OWNER'S MANUAL 2026

READY TO RACE

990 RC R TRACK

ITEM NO.: 3240309EN



Dear KTM customer,

Congratulations on your decision to purchase a KTM motorcycle. You are now the owner of a state-of-the-art sports vehicle which, with proper care, will bring you pleasure for a long time to come.

We hope you enjoy your bike and have a safe journey at all times!

You can enter the serial numbers of your vehicle below to find the serial numbers more quickly if required:

Vehicle identification number (p. 16)	Stamp of the contractual partner
Engine number (p. 16)	

The owner's manual contained the latest information for this model series at the time of publication. However, minor differences due to further developments in design cannot be ruled out completely.

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1.1 Conventions

1.1.1 Icons

✓ Indicates a desired result (e.g. of a work step or a function).

✗ Indicates an undesired result (e.g. of a work step or a function).


All work marked with this symbol requires specialist knowledge and technical understanding. Ensure that this work is carried out or supervised by trained personnel from an authorized contractual partner, and that any special tools required are used.


Indicates a page reference.


Indicates information with more details.


Indicates a tip, e.g. to simplify work.

» Indicates the result from a test step.

◀ Indicates the end of an activity, including any rework.

1.1.2 Formatting

Proprietary name	Indicates a proprietary name.
Name ®	Indicates a protected name.
Brand ™	Indicates a brand available on the open market.
Underlined terms	Refer to technical details of the vehicle or indicate technical terms that are explained in the glossary.

1.1.3 Abbreviations

2–pc.	two-part
Part no.	Part number
or	respectively
approx.	circa
etc.	et cetera
poss.	possibly/possible
if necessary	if necessary
cmpl.	complete
min.	at least
no.	number
no fig.	no figure
s.	see
among others	among others/not limited to
and the like	and the like
etc.	et cetera
cf.	compare
e.g.	for example

2.1 Safety instructions

Function of the safety instruction

Safety instruction brings attention to dangers when handling the product. Hazards are classified, named, described, and supplemented with information on how to avoid them.

- If there is a safety instruction before a list of instructions, the danger exists throughout the entire activity.
- If there is a safety instruction immediately before an instruction, the next step presents a danger.

Safety instruction layout

All safety instructions are identified by a signal word and a warning symbol. The combination of signal word and warning symbol determines the degree of danger.



DANGER
Indicates an imminent danger that leads to serious injury or death.



WARNING
Indicates a potentially imminent danger that could lead to serious injury or death.



CAUTION
Indicates a potentially imminent danger that can lead to minor or slight injuries.



NOTE
Indicates a situation that can lead to damage to the product or the product environment.



NOTE
Indicates a situation that can lead to environmental damage.

2.2 Ban on tampering

No changes may be made to the noise control equipment and components.

Tampering that is prohibited

- Removing or disabling any devices or components used for noise control before the new vehicle is sold or delivered to the end customer.
- Removing or disabling any device or component used for noise control for purposes other than service, repair, or replacement during the service life of the vehicle.
- Use of the vehicle after a device or component used for noise control has been removed, disabled, or inadequately maintained.

Examples of prohibited tampering

- Removing or drilling through rear mufflers, baffle plates, manifolds, or other components that conduct exhaust gases.
- Removing or puncturing parts of the intake system.
- Replacing moving parts of the vehicle, or parts of the exhaust system or intake system, with parts other than those specified by the manufacturer.

2.3 Safe use

DANGER

Danger of accidents A rider who is not fit to ride poses a danger to themself and to others.

– Do not operate the vehicle if you are not fit to ride due to alcohol, drugs, or medication.
– Do not operate the vehicle if you are physically or mentally incapable of doing so.

DANGER

Danger of poisoning Exhaust gases are toxic and inhaling them may result in unconsciousness and death.

– Always ensure that there is sufficient ventilation when running the engine.
– Use suitable exhaust extraction when starting or running the engine in an enclosed space.

WARNING

Danger of burns Some vehicle components become hot when the vehicle is operated.

– Do not touch any parts such as the exhaust system, radiator, engine, damper, or brake system before the vehicle parts have cooled down.
– Allow the vehicle parts to cool down before performing any work on the vehicle.

The vehicle should only be used when it is in perfect technical condition, for its intended purpose, and in a safe and environmentally-friendly manner.

Have any faults that impair safety immediately remedied by an authorized contractual partner.

Adhere to the information and warning labels on the vehicle.

2.4 Protective clothing

WARNING

Risk of injury Missing or inadequate protective clothing increases the risk of injury.

– Wear appropriate protective clothing such as helmet, boots, gloves as well as pants and a jacket with protectors on all rides.
– Always wear protective clothing that is in good condition and meets the legal regulations.

2.5 Work rules

Unless specified otherwise, the ignition must be switched off during all work (models with ignition lock, models with transponder key) or the engine must be at a standstill (models without ignition lock or transponder key).

Special tools are required for some work. The tools are not part of the vehicle, but can be ordered using the number in parentheses. Example: bearing puller (15112017000)

Unless otherwise noted, normal conditions apply to all tasks and descriptions.

Ambient temperature	20 °C (68.0 °F)
Ambient air pressure	1,013 mbar (14.69 psi)
Relative air humidity	60 ±5 %

During assembly, use new parts to replace parts which cannot be reused (e.g. self-locking screws and nuts, expansion screws, seals, sealing rings, O-rings, pins, and lock washers).

A thread lock (e.g. **Loctite®**) is required for some screw connections. Observe the manufacturer's specific instructions for use.

If thread lock (e.g. **Precote®**) has already been applied to a new part, do not apply any additional thread lock.

After disassembly, clean the parts that are to be reused and check them for damage and wear. Replace damaged or worn parts.

After completing a repair or service, check the operating safety of the vehicle.

2.6 Environment

Handling the vehicle responsibly reduces the risk of conflict with other road users and the surrounding area. The future of motorcycling also depends on using motorcycles legally, being environmentally conscious and respecting the rights of others.

When disposing of used oil, other operating and auxiliary fluids, and used components, the laws and regulations of the respective country must be observed.

As motorcycles are not subject to the EU regulations governing the disposal of end-of-life vehicles, there are no legal regulations that pertain to the disposal of an end-of-life motorcycle. More information is available from the authorized contractual partner.

2.7 Owner's manual

Read this owner's manual carefully and in full before riding off for the first time. The owner's manual contains information and tips on how to operate, handle, and service your vehicle, as well as advice on optimum tuning and how to avoid injuries.

Tip

Save this owner's manual on your smartphone, for example, so that you can access it at any time.

An authorized contractual partner will be happy to assist you if you are unsure.

The owner's manual is an important component of the vehicle. If the vehicle is sold, the owner's manual must be downloaded again by the new owner.

The owner's manual can be downloaded multiple times using the QR code or the link on the delivery certificate.

The owner's manual is also available for download from your authorized contractual partner and on the KTM website.

International KTM Website: https://www.ktm.com

A printed copy can be ordered from the following address.

Website for printed copy: https://print.ktm.com

2.8 Use definition – intended use

This vehicle has been designed and built to withstand the typical stresses and strains of racing.

Note

Only use this vehicle on designated tracks away from public roads.

2.9 Improper use

The vehicle may only be used as intended.

Improper use can result in danger to people, property and the environment.

Any use of the vehicle beyond the intended and defined use constitutes misuse.

Improper use includes the use of operating and auxiliary materials that do not meet the required specifications for the respective use.

3.1 Manufacturer's warranty, implied warranty

The work prescribed in the service schedule must only be carried out by an authorized contractual partner and then confirmed in the electronic proof of service, as otherwise all warranty claims will be void. Damage or secondary damage caused by tampering with and/or conversions on the vehicle are not covered by the manufacturer's warranty.

3.2 Auxiliary material, operating material

Use operating materials and auxiliary materials in accordance with the operating instructions and specifications.

3.3 Spare parts, accessories

For safety reasons, only spare parts and accessories approved by KTM may be used. They may only be installed by an authorized contractual partner. KTM accepts no liability for other products and any resulting damage or loss.

Certain spare parts and accessory products are specified in parentheses in the descriptions. Authorized contractual partners will be happy to help.

The current **KTM PowerParts** are listed for each vehicle on the KTM website.

International KTM Website: https://www.ktm.com

3.4 Service

A prerequisite for perfect operation and prevention of premature wear is that the service, care, and tuning work is properly carried out as described in the owner's manual. An incorrect suspension setting can lead to damage and breakage of chassis components.

Use of the vehicle under difficult conditions, such as dusty environments, heavy rain, high heat or with a heavy load, can lead to increased wear of components such as the air filter, powertrain, brake systems, or suspension components. For this reason, it may be necessary to inspect or replace components before the next scheduled service interval.

The prescribed running-in times and service intervals must be observed, otherwise the long-term durability of the vehicle will be severely impaired.

The relevant mileage or time interval is whichever occurs first.

A list of services that have already been carried out on the vehicle can be found in the Service area on the international KTM website:

International KTM Website: https://www.ktm.com

Authorized contractual partners will be happy to answer any questions regarding the services performed.

A list of authorized contractual partners can be found on the KTM website.

3.5 Figures

Some of the figures in this document contain optional extras.

For clarity, some components may be shown disassembled or may not be shown at all. Disassembly is not always absolutely necessary in order to carry out the activities described. The textual information takes precedence.

3.6 Customer service

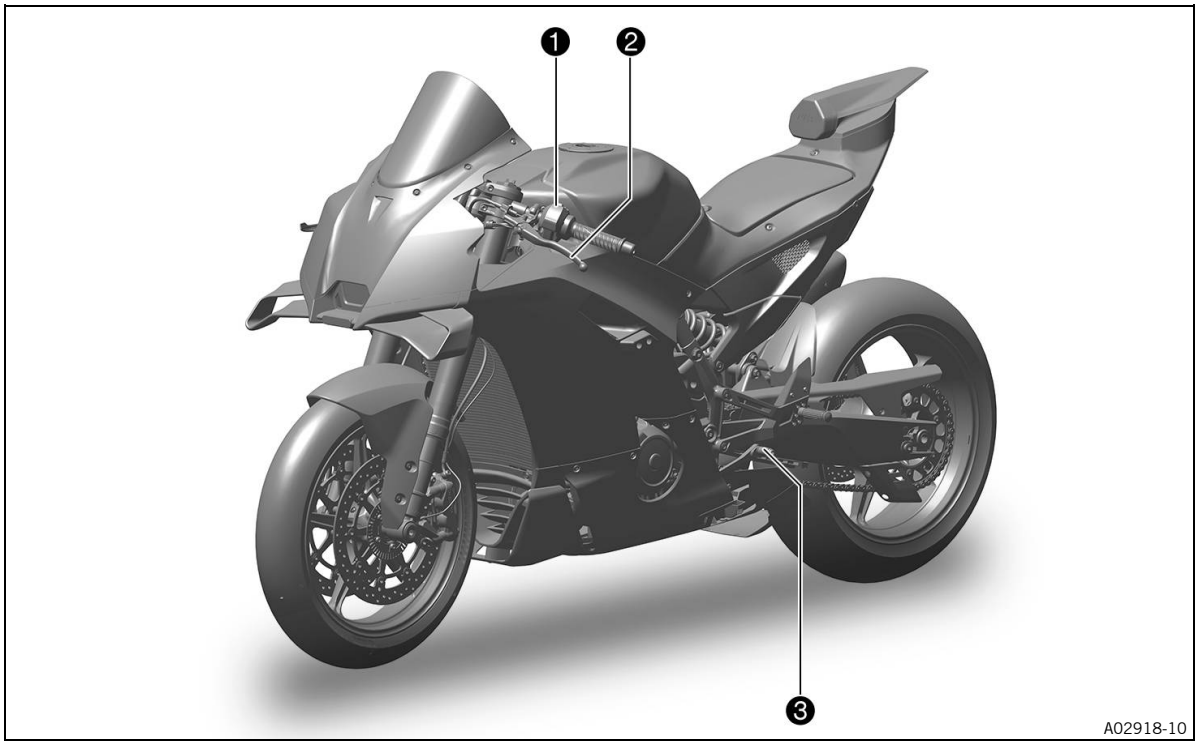
Authorized contractual partners will be happy to answer questions about the vehicle and KTM.

A list of authorized contractual partners can be found on the KTM website.

International KTM Website: https://www.ktm.com

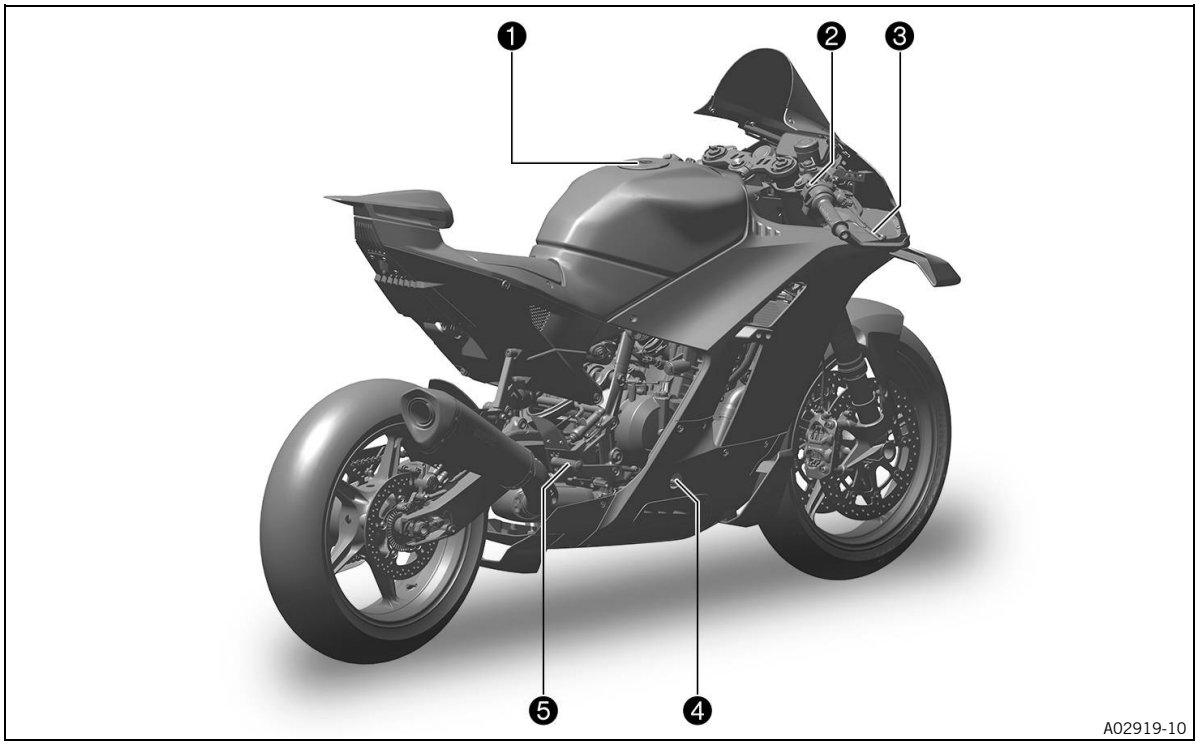
4 View of the vehicle

4.1 View of vehicle, front left (example)



1 Pit limiter (p. 19)
1 Menu buttons (p. 19)
1 Slip adjuster (p. 19)
2 Clutch lever (p. 18)
3 Gear shift lever (p. 22)

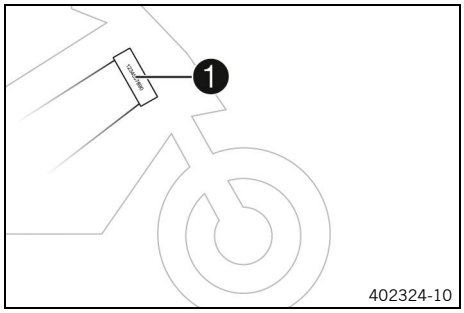
4.2 View of vehicle, rear right (example)



1. Fuel tank cap
2. Start button/kill switch (p. 20)
3. Handbrake lever (p. 18)
4. Level viewer, engine oil
5. Brake pedal (p. 22)

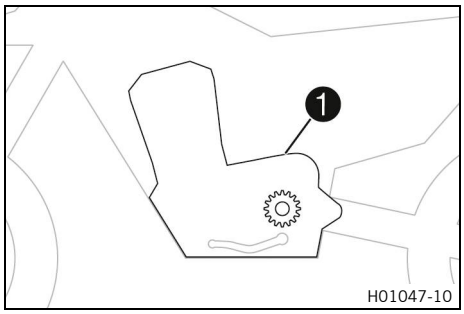
5 Serial number

5.1 Vehicle identification number



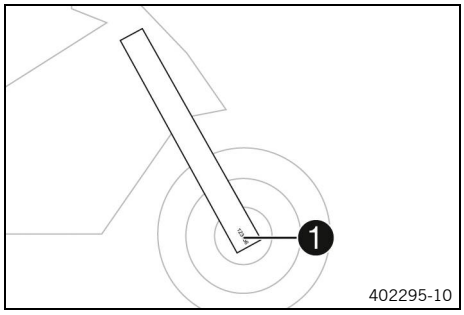
The vehicle identification number ❶ is stamped on the right side of the steering head.
The vehicle identification number is also shown on the type label.

5.2 Engine number



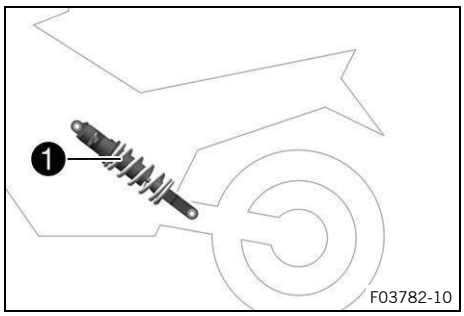
The engine number ❶ is stamped onto the engine case at the top.

5.3 Fork part number



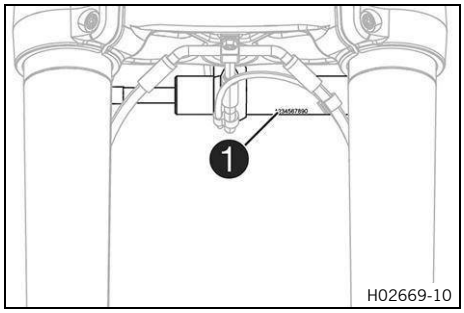
Fork part number ❶ is stamped on the inside of the fork shoe.

5.4 Shock absorber part number



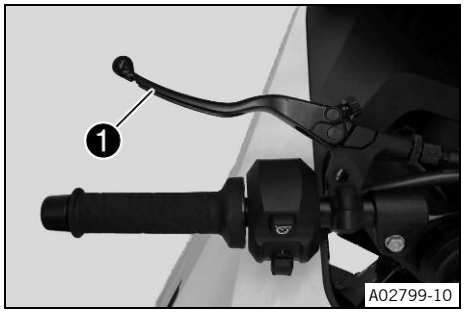
The shock absorber part number ❶ is stamped on the top of the shock absorber.

5.5 Steering damper article number



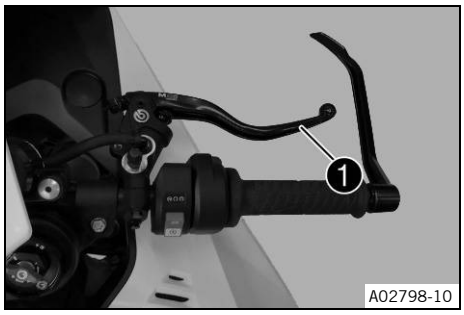
Steering damper article number ❶ is embossed on the underside of the steering damper.

6.1 Clutch lever



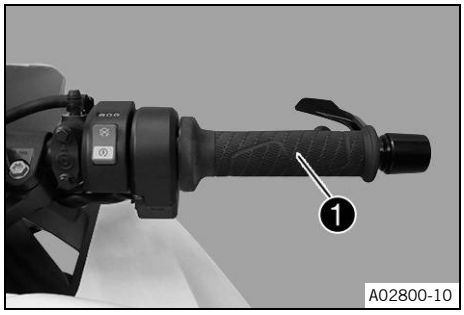
Clutch lever ❶ is fitted on the left side of the handlebar.

6.2 Handbrake lever



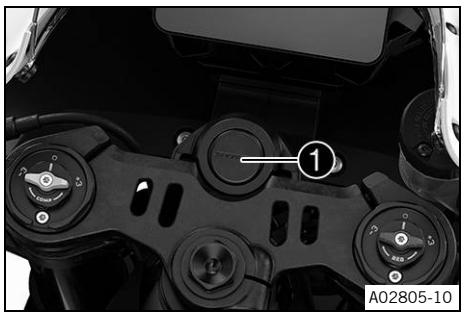
Hand brake lever ❶ is fitted on the right side of the handlebar. The front brake is engaged using the hand brake lever.

6.3 Throttle grip



The throttle twist grip ❶ is fitted on the right side of the handlebar.

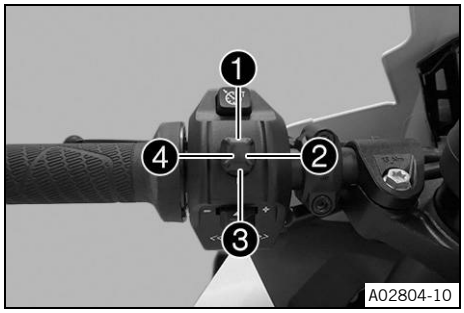
6.4 Ignition button



Ignition button ❶ is located behind the upper triple clamp.

Condition	Meaning
Ignition button has not been pressed.	The ignition is off.
Ignition button has been pressed.	In this position, the ignition circuit is closed, and the engine can be started.

6.5 Menu buttons



The menu buttons are fitted in the middle of the left combination switch.

The menu buttons are used to control the display on the combination instrument.

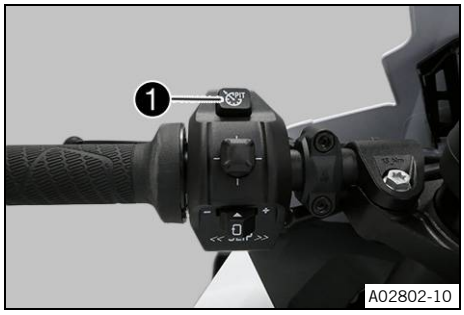
Button ❶ is the **UP** button.

Button ❷ is the **SET** button.

Button ❸ is the **DOWN** button.

Button ❹ is the **BACK** button.

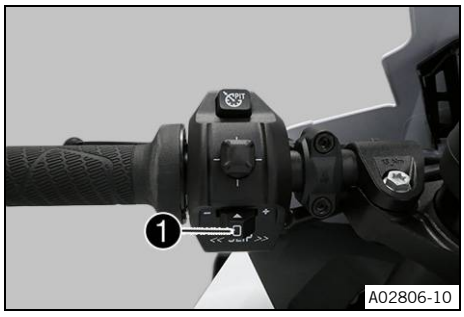
6.6 Pit limiter



The button for pit limiter ❶ is fitted on the left of the handlebar.

Condition	Meaning
The pit limiter button has not been pressed.	No function.
The pit limiter button has been pressed.	The pit limiter is switched on.

6.7 Slip adjuster

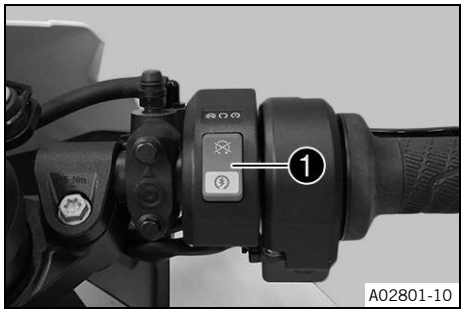


The button for slip adjuster ❶ is located on the left of the handlebar.

Note

The slip adjuster button can be used to set different slip levels.

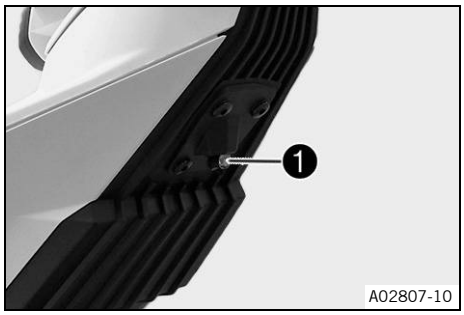
6.8 Start button/kill switch



The start button/emergency OFF switch ❶ is fitted on the right side of the combination switch.

Condition		Meaning
	Start button/kill switch off (upper position)	In this position, the ignition circuit is interrupted, a running engine stops, and cannot be started. A message appears on the display.
	Start button/kill switch on (middle position)	This position is required for operation; the ignition circuit is closed.
	Starter motor on (lower position)	In this position, the starter motor is actuated.

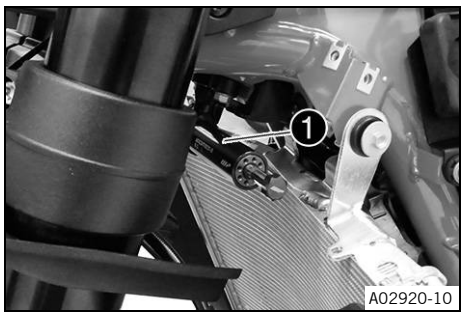
6.9 Tail light



Tail light ❶ is installed in the rear.

Note
The tail light can be switched on via the speedometer.

6.10 Steering damper



Steering damper ❶ suppresses shocks to the steering arising from acceleration on uneven ground at high speed or when the load is temporarily taken from the front wheel.

The steering damper is adjusted to suit the riding style and the road conditions. For high speeds, a setting with high damping can be chosen to make the best possible use of the steering damper function. In slow, tight bends, intensive damping can negatively affect handling and steering precision, so the damping should be set to low.

6.11 Opening the fuel tank cap

DANGER

Fire hazard Fuel is highly flammable.

The fuel in the fuel tank expands when warm and can escape if overfilled.

- Do not refuel the vehicle in the vicinity of open flames, glowing, or smoldering objects.
- Make sure that nobody smokes in the vicinity of the vehicle during the refueling process.
- Switch off the engine for refueling.
- Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.
- If any fuel is spilled, wipe it up immediately.
- Do not overfill the fuel tank.

WARNING

Danger of poisoning Fuel is harmful to health.

- Do not allow fuel to come into contact with skin, eyes, or clothing.
- Consult a doctor immediately if fuel has been ingested.
- Do not inhale fuel vapors.
- Rinse the affected area immediately with plenty of water in the event of contact with skin.
- Rinse eyes thoroughly with water and consult a doctor immediately if fuel comes into contact with eyes.
- If fuel spills on to your clothing, change the clothing.
- Store fuel properly in a suitable container and keep out of the reach of children.

NOTE

Environmental hazard Improper handling of fuel is dangerous to the environment.

- Do not allow fuel to enter the groundwater, the soil, or the sewage system.



- Press in fuel tank quick release ❶ and turn counterclockwise.
- Take off the fuel tank cover.

6.12 Closing the fuel tank cap



- Position the fuel tank lid.

The fuel tank cover must not protrude.

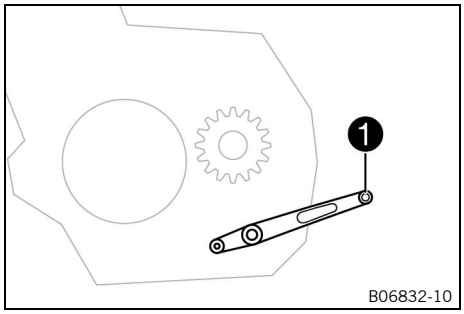
WARNING

Fire hazard Fuel is highly flammable and a health hazard.

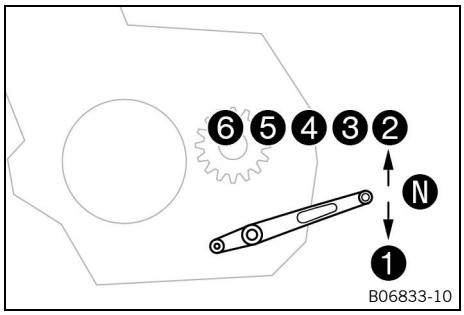
- Check that the fuel tank filler cap is locked correctly after closing.
- If fuel spills on to your clothing, change the clothing.
- Rinse the affected area immediately with plenty of water in the event of contact with skin.

– Turn fuel tank quick release ❶ clockwise.

6.13 Gear shift lever



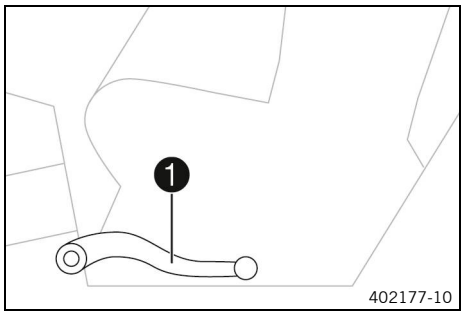
Gear shift lever ❶ is mounted on the left of the engine.



The gear positions can be seen in the figure.
The neutral or idle position is between the first and second gears.

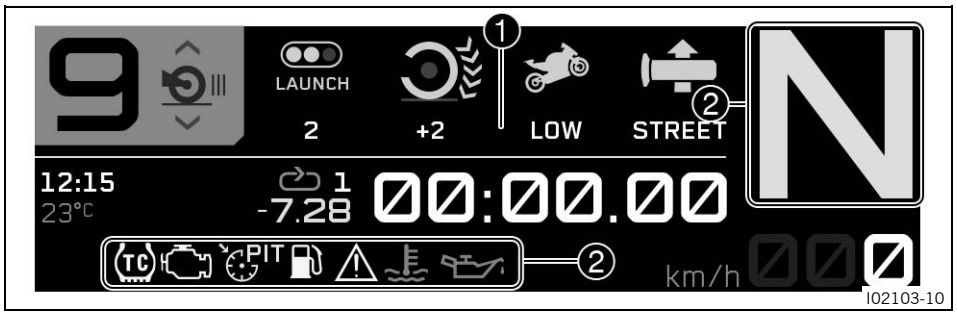
6.14 Brake pedal

The rear brake is operated with the brake pedal.



Foot brake lever ❶ is located in front of the right footrest.

7.1 dashboard



The combination instrument is divided into two function areas.

Display ❶
❷ indicator lamps (p. 24)

7.2 activation and testing

7.2.1 Activating combination instrument



The combination instrument is activated when the ignition is switched on.

7.2.2 Display test

To enable you to check that the display is functioning properly, all display segments light up briefly.

7.3 warnings



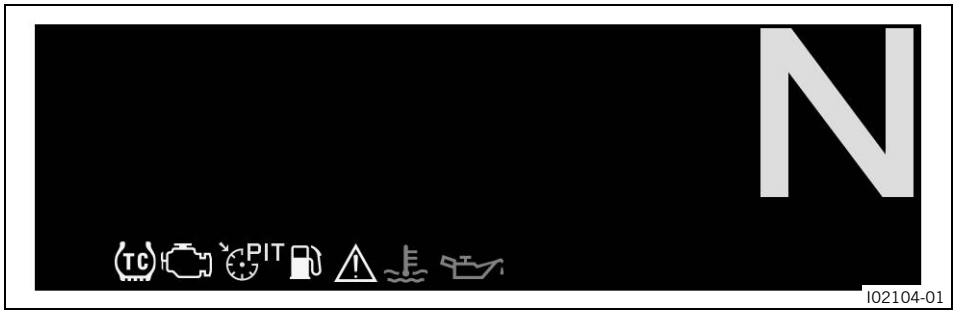
Warnings appear in the middle of the display; these are marked yellow or red depending on their relevance.
Yellow warnings indicate a malfunction or information which requires prompt intervention or an adjustment to the riding style.



Red warnings indicate a malfunction or information which requires immediate intervention.

Note
Warnings can be hidden by pressing any button.
All the existing warnings are displayed in the **Warning** submenu until they are no longer active.

7.4 indicator lamps



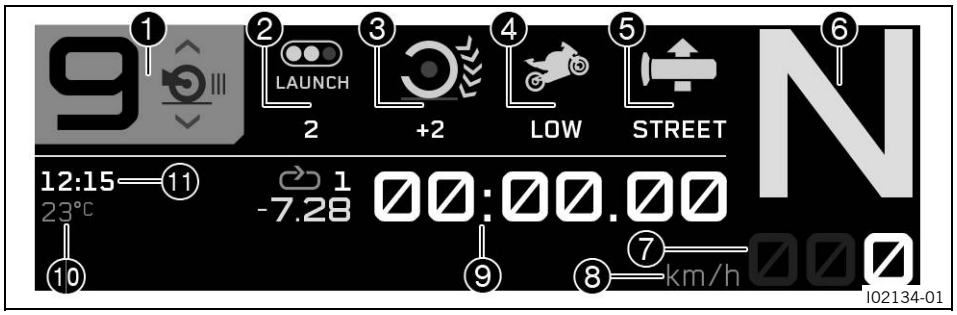
The indicator lamps offer additional information about the operating state of the motorcycle.
When the ignition is switched on, all indicator lamps light up briefly.

Note
The malfunction indicator lamp always lights up as long as the engine is not running. If the engine is running and the failure indicator light lights up, stop (taking care not to endanger yourself or other road users in the process) and contact an authorized dealer.

Condition		Meaning
	The **OBD** failure indicator light lights up yellow.	The **OBD** has detected a malfunction in the vehicle electronics. Come safely to a halt, and contact an authorized dealer.
N	The idle indicator lamp lights up green	The transmission is in the neutral position.
TC	TC indicator lamp lights up/flashes yellow	**MTC** is not active or is currently regulating. The TC indicator lamp also lights up if a malfunction is detected. Contact an authorized contractual partner. The TC indicator lamp flashes if **MTC** makes an active intervention.
	General warning light lights up yellow	A note/warning note on operating safety has been detected. This is also shown in the display.
	The fuel level warning lamp lights up yellow	The fuel level has reached the reserve mark.

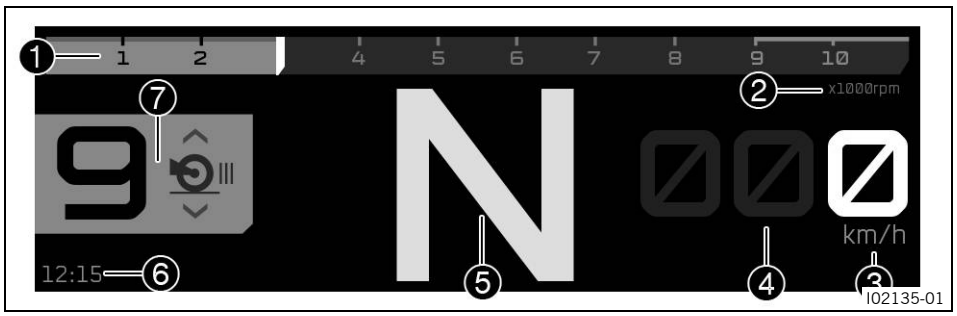
Condition		Meaning
	Coolant temperature indicator light lights up blue	The engine is cold.
	Coolant temperature indicator light lights up red	Engine is hot.
PIT	**Pit Limiter** indicator light lights up yellow.	**Pit Limiter** is activated.

7.5 Display



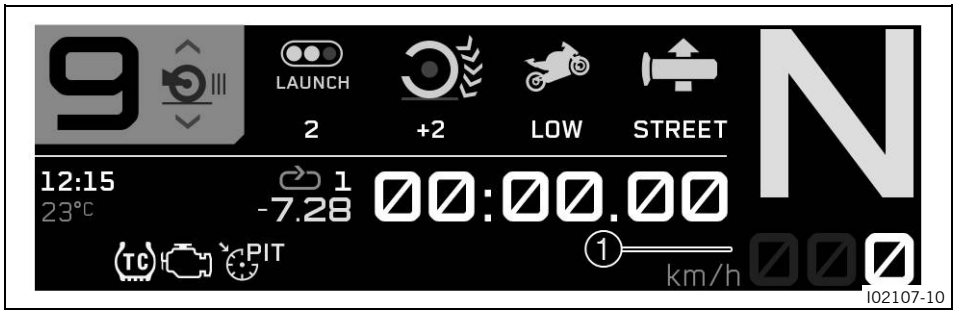
1. **Slip Adjuster** indicator (p. 27)
2. **Launch Control** indicator (p. 28)
3. Engine brake control display (p. 28)
4. **Anti Wheelie Mode** indicator (p. 28)
5. **Throttle Response** indicator (p. 29)
6. Gear display (p. 26)
7. Speed (p. 26)
8. Unit of speed
9. **Lap Timer** indicator (p. 29)
10. ambient air temperature indicator (p. 30)
11. time (p. 29)

7.6 Reduced display



1. Engine speed display
2. Unit for the engine speed display
3. Unit of speed
4. Speed (p. 26)
5. Gear display (p. 26)
6. time (p. 29)
7. **Slip Adjuster** indicator (p. 27)

7.7 Speed

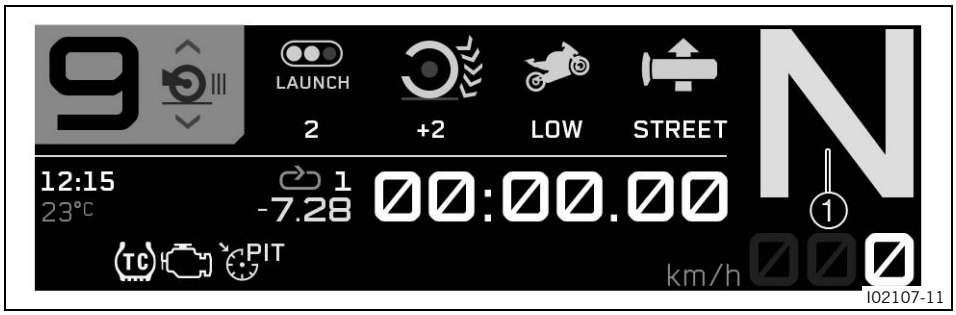


The speed is shown in area ❶ of the display.

Speed ❶ is shown in kilometers per hour **km/h** or in miles per hour **mph**.

The unit of speed can be configured in the **Distance** submenu.

7.8 Gear display

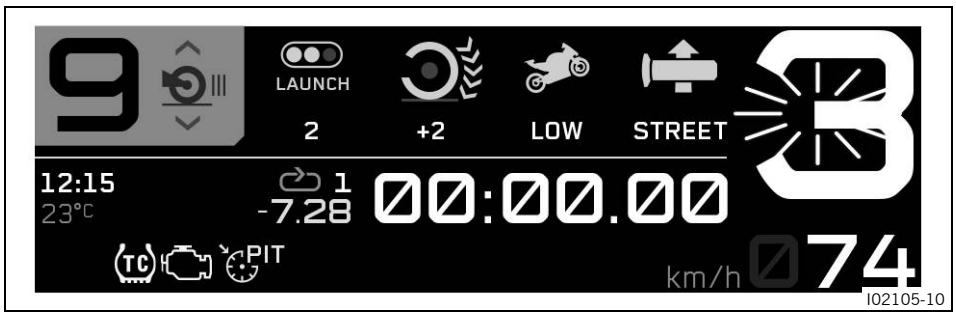


Gear display ❶ shows the engaged gear.

Note

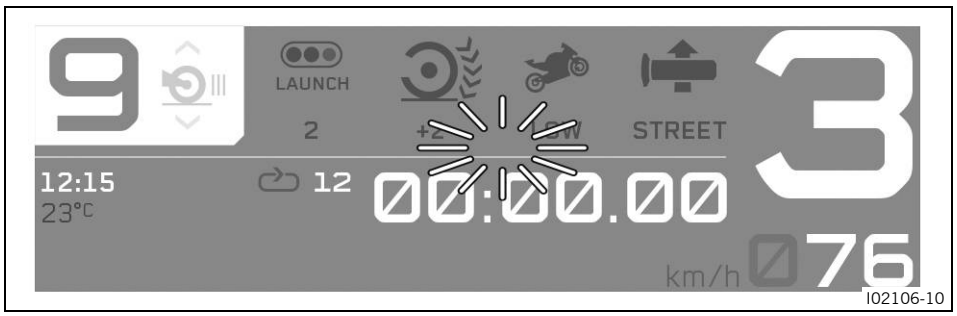
Gear display ❶ is on the right of the display.

7.9 shift light



The shift warning light is integrated into the gear display.

In the **Shift Light** submenu, the engine speed for the shift warning light can be set. During the run-in time (up to 1000 km / 621 miles), the shift light is always active. The shift warning light can only be deactivated, and the values for **RPM1** and **RPM2** can only be adjusted after this.



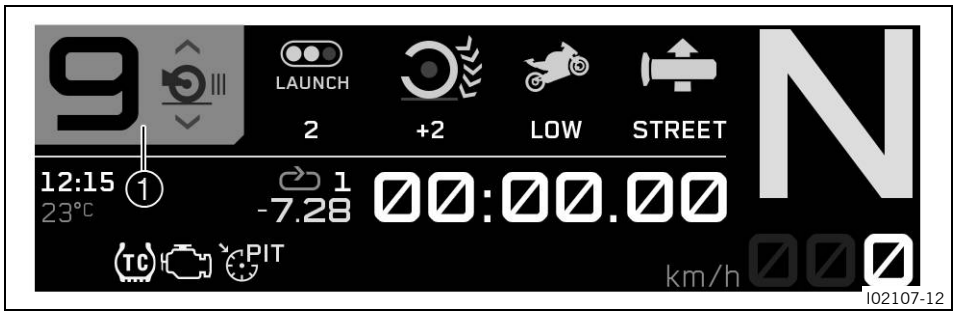
At **RPM1**, the gear display flashes, and at **RPM2**, the combination instrument flashes.

Note
After the first service, the shift warning light is deactivated when the engine is warm and in sixth-gear.

Coolant temperature	≤ 35 °C (≤ 95.0 °F)
ODO	< 1,000 km (< 621.4 mi)
The shift warning light always flashes at	6,500 rpm (108.33 Hz)

Coolant temperature	> 35 °C (> 95.0 °F)
ODO	> 1,000 km (> 621.4 mi)
RPM1 shift warning light	Gear display flashes
RPM2 shift warning light	Combination instrument flashes

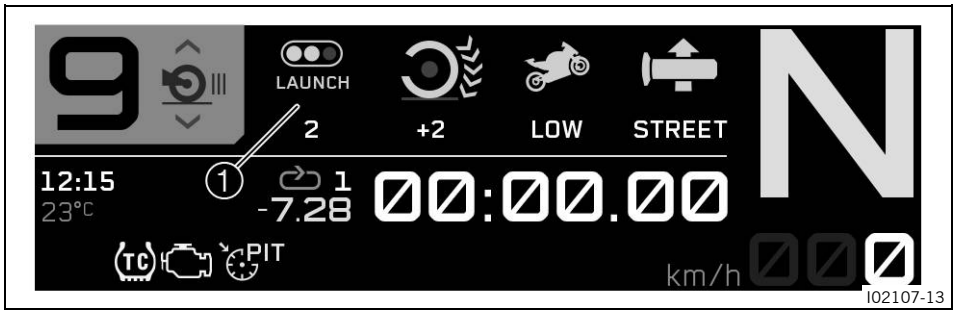
7.10 Slip Adjuster indicator



Indicator ❶ shows the **Slip Adjuster** setting.

Note
Slip Adjuster can be set using the **Slip Adjuster** button or via the **Slip Adjuster** submenu.

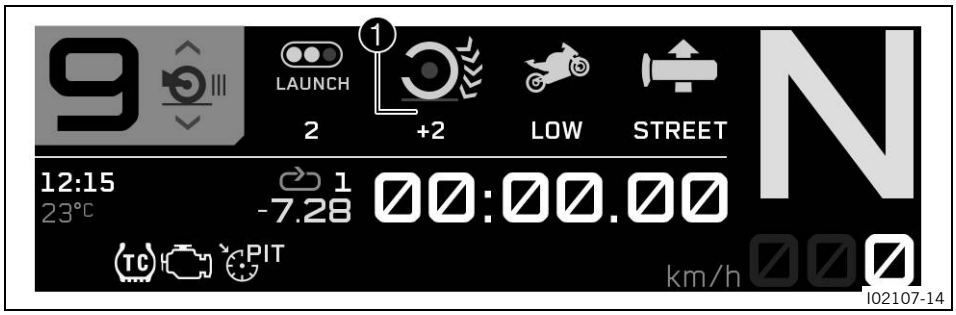
7.11 Launch Control indicator



Indicator ❶ shows the **Launch Control** setting.

Note
Launch Control can be set in the **Launch Control** submenu.

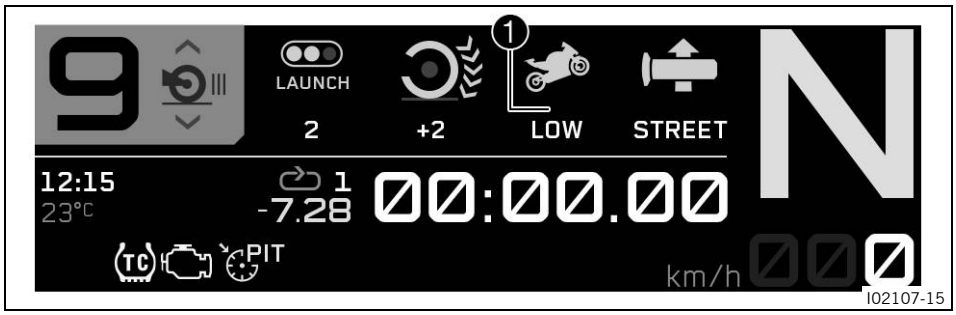
7.12 Engine brake control display



Indicator ❶ shows the engine brake control setting.

Note
The engine brake control can be set in the engine brake control submenu.

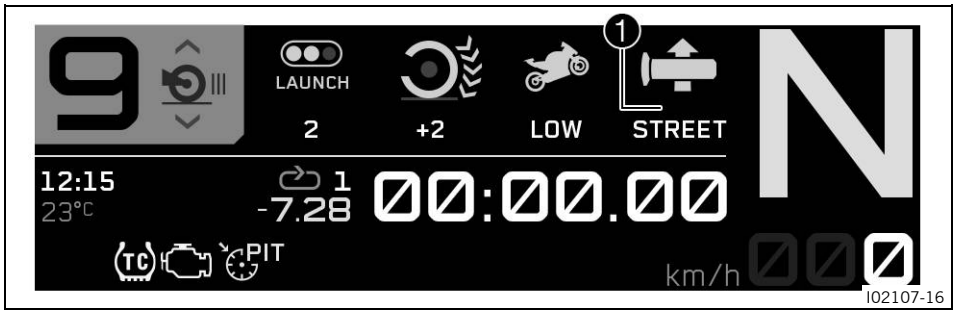
7.13 Anti Wheelie Mode indicator



Indicator ❶ shows the **Anti Wheelie Mode** setting.

Note
The **Anti Wheelie Mode** can be set in submenu **Anti Wheelie Mode**.

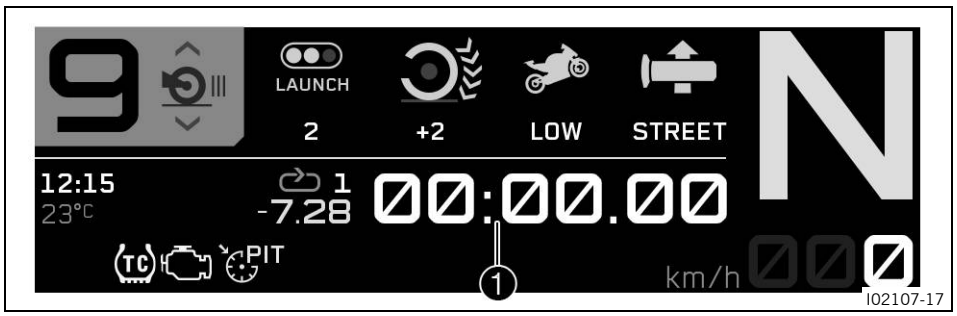
7.14 Throttle Response indicator



Indicator ❶ shows the **Throttle Response** setting.

Note
Throttle Response can be set in the **Throttle Response** submenu.

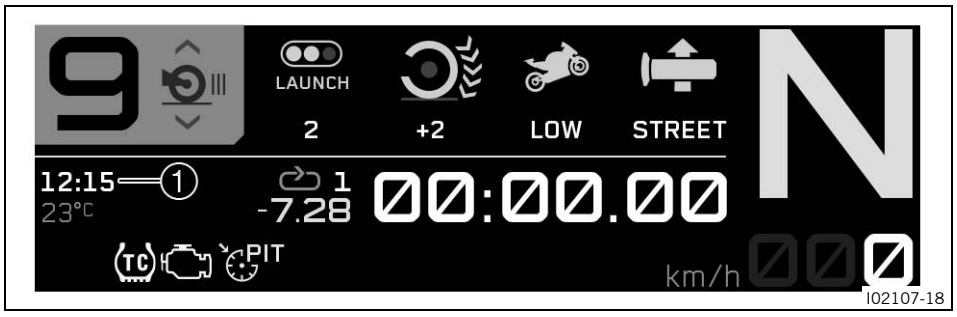
7.15 Lap Timer indicator



Indicator ❶ displays **Lap Timer**.
The **Slip Adjuster** button can be used to start a lap.
You can pause **Lap Timer** by pressing the **LEFT** button.

Note
Lap Timer can be set in the **Lap Timer** menu.

7.16 time

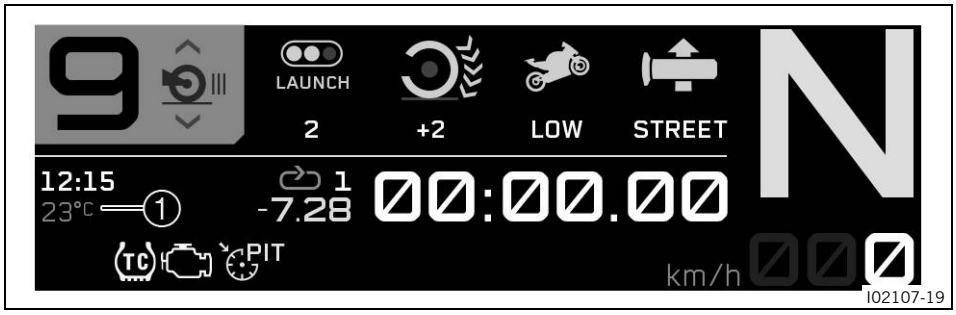


The time is shown in area ❶ of the display.

The time can be displayed in 24-hour format or 12-hour format in all languages.
The format of the time can be configured in the **Clock Format** menu.

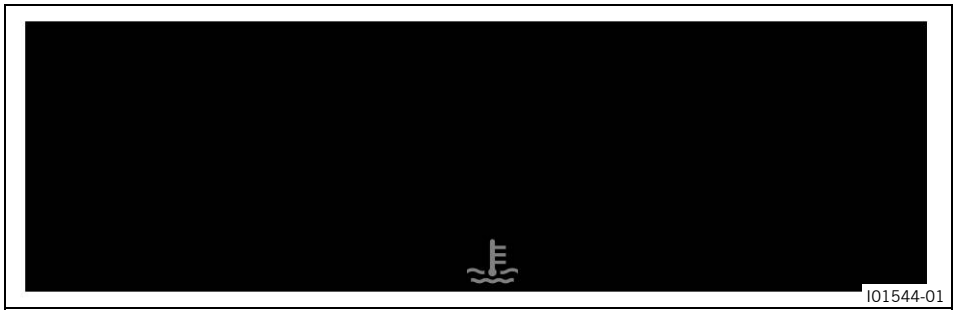
Note
The time must be reset if the 12 V battery was disconnected from the vehicle or the fuse was removed.

7.17 ambient air temperature indicator



The ambient temperature is shown in area ❶ of the display.
The ambient air temperature is displayed in **°C** or **°F**.
The unit of the ambient air temperature can be configured in the **Temperature** submenu.

7.18 coolant temperature display



The coolant temperature is displayed by a symbol . The color of symbol changes depending on the temperature. Symbol disappears when the engine has reached operating temperature.

NOTE
Engine failure Overheating damages the engine.
- If the coolant temperature warning is displayed, stop immediately and take care not to endanger yourself or other traffic participants in the process.
- Allow the engine and cooling system to cool down.
- Check and, if necessary, correct the coolant level on the cooling system while it is in a cooled state.

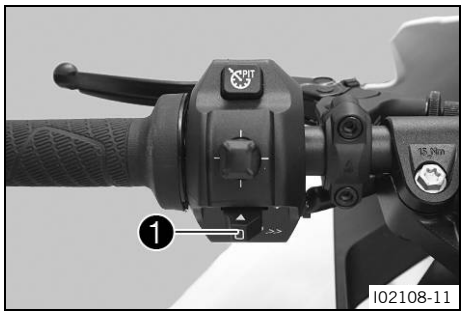
Note
If the coolant temperature gauge lights up red, the display also starts to flash and a warning is displayed.
If the cooling system overheats, the maximum engine speed is limited.

Condition		Meaning
	Coolant temperature gauge lights up blue.	The engine is cold.

Condition		Meaning
	Coolant temperature gauge does not light up.	The engine is at operating temperature.
	Coolant temperature gauge lights up red.	Engine is hot.

7.19 Setting the service interval display

Condition: Motorcycle is stationary

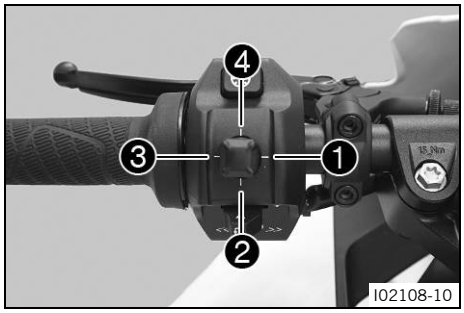


– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Press and hold the **Slip Adjuster** button ❶ for three seconds until menu **Service** opens.



– Press the **UP** or **DOWN** button until the hour display is highlighted.
– Press the **RIGHT** button to select the value.
– Press the **UP** or **DOWN** button to change the hours between 0 and 20.
– Press the **UP** or **DOWN** button until the riding distance display is highlighted.
– Press the **RIGHT** button to select the value.
– Press the **UP** or **DOWN** button to change the kilometers in increments of 500.
– Press the **UP** or **DOWN** button until the date display is highlighted.
– Press the **RIGHT** button to select the value.
– Press the **UP** or **DOWN** button to change the date in one-month increments.
– Press the **LEFT** button to close the current menu and save the settings.

7.20 Menu



Note

Press the **RIGHT** button ❶ on the start screen to open the menu.

Navigate through the menu using the **UP** button ❹ or the **DOWN** button ❷.

By pressing the **LEFT** button ❸, the menu structure jumps one step back, or the menu is closed.

7.20.1 Ride



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Ride** is highlighted.
– Pressing the **RIGHT** button opens the menu.

In **Ride**, you can adjust settings relevant to motorcycling, such as the ride mode, slip control and MTC.

7.20.1.1 Ride Mode



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Ride** is marked.
– Pressing the **RIGHT** button opens the menu.

WARNING

Danger of accidents An incorrectly selected ride mode makes it more difficult to control the vehicle.

The riding modes are each only suitable for certain conditions.

– Always select a riding mode that suits the surface on which you are riding, the weather and the riding situation.

– Press the **UP** or **DOWN** button until **Ride Mode** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.

– Press the **RIGHT** button to select the riding mode, which changes coordinated settings for the engine and motorcycle traction control.
  ✓ **Track 1** - Response and Motorcycle Traction Control can be adjusted individually.
  ✓ **Track 2** - Response and Motorcycle Traction Control can be adjusted individually.
  ✓ **Track 3** - Response and Motorcycle Traction Control can be adjusted individually.

7.20.1.2 Adjusting Ride Mode



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Ride** is marked.
– Pressing the **RIGHT** button opens the menu.

WARNING
Danger of accidents An incorrectly selected ride mode makes it more difficult to control the vehicle.
The riding modes are each only suitable for certain conditions.
– Always select a riding mode that suits the surface on which you are riding, the weather and the riding situation.

– Press the **UP** or **DOWN** button until **Configure Track x** is marked.
– Press the **RIGHT** button to open the submenu.

In **Configure Track x**, features of the **Ride Mode** such as **Throttle Response**, **Slip Adjuster** or **Display Mode** can be adjusted.

7.20.1.3 Slip adjuster



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Ride** is marked.
– Pressing the **RIGHT** button opens the menu.

WARNING
Danger of accidents An incorrectly selected ride mode makes it more difficult to control the vehicle.
The riding modes are each only suitable for certain conditions.
– Always select a riding mode that suits the surface on which you are riding, the weather and the riding situation.

– Press the **UP** or **DOWN** button until **Configure Track x** is highlighted.

– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until **Slip Adjuster** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **RIGHT** button to set the maximum permitted slip for the motorcycle traction control.

Do not open the throttle during the selection.

The spin adjuster is a motorcycle traction control function.
The slip adjustment allows the motorcycle traction control to be tuned through nine levels to the desired characteristic map.
Level 0 allows maximum slip on the rear wheel, and level 9 allows the minimum.
The **UP** and **DOWN** buttons in the main display or in the **Slip Adjuster** menu can be used to adjust the **Slip Adjuster**.

Note
The spin adjuster is only available when motorcycle traction control is activated.

– Press and hold the **DOWN** button or **RIGHT** button for approximately 2 seconds.	Slip adjustment level 0 is activated.

7.20.1.4 Throttle Response



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Ride** is marked.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Configure Track x** is highlighted.
– Press the **RIGHT** button to open the submenu.

WARNING
Danger of accidents An incorrectly selected ride mode makes it more difficult to control the vehicle.
The riding modes are each only suitable for certain conditions.
– Always select a riding mode that suits the surface on which you are riding, the weather and the riding situation.

– Press the **UP** or **DOWN** button until **Throttle Response** is marked on the display.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– The characteristic map of the throttle response can be adjusted by pressing the **RIGHT** button.

Do not open the throttle when adjusting the throttle response.

✓ Rain – balanced response.
✓ Sport – very direct responsiveness.
✓ Track – extremely direct responsiveness.

7.20.1.5 Engine Brake Control



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Ride** is marked.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Engine Brake** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP**- or **DOWN** button to adjust the **Engine Brake**. Press the **SET** button to confirm the selection.

Do not open the throttle when adjusting the engine brake control.

The engine brake control adjusts the effect of the engine braking when closing the throttle twist grip.

7.20.1.6 Wheelie Control



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Ride** is marked.
– Pressing the **RIGHT** button opens the menu.

WARNING
Danger of accidents An incorrectly selected ride mode makes it more difficult to control the vehicle.
The riding modes are each only suitable for certain conditions.
– Always select a riding mode that suits the surface on which you are riding, the weather and the riding situation.

– Press the **UP** or **DOWN** button until **Configure Track x** is highlighted.
– Press the **RIGHT** button to open the submenu.

WARNING
Danger of accidents When Anti Wheelie Mode is disabled, the motorcycle traction control no longer counteracts the raising of the front wheel.
– Only switch off the Anti Wheelie Mode if you have the appropriate experience.

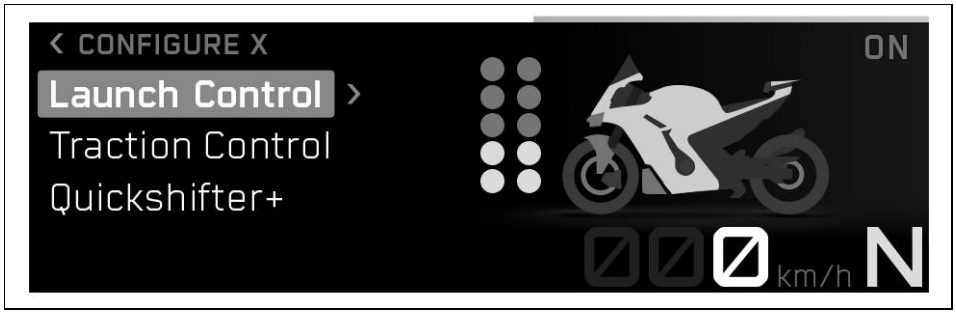
WARNING

Danger of accidents Electronic driving aids can only influence the vehicle within the limits of its physical capabilities.

– Even when using electronic driving aids, always adapt your riding style to the road conditions, the traffic situation and your own ability.

– Press the **UP** or **DOWN** button until **Wheelie Control** is marked.
– Press the **RIGHT** button to open the submenu.
– The **UP** can be adjusted by pressing the **DOWN** or **Wheelie Control** button.
– **Wheelie Control** is a partial function of the traction control, which counteracts the lifting of the front wheel. The intervention time can be set at various levels in the menu. At a higher level with later intervention, the front wheel is more likely to lift.

7.20.1.7 Launch control



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Ride** is marked.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Configure Track x** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until **Launch Control** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button to switch **Launch Control** on or off.

7.20.1.8 MTC



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Ride** is marked.
– Pressing the **RIGHT** button opens the menu.

WARNING

Danger of accidents An incorrectly selected ride mode makes it more difficult to control the vehicle.

The riding modes are each only suitable for certain conditions.

– Always select a riding mode that suits the surface on which you are riding, the weather and the riding situation.

– Press the **UP** or **DOWN** button until **Configure Track x** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until **Traction Control** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– Press the **UP** or **DOWN** button to switch **Traction Control** on or off.

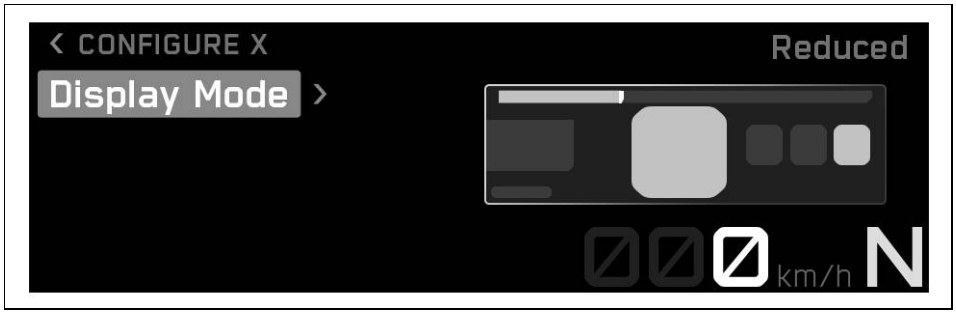
Do not open the throttle when switching on or off.
Press the **RIGHT** button briefly when activating the motorcycle traction control.
Hold down the **RIGHT** button when switching off the motorcycle traction control.

7.20.1.9 QUICKSHIFTER+



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Ride** is marked.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Configure Track x** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until **QUICKSHIFTER+** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– Press the **UP** or **DOWN** button to switch QUICKSHIFTER+ on or off.

7.20.1.10 Display Mode



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Ride** is marked.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Configure Track x** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until **Display Mode** is highlighted.
– Press the **RIGHT** button to open the submenu.
– You can switch between the normal and minimum speedometer view by pressing the **UP** or **DOWN** button.

7.20.2 Lap timer



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Lap Timer** is highlighted.
– Pressing the **RIGHT** button opens the menu.

The timed laps can be displayed and reference laps can be set in the **Lap Timer** menu.

7.20.2.1 Lap Timer settings



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Lap Timer** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Lap Timer Settings** is highlighted.

Lap Timer can be switched on and off.

7.20.2.2 Set Reference Lap



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Lap Timer** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Set Reference Lap** is highlighted.

A reference lap can be set.

7.20.2.3 Set Target Lap Time

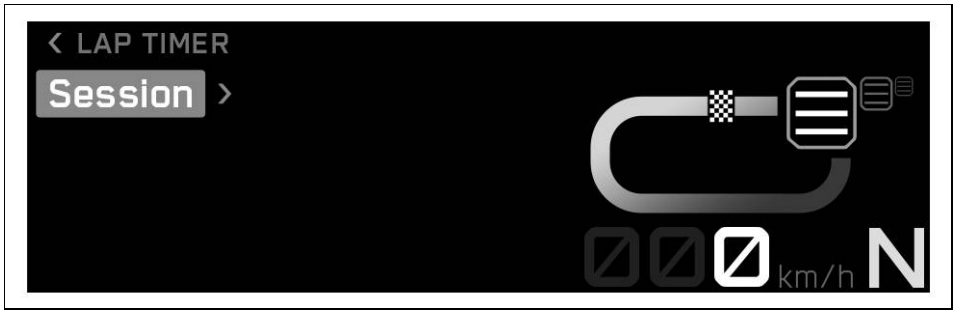


Condition: **Target Lap** is set with **Set Reference Lap**

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Lap Timer** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Set Target Lap Time** is highlighted.

A target lap can be set.

7.20.2.4 Session



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Lap Timer** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Session** is highlighted.

All lap times are displayed here.

7.20.3 Bike info



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Info** is highlighted.
– Pressing the **RIGHT** button opens the menu.

General information and warnings that may be present can be called up in **Bike Info**.

7.20.3.1 info

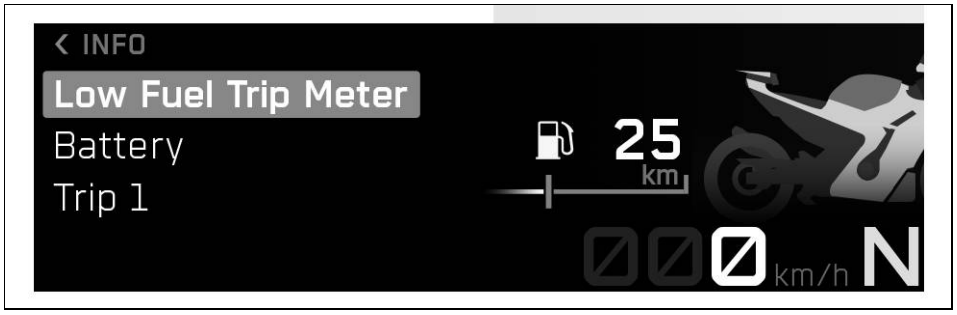


– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Bike Info** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Info** is highlighted.

Oil Temperature displays the oil temperature.
Water displays the coolant temperature.
Hourmeter displays the hours driven.
Odometer displays the total distance covered.

Date & Time displays the time and the date.
Service displays when the next service is due.
Warnings displays warnings that have occurred until they are no longer active.

7.20.3.2 Low Fuel Trip Meter

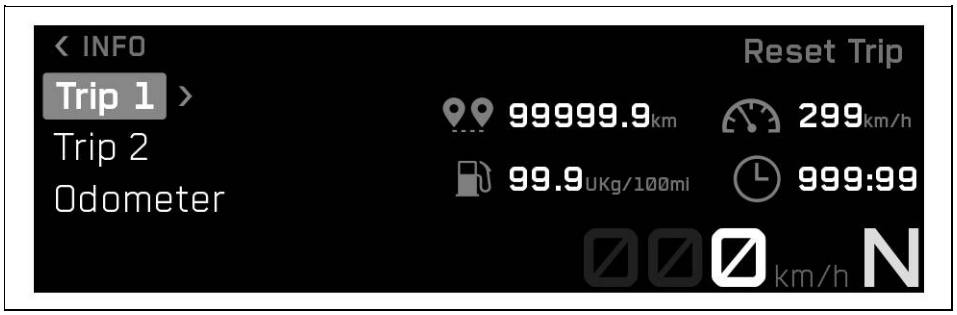


– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Bike Info** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Low Fuel Trip Meter** is highlighted.

When the fuel level reaches the reserve mark, a warning appears on the display and the fuel level warning light lights up.

Note
This indicator shows the distance traveled since the beginning of the fuel reserve.
When the indicator is closed, the fuel level warning lamp continues to be lit up.
The display is automatically reset after refueling.

7.20.3.3 Trip 1

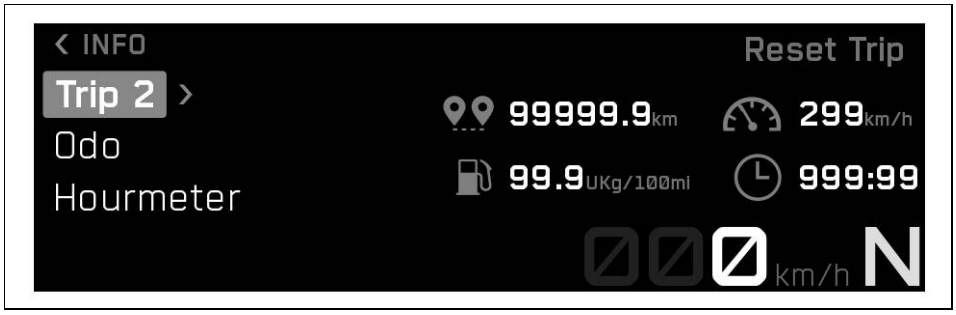


– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Bike Info** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Trip 1** is highlighted.
– Press the **RIGHT** button to open the submenu.

Information on **Trip 1** can be viewed in the **Trip 1** submenu.

Note
Trip displays the distance since the last reset, e. g. between two refueling stops. **Trip** is running and counts up to **9999**.
Trip Time shows the riding time on the basis of **Trip** and runs as soon as a speed signal is received.
ØConsump. indicates the average fuel consumption based on **Trip**.
ØSpeed indicates the average speed based on **Trip** and **Trip Time**.
Press **Reset Trip** to reset all entries in the **Trip 1** menu.

7.20.3.4 Trip 2



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Bike Info** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Trip 2** is highlighted.
– Press the **RIGHT** button to open the submenu.

Information on **Trip 2** can be viewed in the **Trip 2** submenu.

Note

Trip displays the distance since the last reset, e. g. between two refueling stops. **Trip** is running and counts up to **9999**.

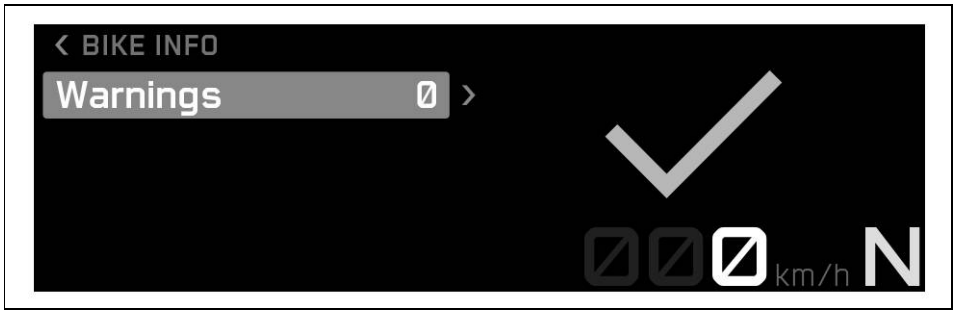
Trip Time shows the riding time on the basis of **Trip** and runs as soon as a speed signal is received.

ØConsump. indicates the average fuel consumption based on **Trip**.

ØSpeed indicates the average speed based on **Trip** and **Trip Time**.

Press **Reset Trip** to reset all entries in the **Trip 2** menu.

7.20.3.5 Warning



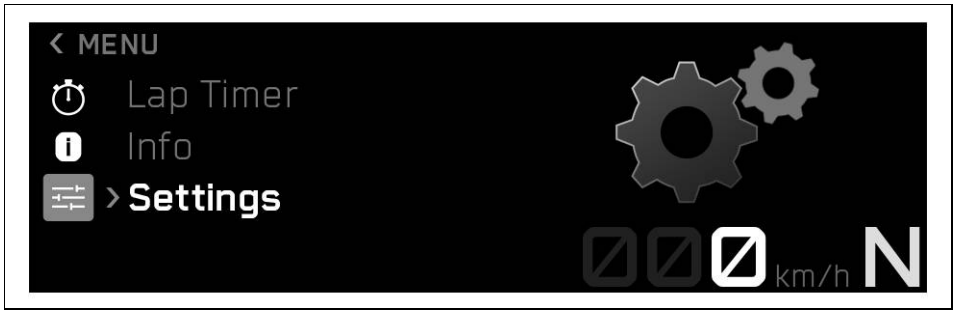
Condition: Message or warning is present

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Bike Info** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Warning** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Use the **UP** or **DOWN** button to navigate through the warnings.

Note

The warnings that have occurred are saved in the display until they are no longer active.

7.20.4 Settings



– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Pressing the **RIGHT** button opens the menu.

In menu **Settings**, favorites **Connectivity** and the shift light can be configured. Settings can be made for units or various values. Several functions can be enabled or disabled.

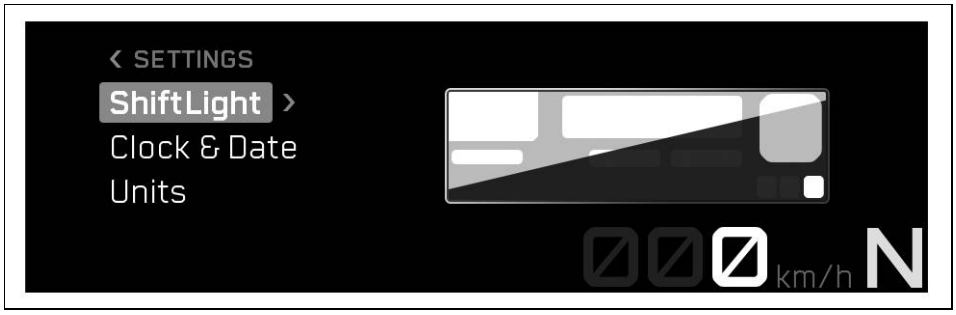
7.20.4.1 Tail light



Condition: Motorcycle is stationary

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Tail Light** is marked.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– Switch **Tail Light** on or off by pressing the **RIGHT** button.

7.20.4.2 Shift Light

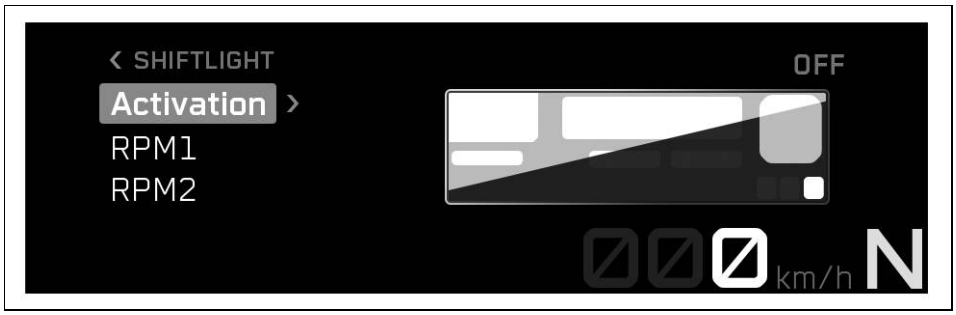


Condition: Motorcycle is stationary, **ODO** > 1000 km (621 mi)

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Shift Light** is highlighted.
– Press the **RIGHT** button to open the submenu.

The shift warning light can be configured in the **Shift Light** submenu.

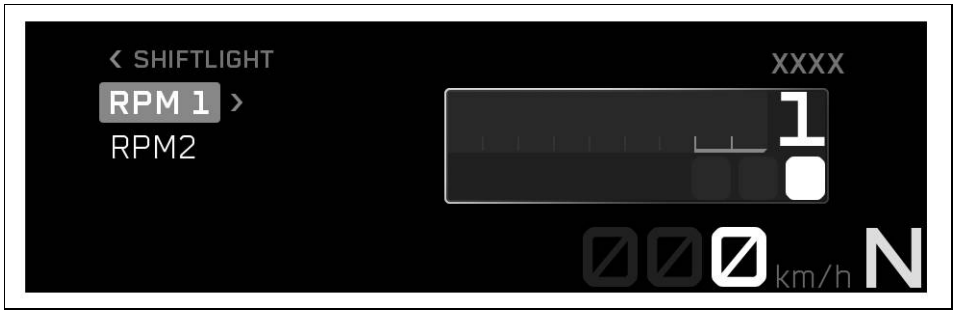
7.20.4.3 Shift Light Activation



Condition: Motorcycle is stationary, **ODO** > 1,000 km (621 miles)

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Press **RIGHT** button to open the menu.
– Press the **UP** or **DOWN** button until **Shift Light** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until **Activation** is highlighted.
– Activate the menu item using the **UP** or **DOWN** button.
– Press the **RIGHT** button to switch the shift warning light on or off.

7.20.4.4 RPM1



Condition: Motorcycle is stationary, **ODO** > 1,000 km (621 miles)

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Press **RIGHT** button to open the menu.
– Press the **UP** or **DOWN** button until **Shift Light** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until **RPM1** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– Set the value for **RIGHT** by pressing the **RPM1** button.

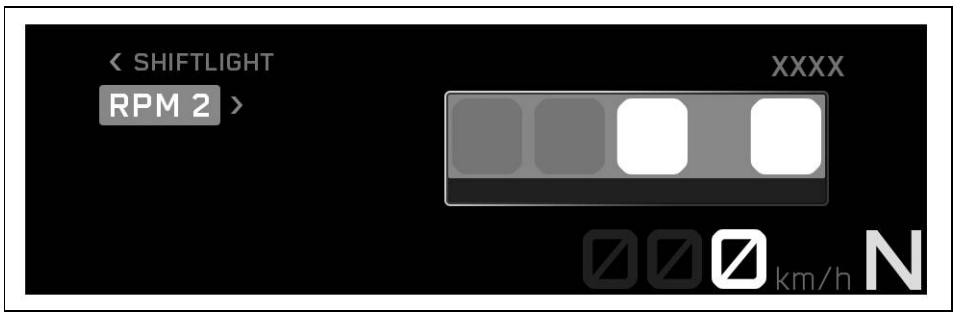
RPM1 must not be larger than **RPM2**.

Note

RPM1 can be set in intervals of 500 between 5,500 and 10,000 rpm.

If the engine speed reaches the set value **RPM1**, the engine speed display flashes as a shift warning light.

7.20.4.5 RPM2



Condition: Motorcycle is stationary, **ODO** > 1,000 km (621 miles)

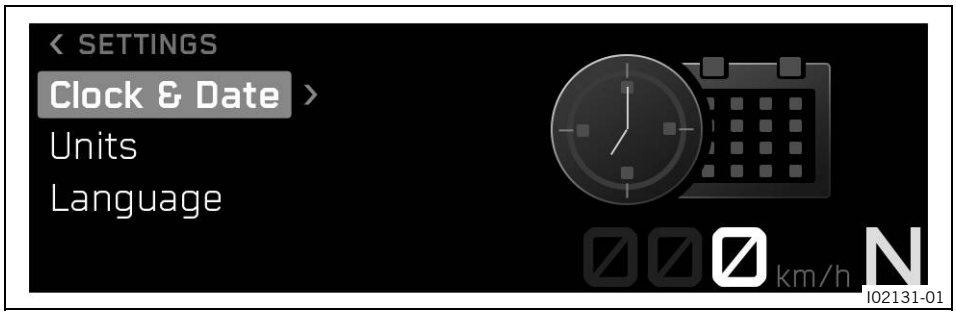
– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Press **RIGHT** button to open the menu.
– Press the **UP** or **DOWN** button until **Shift Light** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until **RPM2** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– Set the value for **RIGHT** by pressing the **RPM2** button.

RPM2 must not be smaller than **RPM1**.

Note
RPM2 can be set in intervals of 500 between 7,000 and 10,000 rpm.
If the engine speed reaches the set value **RPM2**, the screen flashes as a shift warning light.

7.20.4.6 Setting the time and date

Condition: Motorcycle is stationary



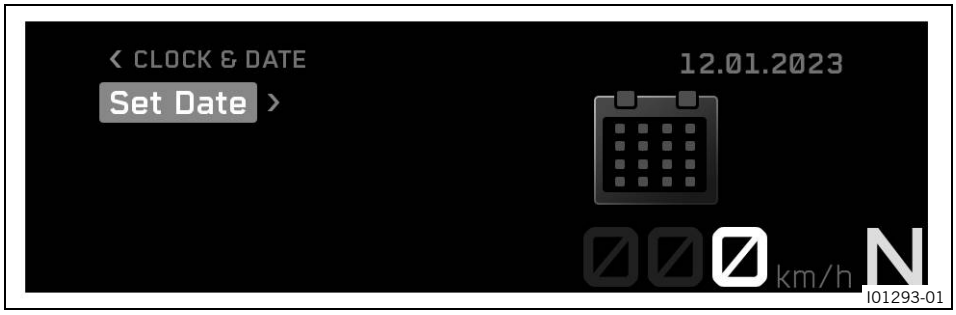
– Press the **RIGHT** button when the menu is closed.
– Press **UP** or **DOWN** button until **Settings** appears.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Clock & Date** is highlighted.
– Press the **RIGHT** button to open the submenu.

Setting the clock



– Press the **UP** or **DOWN** button until **Set Clock** is marked.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until the hour is set.
– Press the **RIGHT** button to select the hour.
– Press the **UP** or **DOWN** button until the minute is set.
– Press the **RIGHT** button to select the minute.
– Press the **LEFT** button to exit the menu.

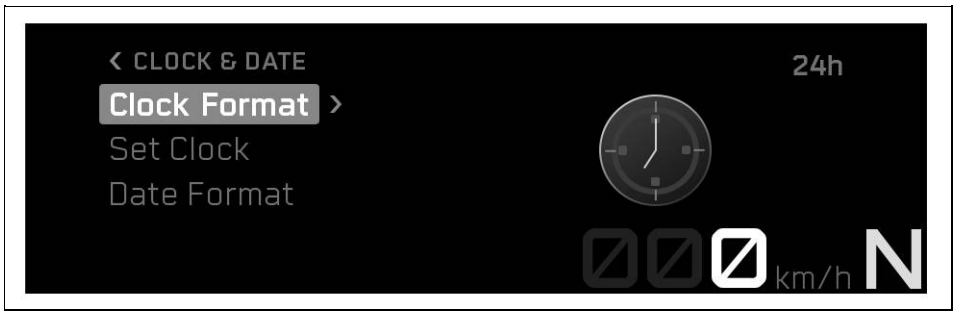
Setting the date



– Press the **UP** or **DOWN** button until **Set Date** is marked.
– Press the **RIGHT** button to open the submenu.

– Press the **UP** or **DOWN** button until the day is set.
– Press the **RIGHT** button to select the day.
– Press the **UP** or **DOWN** button until the month is set.
– Press the **RIGHT** button to select the month.
– Press the **UP** or **DOWN** button until the year is set.
– Press the **RIGHT** button to select the year.
– Press the **LEFT** button to exit the menu.

7.20.4.7 Clock format

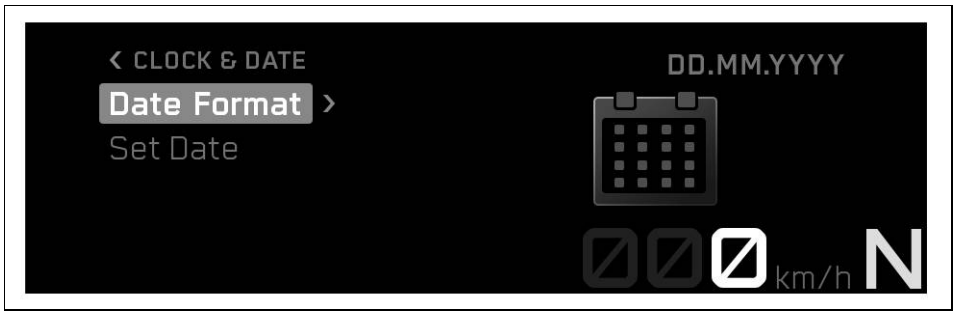


Condition: Motorcycle is stationary

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Clock Format** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– Press the **RIGHT** button to select the time format.

Note
The possible settings are 24h and 12h.

7.20.4.8 Date format

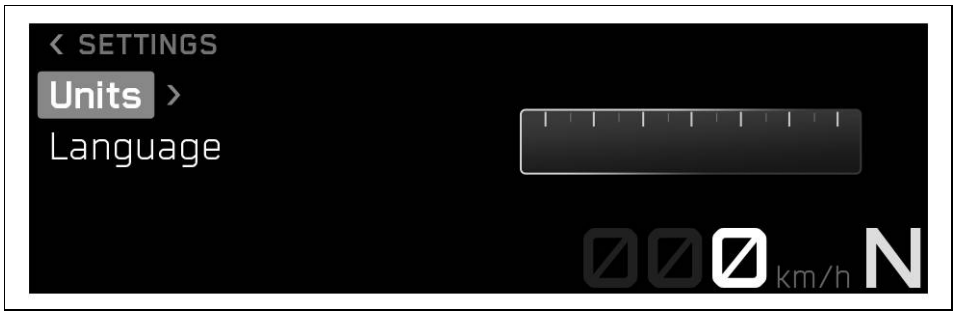


Condition: Motorcycle is stationary

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Date Format** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– Press the **RIGHT** button to select the date format.

Note
The possible settings are DD.MM.YYYY, MM.DD.YYYY and YYYY.MM.DD.

7.20.4.9 Units

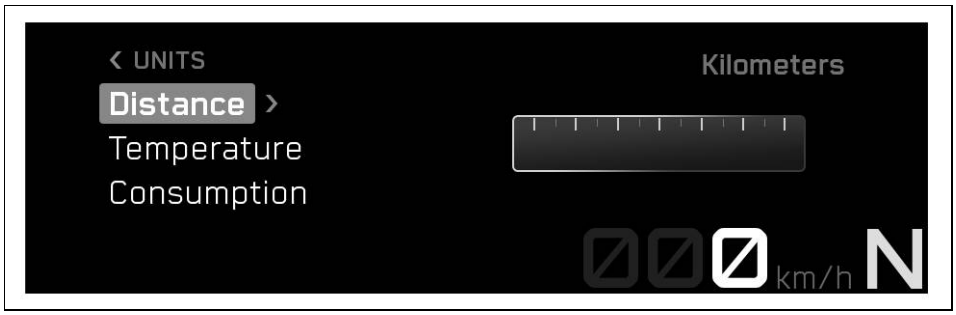


Condition: Motorcycle is stationary

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Units** is highlighted.
– Press the **RIGHT** button to open the submenu.

The **Units** submenu allows settings to be made for units or various values.

7.20.4.10 Distance

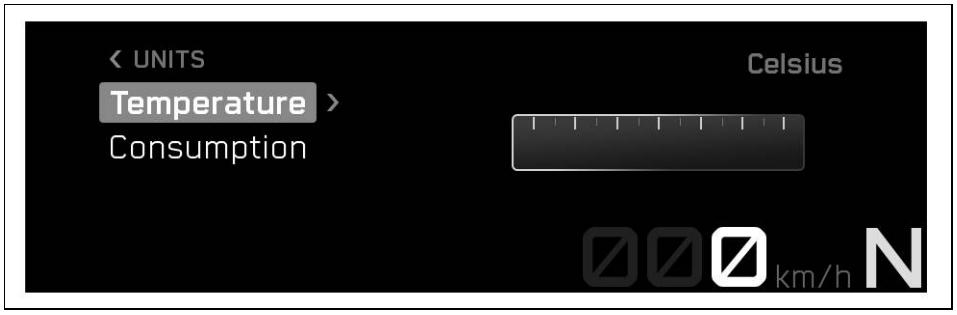


Condition: Motorcycle is stationary

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Press the **RIGHT** button to open the menu.
– Press the **UP** or **DOWN** button until **Units** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until **Distance** is marked.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– Press the **RIGHT** button to confirm the desired unit.

Note
Kilometers and miles can be set.

7.20.4.11 Temperature

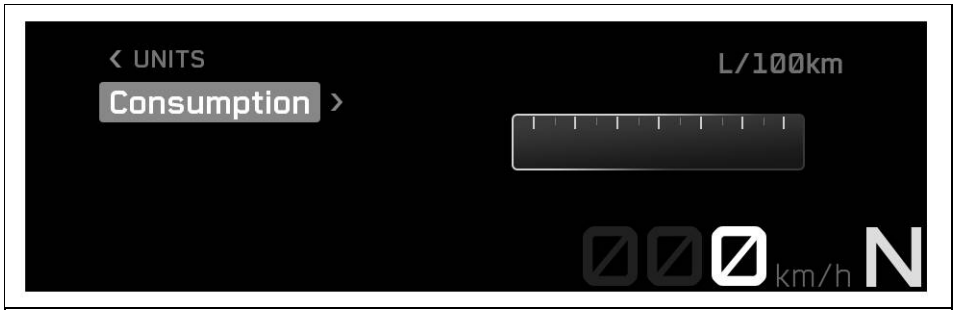


Condition: Motorcycle is stationary

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Press the **RIGHT** button to open the menu.
– Press the **UP** or **DOWN** button until **Units** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until **Temperature** is marked.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– Press the **RIGHT** button to confirm the desired unit.

Note
Celsius and Fahrenheit can be set.

7.20.4.12 Consumption



Condition: Motorcycle is stationary

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Press the **RIGHT** button to open the menu.
– Press the **UP** or **DOWN** button until **Units** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Press the **UP** or **DOWN** button until **Consumption** is marked.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– Press the **RIGHT** button to confirm the desired unit.

Note
The following units can be selected: l/100 km, km/l, USG/100 mi, mi/USG, UKG/100 mi and mi/UKG.

7.20.4.13 Language

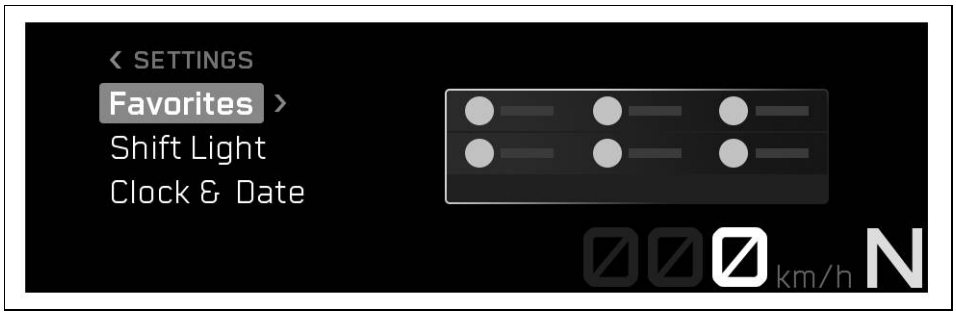


Condition: Motorcycle is stationary

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until **Language** is highlighted.
– Press the **RIGHT** button to open the submenu.
– Activate the menu item using the **UP** or **DOWN** button.
– Press the **RIGHT** button to confirm the desired language.

Note
The menu languages are US English, UK English, German, Italian, French, and Spanish.

7.20.4.14 favorites

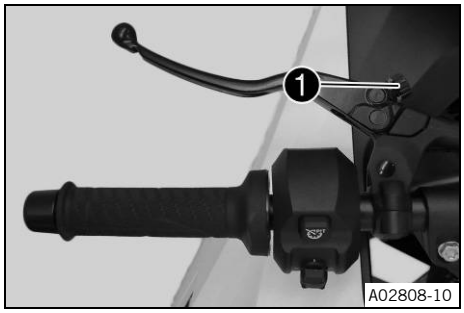


Condition: Motorcycle is stationary

– Press the **RIGHT** button when the menu is closed.
– Press the **UP** or **DOWN** button until **Settings** is highlighted.
– Pressing the **RIGHT** button opens the menu.
– Press the **UP** or **DOWN** button until “Favorites” is highlighted.
– Press the **RIGHT** button to open the submenu.
– Access menu item with the **UP** or **DOWN** button, and add the selected information to the Favorites display using the **RIGHT** button.

Up to six information items can be selected in the **Favorites** submenu.

8.1 Adjusting the basic position of the clutch lever



– Push clutch lever forward.
– Adjust the basic position of the clutch lever to your hand size by turning adjusting screw 1.

Only turn the adjusting screw by hand, and do not use force.
Do not make any adjustments while riding.

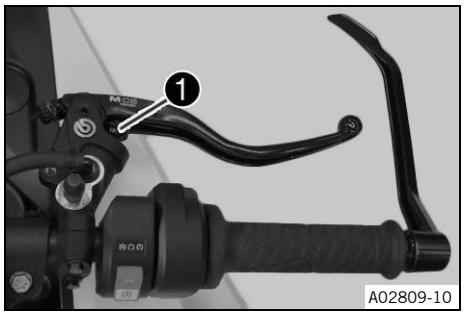
Note

When the adjusting screw is turned clockwise, the clutch lever moves away from the handlebar.

When the adjusting screw is turned counterclockwise, the clutch lever moves closer to the handlebar.

The range of adjustment is limited.

8.2 Adjusting the response of the hand brake lever



– Adjust the response of the hand brake lever with adjusting screw 1.

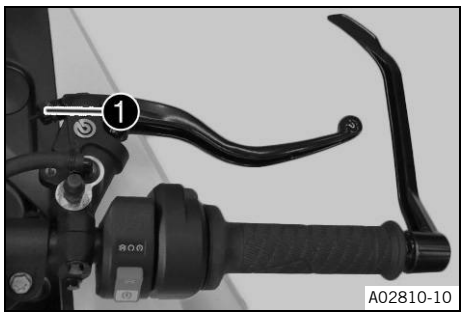
Only turn the adjusting screw by hand, and do not use force.
Do not make any adjustments while riding.

✓ 19 - Setting with large hand brake lever transmission ratio (soft response, more lever travel, less lever force).
✓ 20 - Setting with balanced hand brake lever response.
✓ 21 - Setting with small hand brake lever transmission ratio (hard response, less lever travel, more lever force).

Note

The transmission ratio and, therefore, the response of the hand brake lever can be changed.

8.3 Adjusting the basic position of the hand brake lever



– Push hand brake lever forward.
– Adjust the basic position of the hand brake lever to your hand size by turning adjusting screw 1.

Only turn the adjusting screw by hand, and do not use force.
Do not make any adjustments while riding.

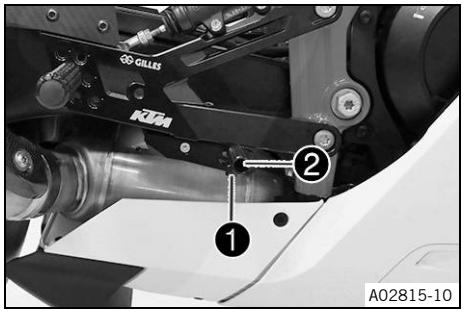
Note

Turn the adjusting screw clockwise to increase the distance between the hand brake lever and the handlebar.

Turn the adjusting screw counterclockwise to decrease the distance between the hand brake lever and the handlebar.

The range of adjustment is limited.

8.4 Setting the step plate of the foot brake lever



– Remove screw ❶.
– Position foot brake lever step plate ❷ at the desired position.

Standard	Stub in front position

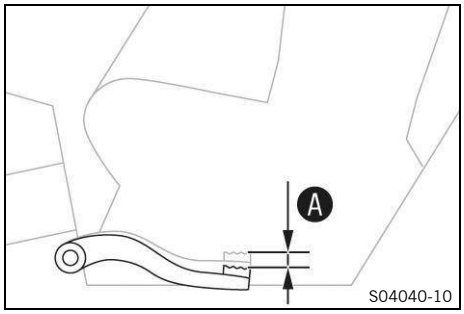
Note
Foot brake lever step plate ❷ can be set to two different positions.

– Mount and tighten screw ❶.

Screw, foot brake lever stub	
M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**

8.5 Checking the free travel of the brake pedal

WARNING
Danger of accidents The brake system fails in the event of overheating.
If there is no free travel on the brake lever, pressure builds up in the brake system.
– Set the free travel on the brake lever as specified.



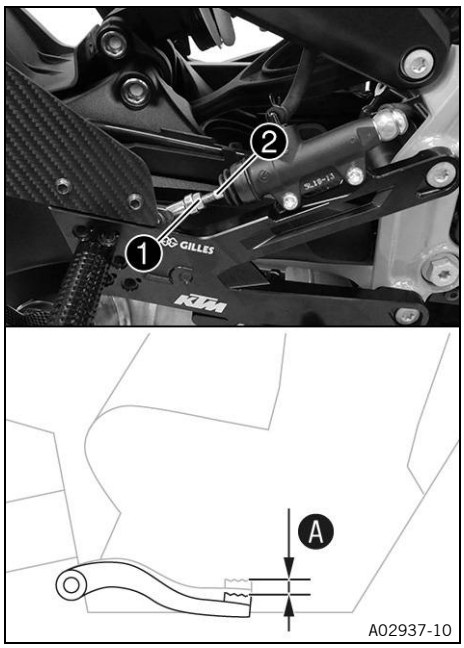
– Move the foot brake lever back and forth between the end stop and the contact to the foot brake cylinder piston and check free travel Ⓐ.

Free travel of brake pedal	3 mm ... 5 mm (0.12 in ... 0.20 in)

» If the free travel does not meet the specifications:
– Adjust the free travel of the foot brake lever. (p. 52)

8.6 Adjusting the free travel of the foot brake lever

WARNING
Danger of accidents The brake system fails in the event of overheating.
If there is no free travel on the brake lever, pressure builds up in the brake system.
– Set the free travel on the brake lever as specified.



– Loosen nut ❶ and use push rod ❷ to adjust the specified free travel Ⓐ.

Free travel of brake pedal	3 mm ... 5 mm (0.12 in ... 0.20 in)

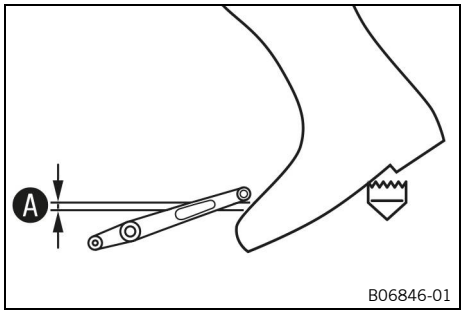
Note
The range of adjustment is limited.

– Tighten nut ❶.

Remaining nuts on chassis	
M6	10 Nm (7.4 ft·lb$_f$)

8.7 Checking the basic position of the gear shift lever

Note
When driving, the gear shift lever must not touch the rider's boot when in the basic position.
If the shift lever is permanently touching the boot, the transmission will be subject to excessive load; this can cause a malfunction of the quickshifter + (optional).

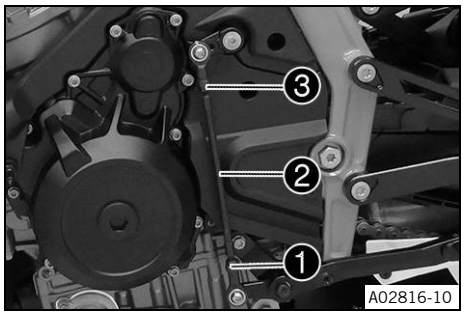


– Sit on the vehicle in the riding position and measure the distance Ⓐ between the upper edge of your boot and the shift lever.

Distance between the gear shift lever and upper edge of boot	10 mm ... 20 mm (0.39 in ... 0.79 in)

» If the distance does not meet the specifications:
– Adjust the basic position of the gear shift lever. (p. 53)

8.8 Adjusting the basic position of the gear shift lever



– Loosen nut ❶ while holding stud ❷.
– Loosen nut ❸ while holding stud ❷.

Note
Nut ❸ has an LH thread.

– Turn stud ❷ to adjust the shift lever.

The gear shift lever must not come into contact with any other vehicle components during the shift procedure.

Note
The range of adjustment is limited.

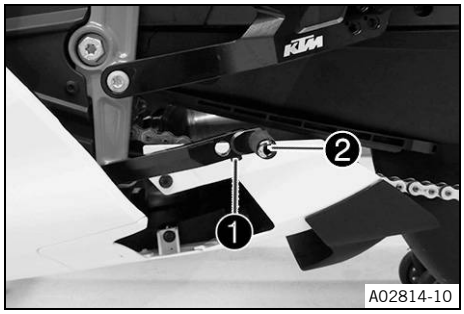
– Tighten nut ❸ while holding stud ❷.

Nut, shift rod	
M6LH	6 Nm (4.4 ft·lb$_f$)

– Tighten nut ❶ while holding stud ❷.

Nut, shift rod	
M6	6 Nm (4.4 ft·lb$_f$)

8.9 Adjusting the gear shift lever step plate



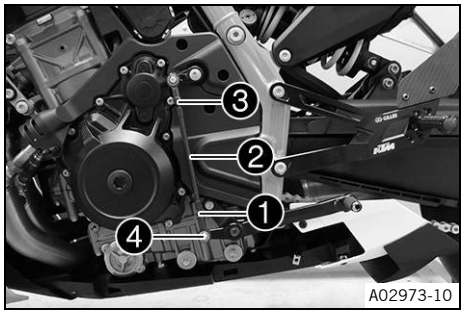
– Remove screw ❶.
– Insert gear shift lever step plate ❷ at the desired position.

Note
Gear shift lever step plate ❷ can be set to two different positions.

– Mount and tighten screw ❶.

Remaining screws on chassis	
M6	10 Nm (7.4 ft·lb$_f$)

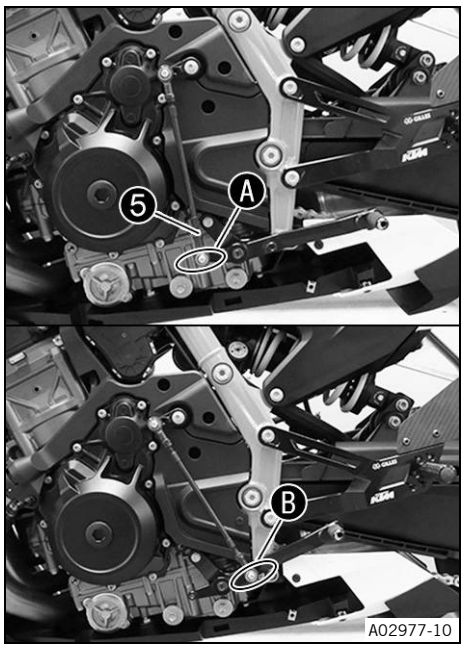
8.10 Changing the shift pattern



– Loosen nut ❶ while holding stud ❷.
– Loosen nut ❸ while holding stud ❷.

Note
Nut ❸ has an LH thread.

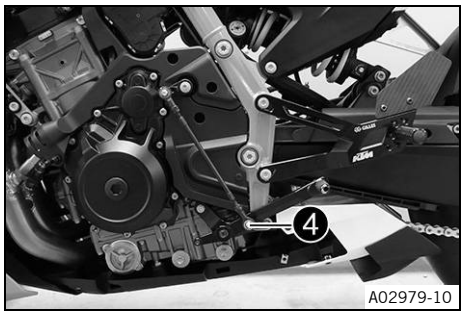
– Remove screw ❹.



– Move shift rod ❺ from position Ⓐ to position Ⓑ.

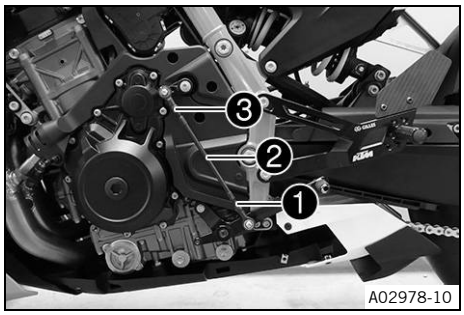
The length of the shift rod must be adjusted so that, when the gearbox is in neutral, the shift lever forms an approximate right angle with the shift rod

Note
Correct positioning is essential for safe and low-wear gear shifting and must be verified during the function test.



– Mount and tighten screw ❹.

Screw, shift rod	
M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**



– Tighten nut ❸ while holding stud ❷.

Nut, shift rod	
M6LH	6 Nm (4.4 ft·lb$_f$)

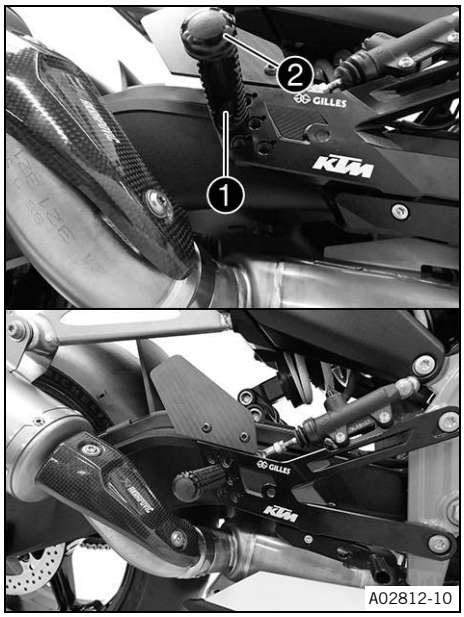
– Tighten nut ❶ while holding stud ❷.

Nut, shift rod	
M6	6 Nm (4.4 ft·lb$_f$)

The shift linkage must be correctly adjusted in all footpeg positions to ensure correct functioning of the shift mechanism.
Once the shift pattern has been reversed, a function test of the gearbox must be carried out.
It must be possible to change all gears smoothly and without resistance.

8.11 Adjusting the right footpeg

Note
The adjustable footpeg allows for a more comfortable foot position.



– Loosen screw ❶ on the right footpeg.
– Remove footpeg ❷.
– Insert the footpeg at the desired position.

Note
The footpeg can be set to six different positions.

– Tighten screw ❶ on the right footpeg.

Screw, footpeg bracket, rear	
M8×25	25 Nm (18.4 ft·lb$_f$) **Loctite® 243**

8.12 Adjusting the left footpeg

Note
The adjustable footpeg allows for a more comfortable foot position.



Main work

– Loosen screw ❶ on the left footpeg.
– Remove footpeg ❷.
– Insert the footpeg at the desired position.

Note
The footpeg can be set to six different positions.

– Tighten screw ❶ on the left footpeg.

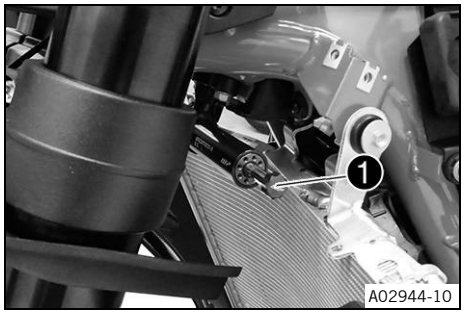
Screw, footpeg bracket, rear	
M8×25	25 Nm (18.4 ft·lb$_f$) **Loctite® 243**

Reworking

– Adjust the basic position of the gear shift lever. (p. 53)

8.13 Adjusting the steering damper

Note
In contrast to other absorbing elements, the steering damper is adjusted with the absorbing element open.



– Turn adjusting screw ❶ counterclockwise to the last detectable click.
– Adjust the steering damper according to your riding style and the road conditions by turning adjusting screw ❶ clockwise.

Steering damper adjustment range	1 click ... 25 clicks
Standard	20 clicks
Do not change the adjustment of the steering damper during the journey.	

– After adjusting the steering damper, check the steering for freedom of movement.
  ✓ The handlebar can be moved from one stop to the other without a locking tendency.

9 Preparing for use

9.1 Notes on preparing for first use

DANGER

Danger of accidents A rider who is not fit to ride poses a danger to themself and to others.

– Do not operate the vehicle if you are not fit to ride due to alcohol, drugs, or medication.
– Do not operate the vehicle if you are physically or mentally incapable of doing so.

WARNING

Danger of accidents The vehicle is not designed to carry passengers.

– Do not ride with a passenger.

WARNING

Danger of accidents The brake system fails in the event of overheating.

If the brake pedal is not released, the brake pads grind continuously.

– Take your foot off the brake pedal when you are not braking.

WARNING

Danger of accidents Not adapting the riding style constitutes a major risk.

– Adapt the vehicle speed to the road conditions and your riding ability.

WARNING

Danger of accidents Total weight and axle loads influence the handling characteristic.

– Do not exceed the maximum permissible total weight or the axle loads.

WARNING

Risk of injury People who act without authorization endanger themselves and others.

– Never leave the vehicle unattended while the engine is running.
– Secure the vehicle against unauthorized access.

WARNING

Danger of accidents Non-approved or non-recommended tyres and wheels impact the handling characteristic.

– Only use tires and wheels approved and recommended by the vehicle manufacturer with the corresponding speed rating.

WARNING

Danger of accidents New tires have reduced road grip.

The contact surface on new tires is not yet roughened.

– Run in new tires with moderate riding and only gradually increase the lean angle.

WARNING

Danger of accidents Different tire profiles on the front and rear wheels can make it more difficult to control the vehicle.

– Make sure that only tires of the same tread type are mounted to the front and rear wheel.

WARNING

Risk of injury Missing or inadequate protective clothing increases the risk of injury.

– Wear appropriate protective clothing such as helmet, boots, gloves as well as pants and a jacket with protectors on all rides.
– Always wear protective clothing that is in good condition and meets the legal regulations.

Note
When using the vehicle, remember that others may feel disturbed by excessive noise.

– Ensure that the pre–delivery inspection has been carried out by an authorized contractual partner.
  ✓ The delivery certificate is transferred upon vehicle handover.
– Read the entire owner's manual before riding for the first time.
– Check the frost protection and coolant level. (p. 158)
– Get to know the controls.
– Adjust the basic position of the clutch lever. (p. 51)
– Adjust the basic position of the hand brake lever. (p. 51)
– Check the free travel of the brake pedal. (p. 52)
– Get used to the handling characteristics of the motorcycle on suitable terrain before undertaking a more challenging ride. Also, ride as slowly as possible to get a better feeling for the motorcycle.

This vehicle is not approved for use on public roads.

– Hold the handlebar firmly with both hands and keep your feet on the footpegs when riding.
– Do not take any luggage.
– Run in the engine. (p. 59)

9.2 Running in the engine

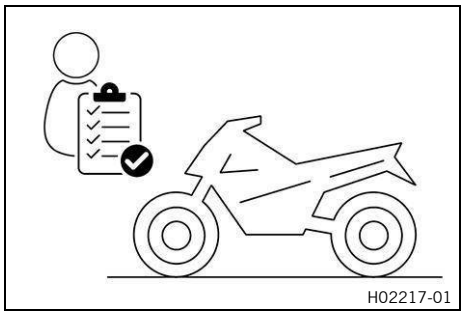
– During the running-in time, do not exceed the specified engine speed.

Maximum engine speed	
During the first: 200 km (124.3 mi)	7,500 rpm (125.00 Hz)

Avoid fully opening the throttle.

10.1 checks and maintenance measures when preparing for use

Note
Before every trip, check the condition of the vehicle and ensure that it is roadworthy.
The vehicle must be in perfect technical condition when it is being operated.


H02217-01

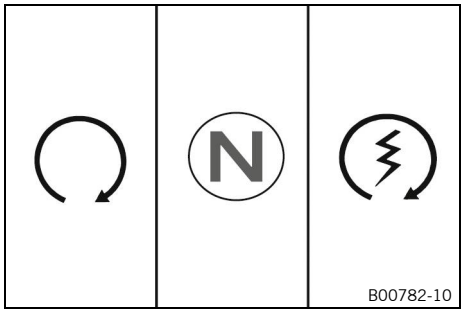
- Check the engine oil level. (p. 167)
- Check the brake fluid level for the front brake. (p. 128)
- Check the brake fluid level for the rear brake. (p. 133)
- Check that the brake pads of the front brake are secured. (p. 130)
- Check that the brake pads of the rear brake are secured. (p. 135)
- Check the brake discs. (p. 128)
- Check the brake lines for damage and tightness.
- Check that the brake system is functioning properly.
- Check the chassis for leakage.
- Check that the chassis is functioning properly.
- Check the coolant level.
- Check the chain for dirt. (p. 92)
- Check the chain, rear sprocket, engine sprocket, and chain guide. (p. 94)
- Check the chain tension. (p. 93)
- Check the tire condition. (p. 148)
- Check the tire pressure. (p. 149)
- Check the settings of all controls and ensure that they can be operated smoothly.
- Check the free travel of the clutch lever.
- Check all screws, nuts, and hose clamps regularly for tightness.
- Check the fuel level.

10.2 Starting the vehicle

DANGER
Danger of poisoning Exhaust gases are toxic and inhaling them may result in unconsciousness and death.
– Always ensure that there is sufficient ventilation when running the engine.
– Use suitable exhaust extraction when starting or running the engine in an enclosed space.

WARNING
Danger of accidents Electronic components and safety devices will be damaged if the 12-V battery is discharged or missing.
If the 12-V battery is discharged or defective, malfunctions in the vehicle electronics can occur, especially when starting.
– Never operate the vehicle with a discharged 12-V battery or without a 12-V battery.

NOTE
Engine failure Running a cold engine at high engine speeds negatively impacts the service life of the engine.
– Always warm up the engine at low engine speeds.



Preparatory work

– Remove the rear of the motorcycle from the lifting gear.
(p. 75)

Main work

– Make sure that the start button/kill switch is in the middle position.
– Switch the ignition on using the ignition button.

To avoid malfunctions in the control unit communication, do not switch the ignition off and on in rapid succession.

✓ After you switch on the ignition, you can hear the fuel pump working for about two seconds. The function check of the combination instrument is run at the same time.

– Shift the transmission into the neutral position.
✓ The green idle indicator lamp **N** lights up.
– Press the start button/kill switch into the lower position.

Only press the start button/emergency OFF switch into the lower position when the combination instrument function check has been completed.
Do not open the throttle to start.
If the starting attempt is unsuccessful, wait for 15 seconds before making another attempt at starting.
After 6 unsuccessful starting attempts, do not try again, and check the vehicle for other malfunctions instead.

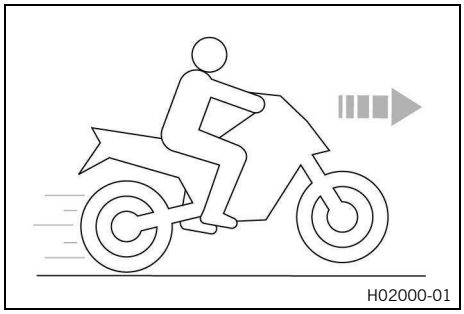
Note

This motorcycle is equipped with a safety starting system. You can only start the engine if the transmission is in neutral or if the clutch lever is pulled when a gear is engaged.

10.3 Starting off

– Pull the clutch lever, shift into first gear, release the clutch lever slowly and at the same time carefully open the throttle.

10.4 Launch control



Launch Control is a vehicle electronics function.

Launch control adjusts the engine speed in order to achieve the best possible acceleration.

Launch control can be used for starting off for a maximum of three times in succession. Launch control is temporarily deactivated after the third starting off in order to protect the engine, transmission and cooling system from overloading.

Launch control is also deactivated if all conditions for activation are no longer met.

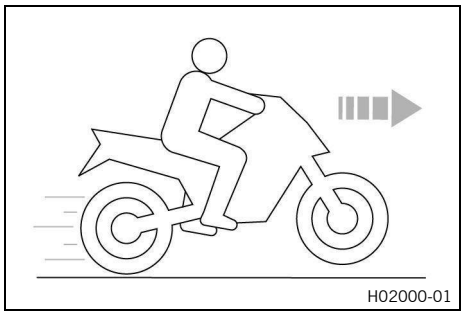
Launch control is enabled again in the following cases: the engine runs for at least three minutes, the engine is switched off for 20 minutes or a distance of 1.5 km (0.93 mi) has been covered.

10.5 starting off with launch control

WARNING

Danger of accidents Launch Control enables powerful acceleration which may overwhelm a novice rider. Public roads are neither a safe place nor a necessary environment for the use of Launch Control.

– Only use the launch control if you have the necessary experience.
– Do not use launch control on public roads.


H02000-01

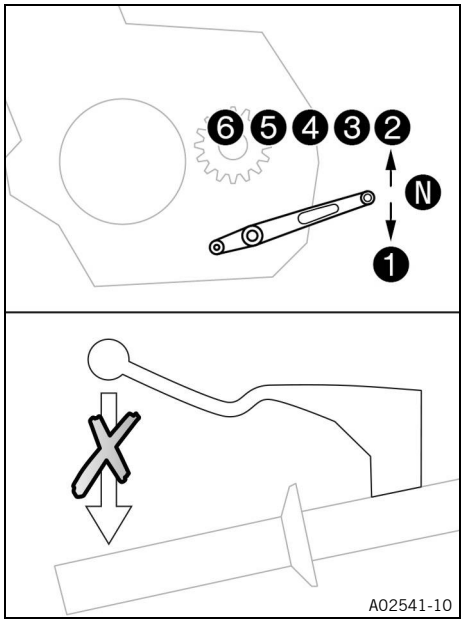
Condition: The vehicle is in first gear, TC indicator lamp does not light up, Coolant temperature: > 60 °C (> 140.0 °F), Total riding distance covered: > 1,000 km (> 621.4 mi)

– Activate launch control in the combination instrument.
  ✓ The number of available starts is indicated on the start screen.
– Apply full throttle with the clutch lever pulled.
  ✓ The engine speed is adjusted.

10,500 rpm (175.00 Hz)

  ✓ The TC indicator lamp flashes quickly.
– Release clutch lever quickly but in a controlled manner.

10.6 QUICKSHIFTER+



A02541-10

If the **QUICKSHIFTER+** is activated, you can shift up and down without actuating the clutch.

Because there is no need to close the throttle grip, uninterrupted gear shifts are possible.

The QUICKSHIFTER+ uses the shift shaft position to check whether or not a shift should be initiated, and sends a corresponding signal to the engine control unit.

If the QUICKSHIFTER+ is disabled in the combination instrument, the clutch needs to be actuated in the normal way for each shift.

10.7 Shifting, riding.

WARNING
Danger of accidents Not adapting the riding style constitutes a major risk.
– Comply with traffic regulations and ride defensively and with foresight to detect sources of danger as early as possible.

WARNING
Danger of accidents Total weight and axle loads influence the handling characteristic.
The total weight consists of: operational vehicle with a full tank, rider and, if applicable, a passenger with protective clothing and helmet, and, if applicable, mounted luggage.
– Do not exceed the maximum permissible total weight or the axle loads.

WARNING
Danger of accidents Adjustments to the vehicle distract attention from traffic activity.
– Make all adjustments when the vehicle is at a standstill.

WARNING
Danger of accidents Abrupt load alterations can cause the vehicle to become out of control.
– Avoid abrupt load alterations and sudden braking actions unless a hazardous situation arises.

WARNING
Danger of accidents Cold tires have reduced road grip.
– Ride the first miles carefully on every journey at moderate speed until the tires reach operating temperature.

WARNING
Danger of accidents New tires have reduced road grip.
The contact surface on new tires is not yet roughened.
– Run in new tires with moderate riding and only gradually increase the lean angle.

WARNING
Danger of accidents A fall can damage the vehicle more seriously than it may first appear.
– Check the vehicle after a fall as you do when preparing for use.

WARNING
Danger of accidents If you downshift at high engine speed, the rear wheel blocks and the engine races.
– Do not downshift to a lower gear at high engine speeds.

NOTE
Engine failure Overheating damages the engine.
– If the coolant temperature warning is displayed, stop immediately and take care not to endanger yourself or other traffic participants in the process.
– Allow the engine and cooling system to cool down.
– Check and, if necessary, correct the coolant level on the cooling system while it is in a cooled state.

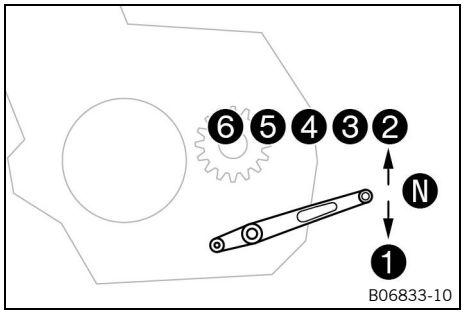
NOTE
Engine failure Unfiltered intake air has a negative effect on the service life of the engine.
Dust and dirt can enter the engine if there is no air filter or if the air filter is mounted incorrectly.
– Only operate the vehicle if an air filter is correctly fitted.

NOTE
Transmission damage Incorrect use of the QUICKSHIFTER+ will damage the transmission.

The QUICKSHIFTER+ can only be used if the function is enabled in the combination instrument.
The QUICKSHIFTER+ is not active if you pull the clutch lever.

– Only use the QUICKSHIFTER+ in the permitted speed range shown.

Note
If you hear unusual noises while riding, stop immediately in a safe manner, switch off the engine, and contact an authorized contractual partner.

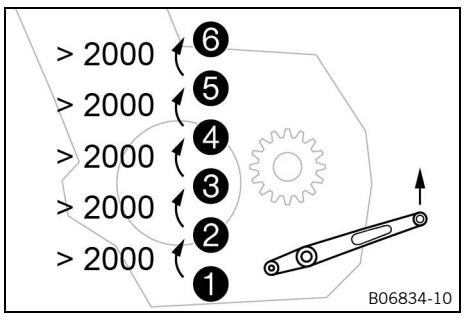


– Shift into a higher gear when conditions allow (incline, riding situation, etc.).
– Release the throttle while simultaneously pulling the clutch lever, shift into the next gear, release the clutch lever, and open the throttle.

Note
You can see the positions of the 6 forward gears in the figure. The neutral or idle position is between the first and second gears. First gear is used for starting off or for steep inclines.

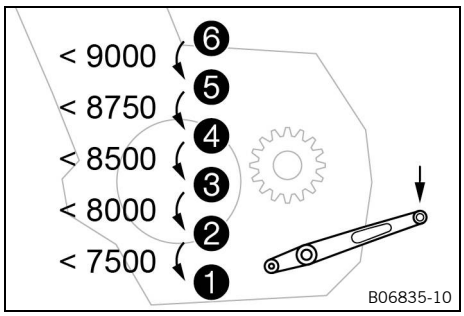
– After reaching maximum speed by fully opening the throttle twist grip, turn the throttle back so that it is ¾ open. This will reduce the speed slightly, but the fuel consumption will be considerably lower.
– Accelerate only up to a speed suitable for the road surface and weather conditions. In particular, you should not change gear on bends and should only accelerate very cautiously.
– Brake if necessary and close the throttle at the same time in order to shift down.
– Pull clutch lever and shift into a lower gear, release the clutch lever slowly, and open the throttle or shift again.
– Switch off the engine if you are likely to be running at idle speed or stationary for a long time.
– If the oil pressure warning lamp lights up during a trip, stop immediately and switch off the engine. Contact an authorized contractual partner.
– If malfunction indicator lamp lights up during a trip, please contact an authorized contractual partner as soon as possible.
– If the general warning lamp lights up during a trip, the display shows a message.

Note
Very important messages are stored in the **Warnings** menu.



– If the **QUICKSHIFTER+** is enabled in the combination instrument, you can shift up in the speed range shown without pulling the clutch lever.

Note
The minimum engine speed before shifting up in revolutions per minute is shown in the figure.
Pull the shift lever to the stop quickly without changing the throttle twist grip position.



– If the QUICKSHIFTER+ is activated in the combination instrument, you can shift down in the engine speed range shown without pulling the clutch lever.

Note

The maximum engine speed before shifting down in revolutions per minute is shown in the figure.

Press the shift lever to the stop quickly without changing the throttle twist grip position.

10.8 Braking.

WARNING

Danger of accidents A spongy pressure point on the front or rear brake reduces the brake action.

– Do not drive the vehicle if the brake system has a spongy pressure point.

WARNING

Danger of accidents The brake system fails in the event of overheating.

If the brake pedal is not released, the brake pads grind continuously.

– Take your foot off the brake pedal when you are not braking.

WARNING

Danger of accidents Moisture and dirt impair the brake system.

– Brake carefully several times to dry out and remove dirt from the brake pads and the brake discs.

– When braking, release the throttle and apply the front and rear brakes at the same time.

WARNING

Danger of accidents The rear wheel can lock due to the engine braking effect.

– Pull the clutch when performing emergency braking or braking on slippery surfaces.

WARNING

Danger of accidents Banked or laterally sloping ground reduces the maximum possible delay.

– If possible finish braking before going into a bend.

– Always finish braking before you go into a bend. Shift into a lower gear that suits the speed.
– Use the brake action of the engine on long downhill stretches. To do so, shift back one or two gears, but do not overrev the engine. This means that significantly less braking is required and means the brake system does not overheat.

10.9 Stop, park

WARNING

Risk of injury People who act without authorization endanger themselves and others.

– Never leave the vehicle unattended while the engine is running.
– Lock the steering and remove the ignition key if you leave the vehicle unattended.

WARNING

Danger of burns Some vehicle components become hot when the vehicle is operated.

– Do not touch any parts such as the exhaust system, radiator, engine, damper, or brake system before the vehicle parts have cooled down.
– Allow the vehicle parts to cool down before performing any work on the vehicle.

NOTE

Fire hazard Hot vehicle components pose a fire hazard and explosion risk.

– Do not park the vehicle near materials which are highly flammable or explosive.
– Allow the vehicle to cool down before covering it.

NOTE

Material damage The vehicle may be damaged if parked incorrectly.

Damage can occur if the vehicle rolls away or falls over.

The components for parking the vehicle are designed only for the weight of the vehicle.

– Park the vehicle on a firm and level surface.
– Make sure that nobody sits on the vehicle when it is parked on a stand.

Main work

– Brake the motorcycle.
– Shift the transmission into the neutral position.
– Switch the ignition off using the ignition button.

Note

If the engine is switched off using the emergency OFF switch but the ignition remains on, the power supply to most electrical components is not cut off. This discharges the 12-V battery. You should therefore always switch off the engine with the ignition button – the emergency OFF switch is intended for emergencies only.

– Park the motorcycle on firm ground.

Reworking

– Raise the motorcycle with the rear lifting gear. (p. 75)

10.10 Transportation

NOTE

Fire hazard Hot vehicle components pose a fire hazard and explosion risk.

– Do not park the vehicle near materials which are highly flammable or explosive.
– Allow the vehicle to cool down before covering it.

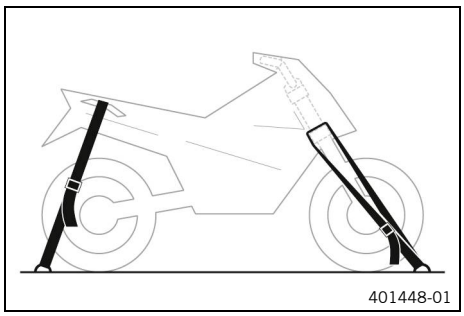
NOTE

Material damage The vehicle may be damaged if parked incorrectly.

Damage can occur if the vehicle rolls away or falls over.

The components for parking the vehicle are designed only for the weight of the vehicle.

– Park the vehicle on a firm and level surface.
– Make sure that nobody sits on the vehicle when it is parked on a stand.



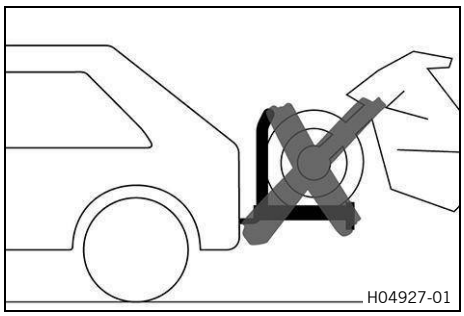
– Switch off the engine.
– Use tension belts or other suitable devices to secure the motorcycle against falling over or rolling away.

10.11 Towing in the event of a breakdown

NOTE

Danger of damage Damage to the powertrain and transmission can occur when towing with a towing vehicle.

– Do not use towing equipment where the wheels of the broken down vehicle remain on the road and rotate as it is towed.
– Always transport a broken down vehicle on a trailer or on the loading area of a transport vehicle.



– Ensure that the broken down vehicle is properly secured on the trailer or transport vehicle.
– Observe local regulations for the recovery of broken down vehicles.

10.12 Refueling

DANGER

Fire hazard Fuel is highly flammable.

The fuel in the fuel tank expands when warm and can escape if overfilled.

– Do not refuel the vehicle in the vicinity of open flames, glowing, or smoldering objects.
– Make sure that nobody smokes in the vicinity of the vehicle during the refueling process.
– Switch off the engine for refueling.
– Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.
– If any fuel is spilled, wipe it up immediately.
– Do not overfill the fuel tank.

WARNING

Danger of poisoning Fuel is harmful to health.

– Do not allow fuel to come into contact with skin, eyes, or clothing.
– Consult a doctor immediately if fuel has been ingested.
– Do not inhale fuel vapors.
– Rinse the affected area immediately with plenty of water in the event of contact with skin.
– Rinse eyes thoroughly with water and consult a doctor immediately if fuel comes into contact with eyes.
– If fuel spills on to your clothing, change the clothing.
– Store fuel properly in a suitable container and keep out of the reach of children.

NOTE

Material damage Inadequate fuel quality can lead to losses in performance and consequential damage.

– Refuel only with clean fuel that meets the specified standards.

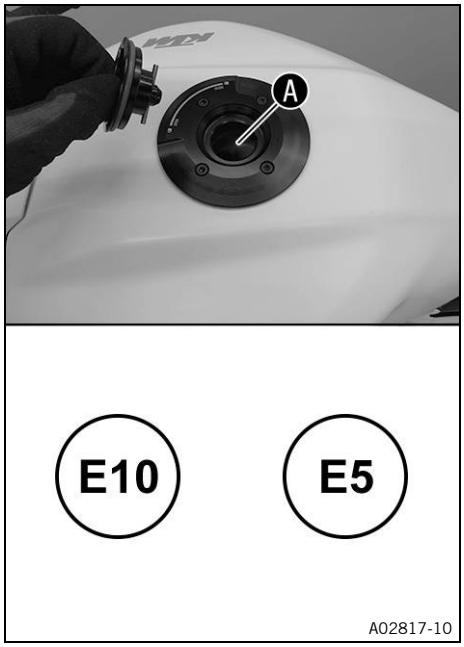
NOTE

Environmental hazard Improper handling of fuel is dangerous to the environment.

– Do not allow fuel to enter the groundwater, the soil, or the sewage system.

Note

An optional fuel tank foam can be used to reduce fuel sloshing in the tank and improve riding stability. If fuel foam is used, the fuel level indicator may stop working or become inaccurate.



– Switch off the engine.

Use only petrol-resistant materials and check the foam regularly for signs of aging.
Do not use unsuitable or non-fuel-resistant foam. Particles that break down can damage the fuel system and cause engine malfunctions.

– Open the fuel tank cap. (p. 21)

– Fill the fuel tank with fuel up to the lower edge Ⓐ of the filler neck.

Fuel tank capacity, approx.	
Super unleaded (ROZ 95) (p. 214)	15.7 l (4.15 liq. gal_{US})

– Close the fuel tank cap. (p. 21)

11.1 Service schedule

Any further work that results from the service work must be ordered separately and invoiced separately.
Different service intervals may apply in your country, depending on the local operating conditions.
Individual service intervals and scopes may change in the course of technical developments. The most up-to-date service schedule is available for authorized contractual partners for the electronic proof of service. Your authorized contractual partner will be happy to advise you.

	after 200 km (124.3 mi)	every 2,500 km (1,553.4 mi)	every 5,000 km (3,106.9 mi)	every 10,000 km (6,213.7 mi)	every 20,000 km (12,427.4 mi)	Every 12 months
Read out the fault memory using the diagnostics tool.	○			•	•	•
Program the shift shaft sensor.	○			•	•	•
Change the brake fluid for the front brake.	○	•	•	•	•	•
Change the brake fluid for the rear brake.						•
Change the engine oil and the oil filter, clean the oil screens. (p. 167)	○	•	•	•	•	•
Check all hoses (e.g. fuel, cooling, bleeder, drainage, etc.) and boots for cracking, leaks, and correct routing.	○	•	•	•	•	•
Check the cables for damage and that there are no kinks in the routing.	○	•	•	•	•	•
Check the frame. (p. 106)	○	•	•	•	•	
Check the swingarm. (p. 106)	○	•	•	•	•	
Check the swingarm bearing for play.	○	•	•	•	•	
Check the heim joint on the shock absorber for play.	○	•	•	•	•	
Check the shock absorber linkage for play.	○	•	•	•	•	
Check the steering head bearing play. (p. 84)	○	•	•	•	•	
Check the wheel bearing for play.	○	•	•	•	•	
Check the shock absorber and fork for leaks. Perform a fork service and shock absorber service as needed, when possible and depending on how the vehicle is used.						•
Grease all moving parts (e.g., hand lever, chain, etc.) and check for smooth operation.	○	•	•	•	•	•
Change the spark plugs.				•	•	
Check/clean the oil nozzle for clutch lubrication.				•	•	
Check and adjust the valve clearance.				•	•	
Check the clutch plate pack.			•	•	•	
Change the clutch.					•	
Clean the air filter and change as necessary.				•	•	
Check the fuel pressure.	○			•	•	•
Clean the dust boots of the fork legs. (p. 78)				•	•	
Change the coolant. (p. 163)						•
Check the wear of the camshaft and cam levers.				•	•	

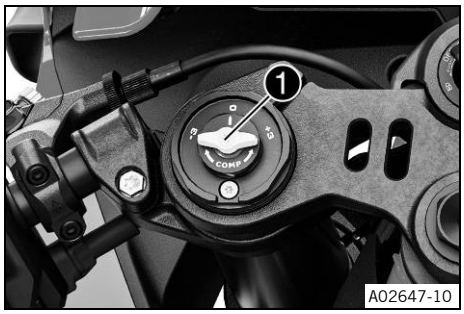
	after 200 km (124.3 mi)	every 2,500 km (1,553.4 mi)	every 5,000 km (3,106.9 mi)	every 10,000 km (6,213.7 mi)	every 20,000 km (12,427.4 mi)	Every 12 months
Change the fuel filter.				•	•	
Check the transmission.					•	
Perform engine service including removing and installing the engine. (Change the cover seal and radial seal ring of the water pump. Check the rod bearings and crankshaft bearings, and change if necessary. Change the balancer bearing. Check/change piston clearance and piston rings.)					•	
Final check: check vehicle for operating safety.	○	•	•	•	•	•
Enter electronic proof of service.	○	•	•	•	•	•

○ One-time interval

• Periodic interval

12.1 Adjusting the compression damping of the fork

Note
The hydraulic compression damping determines the fork suspension behavior.



– Turn white adjuster ❶ clockwise as far as it will go.

Note
Adjuster ❶ is located at the upper end of the left fork leg.
The compression damping is located in left fork leg **COMP** (white adjuster). The rebound damping is located in right fork leg **REB** (red adjuster).

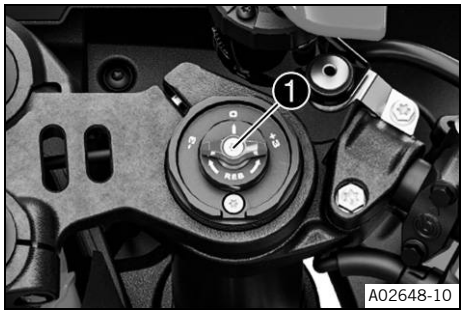
– Turn counterclockwise by the number of clicks corresponding to the fork type.

Compression damping	
Standard	15 clicks

Note
Turning clockwise increases damping; turning counterclockwise reduces damping during compression.

12.2 Adjusting the rebound damping of the fork

Note
The hydraulic rebound damping determines the fork suspension behavior.



– Turn red adjuster ❶ clockwise as far as it will go.

Note
Adjuster ❶ is located at the upper end of the right fork leg.
The rebound damping is located in right fork leg **REB** (red adjuster). The compression damping is located in left fork leg **COMP** (white adjuster).

– Turn counterclockwise by the number of clicks corresponding to the fork type.

Rebound damping	
Standard	15 clicks

Note
Turning clockwise increases damping; turning anticlockwise reduces damping on rebound.

12.3 Compression damping of the shock absorber

The compression damping of the shock absorber is divided into two ranges: high-speed and low-speed.

High-speed and low-speed refer to the compression speed of the rear wheel suspension and not to the vehicle speed.

The high-speed compression adjuster, for example, has an effect when riding over an asphalt edge: the rear wheel suspension compresses quickly.

The low-speed compression has an effect, for example, when riding over long bumps: the rear wheel suspension compresses slowly.

These two ranges can be adjusted separately, although the transition between high-speed and low-speed is gradual. As a result, changes in the high-speed range affect the compression damping in the low-speed range and vice versa.

12.4 Adjusting the low-speed compression damping of the shock absorber

CAUTION

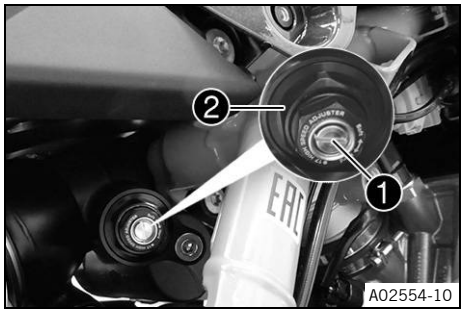
Risk of injury Parts of the shock absorber will move erratically if the shock absorber is detached incorrectly.

The shock absorber is filled with highly compressed nitrogen.

– Please follow the description provided.

Note

The effect of the low-speed compression adjustment can be seen in slow to normal compression of the shock absorber.



– Turn adjusting screw ❶ clockwise with a screwdriver as far as the last perceptible click.

Note

Do not loosen fitting ❷!

– Turn counterclockwise by the number of clicks corresponding to the shock absorber type.

Low-speed compression damping	
Standard	15 clicks

Note

Turn clockwise to increase damping; turn counterclockwise to reduce damping during slow to normal compression.

12.5 Adjusting the high-speed compression damping of the shock absorber

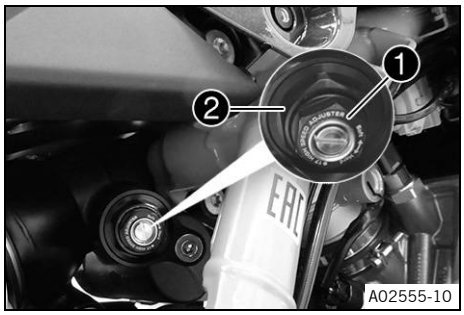
CAUTION

Risk of injury Parts of the shock absorber will move erratically if the shock absorber is detached incorrectly.

The shock absorber is filled with highly compressed nitrogen.

– Please follow the description provided.

Note
The effect of the high-speed compression adjustment can be seen in the fast compression of the shock absorber.



– Using an open end wrench, turn adjusting screw ❶ clockwise all the way.

Note
Do not loosen fitting ❷!

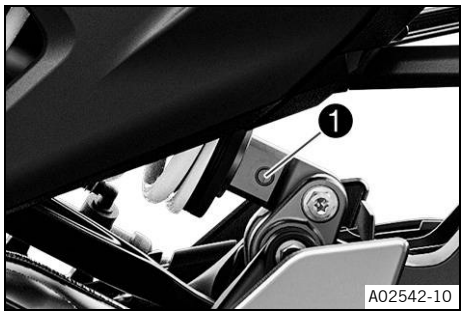
– Turn counterclockwise by the number of turns corresponding to the shock absorber type.

High-speed compression damping	
Standard	2 turns (720°)

Note
Turn clockwise to increase damping; turn counterclockwise to reduce damping during fast compression.

12.6 Adjusting the rebound damping of the shock absorber

CAUTION
Risk of injury Parts of the shock absorber will move erratically if the shock absorber is detached incorrectly. The shock absorber is filled with highly compressed nitrogen.
– Please follow the description provided.



– Turn adjusting screw ❶ clockwise up to the last perceptible click.
– Turn counterclockwise by the number of clicks corresponding to the shock absorber type.

Rebound damping	
Standard	12 clicks

Note
Turning clockwise increases damping; turning anticlockwise reduces damping on rebound.

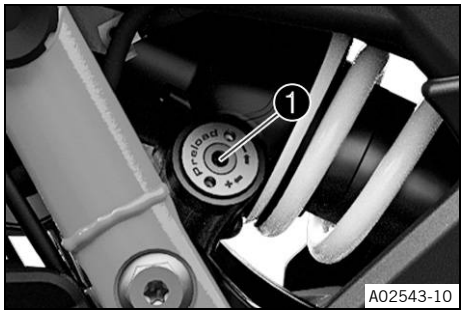
12.7 Adjusting the spring preload of the shock absorber

WARNING
Danger of accidents Modifications to the suspension settings that are not properly coordinated can impair the handling and overload components.
– Only make adjustments within the recommended range.
– Ride slowly to start with after making adjustments to get the feel of the new handling characteristics.

Note

The spring preload defines the initial status of the spring operation on the shock absorber.

An optimally adjusted spring preload is adapted to the rider's weight and ensures a compromise between easy handling and stability.



– Adjust the spring preload by turning the adjusting device ❶ using a suitable hook wrench.

Preload adjuster	
Standard	3 turns (1,080°)

Note

The spring preload can be set to 10 different positions.

13.1 Raising the motorcycle with rear lifting gear

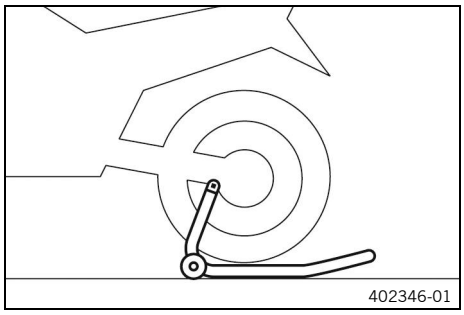
NOTE

Material damage The vehicle may be damaged if parked incorrectly.

Damage can occur if the vehicle rolls away or falls over.

The components for parking the vehicle are designed only for the weight of the vehicle.

– Park the vehicle on a firm and level surface.
– Make sure that nobody sits on the vehicle when it is parked on a stand.



– Mount the supports of the wheel stand.
– Insert the adapter in the rear wheel stand.

Retaining adapter (63529955000)
Rear wheel work stand (69329955000)

– Stand the motorcycle upright, align the wheel stand with the swingarm and the adapters, and raise the motorcycle.

13.2 Removing the rear of the motorcycle from the lifting gear

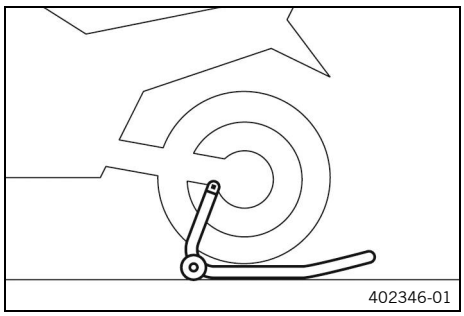
NOTE

Material damage The vehicle may be damaged if parked incorrectly.

Damage can occur if the vehicle rolls away or falls over.

The components for parking the vehicle are designed only for the weight of the vehicle.

– Park the vehicle on a firm and level surface.
– Make sure that nobody sits on the vehicle when it is parked on a stand.



– Secure the motorcycle against falling over.
– Remove the rear lifting gear.
– Remove the retaining adapter from the link fork.

13.3 Lifting the motorcycle with the front lifting gear

NOTE

Material damage The vehicle may be damaged if parked incorrectly.

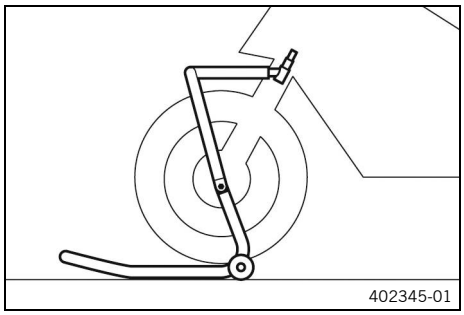
Damage can occur if the vehicle rolls away or falls over.

The components for parking the vehicle are designed only for the weight of the vehicle.

– Park the vehicle on a firm and level surface.
– Make sure that nobody sits on the vehicle when it is parked on a stand.

Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)



Main work

– Move the handlebar to the straight-ahead position. Position wheel stand at the front.

Always raise the motorcycle at the rear first.

Front wheel work stand, small (61129965100)

– Lift the motorcycle at the front.

13.4 Taking the motorcycle off the front lifting gear

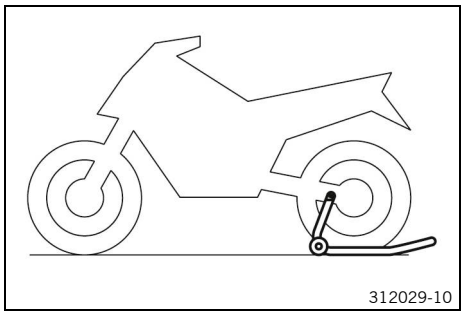
NOTE

Material damage The vehicle may be damaged if parked incorrectly.

Damage can occur if the vehicle rolls away or falls over.

The components for parking the vehicle are designed only for the weight of the vehicle.

– Park the vehicle on a firm and level surface.
– Make sure that nobody sits on the vehicle when it is parked on a stand.



– Secure the motorcycle against falling over.
– Remove the front lifting gear.

13.5 Raising the motorcycle with work stand

NOTE

Material damage The vehicle may be damaged if parked incorrectly.

Damage can occur if the vehicle rolls away or falls over.

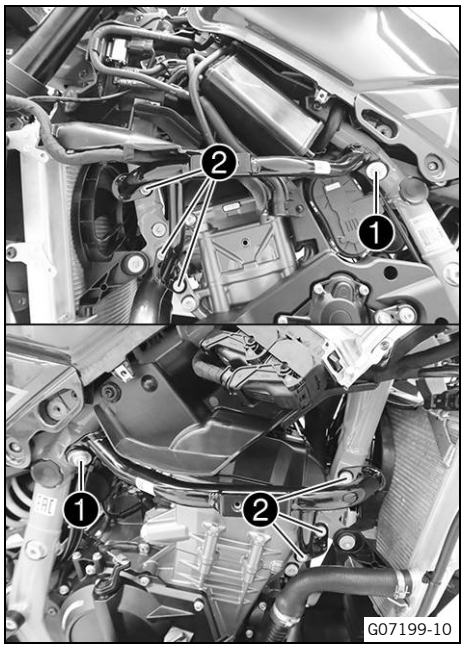
The components for parking the vehicle are designed only for the weight of the vehicle.

– Park the vehicle on a firm and level surface.
– Make sure that nobody sits on the vehicle when it is parked on a stand.

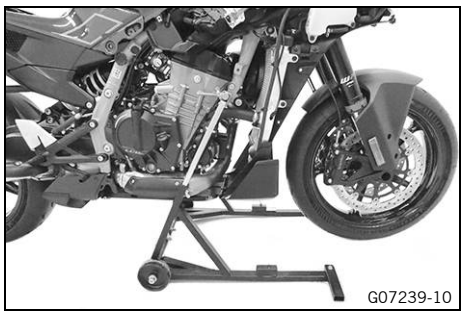
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove left front spoiler. (p. 109)
– Remove front fairing. (p. 112)
– Remove the left side cover. (p. 115)
– Remove right front spoiler. (p. 111)
– Remove the right side fairing. (p. 119)

Main work



– Remove screws ❶ and ❷.
– Remove the crash bar.



– Mount the special tool.

Work stand (62529055200)

– Position the motorcycle vertically, align the special tool, and raise the motorcycle.

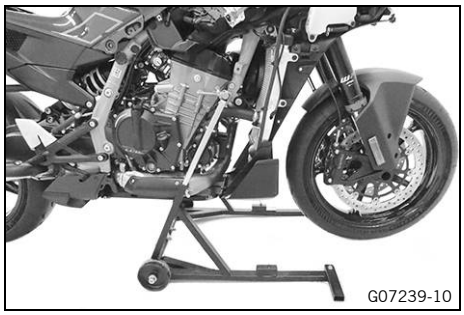
◀

13.6 Removing the motorcycle from the work stand

NOTE

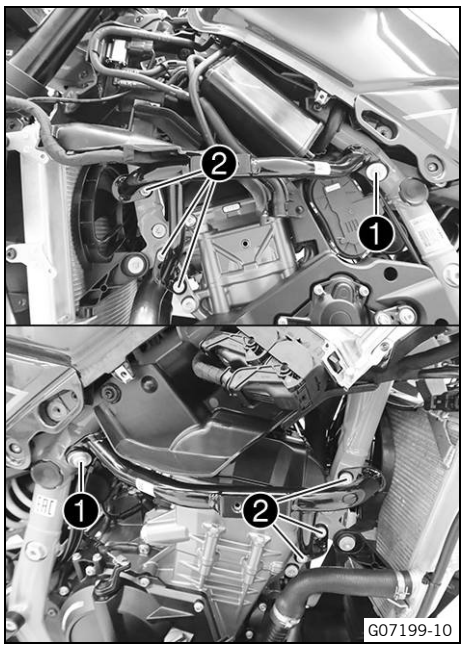
Material damage The vehicle may be damaged if parked incorrectly.
Damage can occur if the vehicle rolls away or falls over.
The components for parking the vehicle are designed only for the weight of the vehicle.
– Park the vehicle on a firm and level surface.
– Make sure that nobody sits on the vehicle when it is parked on a stand.

Main work



– Secure the motorcycle against falling over.
– Remove the special tool.

Work stand (62529055200)



– Position the crash bar.
– Mount and tighten screws ❶ and ❷.

Remaining screws on chassis	
M8	25 Nm (18.4 ft·lb$_f$)

Reworking

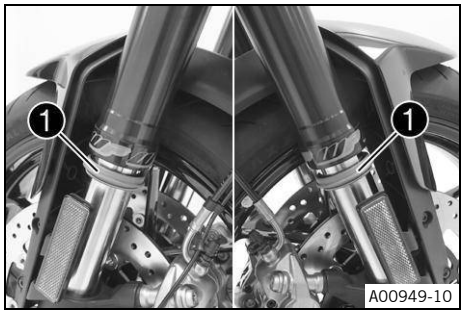
– Install the left side fairing 📖 (p. 117)
– Install left front spoiler. 📖 (p. 110)
– Install the right side cover. 📖 (p. 122)
– Install right front spoiler. 📖 (p. 111)
– Install the front fairing. 📖 (p. 113)
– Remove the rear of the motorcycle from the lifting gear. 📖 (p. 75)

13.7 Cleaning the dust boots of the fork legs

Preparatory work

– Raise the motorcycle with the rear lifting gear. 📖 (p. 75)
– Lift the motorcycle with the front lifting gear. 📖 (p. 75)

Main work



– Push dust boot ❶ downward on both fork legs.

Note

The dust boots should remove dust and coarse dirt particles from the inner fork tubes. Over time, dirt can accumulate behind the dust boots. If this dirt is not removed, the oil seals behind can start to leak.

WARNING

Danger of accidents Oil, grease or wax on the brake discs reduces the brake action.

– Always keep the brake discs free of oil, fat and wax.
– Clean the brake discs with brake cleaner when necessary.

– Clean and oil the dust boots and the inner fork tube of both fork legs.

Universal oil spray (p. 215)

– Press the dust boots back into their installation position.
– Remove excess oil.

Reworking

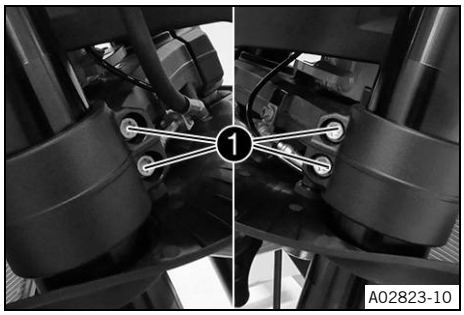
– Take the motorcycle off the front lifting gear. (p. 76)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.8 Removing the fork legs

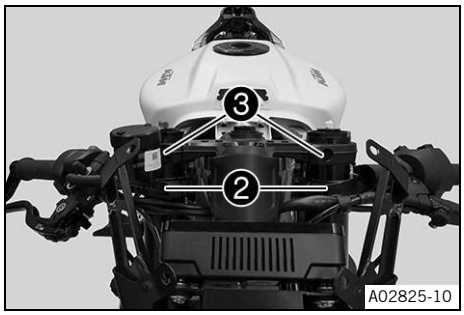
Preparatory work

– Remove the front top fender. (p. 106)
– Raise the motorcycle with the rear lifting gear. (p. 75)
– Lift the motorcycle with the front lifting gear. (p. 75)
– Remove the front wheel. (p. 139)
– Remove left front spoiler. (p. 109)
– Remove front fairing. (p. 112)
– Remove the left side cover. (p. 115)
– Remove right front spoiler. (p. 111)
– Remove the right side fairing. (p. 119)

Main work

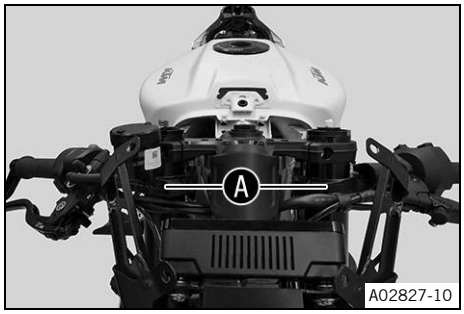


– Loosen screws ❶.



– Loosen screws ❷ on the clip-on.
– Loosen screws ❸. Remove the fork legs downwards.

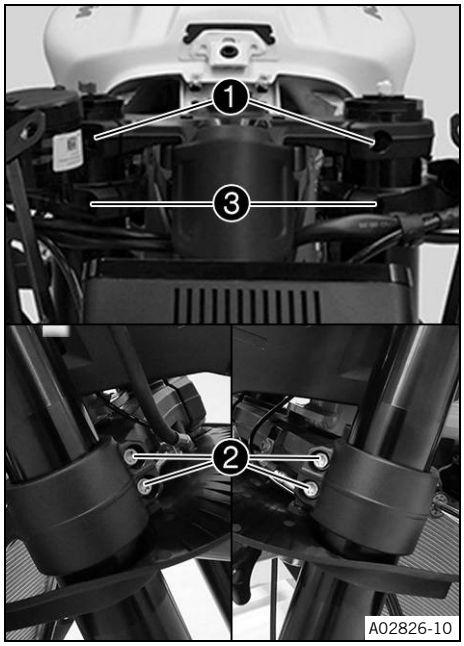
13.9 Installing the fork legs



Main work

– Push the fork legs into the triple clamps.
– Align the fork legs in the required position using the fork rings.
– Position the handlebar stub under the upper triple clamp.

Screw Ⓐ of each handlebar stub must engage in the upper triple clamp.



– Tighten screws ❶ and ❷.

Screw, top triple clamp	
M8	15 Nm (11.1 ft·lb$_f$)
Screw, bottom triple clamp	
M8	12 Nm (8.9 ft·lb$_f$)

– Tighten screws ❸.

Screw, top triple clamp	
M8	15 Nm (11.1 ft·lb$_f$)

Reworking

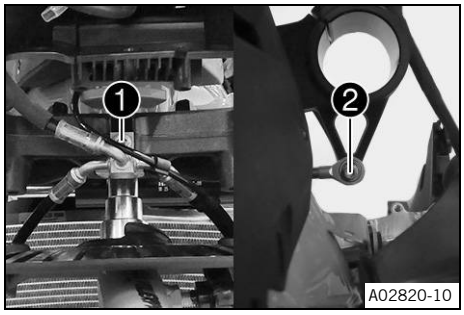
– Install the left side fairing (p. 117)
– Install left front spoiler. (p. 110)
– Install the right side cover. (p. 122)
– Install right front spoiler. (p. 111)
– Install the front fairing. (p. 113)
– Install the front top fender. (p. 107)
– Install the front wheel. (p. 140)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)
– Take the motorcycle off the front lifting gear. (p. 76)

13.10 Removing the lower triple clamp

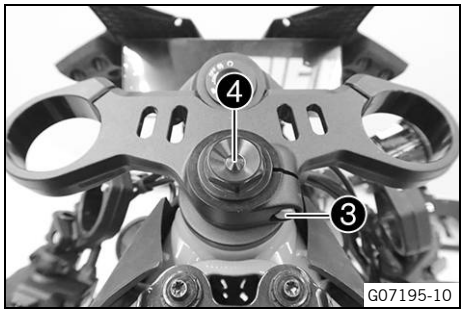
Preparatory work

- Raise the motorcycle with the rear lifting gear. (p. 75)
- Remove left front spoiler. (p. 109)
- Remove front fairing. (p. 112)
- Remove the left side cover. (p. 115)
- Remove right front spoiler. (p. 111)
- Remove the right side fairing. (p. 119)
- Raise motorcycle with work stand. (p. 76)
- Remove the front top fender. (p. 106)
- Lift the motorcycle with the front lifting gear. (p. 75)
- Remove the front wheel. (p. 139)
- Remove the fork legs. (p. 79)

Main work

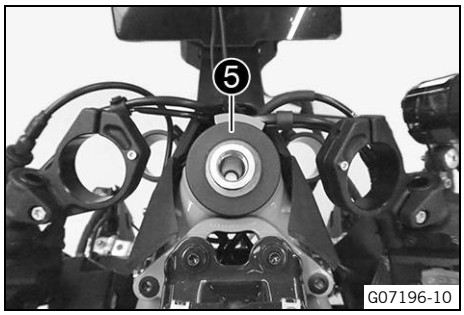


- Remove screw ❶.
- Hang the brake line to the side.
- Remove screw ❷ of the steering damper.

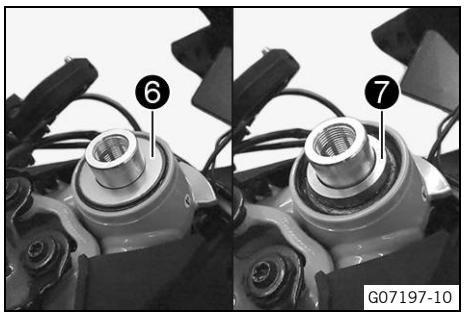


- Remove screw ❸.
- Remove screw ❹ with the washer.
- Take off the upper triple clamp and hang it to the side.

  Hold the lower triple clamp.

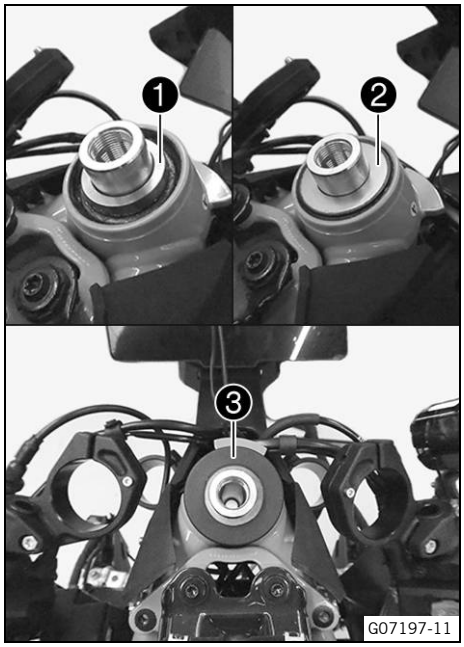


- Remove protective ring ❺.



– Remove seal ring retainer ❻.
– Remove upper steering head bearing ❼.
– Remove the steering stem from the lower triple clamp.

13.11 Installing the lower triple clamp

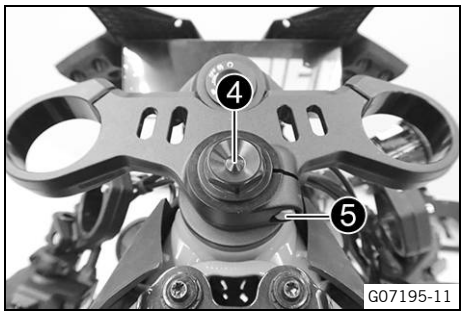


Main work

– Grease the bearing, clean the sealing elements, and check for damage.

High viscosity grease (p. 215)

– Insert the lower triple clamp with the steering stem.
– Mount upper steering head bearing ❶ and seal ring retainer ❷.
– Mount protective ring ❸.

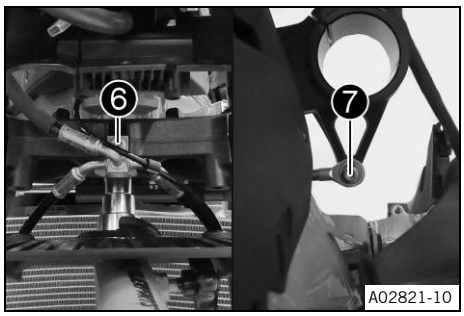


– Position the upper triple clamp.
– Mount screw ❹ with washer, but do not tighten yet.

Screw, steering head	
M20×1.5	18 Nm (13.3 ft·lb$_f$)

– Screw in screws ❺ by a few turns but do not tighten yet.

Screw, steering stem	
M8	20 Nm (14.8 ft·lb$_f$) **Loctite® 243**

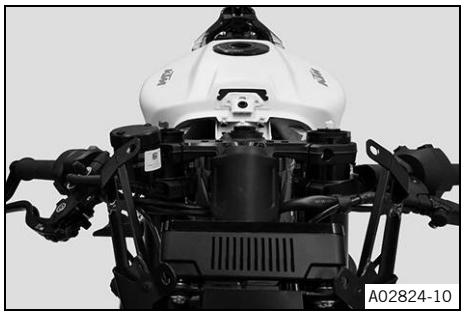


– Position the brake line.
– Mount and tighten screw ❻.

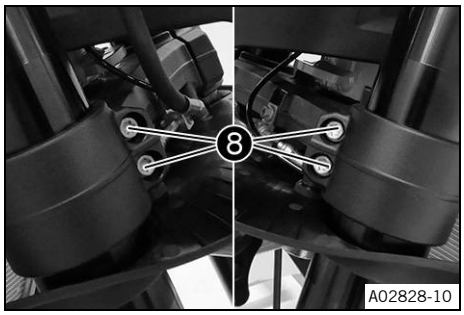
Clamp, front brake line	
M5	2 Nm (1.5 ft·lb$_f$)

– Position the steering damper.
– Mount and tighten screw ❼.

Screw, steering damper on triple clamp	
M8	8 Nm (5.9 ft·lb$_f$) **Loctite® 243**

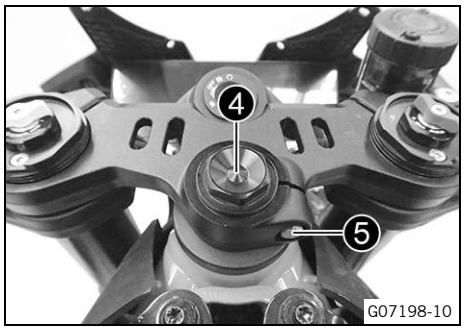


– Push the fork legs into the triple clamps.
– Align the fork legs in the required position using the fork rings.
– Position the handlebar stub under the upper triple clamp.



– Tighten screws ❽ of the lower triple clamp.

Screw, bottom triple clamp	
M8	12 Nm (8.9 ft·lb$_f$)

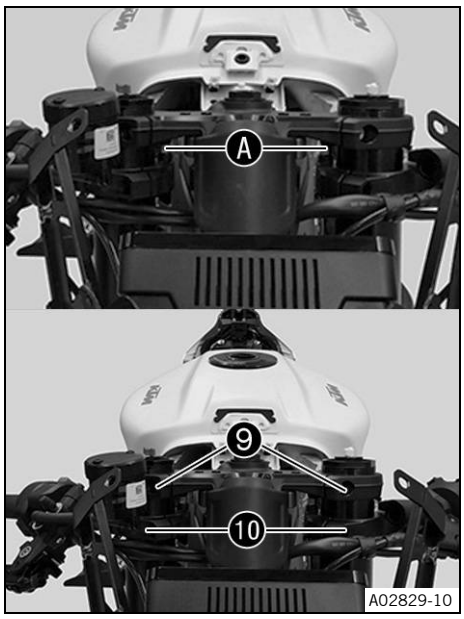


– Tighten screw ❹.

Screw, steering head	
M20×1.5	18 Nm (13.3 ft·lb$_f$)

– Tighten screw ❺.

Screw, steering stem	
M8	20 Nm (14.8 ft·lb$_f$) **Loctite® 243**



– Using a plastic hammer, tap lightly on the upper triple clamp to avoid stresses.
– Tighten screws ❾ of the upper triple clamp.

Screw, top triple clamp	
M8	15 Nm (11.1 ft·lb$_f$)

– Tighten screws ❿ of the upper triple clamp.

Screw, top triple clamp	
M8	15 Nm (11.1 ft·lb$_f$)

Screw Ⓐ of each handlebar stub must engage in the upper triple clamp.

Reworking

– Install the front wheel. 📖 (p. 140)
– Install the front top fender. 📖 (p. 107)
– Remove the motorcycle from the work stand. 📖 (p. 77)
– Install the left side fairing 📖 (p. 117)
– Install left front spoiler. 📖 (p. 110)
– Install the right side cover. 📖 (p. 122)
– Install right front spoiler. 📖 (p. 111)
– Install the front fairing. 📖 (p. 113)
– Remove the rear of the motorcycle from the lifting gear. 📖 (p. 75)

13.12 Checking the steering head bearing play

WARNING

Danger of accidents Incorrect steering head bearing play can impair the handling characteristic and damage components.

– Correct incorrect steering head bearing play immediately.

Note

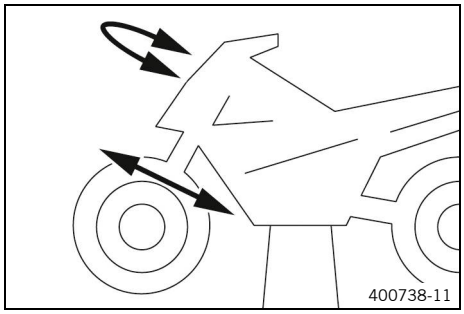
If the vehicle is operated for a lengthy period with play in the steering head bearing, the bearings and the bearing seats in the frame can become damaged.

Preparatory work

– Raise the motorcycle with the rear lifting gear. 📖 (p. 75)
– Remove left front spoiler. 📖 (p. 109)
– Remove front fairing. 📖 (p. 112)
– Remove the left side cover. 📖 (p. 115)
– Remove right front spoiler. 📖 (p. 111)

– Remove the right side fairing. (p. 119)
– Raise motorcycle with work stand. (p. 76)

Main work



– Move the handlebar to the straight-ahead position. Move the fork legs to and fro in the direction of travel.

Play should not be detectable on the steering head bearing.

» If there is detectable play:
– Adjust the steering head bearing play. (p. 85)

– Move the handlebar back and forth over the entire steering range.

It must be possible to move the handlebar easily over the entire steering range. There should be no detectable detent positions.

» If detent positions are detected:
– Adjust the steering head bearing play. (p. 85)
– Check the steering head bearing and adjust if necessary.

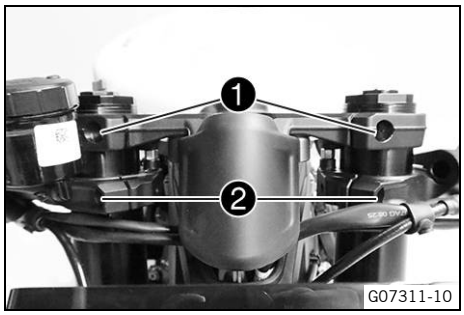
Reworking

– Remove the motorcycle from the work stand. (p. 77)
– Install the left side fairing (p. 117)
– Install left front spoiler. (p. 110)
– Install the right side cover. (p. 122)
– Install right front spoiler. (p. 111)
– Install the front fairing. (p. 113)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.13 Adjusting the steering head bearing play

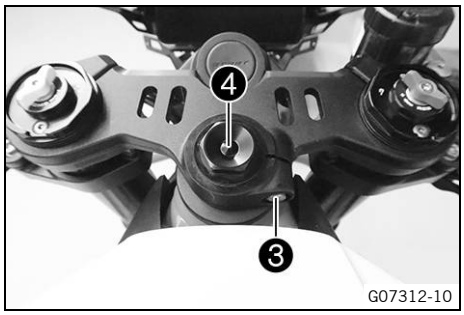
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove left front spoiler. (p. 109)
– Remove front fairing. (p. 112)
– Remove the left side cover. (p. 115)
– Remove right front spoiler. (p. 111)
– Remove the right side fairing. (p. 119)
– Raise motorcycle with work stand. (p. 76)



Main work

– Loosen screws ❶.
– Loosen screws ❷.

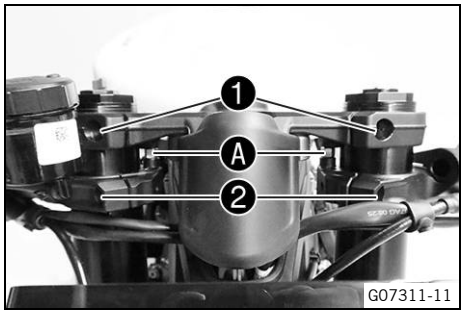


– Remove screw ❸.
– Loosen and retighten screw ❹.

Screw, steering head	
M20×1.5	18 Nm (13.3 ft·lb$_f$)

– Using a plastic hammer, tap lightly on the upper triple clamp to avoid stresses.
– Mount and tighten screw ❸.

Screw, steering stem	
M8	20 Nm (14.8 ft·lb$_f$) **Loctite® 243**



– Tighten screws ❶.

Screw, top triple clamp	
M8	15 Nm (11.1 ft·lb$_f$)

– Tighten screws ❷.

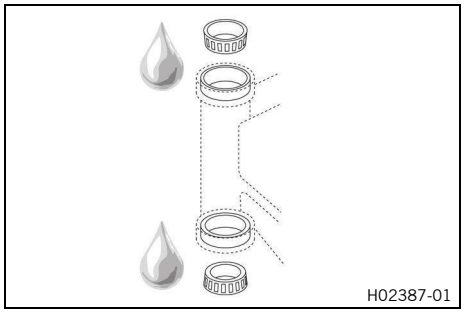
Screw, top triple clamp	
M8	15 Nm (11.1 ft·lb$_f$)

Screw Ⓐ of each handlebar stub must engage in the upper triple clamp.

Reworking

– Check the steering head bearing play. (p. 84)
– Remove the motorcycle from the work stand. (p. 77)
– Install the left side fairing (p. 117)
– Install left front spoiler. (p. 110)
– Install the right side cover. (p. 122)
– Install right front spoiler. (p. 111)
– Install the front fairing. (p. 113)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.14 Lubricating the steering head bearing



– Remove the lower triple clamp. (p. 81)
– Install the lower triple clamp. (p. 82)

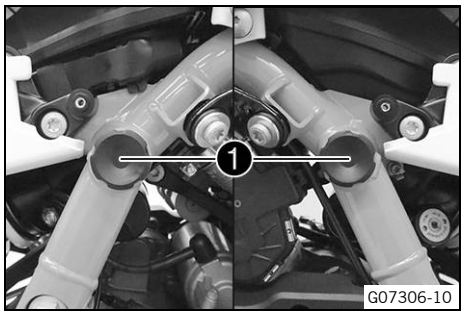
Note
The steering head bearing is cleaned and lubricated in the course of removal and installation of the lower triple clamp.

13.15 Removing the shock absorber

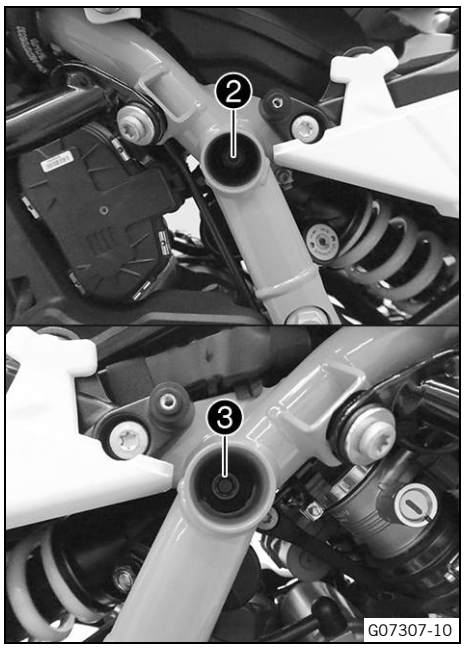
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove left front spoiler. (p. 109)
– Remove front fairing. (p. 112)
– Remove the left side cover. (p. 115)
– Remove right front spoiler. (p. 111)
– Remove the right side fairing. (p. 119)
– Raise motorcycle with work stand. (p. 76)
– Place a load on the front of the vehicle.
  ✓ The rear wheel is not in contact with the ground.
– Remove the rear wheel using a work stand. (p. 145)

Main work

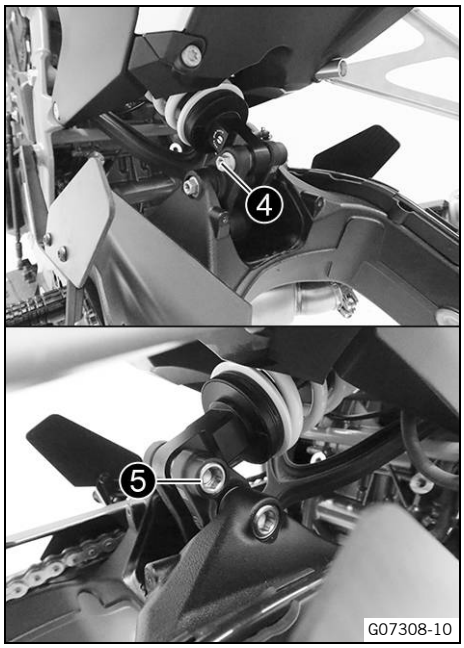


– Remove protection caps 1.



– Loosen screw ❷, but do not remove it yet.
– Loosen bushing ❸.

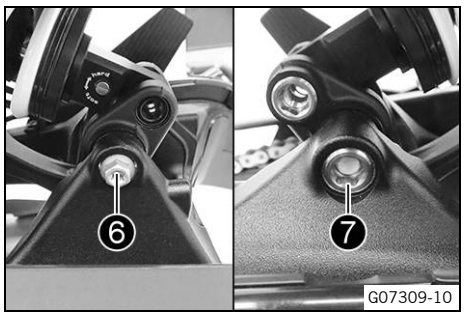
Note
LH thread.



– Loosen screw ❹, but do not remove it yet.
– Loosen bushing ❺.

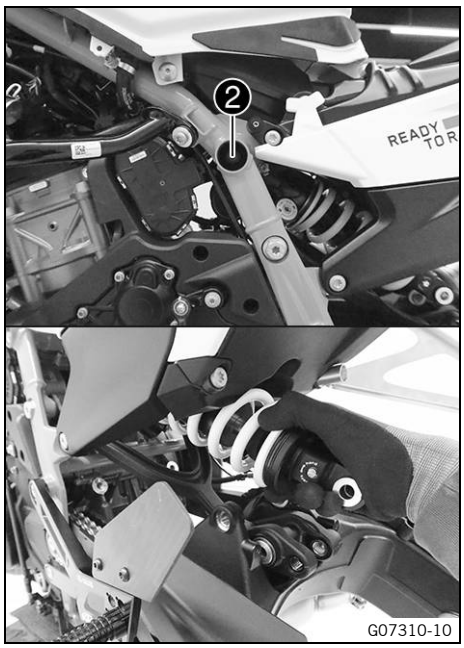
Note
LH thread.

– Remove screw ❹.



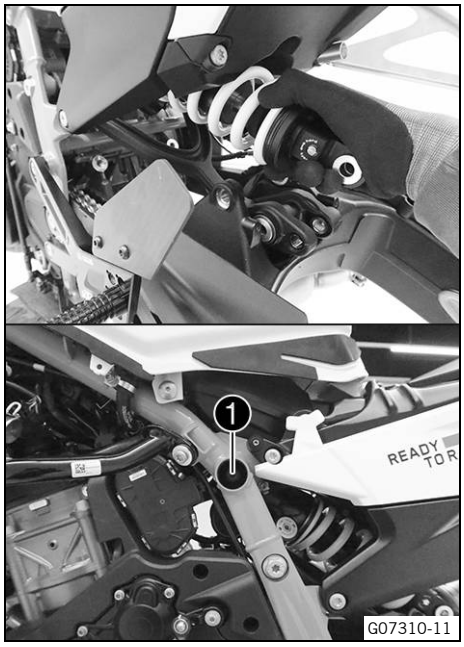
– Remove screw ❻.
– Loosen bushing ❼.

Note
LH thread.



– Remove screw ❷.
– Remove the shock absorber toward the rear.

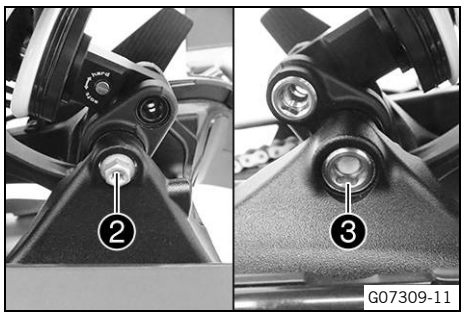
13.16 Installing the shock absorber



Main work

– Position the shock absorber in the frame.
– Mount screw ❶, but do not tighten it yet.

Top shock absorber screw	
M12	80 Nm (59.0 ft·lb$_f$) **Loctite® 2701**



– Mount screw ❷, but do not tighten it yet.

Screw, coupling rod to swingarm	
M12	80 Nm (59.0 ft·lb$_f$) **Loctite® 243**

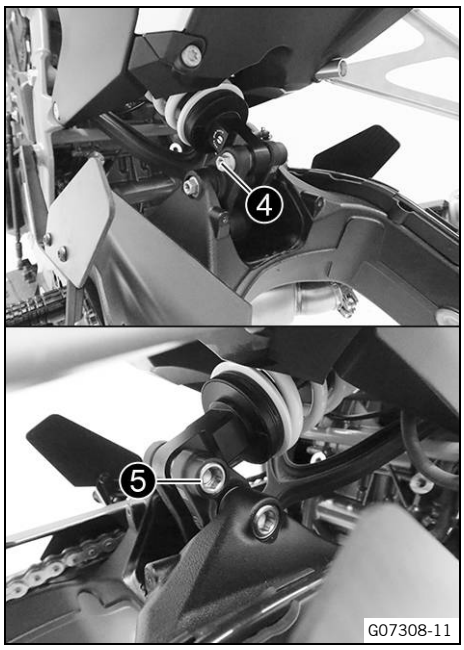
– Tighten bushing ❸.

Bushing, shock absorber support	
M20LH×1.5	10 Nm (7.4 ft·lb$_f$) Long-life grease

Grease thread and fitting.

– Tighten screw ❷.

Screw, coupling rod to swingarm	
M12	80 Nm (59.0 ft·lb$_f$) **Loctite® 243**



– Mount screw ❹, but do not tighten it yet.

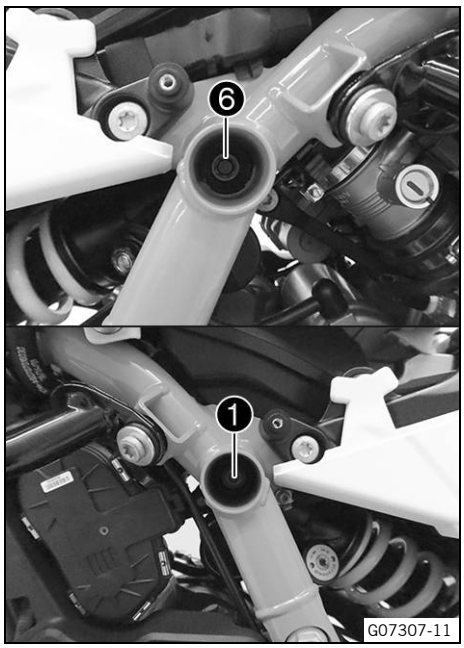
Bottom shock absorber screw	
M12	80 Nm (59.0 ft·lb$_f$) **Loctite® 2701**

– Tighten bushing ❺.

Bushing, shock absorber support	
M20LH×1.5	10 Nm (7.4 ft·lb$_f$) Long-life grease

– Tighten screw ❹.

Bottom shock absorber screw	
M12	80 Nm (59.0 ft·lb$_f$) **Loctite® 2701**

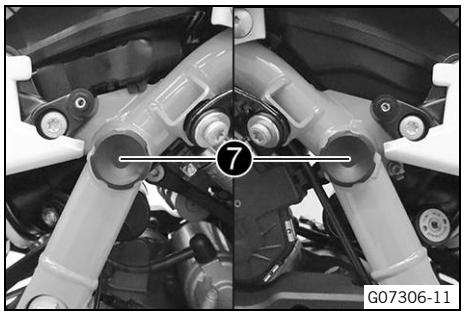


– Tighten bushing ❻.

Bushing, shock absorber support	
M20LH×1.5	10 Nm (7.4 ft·lb$_f$) Long-life grease

– Tighten screw ❶.

Top shock absorber screw	
M12	80 Nm (59.0 ft·lb$_f$) **Loctite® 2701**

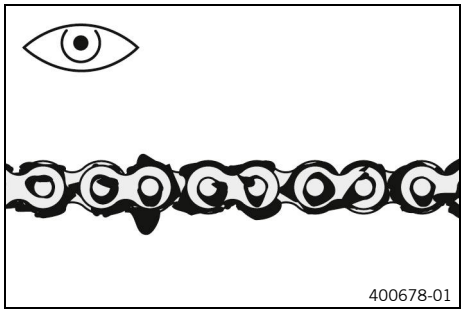


– Fit protection caps ❼.

Reworking

– Install the rear wheel using a work stand. (p. 146)
– Remove the motorcycle from the work stand. (p. 77)
– Install the left side fairing (p. 117)
– Install left front spoiler. (p. 110)
– Install the right side cover. (p. 122)
– Install right front spoiler. (p. 111)
– Install the front fairing. (p. 113)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.17 Checking the chain for dirt



– Check the chain for coarse dirt accumulation.
  » If the chain is very dirty:
    – Clean the chain. (p. 92)

13.18 Cleaning the chain

WARNING
Danger of accidents Oil, grease or wax on the brake discs reduces the brake action.
– Always keep the brake discs free of oil, fat and wax.
– Clean the brake discs with brake cleaner when necessary.

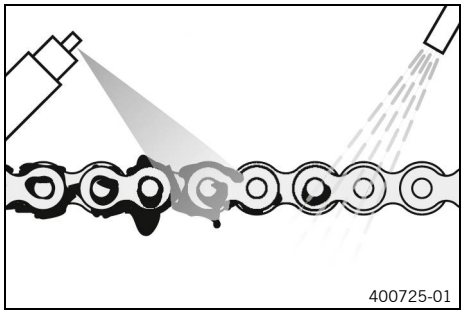
WARNING
Danger of accidents Lubricants on the tires reduces the road grip.
– Remove lubricants from the tires using a suitable cleaning agent.

NOTE
Environmental hazard Hazardous substances cause environmental damage.
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc. correctly and in accordance with the applicable regulations.

Note
The service life of the chain depends largely on its maintenance.

Preparatory work
– Raise the motorcycle with the rear lifting gear. (p. 75)

Main work



– Rinse off the loose dirt with a gentle jet of water.
– Remove old grease residues with a chain cleaner.

Chain cleaner (p. 219)

– After drying, apply chain spray.

Street chain spray (p. 215)

Reworking
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.19 Checking the chain tension

WARNING

Danger of accidents Incorrect chain tension can damage components and result in an accident.

If the chain is tension is too high, the chain, front sprocket, rear sprocket, transmission, and rear wheel bearings wear more quickly. Some components may break if overloaded.

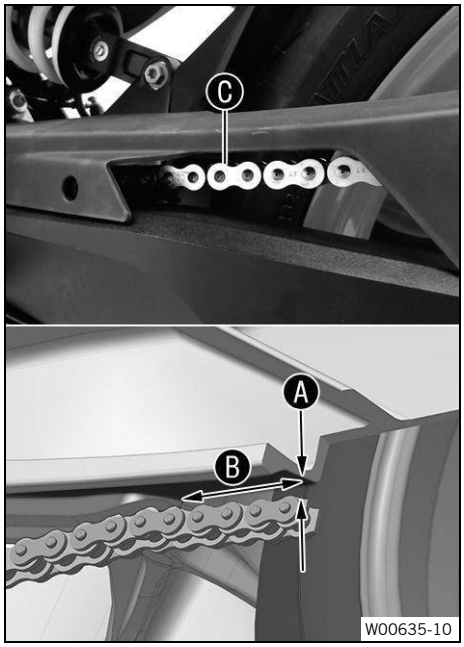
If the chain is too loose, the chain may fall off the front sprocket or the rear sprocket. This can damage the rear wheel or the engine.

– Check the chain tension regularly.
– Set the chain tension in accordance with the specification.

Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)

Main work



– Shift the transmission into the neutral position.
– Push the chain behind the chain sliding piece up and determine the chain tension A between the link fork and the upper edge of the chain.

Distance B from the chain sliding piece	2.5 cm (0.98 in)
Measure the distance from the flat part of the link fork directly above the chain, not from the edge of the link fork.	
Chain tension	2 mm ... 5 mm (0.08 in ... 0.20 in)
The top part of chain C must be taut.	
Chain wear is not always even, so repeat this measurement at different positions on the chain.	

» If the chain tension does not meet the specification:
– Adjust the chain tension. (p. 93)

Reworking

– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.20 Adjusting the chain tension

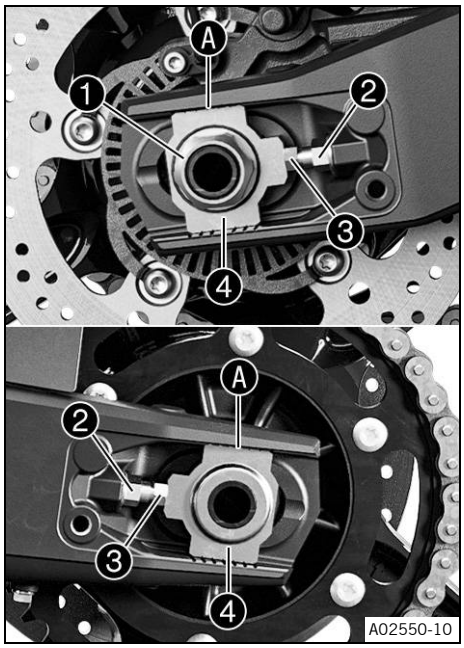
WARNING

Danger of accidents Incorrect chain tension can damage components and result in an accident.

If the chain is tension is too high, the chain, front sprocket, rear sprocket, transmission, and rear wheel bearings wear more quickly. Some components may break if overloaded.

If the chain is too loose, the chain may fall off the front sprocket or the rear sprocket. This can damage the rear wheel or the engine.

– Check the chain tension regularly.
– Set the chain tension in accordance with the specification.



Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Check the chain tension. (p. 93)

Main work

– Loosen nut ❶.
– Loosen nuts ❷.
– Adjust the chain tension by turning adjusting screws ❸ left and right.

Chain tension	2 mm ... 5 mm (0.08 in ... 0.20 in)
Turn adjusting screws ❸ on the left and right so that the markings on left and right chain adjusters ❹ are in the same position relative to reference marks Ⓐ. The rear wheel is then correctly aligned.	
The upper part of the chain must be taut.	
Chain wear is not always even. Repeat this measurement at different chain positions.	

– Tighten nuts ❷.
– Make sure that chain adjusters ❹ are fitted correctly on adjusting screws ❸.
– Tighten nut ❶.

Nut, wheel spindle, rear	
M25×1.5	90 Nm (66.4 ft·lb$_f$) Long-life grease

Note
Chain tension adjusters ❹ can be turned.

Reworking

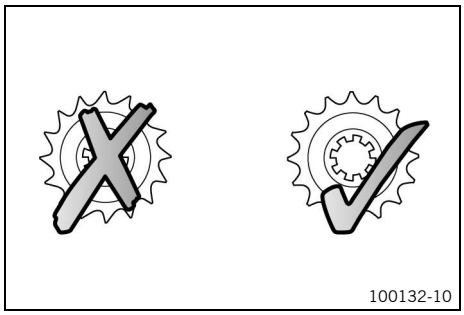
– Check the chain tension. (p. 93)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.21 Checking the chain, rear sprocket, front sprocket, and chain guide

Preparatory work

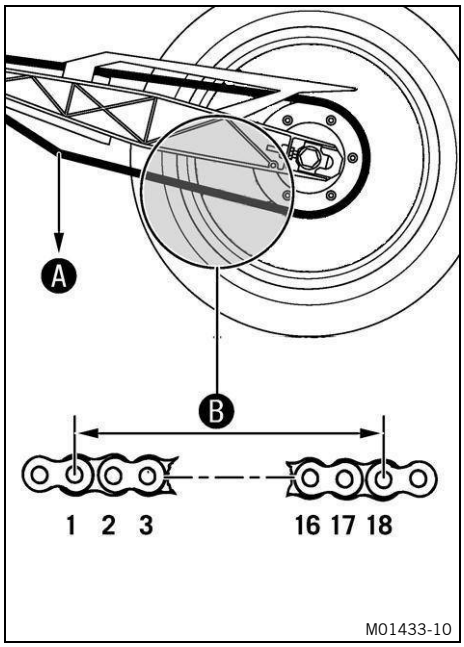
– Raise the motorcycle with the rear lifting gear. (p. 75)

Main work


100132-10

– Check the rear sprocket and the front sprocket for wear.
  » If the rear sprocket and engine sprocket are worn:
    – Change the drivetrain kit.

Always replace the front sprocket, rear sprocket, and chain together.



M01433-10

– Shift the transmission into the neutral position.
– Pull on the lower chain section with specified weight Ⓐ.

Weight, chain wear measurement	15 kg (33.1 lb)

– Measure distance Ⓑ of chain rollers in the lower chain section.

Maximum distance Ⓑ of chain rollers at the longest chain section	272 mm (10.71 in)
Chain wear is not always even, so repeat this measurement at different positions on the chain.	

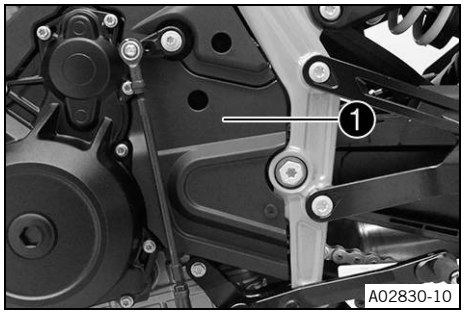
  » If distance Ⓑ is greater than the specified measurement:
    – Change the drivetrain kit.

When installing a new chain, also replace the rear sprocket and front sprocket.

Note

New chains wear out faster on old, worn sprockets.

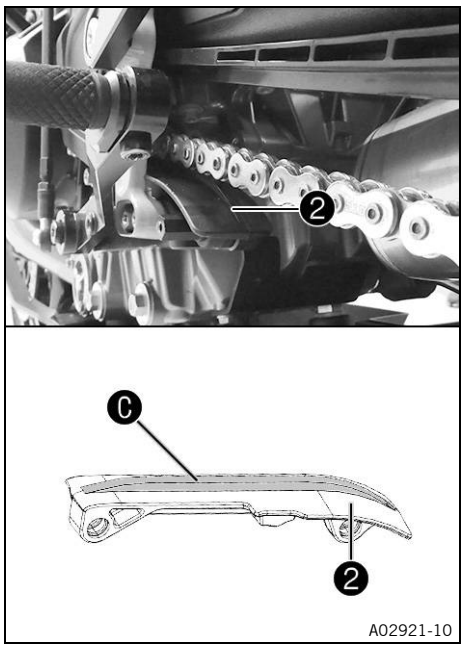
For safety reasons, the chain has no chain joint.



A02830-10

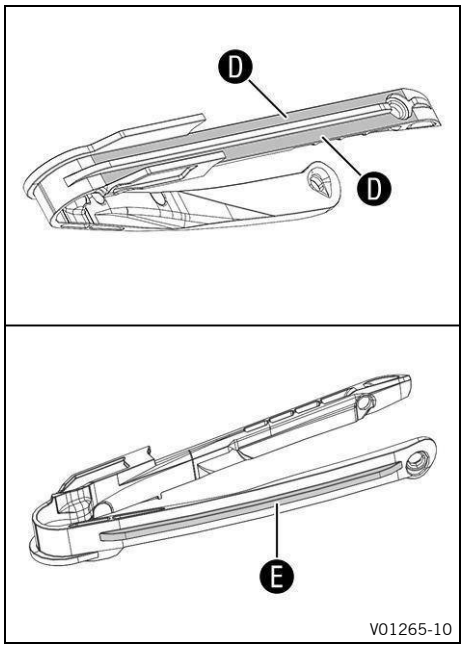
– Check the engine sprocket cover ❶ for wear.
  » If the engine sprocket cover is worn:
    – Replace the engine sprocket cover.
– Check the engine sprocket cover ❶ for tightness.
  » If the engine sprocket cover is loose:
    – Tighten the screws on the engine sprocket cover.

Screw, front sprocket cover	
M5	5 Nm (3.7 ft·lb$_f$) **Loctite® 243**



– Check chain sliding piece 2 for wear.
  » If the chain slider is highly worn in the marked area C:
    – Change the chain slider.
– Check that chain sliding piece 2 is firmly seated.
  » If the chain slider is loose:
    – Tighten the screws on the chain slider.

Remaining screws on chassis	
M8	25 Nm (18.4 ft·lb$_f$)



– Check the chain slider at the top for wear.
  » If continuous signs of wear to the chain are visible on the chain sliding guard in the area D marked:
    – Change the chain slider.
  » If the chain sliding guard is highly worn on the underside in the marked area E:
    – Change the chain slider.
– Check that the chain slider is firmly seated.
  » If the chain slider is loose:
    – Tighten the screws of the chain slider.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

Reworking

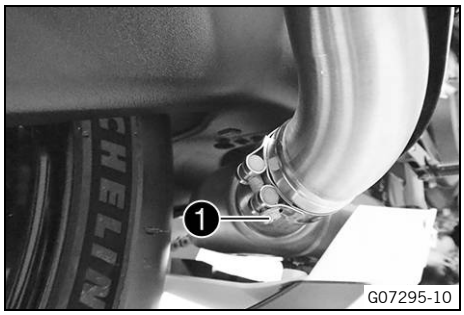
– Remove the rear of the motorcycle from the lifting gear.
(p. 75)

13.22 Removing the muffler

Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)

Main work



– Loosen exhaust clamp ❶.



– Remove screw ❷ with the washer.
– Take off the main silencer.

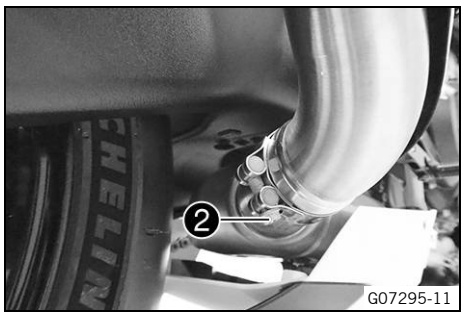
13.23 Installing muffler

Main work



– Position the main silencer.
– Mount and tighten screw ❶ with the washer.

Screw, main silencer fastening	
M8	15 Nm (11.1 ft·lb$_f$)



– Tighten exhaust clamp ❷.

Reworking

– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.24 Removing the air filter.

NOTE

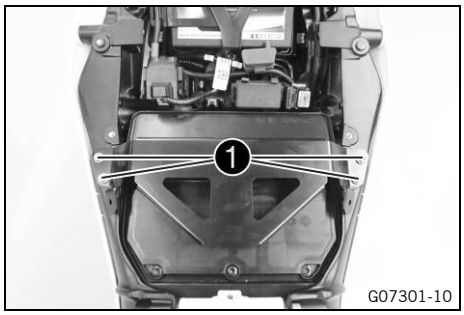
Engine failure Unfiltered intake air has a negative effect on the service life of the engine.
Dust and dirt can enter the engine if there is no air filter or if the air filter is mounted incorrectly.

– Only operate the vehicle if an air filter is correctly fitted.

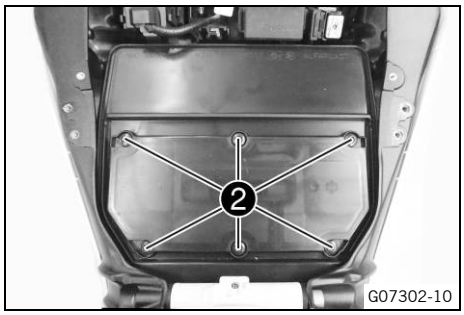
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove the rear fairing. (p. 124)

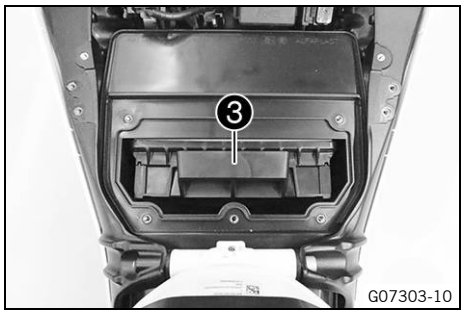
Main work



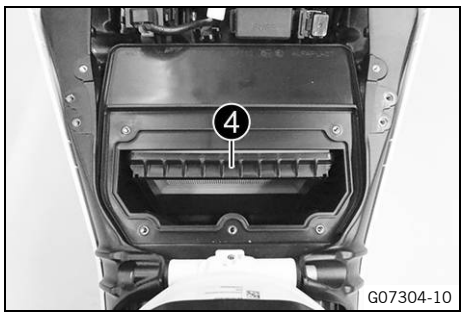
– Remove screws ❶.
– Take off the cross brace of the subframe.



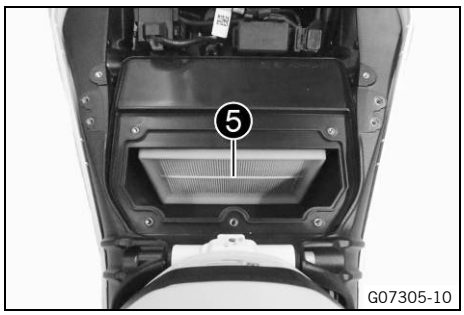
– Remove screws ❷.
– Take off the air filter box cover.



– Remove air filter clamping wedge ❸, pulling it upward.



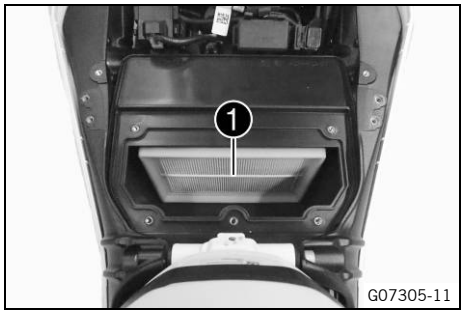
– Remove air filter frame ❹.



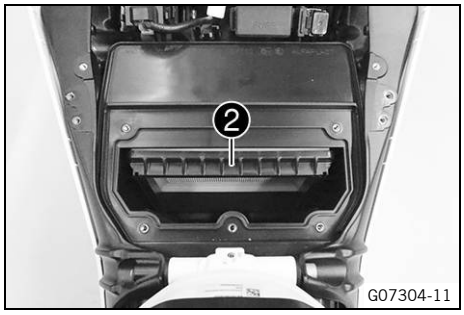
– Remove air filter ❺.
– Clean the air filter box.

13.25 Installing the air filter

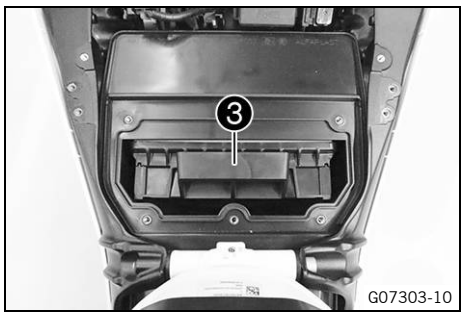
Main work



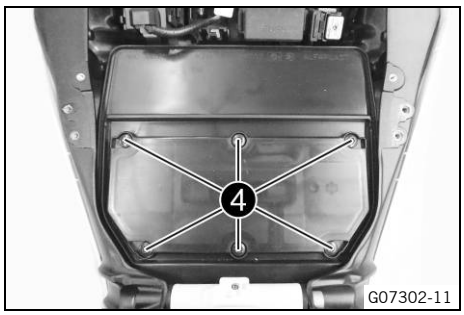
– Position the new air filter ❶.



– Position air filter frame ❷.
  ✓ The broad side of the air filter frame faces the engine.

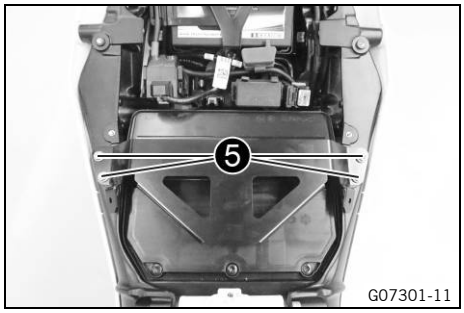


– Mount air filter clamping wedge ❸.
  ✓ The narrow side of the air filter clamping wedge faces the engine.



– Mount the air filter box cover.
– Mount and tighten screws ❹.

Screw, air filter box	
M5	3 Nm (2.2 ft·lb$_f$)



– Position the cross brace of the subframe.
– Mount and tighten screws ❺.

Remaining screws on chassis	
M6	10 Nm (7.4 ft·lb$_f$)

Reworking

– Fit the rear fairing. (p. 125)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.26 Removing the fuel tank

DANGER

Fire hazard Fuel is highly flammable.

The fuel in the fuel tank expands when warm and can escape if overfilled.

– Do not refuel the vehicle in the vicinity of open flames, glowing, or smoldering objects.
– Make sure that nobody smokes in the vicinity of the vehicle during the refueling process.
– Switch off the engine for refueling.
– Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.
– If any fuel is spilled, wipe it up immediately.
– Do not overfill the fuel tank.

WARNING

Danger of poisoning Fuel is harmful to health.

- Do not allow fuel to come into contact with skin, eyes, or clothing.
- Consult a doctor immediately if fuel has been ingested.
- Do not inhale fuel vapors.
- Rinse the affected area immediately with plenty of water in the event of contact with skin.
- Rinse eyes thoroughly with water and consult a doctor immediately if fuel comes into contact with eyes.
- If fuel spills on to your clothing, change the clothing.
- Store fuel properly in a suitable container and keep out of the reach of children.

NOTE

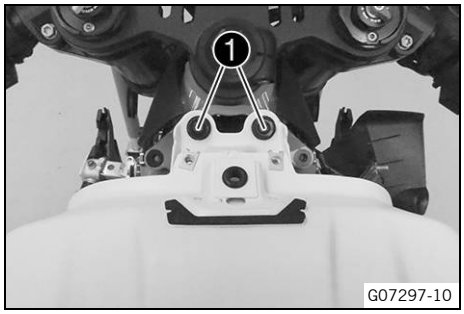
Environmental hazard Improper handling of fuel is dangerous to the environment.

- Do not allow fuel to enter the groundwater, the soil, or the sewage system.

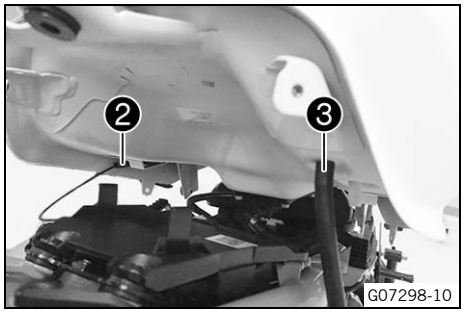
Preparatory work

- Raise the motorcycle with the rear lifting gear. (p. 75)
- Remove the rear fairing. (p. 124)

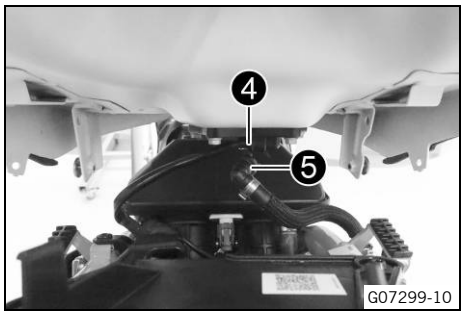
Main work



- Remove screws ❶.



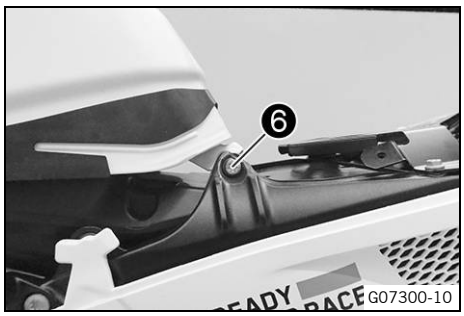
- Raise the fuel tank.
- Unplug connector ❷.
- Push back hose clamp and pull off overflow hose ❸.



- Disconnect plug-in connector ❹.
- Disconnect quick release coupling ❺.

Note

Remaining fuel may flow out of the fuel tank.



– Remove screw 6.
– Take off the fuel tank.

13.27 Installing the fuel tank

DANGER

Fire hazard Fuel is highly flammable.

The fuel in the fuel tank expands when warm and can escape if overfilled.

– Do not refuel the vehicle in the vicinity of open flames, glowing, or smoldering objects.
– Make sure that nobody smokes in the vicinity of the vehicle during the refueling process.
– Switch off the engine for refueling.
– Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.
– If any fuel is spilled, wipe it up immediately.
– Do not overfill the fuel tank.

WARNING

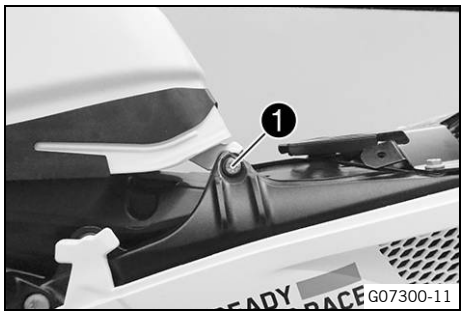
Danger of poisoning Fuel is harmful to health.

– Do not allow fuel to come into contact with skin, eyes, or clothing.
– Consult a doctor immediately if fuel has been ingested.
– Do not inhale fuel vapors.
– Rinse the affected area immediately with plenty of water in the event of contact with skin.
– Rinse eyes thoroughly with water and consult a doctor immediately if fuel comes into contact with eyes.
– If fuel spills on to your clothing, change the clothing.
– Store fuel properly in a suitable container and keep out of the reach of children.

NOTE

Environmental hazard Improper handling of fuel is dangerous to the environment.

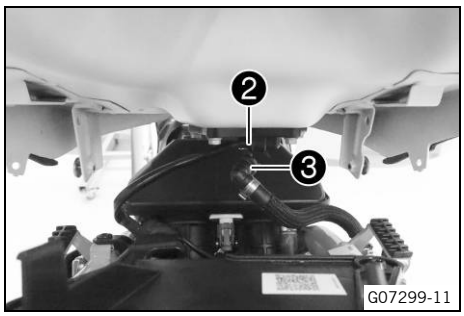
– Do not allow fuel to enter the groundwater, the soil, or the sewage system.



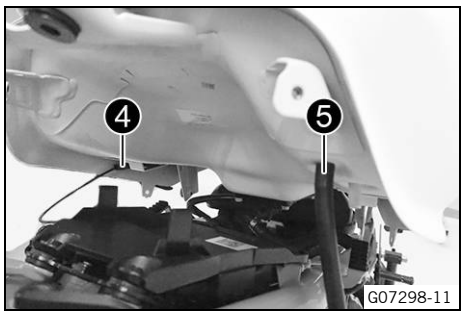
Main work

– Attach the fuel tank at the front and position.
– Mount screw 1, but do not tighten it yet.

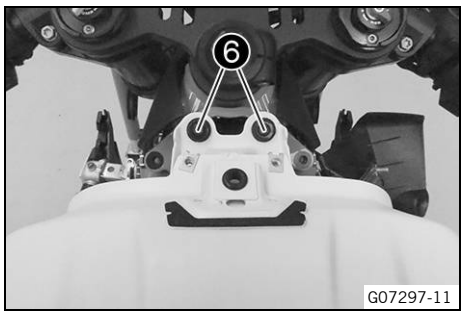
Remaining screws on chassis	
M8	25 Nm (18.4 ft·lb$_f$)



– Join plug-in connector ❷.
– Join quick release coupling ❸.



– Plug in connector ❹.
– Mount overflow hose ❺ and position the hose clamp.



– Mount screws ❻, but do not tighten yet.

Screw, fuel tank rollers	
M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**

– Tighten screw ❶.

Remaining screws on chassis	
M8	25 Nm (18.4 ft·lb$_f$)

– Tighten screws ❻.

Screw, fuel tank rollers	
M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**

Reworking

– Fit the rear fairing. (p. 125)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.28 Draining the fuel tank breather hose

DANGER

Fire hazard Fuel is highly flammable.

The fuel in the fuel tank expands when warm and can escape if overfilled.

– Do not refuel the vehicle in the vicinity of open flames, glowing, or smoldering objects.
– Make sure that nobody smokes in the vicinity of the vehicle during the refueling process.
– Switch off the engine for refueling.
– Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.
– If any fuel is spilled, wipe it up immediately.
– Do not overfill the fuel tank.

WARNING

Danger of poisoning Fuel is harmful to health.

– Do not allow fuel to come into contact with skin, eyes, or clothing.
– Consult a doctor immediately if fuel has been ingested.
– Do not inhale fuel vapors.
– Rinse the affected area immediately with plenty of water in the event of contact with skin.
– Rinse eyes thoroughly with water and consult a doctor immediately if fuel comes into contact with eyes.
– If fuel spills on to your clothing, change the clothing.
– Store fuel properly in a suitable container and keep out of the reach of children.

NOTE

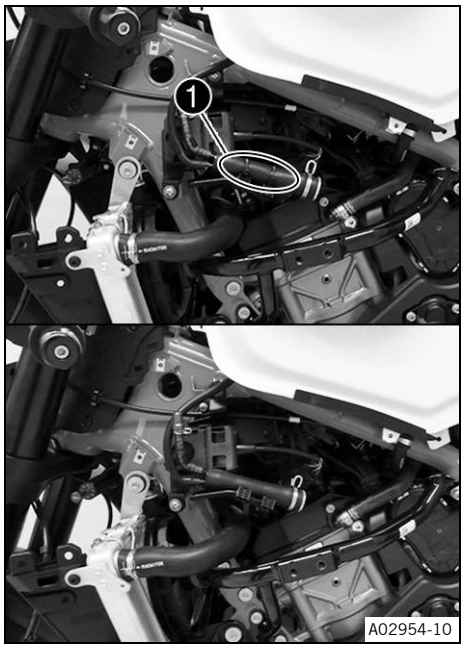
Environmental hazard Improper handling of fuel is dangerous to the environment.

– Do not allow fuel to enter the groundwater, the soil, or the sewage system.

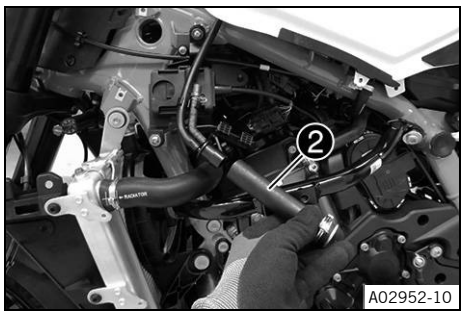
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove left front spoiler. (p. 109)
– Remove front fairing. (p. 112)
– Remove the left side cover. (p. 115)

Main work

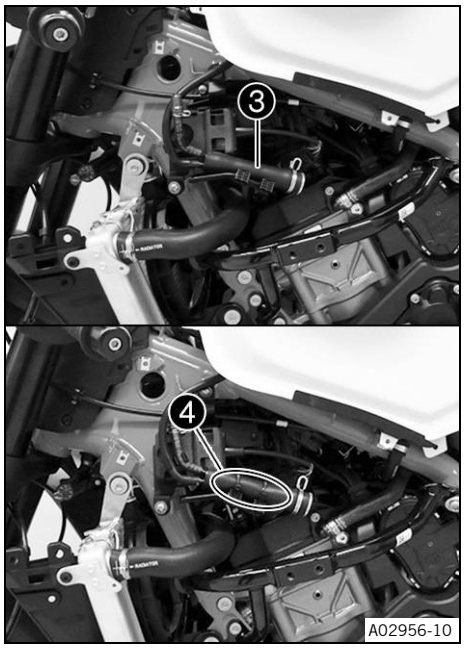


– Carefully remove cable ties ❶.



– Carefully pull off fuel tank breather hose ❷.
– Allow any remaining fuel to drain off.

The fuel tank breather hose must be checked after every race and emptied if necessary.

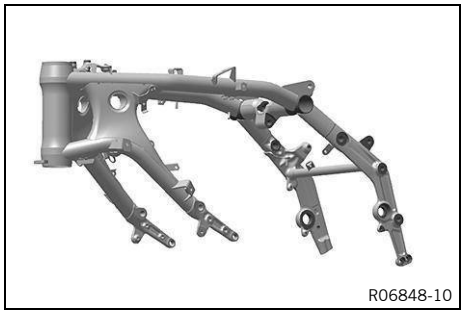


– Attach fuel tank breather hose ❸.
– Mount new cable ties ❹.

Reworking

– Install the left side fairing (p. 117)
– Install left front spoiler. (p. 110)
– Install the front fairing. (p. 113)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

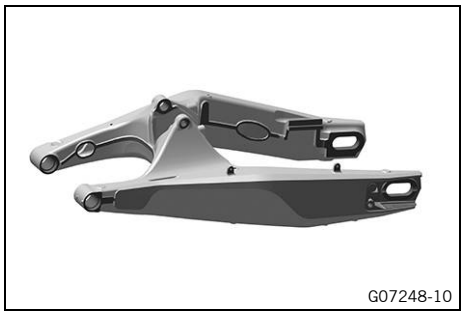
13.29 Checking the frame


R06848-10

– Check the frame for damage, cracks, and deformation.
  » If the frame shows signs of damage, cracks, or deformation:
    – Change the frame.

    Repairs on the frame are not permitted.

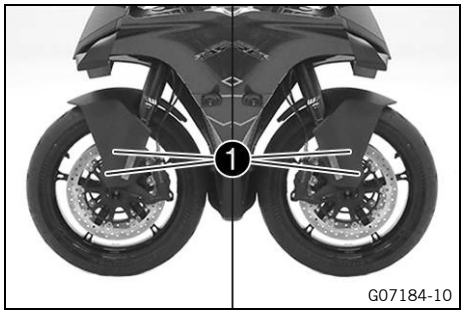
13.30 Checking the swingarm


G07248-10

– Check the swingarm for damage, cracks, and deformation.
  » If the swingarm shows signs of damage, cracks, or deformation:
    – Change the swingarm.

    Repairs on the swingarm are not permitted.

13.31 Removing the front top fender

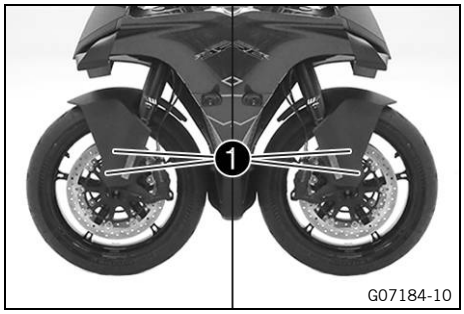


G07184-10

– Remove screws 1.
– Take off the fender.

  Pay attention to the brake lines.

13.32 Installing the front top fender



Main work

– Position the fender.

Pay attention to where the brake lines are placed.

– Mount and tighten screws 1.

Screw, trim	
M5	3 Nm (2.2 ft·lb$_f$)

Reworking

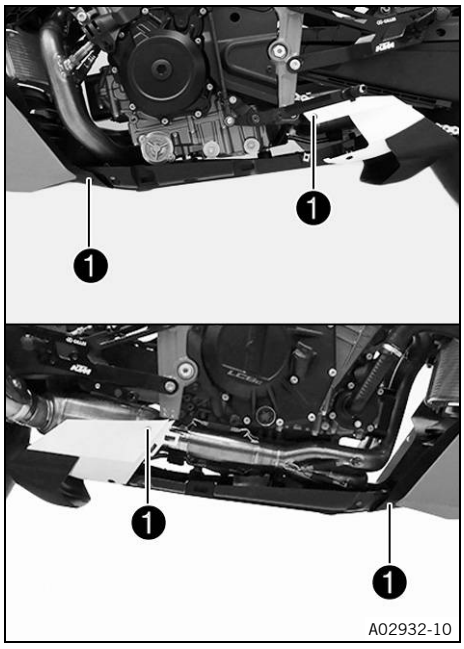
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.33 Removing the lower inner spoiler

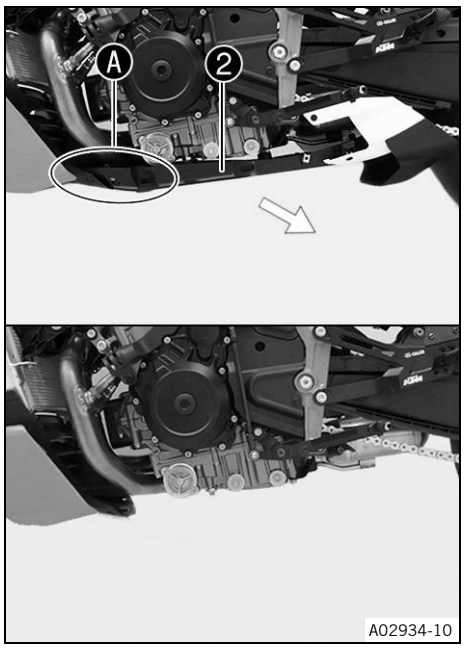
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove left front spoiler. (p. 109)
– Remove right front spoiler. (p. 111)

Main work

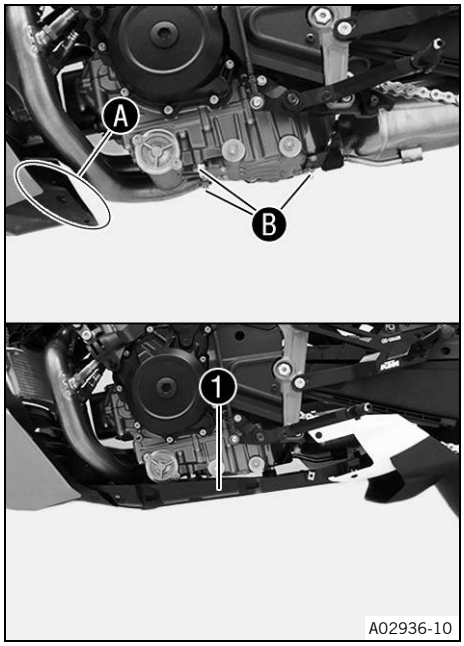


– Remove screws 1 on the left and right.



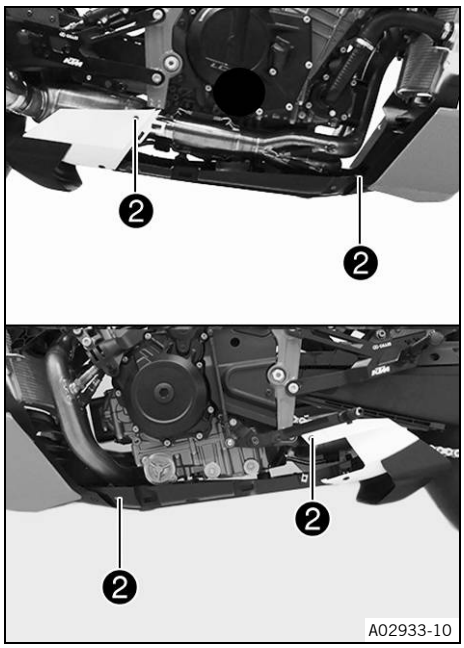
– Pull inner spoiler ❷ downward.
– Slip out inner spoiler ❷ in area Ⓐ and remove it toward the rear.

13.34 Installing the lower inner spoiler



Main work

– Thread inner spoiler ❶ into area Ⓐ.
– Press inner spoiler ❶ into holding lugs Ⓑ.



– Mount and tighten screws 2 on the left and right.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

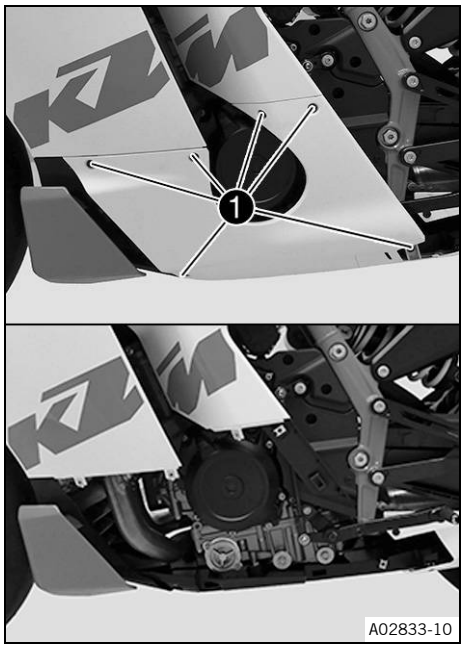
Reworking

– Install right front spoiler. (p. 111)
– Install left front spoiler. (p. 110)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.35 Removing left front spoiler

Preparatory work

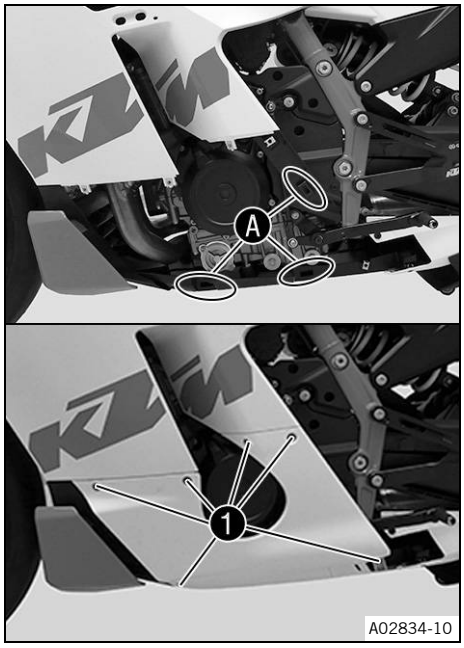
– Raise the motorcycle with the rear lifting gear. (p. 75)



Main work

– Remove screws 1.
– Remove front spoiler to the side.

13.36 Installing left front spoiler



Main work

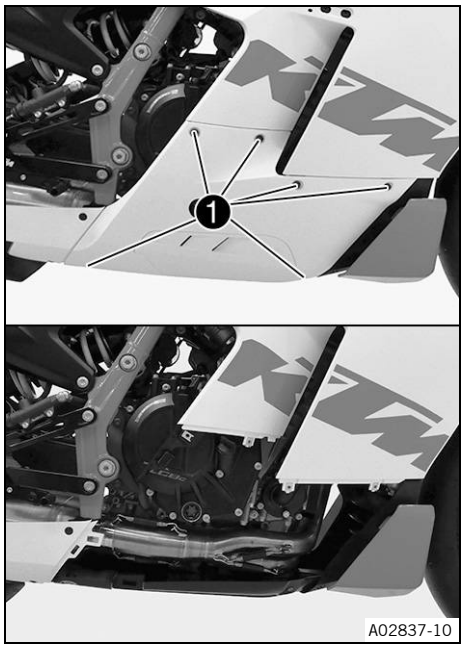
– Mount front spoiler in areas A.
– Mount and tighten screws 1.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

Reworking

– Remove the rear of the motorcycle from the lifting gear.
(p. 75)

13.37 Removing right front spoiler



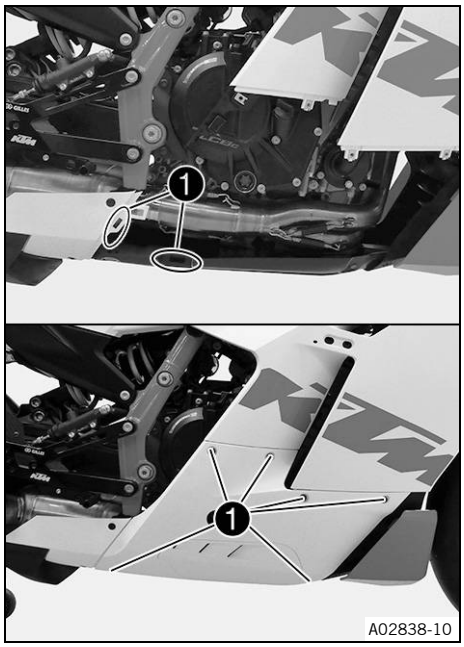
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)

Main work

– Remove screws 1.
– Remove front spoiler to the side.

13.38 Installing right front spoiler



Main work

– Mount front spoiler in areas A.
– Mount and tighten screws 1.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

Reworking

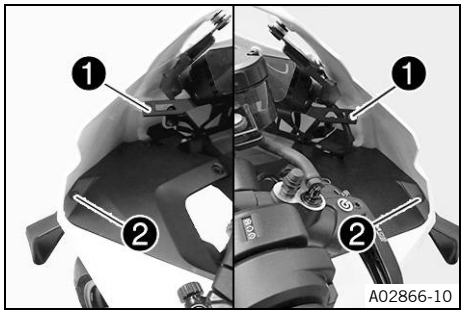
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.39 Removing front fairing

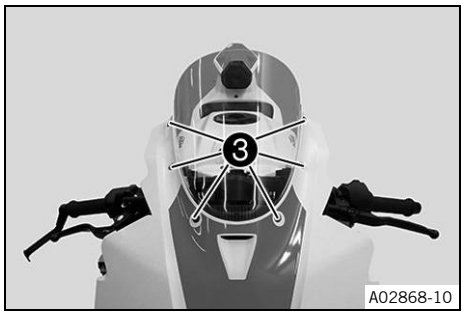
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)

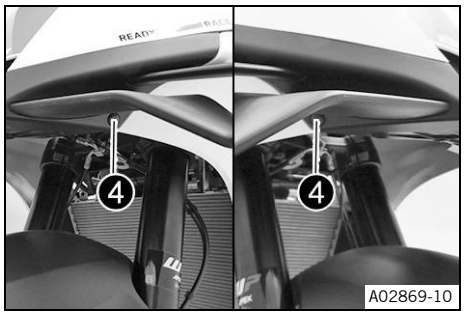
Main work



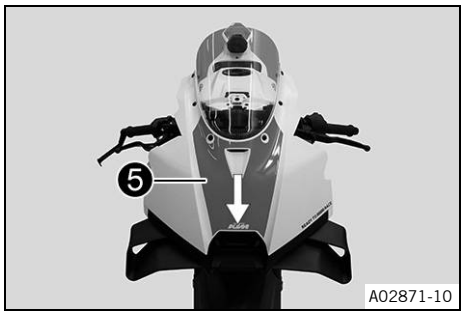
– Remove screws ❶.
– Remove screws ❷.



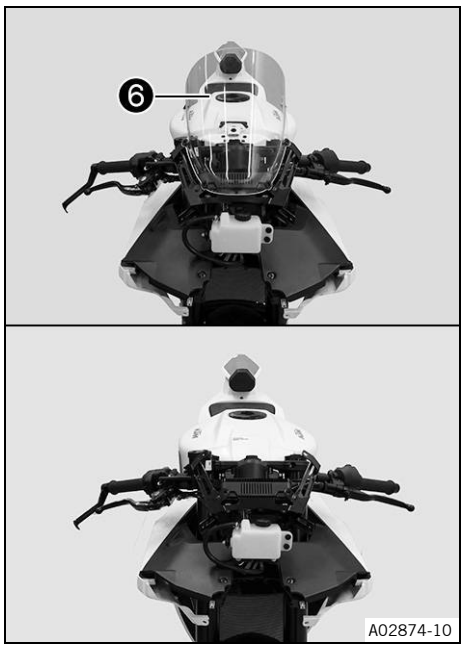
– Remove screws ❸.



– Remove screws ❹.

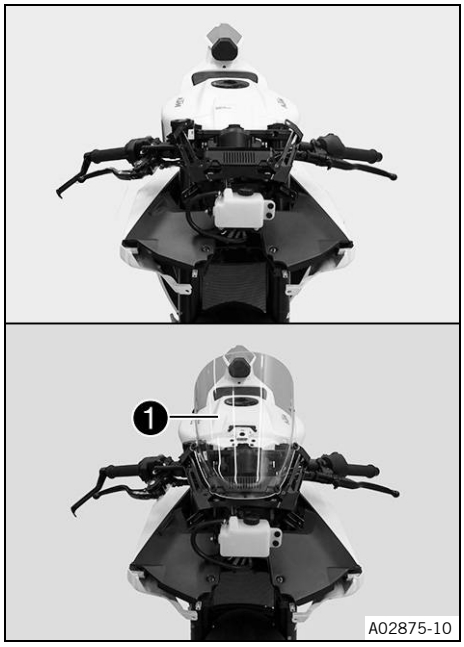


– Pull front fairing ❺ forward.
– Take off the front fairing.



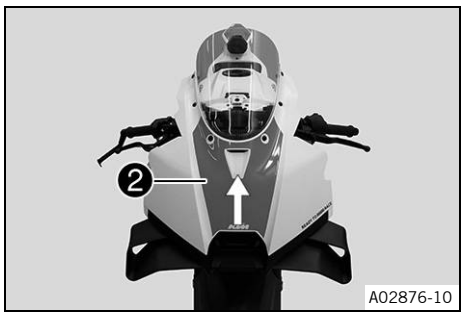
– Take off windshield ❻.

13.40 Installing the front fairing

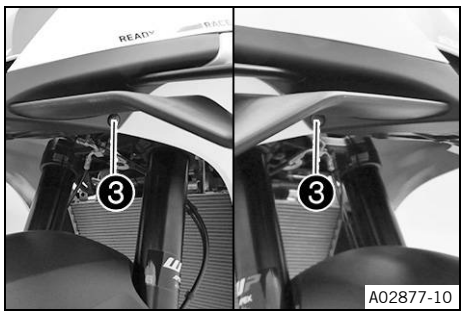


Main work

– Position windshield ❶.

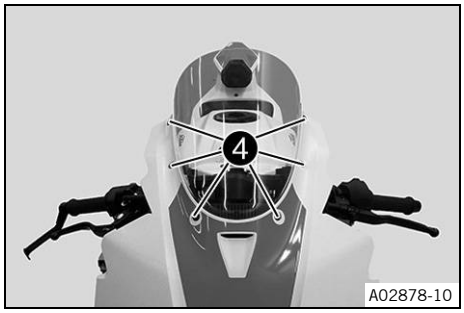


– Push on front fairing ❷.



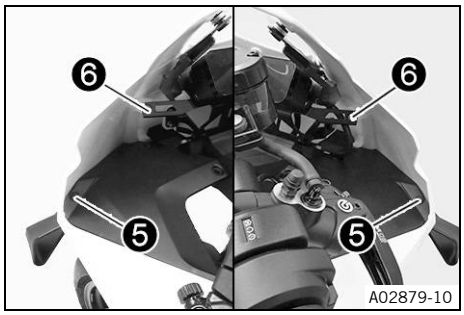
– Mount and tighten screws ❸.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)



– Mount and tighten screws ❹.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)



– Mount and tighten screws ❺.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

– Mount and tighten screws ❻.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

Reworking

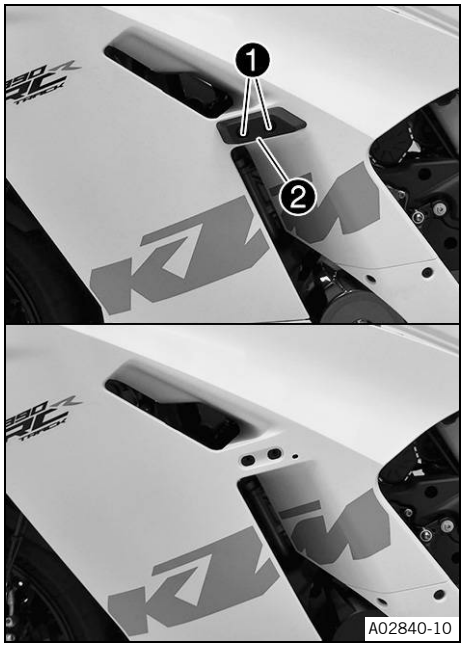
– Remove the rear of the motorcycle from the lifting gear.
(p. 75)

13.41 Removing the left side cover

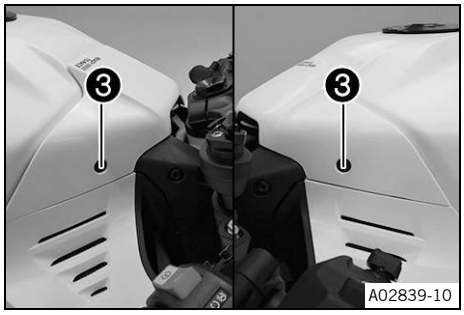
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove left front spoiler. (p. 109)
– Remove front fairing. (p. 112)

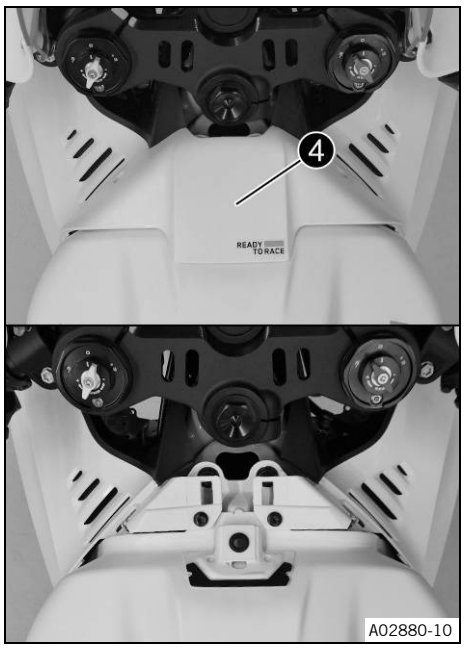
Main work



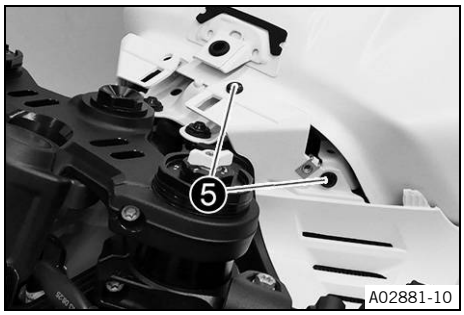
– Remove screws ❶.
– Remove slide pad ❷.



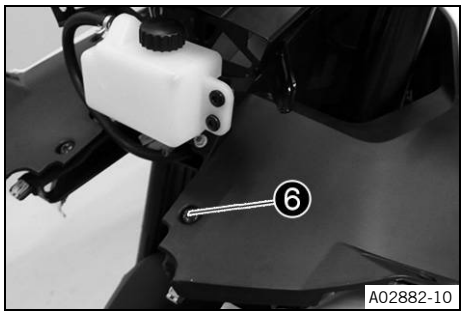
– Remove screws ❸.



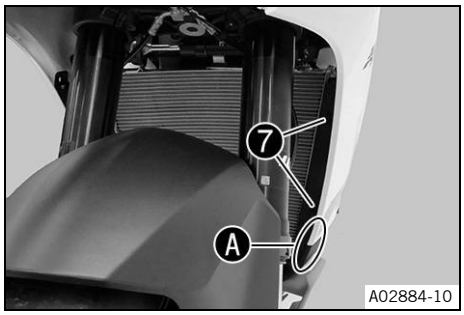
– Take off cover ❹.



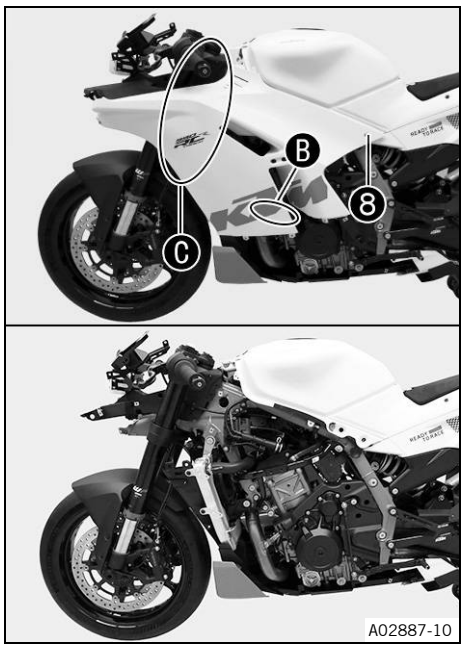
– Remove screws ❺.



– Remove screw ❻.

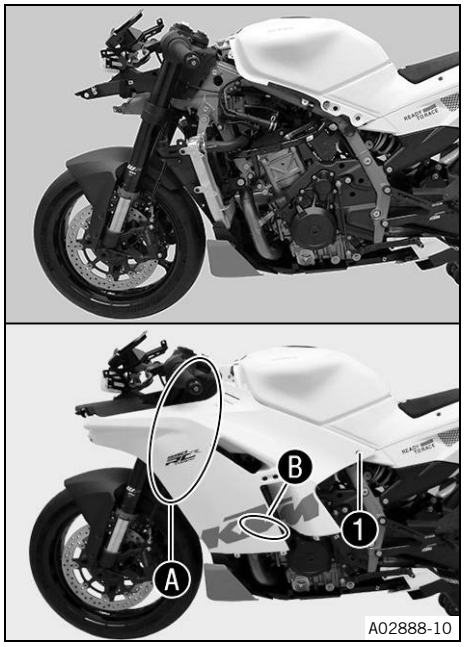


– Remove quick releases ❼.
– Detach side cover in area Ⓐ.



– Remove screw 8.
– Remove fairings in area B to the side.
– Pull out fairings in area C and remove to the side.

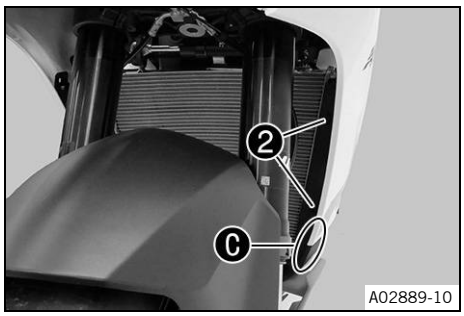
13.42 Installing the left side fairing



Main work

– Arrange fairings in area A.
– Press fairings in area B into rubber bushing.
– Mount and tighten screw 1.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

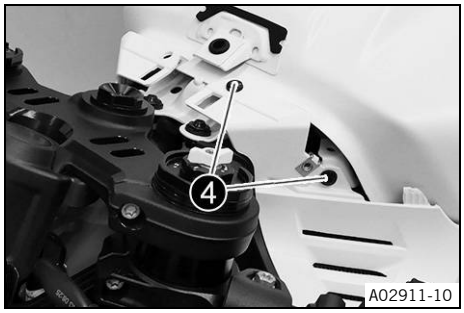


– Attach side fairing in area C.
– Mount quick locks 2.



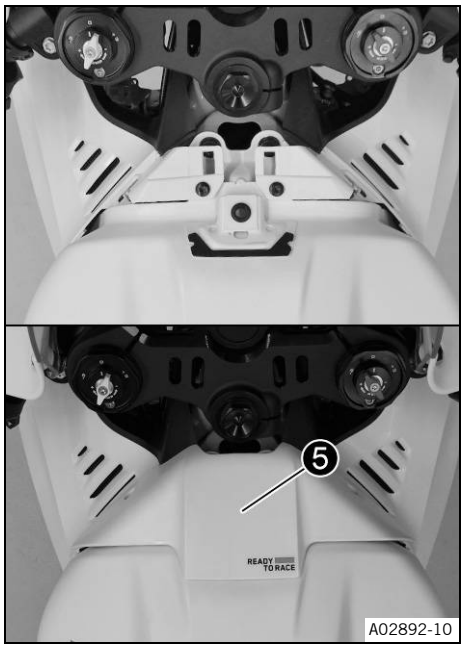
– Mount and tighten screw 3.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

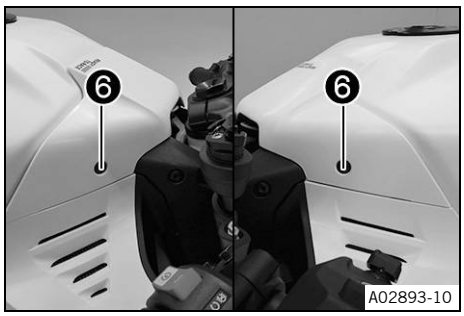


– Mount and tighten screws 4.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

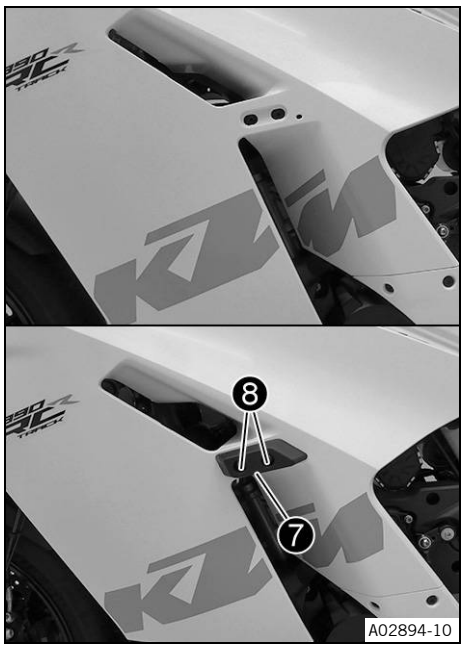


– Position cover 5.



– Mount and tighten screws ❻.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)



– Position slide pad ❼.
– Mount and tighten screws ❽.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

Reworking

– Install left front spoiler. 📖 (p. 110)
– Install the front fairing. 📖 (p. 113)
– Remove the rear of the motorcycle from the lifting gear. 📖 (p. 75)

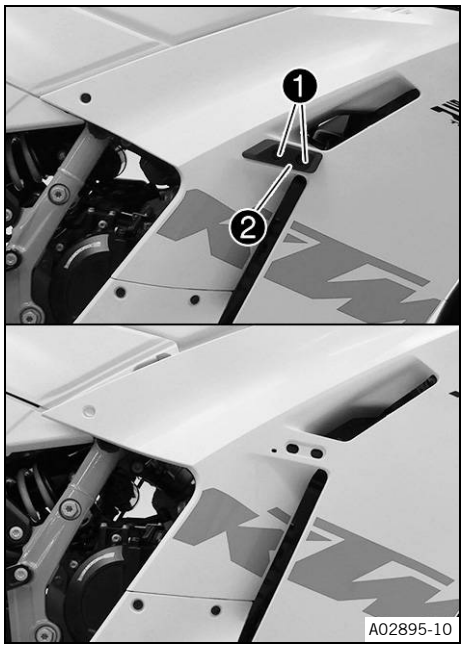
◀

13.43 Removing the right side fairing

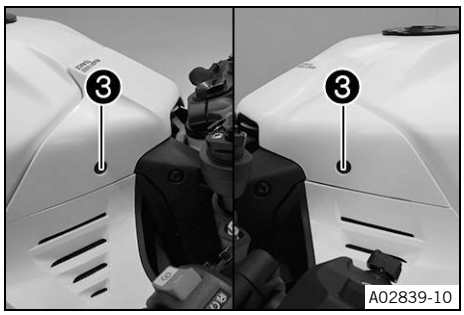
Preparatory work

– Raise the motorcycle with the rear lifting gear. 📖 (p. 75)
– Remove right front spoiler. 📖 (p. 111)
– Remove front fairing. 📖 (p. 112)

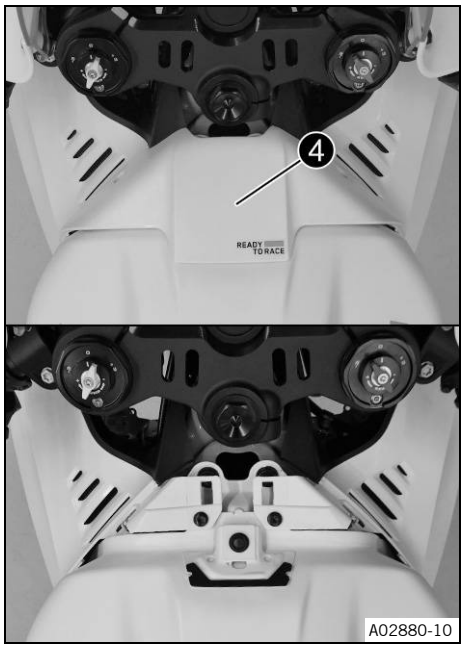
Main work



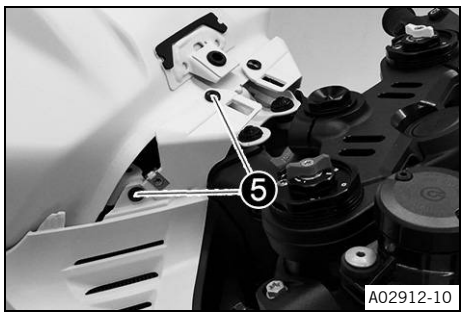
– Remove screws ❶.
– Remove slide pad ❷.



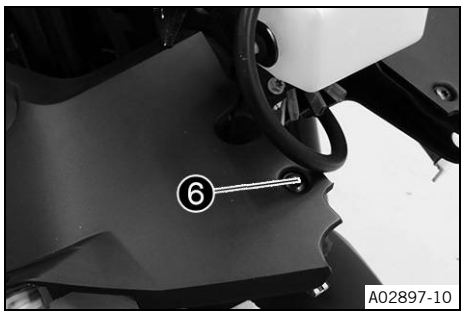
– Remove screws ❸.



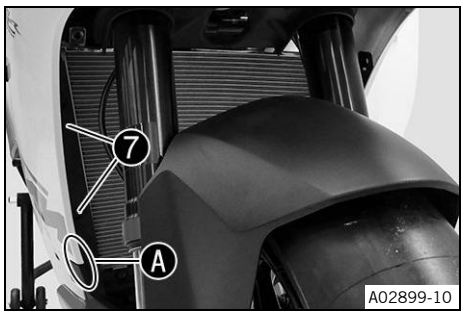
– Take off cover ❹.



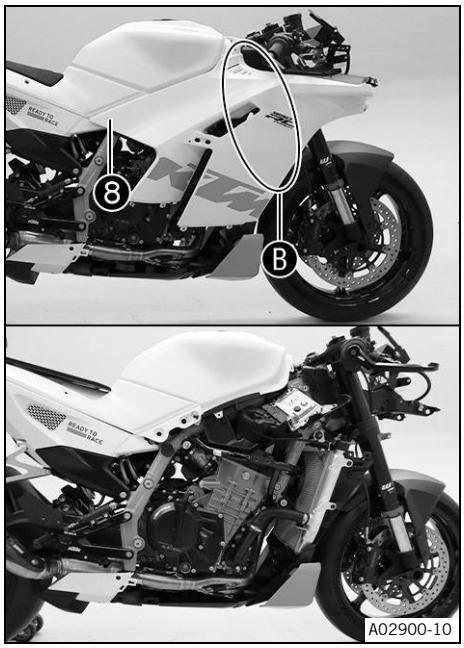
– Remove screws ❺.



– Remove screw ❻.

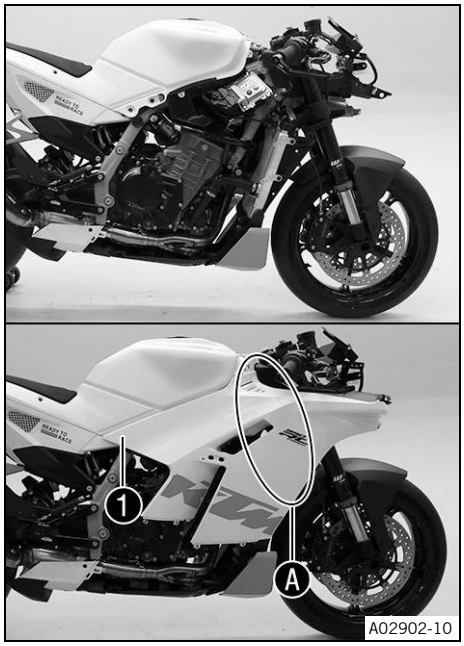


– Remove quick releases ❼.
– Detach side cover in area Ⓐ.



– Remove screw ❽.
– Remove fairings in area Ⓑ to the side.

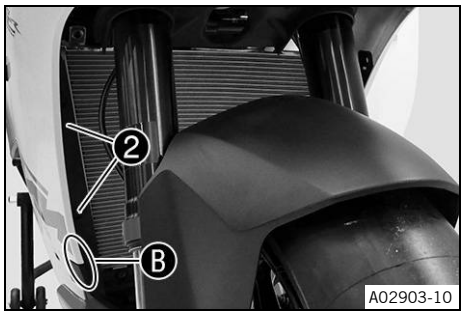
13.44 Installing the right side cover



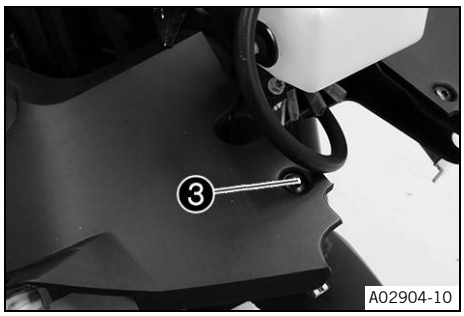
Main work

– Arrange fairings in area Ⓐ.
– Mount and tighten screw ❶.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

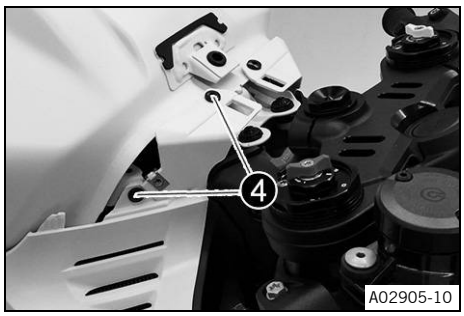


– Attach side fairing in area Ⓑ.
– Mount quick locks ❷.



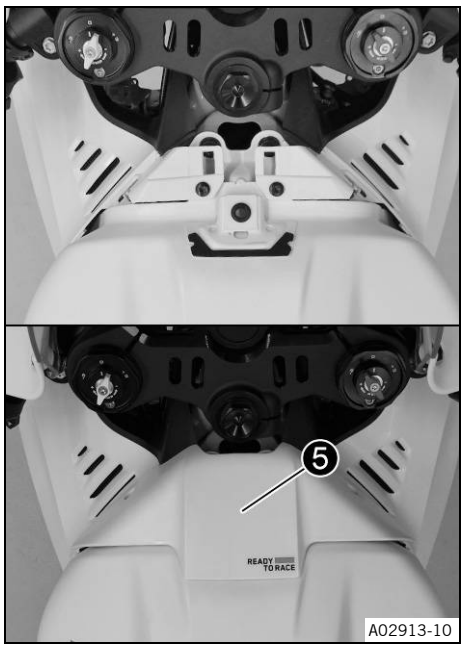
– Mount and tighten screw ❸.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

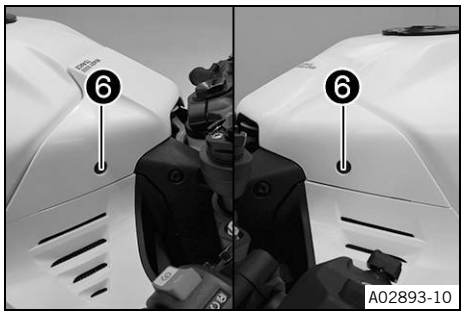


– Mount and tighten screws ❹.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

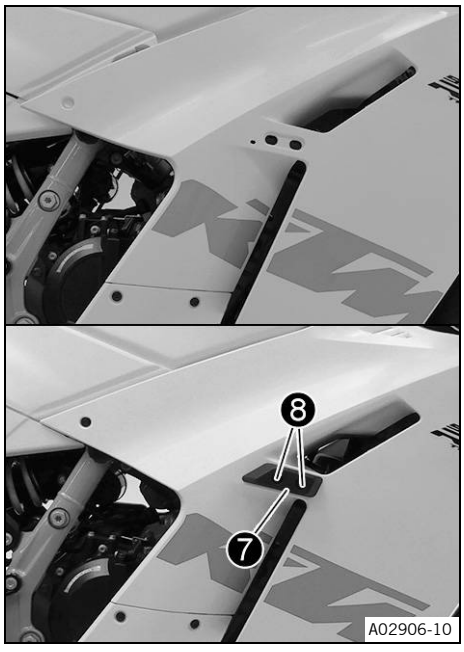


– Position cover ❺.



– Mount and tighten screws ❻.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)



– Position slide pad ❼.
– Mount and tighten screws ❽.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

Reworking

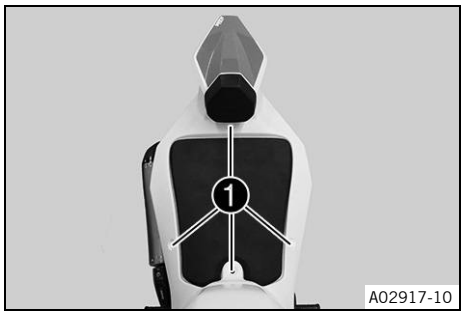
– Install right front spoiler. (p. 111)
– Install the front fairing. (p. 113)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

13.45 Removing the rear fairing

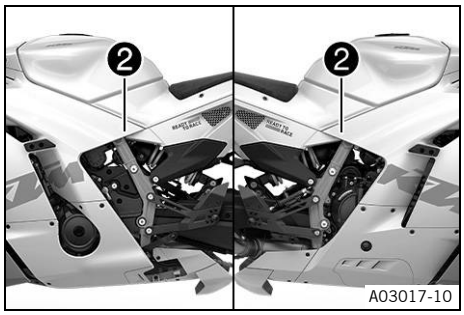
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)

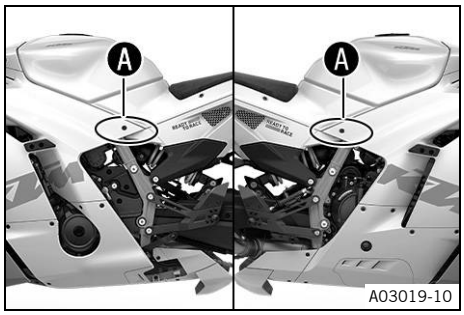
Main work



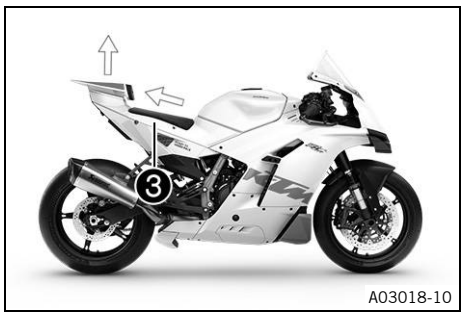
– Remove screws ❶.



– Remove screws ❷.



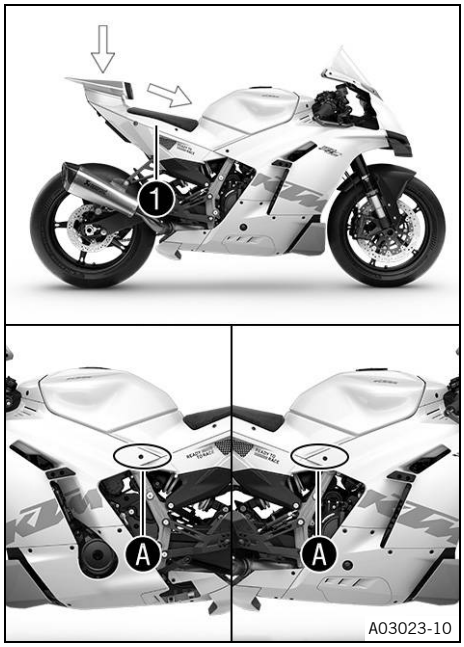
– Carefully push the side fairings to the side in the relevant areas Ⓐ.



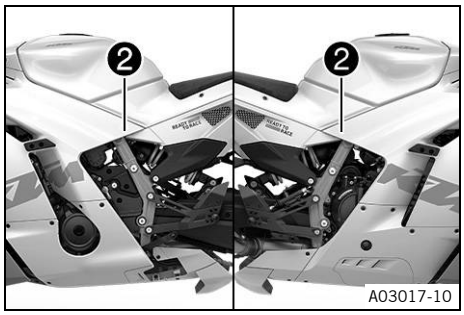
– Raise rear fairing ❸ at the rear and remove from the top.

13.46 Fitting the rear fairing

Main work

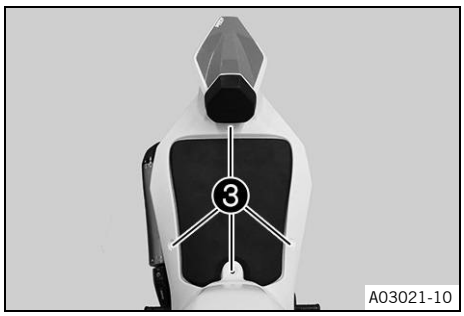


– Push rear fairing ❶ down and slide it forward.
– Slip the rear fairing into the designated areas Ⓐ.



– Mount and tighten screws ❷.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)



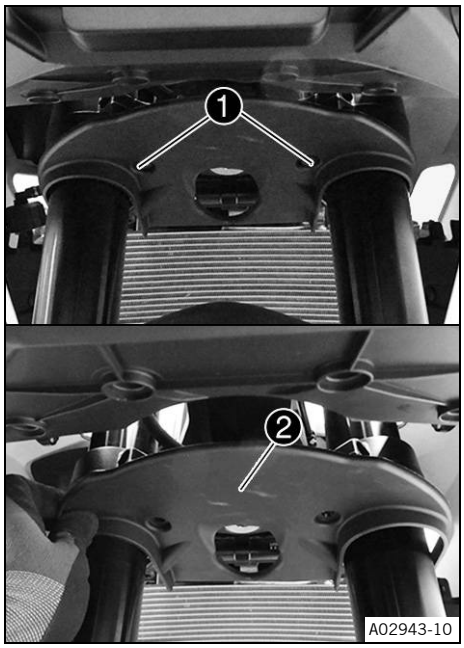
– Mount and tighten screws ❸.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

Reworking

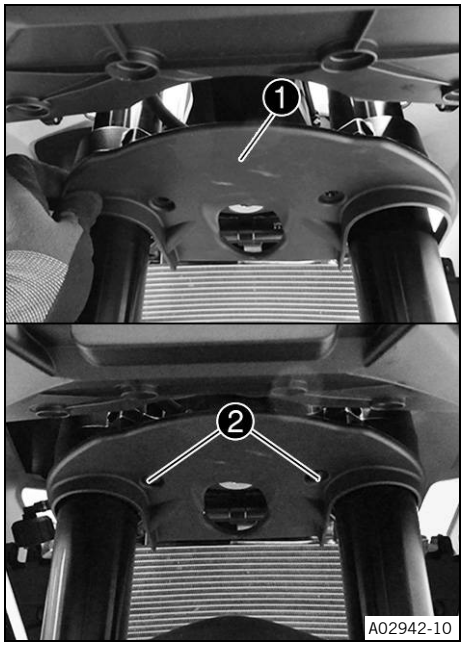
– Remove the rear of the motorcycle from the lifting gear.
(p. 75)

13.47 Removing the triple clamp cover



– Loosen and remove screws ❶.
– Remove triple clamp cover ❷.

13.48 Installing the triple clamp cover



– Position the triple clamp cover ❶.
– Mount and tighten screws ❷.

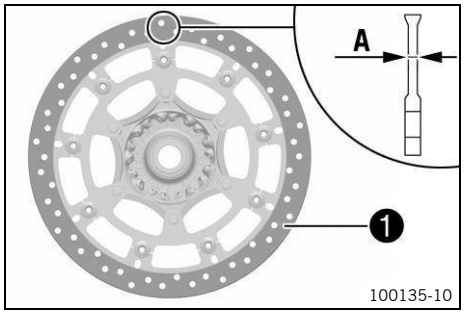
Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

14.1 Checking the brake discs

WARNING

Danger of accidents Worn-out brake discs reduce the braking action.

– Make sure that worn-out brake discs are replaced immediately.



– Check the brake disc thickness of the front and rear brake disc at several places on the disc to see if they conform to measurement A.

Brake disc wear limit	
front	4.5 mm (0.177 in)
rear	4.5 mm (0.177 in)

Note

Wear will reduce the thickness of the brake disc at contact surface 1 of the brake linings.

» If the brake disc thickness is less than the specified value.

– Change the front brake discs.

– Change the brake discs on the rear brake.

– Check the front and rear brake discs for damage, cracks, and deformation.

» If the brake disc shows signs of damage, cracks, or deformation:

– Change the front brake discs.

– Change the brake discs on the rear brake.

14.2 Checking the brake fluid level for the front brake

WARNING

Danger of accidents Brake fluid which is too old or of the wrong type impairs the function of the brake system.

– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule.

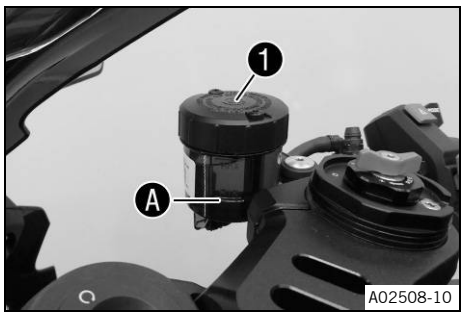
– Make sure that only clean, approved brake fluid from a tightly sealed container is used.

WARNING

Danger of accidents An insufficient brake fluid level will cause the brake system to fail.

If the brake fluid level drops below the specified marking or the specified value, the brake system has a leak or the brake pads are worn down.

– Have the brake system checked and make sure that the problem has been eliminated before the vehicle is used again.



– Move the brake reservoir mounted on the handlebar to a horizontal position.
– Check brake fluid level in brake fluid reservoir 1.
  » If the brake fluid level has dropped below **MIN** marking A:
    – Add brake fluid for the front brake. (p. 129)

14.3 Adding brake fluid for the front brake

WARNING

Danger of accidents Brake fluid which is too old or of the wrong type impairs the function of the brake system.

– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule.
– Make sure that only clean, approved brake fluid from a tightly sealed container is used.

WARNING

Danger of accidents An insufficient brake fluid level will cause the brake system to fail.

If the brake fluid level drops below the specified marking or the specified value, the brake system has a leak or the brake pads are worn down.

– Have the brake system checked and make sure that the problem has been eliminated before the vehicle is used again.

WARNING

Health hazard Brake fluid is a harmful substance.

– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes, or clothing.
– Consult a doctor immediately if brake fluid has been ingested.
– Rinse the affected area with plenty of water in the event of contact with the skin.
– Rinse eyes thoroughly with water immediately and consult a doctor if brake fluid comes into contact with the eyes.
– If brake fluid spills on to your clothing, change the clothing.

NOTE

Environmental hazard Hazardous substances cause environmental damage.

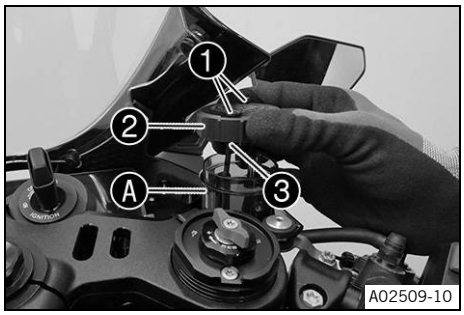
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc. correctly and in accordance with the applicable regulations.

Note

Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.

Preparatory work

– Check that the brake pads of the front brake are secured. (p. 130)



Main work

– Move the brake reservoir mounted on the handlebar to a horizontal position.
– Remove screws ❶.
– Take off cover ❷ with membrane ❸.
– Add brake fluid up to the **MAX** marking Ⓐ.

Immediately clean up any brake fluid that has overflowed or spilled with water.

Brake fluid DOT 5.1 (p. 216)

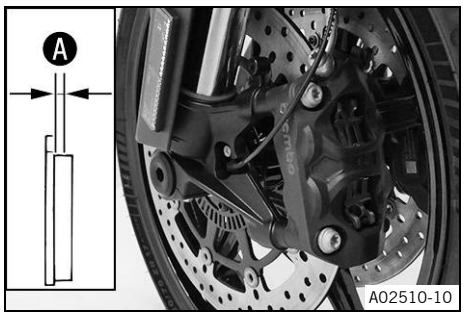
– Position cover ❷ with membrane ❸.
– Mount and tighten screws ❶.

Screw, brake fluid reservoir for rear brake	
M5	2 Nm (1.5 ft·lb$_f$)

14.4 Checking that the brake pads of the front brake are secured

WARNING
Danger of accidents Worn brake pads reduce the brake action.
– Make sure that worn brake pads are replaced immediately.

WARNING
Danger of accidents Damaged brake discs reduce the braking action.
If the brake linings are not changed in time, the brake lining carriers grind against the brake disc. As a consequence, the brake action is greatly reduced and the brake discs are destroyed.
– Check the brake linings regularly.



– Check the brake linings for lining thickness Ⓐ.

Minimum thickness Ⓐ	≥ 1 mm (≥ 0.04 in)

» If it is less than the minimum thickness:
– Change the front brake pads. (p. 131)
– Check the brake pads for damage and cracking.
» If there is damage or cracking:
– Change the front brake pads. (p. 131)
– Check that the brake pads are secured.
» If the brake pads are not secured correctly:
– Secure brake pads, replace with new parts if necessary.

14.5 Changing the brake pads of the front brake

WARNING
Danger of accidents Brake pads which have not been approved alter the braking action.
– Only use brake pads approved and recommended by the vehicle manufacturer.

WARNING
Danger of accidents Incorrect servicing will cause the brake system to fail.
– Ensure that service work and repairs are performed professionally.

WARNING
Danger of accidents Brake fluid which is too old or of the wrong type impairs the function of the brake system.
– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule.
– Make sure that only clean, approved brake fluid from a tightly sealed container is used.

WARNING
Danger of accidents Oil, grease or wax on the brake discs reduces the brake action.
– Always keep the brake discs free of oil, fat and wax.
– Clean the brake discs with brake cleaner when necessary.

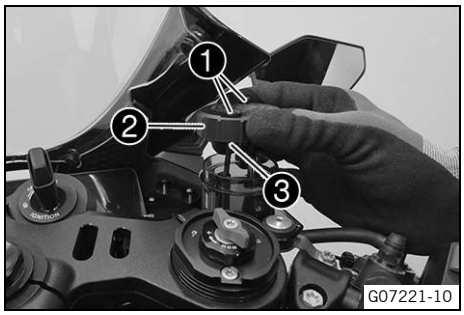
WARNING
Health hazard Brake fluid is a harmful substance.
– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes, or clothing.
– Consult a doctor immediately if brake fluid has been ingested.
– Rinse the affected area with plenty of water in the event of contact with the skin.
– Rinse eyes thoroughly with water immediately and consult a doctor if brake fluid comes into contact with the eyes.
– If brake fluid spills on to your clothing, change the clothing.

NOTE
Environmental hazard Hazardous substances cause environmental damage.
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc. correctly and in accordance with the applicable regulations.

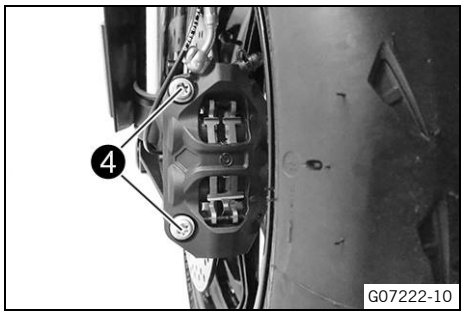
Note
Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.

Preparatory work
– Raise the motorcycle with the rear lifting gear. (p. 75)

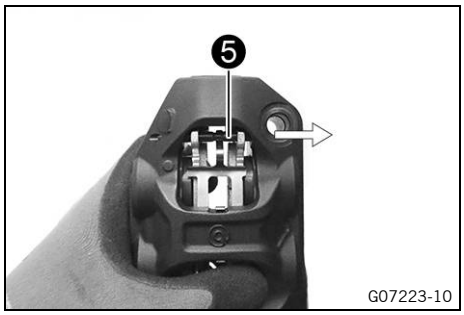
Main work



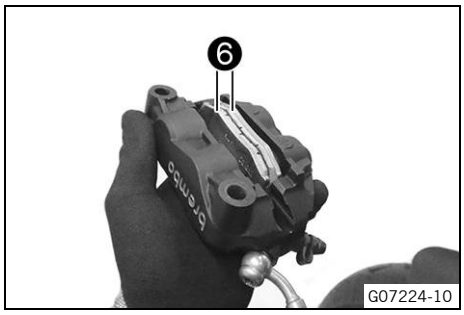
– Move the brake reservoir mounted on the handlebar to a horizontal position.
– Remove screws ❶.
– Take off cover ❷ with membrane ❸.



– Remove screws ❹.
– Take off the brake caliper.

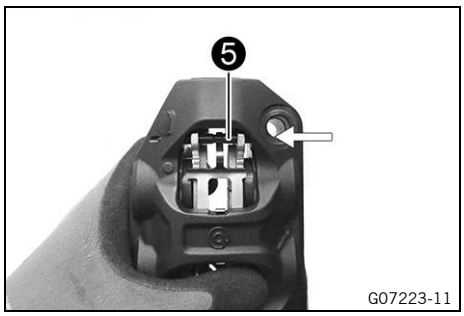


– Remove pin ❺.
– Press the brake piston back to its basic position and make sure that no brake fluid overflows from the brake reservoir, extract some brake fluid if necessary.

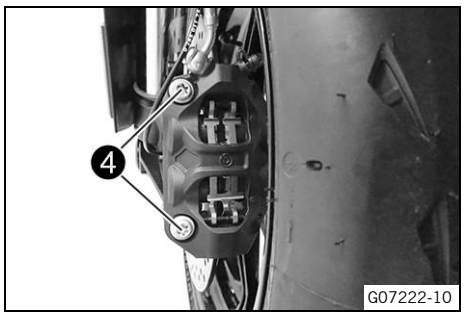


– Remove brake linings ❻.
– Clean the brake caliper.
– Position new brake linings ❻.

Change the brake pads in sets and on both sides.



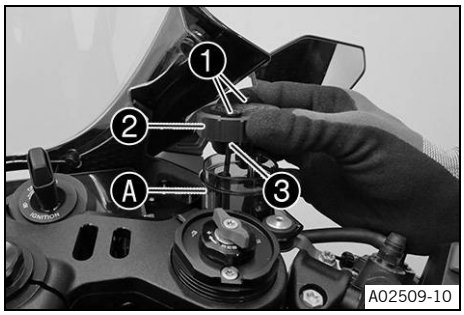
– Mount pin ❺.



– Mount the brake caliper.
– Mount and tighten screws ❹.

Screw, front brake caliper	
M10×1.25	45 Nm (33.2 ft·lb$_f$) **Loctite® 243**

– Repeat these steps on the opposite side.
– Operate the hand brake lever repeatedly until the brake pads are in contact with the brake disc and a pressure point is reached.



– Add brake fluid up to the **MAX** marking Ⓐ.

Brake fluid DOT 5.1 (p. 216)

– Position cover ❷ with membrane ❸. Mount and tighten screws ❶.

Immediately clean up any brake fluid that has overflowed or spilled with water.

Reworking

– Remove the rear of the motorcycle from the lifting gear. (p. 75)

14.6 Checking the brake fluid level for the rear brake

WARNING

Danger of accidents Brake fluid which is too old or of the wrong type impairs the function of the brake system.

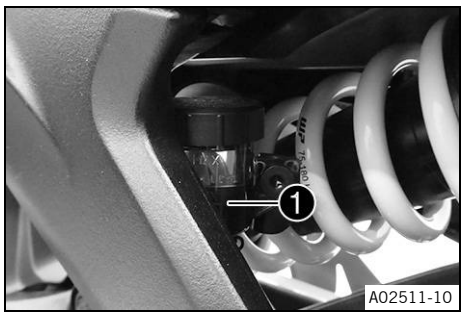
– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule.
– Make sure that only clean, approved brake fluid from a tightly sealed container is used.

WARNING

Danger of accidents An insufficient brake fluid level will cause the brake system to fail.

If the brake fluid level drops below the specified marking or the specified value, the brake system has a leak or the brake pads are worn down.

– Have the brake system checked and make sure that the problem has been eliminated before the vehicle is used again.



– Stand the vehicle upright.
– Check the brake fluid level in the brake fluid reservoir.
  » If the fluid level reaches the **MIN** marking ❶:
    – Add brake fluid for the rear brake. (p. 134)

14.7 Adding brake fluid for the rear brake

WARNING

Danger of accidents Brake fluid which is too old or of the wrong type impairs the function of the brake system.

– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule.
– Make sure that only clean, approved brake fluid from a tightly sealed container is used.

WARNING

Danger of accidents An insufficient brake fluid level will cause the brake system to fail.

If the brake fluid level drops below the specified marking or the specified value, the brake system has a leak or the brake pads are worn down.

– Have the brake system checked and make sure that the problem has been eliminated before the vehicle is used again.

WARNING

Health hazard Brake fluid is a harmful substance.

– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes, or clothing.
– Consult a doctor immediately if brake fluid has been ingested.
– Rinse the affected area with plenty of water in the event of contact with the skin.
– Rinse eyes thoroughly with water immediately and consult a doctor if brake fluid comes into contact with the eyes.
– If brake fluid spills on to your clothing, change the clothing.

NOTE

Environmental hazard Hazardous substances cause environmental damage.

– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc. correctly and in accordance with the applicable regulations.

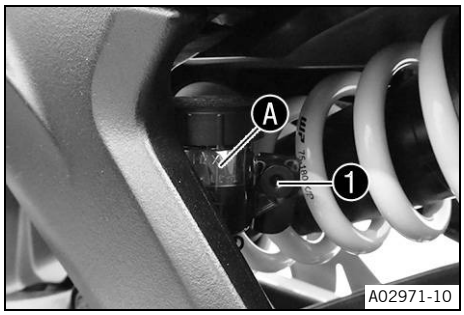
Note

Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.

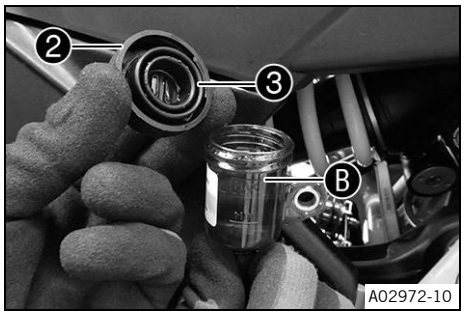
Preparatory work

– Check that the brake pads of the rear brake are secured. (p. 135)

Main work



– Stand the vehicle upright.
– Loosen screw ❶ of the brake reservoir.
– Guide brake reservoir Ⓐ to the front.



– Remove screw cover ❷ with insert and membrane ❸.
– Add brake fluid up to the **MAX** marking Ⓑ.

Brake fluid DOT 5.1 (p. 216)

– Mount and tighten screw cover with insert and membrane.

Immediately clean up any brake fluid that has overflowed or spilled with water.

– Guide brake reservoir Ⓐ to the bracket and mount it with screw ❶.

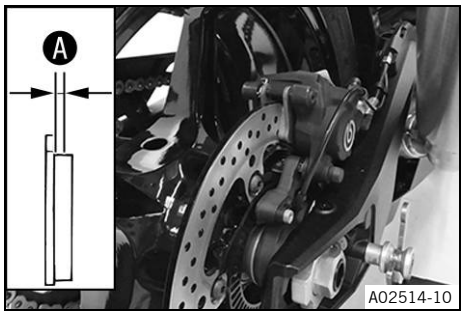
Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

Do not kink the brake fluid hose.

14.8 Checking that the brake pads of the rear brake are secured

WARNING
Danger of accidents Worn brake pads reduce the brake action.
– Make sure that worn brake pads are replaced immediately.

WARNING
Danger of accidents Damaged brake discs reduce the braking action.
If the brake linings are not changed in time, the brake lining carriers grind against the brake disc. As a consequence, the brake action is greatly reduced and the brake discs are destroyed.
– Check the brake linings regularly.



– Check the brake linings for lining thickness Ⓐ.

Minimum thickness Ⓐ	≥ 1 mm (≥ 0.04 in)

» If it is less than the minimum thickness:
– Change the rear brake pads. (p. 136)

– Check the brake pads for damage and cracking.
» If there is damage or cracking:
– Change the rear brake pads. (p. 136)

– Check that the brake pads are secured.
  » If the brake pads are not secured correctly:
    – Secure brake pads, replace with new parts if necessary.

14.9 Changing the rear brake pads

WARNING
Danger of accidents Brake pads which have not been approved alter the braking action.
– Only use brake pads approved and recommended by the vehicle manufacturer.

WARNING
Danger of accidents Incorrect servicing will cause the brake system to fail.
– Ensure that service work and repairs are performed professionally.

WARNING
Danger of accidents Brake fluid which is too old or of the wrong type impairs the function of the brake system.
– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule.
– Make sure that only clean, approved brake fluid from a tightly sealed container is used.

WARNING
Danger of accidents Oil, grease or wax on the brake discs reduces the brake action.
– Always keep the brake discs free of oil, fat and wax.
– Clean the brake discs with brake cleaner when necessary.

WARNING
Health hazard Brake fluid is a harmful substance.
– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes, or clothing.
– Consult a doctor immediately if brake fluid has been ingested.
– Rinse the affected area with plenty of water in the event of contact with the skin.
– Rinse eyes thoroughly with water immediately and consult a doctor if brake fluid comes into contact with the eyes.
– If brake fluid spills on to your clothing, change the clothing.

NOTE
Environmental hazard Hazardous substances cause environmental damage.
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc. correctly and in accordance with the applicable regulations.

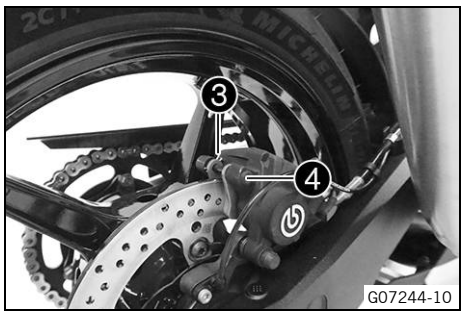
Note
Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.

Preparatory work
– Raise the motorcycle with the rear lifting gear. (p. 75)

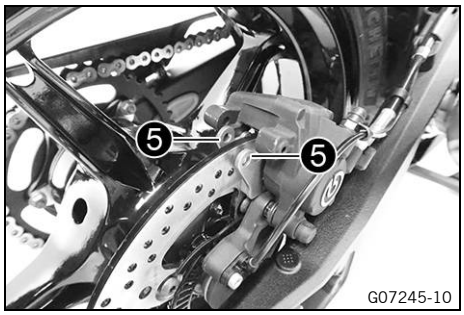
Main work



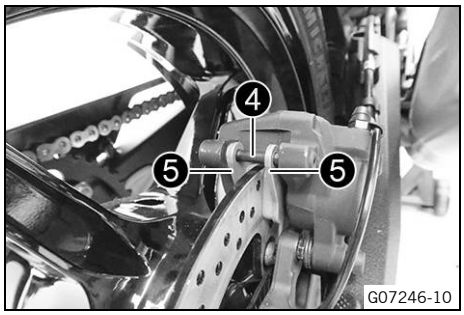
– Stand the vehicle upright.
– Remove screw ❶ and hang the compensating tank to the side.
– Take off screw cap ❷ with the membrane.
– Press the brake piston back to its basic position and make sure that no brake fluid overflows from the brake reservoir, extract some brake fluid if necessary.



– Remove lock ring ❸.
– Remove pin ❹.



– Remove brake linings ❺.
– Clean the brake caliper.

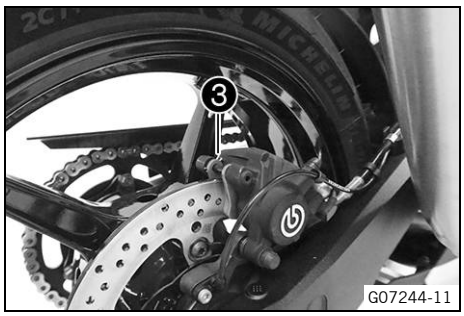


– Position new brake linings ❺.

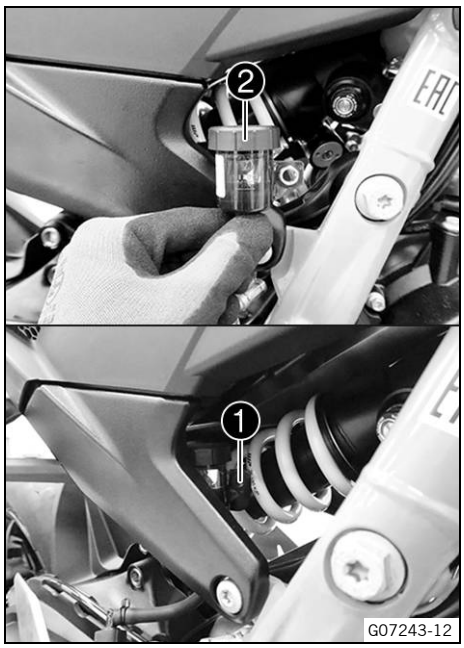
Replace brake pads in sets.

– Mount and tighten pin ❹.

Pin, brake linings	
M8	8 Nm (5.9 ft·lb$_f$)



– Mount lock ring ❸.



– Actuate the brake disc repeatedly until the brake pads are in contact with the brake disc and a pressure point is achieved.
– Adjust the brake fluid level to the **MAX** marking.

Brake fluid DOT 5.1 (p. 216)

– Mount and tighten screw cap ❷ with the membrane.

Immediately clean up any brake fluid that has overflowed or spilled with water.

– Position the reservoir.
– Mount and tighten screw ❶.

Remaining screws on chassis	
M5	5 Nm (3.7 ft·lb$_f$)

Reworking

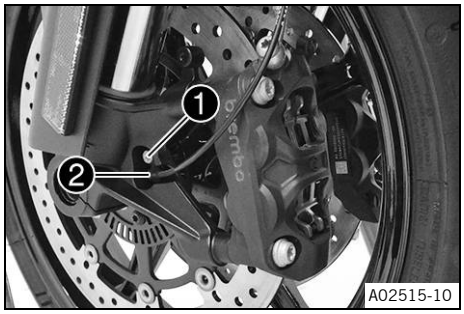
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

15.1 Removing the front wheel

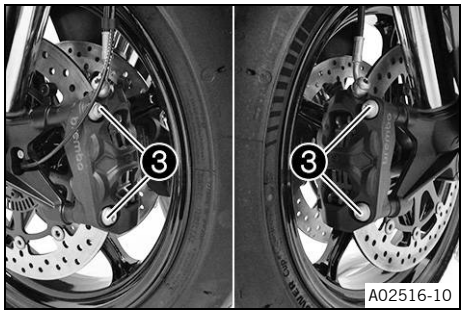
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Lift the motorcycle with the front lifting gear. (p. 75)

Main work

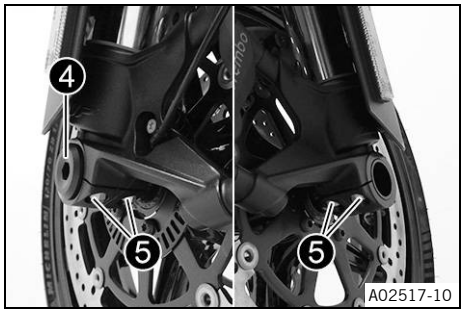


– Remove screw ❶ and pull wheel speed sensor ❷ out of the hole.



– Remove screws ❸ from both brake calipers.
– Press back brake linings by slightly tilting the brake calipers laterally on the brake disc.
– Pull brake calipers carefully back from the brake discs and hang to the side loosely.

Do not operate the hand brake lever if the brake calipers have been removed.



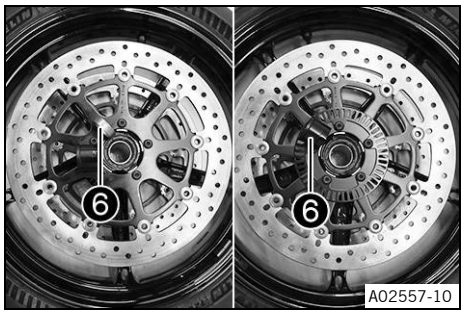
– Loosen screw ❹ by several rotations.
– Loosen screws ❺.
– Press on screw ❹ to push the wheel spindle out of the axle clamp.
– Remove screw ❹.

WARNING

Danger of accidents Damaged brake discs reduce the braking action.

– Always lay the wheel down in such a way that the brake disc is not damaged.

– Hold front wheel and remove wheel spindle. Take the front wheel out of the fork.



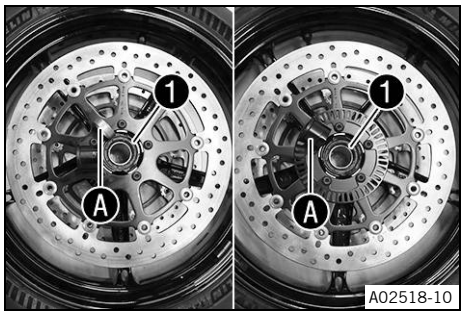
– Remove spacers ❻.

15.2 Installing the front wheel

WARNING

Danger of accidents Oil, grease or wax on the brake discs reduces the brake action.

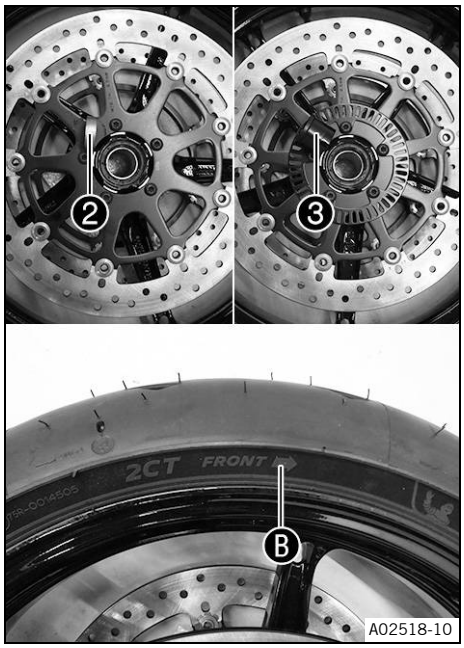
– Always keep the brake discs free of oil, fat and wax.
– Clean the brake discs with brake cleaner when necessary.



Main work

– Check the wheel bearing for damage and wear.
  » If the wheel bearing is damaged or worn:
    – Change the front wheel bearing.
– Clean and grease radial shaft seal ❶ and contact surfaces Ⓐ on the spacers.

Long-life grease (p. 215)

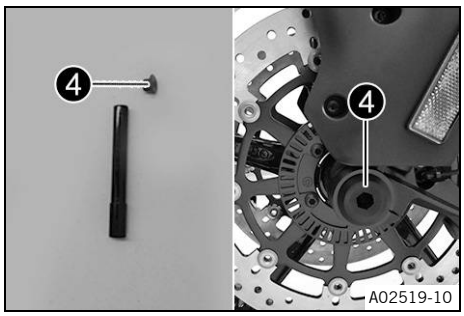


– Insert wide spacer ❷ on the left in the direction of travel.
– Insert narrow spacer ❸ on the right in the direction of travel.

Note

Arrow Ⓑ indicates the direction of travel of the front wheel.

The wheel speed sensor wheel is on the left viewed in the direction of travel.



– Clean screw ❹ and the wheel spindle.
– Grease wheel spindle lightly.

Long-life grease (p. 215)

– Jack up the front wheel into the fork, position it, and insert the wheel spindle.

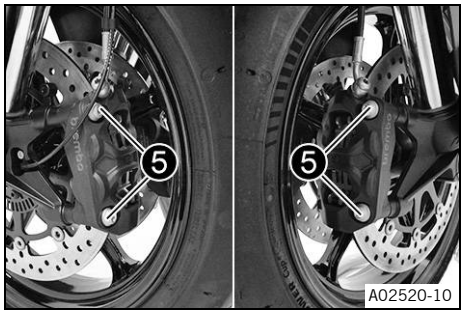
– Mount and tighten screw ❹.

Screw, wheel spindle, front	
M25×1.5	45 Nm (33.2 ft·lb$_f$)

Tip

Temporarily tighten one of the axle clamp screws so that the axle does not rotate with it.

Loosen the axle clamp screw again before compression to allow the fork legs to align.



– Position both brake calipers.

✓ The brake linings are correctly positioned.

– Mount screws ❺ on both sides but do not tighten yet.

Screw, front brake caliper	
M10×1.25	45 Nm (33.2 ft·lb$_f$) **Loctite® 243**

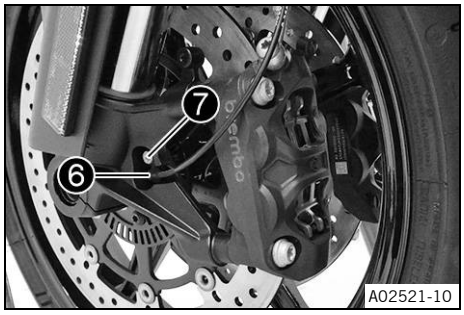
– Operate the hand brake lever repeatedly until the brake pads are in contact with the brake disc and a pressure point is reached. Secure the hand brake lever in the activated position.

✓ The brake calipers straighten.

– Tighten screws ❺ on both brake calipers.

Screw, front brake caliper	
M10×1.25	45 Nm (33.2 ft·lb$_f$) **Loctite® 243**

– Remove the locking piece of the hand brake lever.

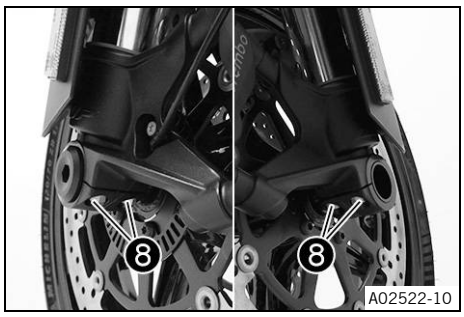


– Position wheel speed sensor ❻ in the hole.

– Mount and tighten screw ❼.

Screw, wheel speed sensor	
M6	6 Nm (4.4 ft·lb$_f$)

– Take the motorcycle off the front lifting gear. (p. 76)



– Operate the front brake and compress the fork a few times firmly.

✓ The fork legs straighten.

– Tighten screws ❽.

Screw, fork shoe	
M8	15 Nm (11.1 ft·lb$_f$)

Reworking

– Remove the rear of the motorcycle from the lifting gear. (p. 75)

15.3 Removing the rear wheel

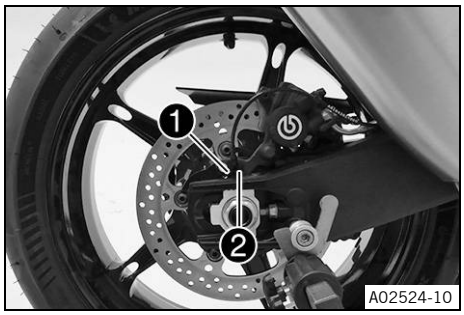
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)

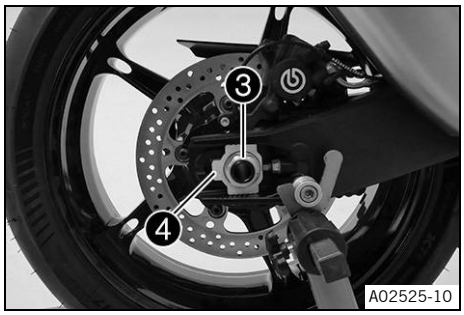
Main work



– Manually press the brake caliper toward the brake disc to push back the brake pistons.

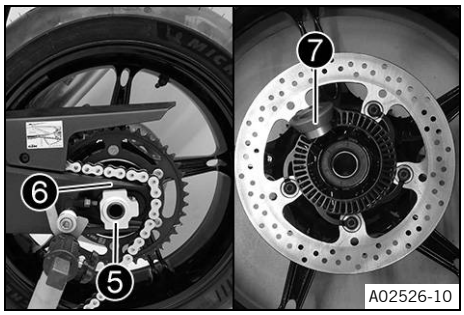


– Remove screw ❶ and pull wheel speed sensor ❷ out of the hole.



– Remove nut ❸.
– Take off chain adjuster ❹.
– Take the rear wheel out of the swingarm.

Do not actuate the brake pedal when the rear wheel is removed.



– Pull out wheel spindle ❺ far enough to allow the rear wheel to be pushed forward.
– Push the rear wheel forward as far as possible. Take the chain off the rear sprocket and place it on chain sprocket guard ❻.

WARNING

Danger of accidents Damaged brake discs reduce the braking action.

– Always lay the wheel down in such a way that the brake disc is not damaged.

– Hold the rear wheel and remove wheel spindle. Take the rear wheel out of the swingarm.

Do not actuate the brake pedal when the rear wheel is removed.

– Remove spacer ❼.

15.4 Installing the rear wheel

WARNING

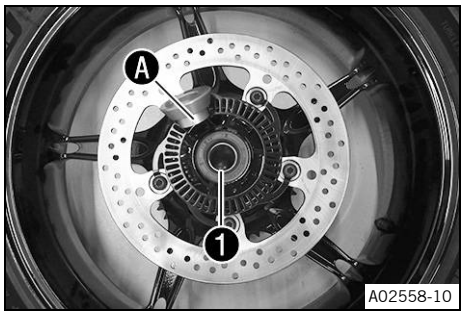
Danger of accidents Oil, grease or wax on the brake discs reduces the brake action.

– Always keep the brake discs free of oil, fat and wax.
– Clean the brake discs with brake cleaner when necessary.

WARNING

Danger of accidents There is no braking effect to start with at the rear brake after installing the rear wheel.

– Actuate the foot brake several times before going on a ride until you can feel a firm pressure point.



Main work

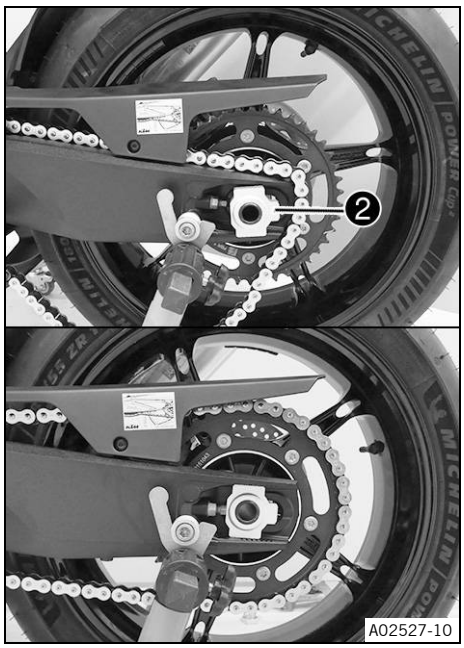
– Check the rear hub damping rubber pieces. (p. 147)
– Check the wheel bearing for damage and wear.
  » If the wheel bearing is damaged or worn:
    – Change the rear wheel bearing.
– Remove spacer.
– Clean and grease shaft seal ring ❶ and contact surface Ⓐ of the spacer.

Long-life grease (p. 215)

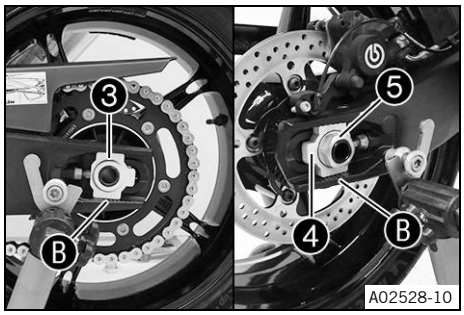
– Insert a spacer.
– Clean and grease the thread of the wheel spindle and nut.

Long-life grease (p. 215)

– Mount the damping rubber pieces and rear sprocket carrier on the rear wheel.
– Clean the contact areas on the brake caliper bracket and link fork.
– Place the rear wheel in the link fork and engage the brake disc in the brake caliper.



– Mount wheel spindle ❷, but do not push it in all the way.
– Push the rear wheel forward as far as possible and lay the chain on the rear sprocket.



– Push wheel spindle in all the way and mount chain adjusters ❸ and ❹ and nuts ❺.

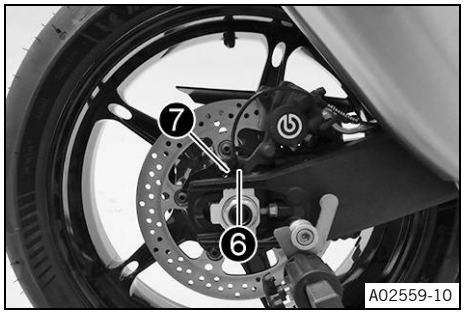
Mount chain adjusters ❸ and ❹ in the same position.

– Make sure that the chain tension adjusters are fitted correctly on the adjusting screws.

In order for the rear wheel to be correctly aligned, the markings on the left and right chain adjusters must be in the same position relative to reference markings Ⓑ.

– Tighten nut ❺.

Nut, wheel spindle, rear	
M25×1.5	90 Nm (66.4 ft·lb$_f$) Long-life grease



– Position wheel speed sensor ❻ in the hole.
– Mount and tighten screw ❼.

Screw, wheel speed sensor	
M6	6 Nm (4.4 ft·lb$_f$)

– Actuate the brake disc repeatedly until the brake pads are in contact with the brake disc and a pressure point is achieved.

Reworking

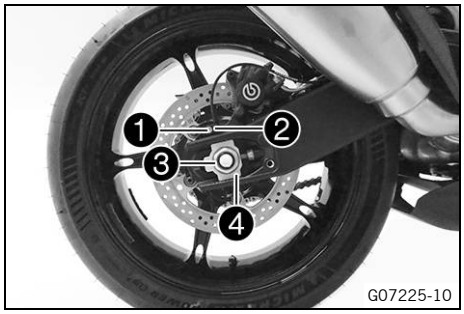
– Check the chain tension. (p. 93)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

15.5 Removing the rear wheel using a work stand

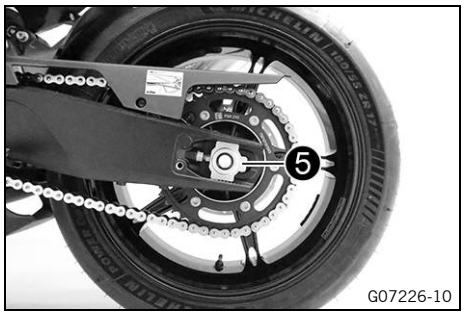
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove left front spoiler. (p. 109)
– Remove front fairing. (p. 112)
– Remove the left side cover. (p. 115)
– Remove right front spoiler. (p. 111)
– Remove the right side fairing. (p. 119)
– Raise motorcycle with work stand. (p. 76)
– Place a load on the front of the vehicle.
  ✓ The rear wheel is not in contact with the ground.

Main work



– Manually press the brake caliper toward the brake disc to push back the brake pistons.
– Remove screw ❶ and pull wheel speed sensor ❷ out of the hole.
– Remove nut ❸. Take off chain adjuster ❹.



– Pull out wheel spindle ❺ far enough to allow the rear wheel to be pushed forward.
– Push the rear wheel forward as far as possible and take the chain off the rear sprocket.

Protect the components against damage by covering them.

– Hold the rear wheel and remove wheel spindle.
– Pull the rear wheel back until the brake caliper bracket is suspended freely between the brake disc and rim.

WARNING

Danger of accidents Damaged brake discs reduce the braking action.

– Always lay the wheel down in such a way that the brake disc is not damaged.

– Take the rear wheel out of the swingarm.

Do not operate the foot brake when the rear wheel is removed.

15.6 Removing the rear wheel using a work stand

WARNING

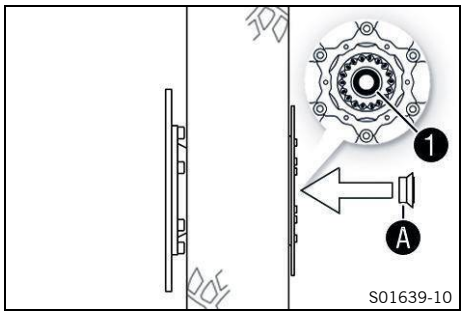
Danger of accidents Oil, grease or wax on the brake discs reduces the brake action.

– Always keep the brake discs free of oil, fat and wax.
– Clean the brake discs with brake cleaner when necessary.

WARNING

Danger of accidents There is no braking effect to start with at the rear brake after installing the rear wheel.

– Actuate the foot brake several times before going on a ride until you can feel a firm pressure point.



Main work

– Check the rear hub damping rubber pieces. (p. 147)
– Check the wheel bearing for damage and wear.
  » If the wheel bearing is damaged or worn:
    – Change the rear wheel bearing.
– Remove spacer.
– Clean and grease shaft seal ring ❶ and contact surface Ⓐ of the spacer.

Long-life grease (p. 215)

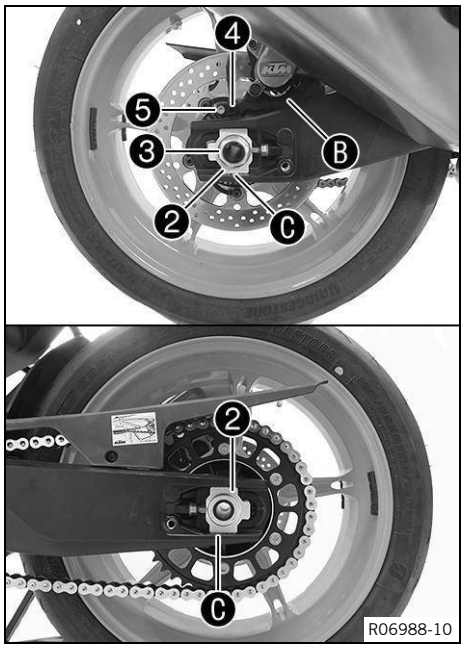
– Insert a spacer.
– Clean and grease the thread of the wheel spindle and nut.

Long-life grease (p. 215)

– Clean and lightly grease the wheel spindle.

Long-life grease (p. 215)

– Clean the contact areas on the brake caliper bracket and link fork.



– Place a load on the front of the vehicle.
– Engage the thrust bearing of brake caliper bracket Ⓑ and the link fork.
– Jack up the rear wheel into the link fork, position it, and insert the wheel spindle.
  ✓ The brake pads are positioned correctly.
– Place the chain on the sprocket.
– Position chain adjuster ❷. Mount nut ❸, but do not tighten yet.

Nut, wheel spindle, rear	
M25×1.5	90 Nm (66.4 ft·lb$_f$) Long-life grease

Mount the left and right chain adjusters in the same position.

– Make sure that chain adjusters ❷ are fitted correctly on the adjusting screws.
– Check the chain tension. (p. 93)
– Tighten nut ❸.

Nut, wheel spindle, rear	
M25×1.5	90 Nm (66.4 ft·lb$_f$) Long-life grease

In order for the rear wheel to be correctly aligned, the markings on the left and right chain adjusters must be in the same position relative to reference markings C.
Grease the thread and contact surface of the wheel spindle.

– Position wheel speed sensor 4 in the hole. Mount and tighten screw 5.

Remaining screws on chassis	
M6	10 Nm (7.4 ft·lb$_f$)

– Remove the load from the front of the vehicle.
– Actuate the brake disc repeatedly until the brake pads are in contact with the brake disc and a pressure point is achieved.

Reworking

– Remove the motorcycle from the work stand. (p. 77)
– Install the left side fairing (p. 117)
– Install left front spoiler. (p. 110)
– Install the right side cover. (p. 122)
– Install right front spoiler. (p. 111)
– Install the front fairing. (p. 113)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

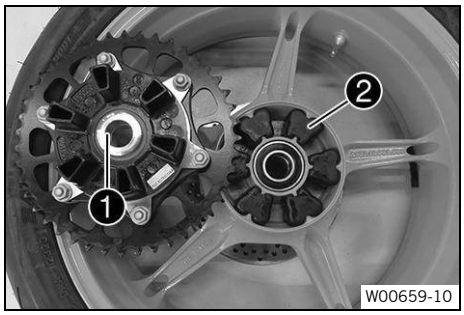
15.7 Checking the rear hub damping rubber pieces

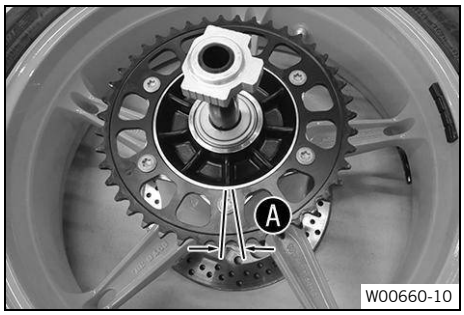
Note

The engine power is transmitted from the rear sprocket to the rear wheel via the 6 damping rubber pieces. They eventually wear out during operation. If the damping rubber pieces are not changed in time, the rear sprocket carrier and the rear hub will be damaged.

Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove the rear wheel. (p. 142)





Main work

– Check bearing ❶.
  » If the bearing is damaged or worn:
    – Change the bearing of the rear sprocket carrier.
– Check damping rubber pieces ❷ of the rear hub for damage and wear.
  » If the damping rubber pieces of the rear hub are damaged or worn:
    – Change all the damping rubber pieces of the rear hub.
– Lay the rear wheel on a workbench with the rear sprocket facing upwards and insert the wheel spindle in the hub.
– To check play Ⓐ, hold the rear wheel tight and try to turn the rear sprocket with your hand.

Play of damping rubber pieces on rear wheel	≤ 5 mm (≤ 0.20 in)

Note
Measure the play on the outside of the rear sprocket.

  » If clearance Ⓐ is larger than the specified value:
    – Change all the damping rubber pieces of the rear hub.

Reworking

– Install the rear wheel. (p. 143)
– Check the chain tension. (p. 93)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

15.8 Checking the tire condition

WARNING
Danger of accidents If a tire bursts while riding, the vehicle becomes uncontrollable.
– Ensure that damaged or worn tires are replaced immediately.

WARNING
Danger of accidents Non-approved or non-recommended tyres and wheels impact the handling characteristic.
– Only use tires and wheels approved and recommended by the vehicle manufacturer with the corresponding speed rating.

WARNING
Danger of accidents New tires have reduced road grip.
The contact surface on new tires is not yet roughened.
– Run in new tires with moderate riding and only gradually increase the lean angle.

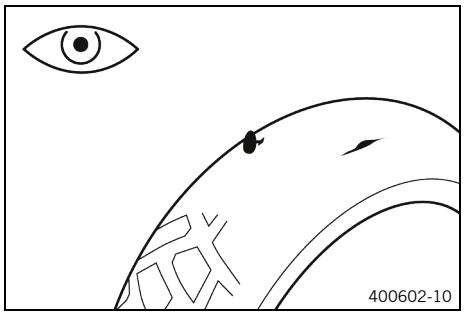
WARNING

Danger of accidents Different tire profiles on the front and rear wheels can make it more difficult to control the vehicle.

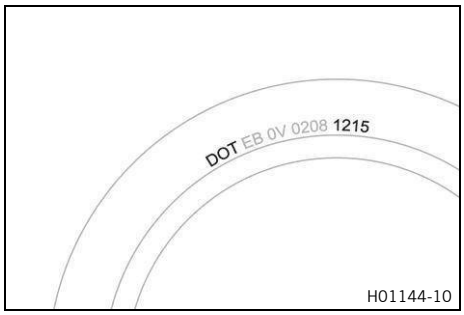
– Make sure that only tires of the same tread type are mounted to the front and rear wheel.

Note

Other tires could have a negative effect on handling characteristics.
The type, condition, and pressure of the tires all have a major impact on the handling of the motorcycle.
The tires mounted on the front and rear wheels must have a similar profile.
Worn tires have a negative effect on handling characteristics, especially on wet surfaces.
Tires must not be moved or loaded while they are cold.
Tires must not be stored or fitted when too cold.
Observe the tire manufacturer's specifications and recommendations.



– Check the front and rear tires for cuts, embedded objects, and other damage.
  » If the tires have cuts, run-in objects, or other damage:
    – Change the tires.



– Check the tire age.

Note

The tire date of manufacture is usually contained in the tire label and is indicated by the last four digits of the **DOT** number. The first two digits indicate the week of manufacture and the last two digits the year of manufacture.

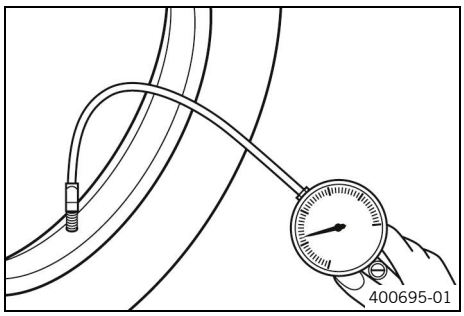
KTM recommends that the tires be changed after 5 years at the latest, regardless of the actual state of wear.

  » If the tires are older than five years:
    – Change the tires.

15.9 Checking the tire pressure

Note

Low tire pressure leads to abnormal wear and the tire overheating.
Correct tire pressure ensures optimal riding comfort and maximum tire service life.



– Remove the protection cap.
– Check the tire pressure when the tires are cold.

Tire pressure when solo (cold)	
front	2.1 bar (30.5 psi)
rear	1.5 bar (21.8 psi)

Tire pressure when solo (warm)	
front	2.4 bar (34.8 psi)
rear	1.7 bar (24.7 psi)

» If the tire pressure does not meet specifications:
  – Correct tire pressure.
– Mount the protection cap.

16.1 Removing the 12 V battery

WARNING

Danger of accidents Electronic components and safety devices will be damaged if the 12-V battery is discharged or missing.

If the 12-V battery is discharged or defective, malfunctions in the vehicle electronics can occur, especially when starting.

– Never operate the vehicle with a discharged 12-V battery or without a 12-V battery.

WARNING

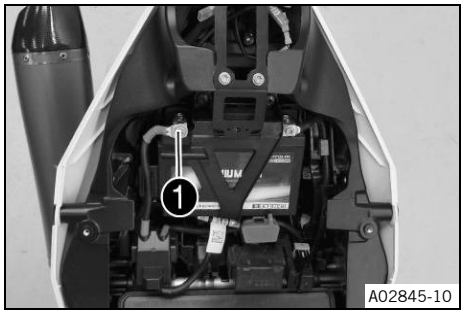
Risk of injury Battery acid and battery gases cause chemical burns.

– Keep 12–V batteries out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Avoid contact with battery acid and battery gases.
– Keep sparks or open flames away from the 12 V battery.
– Only charge 12 V batteries in well-ventilated rooms.
– Rinse the affected area immediately with plenty of water in the event of contact with skin.
– Rinse eyes with water for at least 15 minutes and consult a doctor immediately if battery acid and battery gases get into the eyes.

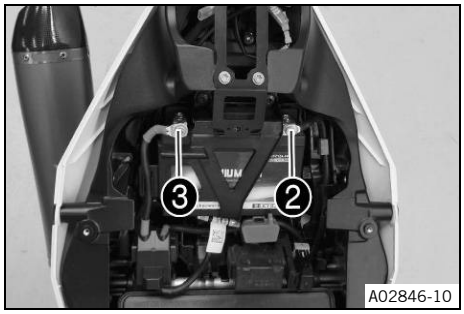
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove the rear fairing. (p. 124)

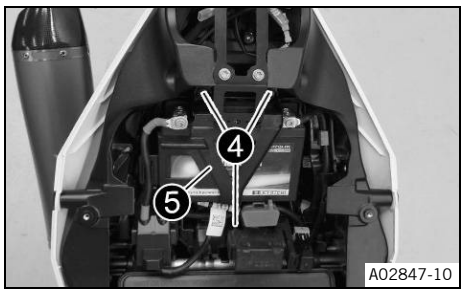
Main work



– Remove positive terminal cover ❶.

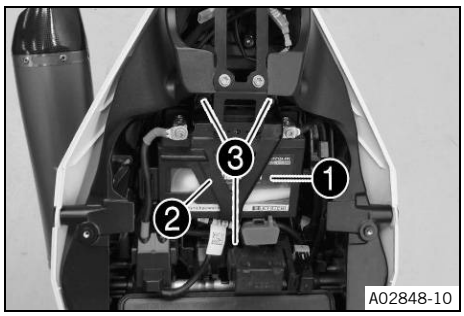


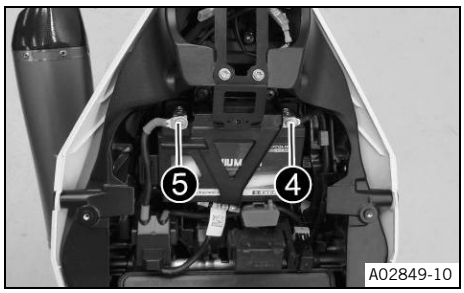
– Remove screw ❷ and disconnect negative cable from the 12 V battery.
– Remove screw ❸ and disconnect positive cable from the 12 V battery.

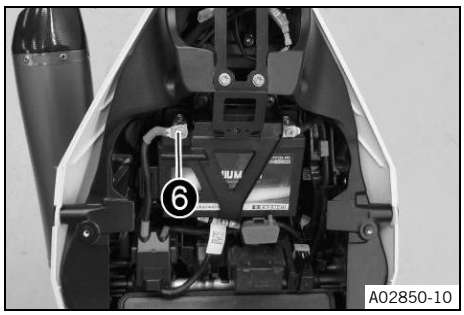


– Remove screws ❹.
– Remove battery support bracket ❺.
– Remove the 12-V battery from the battery compartment.

16.2 Installing the 12 V battery







Main work

– Position 12-V battery ❶ in the battery compartment.

12 V battery (HJTZ12A-FPI) 📖 (p. 217)

✓ The battery terminals face opposite the direction of travel.
– Position battery support bracket ❷.
– Mount and tighten screws ❸.

Screw, battery holding bracket	
M5	3 Nm (2.2 ft·lb$_f$)

– Connect negative cable ❹ to the 12 V battery.

Screw, battery terminal	
M6×12	4.5 Nm (3.32 ft·lb$_f$)

– Connect positive cable ❺ to the 12-V battery.

Screw, battery terminal	
M6×12	4.5 Nm (3.32 ft·lb$_f$)

– Mount positive terminal cover ❻.

Screw, battery terminal	
M6×12	4.5 Nm (3.32 ft·lb$_f$)

Reworking

– Fit the rear fairing. 📖 (p. 125)
– Remove the rear of the motorcycle from the lifting gear. 📖 (p. 75)
– Set time and date. 📖 (p. 46)

16.3 Charging the 12 V battery

WARNING

Risk of injury Battery acid and battery gases cause chemical burns.

– Keep 12–V batteries out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Avoid contact with battery acid and battery gases.
– Keep sparks or open flames away from the 12 V battery.
– Only charge 12 V batteries in well-ventilated rooms.
– Rinse the affected area immediately with plenty of water in the event of contact with skin.
– Rinse eyes with water for at least 15 minutes and consult a doctor immediately if battery acid and battery gases get into the eyes.

NOTE

Environmental hazard 12–V batteries contain environmentally-hazardous materials.

– Do not dispose of 12–V batteries as household waste.
– Dispose of 12–V batteries at a collection point for used batteries.

NOTE

Environmental hazard Hazardous substances cause environmental damage.

– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc. correctly and in accordance with the applicable regulations.

Note

Even when there is no load on the 12-V battery, it discharges steadily each day.

The state of charge and the method of charging are very important for the service life of the 12 V battery.

Rapid recharging with a high charging current shortens the service life of the battery.

If the charging current, charging voltage, or charging time is exceeded, electrolyte escapes through the safety valves. This reduces the capacity of the 12-V battery.

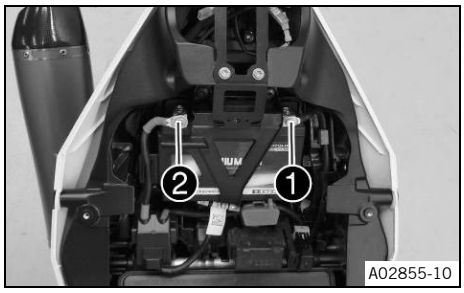
If the 12-V battery is left in a discharged state for an extended period, it will become deeply discharged and sulfating occurs, destroying the battery.

The 12 V battery is maintenance-free. The acid level does not have to be checked.

Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove the rear fairing. (p. 124)

Main work



– Disconnect negative cable ❶ from the 12 V battery to avoid damaging the onboard electronics.
– Remove positive terminal cover ❷.


S06148-01

– Connect a charger to the 12 V battery. Connect the battery charger to the mains connection.

EU battery charger **TecMATE Optimate PRO** (A61029974044)
Work material (Alternative 1 / 2)
USA/CA battery charger **TecMATE Optimate PRO** (A61029974144)
Work material (Alternative 2 / 2)
Battery charger **TecMATE Optimate PRO** UK (A61029974244)

Note

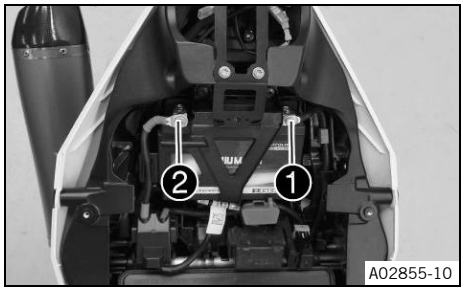
After charging, the battery charger can remain on the vehicle, ensuring that the battery voltage is maintained during the maintenance charging cycle.

Note

It is impossible to overcharge the 12–V battery using this battery charger.

– Disconnect the battery charger from the mains connection and the 12-V battery after charging.

The charging current, charging voltage, and charging time must not be exceeded.	
If the 12 V battery is depleted from starting the vehicle repeatedly, the battery must be charged immediately.	
Recharge the 12 V battery regularly when the motorcycle is not being used.	3 months



A02855-10

– Mount positive terminal cover ❷.
– Connect negative cable ❶ to the 12 V battery.

Reworking

– Fit the rear fairing. (p. 125)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)
– Set time and date. (p. 46)

16.4 Changing the main fuse

WARNING

Fire hazard Incorrect fuses overload the electrical system.

– Use only fuses with the prescribed amperage.
– Do not bypass or repair fuses.

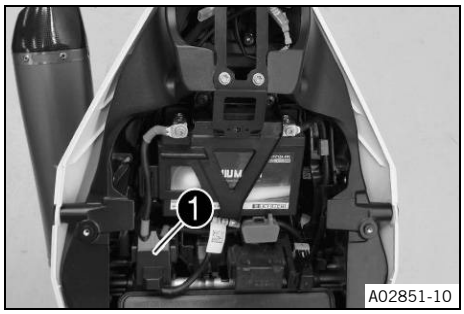
Note

The main fuse protects all electrical power loads of the vehicle. The main fuse is under the rear fairing.

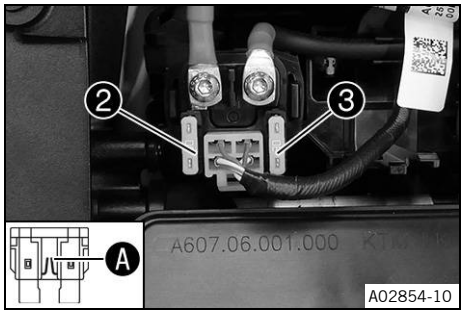
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove the rear fairing. (p. 124)

Main work



– Remove protection cap ❶.



– Remove faulty main fuse ❷.

Note

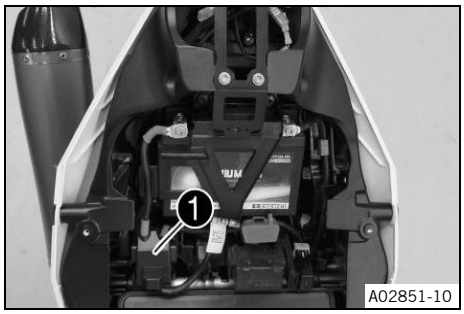
A faulty fuse has a burned-out fuse wire Ⓐ.
A spare fuse ❸ is located in the starter relay.

– Insert the main fuse.

Fuse (58011109130) (p. 217)

Tip

Insert a new spare fuse into the starter relay to have it available when needed.



– Mount protection cap ❶.

Reworking

– Fit the rear fairing. (p. 125)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)
– Set time and date. (p. 46)

16.5 Changing the fuses of individual electrical power consumers

WARNING

Fire hazard Incorrect fuses overload the electrical system.

– Use only fuses with the prescribed amperage.
– Do not bypass or repair fuses.

Note

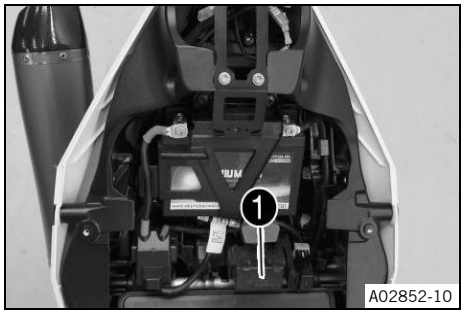
The fuse box containing the fuses of individual electrical power consumers is located under the rear fairing.

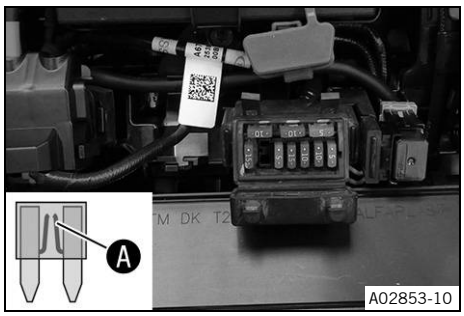
Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove the rear fairing. (p. 124)

Main work

– Open fuse box cover ❶.





– Remove the faulty fuse.

Fuse **1** - 5 A - ignition, motorcycle control unit
Fuse **2** - 10 A - ACC1
Fuse **3** - 10 A - power supply power relay
Fuse **4** - 15 A - ACC2
Fuse **SPARE** - 5 A/10 A/15 A - spare fuses

Note

A faulty fuse has a burned-out fuse wire ❹.

– Insert the spare fuse with the correct rating.

Fuse (75011088005) (p. 218)
Fuse (75011088010) (p. 217)
Fuse (75011088015) (p. 217)

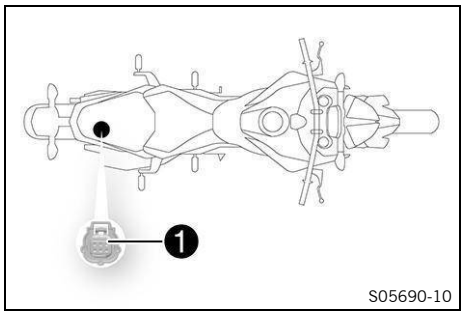
Tip
Put a spare fuse in the fuse box so that it is available if needed.

– Check the function of the electrical power consumer.
– Close the fuse box cover.

Reworking

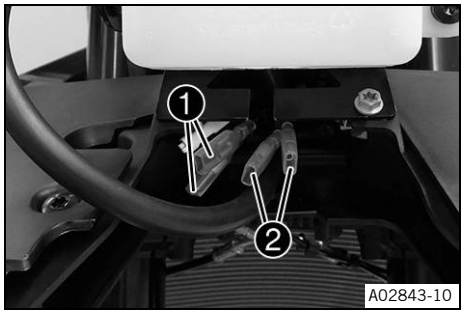
– Fit the rear fairing. (p. 125)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

16.6 Diagnostic connector



Diagnostics connector ❶ is located under the rear fairing.

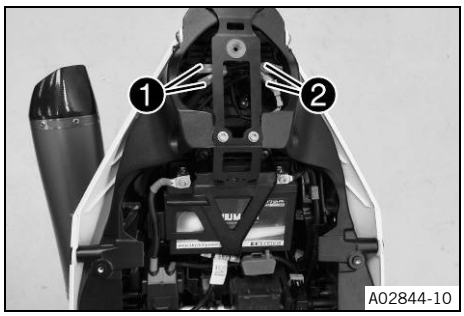
16.7 Front ACC1 and ACC2



Installation location

- Power supplies ACC1 ❶ and ACC2 ❷ at the front are behind the front fairing.

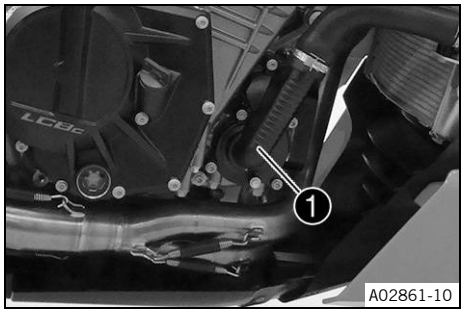
16.8 Rear ACC1 and ACC2



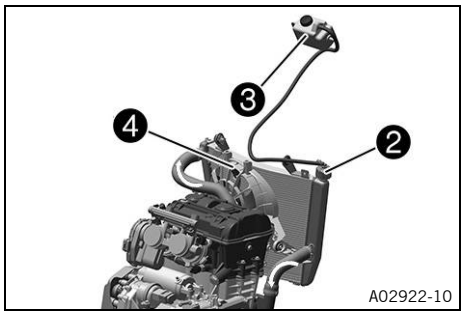
Installation location

- The ACC1 ❶ and ACC2 ❷ power supplies at the rear are located under the rear fairing.

17.1 Cooling system



Water pump ❶ in the engine circulates the coolant.
The pressure resulting from the warming of the cooling system is regulated by a valve in radiator cap ❷. The heat expansion causes the surplus coolant to flow into expansion tank ❸.



The coolant is cooled by the air stream and a radiator fan ❹, which is activated at high temperature.
The lower the vehicle speed, the lower the cooling effect. Dirty cooling fins also reduce the cooling effect.

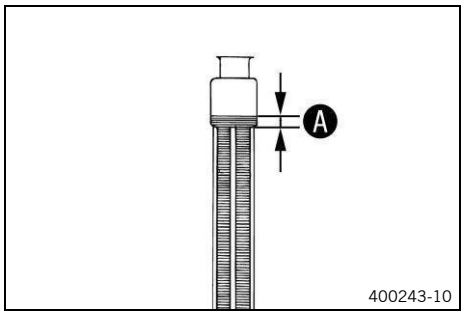
17.2 Checking the frost protection and coolant level

WARNING
Health hazard Coolant is harmful to health.
- Keep coolant out of the reach of children.
- Do not allow coolant to come into contact with skin, eyes, or clothing.
- Consult a doctor immediately if coolant has been ingested.
- Rinse the affected area immediately with plenty of water in the event of contact with skin.
- Rinse eyes thoroughly with water and consult a doctor immediately if coolant comes into contact with eyes.
- If coolant spills on to your clothing, change the clothing.
- Store coolant properly in a suitable container and keep out of the reach of children.

WARNING
Danger of scalding The coolant heats up and is under high pressure when the vehicle is operated.
- Do not open the radiator, the radiator hoses, or other cooling system components if the engine or the cooling system are at operating temperature.
- Allow the cooling system and the engine to cool down before you open the radiator, the radiator hoses, or other components of the cooling system.
- In the event of scalding, rinse the area affected immediately with lukewarm water.

Condition: The engine is cold

Preparatory work
- Raise the motorcycle with the rear lifting gear. (p. 75)
- Remove right front spoiler. (p. 111)
- Remove front fairing. (p. 112)
- Remove the right side fairing. (p. 119)
- Stand the motorcycle upright on a level surface.



Main work

– Stand the motorcycle upright on a level surface.
– Take off the radiator cap.
– Check the frost protection in the coolant.

−45 °C ... −25 °C (−81.0 °F ... −45.0 °F)

» If the frost protection in the coolant does not match the specified value:
– Correct the frost protection in the coolant.

Coolant (p. 216) Antifreeze protection to at least: −25 °C (−13.0 °F)

– Check the coolant level in the radiator.

Coolant level A below the upper edge of filler neck	35 mm (1.38 in)

» If the coolant level does not meet the specifications:
– Correct the coolant level.
– Mount the radiator cap.

Reworking

– Install the right side cover. (p. 122)
– Install the front fairing. (p. 113)
– Install right front spoiler. (p. 111)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

17.3 Checking the coolant level

WARNING
Health hazard Coolant is harmful to health.
– Keep coolant out of the reach of children.
– Do not allow coolant to come into contact with skin, eyes, or clothing.
– Consult a doctor immediately if coolant has been ingested.
– Rinse the affected area immediately with plenty of water in the event of contact with skin.
– Rinse eyes thoroughly with water and consult a doctor immediately if coolant comes into contact with eyes.
– If coolant spills on to your clothing, change the clothing.
– Store coolant properly in a suitable container and keep out of the reach of children.

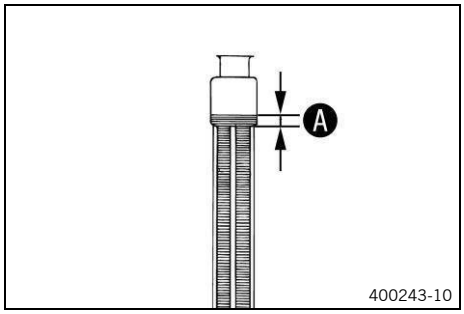
WARNING
Danger of scalding The coolant heats up and is under high pressure when the vehicle is operated.
– Do not open the radiator, the radiator hoses, or other cooling system components if the engine or the cooling system are at operating temperature.
– Allow the cooling system and the engine to cool down before you open the radiator, the radiator hoses, or other components of the cooling system.
– In the event of scalding, rinse the area affected immediately with lukewarm water.

Condition: The engine is cold, Radiator is completely full

Preparatory work

– Stand the motorcycle upright on a level surface.
– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove right front spoiler. (p. 111)
– Remove front fairing. (p. 112)
– Remove the right side fairing. (p. 119)

Main work



– Take off the radiator cap.
– Check the coolant level in the radiator.

Coolant level Ⓐ below the upper edge of filler neck	35 mm (1.38 in)

» If the coolant level does not meet the specifications:
– Correct the coolant level.

Note
Check whether the radiator contains distilled water with additives (for use on the racetrack) or coolant with antifreeze (for storage).

– Mount the radiator cap.

Reworking

– Install the right side cover. (p. 122)
– Install the front fairing. (p. 113)
– Install right front spoiler. (p. 111)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

17.4 Draining the coolant

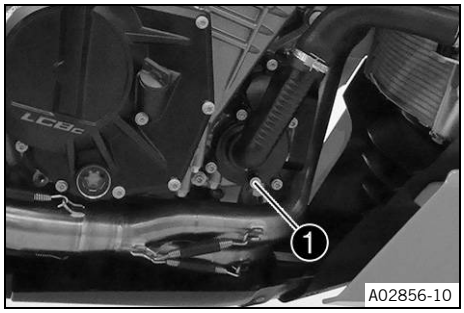
WARNING
Health hazard Coolant is harmful to health.
– Keep coolant out of the reach of children.
– Do not allow coolant to come into contact with skin, eyes, or clothing.
– Consult a doctor immediately if coolant has been ingested.
– Rinse the affected area immediately with plenty of water in the event of contact with skin.
– Rinse eyes thoroughly with water and consult a doctor immediately if coolant comes into contact with eyes.
– If coolant spills on to your clothing, change the clothing.
– Store coolant properly in a suitable container and keep out of the reach of children.

WARNING
Danger of scalding The coolant heats up and is under high pressure when the vehicle is operated.
– Do not open the radiator, the radiator hoses, or other cooling system components if the engine or the cooling system are at operating temperature.
– Allow the cooling system and the engine to cool down before you open the radiator, the radiator hoses, or other components of the cooling system.
– In the event of scalding, rinse the area affected immediately with lukewarm water.

Condition: The engine is cold

Preparatory work

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove right front spoiler. (p. 111)
– Remove front fairing. (p. 112)
– Remove the right side fairing. (p. 119)
– Stand the motorcycle upright on a level surface.



Main work

– Stand the motorcycle upright.
– Position an appropriate container under the engine.
– Remove screw ❶ with the sealing ring.
– Remove the radiator cap.
– Completely drain the coolant.
– Mount screw ❶ with the new sealing ring and tighten.

Screw plug, water pump drain hole	
EJOT ALtracs® Plus – 60×14	8 Nm (5.9 ft·lb$_f$) **Loctite® 243**

– Mount the radiator cap.

Reworking

– Install the right side cover. (p. 122)
– Install the front fairing. (p. 113)
– Install right front spoiler. (p. 111)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

17.5 Filling/bleeding the cooling system

WARNING

Health hazard Coolant is harmful to health.

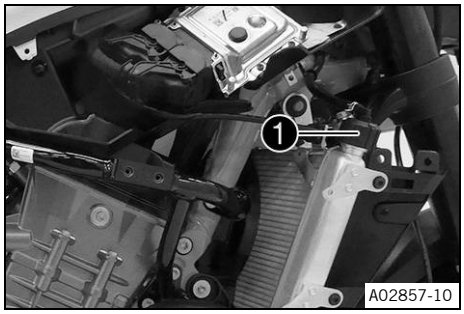
– Keep coolant out of the reach of children.
– Do not allow coolant to come into contact with skin, eyes, or clothing.
– Consult a doctor immediately if coolant has been ingested.
– Rinse the affected area immediately with plenty of water in the event of contact with skin.
– Rinse eyes thoroughly with water and consult a doctor immediately if coolant comes into contact with eyes.
– If coolant spills on to your clothing, change the clothing.
– Store coolant properly in a suitable container and keep out of the reach of children.

Preparatory work

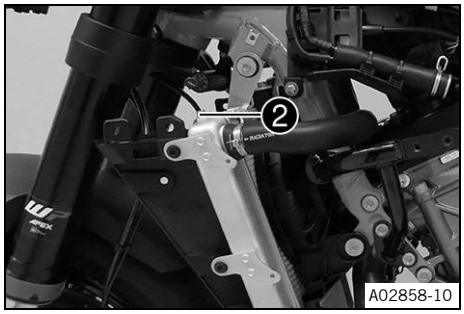
– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove left front spoiler. (p. 109)
– Remove right front spoiler. (p. 111)
– Remove front fairing. (p. 112)

– Remove the left side cover. (p. 115)
– Remove the right side fairing. (p. 119)

Main work



– Remove radiator cap ❶.



– Remove bleeder screw ❷.
– Tilt the vehicle slightly to the right.
– Pour in coolant until it emerges without bubbles at the vent hole, and then mount and tighten bleeder screw ❷ immediately.

Coolant	
Coolant (p. 216) Antifreeze protection to at least: −25 °C (−13.0 °F)	1.9 l (0.50 liq. gal_{US})

– Completely fill the radiator with coolant. Mount radiator cap ❶.
– Check the coolant level. (p. 159)

DANGER

Danger of poisoning Exhaust gases are toxic and inhaling them may result in unconsciousness and death.

– Always ensure that there is sufficient ventilation when running the engine.
– Use suitable exhaust extraction when starting or running the engine in an enclosed space.

– Start the engine and run it until the 5th bar of the temperature indicator lights up.
– Stop the engine and allow it to cool down.
– When the engine is cool, check the coolant level in the radiator and, if necessary, add coolant.
– Check the coolant level. (p. 159)

Reworking

– Install the right side cover. (p. 122)
– Install the left side fairing (p. 117)
– Install the front fairing. (p. 113)
– Install right front spoiler. (p. 111)

– Install left front spoiler. (p. 110)
– Remove the rear of the motorcycle from the lifting gear. (p. 75)

17.6 Changing the coolant

WARNING

Health hazard Coolant is harmful to health.
– Keep coolant out of the reach of children.
– Do not allow coolant to come into contact with skin, eyes, or clothing.
– Consult a doctor immediately if coolant has been ingested.
– Rinse the affected area immediately with plenty of water in the event of contact with skin.
– Rinse eyes thoroughly with water and consult a doctor immediately if coolant comes into contact with eyes.
– If coolant spills on to your clothing, change the clothing.
– Store coolant properly in a suitable container and keep out of the reach of children.

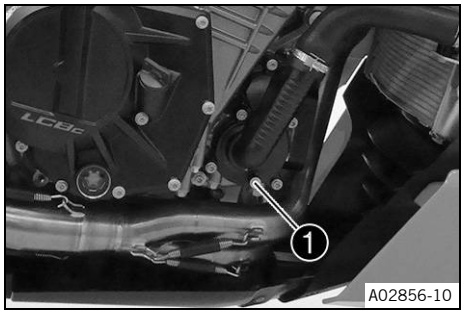
WARNING

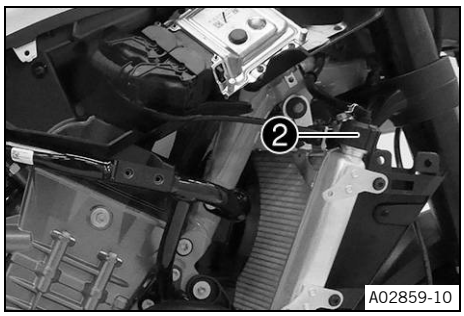
Danger of scalding The coolant heats up and is under high pressure when the vehicle is operated.
– Do not open the radiator, the radiator hoses, or other cooling system components if the engine or the cooling system are at operating temperature.
– Allow the cooling system and the engine to cool down before you open the radiator, the radiator hoses, or other components of the cooling system.
– In the event of scalding, rinse the area affected immediately with lukewarm water.

Condition: The engine is cold

Preparatory work
– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove left front spoiler. (p. 109)
– Remove right front spoiler. (p. 111)
– Remove front fairing. (p. 112)
– Remove the left side cover. (p. 115)
– Remove the right side fairing. (p. 119)

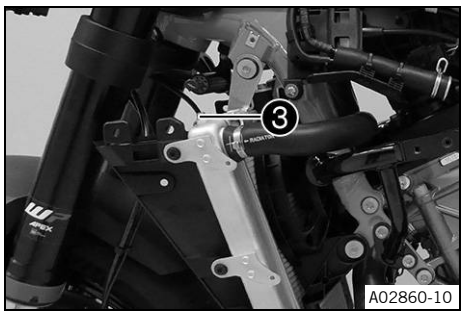
Main work
– Stand the motorcycle upright.
– Position an appropriate container under the engine.
– Remove screw ❶ with the sealing ring.





– Remove radiator cap ❷.
– Completely drain the coolant.
– Mount screw ❶ with the new sealing ring and tighten.

Screw plug, water pump drain hole	
EJOT ALtracs® Plus – 60×14	8 Nm (5.9 ft·lb$_f$) **Loctite® 243**



– Remove bleeder screw ❸.
– Tilt the vehicle slightly to the right.
– Pour in coolant until it emerges without bubbles at the vent hole, and then mount and tighten bleeder screw ❸ immediately.

Coolant	
Coolant 📖 (p. 216) Antifreeze protection to at least: −25 °C (−13.0 °F)	1.9 l (0.50 liq. gal$_{US}$)

– Completely fill the radiator with coolant. Mount radiator cap ❷.

DANGER

Danger of poisoning Exhaust gases are toxic and inhaling them may result in unconsciousness and death.

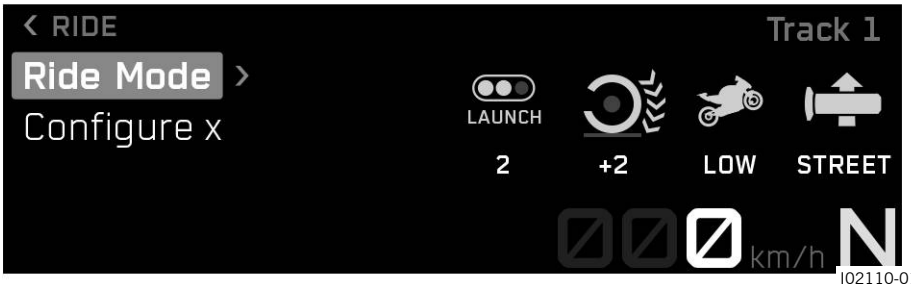
– Always ensure that there is sufficient ventilation when running the engine.
– Use suitable exhaust extraction when starting or running the engine in an enclosed space.

– Start the engine and run it until the 5th bar of the temperature indicator lights up.
– Stop the engine and allow it to cool down.
– After the engine has cooled down, check the coolant level in the radiator and in the compensating tank again and add more coolant if necessary.

Reworking

– Install the right side cover. 📖 (p. 122)
– Install the left side fairing 📖 (p. 117)
– Install the front fairing. 📖 (p. 113)
– Install right front spoiler. 📖 (p. 111)
– Install left front spoiler. 📖 (p. 110)
– Remove the rear of the motorcycle from the lifting gear. 📖 (p. 75)

18.1 Ride Mode



Condition	Meaning
Track 1	Throttle response and motorcycle traction control can be adjusted individually.
Track 2	Throttle response and motorcycle traction control can be adjusted individually.
Track 3	Throttle response and motorcycle traction control can be adjusted individually.

WARNING
Danger of accidents An incorrectly selected ride mode makes it more difficult to control the vehicle.
The riding modes are each only suitable for certain conditions.
– Always select a riding mode that suits the surface on which you are riding, the weather and the riding situation.

Various vehicle tunings (**Track 1**, **Track 2** and **Track 3**) can be selected in the combination instrument in the **Ride Mode** submenu.
The most recently selected ride mode appears on the display.
The riding mode can also be changed while riding with the throttle grip closed.

18.2 Motorcycle traction control



The motorcycle traction control (**MTC**) lowers the engine torque in case of loss of traction in the rear wheel. Depending on the riding mode (p. 165), different amounts of slip are allowed when traction control is activated.

Note
When motorcycle traction control is switched off, the rear wheel may spin during strong acceleration and on surfaces with low grip, resulting in a risk of falling.

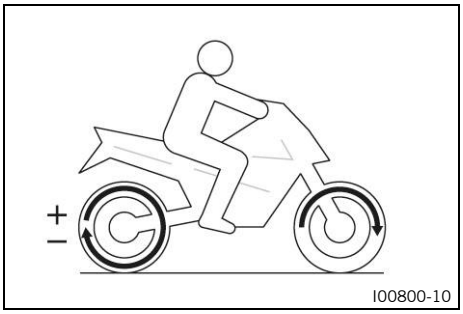
In the combination instrument, the motorcycle traction control can be switched on or off via the **MTC** submenu.

Note

When the motorcycle traction control is active, the TC indicator lamp flashes.

When motorcycle traction control is switched off, the TC indicator lamp lights up.

18.3 Slip adjustment



The spin adjuster is a motorcycle traction control function.

The slip adjustment allows the motorcycle traction control to be tuned through nine levels to the desired characteristic map.

Level 1 allows maximum slip on the rear wheel, and level 9 allows the minimum.

The slip adjustment can be set while riding with a closed menu using the **UP** or **DOWN** button.

18.4 Throttle Response



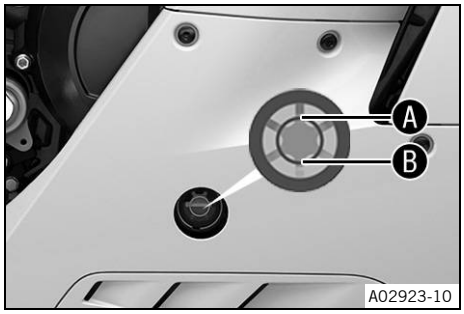
In the combination instrument the characteristics of the throttle response can be adjusted via the **Throttle Response** submenu.

The **Throttle Response** can also be set while riding with a closed throttle grip.

19.1 Checking the engine oil level

Note
Oil consumption depends on the riding style and the operating conditions.

Condition: The engine is at operating temperature



– Stand the motorcycle upright on a level surface.
– Check the engine oil level.

The engine oil must be between marking Ⓐ and marking Ⓑ of the oil level viewer.

Note
After switching off the engine, wait one minute before checking the level.

» If the engine oil level is below the marking Ⓑ:
  – Add engine oil. (p. 169)
» If the engine oil level is above the marking Ⓐ:
  – Correct engine oil level.

19.2 Changing the engine oil and oil filter, cleaning the oil screens

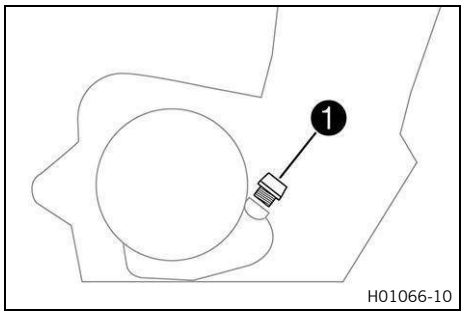
WARNING
Danger of scalding Engine and gear oil heat up when the motorcycle is operated.
– Wear suitable protective clothing and safety gloves.
– In the event of scalding, rinse the area affected immediately with lukewarm water.

NOTE
Environmental hazard Hazardous substances cause environmental damage.
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc. correctly and in accordance with the applicable regulations.

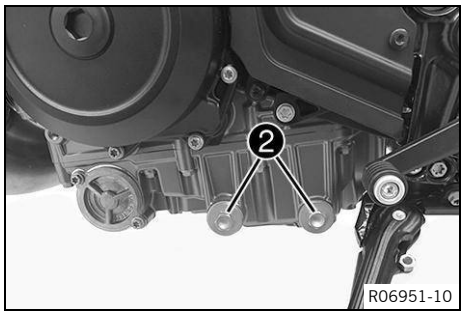
Note
Drain the engine oil while the engine is at operating temperature.

Preparatory work
– Raise the motorcycle with the rear lifting gear. (p. 75)
– Remove left front spoiler. (p. 109)
– Remove right front spoiler. (p. 111)
– Remove the lower inner spoiler. (p. 107)

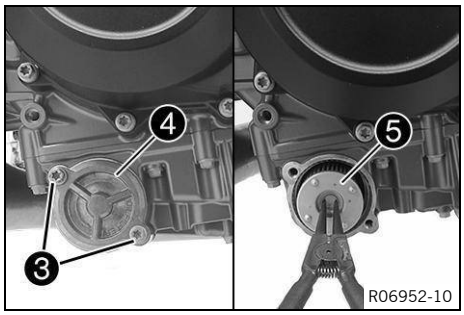
Main work



- Park the motorcycle on a level surface.
- Position an appropriate container under the engine.
- Remove oil filler plug ❶ with the O-ring from the clutch cover.



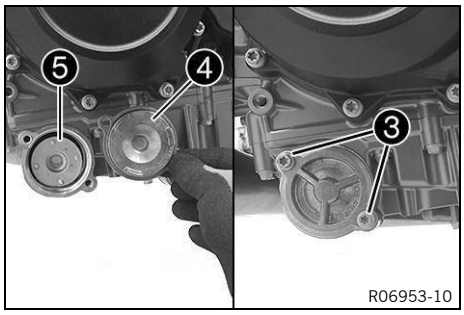
- Remove oil drain plugs ❷ along with the magnets, the O-rings, and the oil screens.



- Remove screws ❸.
- Take off oil filter cover ❹ with the O-ring.
- Pull oil filter ❺ out of the oil filter housing.

Lock ring plier (51012011000)

- Allow the engine oil to drain completely.
- Thoroughly clean the parts and the sealing surfaces.

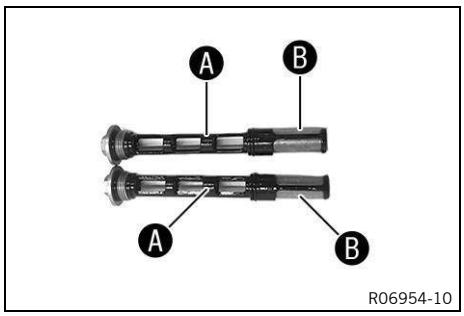


- Insert new oil filter ❺.

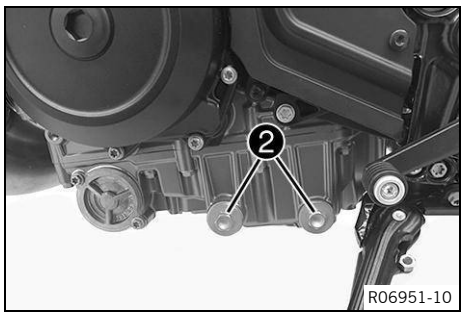
Only insert the oil filter by hand.

- Oil the O-ring of the oil filter cover.
- Position oil filter cover ❹.
- Mount and tighten screws ❸.

Screw, oil filter cover	
M6	10 Nm (7.4 ft·lb$_f$)



- Thoroughly clean magnets Ⓐ and oil screens Ⓑ of the oil drain plugs.

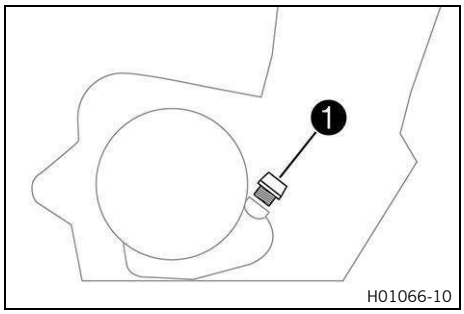


– Mount the oil drain plugs ❷ with magnets and new seal rings, and tighten.

Plug, oil screen	
M20×1.5	20 Nm (14.8 ft·lb$_f$)

– Fill up with engine oil at the clutch cover.

engine oil	
engine oil (SAE 10W/50) 📖 (p. 215) fully synthetic	2.6 l (0.69 liq. gal$_{US}$)



– Mount and tighten filler plug ❶ with the O-ring.

DANGER

Danger of poisoning Exhaust gases are toxic and inhaling them may result in unconsciousness and death.

– Always ensure that there is sufficient ventilation when running the engine.
– Use suitable exhaust extraction when starting or running the engine in an enclosed space.

– Start the engine and check it for leaks.

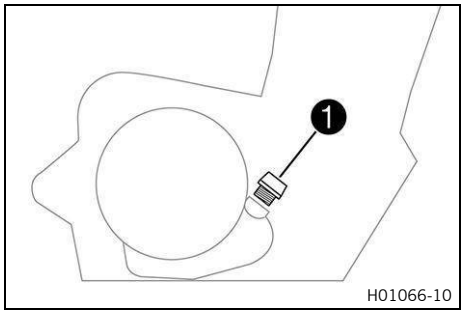
Reworking

– Install the lower inner spoiler. 📖 (p. 108)
– Install right front spoiler. 📖 (p. 111)
– Install left front spoiler. 📖 (p. 110)
– Remove the rear of the motorcycle from the lifting gear. 📖 (p. 75)
– Check the engine oil level. 📖 (p. 167)

19.3 Adding engine oil

Note

Too little engine oil or poor-quality engine oil will result in premature wear of the engine.



Main work

– Remove filler plug ❶ with the O-ring, and fill up with engine oil.
– Fill engine oil to the middle of the level viewer.

engine oil (SAE 10W/50) 📖 (p. 215) fully synthetic

Note

In order to achieve optimal engine oil performance, it is not advisable to mix different engine oils.

KTM recommends changing the engine oil if necessary.

– Mount and tighten oil plug ❶ with O-ring.

DANGER

Danger of poisoning Exhaust gases are toxic and inhaling them may result in unconsciousness and death.

– Always ensure that there is sufficient ventilation when running the engine.
– Use suitable exhaust extraction when starting or running the engine in an enclosed space.

– Start the engine and check it for leaks.

Reworking

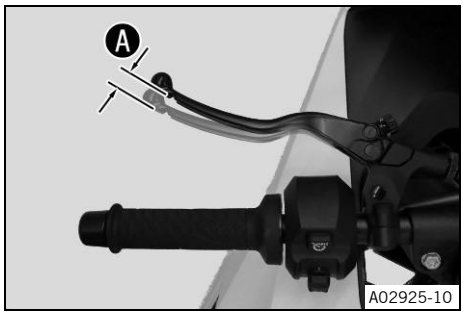
– Check the engine oil level. (p. 167)

19.4 Checking the free travel of the clutch lever

NOTE

Clutch damage If there is no free travel by the clutch lever, the clutch will slip.

– Check the free travel of the clutch lever each time before using the vehicle.
– Adjust the free travel of the clutch lever when necessary in accordance with the specification.



– Check the clutch lever for smooth operation.
– Move the handlebar to the straight-ahead position.
– Pull the clutch lever until resistance is perceptible, and determine the free travel Ⓐ.

Free travel of clutch lever Ⓐ	5 mm (0.20 in)

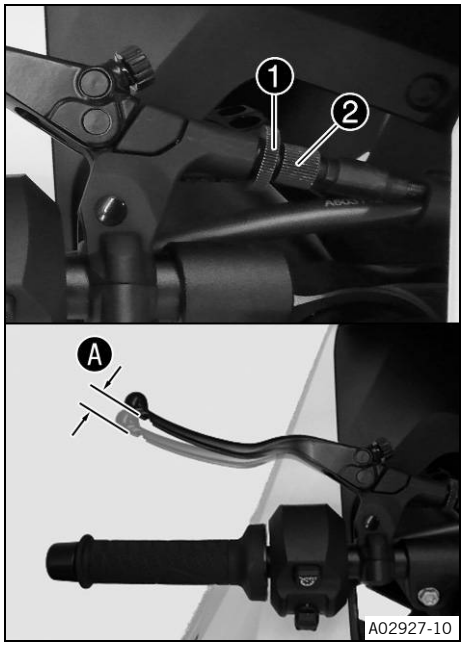
» If the free travel of the clutch lever does not meet specifications:
  – Set the free travel of the clutch lever. (p. 171)

– Move the handlebar back and forth over the entire steering range.

The free travel of the clutch lever must not change.

» If the free travel of the clutch lever changes:
  – Check the routing of the clutch cable.

19.5 Adjusting the free travel of the clutch lever



– Move the handlebar to the straight-ahead position.
– Loosen lock nut ❶.
– Adjust the free travel Ⓐ by turning adjusting screw ❷.

Free travel of clutch lever Ⓐ	5 mm (0.20 in)

– Tighten lock nut ❶.

20.1 Cleaning the motorcycle

NOTE

Material damage Components can be damaged or destroyed if a high-pressure cleaner is used incorrectly.

The high pressure forces water into the electrical components, socket connectors, clutch cables, and bearings, etc.

Too high a pressure can cause malfunctions and destroy components.

– Do not direct the water jet directly on to electrical components, socket connectors, clutch cables, or bearings.
– Maintain a minimum distance between the nozzle of the high-pressure cleaner and the component.

Minimum distance	60 cm (23.6 in)

NOTE

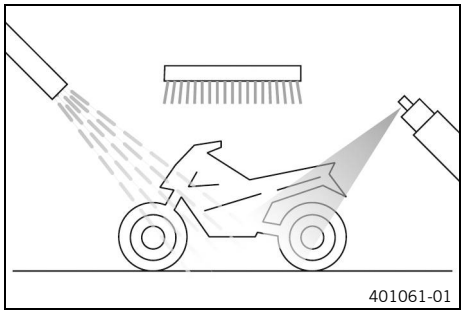
Environmental hazard Hazardous substances cause environmental damage.

– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc. correctly and in accordance with the applicable regulations.

Note

Clean the motorcycle regularly to maintain its value and appearance over a long period.

Avoid direct sunshine when cleaning the motorcycle.



– Seal the exhaust system to prevent water from entering into it.
– Remove loose dirt first with a soft jet of water.
– Spray the heavily soiled parts with a standard commercial motorcycle cleaner and clean using a brush.

Never apply motorcycle cleaner to a dry vehicle; always rinse the vehicle with water first.

Environmentally neutral universal cleaning agent (p. 219)

Note

Use warm water containing standard motorcycle cleaner and a soft sponge. Never apply motorcycle cleaner to a dry vehicle; always rinse the vehicle with water first.

– After rinsing the motorcycle with a gentle spray of water, allow it to dry thoroughly.
– Remove the cover from the exhaust system.

WARNING

Danger of accidents Moisture and dirt impair the brake system.

– Brake carefully several times to dry out and remove dirt from the brake pads and the brake discs.

– After cleaning, ride the vehicle a short distance until the engine warms up.

Note

The heat produced causes water to evaporate at inaccessible locations in the engine and on the brake system.

– After the motorcycle has cooled off, lubricate all moving parts and pivot points.
– Clean the chain. (p. 92)
– Treat bare metal (except for brake discs and the exhaust system) with an anticorrosive.

  Preserving materials (p. 219)

– Treat all painted parts with a mild paint care product.

  Do not polish parts that were matte when delivered as this would strongly impair the material quality.

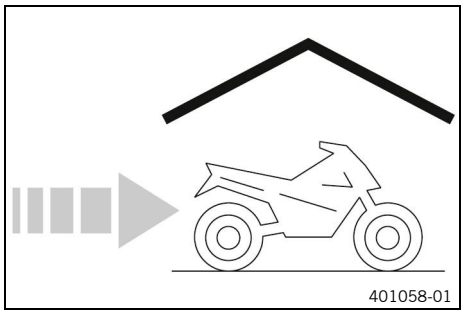
  Shine spray with beading effect (p. 219)

– Treat the plastic parts and powder-coated parts with a mild cleaning and care product.

  Cleaning agents for plastics, glass, lacquers, metals, windshields and visors (p. 219)

21.1 Storage

Note
If the vehicle will not be ridden for an extended period, additional steps are recommended.
Before storing the motorcycle, check all parts for function and wear. If service, repairs, or replacements are necessary, you should do this during the storage period (less overload of the authorized partner). This allows you to avoid long waiting periods when the next season starts.


401058-01

– When refueling for the last time before taking the motorcycle out of service, add fuel additive.

Fuel additive (p. 214)

– Refuel. (p. 67)

Tip
Fill the fuel tank completely as specified, using fuel with the lowest possible ethanol content.

– Clean the motorcycle. (p. 172)
– Change the engine oil and the oil filter, clean the oil screens. (p. 167)
– Check the frost protection and coolant level. (p. 158)
– Check the tire pressure. (p. 149)
– Remove the 12 V battery. (p. 151)
– Charge the 12 V battery. (p. 153)

Storage temperature of the 12 V battery without direct sunlight	0 °C ... 35 °C (32.0 °F ... 95.0 °F)

– Store the vehicle in a dry location that is not subject to large fluctuations in temperature. Various vehicle components such as the 12 V battery, tires, etc. must not be stored at temperatures that are too low. Observe the tire manufacturer's specifications and recommendations.

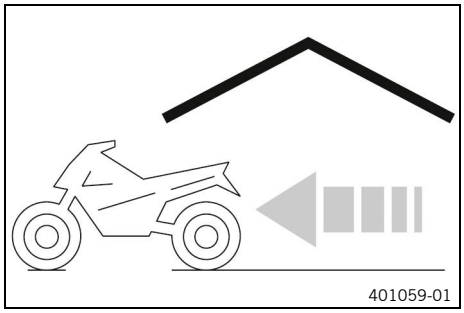
Note
KTM recommends jacking up the motorcycle.

– Raise the motorcycle with the rear lifting gear. (p. 75)
– Lift the motorcycle with the front lifting gear. (p. 75)

Cover the motorcycle with a tarp or cover that is permeable to air.
Do not use non-porous materials because they prevent humidity from escaping and thus cause corrosion.

Note
Avoid running the engine of a motorcycle in storage for a short time only. Since the engine cannot warm up properly, the water vapor produced during combustion condenses and causes valves and the exhaust system to rust.

21.2 Preparing for use after storage



- Take the motorcycle off the front lifting gear. (p. 76)
- Remove the rear of the motorcycle from the lifting gear. (p. 75)
- Charge the 12 V battery. (p. 153)
- Install the 12 V battery. (p. 152)
- Set time and date. (p. 46)
- Perform checks and maintenance measures when preparing for use. (p. 60)
- Take a test ride.

22.1 Troubleshooting

Cause	Finding	Remedy
The dashboard shows nothing on the display	Fuse **1** blown Main fuse blown 12 V battery discharged	– Change the fuses of individual electrical power consumers. (p. 156) – Set time and date. (p. 46) – Change the main fuse. (p. 155) – Charge the 12 V battery. (p. 153) – Check the open-circuit current.
Engine does not rotate if the start button/emergency OFF switch is pressed into the lower position	Operating error 12 V battery discharged Faulty safety starting system Electronic fault	– Carry out the starting procedure. (p. 60) – Charge the 12 V battery. (p. 153) – Check the open-circuit current. – Read out the fault memory using the diagnostics tool. – Read out the fault memory using the diagnostics tool.
The engine only turns over if the clutch lever is pulled	The vehicle is in gear Faulty safety starting system	– Shift the transmission into the neutral position. – Read out the fault memory using the diagnostics tool.
The engine turns over although a gear is engaged	Faulty safety starting system	– Read out the fault memory using the diagnostics tool.
The engine turns but does not start	Quick-lock coupling not joined Malfunction in the electronic fuel injection The fuel quality is insufficient	– Join quick-lock couplings. – Read out the fault memory using the diagnostics tool. – Add suitable fuel.
The engine dies during the trip	Lack of fuel Malfunction in the electronic fuel injection	– Refuel. (p. 67) – Read out the fault memory using the diagnostics tool.
Malfunction indicator lamp lights up or flashes	Malfunction in the electronic fuel injection	– Read out the fault memory using the diagnostics tool.
High oil consumption	The engine oil level is too high The engine oil is too thin (low viscosity)	– Check the engine oil level. (p. 167) – Change the engine oil and the oil filter, clean the oil screens. (p. 167)
12 V battery discharged	The 12-V battery is not being charged by the alternator Ignition was not switched off when vehicle was parked	– Check the charging voltage. – Check the open-circuit current. – Charge the 12 V battery. (p. 153)

23.1 Engine

23.1.1 Technical data - engine

Design	2-cylinder 4-stroke in-line engine, water-cooled
Displacement	950 cm³ (57.97 in³)
Stroke	70.4 mm (2.772 in)
Bore	92.5 mm (3.642 in)
Compression ratio	13.5:1
Control	DOHC, 4 valves per cylinder controlled via cam lever, chain drive
Valve diameter, intake	37 mm (1.46 in)
Valve diameter, exhaust	30 mm (1.18 in)
Valve clearance, cold	
Intake at: 20 °C (68.0 °F)	0.10 mm ... 0.15 mm (0.0039 in ... 0.0059 in)
Exhaust at: 20 °C (68.0 °F)	0.15 mm ... 0.20 mm (0.0059 in ... 0.0079 in)
Crankshaft bearing	Plain bearing
big (bottom) end bearing	Plain bearing
Piston	Forged light alloy
Piston rings	1 compression ring, 1 lower compression ring, 1 oil ring with spring expander
Engine lubrication	Pressure circulation lubrication with 2 trochoidal pumps
Primary transmission	42:76
Clutch	Multi-disc clutch in oil bath/mechanically operated
Transmission	6 speed transmission, claw shift
Gear ratios	
1st gear	15:32
2nd gear	16:28
3rd gear	20:29
4th gear	21:27
5th gear	22:26
6th gear	26:28
Mixture formation	Electronic fuel injection
Ignition system	Contactless controlled fully electronic ignition with digital ignition adjustment
Alternator	• 14 V • 400 W (0.536 hp)
Spark plug	NGK LMAR9AI–10

Plug gap of spark plug	1.0 mm (0.039 in)
Cooling	Liquid cooling, permanent circulation of coolant by water pump
idle speed	1,550 rpm ... 1,650 rpm (25.83 Hz ... 27.50 Hz)
Starting aid	Starter motor

23.1.2 Capacities - engine

engine oil	
engine oil (SAE 10W/50) (p. 215) fully synthetic	2.6 l (0.69 liq. gal_{US})
Coolant	
Coolant (p. 216) Antifreeze protection to at least: −25 °C (−13.0 °F)	1.9 l (0.50 liq. gal_{US})

23.2 Chassis

23.2.1 Technical data - chassis

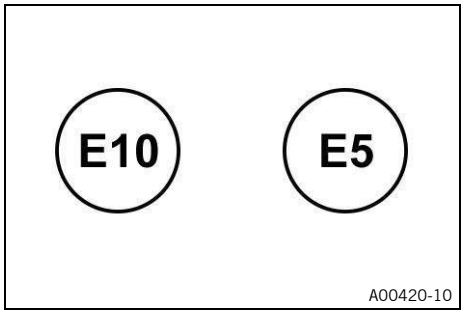
Frame	Lattice frame made of chrome molybdenum steel tubing, powder-coated
Fork	**WP Suspension APEX**
Shock absorber	**WP Suspension APEX**
Suspension travel:	
front	147 mm (5.79 in)
rear	65 mm (2.56 in)
Brake system	
front	Double disc brake with radially mounted four-piston brake calipers, floating brake discs
rear	Disc brake with single-piston brake caliper, floating
Brake discs - diameter	
front	320 mm (12.60 in)
rear	240 mm (9.45 in)
Brake disc wear limit	
front	4.5 mm (0.177 in)
rear	4.5 mm (0.177 in)
Tire pressure when solo (cold)	
front	2.1 bar (30.5 psi)

rear	1.5 bar (21.8 psi)
Tire pressure when solo (warm)	
front	2.4 bar (34.8 psi)
rear	1.7 bar (24.7 psi)
Final drive	16:42 **Note** Modifications to the transmission ratio are not permitted and can lead to malfunctions.
Chain	5/8 x 1/4" (520) X–ring
Steering head angle	65.8° (1.148 rad)
Wheelbase	1,481 mm (58.31 in)
Seat Height unloaded	857 mm (33.74 in)
Ground clearance unloaded	149 mm (5.87 in)
Weight without fuel approx.	178 kg (392.4 lb)
Maximum permissible front axle load	165 kg (363.8 lb)
Maximum permissible rear axle load	270 kg (595.2 lb)
Maximum permissible total weight	390 kg (859.8 lb)

23.2.2 Technical data - tires

Tire front	Rear tire
120/70 ZR 17 M/C 58W TL Michelin Power Slick 2	**190/55 ZR 17 M/C 75W TL** Michelin Power Slick 2
The tires specified represent one of the possible series production tires. For alternative manufacturers, if any, contact an authorized manufacturer or qualified tire dealership. If local road approval regulations apply, these and the respective technical specifications must be observed.	

23.2.3 fuel



Please observe the labels on EU fuel pumps.

23.2.4 Capacities - vehicle

Fuel tank capacity, approx.	
Super unleaded (ROZ 95) (p. 214)	15.7 l (4.15 liq. gal_{US})

23.3 Electrics

23.3.1 Electrics

12 V battery	HJTZ12A-FPI	Battery voltage: 12 V Nominal capacity: 6 Ah Maintenance-free

23.3.2 Fuses

Fuse	75011088005	5 A
Fuse	75011088010	10 A
Fuse	75011088015	15 A
Fuse	58011109130	30 A

23.3.3 Lamps

Dashboard illumination and indicator lights	LED
Tail light	LED

23.4 Fork

23.4.1 Technical data - fork

Fork part number	A674C148Y401000

Compression damping	
Standard	15 clicks
Rebound damping	
Standard	15 clicks
Spring rate	
Medium (standard)	7.5 N/mm (42.83 lb_f/in)

Spring length with preload spacer(s)	325 mm (12.80 in)
Fork length	798 mm (31.42 in)

23.4.2 Fork oil capacity

Fork oil per fork leg	
Fork oil (48601166S1) (SAE 4) (p. 215)	630 ±5 ml (21.30 ±0.17 fl. oz_{US})

23.5 Shock absorber

23.5.1 Technical data - shock absorber

Shock absorber part number	A674C448Y313000

Shock absorber	**WP Suspension APEX**
Low-speed compression damping	
Standard	15 clicks
High-speed compression damping	
Standard	2 turns (720°)
Rebound damping	
Standard	12 clicks
Preload	
Standard	14 mm (0.55 in)
Spring rate	
Medium (standard)	75 N/mm (428.3 lb_f/in)
Spring length	186 mm (7.32 in)
Gas assisted	10 bar (145 psi)
Installation position	356 mm (14.02 in)
Preload adjuster	
Standard	3 turns (1,080°)

23.5.2 Capacities - shock absorber

Shock absorber oil	
Shock absorber oil (50180751S1) (SAE 2.5) (p. 216)	Fill to the maximum mark

23.6 Tightening torque

23.6.1 Engine tightening torques

Hose clip, intake flange M4	2.5 Nm (1.84 ft·lb$_f$)
Oil nozzle in cylinder head M5	2 Nm (1.5 ft·lb$_f$)
Remaining screws for engine M5	6 Nm (4.4 ft·lb$_f$)
Screw, gear position sensor M5	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Oil spray tube, crank chamber evacuation M5	2 Nm (1.5 ft·lb$_f$)
Oil spray tube, camshaft lubrication M5	2 Nm (1.5 ft·lb$_f$)
Screw, cam lever axial lock M5	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Screw, crankshaft position sensor M5	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Screw, thermostat case M5	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Screw, shift shaft sensor M5	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Securing screw, balancer shaft M5	5 Nm (3.7 ft·lb$_f$) **Loctite® 243**
Pressure sensor, throttle valve body M5×14	5 Nm (3.7 ft·lb$_f$) **Loctite® 243**
Screw, fuel rail M5×30	3 Nm (2.2 ft·lb$_f$) **Loctite® 243**
Screw, water flange M5	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Remaining screws for engine M6	10 Nm (7.4 ft·lb$_f$)
Screw, oil filter cover M6	10 Nm (7.4 ft·lb$_f$)
Screw, suction pump cover M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**

Screw, pressure pump cover M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Detent arm screw M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, upper guide rail M6	8 Nm (5.9 ft·lb$_f$) **Loctite® 243**
Screw, clutch cover M6	10 Nm (7.4 ft·lb$_f$)
Screw, engine case M6×35	12 Nm (8.9 ft·lb$_f$)
Screw, engine case M6×60	12 Nm (8.9 ft·lb$_f$)
Bell crank M6	14 Nm (10.3 ft·lb$_f$) **Loctite® 243**
Screw, starter motor M6	10 Nm (7.4 ft·lb$_f$)
Stator screw M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, valve cover M6	10 Nm (7.4 ft·lb$_f$)
Screw, water pump cover M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, water pump impeller M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, cylinder head M6	10 Nm (7.4 ft·lb$_f$)
Screw, ignition cover M6×30	10 Nm (7.4 ft·lb$_f$)
Screw, camshaft bearing bridge M6	10 Nm (7.4 ft·lb$_f$)
Screw, timing chain shaft M6	10 Nm (7.4 ft·lb$_f$)
Screw, shift shaft retaining bracket M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, main shaft bearing support M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, oil pump unit M6	10 Nm (7.4 ft·lb$_f$)

Screw, oil pan M6×30	10 Nm (7.4 ft·lb$_f$)
Screw, oil pan M6×40	10 Nm (7.4 ft·lb$_f$)
Screw, oil pan M6×70	10 Nm (7.4 ft·lb$_f$)
Screw, oil pan M6×80	10 Nm (7.4 ft·lb$_f$)
Screw, oil/water heat exchanger M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, ignition coil M6	8 Nm (5.9 ft·lb$_f$)
Screw, clutch release lever M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, clutch cable retaining bracket M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Nut, starter motor cable M6	5 Nm (3.7 ft·lb$_f$)
Screw, bleeder flange M6	8 Nm (5.9 ft·lb$_f$) **Loctite® 243**
Clutch cover, damping plate M6	8 Nm (5.9 ft·lb$_f$)
Shift mechanism support M6	10 Nm (7.4 ft·lb$_f$)
Clutch pressure cap M6	8 Nm (5.9 ft·lb$_f$)
Screw, bearing flange M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, timing chain shaft, cylinder head M6	10 Nm (7.4 ft·lb$_f$)
Remaining screws for engine M8	20 Nm (14.8 ft·lb$_f$)
Screw, engine case M8×65	27 Nm (19.9 ft·lb$_f$)
Screw, engine case M8×90	27 Nm (19.9 ft·lb$_f$)
Slide rail screw M8×25	15 Nm (11.1 ft·lb$_f$) **Loctite® 243**
Stud, exhaust flange M8	15 Nm (11.1 ft·lb$_f$) **Loctite® 243**

Screw plug, locking screw M8		15 Nm (11.1 ft·lb$_f$)
Knock sensor screw M8		20 Nm (14.8 ft·lb$_f$)
Oil hole screw plug M8		8 Nm (5.9 ft·lb$_f$) **Loctite® 243**
Screw, reduction jet, clutch lubrication M8		5 Nm (3.7 ft·lb$_f$) **Loctite® 243**
Screw, conrod bearing M9×1 engine oil	1.	5 Nm (3.7 ft·lb$_f$)
	2.	15 Nm (11.1 ft·lb$_f$)
	3.	90° (1.57 rad)
Screw, release for timing chain tensioner M10×1		8 Nm (5.9 ft·lb$_f$)
Oil pressure sensor M10×1		10 Nm (7.4 ft·lb$_f$)
Spark plug M10		11 Nm (8.1 ft·lb$_f$)
Coolant temperature sensor M10×1.25		10 Nm (7.4 ft·lb$_f$)
Screw plug, cam lever shaft M10×1		8 Nm (5.9 ft·lb$_f$)
Screw, cylinder head M11×115 engine oil	1.	5 Nm (3.7 ft·lb$_f$)
	2.	23 Nm (17.0 ft·lb$_f$)
	3.	90° (1.57 rad)
	4.	90° (1.57 rad)
Screw, rotor M12×1.5		90 Nm (66.4 ft·lb$_f$) Long-life grease
Nut, engine sprocket M20×1.5		120 Nm (88.5 ft·lb$_f$) **Loctite® 243**
Nut, inner clutch hub M20×1.5		135 Nm (99.6 ft·lb$_f$)
Plug, oil screen M20×1.5		20 Nm (14.8 ft·lb$_f$)
Screw plug, timing chain tensioner M24×1.5		25 Nm (18.4 ft·lb$_f$)
Screw plug, alternator cover M24×1.5		8 Nm (5.9 ft·lb$_f$)

Screw plug, water pump drain hole **EJOT ALtracs® Plus** – 60×14	8 Nm (5.9 ft·lb$_f$) **Loctite® 243**

23.6.2 Chassis tightening torques

Throttle valve body hose clamp	2.8 Nm (2.07 ft·lb$_f$)
Radiator hose hose clamp	2.2 Nm (1.62 ft·lb$_f$)
Rear brake reservoir cover	3.5 Nm (2.58 ft·lb$_f$)
Remaining nuts on chassis M4	3 Nm (2.2 ft·lb$_f$)
Remaining screws on chassis M4	3 Nm (2.2 ft·lb$_f$)
Screw, fixed grip, left M4	3 Nm (2.2 ft·lb$_f$)
Brake fluid reservoir cover, front M4	1 Nm (0.7 ft·lb$_f$)
Screw, combination instrument M5	4.5 Nm (3.32 ft·lb$_f$)
Screw, combination switch, right M5	4.5 Nm (3.32 ft·lb$_f$)
Screw, heat guard M5	3 Nm (2.2 ft·lb$_f$)
Remaining screws on chassis M5	5 Nm (3.7 ft·lb$_f$)
Screw, air filter box M5	3 Nm (2.2 ft·lb$_f$)
Screw, brake fluid reservoir for rear brake M5	5 Nm (3.7 ft·lb$_f$)
Screw, throttle twist grip M5	3.5 Nm (2.58 ft·lb$_f$)
Remaining nuts on chassis M5	5 Nm (3.7 ft·lb$_f$)
Screw, trim M5	3 Nm (2.2 ft·lb$_f$)
Screw, support roller M5	4 Nm (3.0 ft·lb$_f$) **Loctite® 243**
Screw, front sprocket cover M5	5 Nm (3.7 ft·lb$_f$) **Loctite® 243**
Screw, fuel level sensor M5	3 Nm (2.2 ft·lb$_f$)
Screw, battery holding bracket M5	3 Nm (2.2 ft·lb$_f$)

Fuel tank cover screw M5	3 Nm (2.2 ft·lb$_f$)
Screw, lower rear panel M5	3 Nm (2.2 ft·lb$_f$)
Screw, front fairing washer M5	3.5 Nm (2.58 ft·lb$_f$)
Screw, dashboard support to front fairing M5×12	3 Nm (2.2 ft·lb$_f$)
Screw, navigation light carrier to side fairing M5×12	3.5 Nm (2.58 ft·lb$_f$)
Screw, heat guard M5	3.5 Nm (2.58 ft·lb$_f$)
Screw, fender front part M5	3 Nm (2.2 ft·lb$_f$)
Screw, ride-by-wire throttle clamping screw M5	3.5 Nm (2.58 ft·lb$_f$)
Screw, combination switch clamp screw, right M5	4.5 Nm (3.32 ft·lb$_f$)
Screw, combination switch clamp screw, left M5	3.5 Nm (2.58 ft·lb$_f$)
Screw, PVC clamp guide, clutch cable M5	2.5 Nm (1.84 ft·lb$_f$)
Screw, air deflector radiator on ABS carrier M5×12	3 Nm (2.2 ft·lb$_f$)
Screw, right inner cover reservoir M5×12	3 Nm (2.2 ft·lb$_f$)
Clamp, front brake line M5	2 Nm (1.5 ft·lb$_f$)
Screw, brake fluid reservoir for rear brake M5	2 Nm (1.5 ft·lb$_f$)
Nut, push rod, brake pedal M6	10 Nm (7.4 ft·lb$_f$)
Screw, battery terminal M6×12	4.5 Nm (3.32 ft·lb$_f$)
Screw, battery terminal M6×20	4.5 Nm (3.32 ft·lb$_f$)
Screw, foot brake lever stub M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Nut, cable on starter motor M6	5 Nm (3.7 ft·lb$_f$)
Screw, ground wire to starter motor M6	6 Nm (4.4 ft·lb$_f$)
Screw, ground wire on frame M6	6 Nm (4.4 ft·lb$_f$)
Remaining nuts on chassis M6	10 Nm (7.4 ft·lb$_f$)

Remaining screws on chassis M6	10 Nm (7.4 ft·lb$_f$)
Screw, brake cylinder on the rear brake system M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, push rod ball joint on the rear brake cylinder M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, radiator bracket, bottom M6	5 Nm (3.7 ft·lb$_f$)
Nut, shift rod M6	6 Nm (4.4 ft·lb$_f$)
Nut, shift rod M6LH	6 Nm (4.4 ft·lb$_f$)
Screw, shift lever stub M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, shift rod M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, front brake assembly M6	8 Nm (5.9 ft·lb$_f$)
Screw, angle sensor M6	6 Nm (4.4 ft·lb$_f$)
Screw, wheel speed sensor M6	6 Nm (4.4 ft·lb$_f$)
Screw, clutch lever assembly M6	8 Nm (5.9 ft·lb$_f$)
Screw, shift shaft deflector on shift shaft M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, fuel tank rollers M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, subframe brace M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Nut, hand brake lever M6	5.5 Nm (4.06 ft·lb$_f$)
Screw, electronic instrument cluster carrier clamp M6×12	1.5 Nm (1.11 ft·lb$_f$)
Screw, control unit/transmission control unit to frame M6	6 Nm (4.4 ft·lb$_f$)
Screw, voltage regulator M6×20	6 Nm (4.4 ft·lb$_f$)
Screw, starter relay M6	3.5 Nm (2.58 ft·lb$_f$)

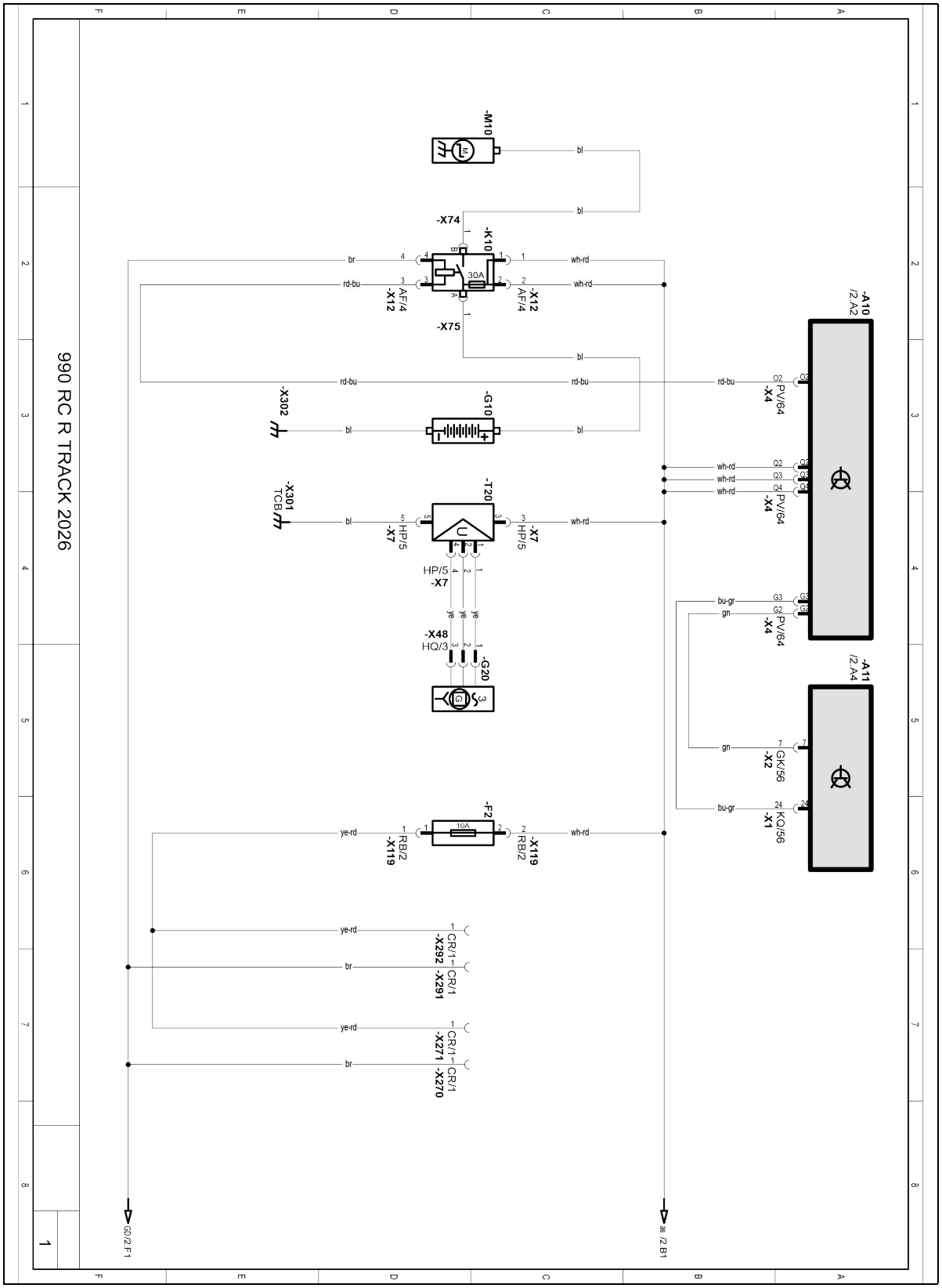
Screw, brake cylinder on the rear brake system M6		10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Nut, purge valve M6		7 Nm (5.2 ft·lb$_f$)
Screw, reservoir to heat protection M6		6 Nm (4.4 ft·lb$_f$)
Screw, manifold clamp M8		15 Nm (11.1 ft·lb$_f$)
Nut, manifold on cylinder head M8	First, tighten the nut on the bushing. Do not bend the metal.	20 Nm (14.8 ft·lb$_f$)
Remaining nuts on chassis M8		25 Nm (18.4 ft·lb$_f$)
Remaining screws on chassis M8		25 Nm (18.4 ft·lb$_f$)
Screw, rear brake disc M8		28 Nm (20.7 ft·lb$_f$) **Loctite® 2701**
Screw, front brake disc M8		28 Nm (20.7 ft·lb$_f$) **Loctite® 2701**
Screw, main silencer fastening M8		15 Nm (11.1 ft·lb$_f$)
Screw, footpeg bracket, rear M8×25		25 Nm (18.4 ft·lb$_f$) **Loctite® 243**
Screw, footpeg bracket, rear M8×40		25 Nm (18.4 ft·lb$_f$) **Loctite® 243**
Screw, top triple clamp M8		15 Nm (11.1 ft·lb$_f$)
Screw, bottom triple clamp M8		12 Nm (8.9 ft·lb$_f$)
Screw, fork shoe M8		15 Nm (11.1 ft·lb$_f$)
Screw, steering stem M8		20 Nm (14.8 ft·lb$_f$) **Loctite® 243**
Screw, grab handle M8×20		25 Nm (18.4 ft·lb$_f$) **Loctite® 243**
Handlebar clamp screw M8		20 Nm (14.8 ft·lb$_f$)
Screw, steering damper on triple clamp M8		8 Nm (5.9 ft·lb$_f$) **Loctite® 243**

Screw, steering damper on frame M8	8 Nm (5.9 ft·lb$_f$) **Loctite® 243**
Screw, engine fixing arm linkage bracket M8	25 Nm (18.4 ft·lb$_f$) **Loctite® 243**
Screw, foot brake lever M8	25 Nm (18.4 ft·lb$_f$) **Loctite® 2701**
Screw, shift lever M8	25 Nm (18.4 ft·lb$_f$) **Loctite® 2701**
Screw, presilencer on frame M8	15 Nm (11.1 ft·lb$_f$) **Loctite® 243**
Screw, cross member M8×20	25 Nm (18.4 ft·lb$_f$) **Loctite® 243**
Screw, cross member in rear M8×35	25 Nm (18.4 ft·lb$_f$) **Loctite® 243**
Nut, rear sprocket screw M8	35 Nm (25.8 ft·lb$_f$) **Loctite® 2701**
Screw, main silencer clamp M8	15 Nm (11.1 ft·lb$_f$)
Screw, main silencer holder M8×40	25 Nm (18.4 ft·lb$_f$) **Loctite® 243**
Screw, main silencer holder M8×45	25 Nm (18.4 ft·lb$_f$) **Loctite® 243**
Screw, main silencer holder M8×60	25 Nm (18.4 ft·lb$_f$) **Loctite® 243**
Pin, rear brake caliper M8	22 Nm (16.2 ft·lb$_f$)
Pin, brake linings M8	8 Nm (5.9 ft·lb$_f$)
Screw, handlebar clamp, fork M8	15 Nm (11.1 ft·lb$_f$)
Screw, handlebar clamp, steering stem M8	15 Nm (11.1 ft·lb$_f$)
Screw, footpeg bracket, rear M8	10 Nm (7.4 ft·lb$_f$)
Screw, front footrest bracket M10×24	45 Nm (33.2 ft·lb$_f$) **Loctite® 243**

Screw, footpeg bracket, front M10×80	45 Nm (33.2 ft·lb$_f$) **Loctite® 243**
Screw, front brake caliper M10×1.25	45 Nm (33.2 ft·lb$_f$) **Loctite® 243**
Subframe screw M10	50 Nm (36.9 ft·lb$_f$) **Loctite® 243**
Engine mounting bolt M10	45 Nm (33.2 ft·lb$_f$) **Loctite® 243**
Banjo bolt, brake line M10×1	25 Nm (18.4 ft·lb$_f$)
Remaining nuts on chassis M10	45 Nm (33.2 ft·lb$_f$)
Remaining screws on chassis M10	45 Nm (33.2 ft·lb$_f$)
Screw, handlebar mount M10	45 Nm (33.2 ft·lb$_f$) **Loctite® 243**
Screw, main silencer holder M10×24	30 Nm (22.1 ft·lb$_f$) **Loctite® 243**
Top shock absorber screw M12	80 Nm (59.0 ft·lb$_f$) **Loctite® 2701**
Bottom shock absorber screw M12	80 Nm (59.0 ft·lb$_f$) **Loctite® 2701**
Screw, swingarm pivot M12	100 Nm (73.8 ft·lb$_f$)
Screw, coupling rod to frame M12	80 Nm (59.0 ft·lb$_f$)
Screw, triangle cantilever to swingarm M12	80 Nm (59.0 ft·lb$_f$) **Loctite® 243**
Screw, coupling rod to swingarm M12	80 Nm (59.0 ft·lb$_f$) **Loctite® 243**
Oxygen sensor M18×1.5	50 Nm (36.9 ft·lb$_f$)
Screw, steering head M20×1.5	18 Nm (13.3 ft·lb$_f$)
Bushing, shock absorber support M20LH×1.5	10 Nm (7.4 ft·lb$_f$) Long-life grease

Adjusting ring M24	10 Nm (7.4 ft·lb$_f$)
Screw, wheel spindle, front M25×1.5	45 Nm (33.2 ft·lb$_f$)
Nut, wheel spindle, rear M25×1.5	90 Nm (66.4 ft·lb$_f$) Long-life grease
Remaining screws on chassis **EJOT PT®** – K45×12	1 Nm (0.7 ft·lb$_f$)
Remaining screws on chassis **EJOT PT®** – K50×12	1 Nm (0.7 ft·lb$_f$)
Remaining screws on chassis **EJOT PT®** – K50×14	1 Nm (0.7 ft·lb$_f$)
Remaining screws on chassis **EJOT PT®** – K50×16	2 Nm (1.5 ft·lb$_f$)
Remaining screws on chassis **EJOT PT®** – K50×18	2 Nm (1.5 ft·lb$_f$)

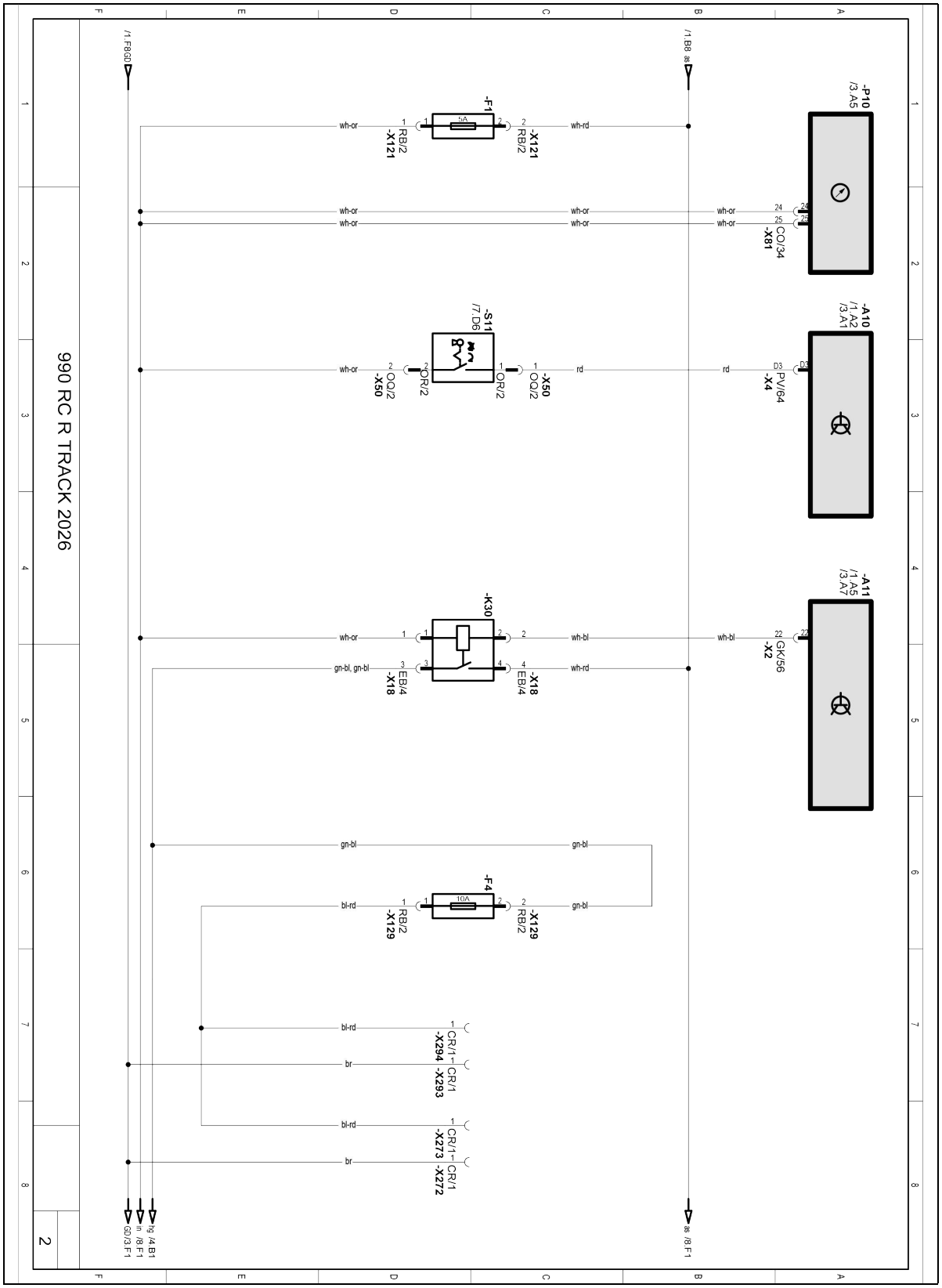
24.1 Page 1 of 8



Components:

A10	Vehicle system control unit
A11	Engine control unit
F2	Fuse
G10	12 V battery
G20	Alternator
K10	Starter relay with main fuse
M10	Starter motor
T20	Regulator rectifier
X270	Connector for accessories circuit, ground **ACC 1**
X271	Connector for accessories circuit, plus **ACC 1**
X291	Connector for accessories circuit, ground **ACC 1**
X292	Connector for accessories circuit, plus **ACC 1**

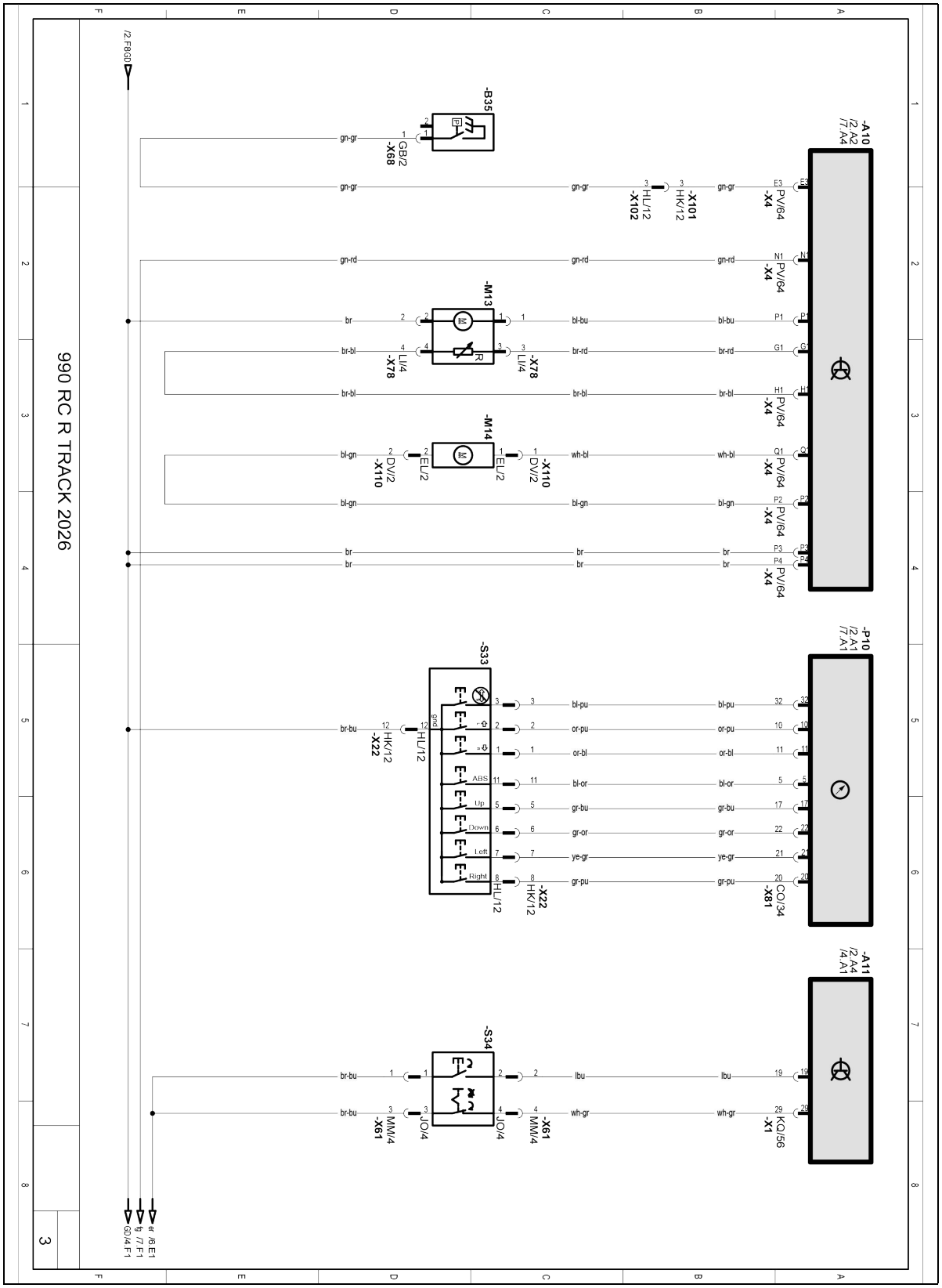
24.2 Page 2 of 8



Components:

A10	Vehicle system control unit
A11	Engine control unit
F1	Fuse
F4	Fuse
K30	Main relay
P10	dashboard
S11	Ignition and steering lock
X272	Connector for accessories circuit, ground **ACC 2**
X273	Connector for accessories circuit, plus **ACC 2**
X293	Connector for accessories circuit, ground **ACC 2**
X294	Connector for accessories circuit, plus **ACC 2**

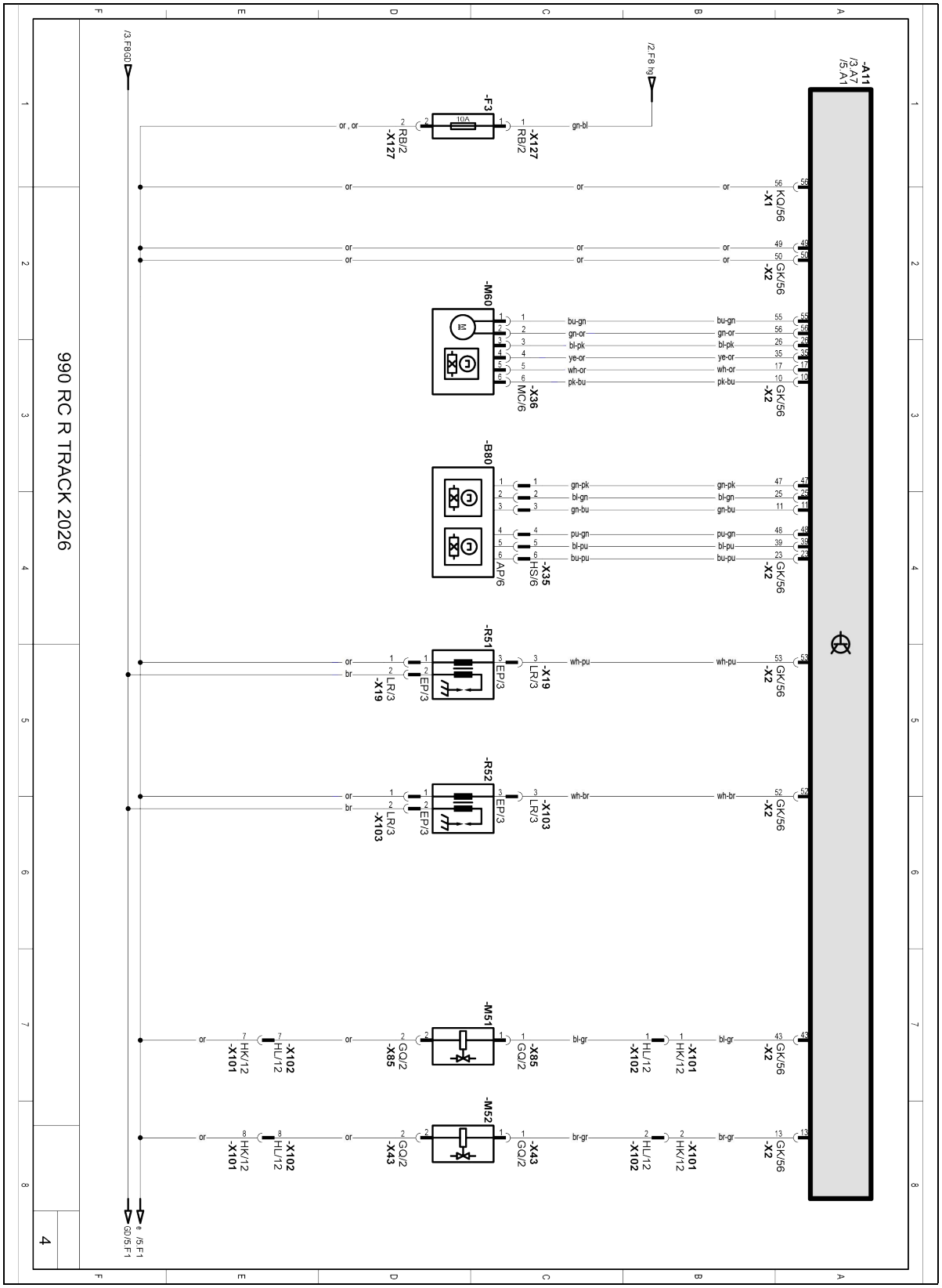
24.3 Page 3 of 8



Components:

A10	Vehicle system control unit	M14	Radiator fan
A11	Engine control unit	P10	dashboard
B35	Oil pressure sensor	S33	Left combination switch
M13	Fuel pump	S34	Combination switch, right

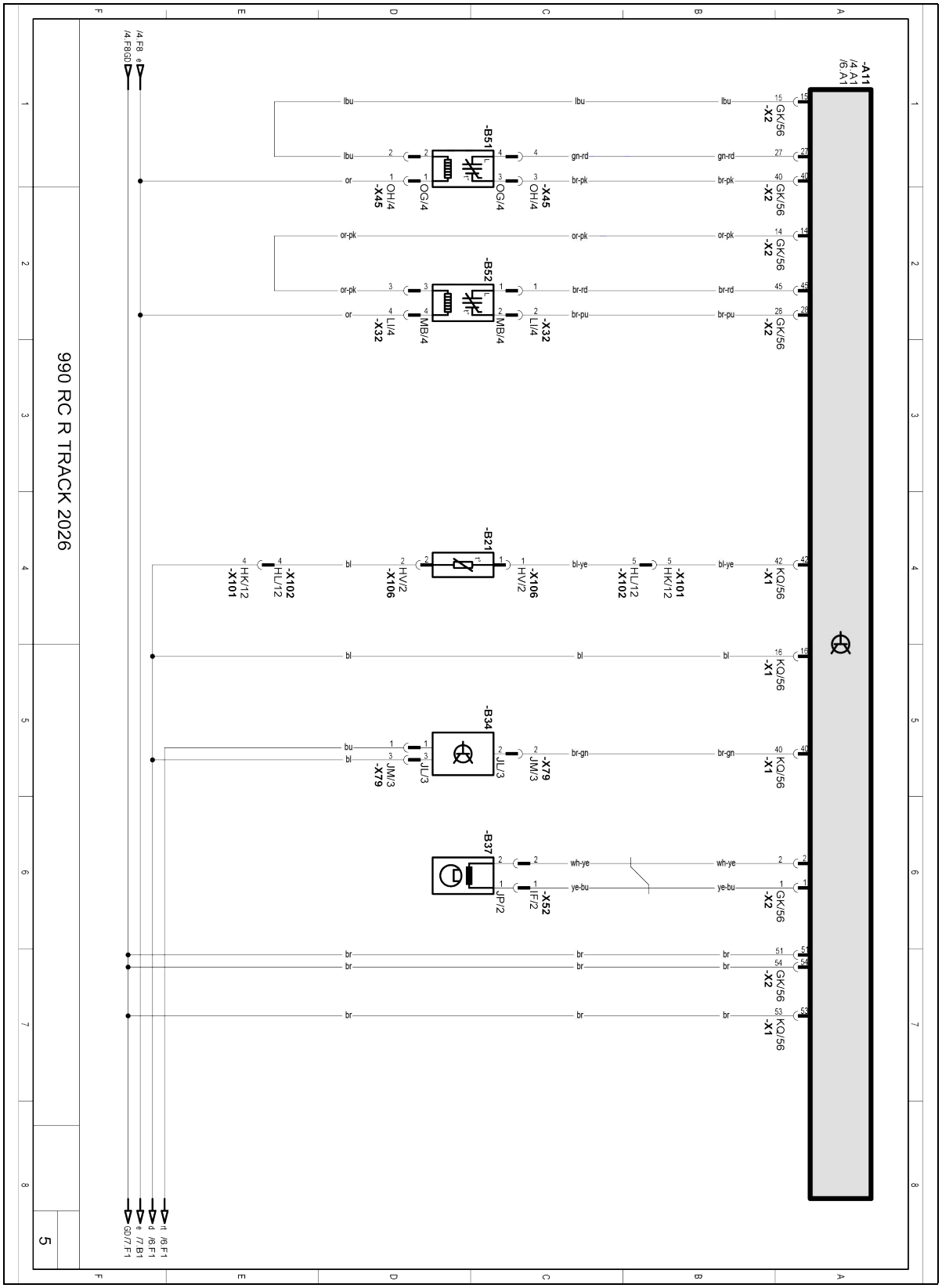
24.4 Page 4 of 8



Components:

A11	Engine control unit
B80	Accelerator position sensor
F3	Fuse
M51	Injection valve, cylinder 1
M52	Injection valve, cylinder 2
M60	Throttle valve actuator and throttle valve position sensor
R51	Ignition coil cylinder 1
R52	Ignition coil, cylinder 2

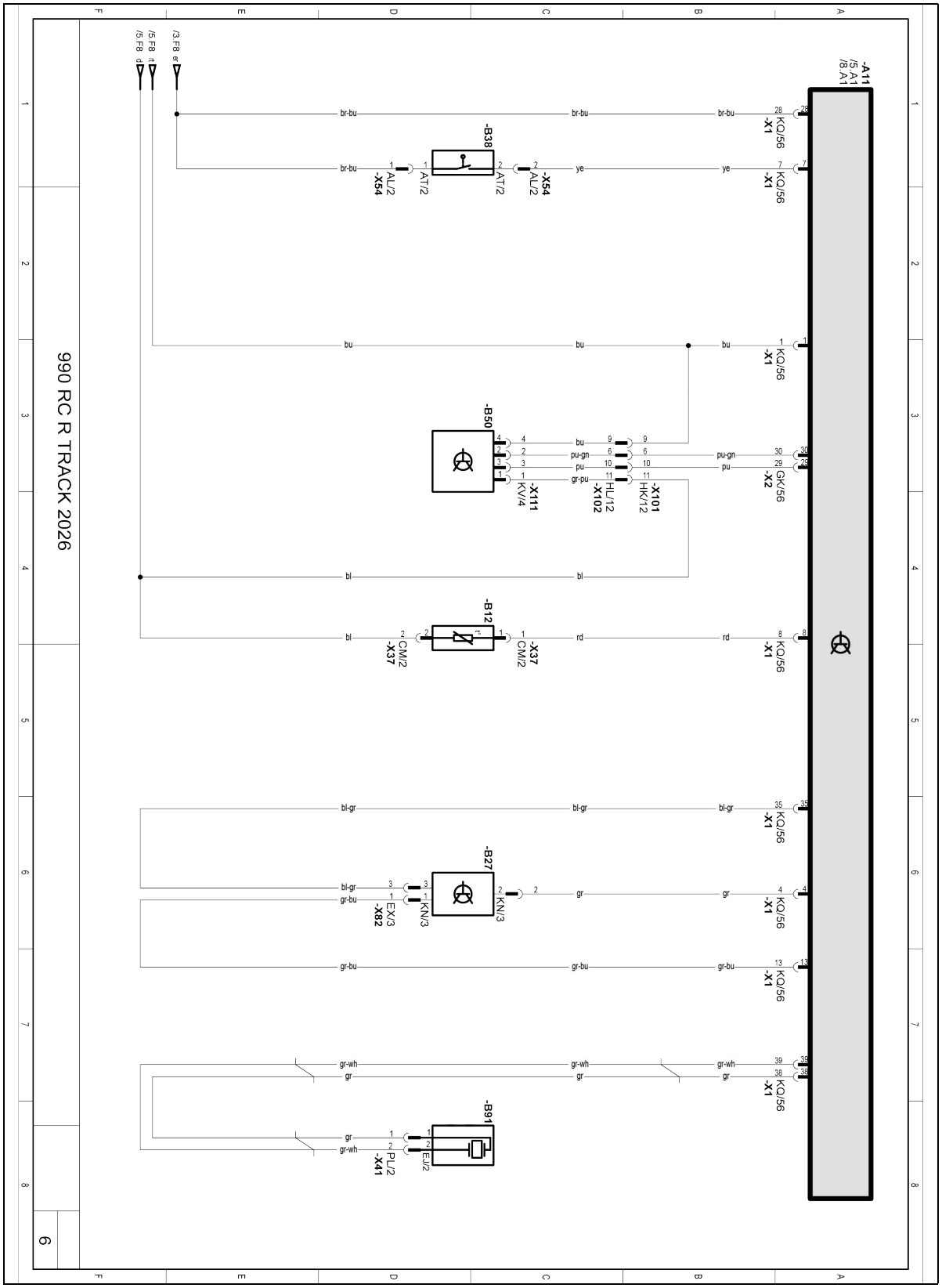
24.5 Page 5 of 8



Components:

A11	Engine control unit	B37	Crankshaft position sensor
B21	Coolant temperature sensor	B51	Oxygen sensor 1, single-cylinder 1
B34	Gear position sensor	B52	Oxygen sensor 1, single-cylinder 2

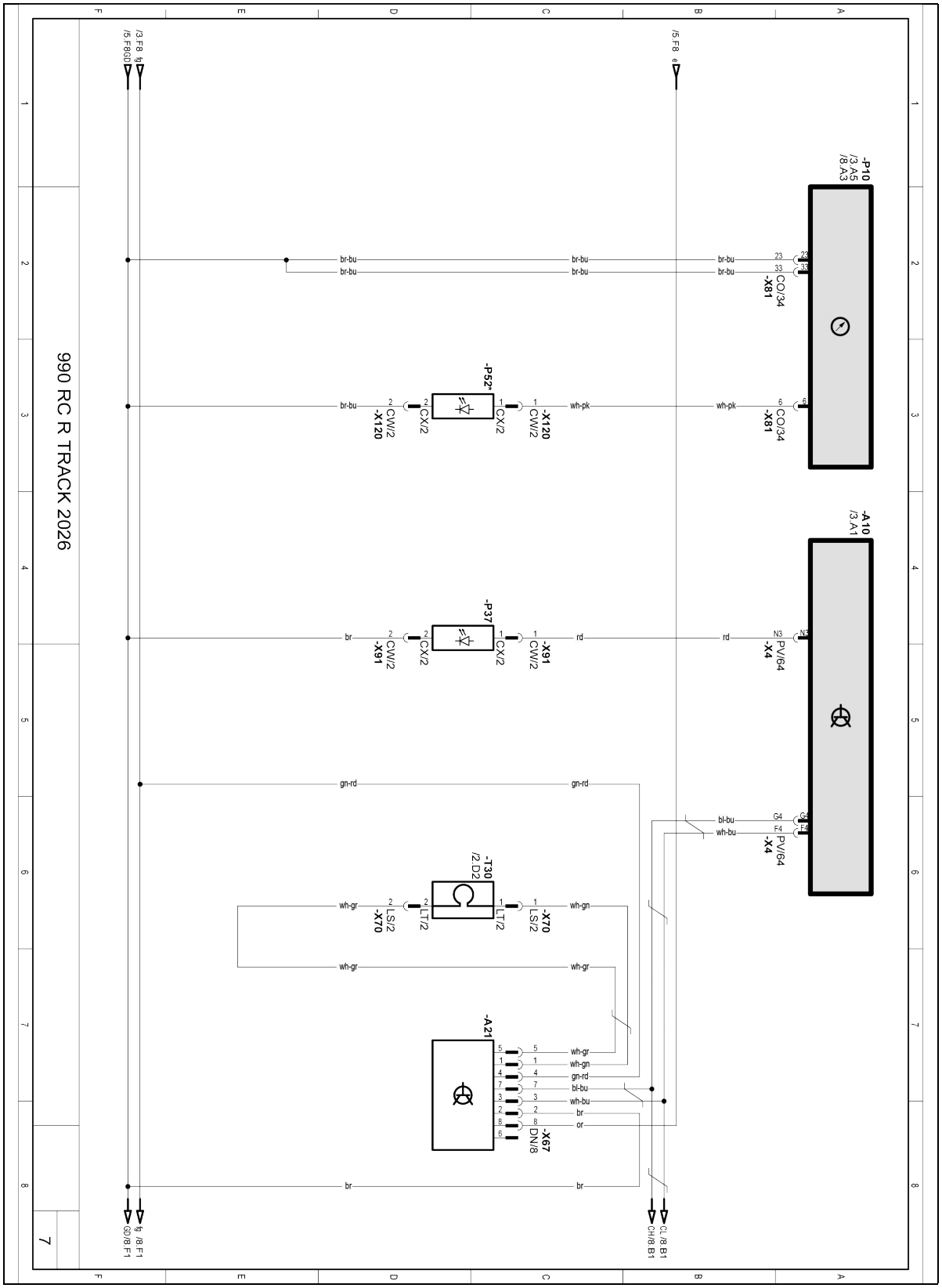
24.6 Page 6 of 8



Components:

A11	Engine control unit
B12	Intake air temperature sensor
B27	Shift shaft sensor
B38	Clutch switch
B50	Induction manifold pressure sensor, cylinder 1 and cylinder 2
B91	Knock sensor

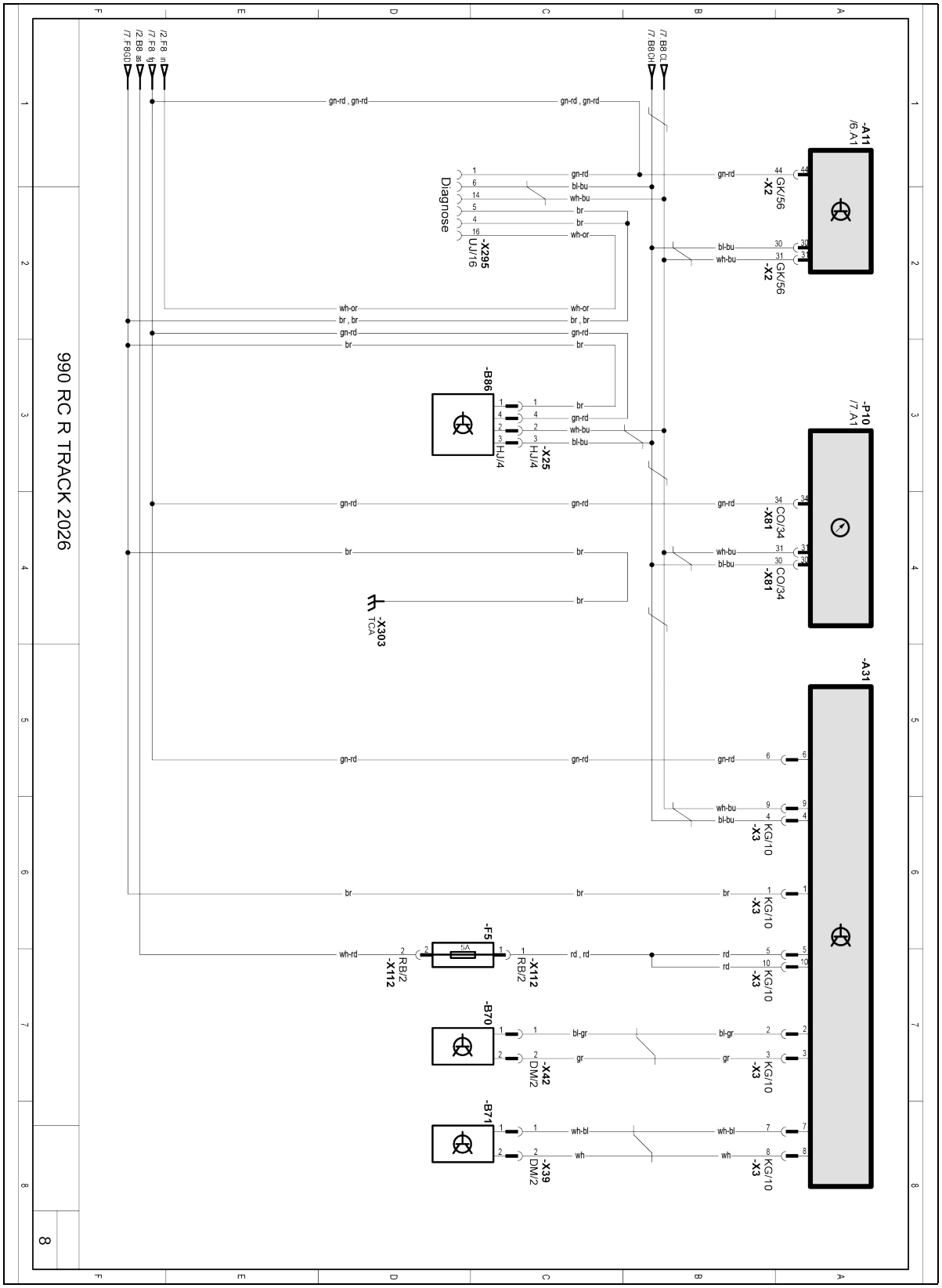
24.7 Page 7 of 8



Components:

A10	Vehicle system control unit	P37	Tail light
A21	Keyless Start	P52	Shift warning light
P10	dashboard	T30	Transponder antenna

24.8 Page 8 of 8



Components:

A11	Engine control unit	B86	5-D sensor
A31	Motorcycle traction control unit	F5	Fuse
B70	Wheel speed sensor	P10	dashboard
B71	Wheel speed sensor		

Cable colors:

bl	black	or	orange
br	brown	pk	pink
bu	blue	pu	violet
gn	green	rd	red
gr	grey	wh	white
lbu	light blue	ye	yellow

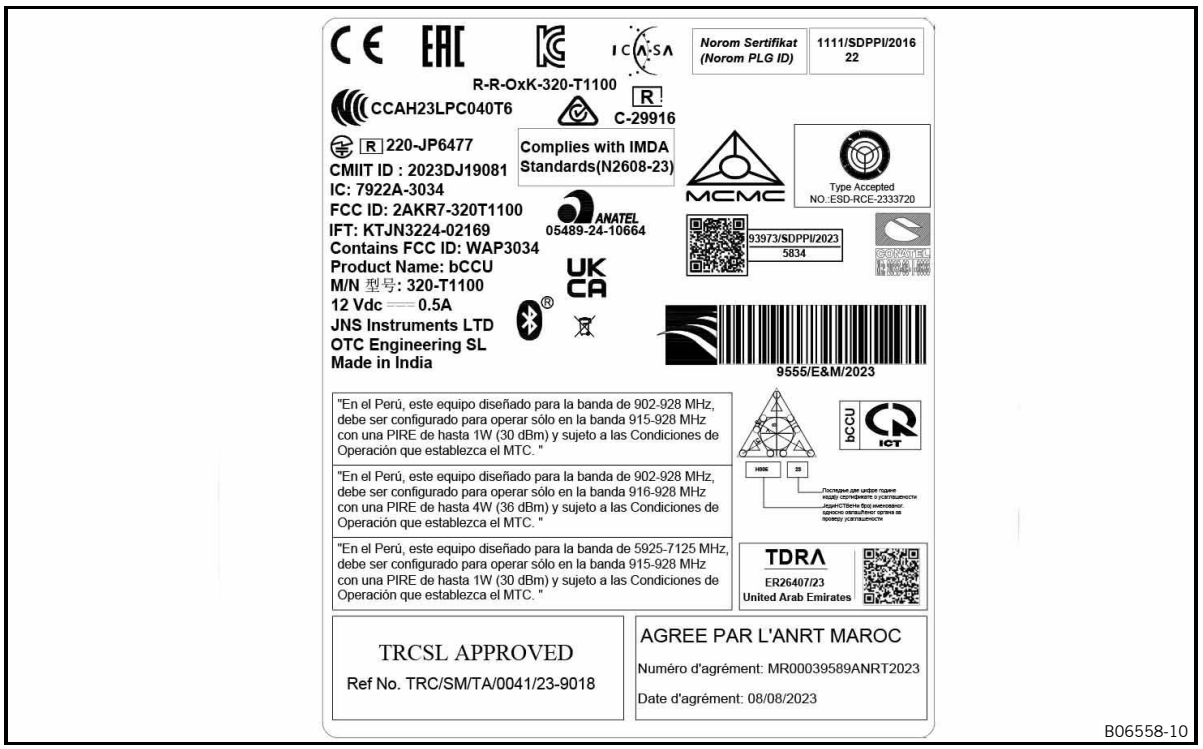
25.1 Declarations of conformity

Note
The functional and equipment scope is model-dependent and may not include all wireless systems and application areas referred to.

KTM AG hereby declares that the **Immo641** wireless system conforms with the relevant guidelines. The full text of the Declaration of Conformity is available at the following Internet address.
Certification website: https://www.ktm.com/ccu-2

Schrader Electronics Ltd hereby declares that the **Tyre Pressure Monitoring System** wireless system conforms with the relevant guidelines. The full text of the Declaration of Conformity is available at the following Internet address.
Certification website: https://www.ktm.com/tpms

25.2 Country-specific declarations of conformity



26.1 Recycling



I02045-10

Further information is available at the following website.
Recycling information website: https://www.quefairedemesdechets.fr

26 Recycling

A Technical terms

MTC	Motorcycle Traction Control	Additional engine management function, where the engine torque is reduced in the event of rear wheel slip.
OBD	On-board diagnosis	Vehicle system that monitors the specified parameters of the vehicle electronics.
	QUICKSHIFTER+	Engine electronics function for shifting up and down without clutch actuation

B Fuels

Super unleaded

Standards

• ROZ 95	→ DIN EN 228

Fuel additive

Recommended supplier

MOTOREX®

- **FUEL STABILIZER**

C Operating supplies

Street chain spray

Recommended supplier

MOTOREX®

- **CHAINLUBE ROAD STRONG**

Fork oil

Order details

- 48601166S1

Standards

- SAE 4 → SAE

Universal oil spray

Recommended supplier

MOTOREX®

- **JOKER 440 SYNTHETIC**

Long-life grease

Recommended supplier

MOTOREX®

- **Bike Grease 2000**

engine oil

Recommended supplier

MOTOREX®

- **POWER SYNT 4T**

Standards

→ JASO T903 MA2

- SAE 10W/50 → SAE

Properties

- fully synthetic

High viscosity grease

Recommended supplier

SKF®

- **LGHB 2**

Shock absorber oil

Order details	
• 50180751S1	
Standards	
• SAE 2.5	→ SAE

Brake fluid DOT 5.1

Recommended supplier	
MOTOREX®	
• **BRAKE FLUID DOT 5.1**	
Standards	
→ DOT	

Coolant

Recommended supplier	
MOTOREX®	
• **COOLANT M3.0**	
Properties	
• Antifreeze protection to at least	−25 °C (−13.0 °F)

D Electrics

12 V battery (HJTZ12A-FPI)

Product code

- HJTZ12A-FPI

Properties

• Battery voltage	12 V
• Nominal capacity	6 Ah
• Maintenance-free	

Dashboard illumination and indicator lights (LED)

Product code

- LED

Tail light (LED)

Product code

- LED

Fuse (75011088010)

Product code

- 75011088010

Properties

- 10 A

Fuse (75011088015)

Product code

- 75011088015

Properties

- 15 A

Fuse (58011109130)

Product code

- 58011109130

Properties

- 30 A

Fuse (75011088005)

Product code

- 75011088005

Properties

- 5 A

E Cleaning agents

Shine spray with beading effect

Recommended supplier

MOTOREX®

- **MOTO SHINE MS1**

Chain cleaner

Recommended supplier

MOTOREX®

- **CHAIN CLEAN**

Preserving materials

Recommended supplier

MOTOREX®

- **MOTO PROTECT**

Cleaning agents for plastics, glass, lacquers, metals, windshields and visors

Recommended supplier

MOTOREX®

- **QUICK CLEANER**

Environmentally neutral universal cleaning agent

Recommended supplier

MOTOREX®

- **MOTO CLEAN UNIVERSAL**

F Icons

F.1 Symbol colors

F.1.1 Red symbols

Red symbols indicate a fault status that requires immediate intervention.

	Coolant temperature indicator light lights up red
	The oil pressure warning light lights up red

F.1.2 Yellow and orange symbols

Yellow and orange symbols indicate a malfunction status that requires prompt intervention. Active driving aids are also represented by yellow or orange symbols.

	The fuel level warning lamp lights up yellow
	The **OBD** failure indicator light lights up yellow.
	TC indicator lamp lights up/flashes yellow
	**Pit Limiter** indicator light lights up yellow.
	General warning light lights up yellow

F.1.3 Green and blue symbols

Green and blue symbols convey information.

	Coolant temperature indicator light lights up blue
	The idle indicator lamp lights up green

1

12 V battery
- charging . . . 153
- installation . . . 152
- removing . . . 151

A

ACC1
- front . . . 157
- rear . . . 157

ACC2
- front . . . 157
- rear . . . 157

Accessories . . . 13

Air filter
- installation . . . 99
- removing . . . 98

Antifreeze
- checking . . . 158

Auxiliary substances . . . 13

B

Brake discs
- checking . . . 128

Brake fluid
- adding front brake . . . 129
- adding to rear brake . . . 134

Brake fluid level
- checking on front brake . . . 128
- checking on rear brake . . . 133

Brake lining retainers
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