle systems remain active, for example the climate control system.

When you remove the foot from the brake pedal or accelerate when the HOLD function is activated, the combustion engine starts automatically. You can drive off as usual.

⚠ Warning!

When the green READY indicator lamp in the instrument cluster is on while the combustion engine is off, the combustion engine has been turned off automatically. All vehicle systems continue to be active. When you open the driver's door, unbuckle the seat belt, or take your foot off of the brake pedal, the combustion engine starts automatically. The vehicle could start to drive off. An accident causing serious or even fatal personal injury to you and/or others could be the result.

Therefore, always do the following before leaving the vehicle:

- Engage the electronic parking brake.
- Shift the automatic transmission into park position **P**.
- Switch off the ignition. The green or yellow READY indicator lamp goes out.

The conditions for turning off the combustion engine automatically are fulfilled when

- the combustion engine has reached its operating temperature
- the driver seat belt is fastened and the driver's door is closed
- the vehicle has exceeded a speed of 9 mph (15 km/h) after driving off. In subsequent stop-and-go traffic, brief forward movement of the vehicle is sufficient
- you take your foot off the accelerator pedal
- the hood is closed and properly engaged
- the automatic transmission is in drive position **D** or neutral position **N**
- the high-voltage battery is charged sufficiently
- the HYBRID system is operating undisturbed

ⓘ For information on driving with the DISTRONIC Plus, see (▷ page 18).

When the conditions for turning off the engine automatically are not fulfilled, the yellow READY indicator lamp ① is illuminated. The combustion engine does not turn off automatically when

- the self-diagnosis of the engine management is still running
- the temperature of the coolant or the catalyst is too low
- the climate control system of the vehicle requires the engine to run
- the battery is being charged
- the vehicle has moved backward shortly before
- the automatic transmission is in reverse gear **R**
- automatic emission tests are in progress

After the combustion engine has been turned off automatically, it restarts automatically in circumstances, when

- the charging condition of the high-voltage battery has reached the lower limit
- the settings of the climate control systems require the engine to run, for example at an outside temperature over 100°F (38 °C)

Driving off

Depress the brake pedal and shift the automatic transmission into drive position **D** or reverse gear **R**. If the message Apply

▷▷

Brake to Shift from 'P' appears in the multifunction display:

▶ Depress the brake pedal with somewhat greater force and select the desired transmission position.

ⓘ Read and observe messages that may appear in the multifunction display (▷ page 20)

For more information on driving off, refer to the Operator's Manual.

Driving

Driving tips

- Think ahead and keep sufficient distance.
- Avoid frequent and rapid acceleration as well as abrupt braking.
- In semi-electric operation, when driving off and when accelerating, the electric drive supports the combustion engine.
- The electric drive functions as a generator when coasting the vehicle with the automatic transmission in drive position **D** and during braking.

ⓘ For more information on the ECO Start/Stop function, see (▷ page 17). For additional general driving instructions, refer to the Operator's Manual.

Driving with activated DISTRONIC PLUS

When the DISTRONIC PLUS recognizes that the preceding vehicle stops, it will brake your vehicle to a complete stop. The combustion engine is turned off automatically only after both vehicles have come to a complete stop.

The green READY indicator lamp in the instrument cluster continues to be illuminated.

ⓘ For more information on the ECO Start/Stop function, see (▷ page 17). For additional information on the DISTRONIC PLUS, refer to the Operator's Manual.

Parking

⚠ Warning!

When your vehicle is in electric drive mode the engine produces significantly lower noise levels. Other motorists or pedestriants, especially those who are visually or hearing impaired, may be unable to hear your vehicle while it is in motion. This is particularly true when driving at lower speeds and during parking maneuvers. At all times, it is the responsibility of the driver to be aware of their surroundings, especially in these low speed situtations. Otherwise other road users could be seriously or fatally injured.

⚠ Warning!

When the green READY indicator lamp in the instrument cluster is on while the combustion engine is off, the combustion engine has been turned off automatically. All vehicle systems continue to be active. When you open the driver's door, unbuckle the seat belt, or take your foot off of the brake pedal, the combustion engine starts automatically. The vehicle could start to drive off. An accident causing serious or even fatal personal injury to you and/or others could be the result.

Therefore, always do the following before leaving the vehicle:

- Engage the electronic parking brake.
- Shift the automatic transmission into park position **P**.
- Switch off the ignition. The green or yellow READY indicator lamp goes out.

- ▶ Engage the electronic parking brake.
  The parking brake indicator lamp BRAKE (USA only) or (P) (Canada only) in the instrument cluster comes on.
- ▶ Shift the automatic transmission into park position **P**.
- ▶ Switch off the ignition.
  The green or yellow READY indicator lamp goes out.

For more information on parking and on turning off the combustion engine, refer to the Operator's Manual.

Climate control

Notes

The climate control system is available when the vehicle is operational and the green or yellow READY indicator lamp is on.

The set temperature of the vehicle interior is maintained for a certain period after the combustion engine was turned off automatically. Air recirculation switches on automatically. The indicator lamp in rocker switch is not lit when the air recirculation mode is switched on automatically.

Air conditioning switched on automatically

If the operating temperature of the high-voltage battery is too high, it will be cooled by the climate control system. The air conditioning switches on automatically.

In such circumstances it is not possible to switch off the air conditioning via COMAND for several minutes.

For more information on the climate control system, refer to the Operator's Manual.

Vehicle status messages in the multifunction display

Notes

Warning and malfunction messages appear in the multifunction display located in the instrument cluster. Certain warning and malfunction messages are accompanied by an audible signal.

High-priority messages are shown in red in the multifunction display. Messages of lower priority are also shown in yellow or white.

Address these messages accordingly and follow the additional instruction given in this Supplemental Operating Instructions Booklet and in the Operator's Manual.

⚠ Warning!

All categories of messages contain important information which should be taken note of and, where a malfunction is indicated, addressed as soon as possible at an authorized Mercedes-Benz Center.

Failure to repair the condition noted may cause damage not covered by the Mercedes-Benz Limited Warranty, or result in property damage or personal injury.

⚠ Warning!

No messages will be displayed if either the instrument cluster or the multifunction display is inoperative.

As a result, you will not be able to see information about your driving conditions, such as

- speed
- outside temperature
- warning/indicator lamps
- malfunction/warning messages
- failure of any systems

Driving characteristics may be impaired.

If you must continue to drive, do so with added caution. Contact an authorized Mercedes-Benz Center as soon as possible.

On the pages that follow, you will find a compilation of the warning and malfunction messages specific to the HYBRID system. For all other warning and malfunction messages, refer to the Operator's Manual.

Clearing display messages

Some display messages with low priority are cleared from the multifunction display after several seconds. Other display messages remain displayed in the multifunction display until you clear them manually.

Certain messages of high priority cannot be cleared from the multifunction display. Such messages will appear in the multifunction display until the causes for these messages have been repaired.

Use the buttons on the multifunction steering wheel.

▶ Clear the messages using button OK or ⮌.

Certain messages are stored in the vehicle status message memory. For information on calling up vehicle malfunction, warning and system status messages stored in memory, refer to the Operator's Manual.

Text messages

Display messages		Possible causes/consequences and ▶ Solutions
Apply Brake	to Shift from 'P'	You have attempted to shift the automatic transmission into drive position **D**, reverse gear **R** or neutral position **N** without depressing the brake pedal or without depressing it fully. ▶ Depress the brake pedal fully.
Service Required	Do not turn engine off or start engine again	The HYBRID system is malfunctioning. The engine speed of the combustion engine may be limited to 2000 rpm. When you turn the combustion engine off, it cannot be restarted. The ECO Start/Stop function is not available. In addition, an acoustic warning sounds. ▶ Do not turn off the combustion engine. ▶ Contact an authorized Mercedes-Benz Center.
Engine Can Now Be Started		The high-voltage battery has been charged via the voltage transformer automatically. ▶ Start the combustion engine and drive the vehicle for some time in order to charge the 12-volt battery and the high-voltage battery.

Symbol messages

Display messages		Possible causes/consequences and ▶ Solutions
		The hood is open. The combustion engine cannot be started. Risk of accident! ▶ Close the hood.
	Charging Hybrid Battery Please Wait	The high-voltage battery is discharged. You have switched on the ignition while the 12-volt battery was being charged with an approved charge unit or while jump starting the vehicle. The high-voltage battery is being charged via the voltage transformer automatically. The message Engine Can Now Be Started appears in the multifunction display after a few minutes. ▶ Start the combustion engine. ▶ Disconnect the charge unit and drive the vehicle for some time in order to charge the 12-volt battery and the high-voltage battery. If the display message Engine Can Now Be Started does not appear after a few minutes: ▶ Try to start the combustion engine. ▶ If the combustion engine cannot be started: Contact an authorized Mercedes-Benz Center.
	Malfunction	The combustion engine cannot be started. In addition, an acoustic warning sounds. ▶ Contact an authorized Mercedes-Benz Center.
		The combustion engine is running and the HYBRID system is malfunctioning. In addition, an acoustic warning sounds. ▶ Contact an authorized Mercedes-Benz Center.
		The combustion engine is running and the HYBRID system is malfunctioning. In addition, an acoustic warning sounds. Extreme operating conditions such as driving through standing water can cause very high moisture in the engine compartment. The message disappears once the engine compartment is dry.

Display messages		Possible causes/consequences and ▶ Solutions
	Malfunction	The engine stalled when driving off. ▶ Shift the automatic transmission into park position **P**. ▶ Switch off the ignition and switch it back on. ▶ Start the combustion engine.
		The HYBRID system is malfunctioning. The ECO Start/Stop function may have failed and the vehicle may accelerate slower than usual. ▶ Contact an authorized Mercedes-Benz Center.
		The combustion engine cannot be started. ▶ Contact an authorized Mercedes-Benz Center.
	Caution Brakes Overheated Drive Carefully	The brake system is very hot due to extreme brake load. Relieve the load on the brake system. ▶ Exercise a more anticipatory driving style. ▶ Use the engine's braking power on downgrades. Shift the automatic transmission into a lower gear. ▶ Continue to drive with added caution so the air stream can cool the brakes.

What to do if ...

Lamps in instrument cluster

Problem	Possible causes/consequences and ▶ Solutions
RBS The yellow RBS (Recuperative Brake System) warning lamp is on while the combustion engine is running. In addition, an acoustic warning may sound.	The RBS is malfunctioning. Risk of accident! Brake pedal travel may be longer than usual and the braking behavior of the vehicle may change. The ECO Start/Stop function may also be switched off. ▶ Read and observe messages that may appear in the multifunction display (▷ page 20). ▶ Continue driving with added caution. ▶ Contact an authorized Mercedes-Benz Center.
BRAKE (USA only) (!) (Canada only) The red brake warning lamp is on while the combustion engine is running. An additional acoustic warning sounds.	The RBS is malfunctioning. Risk of accident! Brake pedal travel may be longer than usual and the braking behavior of the vehicle may change. ▶ Stop the vehicle in a safe location or as soon as it is safe to do so. Do not continue to drive. ▶ Contact an authorized Mercedes-Benz Center immediately. ▶ Read and observe messages that may appear in the multifunction display (▷ page 20), see Operator's Manual.
	The brake fluid level in the brake fluid reservoir is too low. Risk of accident! ▶ Stop the vehicle in a safe location or as soon as it is safe to do so. Do not continue to drive. ▶ Contact an authorized Mercedes-Benz Center immediately. ▶ Read and observe messages that may appear in the multifunction display (▷ page 20), see Operator's Manual. Do not add brake fluid. This will not solve the problem.
The yellow ABS/ESC warning lamp flashes while driving.	The ESC, the ETS, or the ABS has come into operation because of detected traction loss for at least one wheel. Risk of accident! The cruise control or the DISTRONIC PLUS is deactivated. ▶ When driving off, apply as little throttle as possible. ▶ While driving, ease up on the accelerator pedal. ▶ Adapt your speed and driving to the prevailing road and weather conditions. ▶ Do not switch off the ESC. Exceptions, see Operator's Manual.

Problem	Possible causes/consequences and ▶ Solutions
The warning and indicator lamps in the instrument cluster fail to come on when switching on the ignition.	The 12-volt battery is discharged. ▶ Get a jump start (▷ page 29). or ▶ Charge the 12-volt battery (▷ page 28). or ▶ Contact an authorized Mercedes-Benz Center.

Combustion engine

Problem	Possible causes/consequences and ▶ Solutions
The combustion engine cannot be started. The warning and indicator lamps in the instrument cluster come on when switching the ignition. The message `Charging Hybrid Battery Please Wait` appears in the multifunction display.	The high-voltage battery is discharged. The discharged high-voltage battery is being charged with the ignition switched on, provided the 12-volt battery is charged sufficiently and an approved charge unit is connected. ▶ Read and observe messages that may appear in the multifunction display (▷ page 22).
The combustion engine cannot be started. The multifunction display does not display any messages.	The self-diagnosis has not been completed yet or the HYBRID system is malfunctioning. ▶ Switch off the ignition and switch it back on. ▶ Try to start the combustion engine once more. ▶ If the combustion engine cannot be started: Contact an authorized Mercedes-Benz Center.
The ECO Start/Stop function does not start the combustion engine when attempting to drive off.	The ECO Start/Stop function may be malfunctioning. The lamps in the instrument cluster are on. ▶ Shift the automatic transmission into park position **P**. ▶ Switch off the ignition and switch it back on. ▶ Start the combustion engine.
	The HYBRID system is malfunctioning. ▶ Contact an authorized Mercedes-Benz Center.

RBS (Recuperative Brake System)

Problem	Possible causes/consequences and ▶ Solutions
Less brake pedal pressure is required and the brake pedal travel is longer than usual.	▶ Apply the brake pedal fully and release it. The required brake pedal pressure and the brake pedal travel are back to normal.
	The RBS is malfunctioning. Risk of accident! ▶ Read and observe the messages in the multifunction display and the notes on warning and indicator lamps in the instrument cluster (▷ page 24).
The brake pedal pulsates.	The RBS is providing electronic controlled brake boost. Read and observe the notes on the ABS/ESC warning lamp (▷ page 10).

The HYBRID system switches of automatically

Problem	Possible causes/consequences and ▶ Solutions
The HYBRID system has switched off automatically.	Your vehicle was involved in an accident. The HYBRID system remains switched off, if • the combustion engine cannot be started again after a few seconds • the red SRS indicator lamp in the instrument cluster comes on ▶ Contact an authorized Mercedes-Benz Center.
The HYBRID system has switched off automatically. An additional message appears in the multifunction display.	A short circuit in the HYBRID system has occurred or a plug connection of the HYBRID system was disconnected. ▶ Read and observe messages that may appear in the multifunction display (▷ page 20). ▶ Contact an authorized Mercedes-Benz Center.

Battery

Notes

Your vehicle is equipped with a 12-volt battery and a high-voltage battery. The high-voltage battery stores the power required for the electric drive. The electric drive also starts the combustion engine.

Have any work on the batteries performed at an authorized Mercedes-Benz Center.

ⓘ Read and observe the safety notes (▷ page 9) and the notes on the 12-volt battery in the Operator's Manual.

⚠ Warning!
The electrolyte, i.e. the battery fluid, is toxic and caustic. Do not allow this fluid to come in contact with eyes, skin or clothing, for example in case of an accident.

In case it does, immediately flush affected area with water and seek medical help immediately.

For information on the location of the 12-volt battery and the high-voltage battery, see (▷ page 13).

! Deep discharge caused by prolonged periods of the vehicle not being used, can damage the high-voltage battery.

During such periods, operate the vehicle every 4 weeks for several minutes in order to charge the high-voltage battery.

During the charging process, switch off electrical consumers that are currently not needed, e.g. climate control system or seat heating.

If necessary, get a jump start.

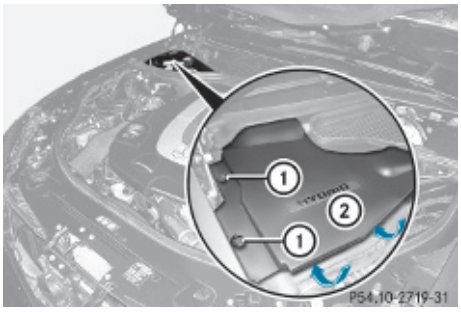
⚠ Warning!
Inhalation of exhaust gas is hazardous to your health. All exhaust gas contains carbon monoxide (CO), and inhaling it can cause unconsciousness and lead to death. Do not run the engine in confined areas (such as a garage) which are not properly ventilated.

If you do not intend to operate your vehicle for an extended period of time, contact an authorized Mercedes-Benz Center about steps you need to observe.

Removing/installing high-voltage battery cover

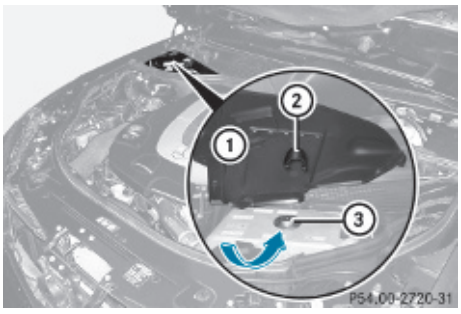
- ▶ Engage the electronic parking brake.
- ▶ Shift the automatic transmission into park position **P**.
- ▶ Switch off the ignition.
  The green or yellow READY indicator lamp (▷ page 16) in the instrument cluster goes out.
- ▶ Remove the SmartKey from the starter switch or remove the SmartKey with KEYLESS-GO from the vehicle.
- ▶ Observe the safety notes on the danger of electric shock in this manual.
- ▶ Observe the safety notes regarding the hood in the Operator's manual.
- ▶ Open the hood, see Operator's Manual.

Removing

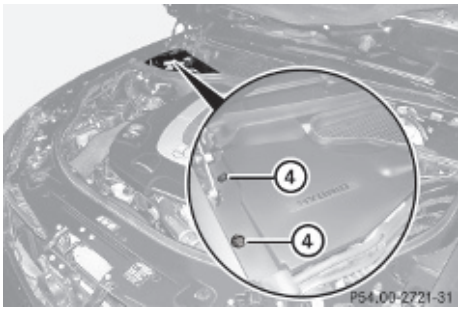


- ▶ Turn locks ① clockwise by 90°.
- ▶ Lift cover ② as indicated by the arrows and remove it forward as seen in driving direction.
- ▶ Store cover ② in the trunk for example.

Installing



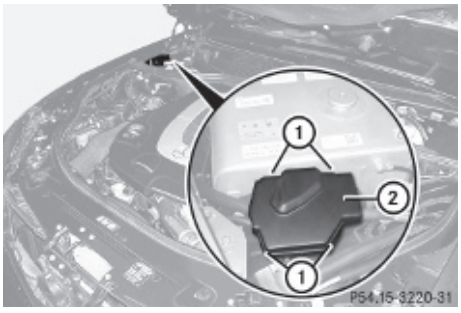
▶ Place cover ① onto the high-voltage battery carefully.
▶ Push holder ② onto pin ③.



▶ Turn locks ④ counterclockwise by 90°. The cover is locked.

Removing/installing jump start contact cover

▶ Remove the high-voltage battery cover, see (▷ page 27).



Removing

▶ Disengage tabs ①.
▶ Remove cover ②.
▶ Store cover ② in the trunk for example.

Installing

▶ Position cover ②.
▶ Press down on cover ② until tabs ① engage.
▶ Install the high-voltage battery cover.

! The cover must be positioned and installed properly. Otherwise moisture and/or dirt may impair fuse operation.

▶ Close the hood.

Charging the batteries

Charging the 12-volt battery

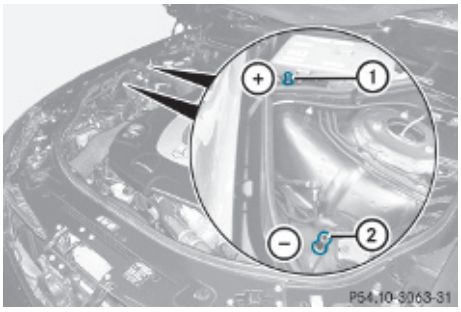
⚠ **Warning!**

Never charge a battery while still installed in the vehicle unless the accessory battery charge unit approved by Mercedes-Benz is being used. Gases may escape during charging and could cause an explosion that may result in personal injury, paint damage or corrosion.

An accessory battery charge unit specially adapted for Mercedes-Benz vehicles and tested and approved by Mercedes-Benz is available. It permits the charging of the battery in its installed position. Contact an authorized Mercedes-Benz Center for information and availability.

Charge battery in accordance with the separate instructions for the accessory battery charger.

▶ Remove the high-voltage battery cover (▷ page 27).
▶ Remove the jump start terminal cover (▷ page 28).
▶ Follow the instructions in the separate operating instructions of the charge unit.



- ▶ Connect the positive terminal clamp of the charge unit with jump start terminal ①.
- ▶ Connect the negative terminal clamp of the charge unit with jump start terminal ②.
- ▶ Charge the 12-volt battery.

Charging the high-voltage battery

With the ignition switched on, the discharged high-voltage battery is being charged via the voltage transformer, provided the 12-volt battery is charged sufficiently. During the charging procedure the charge unit must remain connected to the jump start terminals.

ⓘ The high-voltage battery can only be charged via the 12-volt battery of your vehicle. Observe the safety notes (▷ page 9).

- ▶ Switch on the ignition.
  The lamps in instrument cluster are on. The message `Charging Hybrid Battery Please Wait` appears in the multifunction display.

  Start the combustion engine when the message `Engine Can Now Be Started` appears in the multifunction display after a few minutes.

Disconnecting the charge unit

- ▶ Disconnect the charge unit. Follow the instructions in the separate operating instructions of the charge unit.
- ▶ Install the jump start terminal cover (▷ page 28).
- ▶ Install the high-voltage battery cover (▷ page 27).
- ▶ Close the hood.
- ▶ Drive the vehicle for some time in order to charge the 12-volt battery and the high-voltage battery.

Jump starting

When the 12-volt battery is discharged, the combustion engine can be started with jumper cables and the battery of another vehicle.

Observe the following:

- Jump starting should only be performed when the combustion engine and the catalytic converter are cold.
- Do not jump start if the battery is frozen. Let the battery thaw out first.
- Only jump start from batteries with the same voltage rating (12 V). Jump starting with a more powerful battery could damage the vehicle's electrical system, which is not covered by the Mercedes-Benz Limited Warranty.
- Only use jumper cables with sufficient cross-section and insulated terminal clamps.
- Always make sure the jumper cables are not on or near pulleys, fans or other parts that move when an engine is started or running.
- Should the battery be drained completely, let the donating power source charge the vehicle for several minutes before reattempting the starting process.

▷▷

Jumper cables and additional information on jump starting are available at any authorized Mercedes-Benz Center.

Jump starting should only be performed using the jump-start terminals located in the engine compartment.

Avoid repeated and lengthy starting attempts.

Do not attempt to start the engine using a battery quick-charge unit.

If the engine does not run after several unsuccessful starting attempts, have it checked at the nearest authorized Mercedes-Benz Center.

Excessive unburned fuel generated by repeated failed starting attempts may damage the catalytic converter and may present a fire risk.

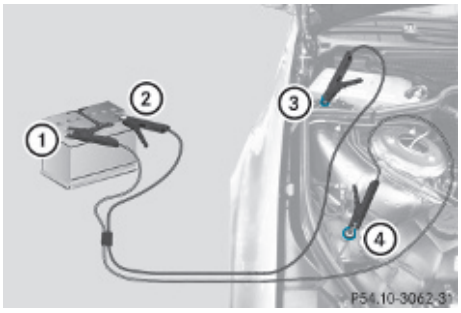
Make sure the jumper cables do not have loose or missing insulation.

Make sure the cable clamps do not touch any other metal part while the other end is still attached to a battery.

Connecting the jumper cables

- Make sure the two vehicles do not touch.
- Remove the high-voltage battery cover (▷ page 27).
- Remove the jump start terminal cover (▷ page 28).

Your vehicle is equipped with two jump start terminals in the engine compartment.



- Connect jump start terminal ③ with positive terminal ② of the external battery with a jumper cable. Clamp the jumper cable to jump start terminal ③ first.
- Connect negative terminal ① of the external battery with jump start terminal ④ with a jumper cable. Clamp the jumper cable to negative terminal ① of the external battery first.

Starting the combustion engine

- Start the engine of the vehicle with the charged battery and run it at an engine speed slightly above idle speed.
- Switch on the ignition of your vehicle. The lamps in the instrument cluster come on. Wait to start the combustion engine, if the message `Charging Hybrid Battery Please Wait` appears in the multifunction display.

  Start the combustion engine only after the message `Engine Can Now Be Started` has appeared in the multifunction display. This may take a few minutes.

  If no messages appear in the multifunctional display, you can start the combustion engine directly.
- After the combustion engine of your vehicle has been started, leave the engines of both vehicles running at idle speed.

Disconnecting the jumper cables

- ▶ Disconnect the jumper cables in reverse order, starting with jump start terminal ④ (▷ page 30).
- ▶ Install the jump start terminal cover (▷ page 28).
- ▶ Install the high-voltage battery cover (▷ page 27).
- ▶ Close the hood.
- ▶ Drive the vehicle for some time in order to charge the 12-volt battery and the high-voltage battery.

Towing the vehicle

ⓘ For information on towing and transporting the vehicle refer to the Operator's Manual.

⚠ Warning!

When you depress the brake pedal for the first time when towing, less brake pedal pressure is required and the brake pedal travel is longer than usual. The same applies if a malfunction occurs, for example when the vehicle system voltage is too low. If required, you have to depress the brake pedal further. Adapt your speed and driving accordingly.

Depress the brake pedal fully and release it again before towing. When all necessary systems are operational again, the required brake pedal pressure and the brake pedal travel are back to normal.

Identification labels

For more information on the identification labels, refer to the Operator's Manual.

Electric drive

The engine number is engraved on the housing of the electric drive. For more information contact an authorized Mercedes-Benz Center.

Vehicle specification S 400 HYBRID (221.195)

The quoted data apply only to the standard vehicle. Contact an authorized Mercedes-Benz Center for the corresponding data of all special bodies and special equipment.

Engine S 400 HYBRID	
Engine, type	272
Mode of operation	4-stroke engine, gasoline injection
No. of cylinders	6
Bore	3.66 in (92.90 mm)
Stroke	3.39 in (86.00 mm)
Total piston displacement	213.5 cu in (3498 cm^3)
Compression ratio	11.7:1
Output acc. to SAE J 1349[1]	275 hp/6000 rpm (205 kW/6000 rpm)
Maximum torque acc. to SAE J 1349	258 lb-ft/ 3000 - 5500 (350 Nm/ 3000 - 5500 rpm)

Engine S 400 HYBRID	
Maximum engine speed	6500 rpm
Firing order	1-4-3-6-2-5
Poly-V-belt	2404 mm

Electric drive S 400 HYBRID	
Type	Permanent-field synchronous motor
Output	20 hp (15 kW)
Maximum starting torque	160 Nm

Electrical system S 400 HYBRID	
Alternator	14 V/180 A
Battery	12 V/95 Ah
Spark plugs, type	Bosch Y 7 MPP33
Spark plugs, electrode gap	0.031 in (0.8 mm)
Spark plugs, tightening torque	15 - 18 lb-ft (20 - 25 Nm)

Main dimensions S 400 HYBRID	
Overall vehicle length	206.7 in (5250 mm)
Overall vehicle width[2]	83.5 in (2120 mm)
Overall vehicle height	58.2 in (1479 mm)
Wheelbase	124.6 in (3165 mm)
Track, front	63.0 in (1600 mm)

1 Premium fuel required. Performance may vary with fuel octane rating.
2 Exterior rear view mirrors folded out.

Main dimensions S 400 HYBRID	
Track, rear	63.2 in (1 606 mm)
Turning circle	40.0 ft (12.2 m)

Weights S 400 HYBRID	
Roof load	max. 220 lb (100 kg)
Trunk load	max. 220 lb (100 kg)

Rims and tires

Same size tires

		S 400 HYBRID
18" wheels	**Rims (light alloy)** **Wheel offset**	8.5 J x 18 H2 1.69 in (43 mm)
	All-season tires[3]	255/45 R18 99H M+S
	Winter tires[3,4,5]	255/45 R18 99V M+S

		S 400 HYBRID
19" wheels	**Rims (light alloy)** **Wheel offset**	8.5 J x 19 H2 1.69 in (43 mm)
	Winter tires[3,4,5]	255/40 R19 100V XL (Extra Load) M+S

Mixed size tires

			S 400 HYBRID
19" wheels	**Front axle**	**Rims (light alloy)** **Wheel offset**	8.5 J x 19 H2 1.69 in (43 mm)
		All-season tires[3]	255/40 R19 100V XL (Extra Load) M+S
	Rear axle	**Rims (light alloy)** **Wheel offset**	9.5 J x 19 H2 1.69 in (43 mm)
		All-season tires[3,6]	275/40 R19 101V M+S

3 Radial-ply tires.
4 For use with snow chains contact an authorized Mercedes-Benz Center.
5 Not available as factory equipment.
6 Must not be used with snow chains.

▷▷

			S 400 HYBRID[7]
19" wheels	**Front axle**	**AMG rims (light alloy)** **Wheel offset**	8.5 J x 19 H2 1.69 in (43 mm)
		All-season tires[3]	255/40 R19 100V XL (Extra Load) M+S
	Rear axle	**AMG rims (light alloy)** **Wheel offset**	9.5 J x 19 H2 1.69 in (43 mm)
		All-season tires[3,6]	275/40 R19 101V M+S

Spare wheel

	S 400 HYBRID
Rim (steel)	4.5 B x 19 H2
Wheel offset	1.38 in (35 mm)
Minispare tire[6]	T 155/70 R19 113M
Recommended tire inflation pressure	61 psi (4.2 bar)

Capacities

Vehicle components and their respective lubricants must match. Therefore only use products tested and approved by Mercedes-Benz.

For information on tested and approved products, contact an authorized Mercedes-Benz Center or visit **www.mbusa.com** (USA only).

⚠ Warning!
Comply with all valid regulations with respect to handling, storing, and disposing of service fluids. Otherwise you could endanger persons or the environment.

Keep service fluids out of the reach of children.

For health reasons, you should prevent service fluids from coming into direct contact with your skin or clothing.

If a service fluid is swallowed, contact a physician immediately.

7 Vehicles with AMG Sport Package.
3 Radial-ply tires.
6 Must not be used with snow chains.

Model S 400 HYBRID	Capacity	Fuels, coolants, lubricants, etc.
Engine with oil filter	8.5 US qt (8.0 l)	Approved engine oils
Automatic transmission	9.8 US qt (9.3 l)	MB Automatic Transmission Fluid
Rear axle	1.2 US qt (1.1 l)	Hypoid gear oil
Power steering	approx. 1.1 US qt (1.0 l)	MB Power Steering Fluid or approved Dexron III ATF
Brake system	0.63 US qt (0.6 l)	MB Brake Fluid (DOT 4+)
Cooling system	approx. 11.6 US qt 11.0 l)	MB 325.0 Anticorrosion/ Antifreeze
Fuel tank	23.8 US gal (90.0 l)	Premium unleaded gasoline (Minimum Posted Octane 91 [Avg. of 96 RON/86 MON])
Fuel tank reserve	approx. 2.9 US gal (11.0 l)	
Air conditioning system	–	R134a refrigerant and special PAG lubricant oil (never R 12)
Washer system and headlamp cleaning system	6.9 US qt (6.5 l)	MB Windshield Washer Concentrate[8], see Operator's Manual Washer fluid mixing ratio, see Operator's Manual

8 Mixed with water or commercially available premixed washer solvent/antifreeze.

Approved engine oils

Use the table below to determine the MB sheet number.

Model S 400 HYBRID	Engine, type	MB sheet number
	272	229.5

MB sheet numbers are printed on the outside of oil containers.

For more information on approved engine oils, refer to the Operator's Manual.

Coolants

The engine coolant is a mixture of water and anticorrosion/antifreeze.

The cooling system was filled at the factory with a coolant providing freeze protection to approximately -35°F (-37°C) and corrosion protection.

Model S 400 HYBRID	Approximate freeze protection	
	-35°F (-37°C)	-49°F (-45°C)
Cooling system	5.0 US qt (4.75 l)	5.5 US qt (5.2 l)

Add premixed coolant solution only. Adding water and MB 325.0 Anticorrosion/Antifreeze separately from each other, could cause engine damage not covered by the Mercedes-Benz Limited Warranty.

For more information on coolants, refer to the Operator's Manual.

Service and Literature

Your authorized Mercedes-Benz Center has trained technicians and Genuine Mercedes-Benz Parts to service your vehicle properly. For expert advice and quality service, contact an authorized Mercedes-Benz Center.

If you are interested in obtaining service literature for your vehicle, please contact an authorized Mercedes-Benz Center.
We consider this the best way for you to obtain accurate information for your vehicle.

For further information you can find us on the Mercedes-Benz web-site **www.mbusa.com** (USA only) or **www.mercedes-benz.ca** (Canada only).

⚠ Warning!

To help avoid personal injury, be extremely careful when performing any service work or repairs. Improper or incomplete service or the use of incorrect or inappropriate parts or materials may damage the vehicle or its equipment, which may in turn result in personal injury.

If you have any questions about carrying out any type of service, turn to the advice of an authorized Mercedes-Benz Center.

We reserve the right to make changes in design and equipment.
Therefore, information, illustrations and descriptions in this Supplemental Operating Instructions might differ from your vehicle.

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