



2475844907

Order no. P247 0411 13 Part no. 247 584 49 07
Edition A 2021



GLB

Mercedes-AMG Supplement

Mercedes-Benz



Publication details

Internet

Further information about Mercedes-Benz vehicles and about Mercedes-Benz AG can be found on the following websites:

<https://www.mbusa.com> (USA only)

<https://www.mercedes-benz.ca> (Canada only)

Documentation team

Mercedes-Benz AG: Not to be reprinted, translated or otherwise reproduced, in whole or in part, without written permission from Mercedes-Benz AG.

Vehicle manufacturer

Mercedes-Benz AG

Mercedesstra e 120

70372 Stuttgart

Germany

As at 25.10.2019

Thank you for purchasing a Mercedes-AMG

Before you first drive off, read this Operator's Manual carefully and familiarize yourself with your vehicle. For your own safety and a longer operating lifespan of the vehicle, follow the instructions and warning notices in this Operator's Manual. Disregarding them may lead to damage to the vehicle or injury to people.

Damage to the vehicle resulting from the disregard of the instructions is not covered by the Mercedes-Benz Limited Warranty.

The standard equipment or product description of your vehicle may vary and depends on the following factors:

- Model
- Order
- National version
- Availability

Mercedes-AMG reserves the right to introduce changes in the following areas:

- Design
- Equipment

- Technical features

The equipment in your vehicle may therefore differ from that shown in the descriptions and illustrations.

The following documents are integral parts of the vehicle:

- Digital Operator's Manual
- Printed Operator's Manual
- Maintenance Booklet
- Equipment-dependent Supplements

Keep these documents in the vehicle at all times. If you sell the vehicle, always pass all of the documents on to the new owner.

Mercedes-Benz USA, LLC
Mercedes-Benz Canada, Inc.
A Daimler Company

2475844907



Symbols	3	Instrument Display and on-board computer	21	Index	39
At a glance	4	Notes on the Instrument Display and on-board computer	21		
Cockpit	4	Calling up displays on the Performance menu	21		
		Function of the Head-up Display	23		
General notes	7				
Operator's Manual	7	MBUX multimedia system	25		
Operating safety	7	AMG TRACK PACE	25		
Qualified specialist workshop	8				
Correct use of the vehicle	8	Wheels and tires	31		
Limited Warranty	9	Overview of the tire-change tool kit	31		
Driving and parking	10				
Driving	10	Technical data	32		
DYNAMIC SELECT switch	11	Operating fluids	32		
Automatic transmission	12	Vehicle data	32		
Driving and driving safety systems	13				
Function of the AMG steering-wheel buttons	20	Display messages and warning/indicator lamps	35		
		Display messages	35		
		Warning and indicator lamps	36		

In this Operator's Manual, you will find the following symbols:

⚠ DANGER Danger due to not observing the warning notices

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

▶ Observe the warning notices.

🌿 ENVIRONMENTAL NOTE Environmental damage due to failure to observe environmental notes

Environmental notes include information on environmentally responsible behavior or environmentally responsible disposal.

▶ Observe environmental notes.

! NOTE Damage to property due to failure to observe notes on material damage

Notes on material damage inform you of risks which may lead to your vehicle being damaged.

▶ Observe notes on material damage.

ⓘ These symbols indicate useful instructions or further information that could be helpful to you.

▶ Instruction

(→ page) Further information on a topic

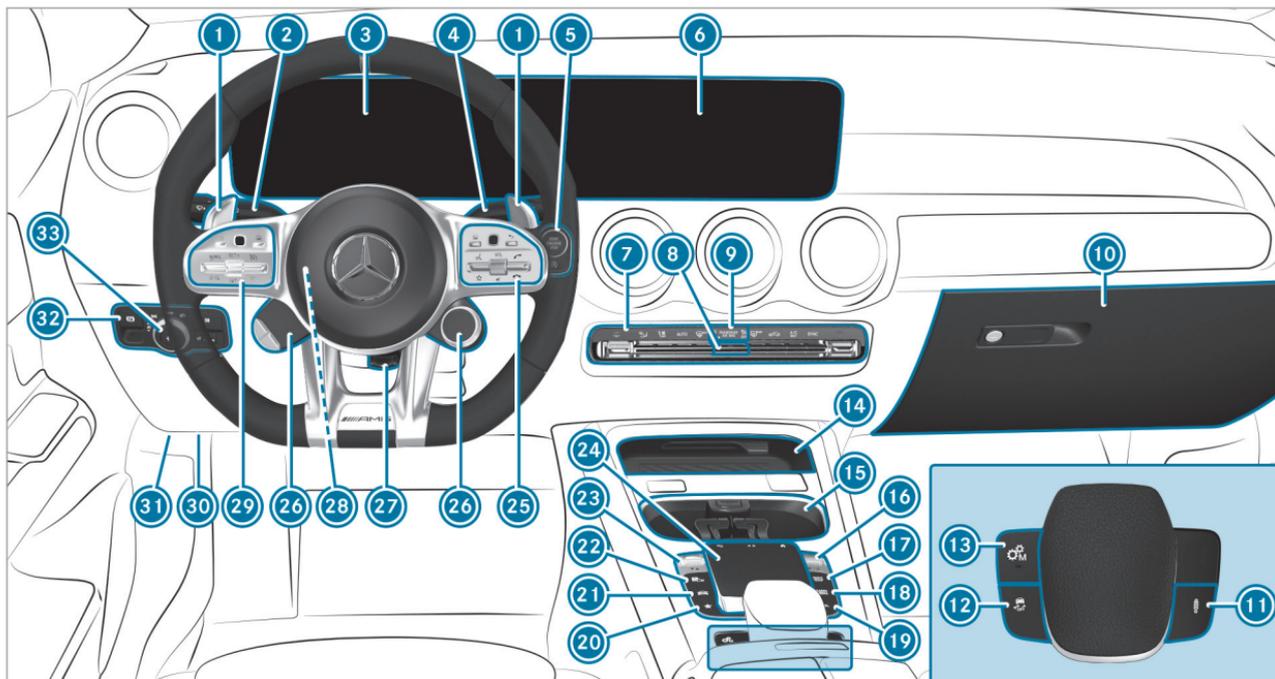
Display Information on the multifunction display/media display

↗▶ Highest menu level, which is to be selected in the multimedia system

▶▶ Relevant submenus, which are to be selected in the multimedia system

* Indicates a cause

4 At a glance – Cockpit



Left-hand-drive vehicles

①	Steering wheel gearshift paddles	→	12	⑩	Glove box		
②	Combination switch			⑪	AMG adaptive sport suspension system	→	19
③	Instrument Display	→	21	⑫	ESP®	→	13
④	DIRECT SELECT lever			⑬	Manual gearshifting	→	12
⑤	Start/stop button	→	10	⑭	Storage compartment		
	ECO start/stop function	→	11	⑮	Cup holder		
⑥	Media display			⑯	Media display		
⑦	Climate control systems			⑰	Controller for volume and switching sound on/off		
⑧	Hazard warning light system				Switches the MBUX multimedia system on/off		
⑨	PASSENGER AIR BAG indicator lamps			⑱	Calls up navigation		
				⑲	Calls up the radio		
					Calls up media		
				⑳	Calls up the telephone		
				㉑	Calls up favorites		
				㉒	Calls up vehicle functions		
				㉓	Active Parking Assist		
				㉔	DYNAMIC SELECT switch	→	11
				㉕	Touchpad		
				㉖	Control panel for the MBUX multimedia system		
				㉗	AMG steering-wheel buttons	→	20
				㉘	Adjusts the steering wheel		
				㉙	Switches the steering wheel heater on/off		

6 At a glance – Cockpit

29 Control panel:

On-board computer → 21

Cruise control

Active Distance Assist DISTRONIC

30 Diagnostics connection

31 Opens the hood

32 Electric parking brake

33 Light switch

Operator's Manual

This Supplement provides information on all the important functions of your AMG vehicle that are either not described or differ from the descriptions in the vehicle Operator's Manual. This information supplements or replaces the corresponding sections in the vehicle Operator's Manual. Under no circumstances does the Supplement replace the Operator's Manual.

This Supplement describes all models, and standard and optional equipment for your vehicle, as available at the time of going to press. Country-specific differences are possible. Bear in mind that your vehicle may not feature all functions described here. This is also the case for systems and functions relevant to safety. Therefore, the equipment on your vehicle may differ from that in the descriptions and illustrations.

The original purchase contract documentation for your vehicle contains a list of all of the systems in your vehicle.

Should you have any questions concerning equipment and operation, please consult an authorized Mercedes-Benz Center.

The Operator's Manual, the Supplement and the Maintenance Booklet are important documents and should be kept in the vehicle.

Operating safety

▲ WARNING Risk of accident due to malfunctions or system failures

To avoid malfunctions or system failures:

- ▶ Always have the prescribed service and maintenance work as well any required repairs carried out at a qualified specialist workshop.

▲ WARNING Risk of accident or injury due to incorrect modifications on electronic component parts

Modification of electronic components, their software or wiring could impair their function

and/or the function of other networked component parts or safety-relevant systems.

This can endanger the operating safety of the vehicle.

- ▶ Never tamper with the wiring and electronic component parts or their software.
- ▶ You should have all work on electrical and electronic components carried out at a qualified specialist workshop.

Observe the "On-board electronics" section in "Technical data" in the vehicle Operator's Manual.

▲ WARNING Risk of fire due to flammable materials on hot parts of the exhaust system

Flammable material such as leaves, grass or twigs may ignite if they come into contact with hot parts of the exhaust system.

- ▶ When driving on unpaved roads or off-road, regularly check the vehicle underside.
- ▶ Remove trapped plants or other flammable material, in particular.
- ▶ If there is damage, consult a qualified specialist workshop immediately.

! **NOTE** Damage to the vehicle

In the following situations, in particular, there is a risk of damage to the vehicle:

- The vehicle becomes grounded, e.g. on a high curb or an unpaved road
- The vehicle is driven too fast over an obstacle, e.g. a curb, speed bump or pothole
- A heavy object strikes the underbody or chassis components

In situations such as this, the body, the underbody, chassis components, wheels or tires could be damaged without the damage being visible. Components damaged in this

way can unexpectedly fail or, in the case of an accident, may not absorb the loads that arise as intended.

If the underbody paneling is damaged, flammable materials such as leaves, grass or twigs can collect between the underbody and the underbody paneling. These materials may ignite if they come into contact with hot parts on the exhaust system.

- ▶ Have the vehicle checked and repaired immediately at a qualified specialist workshop.

or

- ▶ If driving safety is impaired while continuing your journey, pull over and stop the vehicle immediately in accordance with the traffic conditions, and contact a qualified specialist workshop.

Qualified specialist workshop

An authorized Mercedes-Benz Center is a qualified specialist workshop. It has the necessary special skills, tools and qualifications to cor-

rectly carry out the work required on your vehicle. This particularly applies to safety-relevant works.

For the following, always have your vehicle checked at an authorized Mercedes-Benz Center:

- safety-relevant works
- service and maintenance work
- repair work
- modifications as well as installations and conversions
- work on electronic components

Mercedes-AMG recommends a Mercedes-Benz service center.

Correct use of the vehicle

If you remove any warning stickers, you or others could fail to recognize certain dangers. Leave warning stickers in position.

Observe the following information in particular when driving your vehicle:

- the safety notes in this manual

- technical data for the vehicle
- traffic rules and regulations
- laws and safety standards pertaining to motor vehicles

Limited Warranty

! **NOTE** Damage to the vehicle arising from violation of these operating instructions.

Damage to the vehicle can arise from violation of these operating instructions.

This damage is not covered either by the Mercedes-Benz implied warranty or by the New- or Used-Vehicle Warranty.

- ▶ Follow the instructions in these operating instructions on proper operation of your vehicle as well as on possible vehicle damage.

Driving

Breaking-in notes

To preserve the engine during the first 1,000 miles (1,500 km):

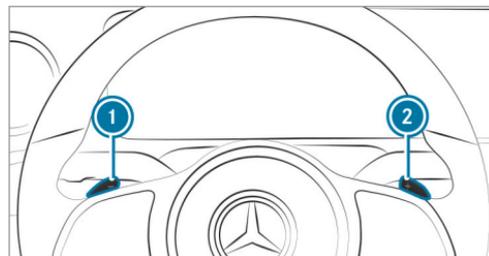
- drive at varying road speeds and engine speeds.
- do not drive faster than 85 mph (140 km/h).
- allow the engine to reach a maximum engine speed of 4,500 rpm (4,500 rpm) only briefly.
- drive the vehicle in drive program **C**.
- change gear before the tachometer needle is $\frac{2}{3}$ of the way to the red area of the tachometer.
- do not shift down a gear manually in order to brake.
- avoid overstraining the vehicle, e.g. driving at full throttle.
- do not depress the accelerator pedal past the pressure point (kickdown).
- only increase the engine speed gradually and accelerate the vehicle to full speed after 1,000 miles (1,500 km).

This also applies when the engine or parts of the drivetrain have been replaced.

Please also observe the following breaking-in notes:

- In certain driving and driving safety systems, the sensors adjust automatically while a certain distance is being driven after the vehicle has been delivered or after repairs. Full system effectiveness is not reached until the end of this teach-in process.
- Brakepads, brake discs and tires that are either new or have been replaced only achieve optimum braking effect and grip after several hundred kilometers of driving. Compensate for the reduced braking effect by applying greater force to the brake pedal.

Function of Emotion Start



- ▶ Start the vehicle with the start/stop button and simultaneously pull one of the steering wheel gearshift paddles ① or ②. The idle speed is briefly increased upon starting the engine, and in the sporty characteristic the engine sound is reproduced.

Observe the notes on starting the vehicle in the vehicle Operator's Manual.

Operation of the ECO start/stop function

The engine is automatically switched off if the following conditions are met:

- if all vehicle conditions for an automatic engine stop are met.
- you brake the vehicle to a standstill in transmission position **D** or **N**.
- you depress the brake pedal when driving at speeds below 15 mph (20 km/h).

The **A** symbol appears in the multifunction display when the vehicle is stationary. If not all the vehicle conditions are met, the **A** symbol appears in the multifunction display.

The engine is restarted automatically if:

- you release the brake pedal in transmission position **D** when the HOLD function is not active.
- you shift from transmission position **P**.
- you engage transmission position **D** or **R**.
- you depress the accelerator pedal.
- you permanently activate manual gearshifting.

- you pull the left-hand steering wheel gearshift paddle.
- an automatic engine start is required by the vehicle.

If the engine was switched off by the ECO start/stop function and you leave the vehicle, a warning tone sounds and the engine is not restarted. In addition, the **Vehicle Ready to Drive Switch the Ignition Off Before Exiting** message appears in the multifunction display. If you do not switch off the ignition, the ignition is automatically switched off after one minute.

DYNAMIC SELECT switch

Function of the DYNAMIC SELECT switch

Use the DYNAMIC SELECT switch to change between the following drive programs:

- **Slippery**: optimized pulling away and driving characteristics in wintry and slippery road conditions
- **Individual**: individual settings

- **C (Comfort)**: comfortable and economical driving style
- **S (Sport)**: sporty driving style
- **S+ (Sport +)**: particularly sporty driving style

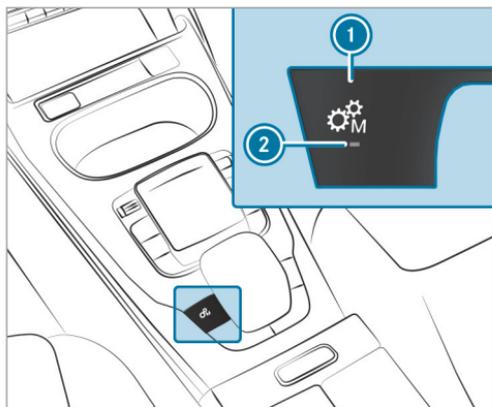
Mercedes-AMG recommends selecting the drive program **C** when in city traffic or stop-and-go traffic.

Depending on the drive program selected, the following vehicle characteristics will change:

- Drive
 - Engine and transmission management
 - Active Distance Assist DISTRONIC
- AMG Dynamics
 - The agility functions are automatically selected depending on the drive program.
 - The steering, shift timing point and stabilization functions are adapted to the selected drive program.
- Suspension
- Availability of glide mode

Automatic transmission

Manual gearshifting



▶ **To activate/deactivate:** press button ①. If indicator lamp ② is lit, manual gearshifting is activated. The current gear is displayed in the multifunction display.

① To permanently shift the gears manually in drive program  using the steering wheel

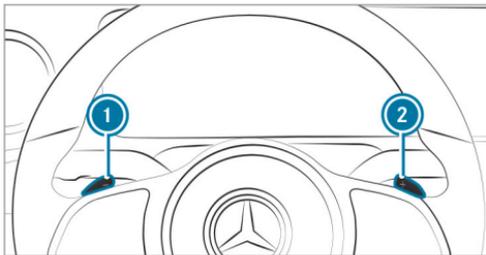
gearshift paddles, select the **M** (Manual) setting for the transmission.

❗ **NOTE** Damage to the engine due to shifting up too late

The automatic transmission does not shift up in manual mode even when the engine's limiting speed is reached.

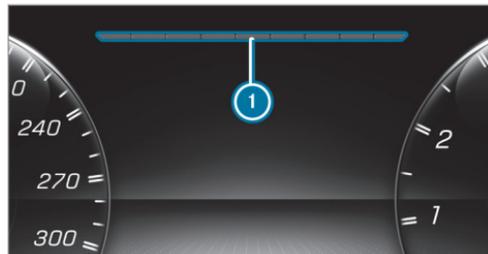
The fuel supply is interrupted in order to prevent the engine from overrevving.

▶ Shift up before the engine speed reaches the red area in the tachometer.



▶ **To shift up:** pull steering wheel gearshift paddle ②.

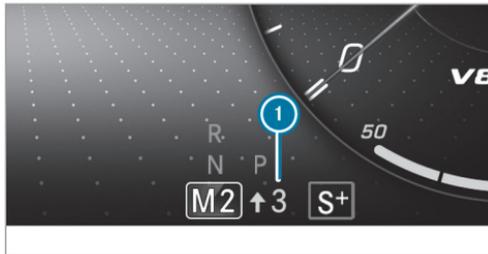
▶ **To shift down:** pull steering wheel gearshift paddle ①.



If the engine speed is too high or too low, you cannot change gear using the steering wheel gearshift paddles. In this case, segments ① light up red.

Gearshift recommendation

The gearshift recommendation assists you in adopting an economical driving style.



- ▶ If gearshift recommendation message ❶ appears on the multifunction display, shift to the recommended gear.

Using kickdown

- ▶ **Maximum acceleration:** depress the accelerator pedal beyond the pressure point.

The automatic transmission shifts up to the next gear when the maximum engine speed is reached to protect the engine from overrevving.

- ❶ If you have activated manual gearshifting with the button in the center console, the

transmission does not react to the kick-down.

Glide mode function

With an anticipatory driving style, glide mode helps you to reduce fuel consumption.

Glide mode is characterized by the following:

- the combustion engine is disconnected from the drivetrain and the vehicle continues to roll.
- the  symbol appears in the multifunction display.

Glide mode is activated if the following conditions are met:

- the ECO start/stop function is switched on.
- drive program  is selected with the drive setting "Moderate" or "Reduced".
- the speed is within a suitable range.
- the road's course is suitable, e.g. no steep uphill or downhill inclines or tight bends.
- you are no longer depressing the accelerator or brake pedal.

Glide mode is deactivated again if one of the conditions is no longer met.

Driving and driving safety systems

Functions of ESP® (Electronic Stability Program)

⚠ WARNING Risk of skidding if ESP® is malfunctioning

If ESP® is malfunctioning, ESP® cannot carry out vehicle stabilization. In addition, other driving safety systems are switched off.

- ▶ Drive on carefully.
- ▶ Have ESP® checked at a qualified specialist workshop.

You can select between the following modes of ESP®:

- ESP® ON
- ESP® SPORT
- ESP® OFF

14 Driving and parking

Characteristics when ESP® is activated

ESP® monitors and improves driving stability and traction, particularly in the following situations:

- When pulling away on a wet or slippery road.
- When braking.
- In strong side winds when you are driving faster than 47 mph (75 km/h).

ESP® can stabilize the vehicle by intervening in the following ways:

- One or more wheels are braked.
- The engine output is adapted according to the situation.

ESP® is activated every time the engine is started regardless of whether ESP® was in ESP® SPORT or deactivated before the engine was switched off.

If the  ESP® warning lamp flashes in the instrument cluster, one or several vehicle wheels has reached its grip limit:

- Adapt the driving style to suit the prevailing road and weather conditions.

- Do not deactivate ESP® under any circumstances.
- Only depress the accelerator pedal as far as is necessary.

Characteristics of ESP® SPORT

▲ WARNING Risk of skidding if ESP® SPORT is used incorrectly

When you activate ESP® SPORT, there is an increased risk of skidding and having an accident.

▶ Activate ESP® SPORT only in the circumstances described below.

When ESP® SPORT is activated, the  and  warning lamps light up continuously in the instrument cluster.

Select ESP® SPORT when the vehicle's own oversteering and understeering characteristics are desired, e.g. on designated roads.

Driving with ESP® SPORT or with ESP® deactivated requires an extremely qualified and experienced driver.

If ESP® SPORT is activated and one or more wheels start to spin, the  ESP® warning lamp on the instrument cluster flashes. ESP® then only stabilizes the vehicle to a limited degree.

ESP® SPORT also has the following characteristics:

- ESP® only improves driving stability to a limited degree.
- ETS/4ETS traction control is still active.
- The engine's torque is only restricted to a limited degree and the drive wheels can spin. The spinning of the wheels results in a cutting action for better traction on loose surfaces.
- ESP® continues to provide assistance when the brakes are firmly applied.
- Crosswind Assist is no longer active.

Characteristics when ESP® is deactivated

▲ WARNING Risk of skidding if ESP® is deactivated

If you deactivate ESP®, ESP® cannot carry out vehicle stabilization.

▶ ESP® should only be deactivated in the following situations.

When ESP® is deactivated, the  and  warning lamps light up continuously in the instrument cluster.

Deactivating ESP® has the following effects:

- Driving stability will no longer be improved.
 - The drive wheels could spin.
 - ETS/4ETS traction control is still active.
 - Crosswind Assist is no longer active.
- i** Even when ESP® is deactivated, you are still assisted by ESP® when braking hard.

It may be best to activate ESP® SPORT or deactivate ESP® in the following situations:

- When using snow chains.
 - In deep snow.
 - On sand or gravel.
- i** Spinning the wheels results in a cutting action, which enhances traction.
- i** Activate ESP® as soon as the situations described above no longer apply. ESP® will otherwise not be able to stabilize the vehicle if the vehicle starts to skid or a wheel starts to spin.

If the  ESP® warning lamp lights up continuously even when ESP® is activated, ESP® is not available due to a malfunction.

Observe any information which may be displayed in the instrument cluster:

- Indicator and warning lamps
- Display messages

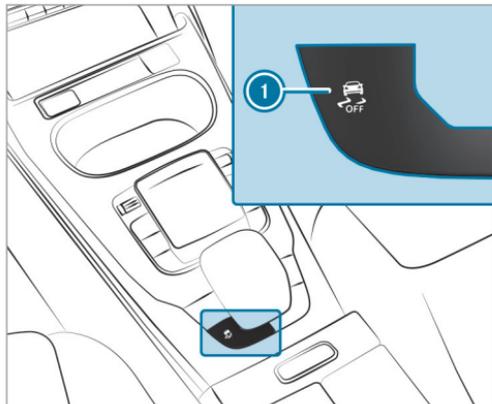
ETS/4ETS (Electronic Traction System)

ETS/4ETS traction control is part of ESP®.

ETS/4ETS can improve the vehicle's traction by intervening in the following ways:

- The drive wheels are braked individually if they spin.
- More drive torque is transferred to the wheel or wheels with traction.

Activating/deactivating ESP® (Electronic Stability Program)



- ▶ **To activate ESP® SPORT:** briefly press button ①. The  and  warning lamps appear in the instrument cluster.

- ▶ **To deactivate ESP®:** press and hold button ① until the  and  warning lamps appear in the instrument cluster.

- ① When you deactivate ESP® in the  drive program, AMG Dynamics automatically switches to the **Master** level.

- ▶ **To activate ESP®:** briefly press button ①. The ,  and  warning lamps go out.

Observe the information on warning lamps and display messages which may be shown in the instrument cluster.

RACE START

Function of RACE START

RACE START enables optimal vehicle acceleration from a standstill. For this, a suitably high-grip road surface is required, the tires and vehicle must also be in good condition.

- ① RACE START is only available after the vehicle has been broken in (→ page 10).

- ① RACE START may not be used on normal roads. RACE START must only be activated and used on dedicated race circuits, not on public roads. Be sure to read the safety notes and information on ESP® (→ page 13).

⚠ WARNING Risk of skidding and having an accident from wheels spinning

If you use RACE START, depending on the ESP® mode selected, there is an increased risk of skidding and having an accident.

- ▶ Make sure that no persons or obstacles are in the close vicinity of your vehicle.

Activating RACE START Requirements:

- the driver's door is closed.
- the engine is running and the transmission and engine are at normal operating temperature.
- the steering wheel is in the straight-ahead position.

- the vehicle is on level ground.
 - the vehicle is stationary, the brake pedal is depressed (left foot) and the parking brake is released.
 - one of the drive programs **[S]** or **[S⁺]** is selected (→ page 11).
- ▶ Rapidly depress the accelerator pedal fully. The engine speed increases.
- ⓘ If the activation conditions are not fulfilled, RACE START cannot be activated. The **RACE START Not Possible See Operator's Manual** message appears in the multifunction display.
- ▶ The **RACE START Release brake to start** message appears in the multifunction display.
- ⓘ If the brake pedal is not released after a short while, RACE START is canceled. The **RACE START Canceled** message appears in the multifunction display.

- ▶ Take your foot off the brake, but keep the accelerator pedal depressed. The vehicle pulls away at maximum acceleration. The **RACE START Active** message appears in the multifunction display.

RACE START is deactivated immediately if you release the accelerator pedal during RACE START or if any of the activation conditions are no longer fulfilled. The **RACE START Canceled** message appears in the multifunction display.

- ⓘ After using it several times in short succession, RACE START is unavailable until a certain distance has been driven.

DRIFT MODE

Functions of DRIFT MODE
DRIFT MODE is available only for the Mercedes-AMG GLA 45 S4 MATIC model or for vehicles with AMG DYNAMIC PLUS package.

DRIFT MODE enables intentional unstable movement (drifting) and oversteering of the vehicle.

All activation conditions must be fulfilled for this (ESP[®] deactivated, for example).

- ⓘ Only a highly qualified and experienced driver should drive in DRIFT MODE. Be sure to read the safety notes and information on ESP[®] (→ page 13).

⚠ WARNING Risk of skidding and having an accident from wheels spinning

When you use DRIFT MODE, ESP[®] is not available.

There is an increased risk of skidding and having an accident.

- ▶ Do not use DRIFT MODE on normal roads.
- ▶ DRIFT MODE may only be activated and used on closed race circuits, not on public roads.
- ▶ Make sure that no persons or obstacles are in the close vicinity of your vehicle.

From a speed of approximately 75 mph (120 km/h) up to 100 mph (160 km/h) DRIFT

MODE is continuously deactivated. From a speed of 100 mph (160 km/h) DRIFT MODE is fully deactivated, but ESP® remains switched off. Below a speed of 100 mph (160 km/h) up to approximately 75 mph (120 km/h) DRIFT MODE is continuously activated.

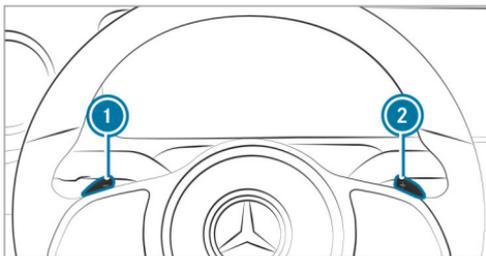
- ❗ DRIFT MODE is only available after the vehicle has been broken in (→ page 10).

Activating and deactivating DRIFT MODE Requirements:

- ESP® is deactivated (→ page 16).
- drive program  (RACE) is selected .
- the doors, the hood and the tailgate are closed.
- the engine is running and the transmission and engine are at normal operating temperature.
- the transmission is in manual mode – manual shifting is activated (→ page 12).

Activating DRIFT MODE

You can activate DRIFT MODE at a speed of up to 60 mph (99 km/h).



- ▶ Pull steering wheel gearshift paddles ❶ and ❷ and hold for half a second. If all activation conditions are fulfilled, the multifunction display shows the **DRIFT MODE Confirm: Paddle UP Cancel: Paddle DOWN** message and the **DRIFT** warning lamp flashes.
- ▶ **To cancel:** pull the steering wheel gearshift paddle ❶. The multifunction display shows the **DRIFT MODE Canceled** message and the **DRIFT** warning lamp goes out.

- ▶ **To confirm:** pull the steering wheel gearshift paddle ❷. The multifunction display shows the **DRIFT MODE Active** message and the **DRIFT** warning lamp lights up.

Deactivating DRIFT MODE

- ▶ Pull steering wheel gearshift paddles ❶ and ❷ and hold for half a second. The **DRIFT MODE Active** message and the **DRIFT** warning lamp go out.

DRIFT MODE is automatically deactivated in the following situations:

- ESP® is activated.
- manual shifting is deactivated – the gearbox is in position **D**.
- the drive program  (RACE) is switched off.
- the vehicle is switched off.

- ❗ After drifting and before continuing the journey, check the wheels and tires for damage. In particular, check the tire tread depth and tire contact surface over the entire width of the tires (see the vehicle Operator's Manual).

AMG adaptive sport suspension system

Function of AMG adaptive sport suspension system

AMG adaptive sport suspension system is an electronically controlled damping system for improved driving comfort and increased driving safety.

The damping is adjusted individually to each wheel and depends on the following factors:

- driving style, e.g. sporty
- road condition, e.g. bumps
- the drive program selected
- the individual selection of the "Sport", "Sport Plus" or "Comfort" suspension setting

The suspension setting is dependent on the drive program selected via the DYNAMIC SELECT switch.

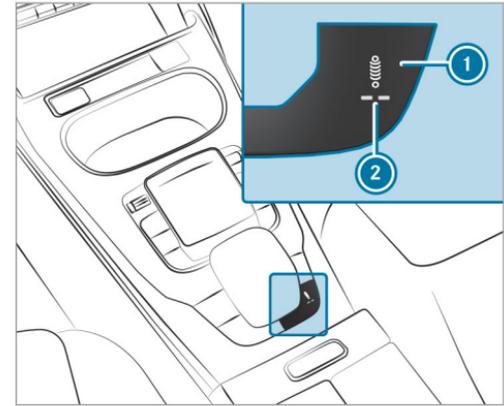
In addition, you can select the mode in every drive program individually via the AMG adaptive sport suspension system button in the center console. After a drive program is changed, the automatic suspension setting of the drive program is reactivated.

AMG adaptive sport suspension system, selecting the suspension setting

In "Comfort" mode, the driving characteristics of your vehicle are comfortable. Select this suspension setting if you prefer a comfortable driving style.

"Sport" driving mode ensures a firmer suspension setting. Select this suspension setting when employing a sporty driving style, e.g. on winding country roads.

"Sport Plus" driving mode ensures a very firm suspension setting.



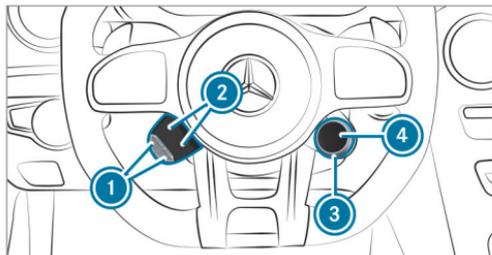
- ▶ Press button ❶ repeatedly until the selected setting is displayed.

Depending on the number of indicator lamps ❷ lighting up, the following suspension setting is selected:

- 0 – "Comfort" suspension setting
- 1 – "Sport" suspension setting
- 2 – "Sport Plus" suspension setting

The currently selected suspension setting is shown as a display message in the media display.

Function of the AMG steering-wheel buttons



The AMG steering-wheel buttons are two additional control elements on the steering wheel.

You can assign two vehicle functions of your choice to the left control element. You can change between the available functions by pressing display buttons ② repeatedly. The currently selected functions are displayed in display buttons ②.

The following functions are available:

- ESP® (→ page 13)
- AMG adaptive sport suspension system (→ page 19)
- ECO start/stop function (→ page 11)
- Manual gearshifting (→ page 12)
- AMG Dynamics (→ page 11)

If you have assigned a function to one of display buttons ②, you can operate this function with corresponding button ①.

The assignment of display button ② remains stored even after a new engine start, but the operating status of the respective function is reset to the basic setting.

You can change between the drive programs with stabilizer bar actuator ③. The selected drive program appears in display button ④. By pressing display button ④, you can directly access the drive program **Individual**.

Notes on the Instrument Display and on-board computer

Additional notes regarding your Mercedes-AMG vehicle:

- If you activate manual gearshifting, (→ page 12) the upshift bar will appear on the multifunction or Head-up Display. In addition, transmission set-up **M** (manual) and the current gear will appear on the transmission position display of the multifunction display.
- Additional note regarding the indicator and warning lamps: the vehicle is also equipped with the ESP® , ESP® OFF  and ESP® SPORT  indicator and warning lamps (→ page 36).

You can select the following display content:

- Tachometer with gear display
- Date and time
- Warm-up
- AMG TRACK PACE
- G-meter

- Engine data
- SETUP
- Trip computer
- Navigation
- Media
- Telephone

AMG TRACK PACE is displayed on the left-hand section of the display. The warm-up, engine data, SETUP and G-meter menus are displayed on the right-hand section of the display.

Calling up displays on the Performance menu

On-board computer:

↳ **Performance**

▶ **To select a display:** swipe upwards or downwards on the left-hand Touch Control.

Displays on the **Performance** menu:

- Warm-up
- Engine data

- SETUP
- G-meter



Warm-up (example)

- ① Digital speedometer
- ② Engine oil temperature
- ③ Transmission oil temperature
- ④ Boost pressure

22 Instrument Display and on-board computer

If the engine or transmission is not at normal operating temperature, the multifunction display will show temperature ② or ③ in blue. Avoid using the full engine power output during this time.



Engine data (example)

- ① Current power output
- ② Current torque

When the current power output ① or the current torque ② reaches the maximum value, the digital value will briefly be stationary. The bar display will continue.



SETUP in Mercedes-AMG vehicles (example)

- ① Drive system setting:
Reduced/Moderate/Sport/Dynamic
- ② Transmission position:
D/M
- ③ AMG DYNAMICS:
Basic/Advanced
- ④ Suspension tuning:
Comfort/Sport/Sport+



G-meter (example)

While the vehicle is in motion, the G-meter shows the forces that are exerted on the vehicle occupants both laterally and in the direction of travel. The maximum values are represented by red markings.

- ▶ **To reset the G-meter:** press the left-hand Touch Control.
- ▶ Select **Yes**.
- ▶ Press the left-hand Touch Control.

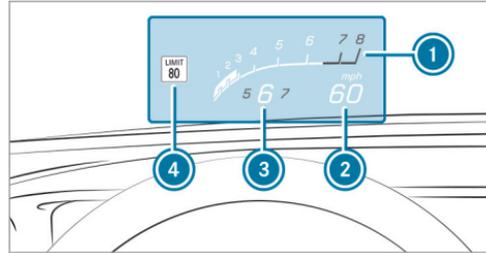
Function of the Head-up Display

The Head-up Display projects the following information above the cockpit into the driver's field of vision:

- Driving speed
- Information from the navigation system
- Information from the driving systems and driving safety systems
- Some warning messages

Depending on the vehicle's equipment, different content can be shown in the three areas of the Head-up Display.

Mercedes-AMG display content



- 1 Current engine speed
- 2 Current speed
- 3 Currently selected gear, gearshift options with manual shifting
- 4 Detected instructions and traffic signs

Depending on the vehicle's equipment, you can select further AMG displays in addition to the standard displays on the [Display Content](#) menu.

In vehicles with AMG TRACK PACE, you can display additional content:

- Speed and gear display

- Lap and sector times
- Acceleration and braking
- Track layout graphics

i The content that can be displayed will vary depending on the settings.

When you receive a call, the  **Incoming Call** message will appear on the Head-up Display.

In audio mode, the station name or track will be shown temporarily when the audio source is being actively operated.

System limits

The visibility of the displays will be affected by the following conditions:

- Seat position
- Image position setting
- Ambient light
- Wet road
- Objects on the display cover
- Polarization in sunglasses

24 Instrument Display and on-board computer

- ① In extreme sunlight, sections of the display may appear washed out. You can correct this by deactivating and reactivating the Head-up Display.

AMG TRACK PACE

General information

With AMG TRACK PACE, the driving characteristics on race tracks can be analyzed and optimized. You can drive previously stored race tracks (e.g. Hockenheimring), or new tracks can be recorded and stored. The driven lap times are stored for every track. These can be analyzed and compared to other lap times to achieve the best possible race results. Additionally, acceleration and braking procedures can be measured and stored.

Please note: Use AMG TRACK PACE only on closed-off routes outside the public traffic area. Adapt your driving style to your personal abilities and the environmental conditions. As the driver, you are solely responsible for driving your vehicle. Park your vehicle safely before operating the application.

Setting Track Race

Multimedia system:

↳ TRACK PACE ▶▶ Track Race

Recording a new track

- ▶ Select  **New Track** .
- ▶ Select  **Start Record**. at the desired starting point.
The track recording starts at this point.

During track recording, sectors can be set to divide up the track.

- ▶ Select  **Set Sector**.
 - ▶ Select  **Stop Recording** to end track recording or cross the starting line again.
 - ▶ Confirm the prompt with .
 - ▶ Select the weather.
- ⓘ The temperature is determined automatically.
- ▶ After ending, select  to save the track.
 - ▶ Enter a name.

- ▶ Press  to confirm.
The track is saved under the name entered.

Searching by track name

- ▶ Select  **All Tracks** .
- ▶ Enter the track name.
Tracks with the searched name are displayed.

Measuring time on a saved track

- ▶ Select  **All Tracks** .
- ▶ Select the desired track.
- ▶ Select .
- ▶ Select **Start Race** if you are already stood at the starting line.

or

- ▶ Select **Navigate to** for navigation to the starting line.

Timekeeping begins automatically when the starting line has been crossed.

- ⓘ When  is selected, the track display can be switched to AR.
- ▶ Select  **Stop Race** to end timekeeping.

- ▶ Confirm the prompt with .
- ▶ Select the weather.
- ▶ Select  **Save Track** to save the times driven for this track.

Showing displays during Track Race

The following displays can be shown:

- Tire temperature
- Mini map
- Sector overview
- Engine data
- G-force display
- Lap overview
- ▶ Select  **Start Race**.

- ▶ Select  **Setup**.
- ▶ Pull the desired display from the grid on the left or right edge of the media display. The displays are shown during the Track Race.

By selecting  on the active display, you can deactivate this.

- ▶ Select  to return to the navigation map view.

Displaying the analysis

- ▶ Select  **All Tracks**.
An overview of all the driven tracks appears.
- ▶ Select a track.
- ▶ Select a session.

The following data is displayed:

- Lap and sector times
- Average and maximum permissible speed
- Driver

- Vehicle
 - Date
 - Weather
 - ▶ Select **Compare to Rec.** to use a different session as a reference value.
 - ▶ Select  to return to the overview.
 - ▶ Select  **Diagram**.
 - ▶ Set parameters  and .
- The analysis is displayed.



- ① Lap overview
- ② Parameter 1
- ③ Parameter 2
- ④ Trajectory of parameter 1 (e.g. time)
- ⑤ Trajectory of parameter 2 (e.g. speed)
- ① The following values can be set for parameters 1 and 2, for example:
 - Speed

- Longitudinal/lateral acceleration
- Steering angle
- Engine speed
- Engine oil/tire temperature

Based on the analysis you can check and optimize driving characteristics for any position on the track.

Exporting tracks (USB)

- ▶ Select Tracks. An overview of all stored tracks appears.
- ▶ Select the desired track.
- ▶ Select options for the desired track.
- ▶ Select **Export**. The selected track can be exported to a USB storage device connected to the vehicle.

Editing tracks and recordings

- ▶ Select  **Tracks**.
- ▶ Select the desired track.
- ▶ Select options  for the desired track.
- ▶ Select **Rename** or **Delete**.

or

- ▶ Select a track.
- ▶ Highlight the desired recording.
- ▶ Select  options.
- ▶ Select **Export to...** or **Delete**.

Setting Drag Race

Multimedia system:

↳ TRACK PACE ▶ Drag Race

Measuring acceleration

- ▶ Select  **Drag Options**.
- ▶ Select **Acceleration**.
- ▶ Set a starting speed or select **Automatic**. Measurement begins as soon as the specified starting speed has been reached.

- ▶ Set a target speed. Measurement stops as soon as the specified target speed has been reached.
- ▶ Pull away and start the measurement. Measurement begins when the vehicle accelerates.

Measurement can be stopped early by stopping the vehicle.

Quarter-mile race

- ▶ Select  **Drag Options**.
- ▶ Select **Quarter Mile**.
- ▶ Set a target distance. Measurement stops as soon as the specified target distance has been reached.
- ▶ Pull away and start the measurement. Measurement begins when the vehicle accelerates. Timing runs until the target distance or a maximum of one mile has been traveled.

Measurement can be stopped early by stopping the vehicle.

Measuring braking

- ▶  **Drag Options**
- ▶ Select **Braking**.
- ▶ Set a starting speed or select **Automatic**.
- ▶ Pull away and start the measurement.
- ▶ Brake to a standstill. Measurement is incremental, in steps of 5 mph (10 km/h) to a standstill. If the braking procedure is started e.g. at a speed of 58 mph (157 km/h), measurement starts as soon as 55 mph (150 km/h) has been reached.

Storing and calling up measurement values

If measurement is completed or canceled, a prompt appears asking whether the measurement should be saved.

- ▶ Confirm the prompt with to save.

Calling up saved measurements

- ▶ Select  **History**.
- ▶ Select **Acceleration**, **Quarter Mile** or **Braking**.

- ▶ Select a measurement.
The desired measurement is displayed in detail.

or

- ▶ Delete a measurement.

Calling up the telemetry display

Multimedia system:

↳ TRACK PACE ▶ Telemetry

The telemetry display shows current vehicle data as a digital value and as a diagram. Up to three parameters can be selected that are to be shown in the display.

For example:

- Engine speed
 - Wheel angle
 - Speed
 - Steering angle
- ▶ Set the desired parameters.

- ▶ Set the time.
The set parameters are evaluated in the diagram for the time set.

Configuring AMG TRACK PACE

Requirements:

To connect a mobile device to the TRACK PACE app:

- The TRACK PACE app is installed on the mobile end device.
- The mobile end device is connected to the multimedia system via Wi-Fi.

Multimedia system:

↳ TRACK PACE ▶ Options

Connecting a mobile device via the TRACK PACE app

The TRACK PACE app makes it possible to record videos and to synchronize them with stored tracks.

- ▶ Select **TRACK PACE App**.

- ▶ Select **AUTHORIZE NEW DEVICE**.
Available devices are displayed.
- ▶ Start the TRACK PACE app on the device to be connected and follow the instructions.
- ▶ Confirm the authorization prompt.
- ▶ Scan the QR code on the media display.
The device is authorized.

De-authorizing the mobile device

- ▶ Select **TRACK PACE App**.
- ▶ Select **De-authorize device**.
- ▶ Select a device.
- ▶ Confirm the message prompt with Yes.
The device is de-authorized.

Setting the TRACK PACE display in the Head-up Display

- ▶ Select **HUD Content**.
 - ▶ Activate or deactivate the desired contents.
The contents in the Head-up Display are adapted.
- ① For further information on the Head-up Display, see (→ page 23).

Setting acoustic feedback

▶ Activate or deactivate the function.

- ▶ Select [Acoustic feedback](#).
A scale with values from 0 to 85 is shown.
- ▶ Select a setting.

Displaying statistics

- ▶ Select [Statistics](#).
Statistics on the current user profile are displayed.

The following data is displayed:

- Driving time
- Track driven
- Tracks recorded
- Track Races recorded
- Laps recorded
- Drag Races recorded
- Maximum design speed

Activating the ambient light

If this function is active, the vehicle interior is lit red or green depending on Delta Time.

- ▶ Select [Ambient light](#).

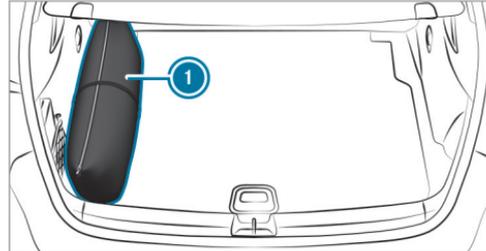
Overview of the tire-change tool kit

Apart from some country-specific variants, vehicles are not equipped with a tire-change tool kit. For more information on which tire-changing tools are required and approved for performing a wheel change on your vehicle, consult a qualified specialist workshop.

You require the following tools, for example, to change a wheel:

- Jack
- Chock
- Lug wrench
- Alignment bolt

The tire-change tool kit is located in tool bag ① in the cargo compartment.



The tool bag contains:

- Jack
- Lug wrench
- Alignment bolt
- Folding chock
- Ratchet for jack

Operating fluids

Quality and capacity of engine oil

Model	MB-Freigabe or MB-Approval
Mercedes-AMG GLB 35 4MATIC	229.51, 229.52, 229.61, 229.71*

* Recommended for lowest possible fuel consumption (lowest SAE viscosity class in each case; observe possible restrictions of the approved SAE viscosity classes).

To achieve the lowest possible fuel consumption, it is recommended to use the engine oil specifications marked in the table for the lowest SAE viscosity class. Possible restrictions of the approved SAE viscosity classes must be observed.

The following values refer to an oil change, including the oil filter.

Missing values were not yet available at the time of going to press.

Model	Capacity
Mercedes-AMG GLB 35 4MATIC	

Coolant capacity

Model	Capacity
Mercedes-AMG GLB 35 4MATIC	8.7 US qt (8.2 liters)

Filling capacity for refrigerant and PAG oil

Model	Refrigerant
Mercedes-AMG GLB 35 4MATIC	24.3 ± 0.4 oz (690 ± 10 g)

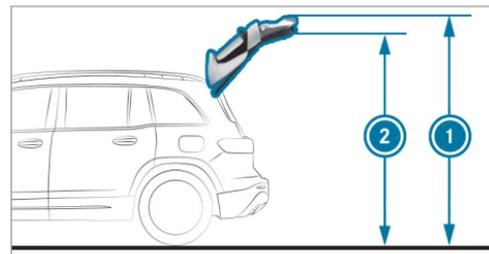
Model	PAG oil
Mercedes-AMG GLB 35 4MATIC	2.8 ± 0.4 oz (80 ± 10 g)

Vehicle data

Vehicle dimensions

The heights specified may vary as a result of the following factors:

- tires
- load
- condition of the suspension
- optional equipment



Height when opened and headroom

Model	① Height when opened	② Headroom
Mercedes-AMG GLB 35 4MATIC	80.4 in (2042 mm)	74.4 in (1889 mm)

Missing values were not yet available at the time of going to press.

Vehicle dimensions

Mercedes-AMG GLB 35 4MATIC	
Vehicle length	183.1 in (4650 mm)
Vehicle width including outside mirrors	79.5 in (2020 mm)
Vehicle height	65.4 in (1662 mm)
Wheelbase	111.4 (2829 mm)
Turning radius	

Weights and loads

Please observe the following notes for the specified vehicle data:

- Items of optional equipment increase the curb weight and reduce the payload.

Missing values were not yet available at the time of going to press.

Model	Maximum roof load
Mercedes-AMG GLB 35 4MATIC	

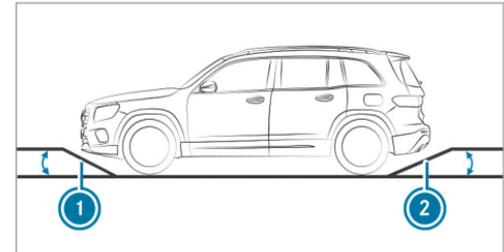
Off-road driving

Angle of approach/departure

The specified values are maximum values for vehicles that are ready to drive.

On vehicles with AIR BODY CONTROL, loads up to the maximum permissible load have no influence on the approach/departure angle.

Observe the notes on driving in mountainous terrain in the vehicle Operator's Manual.



Model	① Front	② Rear
Mercedes-AMG GLB 35 4MATIC	17°	20°

Maximum gradient climbing ability

The vehicle's gradient climbing ability depends on the weight distribution in the vehicle, the terrain conditions and the road surface conditions.

The specified value applies in the following cases:

- the vehicle is ready to drive
- the road surface conditions and thus traction are good

34 Technical data

A gradient climbing ability of 100% corresponds to an incline of 45°.

Observe the notes on driving in mountainous terrain in the vehicle Operator's Manual.

Missing values were not yet available at the time of going to press.

Model	Maximum gradient climbing ability
Mercedes-AMG GLB 35 4MATIC	

Display messages
Driving systems

Display messages	Possible causes/consequences and ► Solutions
RACE START Not Possible See Operator's Manual	* Possible causes are: <ul style="list-style-type: none"> • The conditions for activation are not met (→ page 16).
RACE START Canceled	* Possible causes are: <ul style="list-style-type: none"> • you released the accelerator pedal during RACE START. • you depressed the brake pedal during RACE START. You can try RACE START again at the next start.
DRIFT MODE Currently Unavailable See Operator's Manual	* Possible causes: <ul style="list-style-type: none"> • The activation conditions have not been fulfilled (→ page 18).
 <p data-bbox="195 754 454 800">Malfunction Drive at Max. 50 mph</p>	* The AMG adaptive sport suspension system is malfunctioning. The vehicle's handling characteristics may be affected. <ul style="list-style-type: none"> ► Do not drive at speeds greater than 50 mph (80 km/h). ► Consult a qualified specialist workshop.

Warning and indicator lamps

Driving systems

Warning/indicator lamp	Possible causes/consequences and ► Solutions
 <p data-bbox="144 422 408 474">Suspension warning lamp (yellow)</p>	<p data-bbox="452 329 1155 355">The yellow AMG adaptive sport suspension system warning lamp is lit.</p> <p data-bbox="452 363 1171 389">* There is a malfunction in the AMG adaptive sport suspension system.</p> <ul style="list-style-type: none"> <li data-bbox="476 397 996 423">► Note the messages on the multifunction display.

Driving safety systems

Warning/indicator lamp	Possible causes/consequences and ► Solutions
	<p data-bbox="452 615 1160 641">The yellow ESP® OFF warning lamps are lit while the engine is running.</p> <p data-bbox="452 649 685 675">*ESP® is deactivated.</p> <p data-bbox="452 683 1217 709">Other driving systems and driving safety systems may also be inoperative.</p> <div data-bbox="482 733 1646 778" style="background-color: #f0f0f0; padding: 5px;"> <p data-bbox="489 740 1177 766">▲ WARNING Risk of skidding when driving with ESP® deactivated</p> </div> <p data-bbox="489 785 1546 811">ESP® does not act to stabilize the vehicle. The availability of further driving safety systems is also limited.</p> <ul style="list-style-type: none"> <li data-bbox="489 819 713 845">► Drive on carefully.

Warning/indicator lamp	Possible causes/consequences and ► Solutions
	<ul style="list-style-type: none"> ► Deactivate ESP® only for as long as the situation requires. If ESP® cannot be activated, ESP® is malfunctioning. ► Have ESP® checked immediately at a qualified specialist workshop. <p>► Observe the notes on deactivating ESP® (→ page 13).</p>
	<p>ESP® SPORT is activated while the engine is running.</p> <p>*When ESP® SPORT is activated, ESP® will stabilize the vehicle only to a limited extent.</p> <p>▲ WARNING Risk of skidding if ESP® SPORT is used incorrectly</p> <p>When you activate ESP® SPORT, there is an increased risk of skidding and having an accident.</p> <ul style="list-style-type: none"> ► Activate ESP® SPORT only in the circumstances described below. <p>► Observe the notes on activating ESP® SPORT (→ page 13).</p>
 <p>DRIFT MODE warning lamp</p>	<p>DRIFT MODE is activated while the engine is running.</p> <p>* ▲ WARNING Risk of skidding and having an accident from wheels spinning</p> <p>When you use DRIFT MODE, ESP® is not available.</p> <p>There is an increased risk of skidding and having an accident.</p>

38 Display messages and warning/indicator lamps

Warning/indicator lamp	Possible causes/consequences and ► Solutions
	<ul style="list-style-type: none">▶ Do not use DRIFT MODE on normal roads.▶ DRIFT MODE may only be activated and used on closed race circuits, not on public roads.▶ Make sure that no persons or obstacles are in the close vicinity of your vehicle. <p>► Observe the notes on activating DRIFT MODE (→ page 17).</p>

A**Acceleration**

see Kickdown

AMG

- Menu (on-board computer) 21
- Steering wheel control element 20
- Steering-wheel buttons 20

AMG adaptive sport suspension system

- Selecting the suspension setting 19

AMG adaptive sport suspension system +

- Suspension 19

AMG Performance steering wheel 20**AMG TRACK PACE**

- Configuring 29
- Drag Race 28
- General information 25
- Telemetry display 29
- Track Race 25

Authorized Mercedes-Benz Center

see Qualified specialist workshop

Authorized workshop

see Qualified specialist workshop

Automatic engine start (ECO start/stop function) 11**Automatic engine stop (ECO start/stop function)** 11**Automatic transmission**

- Drive programs 11
- DYNAMIC SELECT switch 11
- Kickdown 13
- Manual gearshifting 12
- Oil temperature (on-board computer, Performance menu) 21
- Steering wheel paddle shifters 12

B**Boost pressure (on-board computer, Performance menu)** 21**Brakes**

- New/replaced brakepads/brake discs 10
- Notes on breaking-in a new vehicle 10

C**Changing gears** 12

Manually 12

Chock 31

Storage location 31

Chock

see Chock

Climate control

- Filling capacity for PAG oil 32
- Refrigerant filling capacity 32

Cockpit 4

Overview 4

Coolant (engine)

Capacity 32

D**Dashboard**

see Cockpit

Dealership

see Qualified specialist workshop

Display messages

 Malfunction Drive at Max. 50 mph	35
DRIFT MODE Currently Unavailable	
See Operator's Manual	35
RACE START Canceled	35
RACE START Not Possible See Operator's Manual	35
Drag Race	
Setting	28
DRIFT MODE	
Activating	18
Activation conditions	18
Deactivating	18
Function	17
Drive programs	
see DYNAMIC SELECT	
Driving safety system	
ESP® (Electronic Stability Program)	13
Driving system	
AMG adaptive sport suspension system +	19

Driving tips

Notes on breaking-in a new vehicle	10
DYNAMIC SELECT	11
Drive programs	11
Function	11

E

ECO start/stop function	11
Automatic engine start	11
Automatic engine stop	11
Method of operation	11

Emotion Start

Starting the vehicle	10
----------------------------	----

Engine

ECO start/stop function	11
-------------------------------	----

Engine oil

Capacity	32
MB-Freigabe or MB-Approval	32
Quality	32
Temperature (on-board computer, Performance menu)	21

ESP® (Electronic Stability Program)

Activating/deactivating	16
-------------------------------	----

ESP® SPORT	13
Function/notes	13
Status display (on-board computer, Performance menu)	21

ESP® SPORT

Function/notes	13
----------------------	----

G

G-meter (on-board computer, Performance menu)	21
--	----

Gear display (on-board computer, Performance menu)	21
---	----

Gearshift recommendation	12
---------------------------------------	----

Glide mode	13
-------------------------	----

H**Head-up Display**

Function	23
----------------	----

I**Instrument display**

AMG displays	21
--------------------	----

- J**
- Jack**
Storage location 31
- K**
- Kickdown** 13
Using 13
- L**
- Limited Warranty**
Vehicle 9
- M**
- Menu (on-board computer)**
AMG displays 21
Performance 21
- N**
- Notes on breaking-in a new vehicle** 10
- O**
- On-board computer**
AMG menu 21
- Performance menu 21
- Operating safety**
Information 7
- Operator's Manual**
Vehicle equipment 7
- P**
- Performance (on-board computer, Performance menu)** 21
- Power output (on-board computer, Performance menu)** 21
- Q**
- Qualified specialist workshop** 8
- R**
- RACE START**
Activating 16
Activation conditions 16
Function 16
- Roof load** 33
- S**
- Selecting a gear**
see Changing gears
- Service center**
see Qualified specialist workshop
- SETUP (on-board computer, Performance menu)** 21
- Shift paddles**
see Steering wheel paddle shifters
- Shifting gears**
Gearshift recommendation 12
- Specialist workshop** 8
- Start/Stop button**
Emotion Start 10
- Start/stop function**
see ECO start/stop function
- Steering wheel paddle shifters** 12
- Suspension**
AMG adaptive sport suspension system + 19
Selecting the suspension setting 19

T**Telemetry display**

Calling up 29

Temperature

Engine oil (on-board computer, Performance menu) 21

Transmission oil (on-board computer, Performance menu) 21

Tire-change tool kit

Overview 31

Torque (on-board computer, Performance menu)

..... 21

Track Race

Setting 25

Trunk lid

Opening dimensions 32

V**Vehicle**

Correct use 8

Equipment 7

Limited Warranty 9

Qualified specialist workshop 8

Starting (Emotion Start) 10

Vehicle data

Angle of approach/departure 33

Maximum gradient-climbing capability .. 33

Roof load 33

Turning radius 32

Vehicle height 32

Vehicle length 32

Vehicle width 32

Wheelbase 32

Vehicle dimensions

..... 32

W**Warm-up (on-board computer, Performance menu)**

..... 21

Warning/indicator lamp

 DRIFT MODE warning lamp 37

 Suspension warning lamp (yellow) 36

Warranty

..... 9

Workshop

see Qualified specialist workshop

