OWNER'S MANUAL 2027

READY TO RACE

450 RALLY REPLICA

ITEM NO.: 3240397EN



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. 19)	Stamp of the contractual partner
Engine number (p. 19)	

The owner's manual contained the latest information for this model series at the time of publication. Slight deviations resulting from continuing development and design of the motorcycles cannot, however, be completely excluded.
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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.

The vehicle must only be used by trained persons. An appropriate driver's license is needed to drive the vehicle on public roads.

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

Observe the information and warning stickers 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.

In the interest of your own safety, KTM recommends that you only operate the vehicle while wearing suitable protective clothing.

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

If you use your motorcycle responsibly, you can ensure that problems and conflicts do not occur. To protect the future of the motorcycle sport, make sure that you use your motorcycle legally, be environmentally aware, and respect the rights of others.

When disposing of used oil, other operating and auxiliary fluids, and used components, comply with the laws and regulations of the respective country.

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. An authorized partner will be happy to help.

2.7 Owner's manual

Read this owner's manual carefully and completely before making your first trip. The owner's manual contains useful information and many tips on how to operate, handle, and service your vehicle. Only then will you find out how to best customize the vehicle for your own use and how you can protect yourself from injury.

Tip

Store the owner's manual on your terminal device, for example, so that you can read it whenever you need to.

If you would like to know more about the vehicle or have questions about the material, please contact an authorized partner.

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

KTM motorcycles are designed and built to withstand the normal stresses and strains of motorsport. The motorcycles comply with the currently valid regulations and categories of the top international motorsport organizations.

Note

The motorcycle is authorized for public road traffic in the homologated (reduced) version only.

In the derestricted version, the motorcycle must be used only on closed off properties remote from public road traffic.

This motorcycle is designed for use in offroad endurance competition and not primarily for use in motocross.

Some descriptions show the vehicle in a derestricted condition after preparation for racing has been completed. In the derestricted version, the motorcycle must be used only on closed off properties remote from public road traffic. Observe the specifications in the Section homologated structure (p. 15).

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 Important notes

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 your own safety, only use spare parts and accessory products that are approved and/or recommended by KTM and have them 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. Your authorized contractual partner will be happy to advise you.

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 on the engine and chassis 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 arduous conditions, such as on sand or on wet, dusty and muddy surfaces, can result in significantly increased wear of components, such as the powertrain, brake system, air filter, or suspension components. For this reason, it may be necessary to inspect or replace parts before the next scheduled service interval.

Please adhere to the prescribed run-in times and service intervals at all times. Strictly adhering to this will ensure a much longer service life for your motorcycle.

The relevant mileage or time interval is whichever occurs first.

3.5 Figures

Some figures in the manual contain optional extras.

For clarity, some components may be shown disassembled or may not be shown at all. Removal for the corresponding description is not always strictly necessary. Please follow the instructions in the text.

Some descriptions show the vehicle in a derestricted condition after preparation for racing has been completed. In the derestricted version, the motorcycle must be used only on closed off properties remote from public road traffic. Observe the specifications in the Section homologated structure 📖 (p. 15).

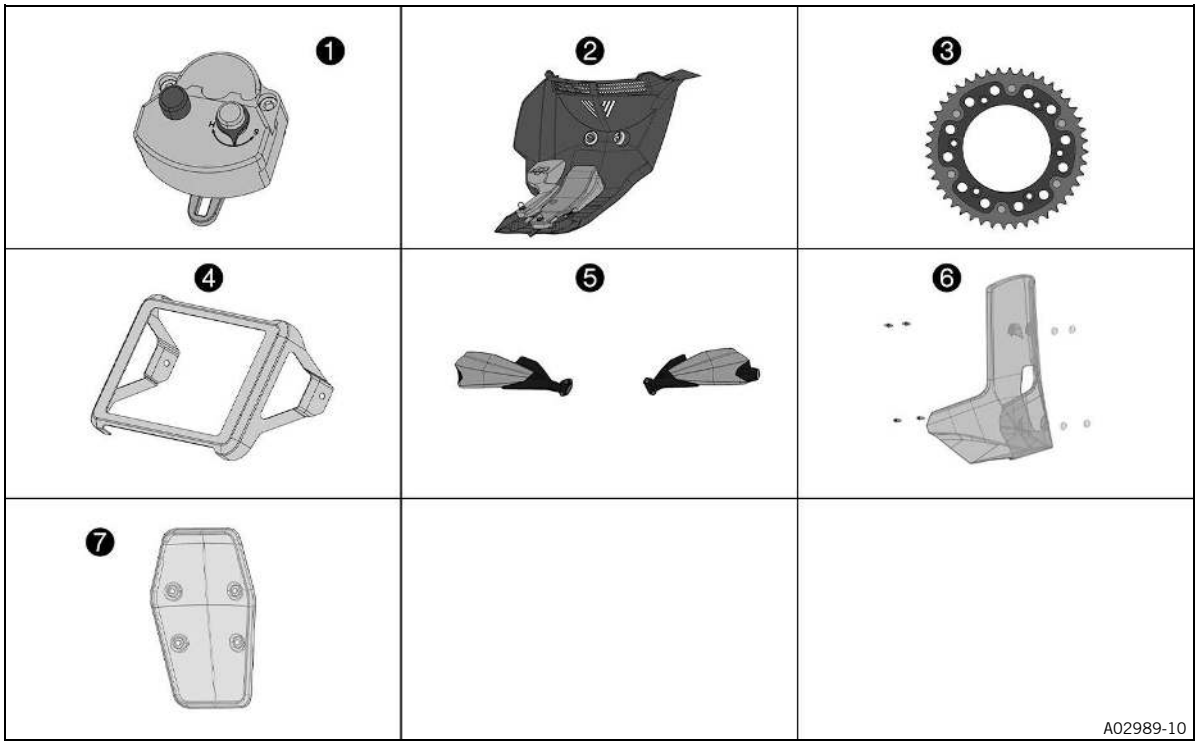
3.6 Customer service

Your authorized contractual partner will be happy to answer any questions you may have regarding your vehicle and KTM.

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

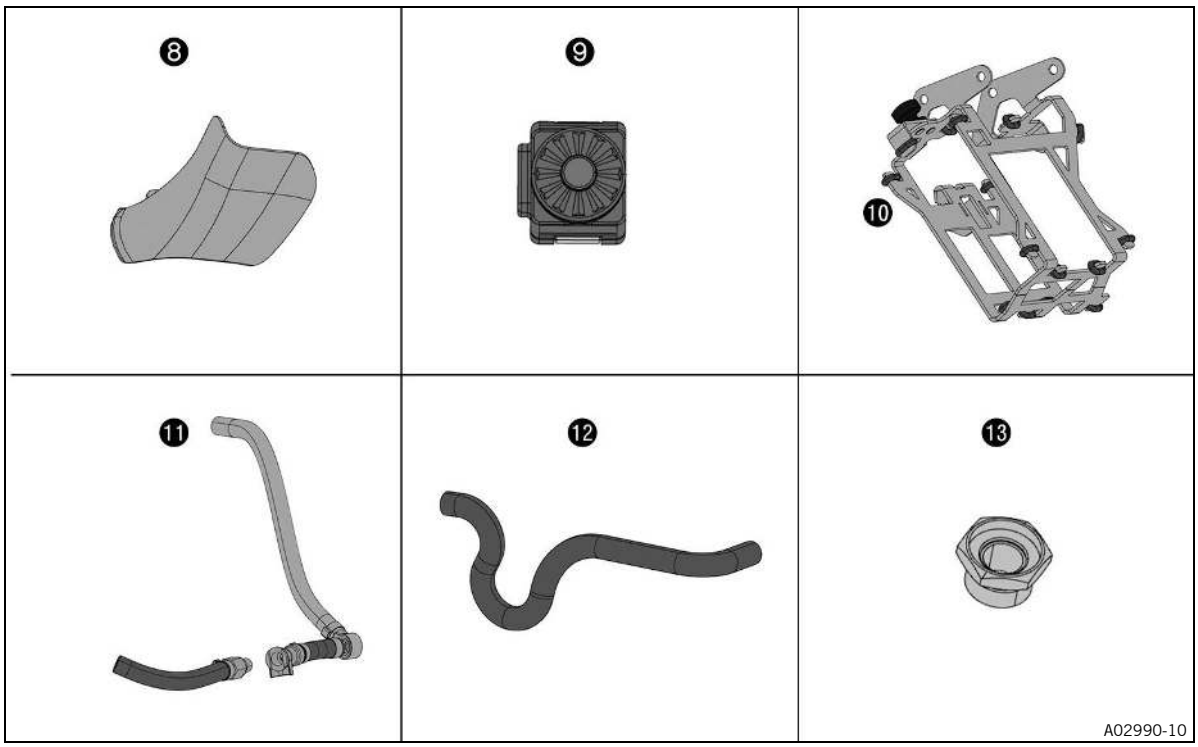
International KTM Website: https://www.ktm.com

3.7 Homologated structure



In the homologated (restricted) condition, the following parts must not be fitted:

- Steering damper ❶ (58512050100)
- Skid plate ❷ (A58003090100)
- Steel sprocket ❸ (5841005105004)
- Roadbook holding bracket ❹ (A58012091500)
- Handguard ❺ both sides (7800207920028)
- Windshield ❻ (A58008008100)
- Headlight protection ❼ (A58014044100)



In the homologated (restricted) condition, the following parts must not be fitted:

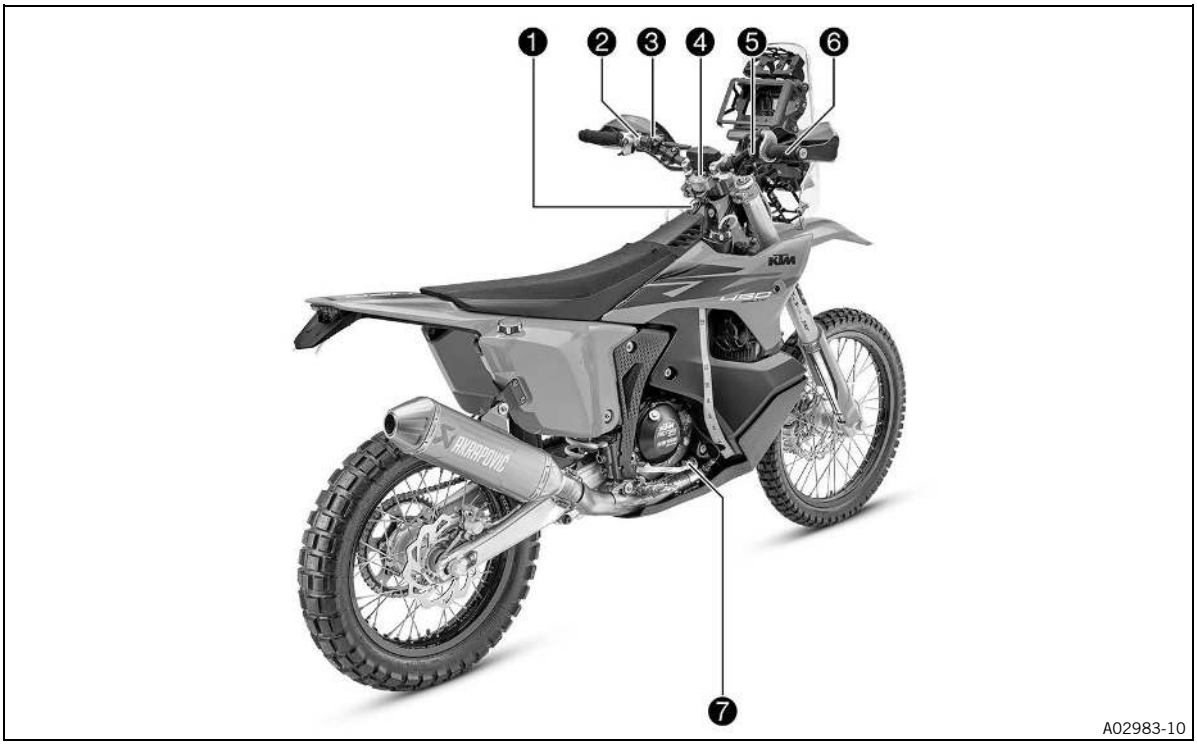
- Heat protection 8 (A58007095000)
- Electric starter 9 (63011074000)
- Iritrack bracket 10 (A58012084500)
- Fuel hose 11 for right and left front tank
- Fuel hose 12 for rear tank
- Screw plug 13 both sides (A58007090040)

4.1 View of vehicle, front right side



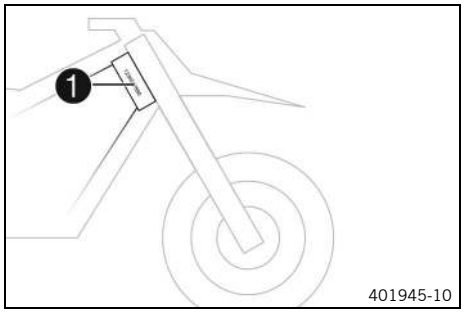
1. Handbrake lever (p. 21)
2. Clutch lever (p. 21)
3. Gear shift lever (p. 27)
4. Side stand (p. 28)

4.2 View of vehicle, rear right side



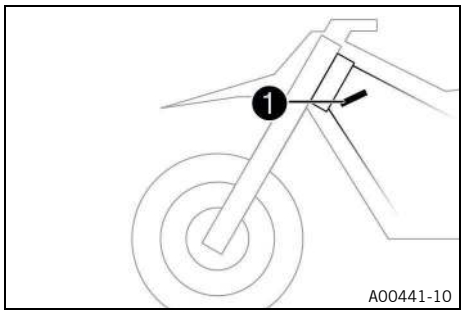
1. Seat release strap
2. Fuel pump switch (p. 24)
3. Kill button (p. 21)
3. Light switch (p. 22)
3. Turn signal switch (p. 22)
3. Horn button (p. 22)
4. Steering damper
5. Electric starter (p. 22)
6. Throttle grip (p. 21)
7. Brake pedal (p. 28)

5.1 Vehicle identification number



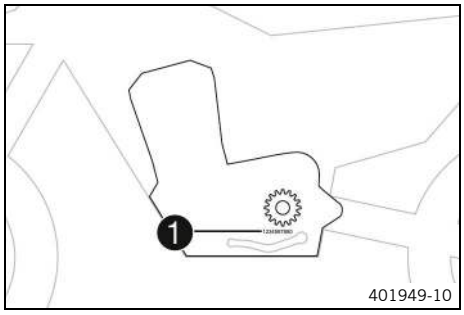
The vehicle identification number ❶ is stamped on the right-hand side of the steering head.

5.2 Frame label



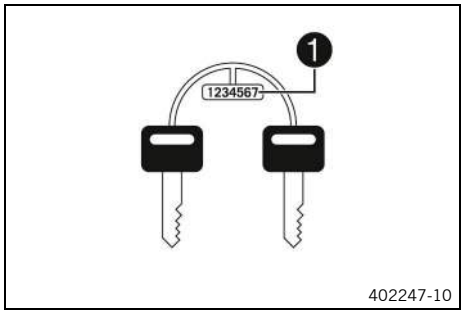
The frame label ❶ is attached to the front of the frame.

5.3 Engine number



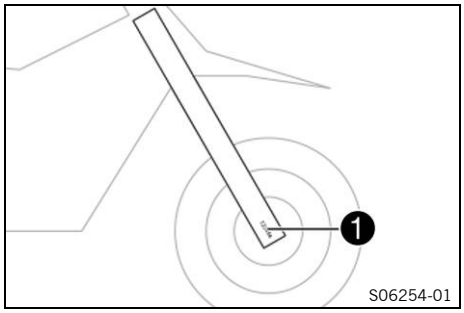
The engine number ❶ is located on the left side of the engine under the engine sprocket.

5.4 Key number



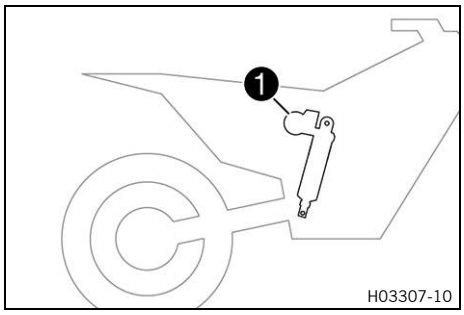
The key number ❶ for the steering lock is stamped onto the key connector.

5.5 Fork part number



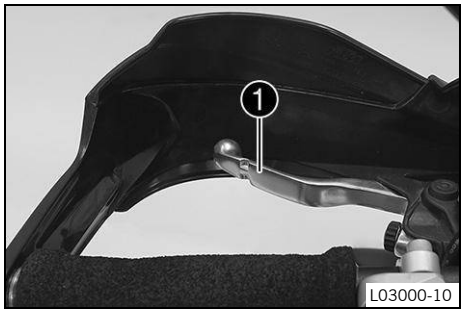
The fork article number ❶ is stamped on the outside of the axle clamp.

5.6 Shock absorber part number



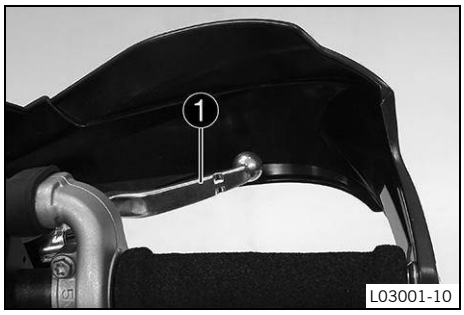
Shock absorber part number ❶ is stamped on the top right of the shock absorber.

6.1 Clutch lever



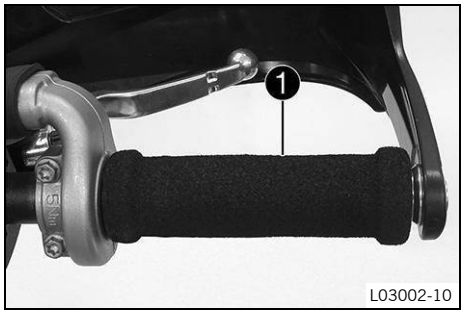
Clutch lever ❶ is fitted on the handlebar on the left.
The clutch is activated hydraulically and adjusts itself automatically.

6.2 Handbrake lever



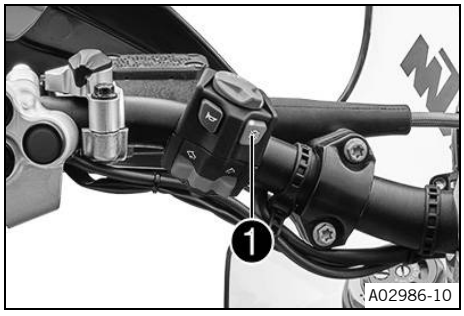
Hand brake lever ❶ is located on the right side of the handlebar.
The front brake is engaged using the hand brake lever.

6.3 Throttle grip



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

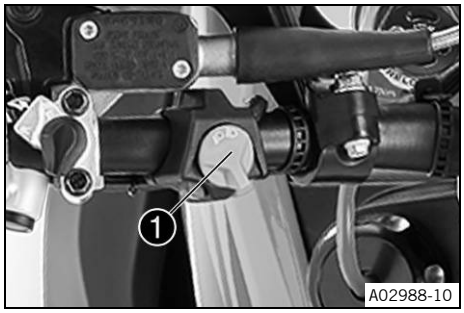
6.4 Kill button



The stop button ❶ is fitted on the left side of the handlebar.

Condition		Meaning
	The kill switch is not pressed.	In this position, the ignition circuit is closed, and the engine can be started.
	The kill switch is pressed and held.	In this position, the ignition circuit is interrupted, a running engine stops, and an engine at a standstill will not start.

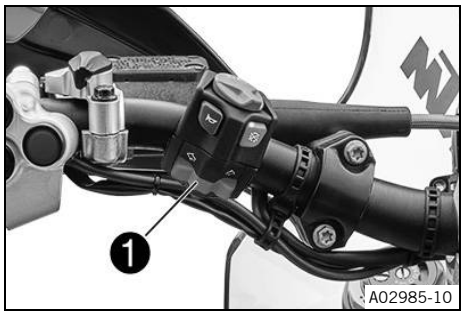
6.5 Light switch



Light switch ❶ is fitted on the left side of the handlebar.

Condition		Meaning
	Light switch is in the central position.	In this position, the low beam and the tail light are switched on.
	The light switch is turned counterclockwise.	In this position, the high beam and the tail light are switched on.

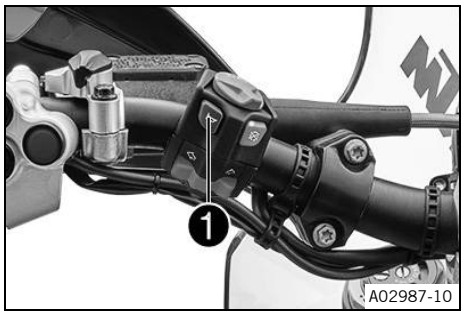
6.6 Turn signal switch



Turn signal switch ❶ is fitted on the left side of the handlebar.

Condition		Meaning
	Turn signal switch pressed to the left	Left turn signal on.
	Turn signal switch pressed to the right	Right turn signal on.

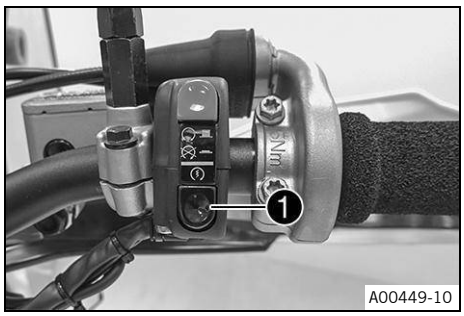
6.7 Horn button



Horn button ❶ is fitted on the left side of the handlebar.

Condition		Meaning
	The horn button is not pressed.	No function.
	The horn button is pressed	The horn is operated in this position.

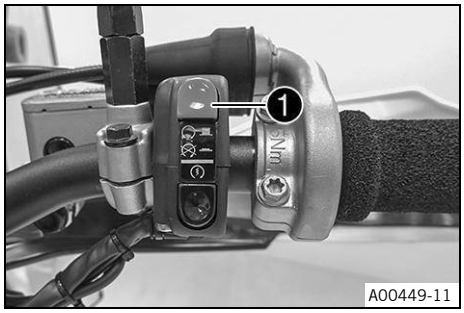
6.8 Electric starter



Start button ❶ is fitted on the right side of the handlebar.

Condition		Meaning
	Start button in the basic position	No function.
	Start button pressed	In this position, the starter motor is actuated.

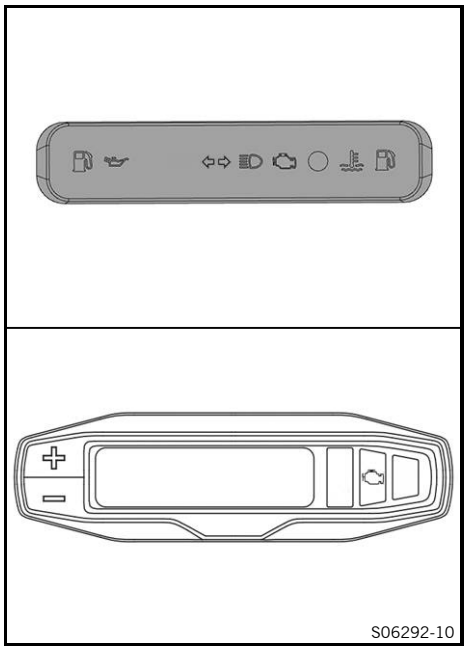
6.9 Kill switch



The emergency OFF switch ❶ is fitted on the right side of the handlebar.

Condition		Meaning
	Kill switch pressed	In this position, the ignition circuit is interrupted, a running engine stops, and an engine at a standstill will not start.
	Kill switch in the basic position	In this position, the ignition circuit is closed, and the engine can be started.

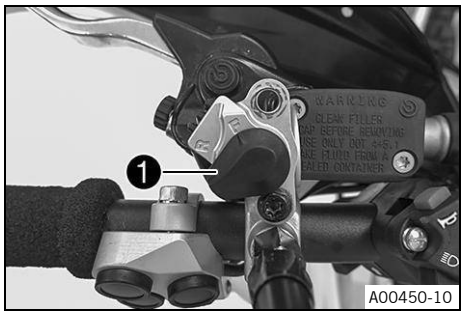
6.10 Overview of indicator lights



Condition		Meaning
	Left fuel level warning lamp lights up orange	The fuel level of the two front fuel tanks has reached the reserve mark.
	The oil pressure warning lamp lights up red	The oil pressure is too low. Stop immediately, taking care not to endanger yourself or other road users in the process, and switch off the engine.
	Turn signal indicator lamp flashes green	The turn signal is switched on.
	The high beam indicator lamp lights up blue	The high beam is switched on.
	Malfunction indicator lamp lights up/flashes yellow	The **OBD** has detected a failure in the vehicle electronics. Come safely to a halt, and contact an authorized dealer.

Condition		Meaning
	The coolant temperature warning lamp lights up red	The coolant temperature is too high. Stop immediately, taking care not to endanger yourself or other road users in the process, and switch off the engine.
	Right fuel level warning lamp lights up orange	The fuel level of the rear fuel tank has reached the reserve mark.

6.11 Fuel pump switch

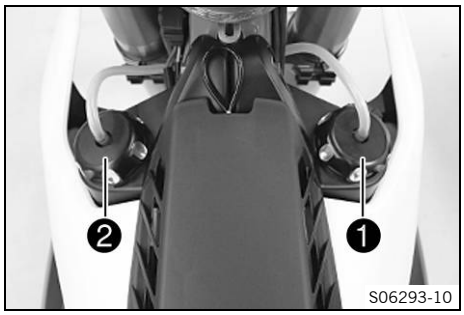


The fuel pump switch ❶ is fitted on the left side of the handlebar.

The fuel pump switch controls the fuel pumps of both front fuel tanks and the rear fuel tank.

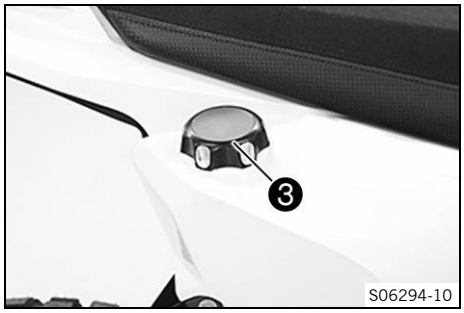
Condition		Meaning
F	Fuel pump switch in F (FRONT) position	In this position, the fuel pump of the two front fuel tanks is active. Only the two front fuel tanks empty out.
R	Fuel pump switch in R (REAR) position	In this position, the fuel pump of the rear fuel tank is active. Only the rear tank empties out.

6.12 Fuel tank



This model has three separate fuel tanks controlled by a fuel pump switch. Two fuel tanks are located in front of the seat and one fuel tank is located beneath the seat.

The right fuel tank is filled via fuel tank filler cap ❶ and the left fuel tank is filled via fuel tank filler cap ❷.



The rear fuel tank is filled via fuel tank filler cap ❸.

6.13 Opening fuel tank filler caps

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

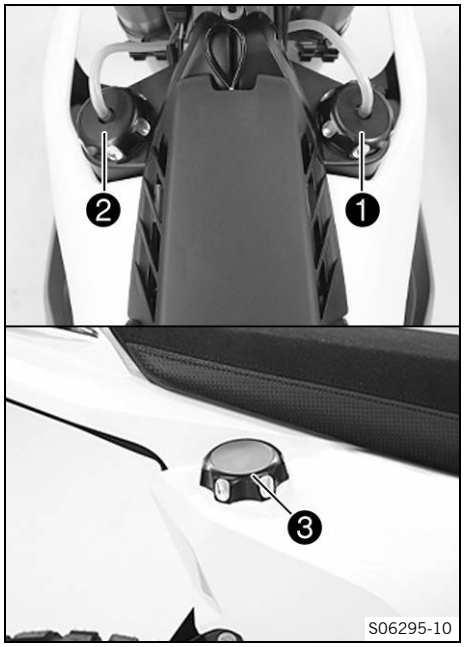
Danger of poisoning Fuel is harmful to health.

- 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

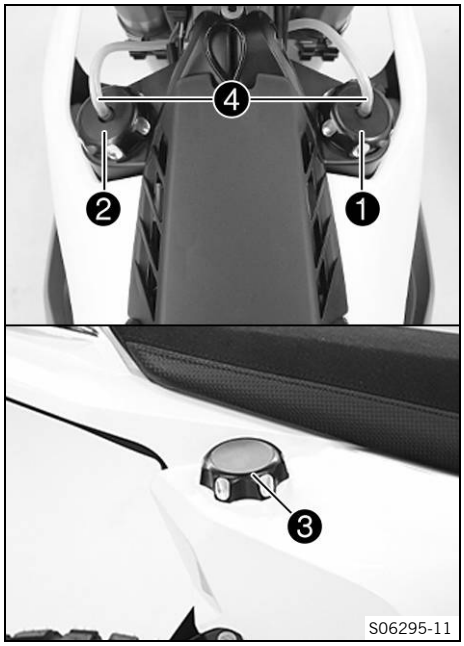
Environmental hazard Improper handling of fuel is dangerous to the environment.

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



- Turn fuel tank filler caps ❶, ❷ and ❸ counterclockwise and lift off.

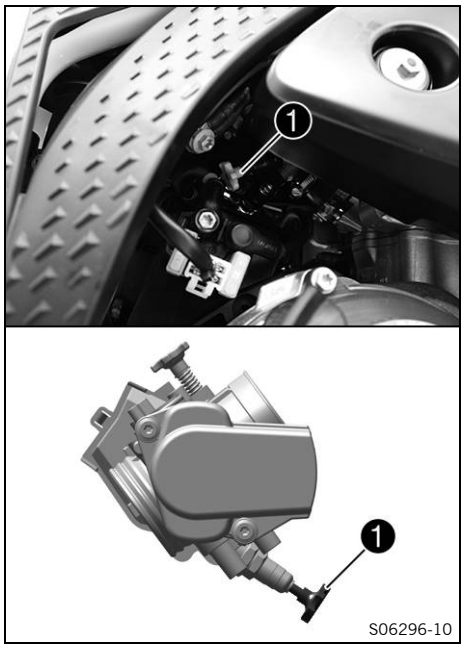
6.14 Closing fuel tank filler caps



– Mount fuel tank filler caps ❶, ❷, and ❸ and turn clockwise until the fuel tanks are tightly closed.

Route fuel tank breather hoses ❹ without kinks.

6.15 Cold start button



The cold start button ❶ is fitted to the bottom of the throttle valve body.

The electronic fuel injection extends the injection time when the engine is cold and the ambient temperature is low. To help the engine burn the increased amount of fuel, it must be supplied with additional oxygen by pushing the cold start button.

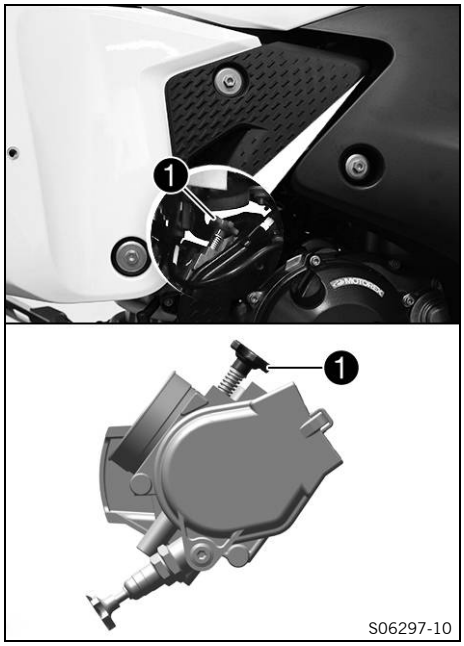
After briefly opening up the throttle and then releasing the throttle twist grip again, or turning the throttle twist grip towards the front, the cold start button returns to its original position.

Note

Check whether the cold start button has returned to its basic position.

Condition	Meaning
The cold start button is pushed in all the way to the stop.	Cold start button activated
The cold start button is in the basic position.	Cold start button deactivated

6.16 Idle speed adjusting screw



The idle speed is adjusted using idle speed adjusting screw ❶.

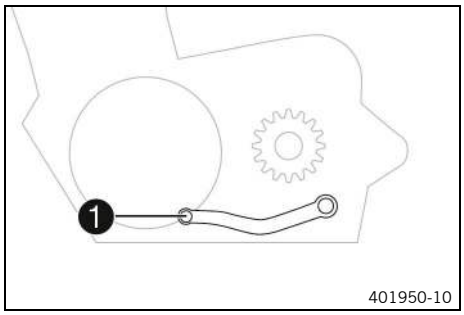
Increase the idle speed by turning the idle speed adjustment screw clockwise.

Decrease the idle speed by turning the idle speed adjustment screw counterclockwise.

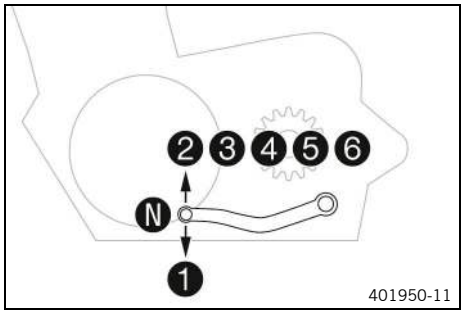
The idle setting of the throttle body substantially influences the vehicle's starting behavior, a stable idle speed, and the vehicle's response when the throttle is opened.

An engine with a correctly set idle speed is easier to start than an engine with the idle speed set incorrectly.

6.17 Gear shift lever



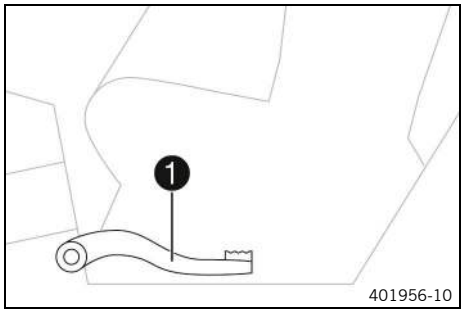
Gear shift lever ❶ is mounted on the left of the engine.



The gear positions can be seen in the figure.

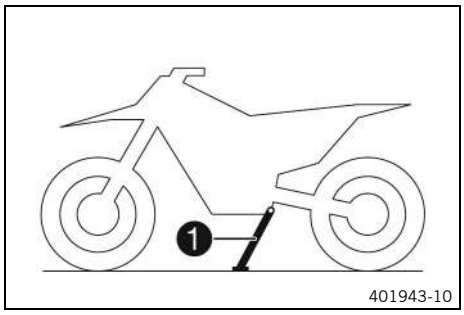
The neutral or idle position is between the first and second gears.

6.18 Brake pedal

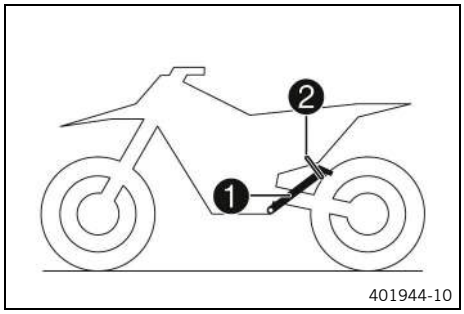


Foot brake lever ❶ is located in front of the right footrest.
The rear brake is operated with the brake pedal.

6.19 Side stand

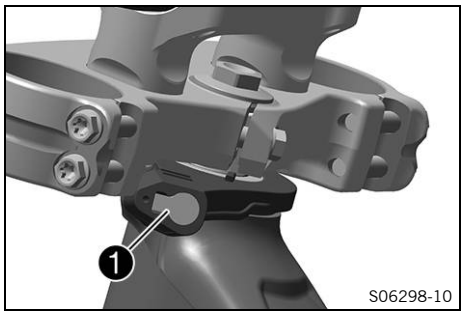


The side stand ❶ is located on the left of the vehicle.
The side stand is used for parking the motorcycle.



Note
When you are riding, side stand ❶ must be folded up and secured with rubber strap ❷.

6.20 Steering lock (optional)



Steering lock ❶ is fitted on the left side of the steering head.
The steering lock is used to lock the steering. Steering, and therefore riding, is no longer possible.

6.21 Locking the steering

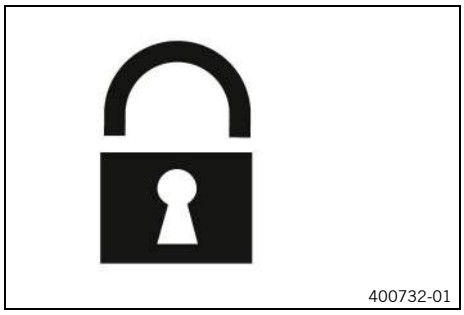
NOTE

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.



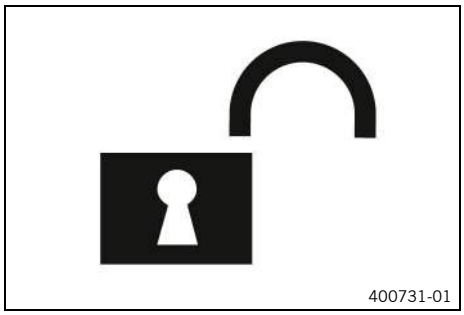
– Park the vehicle.
– Turn handlebar as far as possible to the right.
– Insert the key for the steering lock into the steering lock, turn it to the left, press it in, and turn it to the right. Pull out the key for the steering lock.

✓ Steering is no longer possible.

Note

Never leave the key for the steering lock in the steering lock.

6.22 Unlocking the steering



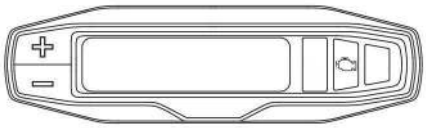
– Insert the key for the steering lock into the steering lock, turn it to the left, pull it out, and turn it to the right. Pull out the key for the steering lock.

✓ The handlebar can now be moved again.

Note

Never leave the key for the steering lock in the steering lock.

7.1 Combination instrument overview



A00403-10

- Press the **+ button** to control different functions.
- Press the **— button** to control different functions.

Note
When the vehicle is delivered, only the **SPEED/H** and **SPEED/ODO** display modes are activated.

7.2 activation and testing

7.2.1 Activating combination instrument



400313-01

The combination instrument is activated when one of the buttons is pressed or an impulse comes from the wheel speed sensor.

7.2.2 Display test



400313-01

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

7.2.3 WS (wheel size)



400314-01

After the display function check, the wheel circumference **WS** is displayed briefly.

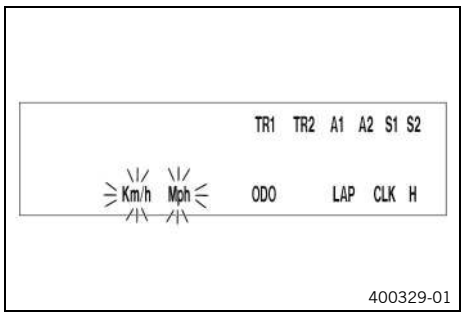
Note
The number 2205 equals the circumference of the 21" front wheel with standard tires.

The indicator then changes to the last selected mode.

7.3 Setting kilometers or miles

Note
If the unit is changed, value **ODO** is retained and converted accordingly.
The values **TR1**, **TR2**, **A1**, **A2** and **S1** are cleared when the unit of measure is changed.

Condition: Motorcycle is stationary



– Briefly and repeatedly press button + until indicator **H** appears in the bottom right of the display.
– Press button + for 2–3 seconds.
  ✓ The Setup menu is displayed and the active functions are shown.
– Press button + briefly until indicator **Km/h** / **Mph** flashes.

– Select one of the following alternatives.

Adjusting the Km/h

– Press button +.

Adjusting the Mph

– Press button —.

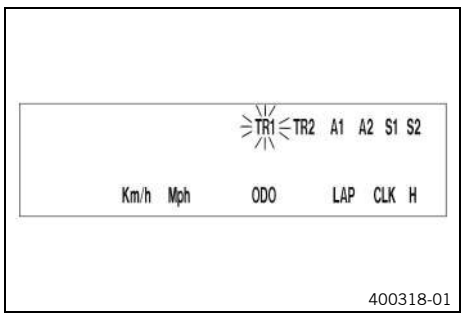
– Wait 3–5 seconds
  ✓ The settings are stored.

Note
If no button is actuated for 10–12 seconds or there is no signal from the wheel speed sensor, then the settings are automatically stored and the setup menu is closed.

7.4 Adjusting combination instrument function

Note
When the vehicle is delivered, only the **SPEED/H** and **SPEED/ODO** display modes are activated.

Condition: Motorcycle is stationary



– Briefly and repeatedly press button + until indicator **H** appears in the bottom right of the display.
– Press button + for 2–3 seconds.
  ✓ The Setup menu is displayed and the active functions are shown.

Note

If no button is pressed for 10–12 seconds, the settings are automatically stored.

If no button is pressed for 20 seconds, or if no impulse comes from the wheel speed sensor, the settings are automatically saved and the setup menu is closed.

– Press button + briefly until the desired function flashes.
  ✓ The selected function flashes.
– Select one of the following alternatives.

Activating the function

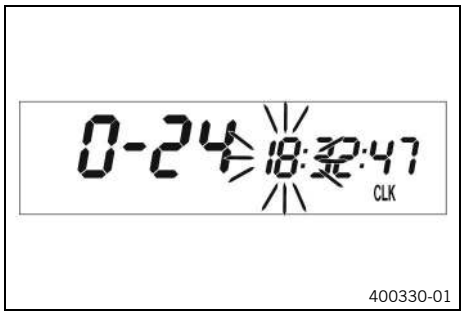
– Press button +.
  ✓ The symbol continues to appear in the display and the indicator switches to the next function.

Deactivating a function

– Press button —.
  ✓ The symbol disappears in the display and the indicator switches to the next function.

7.5 Setting the clock

Condition: Motorcycle is stationary



400330-01

– Briefly and repeatedly press button + until indicator **CLK** appears in the bottom right of the display.
– Press button + for 2–3 seconds.
  ✓ The hour display flashes.
– Adjust the hour display with the **button** + or **button** —.
– Wait 3–5 seconds
  ✓ The next segment of the display flashes and can be set.
– You can set the following segments in the same way as the hours by pressing the **button** + and **button** —.

Note

The seconds can only be set to zero.

If no button is pressed for 15–20 seconds, or if no pulse comes from the wheel speed sensor, the settings are automatically saved and the Setup menu is closed.

7.6 Viewing the lap time

Note

This function can only be opened if lap times have actually been timed.

Condition: Motorcycle is stationary



– Briefly and repeatedly press button + until indicator **LAP** appears in the bottom right of the display.
– Press button + briefly.
  ✓ **LAP 1** appears on the left side of the display.
– The laps 1–10 can be viewed with the **button**—.
– Press and hold **button** + for 3–5 seconds.
  ✓ The lap times are deleted.
– Press button + briefly.
  ✓ Next display mode

Note
When an impulse is received from the wheel speed sensor, the left side of the display changes back to the **SPEED** mode.

7.7 Display mode SPEED (speed)



– Briefly and repeatedly press button + until indicator **SPEED** appears in the left of the display.

The current speed is displayed in the **SPEED** display mode.
The current speed can be displayed in **Km/h** or **Mph**.

Note
Make the setting according to the country.
When an impulse comes from the front wheel, the left side of the display changes to the **SPEED** mode and the current speed is shown.

7.8 Display mode SPEED/H (operating hours)



Condition: Motorcycle is stationary

– Briefly and repeatedly press button + until indicator **H** appears in the bottom right of the display.

In display mode **H**, the operating hours of the engine are displayed.
The operating hour counter stores the total traveling time.

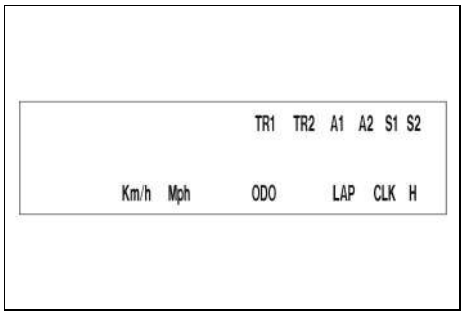
Note
The operating hour counter is necessary for ensuring that service work is carried out at the right intervals.
If the combination instrument is in **H** display mode when starting off, it automatically changes to the **ODO** display mode.
The **H** display mode is suppressed during the journey.

– Press button + for 2–3 seconds.	The display changes to the setup menu for the combination instrument functions.



– Press button + briefly.	Next display mode
– Press button — for 2–3 seconds.	No function
– Press button — briefly.	No function

7.9 Setup menu



Condition: Motorcycle is stationary

– Briefly and repeatedly press button + until indicator **H** appears in the bottom right of the display.
– Press button + for 2–3 seconds.

The Setup menu displays the active functions.

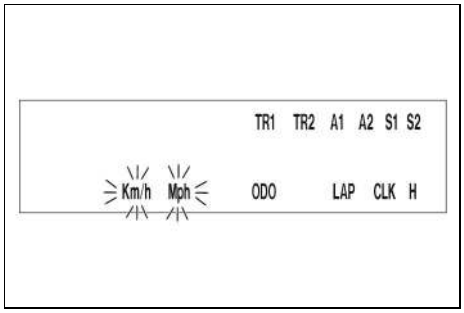
Note

Repeatedly press the **button** + briefly until the desired function is reached.

If no button is pressed for 20 seconds, the settings are automatically stored.

– Press button + briefly.	Activates the flashing display and changes to the next display
– Press button + for 2–3 seconds.	No function
– Press button — briefly.	Deactivates the flashing display and changes to the next display
– Press button — for 2–3 seconds.	No function
– Wait 3–5 seconds	Changes to the next display without changes
– Wait 10–12 seconds	Setup menu starts, stores the settings, and changes to **H** or **ODO**.

7.10 Adjusting the unit of measurement



Condition: Motorcycle is stationary

– Press button + for 2–3 seconds.
– Briefly and repeatedly press button + until indicator **H** appears in the bottom right of the display.
– Press button + briefly until indicator **Km/h** / **Mph** flashes.

In measurement unit mode, you can change the unit of measurement.

Note
If no button is pressed for 5 seconds, the settings are automatically stored.

– Press button + briefly.	Starts selection, activates **Km/h** display
– Press button + for 2–3 seconds.	No function
– Press button — briefly.	Activates **Mph** display
– Press button — for 2–3 seconds.	No function
– Wait 3–5 seconds	Changes to the next display, changes from selection to the Setup menu
– Wait 10–12 seconds	Stores and closes the Setup menu

7.11 Display mode SPEED/CLK (time)



– Briefly and repeatedly press button + until indicator **CLK** appears in the bottom right of the display.

The time is shown in display mode **CLK**.

– Press button + for 2–3 seconds.	The display changes to the Setup menu of the clock.
– Press button + briefly.	Next display mode
– Press button — for 2–3 seconds.	No function



– Press button — briefly.	No function

7.12 Setting the clock



Condition: Motorcycle is stationary

– Briefly and repeatedly press button + until indicator **CLK** appears in the bottom right of the display.
– Press button + for 2–3 seconds.

– Press button + for 2–3 seconds.	Increases the value
– Press button + briefly.	Increases the value
– Press button — for 2–3 seconds.	Reduces the value
– Press button — briefly.	Reduces the value
– Wait 3–5 seconds	Changes to the next value
– Wait 10–12 seconds	Exit the Setup menu

7.13 Display mode SPEED/LAP (lap time)



– Briefly and repeatedly press button + until indicator **LAP** appears in the bottom right of the display.

In the **LAP** display mode, up to 10 lap times can be timed with the stop watch.

Note

If the lap time continues running after the **button**— is pressed, 9 memory locations are filled.

Lap 10 must be timed with the **button**+.

– Press button + for 2–3 seconds.	The stop watch and the lap time are reset.
– Press button + briefly.	Next display mode
– Press button — for 2–3 seconds.	Stops the stopwatch
– Press button — briefly.	Starts the stop watch or stops the current lap time measurement, stores it and the stop watch starts the next lap.

7.14 Viewing the lap time



Condition: Motorcycle is stationary

– Briefly and repeatedly press button + until indicator **LAP** appears in the bottom right of the display.
– Press button + briefly.

– Press button + for 2–3 seconds.	The stop watch and the lap time are reset.
– Press button + briefly.	Select a lap from 1–10
– Press button — for 2–3 seconds.	No function
– Press button — briefly.	View the next lap time.

7.15 Display mode SPEED/ODO (odometer)



– Briefly and repeatedly press button + until indicator **ODO** appears in the bottom right of the display.

The total traveled distance is shown in display mode **ODO**.

– Press button + for 2–3 seconds.	No function
– Press button + briefly.	Next display mode
– Press button — for 2–3 seconds.	No function



– Press button — briefly.	No function

7.16 Display mode SPEED/TR1 (trip master 1)



– Briefly and repeatedly press button + until indicator **TR1** appears in the top right of the display.

TR1 (trip master 1) runs constantly and counts up to 999.9.

You can use it to measure trips or the distance between refueling stops.

TR1 is coupled with **A1** (average speed 1) and **S1** (stop watch 1).

Note

If 999.9 is exceeded, the values of **TR1**, **A1** and **S1** are automatically reset to 0.0.

– Press button + for 2–3 seconds.	Displays of **TR1**, **A1** and **S1** are reset to 0.0.
– Press button + briefly.	Next display mode
– Press button — for 2–3 seconds.	No function
– Press button — briefly.	No function

7.17 Display mode SPEED/TR2 (trip master 2)



– Briefly and repeatedly press button + until indicator **TR2** appears in the top right of the display.

TR2 (trip master 2) runs constantly and counts up to 999.9.

– Press button + for 2–3 seconds.	The displays of **TR2** and **A2** are set to 0.0.
– Press button + briefly.	Next display mode

– Press button — for 2–3 seconds.	Reduces value of **TR2**.
– Press button — briefly.	Reduces value of **TR2**.

7.18 Adjusting TR2 (trip master 2)



Condition: Motorcycle is stationary

– Briefly and repeatedly press button + until indicator **TR2** appears in the top right of the display.
– Press the **button** — for 2–3 seconds until **TR2** flashes.

The displayed value can be set manually with the **button**+ and **button**—. This is a very practical function when riding using the road book.

Note

The value of **TR2** can also be corrected manually during the journey with **button**+ and **button**—.

If 999.9 is exceeded, the value of **TR2** is automatically reset to 0.0.

– Press button + for 2–3 seconds.	Increases value of **TR2**.
– Press button + briefly.	Increases value of **TR2**.
– Press button — for 2–3 seconds.	Reduces value of **TR2**.
– Press button — briefly.	Reduces value of **TR2**.
– Wait 10–12 seconds	Stores and closes the Setup menu

7.19 Display mode SPEED/A1 (average speed 1)



– Briefly and repeatedly press button + until indicator **A1** appears in the top right of the display.

A1 (average speed 1) shows the average speed calculated using **TR1** (trip master 1) and **S1** (stop watch 1).

The calculation of this value is activated by the first impulse of the wheel speed sensor and ends 3 seconds after the last impulse.

– Press button + for 2–3 seconds.	Displays of **TR1**, **A1** and **S1** are reset to 0.0.
– Press button + briefly.	Next display mode
– Press button — for 2–3 seconds.	No function
– Press button — briefly.	No function

7.20 Display mode SPEED/A2 (average speed 2)



– Briefly and repeatedly press button + until indicator **A2** appears in the top right of the display.

A2 (average speed 2) shows the average speed on the basis of the current speed if the stop watch **S2** (stop watch 2) is running.

Note

The displayed value can differ from the actual average speed if **S2** was not stopped after the ride.

– Press button + briefly.	Next display mode
– Press button + for 2–3 seconds.	No function
– Press button — for 2–3 seconds.	No function
– Press button — briefly.	No function

7.21 Display mode SPEED/S1 (stop watch 1)



– Briefly and repeatedly press button + until indicator **S1** appears in the top right of the display.

S1 (Stop watch 1) shows the riding time based on **TR1** and continues running as soon as an impulse arrives from the wheel speed sensor.

The calculation of this value starts with the first impulse from the wheel speed sensor and ends 3 seconds after the last impulse.

– Press button + for 2–3 seconds.	Displays of **TR1**, **A1** and **S1** are reset to 0.0.
– Press button + briefly.	Next display mode
– Press button — for 2–3 seconds.	No function
– Press button — briefly.	No function

7.22 Display mode SPEED/S2 (stop watch 2)



– Briefly and repeatedly press button + until indicator **S2** appears in the top right of the display.

S2 (Stop watch 2) is a manual stop watch.

If **S2** is running in the background, indicator **S2** in the display flashes.

– Press button + for 2–3 seconds.	The displays of **S2** and **A2** are set to 0,0.
– Press button + briefly.	Next display mode
– Press button — for 2–3 seconds.	No function
– Press button — briefly.	Starts or stops **S2**.

8 Preparing for use

8.1 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 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.
– Get to know the controls.
– Adjust the basic position of the clutch lever. (p. 94)
– Adjust the basic position of the hand brake lever. (p. 99)
– Adjust the free travel of the foot brake lever. (p. 104)
– Adjust the basic position of the gear shift lever. (p. 130)

– Get used to the handling characteristics of the motorcycle on suitable terrain before undertaking a more challenging ride.

Note
When off-road, it is recommended that you be accompanied by another person with another vehicle so that you can help each other.

– Also, ride as slowly as possible and in a standing position to get a better feel for the motorcycle.
– Do not make any off-road trips that exceed your ability and experience.
– Hold the handlebar firmly with both hands and keep your feet on the footpegs when riding.
– If luggage is carried, ensure it is fixed firmly as close as possible to the center of the vehicle and ensure even weight distribution between the front and rear wheels.

Note
Motorcycles react sensitively to any changes of weight distribution.

– The maximum permissible overall weight and the maximum permissible axle loads must not be exceeded.

Maximum permissible total weight	335 kg (738.5 lb)
Maximum permissible front axle load	161 kg (354.9 lb)
Maximum permissible rear axle load	174 kg (383.6 lb)

– Run in the engine. (p. 43)

8.2 Running in the engine

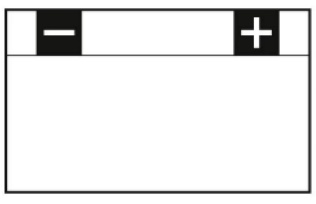
– Do not exceed the specified engine speed and load during the running-in time.

Maximum engine speed	
During the first operating hour	7,000 rpm (116.67 Hz)

Maximum engine power	
during the first 3 operating hours	≤ 75 %

Avoid fully opening the throttle.

8.3 Starting performance of lithium-ion batteries at low temperatures



402555-01

Lithium-ion batteries are far lighter than lead batteries, have a low self-discharge rate, and have more starting power at temperatures over 6 °C (43 °F).

Several attempts to start may be required. Press the start button for 5 seconds, and wait 15 seconds between attempts. At low temperatures, wait for 30 seconds. The pauses are necessary so that the heat created can be distributed through the lithium-ion battery without damaging the lithium-ion battery.

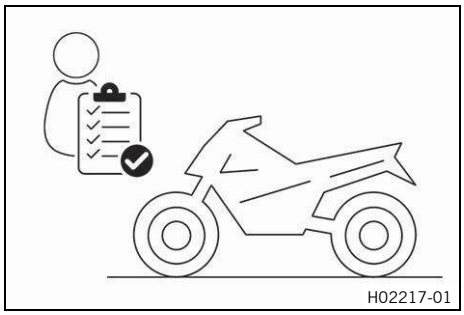
The starting power increases as the battery warms up.

Always make sure the lithium-ion battery is charged to that there is enough power to spare for starting at low temperatures.

After 6 unsuccessful starting attempts, do not try again, and check the vehicle for other malfunctions instead.

9.1 checks and maintenance measures when preparing for use

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


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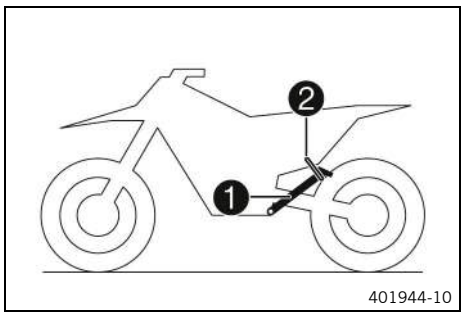
- Check the engine oil level. (p. 132)
- Check the electrical system.
- Check the brake fluid level for the front brake. (p. 100)
- Check the brake fluid level for the rear brake. (p. 105)
- Check that the brake pads of the front brake are secured. (p. 101)
- Check that the brake pads of the rear brake are secured. (p. 106)
- Check that the brake system is functioning properly.
- Check the coolant level. (p. 124)
- Check the chain for dirt. (p. 86)
- Check the chain, rear sprocket, engine sprocket, and chain guide. (p. 89)
- Check the chain tension. (p. 87)
- Check the tire condition. (p. 115)
- Check the tire pressure. (p. 115)
- Check the spoke tension. (p. 116)

  The spoke tension must be checked regularly as incorrect spoke tension will severely impair riding safety.
- Clean the dust boots of the fork legs. (p. 63)
- Bleed the fork legs. (p. 62)
- Check the air filter and clean if necessary.
- Check the fuel filter.
- Check the settings of all controls and ensure that they can be operated smoothly.
- Check all screws, nuts, and hose clamps regularly for tightness.
- Check the fuel level.

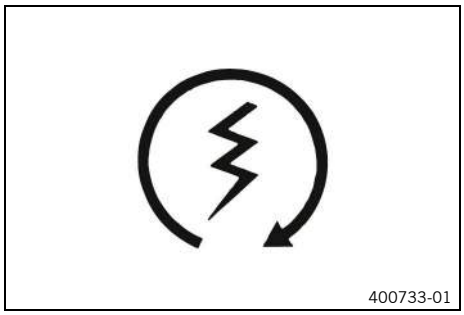
9.2 Starting

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.

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.



– Take the motorcycle off side stand ❶ and secure the side stand with rubber strap ❷.
– Shift the transmission into the neutral position.



Condition: Ambient temperature: < 20 °C (< 68.0 °F)

– Press the cold start button in all the way to the stop.
– Press electric starter.

Press the electric starter for a maximum of 5 seconds.
If the starting attempt is unsuccessful, wait for 30 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
At temperatures below 15 °C (60 °F), several attempts at starting may be necessary to warm-up the lithium-ion battery and thereby increase the starting power.
When starting, the **FI** warning lamp lights up briefly as a function check.

Condition: Ambient temperature: > 20 °C (> 68.0 °F)

– Press electric starter.

9.3 Starting off

Note
When you are riding, the side stand must be folded up and secured with the rubber band.

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

9.4 Shifting, riding.

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

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

First gear is used for starting off or for steep inclines.

- Shift into a higher gear when conditions allow (incline, riding situation, etc.). To do so, release the throttle while simultaneously pulling the clutch lever, shift into the next gear, release the clutch lever and open the throttle.
- If you pushed the cold start button while starting, open the throttle briefly and release the throttle twist grip or turn the throttle twist grip forward.
  ✓ The cold start button goes to the basic position.
- 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.
- Only open the throttle as much as the engine can handle. Abruptly opening the throttle increases fuel consumption.
- To shift down, apply the brakes and close the throttle at the same time.
- Pull the clutch lever and shift into a lower gear, release the clutch lever slowly, and either 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.

≥ 2 min

- Avoid frequent and lengthy slipping of the clutch. This heats the engine oil, the engine, and the cooling system.
- Ride at a low engine speed instead of at a high engine speed when riding the clutch.

9.5 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 Braking with excessive force locks the wheels.

- Adapt your braking to the riding situation and the road conditions.

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.

- On sandy, wet, or slippery surfaces, use the rear brake.
- 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.

9.6 Stop, park

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.

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.

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.

– Brake the motorcycle.
– Shift the transmission into the neutral position.
– Press and hold kill button ⊗ while the engine is idling until the engine stops.
– Park the motorcycle on firm ground.

9.7 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.

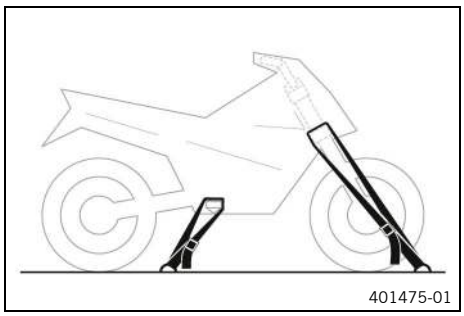
NOTE

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.

9.8 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.

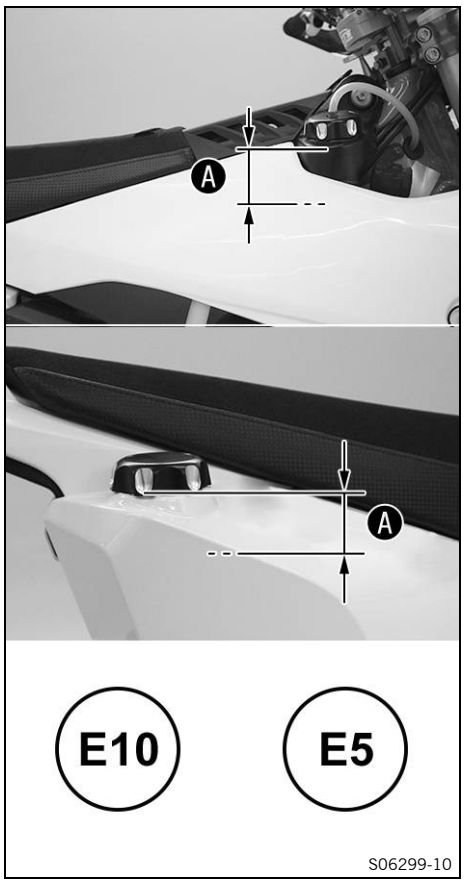
NOTE

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.

– Switch off the engine.
– Open fuel tank filler caps. (p. 25)

In the homologated condition, only the left front fuel tank may be used.



– Fill the fuel tank with fuel no higher than Ⓐ.

Level Ⓐ	45 mm (1.77 in)

Fuel tank capacity, approx.	
Super unleaded (ROZ 95) 📖 (p. 178)	Condition: front left 9.1 l (2.40 liq. gal_{US})
	Condition: front right 9.1 l (2.40 liq. gal_{US})
	Condition: rear 15.8 l (4.17 liq. gal_{US})
	Condition: Total 34.0 l (8.98 liq. gal_{US})

– Close fuel tank filler caps. 📖 (p. 26)

10.1 Service schedule

Any further work that results from the compulsory work or from the recommended 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.

									Every 24 months
									after every race
								Every 100 operating hours	
							Every 50 operating hours		
						Every 40 operating hours			
					Every 30 operating hours				
				After 20 operating hours					
			Every ten operating hours						
		After one operating hour							
Read out the fault memory using the diagnostics tool.	○	●	●	●	●	●	●	●	●
Program the gear position sensor.		●	●	●	●	●	●		
Check that the electrical equipment is functioning properly.	○	●	●	●	●	●	●	●	
Check and charge the 12 V battery.		●	●	●	●	●	●	●	●
Check that the brake pads of the front brake are secured. (p. 101)		●	●	●	●	●	●	●	●
Check that the brake pads of the rear brake are secured. (p. 106)		●	●	●	●	●	●	●	●
Check the brake discs. (p. 99)		●	●	●	●	●	●	●	●
Check the brake lines for damage and tightness.		●	●	●	●	●	●	●	●
Check the brake fluid level for the front brake. (p. 100)		●	●	●		●	●		
Change the brake fluid for the front brake.					●			●	●
Check the brake fluid level for the rear brake. (p. 105)		●	●	●		●	●		
Change the brake fluid for the rear brake.					●			●	●
Check/correct the fluid level of the hydraulic clutch. (p. 94)		●	●	●		●	●		
Change the hydraulic clutch fluid. (p. 95)					●			●	●
Check the free travel on the hand brake lever.		●	●	●	●	●	●	●	●
Check the free travel of the brake pedal. (p. 104)		●	●	●	●	●	●	●	●
Adjust the idle speed. (p. 129)	○	●	●	●	●	●	●	●	●
Change the engine oil and the oil filter, clean the oil screens. (p. 132)	○	●	●	●	●	●	●	●	●
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 that the clutch cables are undamaged, routed without kinks, and set correctly.	○	●	●	●	●	●	●	●	
Check the frame and the link fork.		●	●	●	●	●	●	●	
Check the link fork bearing.			●		●		●		

	After one operating hour	Every ten operating hours	After 20 operating hours	Every 30 operating hours	Every 40 operating hours	Every 50 operating hours	Every 100 operating hours	after every race	Every 24 months
Check the heim joints at the top of the shock absorber.		•	•	•	•	•	•	•	
Check the shock absorber linkage.		•	•	•	•	•	•	•	
Check the tire condition. (p. 115)	○	•	•	•	•	•	•	•	•
Check the tire pressure. (p. 115)	○	•	•	•	•	•	•	•	•
Check the wheel bearing for play.		•	•	•	•	•	•	•	
Check the hubs.		•	•	•	•	•	•	•	
Check the rim run-out.	○	•	•	•	•	•	•	•	
Check the spoke tension. (p. 116)	○	•	•	•	•	•	•	•	
Check the chain, rear sprocket, engine sprocket, and chain guide. (p. 89)		•	•	•	•	•	•	•	
Check the chain tension. (p. 87)	○	•	•	•	•	•	•	•	•
Grease all moving parts (e.g., hand lever, chain, etc.) and check for smooth operation.		•	•	•	•	•	•	•	•
Change the spark plug and spark plug connector.					•				
Check the valve clearance.	○			•					
Clean the fuel filter of the fuel tank.			•		•		•		•
Check the clutch.		•	•	•	•	•	•	•	
Change the absorbing elements in the outer clutch basket.		•	•	•	•	•	•	•	
Clean the air filter and air filter box. (p. 78)		•	•	•	•	•	•	•	•
Change the damping material on the main silencer. (p. 80)		•	•	•	•	•	•	•	
Conduct a minor fork service.		•	•		•	•	•	•	
Conduct a major fork service.				•					
Service the shock absorber.			○		•				
Check the tightness of the safety-relevant screws and nuts which are easily accessible.	○	•	•	•	•	•	•	•	•
Changing the fuel screen (p. 85)	○	•	•	•	•	•	•		•
Check the fuel pressure.		•	•	•	•	•	•	•	•
Check the steering head bearing play. (p. 70)	○	•	•	•		•	•	•	
Lubricate the steering head bearing. (p. 72)					•				•
Empty the drainage hoses.					•				•
Check that the radiator fan is functioning properly.		•	•	•	•	•	•	•	
Check the frost protection and coolant level. (p. 123)	○	•	•	•	•	•	•	•	

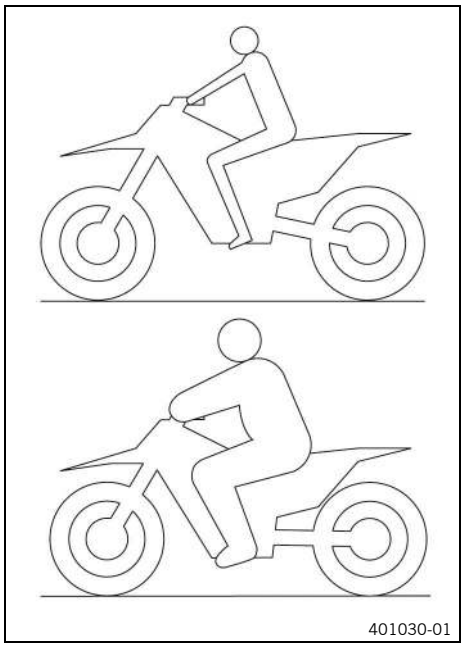
	After one operating hour	Every ten operating hours	After 20 operating hours	Every 30 operating hours	Every 40 operating hours	Every 50 operating hours	Every 100 operating hours	after every race	Every 24 months
Change the coolant. (p. 126)									●
Check the headlight setting.		●	●	●	●	●	●		
Perform minor engine service (Change piston. Check/measure the cylinder. Check the cylinder head. Check the camshaft and rocker arm. Change the connecting rod, conrod bearing and crank pin. Change the radial shaft seal rings of the water pump. Check the transmission and shift mechanism. Check the oil pressure control valve. Change the suction pump. Check the force pump and lubrication system. Change the timing chain. Check the timing assembly. Change all the engine bearings.).						●	●		
Perform major engine service (Change piston. Check/measure the cylinder. Check the cylinder head. Change the valves, valve springs, and valve spring seats. Check the camshaft and rocker arm. Change the connecting rod, conrod bearing and crank pin. Change the radial shaft seal rings of the water pump. Check the transmission and shift mechanism. Check the oil pressure control valve. Change the suction pump. Check the force pump and lubrication system. Change the timing chain. Check the timing assembly. Change all the engine bearings.).							●		
Final check: Check the vehicle is roadworthy and take a test ride.	○	●	●	●	●	●	●	●	●
Read out the fault memory after the test ride using the diagnostics tool.	○	●	●	●	●	●	●	●	●
Enter the electronic proof of service in the contractual partner portal.	○	●	●	●	●	●	●	●	●

○ One-time interval

● Periodic interval

11.1 Checking the basic chassis setting with the rider's weight

Note
When adjusting the basic chassis setting, first adjust the shock absorber and then the fork.



– For optimal motorcycle riding characteristics and to avoid damage to forks, shock absorbers, swingarm, and frame, the basic settings of the suspension components must match the rider's weight.
– As delivered, KTM offroad motorcycles are adjusted for an average rider's weight (with full protective clothing).

Standard rider weight	75 kg ... 85 kg (165.3 lb ... 187.4 lb)

– If the rider's weight is above or below this range, the basic setting of the suspension components must be adjusted accordingly.
– Small weight differences can be compensated for by adjusting the preload, but in the case of large weight differences, the springs must be replaced.

11.2 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 has an effect, for example, when landing after a jump: the rear wheel suspension compresses quickly.

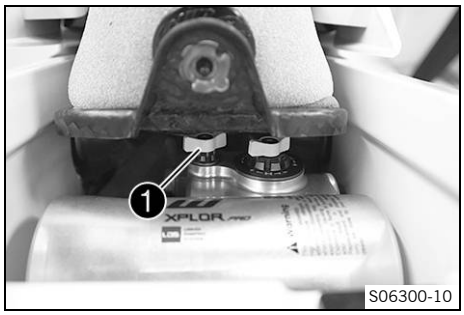
The low-speed compression has an effect, for example, when riding over long bumps: the rear wheel suspension compresses slowly.

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

11.3 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.



Preparatory work

– Remove the seat. (p. 76)

Main work

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

Low-speed compression damping	
Comfort	15 clicks
Standard	12 clicks
Sport	9 clicks

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

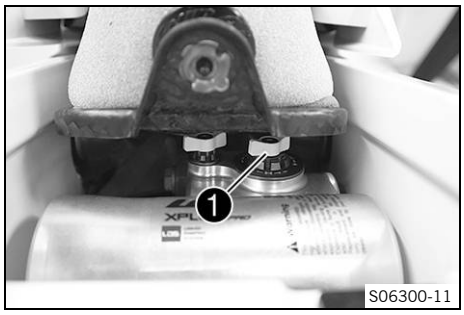
Reworking

– Mount the seat. (p. 77)

11.4 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.



Preparatory work

– Remove the seat. (p. 76)

Main work

– Turn adjuster ❶ clockwise all the way to the stop.
– Turn counterclockwise by the number of turns corresponding to the shock absorber type.

High-speed compression damping	
Comfort	18 clicks
Standard	15 clicks
Sport	12 clicks

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

Reworking

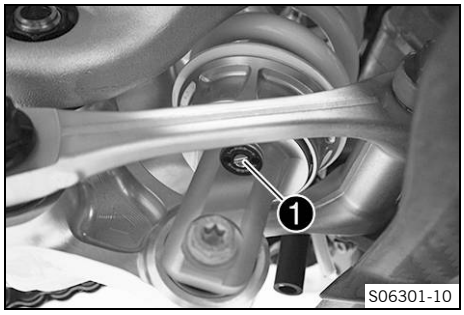
– Mount the seat. (p. 77)

11.5 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 1 clockwise up to the last perceptible click.
– Turn counterclockwise by the number of clicks corresponding to the shock absorber type.

Rebound damping	
Comfort	17 clicks
Standard	14 clicks
Sport	11 clicks

Note

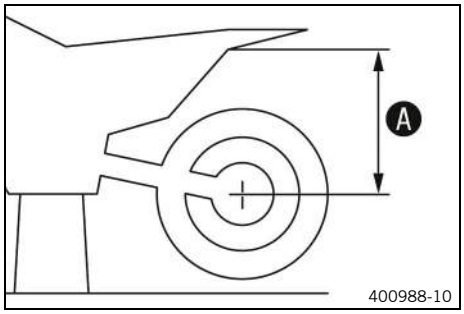
Turning clockwise increases damping; turning anticlockwise reduces damping on rebound.

11.6 Measuring the dimension of the unloaded rear wheel

Preparatory work

– Raise the motorcycle with a lift stand. (p. 62)

Main work



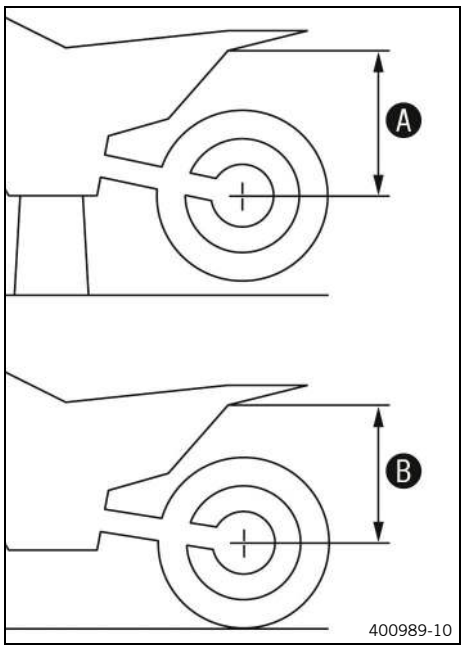
– Measure the vertical distance between the rear axle and a fixed point, such as a marking on the side cover.
– Note the value as dimension A.

Reworking

– Remove the motorcycle from the lift stand. (p. 62)

11.7 Checking the static sag of the shock absorber

Condition: The fuel tanks are half full.



– Measure the dimension of the unloaded rear wheel. (p. 55)
– Hold the motorcycle upright with aid of an assistant.
– Measure the distance between rear axle and fixed point again.
– Note the value as dimension **B**.

Note
The static sag is the difference between measurements **A** and **B**.

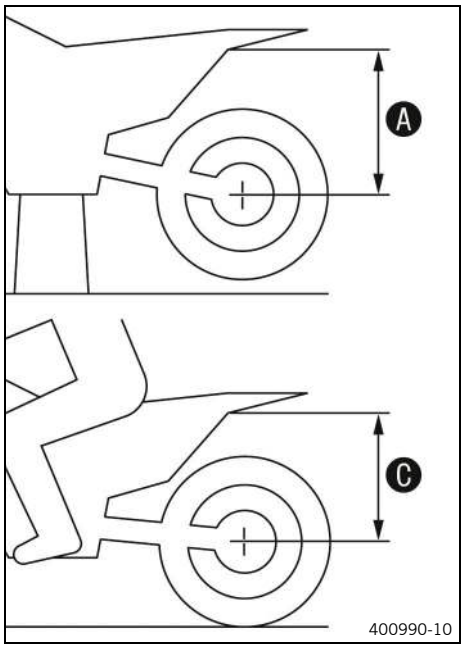
– Check the static sag.

Static sag	46 mm (1.81 in)

» If the static sag is more or less than the specified value:
– Adjust the preload for the shock absorber. (p. 57)

11.8 Checking the rider sag of the shock absorber

Condition: The fuel tanks are half full.



– Measure the dimension of the unloaded rear wheel. (p. 55)
– With another person holding the motorcycle, sit on the saddle with full protective clothing in a normal sitting position (feet on footrests) and bounce up and down a few times.
✓ The rear wheel suspension levels out.
– With the help of another person, measure the distance between the rear axle and the fixed point again.
– Note the value as dimension **C**.

Note
The rider sag is the difference between measurements **A** and **C**.

– Check the rider sag.

Rider sag	108 mm (4.25 in)

» If the rider sag differs from the specified measurement:
– Adjust the rider sag. (p. 57)

11.9 Adjusting the preload for the shock absorber

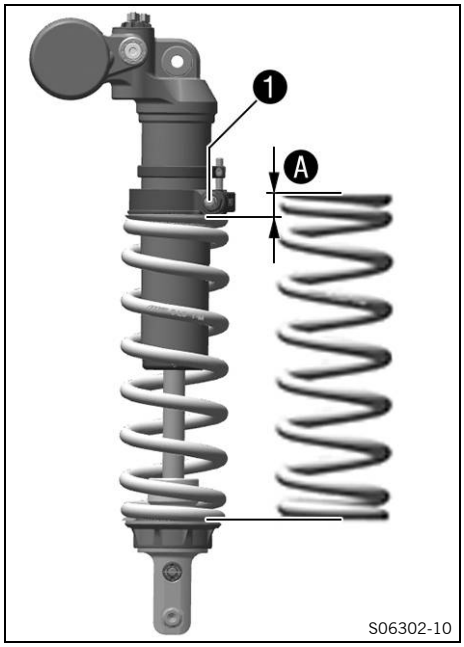
CAUTION

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

Note the current adjustment before changing the spring preload - e.g. measure the spring length.



– Set spring preload using the adjusting screw ❶.
– Turn adjusting screw clockwise to increase the spring preload Ⓐ.
– Turn adjusting screw counterclockwise to decrease the spring preload Ⓐ.

Preload	
Standard	8 mm (0.31 in)

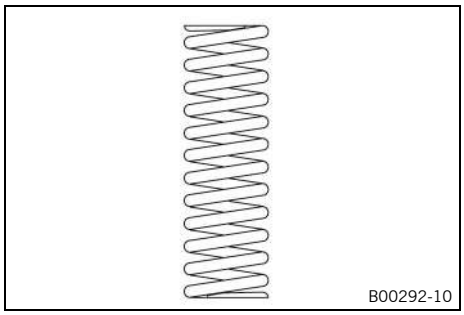
Note

Depending on the static sag and/or the rider sag, it may be necessary to increase or decrease the spring preload.

11.10 Adjusting the rider sag

Preparatory work

– Raise the motorcycle with a lift stand. (p. 62)
– Remove the seat. (p. 76)
– Remove the air filter. (p. 77)
– Remove the muffler. (p. 79)
– Remove the shock absorber. (p. 72)
– After removing the shock absorber, clean it thoroughly.



Main work

– Select and mount a suitable spring.

Spring rate	
Weight of rider: ≤ 65 kg (≤ 143.3 lb)	54 N/mm (308.3 lb_f/in)
Weight of rider: 65 kg ... 75 kg (143.3 lb ... 165.3 lb)	57 N/mm (325.5 lb_f/in)
Weight of rider: 75 kg ... 85 kg (165.3 lb ... 187.4 lb)	60 N/mm (342.6 lb_f/in)
Weight of rider: 85 kg ... 95 kg (187.4 lb ... 209.4 lb)	63 N/mm (359.7 lb_f/in)
Weight of rider: ≥ 95 kg (≥ 209.4 lb)	66 N/mm (376.9 lb_f/in)

Note

The spring rate is shown on the outside of the spring.

Smaller weight differences can be compensated by changing the spring preload.

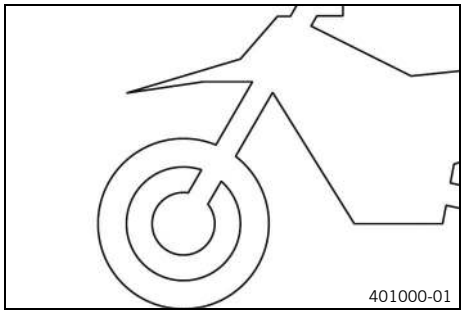
Reworking

– Install the shock absorber. (p. 74)
– Install the muffler. (p. 80)
– Install the air filter. (p. 79)
– Mount the seat. (p. 77)
– Remove the motorcycle from the lift stand. (p. 62)
– Check the static sag of the shock absorber. (p. 56)
– Check the rider sag of the shock absorber. (p. 56)
– Adjust the rebound damping of the shock absorber. (p. 55)

11.11 Checking the basic setting of the fork

Note

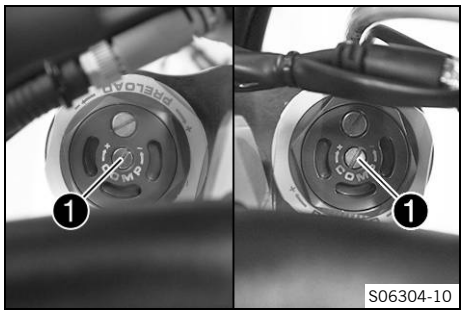
For various reasons, no exact rider sag can be determined for the fork.



– As with the shock absorber, smaller differences in the rider's weight can be compensated by the spring preload.
– However, if the fork frequently bottoms out (hard end stop on compression), harder springs must be fitted to avoid damage to the fork and frame.

11.12 Adjusting the compression damping of the fork

Note
The hydraulic compression damping determines the fork suspension behavior.



– Turn adjusting screws ❶ clockwise all the way.

Note
Adjusters ❶ **COMP** are located at the top end of the fork legs.
Make the same adjustment on both fork legs.

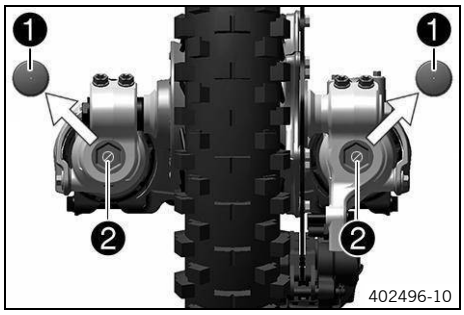
– Turn counterclockwise by the number of clicks corresponding to the fork type.

Compression damping	
Comfort	15 clicks
Standard	12 clicks
Sport	9 clicks

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

11.13 Adjusting the rebound damping of the fork

Note
The hydraulic rebound damping determines the fork suspension behavior.



– Take off protection caps ❶.
– Turn adjusting screws ❷ clockwise all the way.

Note
Adjusters ❷ **REB** are located at the bottom end of the fork legs.
Make the same adjustment on both fork legs.

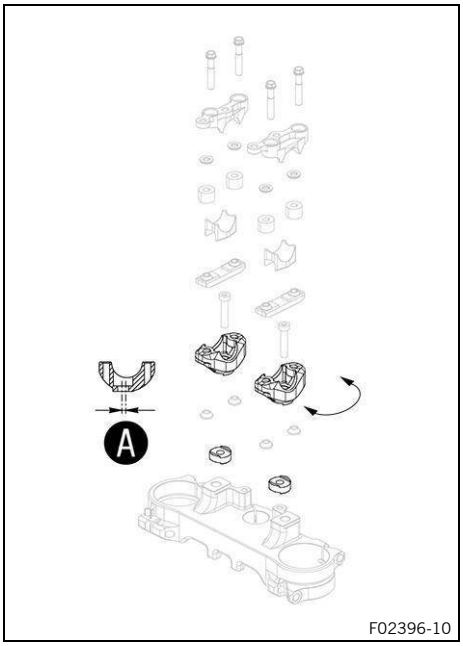
– Turn counterclockwise by the number of clicks corresponding to the fork type.

Rebound damping	
Comfort	23 clicks
Standard	20 clicks
Sport	17 clicks

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

– Fit protection caps ❶.

11.14 Handlebar position



The holes on the handlebar supports are placed at a distance of Ⓐ from the center.

Hole distance Ⓐ	3.5 mm (0.138 in)

The handlebar mounts can be turned through 180°. In this way, the handlebar can be mounted in the position that is most comfortable for the rider.

The handlebar supports can also be mounted at two different heights (with and without a spacer).

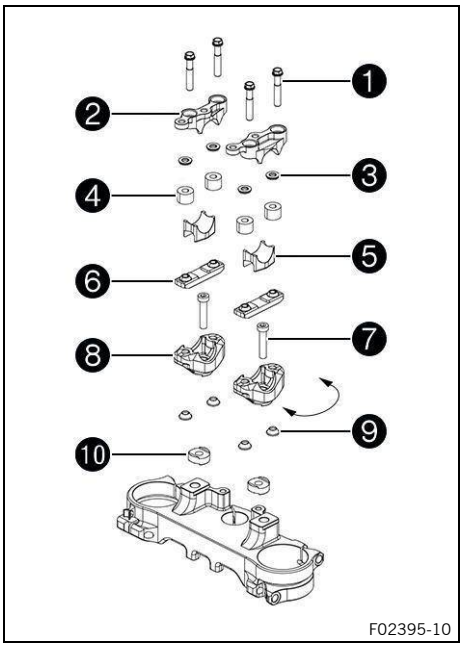
11.15 Adjusting the handlebar position

WARNING

Danger of accidents A repaired handlebar poses a safety risk.

If the handlebar is bent or straightened, the material becomes fatigued. The handlebar may break as a result.

– Change the handlebar if the handlebar is damaged or bent.



– Remove screws ❶.
– Take off handlebar clamps ❷ with rubber washers ❸ and elastomers ❹.
– Fix handlebar onto instrument support with cable ties.

Protect the components against damage by covering them.
Do not kink the cables or lines.

– Take out lower shells ❺ and clamping bars ❻.
– Remove screws ❼. Take off handlebar supports ❽ with conical rubber pieces ❾.
– Place handlebar supports ❽ with conical rubber pieces ❾ in the desired position. Mount and tighten screws ❼.

Position the left and right handlebar supports evenly.

Screw, handlebar mount	
M10	46 Nm (33.9 ft·lb$_f$) **Loctite® 243**

Condition: Spacer ❿ fitted:

Use an M10x35 screw.
Condition: without spacer ⑩:
Use a M10x25 screw.

– Insert clamping bars ❻ and lower shells ❺.
– Remove the cable ties and position the handlebar.

Make sure the cables and wiring are routed correctly.

– Position handlebar clamps ❷ with rubber washers ❸ and elastomers ❹.

Elastomer kit, green - soft (SXS05125203)
Elastomer kit, yellow - medium (standard) (SXS05125204)
Elastomer kit, red - hard (SXS05125205)

Note
The elastomers are available in different versions.

– Mount screws ❶ and tighten evenly.

Handlebar clamp screw	
M8	20 Nm (14.8 ft·lb$_f$)

Make sure the installed gap widths are even.

12.1 Raising the motorcycle with a lift stand

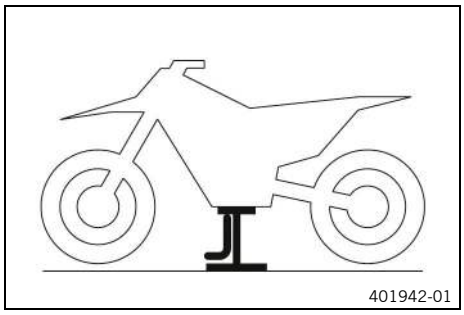
NOTE

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.


401942-01

– Use the engine guard underneath the engine to raise the vehicle.
  ✓ Neither wheel is in contact with the ground.
– Secure the motorcycle against falling over.

12.2 Removing the motorcycle from the lift stand

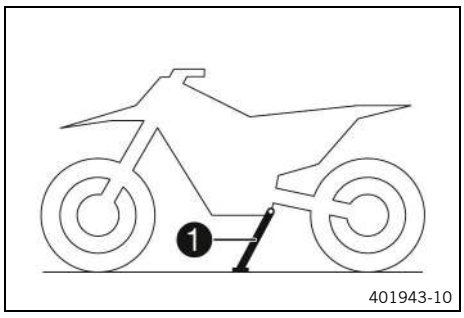
NOTE

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.



401943-10

– Remove the motorcycle from the lift stand.
– Remove the lift stand.
– To park the motorcycle, press side stand ❶ to the ground with your foot and lean the motorcycle on it.

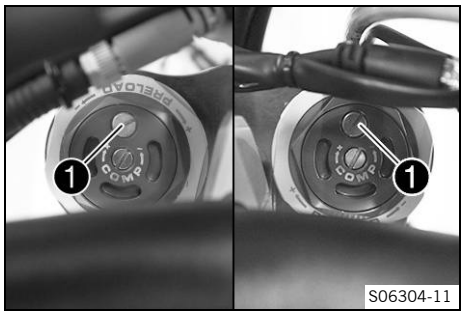
Note

When you are riding, the side stand must be folded up and secured with the rubber band.

12.3 Bleeding the fork legs

Preparatory work

– Raise the motorcycle with a lift stand. (p. 62)



Main work

– Loosen bleeder screw 1.
  ✓ Any excess pressure escapes from the inner fork.
– Tighten the bleeder screw.

Reworking

– Remove the motorcycle from the lift stand. (p. 62)

12.4 Cleaning the dust boots of the fork legs

Preparatory work

– Raise the motorcycle with a lift stand. (p. 62)
– Remove the fork protector. (p. 64)



Main work

– Push dust boot 1 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.

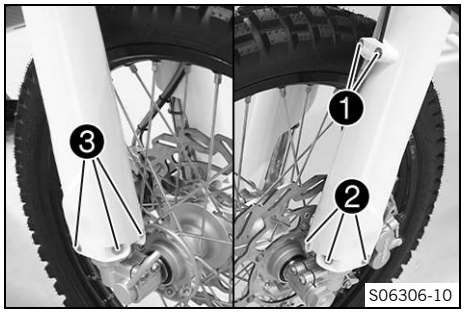
Universal oil spray (p. 179)

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

Reworking

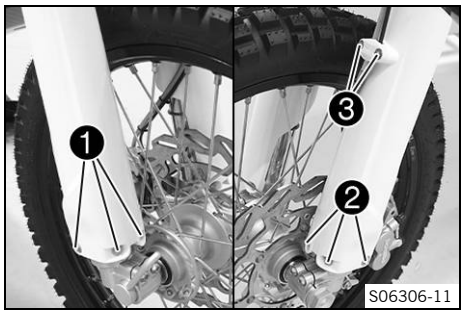
– Install the fork protector. (p. 64)
– Remove the motorcycle from the lift stand. (p. 62)

12.5 Removing the fork protector



– Remove screw ❶ and take off the clamp.
– Remove screws ❷ on the left fork leg and take off the left fork protector.
– Remove screws ❸ on the right fork leg and take off the right fork protector.

12.6 Installing the fork protector



– Position the fork protector on the right fork leg. Mount and tighten screws ❶.

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

– Position the fork protector on the left fork leg. Mount and tighten screws ❷.

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

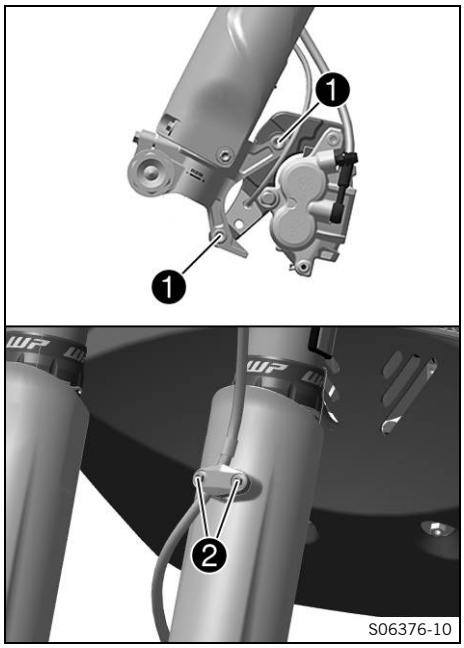
– Position the brake line, the wiring harness, and the clamp. Mount and tighten screws ❸.

Screw, brake hose bracket on fork protector	
K60x20	2 Nm (1.5 ft·lb$_f$)

12.7 Removing the fork legs

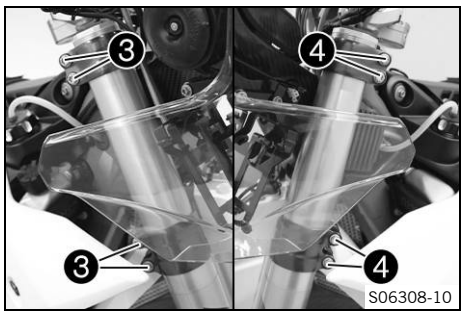
Preparatory work

– Raise the motorcycle with a lift stand. (p. 62)
– Remove the front wheel. (p. 110)



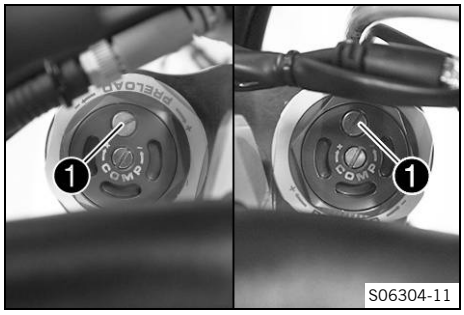
Main work

– Remove screws ❶.
– Remove screws ❷ and take off the clamp.
– Allow the brake caliper and the brake line to hang loosely to the side.



– Loosen screws ❸. Take out the right fork leg.
– Loosen screws ❹. Take out the left fork leg.

12.8 Installing the fork legs

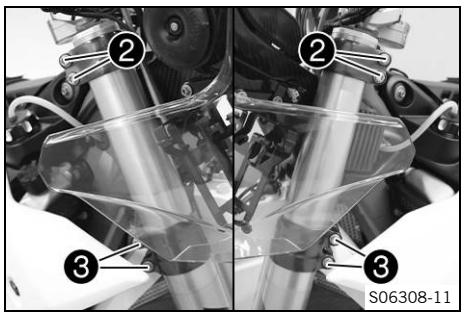


Main work

– Position the fork legs.
  ✓ Bleeder screws ❶ are positioned toward the front.

Note

Grooves are milled into the side of the upper end of the fork legs. The second milled groove (from the top) must be flush with the upper edge of the upper triple clamp.

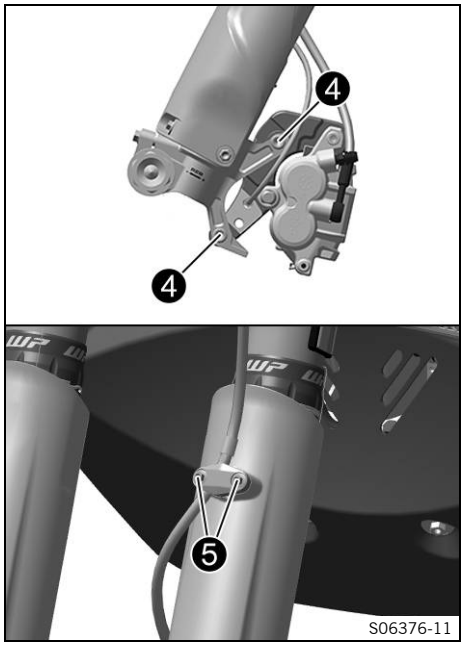


– Tighten screws ❷.

Screw, top triple clamp	
M8	19 Nm (14.0 ft·lb$_f$)

– Tighten screws ❸.

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



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

Screw, front brake caliper	
M8	27 Nm (19.9 ft·lb$_f$) **Loctite® 243**

– Position the brake line and the clamp. Mount and tighten screws ❺.

Remaining screws on chassis	
K50x18	2 Nm (1.5 ft·lb$_f$)

Reworking

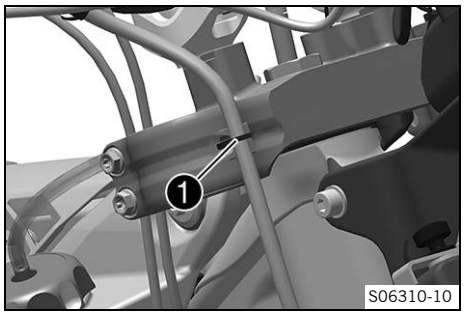
– Install the front wheel. (p. 111)

12.9 Removing the lower triple clamp

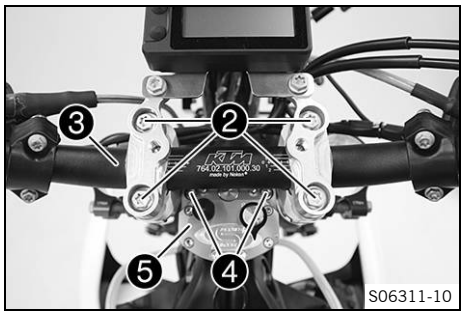
Preparatory work

– Raise the motorcycle with a lift stand. (p. 62)
– Remove the front wheel. (p. 110)
– Remove the fork legs. (p. 64)
– Remove the front top fender. (p. 76)

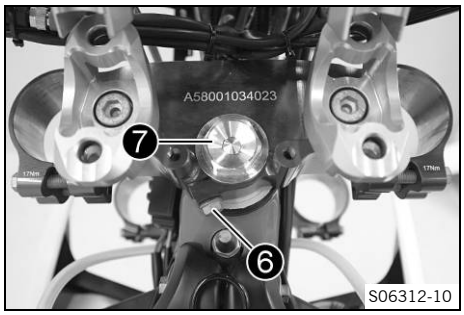
Main work



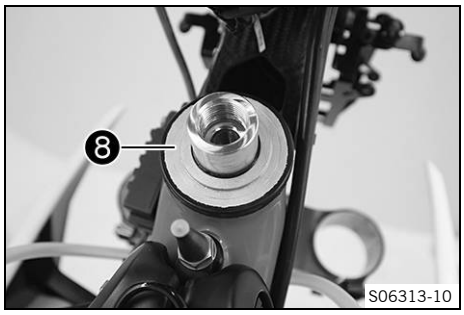
– Remove cable tie(s) ❶.
– Allow the brake caliper and the brake line to hang loosely to the side.



– Remove screws ❷. Take off the handlebar clamps with the rubber washers and elastomers.
– Fix handlebar ❸ onto the instrument support with cable ties.
– Remove screws ❹ and take off steering damper ❺.

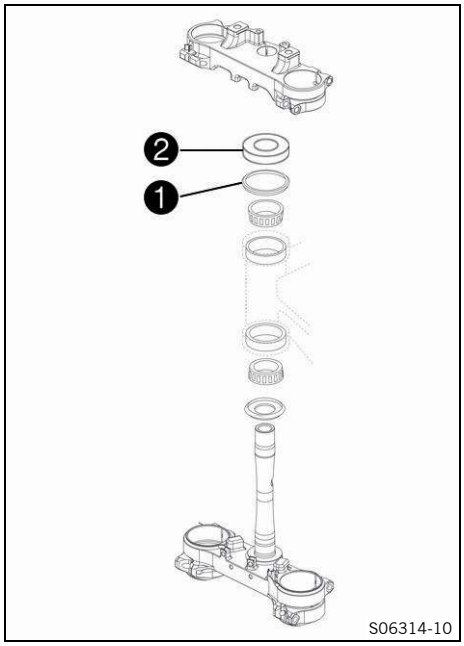


– Secure lower triple clamp against falling out.
– Remove screw ❻.
– Remove screw ❼.
– Remove the upper triple clamp.



– Remove protective ring ❽.
– Take out the lower triple clamp with the steering stem.
– Take out the upper steering head bearing.

12.10 Installing the lower triple clamp



Main work

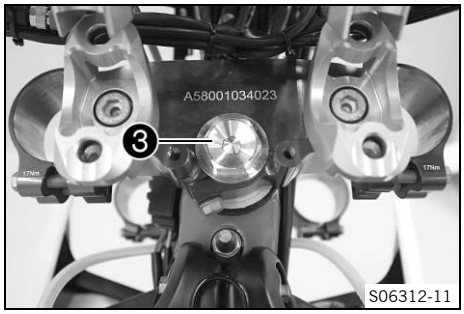
– Clean the bearing and sealing elements, check for damage, and grease.

High viscosity grease (p. 180)

– Insert the lower triple clamp with the steering stem. Mount the upper steering head bearing.

– Check whether upper steering head seal ❶ is correctly positioned.

– Push on protective ring ❷.



– Position the upper triple clamp.

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

Screw, top steering head	
M20×1	12 Nm (8.9 ft·lb$_f$)

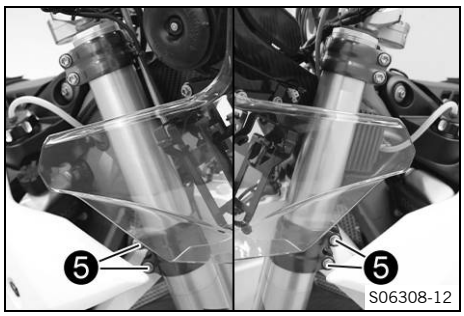


– Position the fork legs.

✓ Bleeder screws ❹ are positioned toward the front.

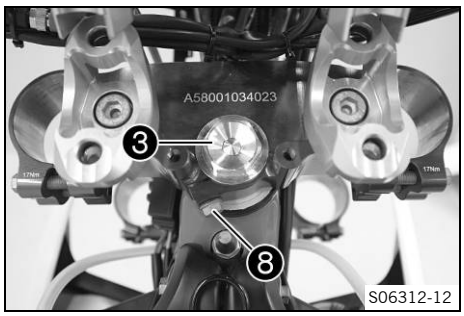
Note

Grooves are milled into the side of the upper end of the fork legs. The second milled groove (from the top) must be flush with the upper edge of the upper triple clamp.



– Tighten screws ❺.

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

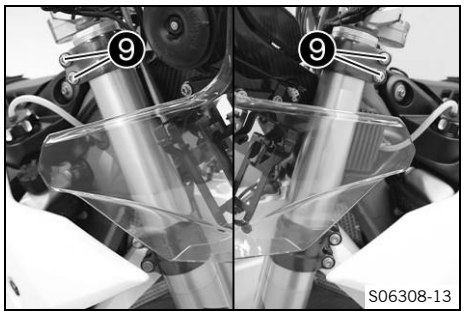


– Tighten screw ❸.

Screw, top steering head	
M20×1	12 Nm (8.9 ft·lb$_f$)

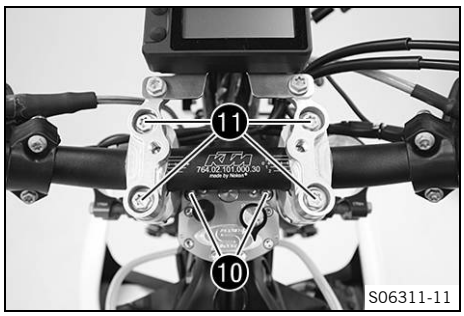
– Mount and tighten screw ❽.

Screw, upper steering stem	
M8	22 Nm (16.2 ft·lb$_f$) **Loctite® 243**



– Tighten screws ❾.

Screw, top triple clamp	
M8	19 Nm (14.0 ft·lb$_f$)



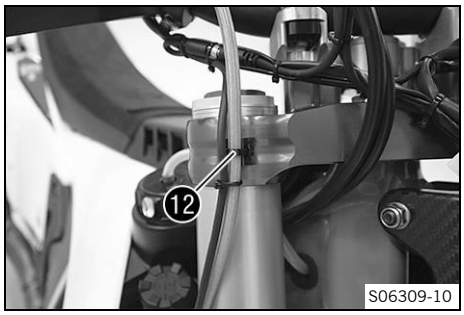
– Position steering damper and mount and tighten screws ❿.

Screw, steering damper	
M6	15 Nm (11.1 ft·lb$_f$)

– Remove the cable ties and position the handlebar.
– Position the handlebar clamps with the rubber washers and elastomers.
– Mount screws ⓫ and tighten evenly.

Handlebar clamp screw	
M8	20 Nm (14.8 ft·lb$_f$)

Make sure the installed gap widths are even.



– Secure the brake line with cable tie ⓬.

Reworking

– Check the wiring harness, cables, and brake and clutch lines for freedom of movement and correct routing.
– Install the front top fender. (p. 76)
– Install the front wheel. (p. 111)

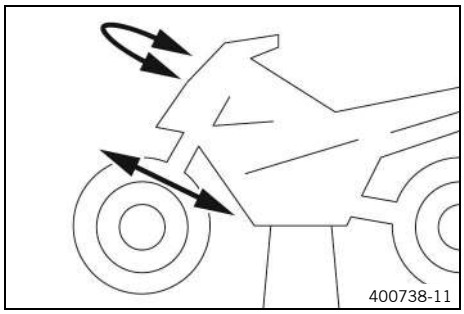
– Check the steering head bearing play. (p. 70)
– Remove the motorcycle from the lift stand. (p. 62)

12.11 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 a lift stand. (p. 62)



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. 70)
– 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.

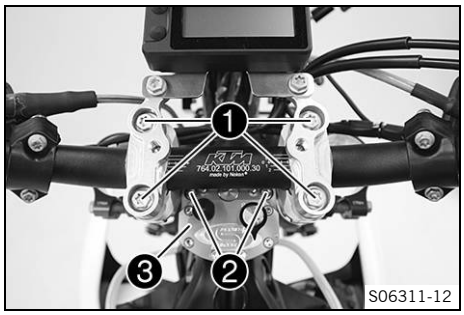
» If detent positions are detected:
– Adjust the steering head bearing play. (p. 70)
– Check the steering head bearing and replace if required.

Reworking
– Remove the motorcycle from the lift stand. (p. 62)

12.12 Adjusting the steering head bearing play

Preparatory work
– Raise the motorcycle with a lift stand. (p. 62)

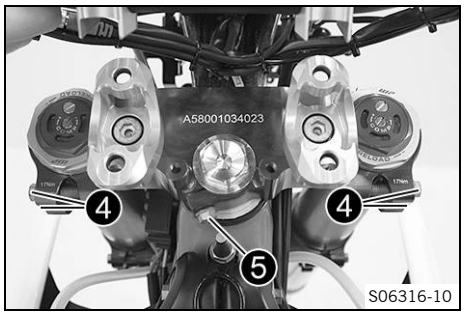
Main work



– Remove screws ❶.
– Take off the handlebar clamps with the rubber washers and elastomers.
– Fix handlebar onto instrument support with cable ties.

Protect the components against damage by covering them.
Do not kink the cables or lines.

– Remove screws ❷ and take off steering damper ❸.



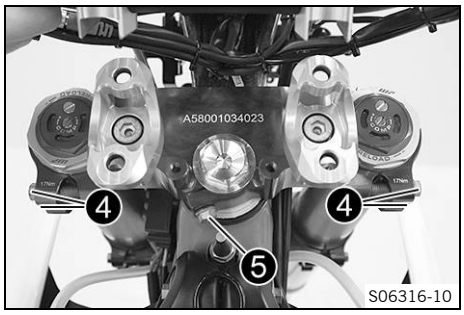
– Loosen screws ❹.
– Remove screw ❺.



– Loosen and retighten screw ❻.

Screw, top steering head	
M20×1	12 Nm (8.9 ft·lb$_f$)

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

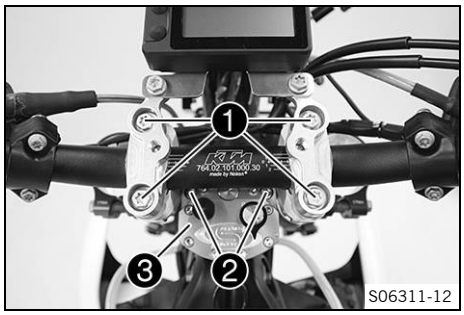


– Tighten screws ❹.

Screw, top triple clamp	
M8	19 Nm (14.0 ft·lb$_f$)

– Mount and tighten screw ❺.

Screw, upper steering stem	
M8	22 Nm (16.2 ft·lb$_f$) **Loctite® 243**



– Position steering damper ❸ and mount and tighten screws ❷.

Screw, steering damper	
M6	15 Nm (11.1 ft·lb$_f$)

– Remove the cable ties and position the handlebar.

Make sure the cables and wiring are routed correctly.

– Position the handlebar clamps with the rubber washers and elastomers.

– Mount screws ❶ and tighten evenly.

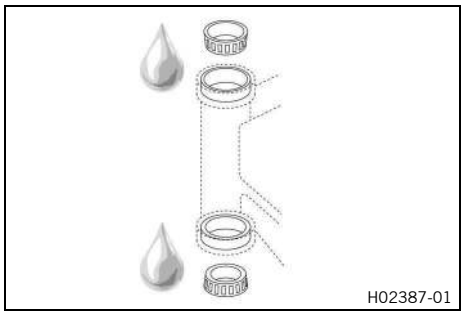
Handlebar clamp screw	
M8	20 Nm (14.8 ft·lb$_f$)

Make sure the installed gap widths are even.

Reworking

– Check the steering head bearing play. (p. 70)
– Remove the motorcycle from the lift stand. (p. 62)

12.13 Lubricating the steering head bearing



– Remove the lower triple clamp. (p. 66)
– Install the lower triple clamp. (p. 68)

Note

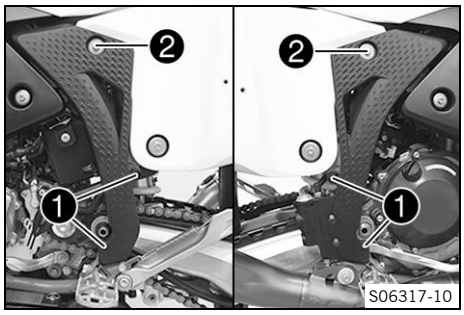
The steering head bearing is cleaned and lubricated in the course of removal and installation of the lower triple clamp.

12.14 Removing the shock absorber

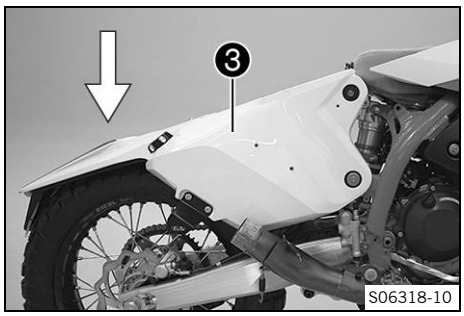
Preparatory work

– Raise the motorcycle with a lift stand. (p. 62)
– Remove the seat. (p. 76)
– Remove the air filter. (p. 77)
– Remove the muffler. (p. 79)

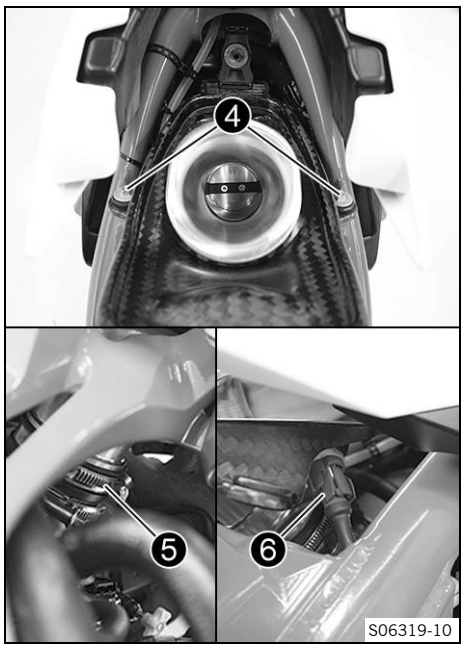
Main work



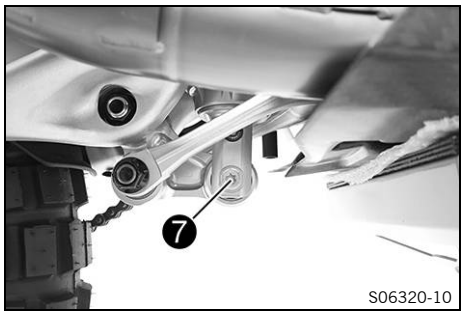
– Remove screws ❶ and ❷.
– Take off the frame protector.



– Carefully lower rear fuel tank ❸.

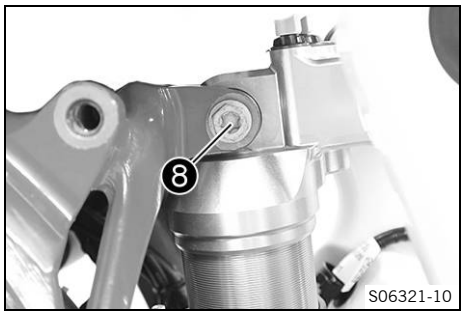


– Remove screws ❹.
– Loosen clamp ❺ and pull off socket connector ❻.
– Remove air filter support.

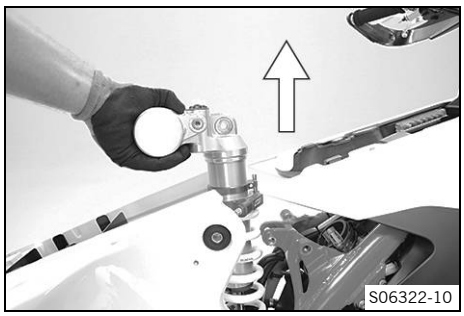


– Remove screw ❼ with the washer.

Note
Raise the link fork slightly to be able to remove the screw more easily.



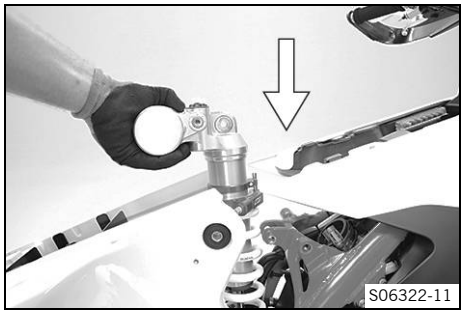
– Remove screw ❽ with the washer.



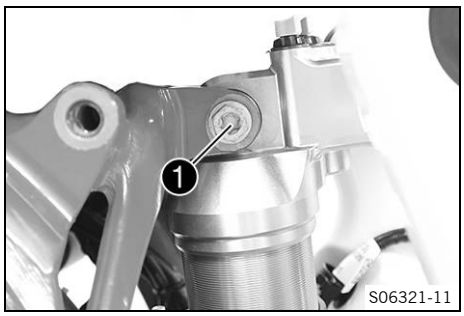
– Remove shock absorber toward top carefully.

12.15 Installing the shock absorber

Main work

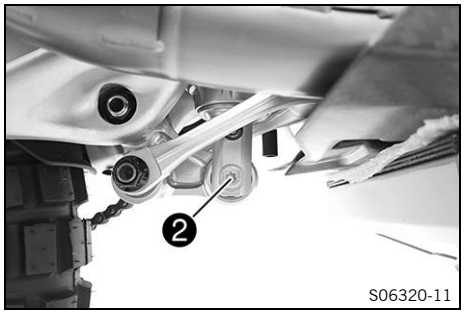


– Carefully position shock absorber into the vehicle from above.



– Mount and tighten screw ❶ with the washer.

Fitting, shock absorber, top	
M10	65 Nm (47.9 ft·lb$_f$) **Loctite® 243**

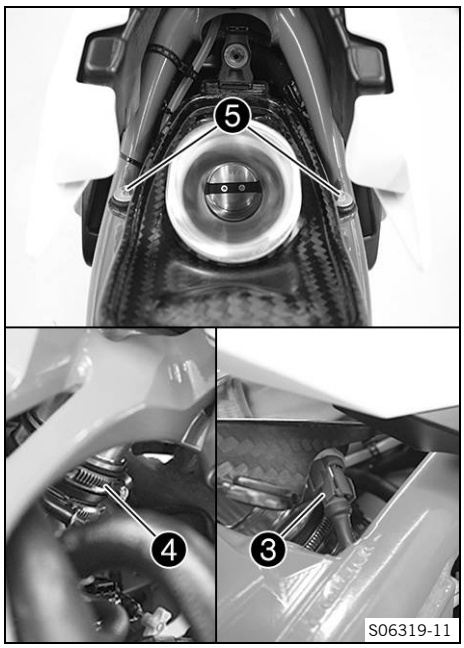


– Mount and tighten screw ❷ with the washer.

Fitting, bottom shock absorber	
M10	65 Nm (47.9 ft·lb$_f$) **Loctite® 243**

Note

Raise the swingarm slightly to be able to mount the screw more easily.



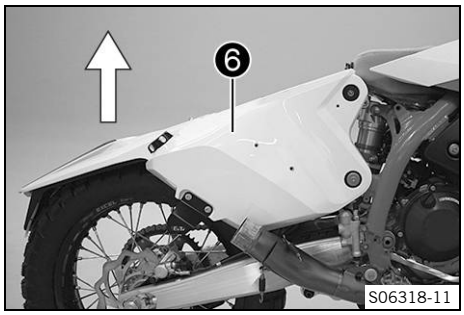
– Position air filter support and plug in socket connector ❸.
– Tighten clamp ❹.

Screw, radiator hoses clip	
	2.4 Nm (1.77 ft·lb$_f$)

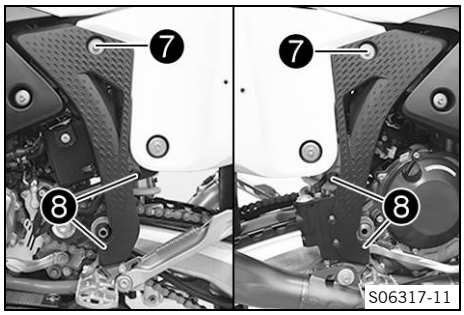
Note
Ensure correct fit.

– Position and tighten screws ❺.

Air filter support on frame	
M6	10 Nm (7.4 ft·lb$_f$)



– Raise rear fuel tank ❻.



– Position the frame protector.
– Mount and tighten screws ❼.

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

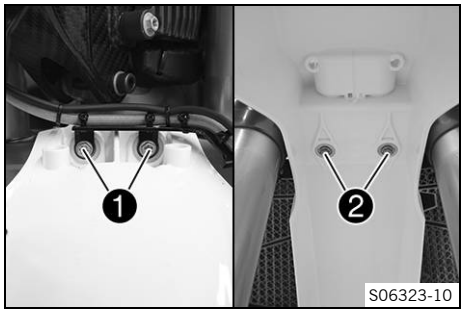
– Position and tighten screws ❽.

Screw, frame protector	
M5	3 Nm (2.2 ft·lb$_f$)

Reworking

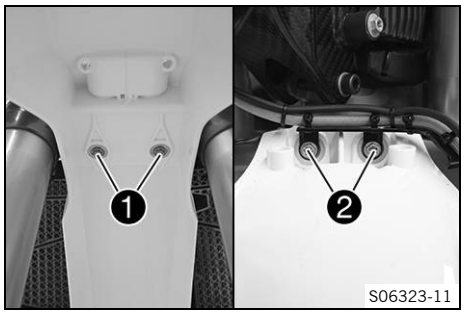
– Install the muffler. (p. 80)
– Install the air filter. (p. 79)
– Mount the seat. (p. 77)
– Remove the motorcycle from the lift stand. (p. 62)

12.16 Removing the front top fender



– Remove ❶ screws.
– Remove screws ❷ and take off the fender.

12.17 Installing the front top fender



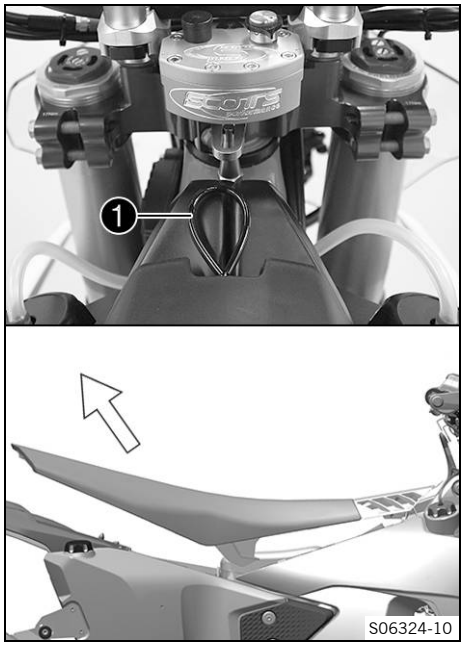
– Position the fender.
– Mount and tighten screws ❶.

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

– Mount and tighten screws ❷.

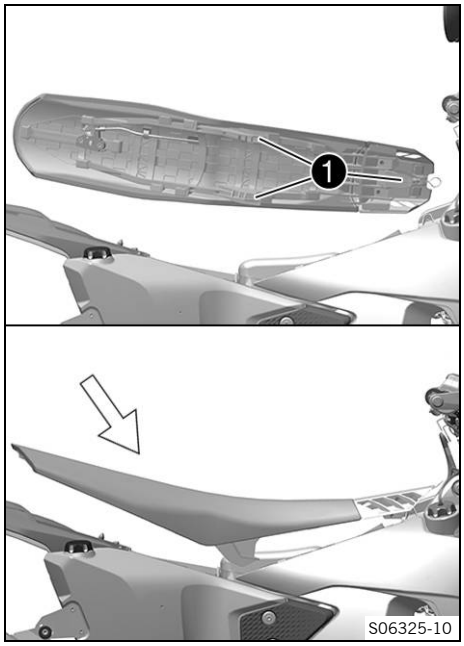
Remaining screws on chassis	
M6	10 Nm (7.4 ft·lb$_f$)

12.18 Removing the seat



– Pull on loop ❶. Raise the rear of the seat, push it towards the rear, and lift it off.

12.19 Mounting the seat



– Hook in seat using the holding lugs ❶ and push forward from the rear.
– Insert locking pin into the lock housing and push down the rear of the seat until the locking pin engages with a click.
– Check that the seat is correctly mounted.

12.20 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.

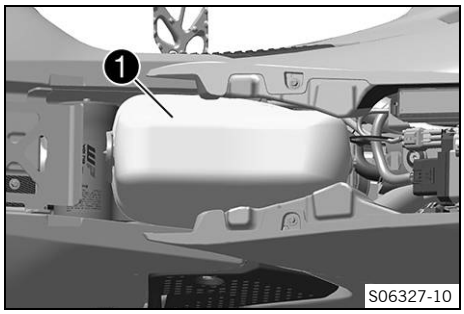
NOTE

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.

Preparatory work

– Remove the seat. (p. 76)

Main work



– Pull air filter cover ❶ up and off.



– Open quick lock ❷ and remove air filter.

12.21 Cleaning the air filter and air filter box

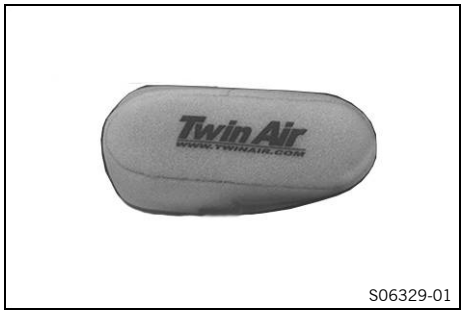
NOTE

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.

Preparatory work

– Remove the seat. (p. 76)
– Remove the air filter. (p. 77)



Main work

– Wash the air filter thoroughly in special cleaning liquid and allow it to dry properly.

Do not clean the air filter with fuel or petroleum as these substances will damage the foam rubber.
Only press the air filter to dry it, never wring it out.

Air filter cleaning agent (p. 182)

– Oil the dry air filter with a high-grade air filter oil.

Oil for foam air filter (p. 180)

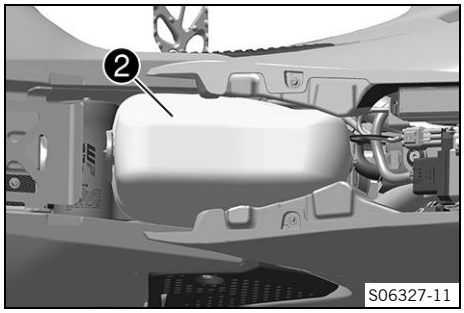
– Clean the air filter box.
– Check intake flange for damage and looseness.

Reworking

– Install the air filter. (p. 79)
– Mount the seat. (p. 77)

12.22 Installing the air filter





Main work

– Position clean air filter and close quick lock ❶.

The air filter must lie flush against the air filter box along the entire sealing surface.

Note
If the air filter is not correctly mounted, dust and dirt can enter the engine and cause damage.

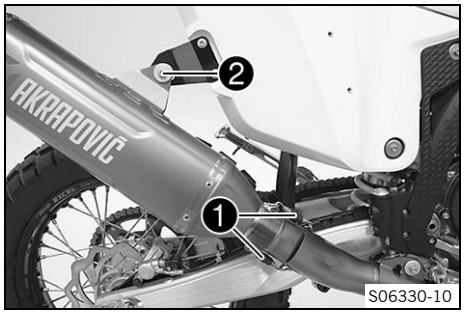
– Press air filter cover ❷ into the tabs from above.

Reworking

– Mount the seat. (p. 77)

12.23 Removing the muffler

WARNING
Danger of burns The exhaust system gets hot when the vehicle is driven.
– Allow the exhaust system to cool down before performing any work on the vehicle.

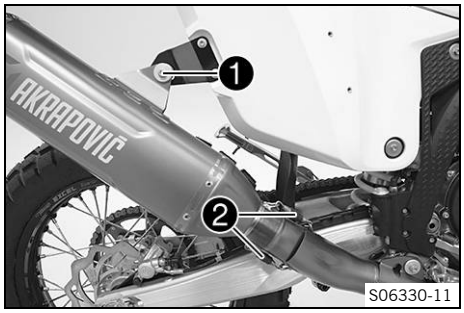


– Detach springs ❶.

Spring hook (50305017000C1)

– Remove screw ❷ and take off the main silencer.

12.24 Installing muffler



– Position the main silencer. Mount screw ❶, but do not tighten it yet.

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

– Attach springs ❷.

Spring hook (50305017000C1)

– Tighten screw ❶.

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

12.25 Changing the damping material on the main silencer

WARNING

Danger of burns The exhaust system gets hot when the vehicle is driven.

– Allow the exhaust system to cool down before performing any work on the vehicle.

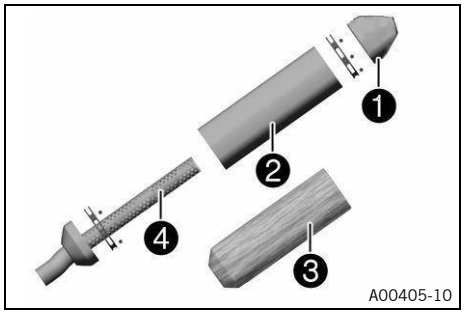
Note

Over a period, the fibers of the rock wool escape into the air, and the main silencer "burns out". Not only does this make the noise level higher, but the performance characteristics also change.

Preparatory work

– Remove the muffler. (p. 79)

Main work



– Drill out all rivets on the main silencer and remove steel strips. Carefully remove rivets in inward direction.

Note

Remove all remains of rivets from the inside of the main silencer.

– Take off silencer cap ❶ and outer tube ❷.
– Pull damping material ❸ from the inner tube ❹.
– Clean the parts that need to be reinstalled and check for damage.
– Wind adhesive tape around the end of inner tube ❹.
– Fit new damping material ❸ on the inner tube ❹.
– Remove adhesive tape from inner tube ❹.
– Slide outer tube ❷ over the damping material ❸.
– Insert silencer cap ❶ into the outer tube.
– Position steel bands and mount new rivets.

Reworking

– Install the muffler. (p. 80)

12.26 Removing front left 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

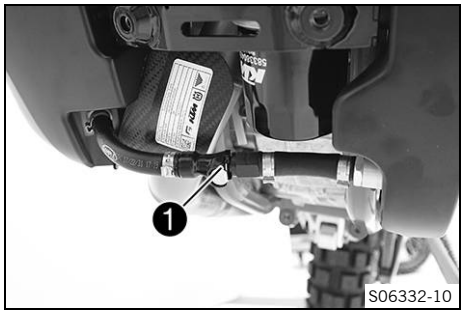
Danger of poisoning Fuel is harmful to health.

– 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.

Preparatory work

– Remove the seat. (p. 76)
– Remove the skid plate. (p. 97)

Main work



– Clean quick release coupling 1 thoroughly with compressed air.

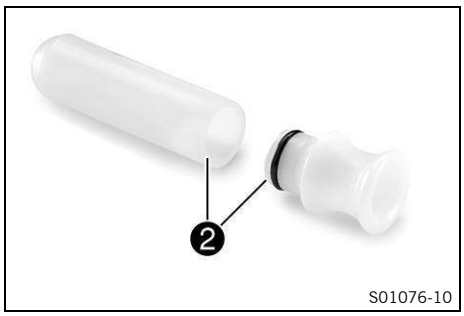
Note

Dirt must not enter into the fuel line. Dirt in the fuel line clogs the injector!

– Disconnect the quick release coupling and remove it from the holder.

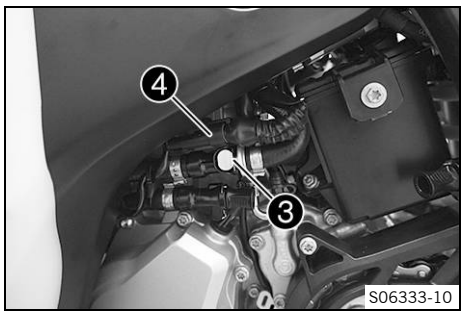
Note

Remaining fuel may flow out of the fuel hose.



– Mount wash cap set ❷ from the separate enclosure.

Wash cap set (81212016100)



– Clean quick release coupling ❸ thoroughly with compressed air.

Note
Dirt must not enter into the fuel line. Dirt in the fuel line clogs the injector!

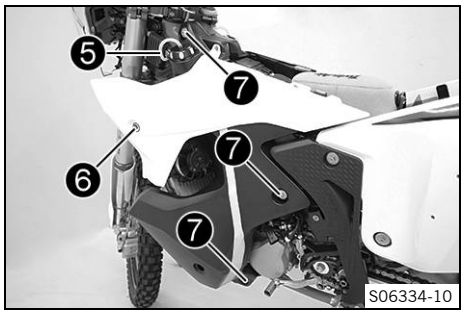
– Disconnect the quick-lock coupling.

Note
Remaining fuel may flow out of the fuel hose.

– Mount wash cap set from the separate enclosure.

Wash cap set (81212016000)

– Disconnect plug-in connector ❹ of the fuel pump.



– Pull off fuel tank breather hose ❺.
– Open quick lock ❻.
– Remove screws ❼.
– Take off the fuel tank.

Note
Set the fuel tank down in an upright position as otherwise fuel can escape from the fuel tank breather at the fuel tank filler cap.

12.27 Removing front right 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

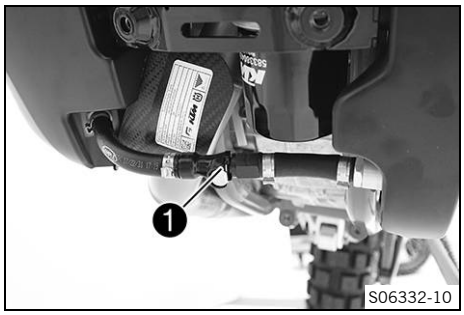
Danger of poisoning Fuel is harmful to health.

- 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.

Preparatory work

- Remove the seat. (p. 76)
- Remove the skid plate. (p. 97)

Main work

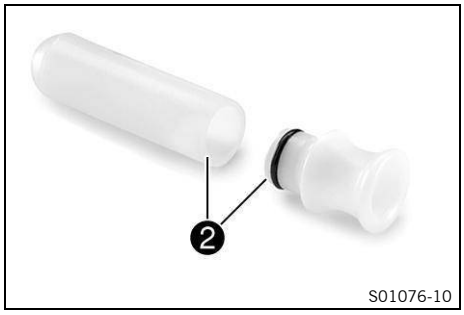


- Clean quick-lock coupling ❶ thoroughly with compressed air.

Note
Under no circumstances should dirt enter into the fuel line. Dirt in the fuel hose clogs the injector!

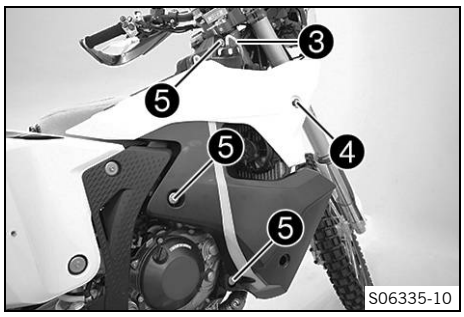
- Disconnect the quick release coupling and remove it from the holder.

Note
Remaining fuel may flow out of the fuel hose.



- Mount wash cap set ❷ from the separate enclosure.

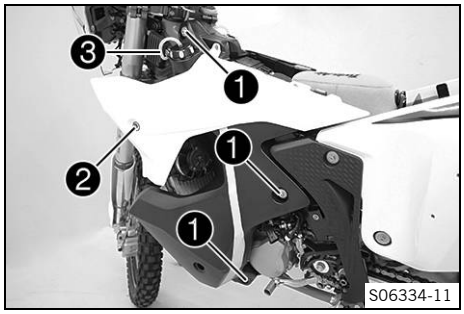
Wash cap set (81212016000)



- Pull off fuel tank breather hose ❸.
- Open quick lock ❹.
- Remove ❺ screws.
- Take off the fuel tank.

Note
Set the fuel tank down in an upright position as otherwise fuel can escape from the fuel tank breather at the fuel tank filler cap.

12.28 Installing the front left fuel tank

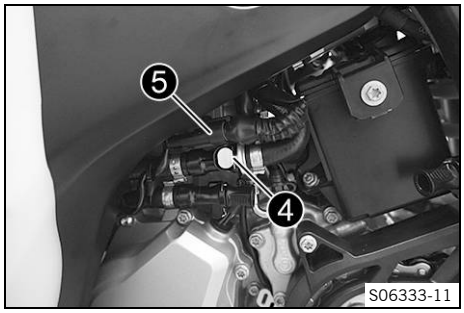


Main work

– Position fuel tank, and mount and tighten screws ❶.

Screw, front fuel tank	
M8	16 Nm (11.8 ft·lb$_f$)

– Close quick release ❷.
– Mount fuel tank breather hose ❸.



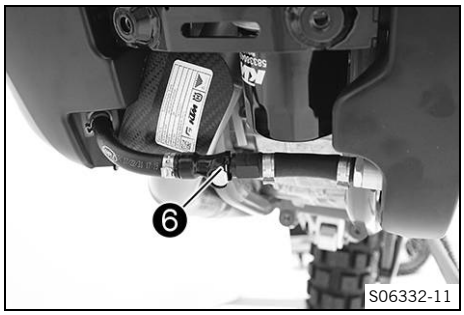
– Remove the wash cap set.
– Clean quick-lock coupling ❹ thoroughly with compressed air.

Note
Under no circumstances should dirt enter into the fuel line. Dirt in the fuel hose clogs the injector!

– Spray silicone spray onto a lint-free cleaning cloth and lightly lubricate the O-ring of the quick-lock coupling.

Silicone spray (p. 180)

– Join quick release coupling ❹.
– Join the plug-in connector of fuel pump ❺.



– Remove the wash cap set.
– Clean quick-lock coupling ❻ thoroughly with compressed air.

Note
Under no circumstances should dirt enter into the fuel line. Dirt in the fuel hose clogs the injector!

– Spray silicone spray onto a lint-free cleaning cloth and lightly lubricate the O-ring of the quick-lock coupling.

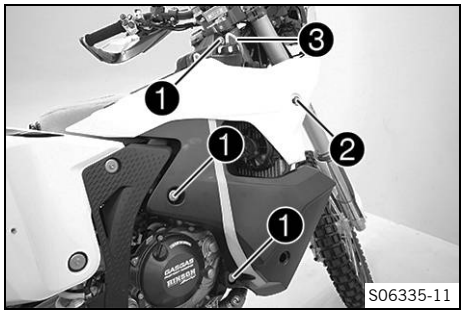
Silicone spray (p. 180)

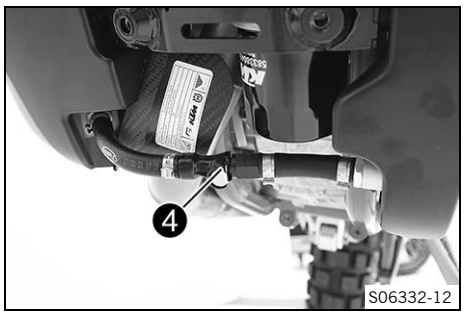
– Join quick release coupling ❻.
– Position the fuel line in the holder.

Reworking

– Install the skid plate. (p. 98)
– Mount the seat. (p. 77)

12.29 Installing the front right fuel tank





Main work

– Position fuel tank, and mount and tighten screws ❶.

Screw, front fuel tank	
M8	16 Nm (11.8 ft·lb$_f$)

– Close quick release ❷.
– Mount fuel tank breather hose ❸.

– Remove the wash cap set.
– Clean quick-lock coupling ❹ thoroughly with compressed air.

Note
Under no circumstances should dirt enter into the fuel line. Dirt in the fuel hose clogs the injector!

– Spray silicone spray onto a lint-free cleaning cloth and lightly lubricate the O-ring of the quick-lock coupling.

Silicone spray (p. 180)

– Join quick release coupling ❹.
– Position the fuel line in the holder.

Reworking

– Install the skid plate. (p. 98)
– Mount the seat. (p. 77)

12.30 Changing the fuel screen

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.

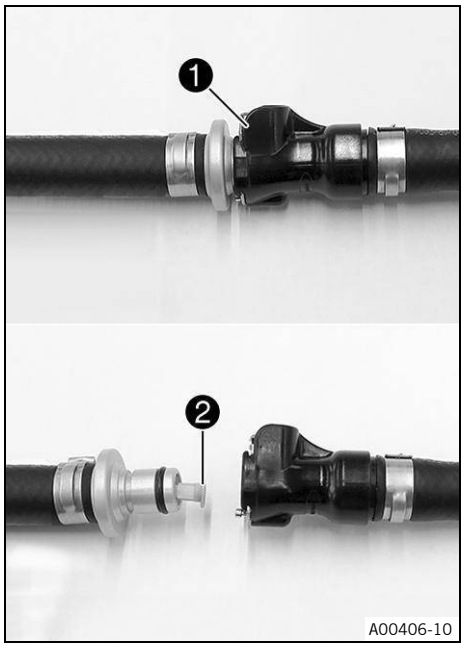
WARNING
Danger of poisoning Fuel is harmful to health.
– Do not allow fuel to come into contact with skin, eyes, or clothing.
– Consult a doctor immediately if fuel has been ingested.
– Do not inhale fuel vapors.
– Rinse the affected area immediately with plenty of water in the event of contact with 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.



– Clean quick-lock coupling ❶ thoroughly with compressed air.

Note

Under no circumstances should dirt enter into the fuel line. Dirt in the fuel hose clogs the injector!

– Disconnect the quick-lock coupling.

Note

Remaining fuel may flow out of the fuel hose.

– Pull fuel screen ❷ out of the connecting piece.
– Slide the new fuel screen all the way into the connecting piece.
– Spray silicone spray onto a lint-free cleaning cloth and lightly lubricate the O-ring of the quick-lock coupling.

Silicone spray (p. 180)

– Join quick release coupling ❶.

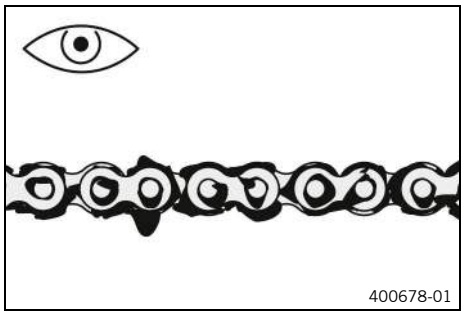
DANGER

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 the response.

12.31 Checking the chain for dirt



– Check the chain for coarse dirt accumulation.
  » If the chain is very dirty:
    – Clean the chain. (p. 87)

12.32 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.

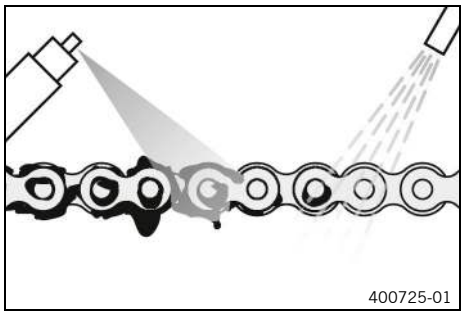
Note

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

Preparatory work

– Raise the motorcycle with a lift stand. (p. 62)

Main work



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

Chain cleaner (p. 182)

– After drying, apply chain spray.

Off-road chain spray (p. 179)

Reworking

– Remove the motorcycle from the lift stand. (p. 62)

12.33 Checking the chain tension

WARNING

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

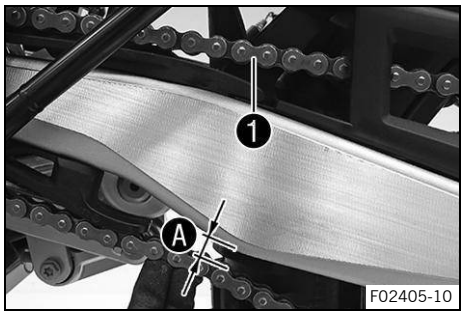
If the chain is tension is too high, the chain, front sprocket, rear sprocket, transmission, and rear wheel bearings wear more quickly. Some components may break if overloaded.

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 a lift stand. (p. 62)



Main work

– Push the chain upward at the end of the chain sliding guard to measure chain tension A.

Chain tension	7 mm (0.28 in)

Note

The top part of chain 1 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. 88)

Reworking

– Remove the motorcycle from the lift stand. (p. 62)

12.34 Adjusting the chain tension

WARNING

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

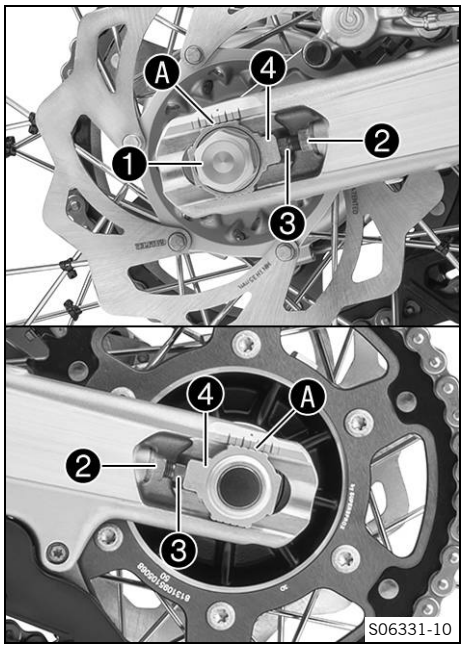
If the chain is tension is too high, the chain, front sprocket, rear sprocket, transmission, and rear wheel bearings wear more quickly. Some components may break if overloaded.

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 a lift stand. (p. 62)



Main work

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

Chain tension	7 mm (0.28 in)
Turn adjusting screws ❸ on the left and right so that the markings on the left and right chain tension adjusters are in the same position relative to reference marks Ⓐ. The rear wheel is then correctly aligned.	

Note
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 tension 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$_f$)

Note
The wide adjustment range of the chain adjusters enables different secondary ratios with the same chain length.
Chain tension adjusters ❹ can be turned by 180°.

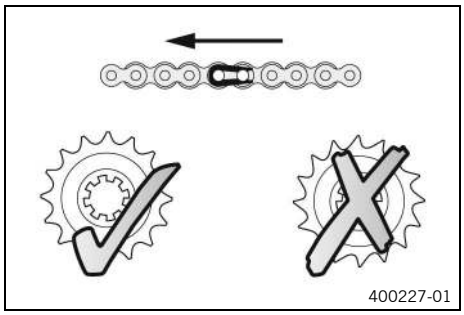
Reworking

– Remove the motorcycle from the lift stand. (p. 62)

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

Preparatory work

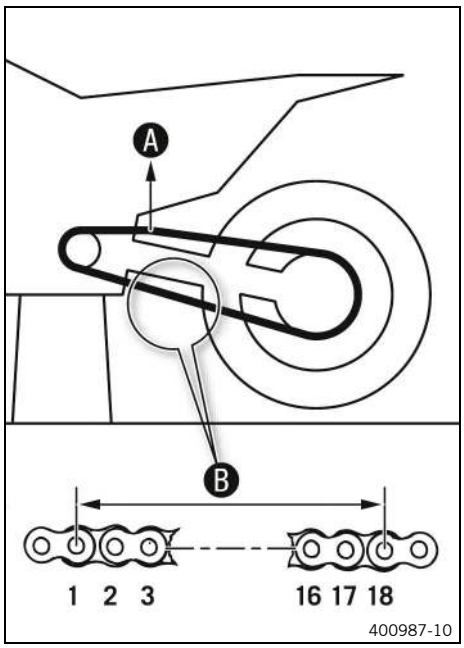
– Raise the motorcycle with a lift stand. (p. 62)



Main work

– Shift the transmission into the neutral position.
– Check the chain, rear sprocket, and front sprocket for wear.
  » If the chain, rear sprocket, or front sprocket is worn:
    – Change the drivetrain kit.

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



– Pull on the top section of the chain with the specified weight Ⓐ.

Weight, chain wear measurement	10 kg ... 15 kg (22.0 lb ... 33.1 lb)

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

Maximum distance Ⓑ 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.	

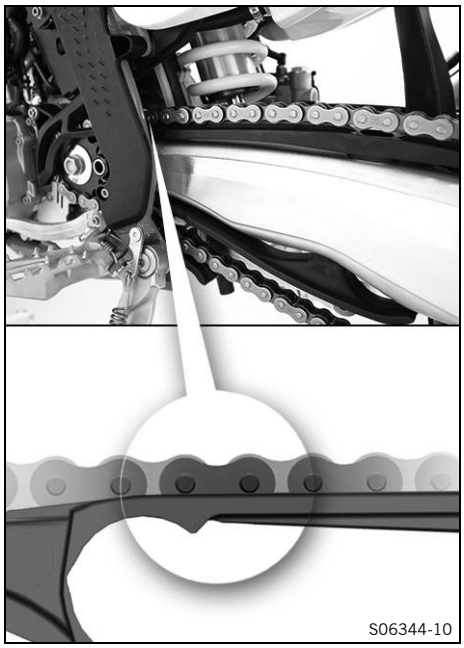
» If distance Ⓑ is greater than the specified measurement:

– 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.



– Check the chain slider at the top for wear.

» If the lower edge of the chain pins is in line with, or below, the chain slider:

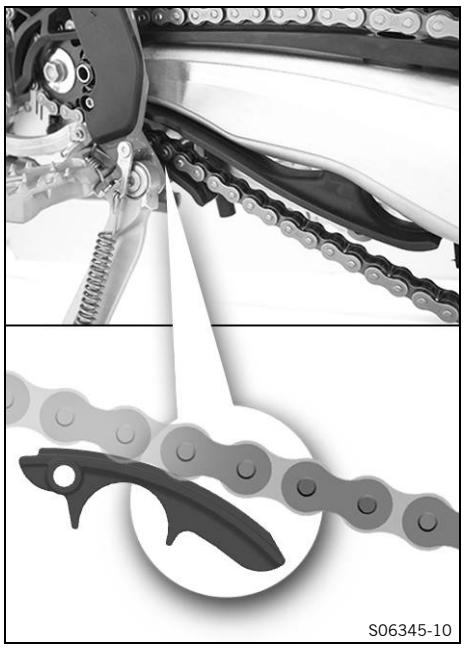
– Change the chain slider.

– Check that the chain slider is firmly seated.

» If the chain slider is loose:

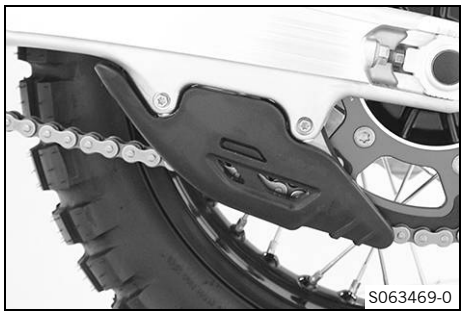
– Tighten the chain sliding guard.

Screw, chain slider guard	
M8	15 Nm (11.1 ft·lb$_f$) **Loctite® 243**



– Check the chain slider for wear.
  » If the lower edge of the chain pins is in line with or below the chain slider:
    – Change the chain slider.
– Check that the chain slider is firmly seated.
  » If the chain slider is loose:
    – Tighten the chain sliding piece.

Screw, chain slider	
M8	15 Nm (11.1 ft·lb$_f$)



– Check the chain guide for wear.

Note
Wear can be seen on the front of the chain guide.

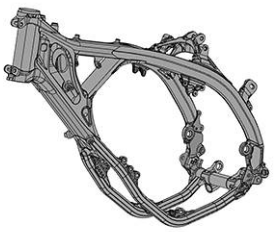
  » If the chain guide is worn:
    – Change the chain guide.
– Check that the chain guide is firmly seated.
  » If the chain guide is loose:
    – Tighten the chain guide.

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

Reworking

– Remove the motorcycle from the lift stand. (p. 62)

12.36 Checking the frame


S06342-01

– 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.

12.37 Checking the swingarm


L03161-10

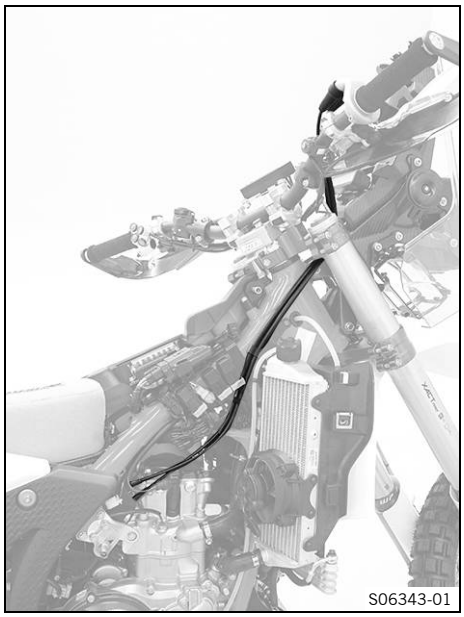
– Check the swingarm for damage, cracks, and deformation.
  » If the swingarm shows signs of damage, cracks, or deformation:
  – Change the swingarm.

Note
Repairs on the swingarm are not permitted.

12.38 Checking the throttle cable routing

WARNING
Danger of accidents The throttle cable can become kinked, jammed, or blocked if it has been routed incorrectly.
If the throttle cable is kinked, jammed or blocked, the speed can no longer be controlled.
– Make sure that the throttle cable routing and the play in the throttle cable complies with the specification.

Preparatory work
– Remove the seat. (p. 76)
– Remove the skid plate. (p. 97)
– Remove front right fuel tank. (p. 82)



Main work

– Check the throttle cable routing.

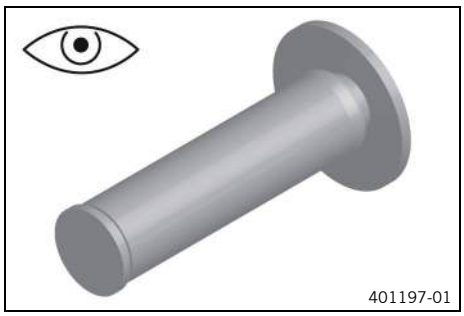
Both throttle cables must be routed side-by-side behind the handlebars and between the right fork leg and frame toward the throttle valve body.

» If the throttle cable routing is not as specified:
– Correct the throttle cable routing.

Reworking

– Install the front right fuel tank. (p. 85)
– Install the skid plate. (p. 98)
– Mount the seat. (p. 77)

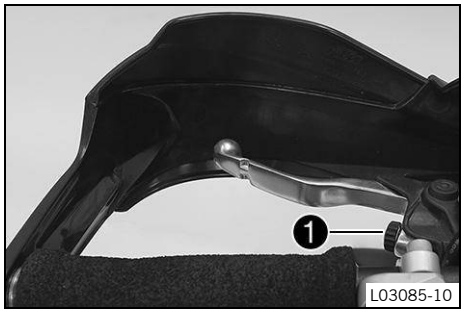
12.39 Checking the hand grip



– Check the hand grips on the handlebar for damage, wear, and that they are firmly seated.
» If a rubber grip is damaged, worn, or loose:
– Change and secure the rubber grip.

Rubber grip adhesive (00062030051)

12.40 Adjusting the basic position of the clutch lever



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

Note

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

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

The range of adjustment is limited.

Only turn the adjusting screw by hand, and do not use force.

Do not make any adjustments while riding.

12.41 Checking/correcting the fluid level of hydraulic clutch

WARNING

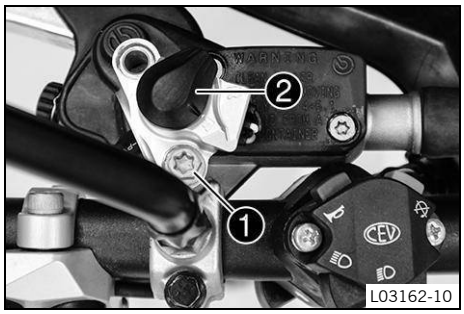
Health hazard Brake fluid is a harmful substance.

– 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.

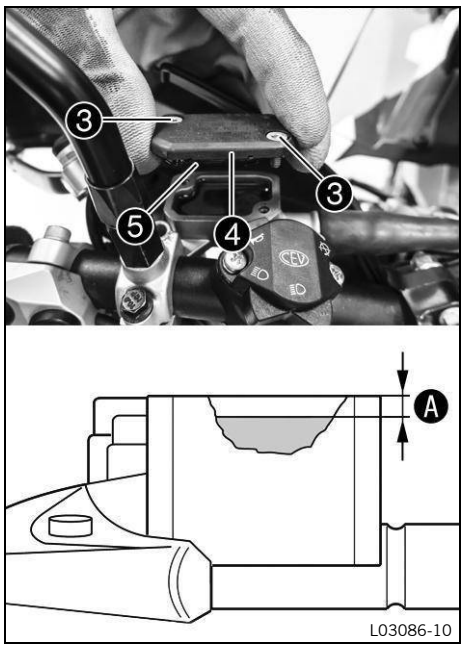
Note

The fluid level rises with increasing wear of the friction plates.

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



– Remove screw ❶.
– Take off fuel pump controller ❷ and hang to the side.



– Move the hydraulic clutch fluid reservoir mounted on the handlebar into a horizontal position.
– Remove ❸ screws.
– Take off cover ❹ with diaphragm ❺.
– Check the fluid level.

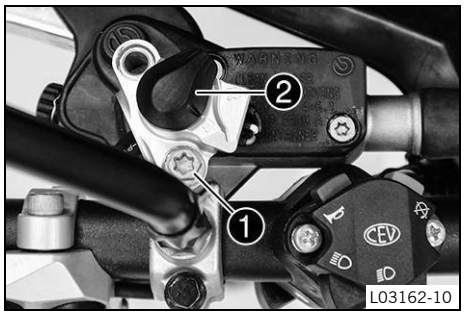
Fluid level Ⓐ below container rim	4 mm (0.16 in)

» If the level of the fluid does not meet specifications:
– Correct the fluid level of the hydraulic clutch.

Brake fluid DOT 5.1 (p. 180)

– Position cover ❹ with diaphragm ❺. Mount and tighten screws ❸.

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



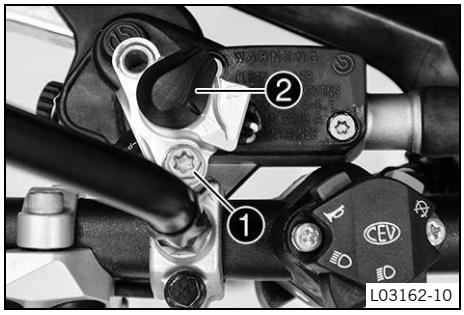
– Position fuel pump controller ❷.
– Mount and tighten screw ❶.

12.42 Changing the hydraulic clutch fluid

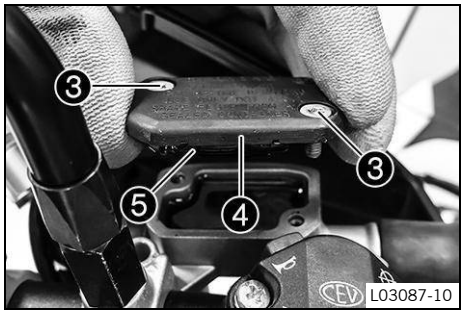
WARNING
Health hazard Brake fluid is a harmful substance.
– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes, or clothing.
– Consult a doctor immediately if brake fluid has been 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.

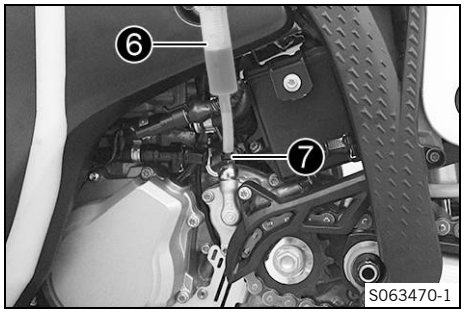
Note
Avoid contact between brake fluid and painted parts. Brake fluid corrodes paint.



– Remove screw ❶.
– Take off fuel pump controller ❷ and hang to the side.



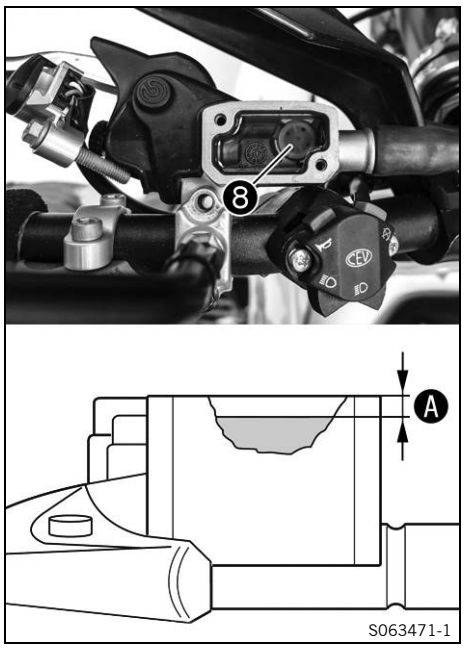
– Move the hydraulic clutch fluid reservoir mounted on the handlebar into a horizontal position.
– Remove ❸ screws.
– Take off cover ❹ with diaphragm ❺.



– Fill bleeding syringe ❻ with the appropriate hydraulic fluid.

Syringe (50329050000)
Brake fluid DOT 5.1 (p. 180)

– On the slave cylinder, open bleed screw ❼ and mount bleeding syringe ❻.

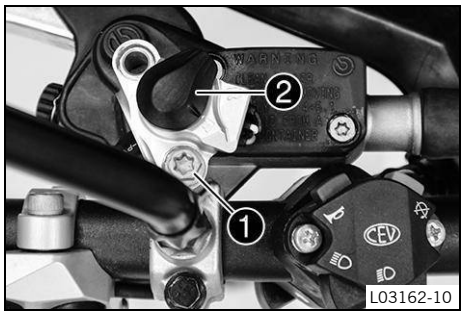


– Now inject fluid into the system until it escapes from the openings ❽ of the master cylinder without bubbles.
– Occasionally extract the fluid from the master cylinder reservoir to prevent overflowing.
– Remove bleeding syringe ❻. Close bleed screw ❼.
– Correct the fluid level of the hydraulic clutch.

Fluid level Ⓐ below container rim	4 mm (0.16 in)

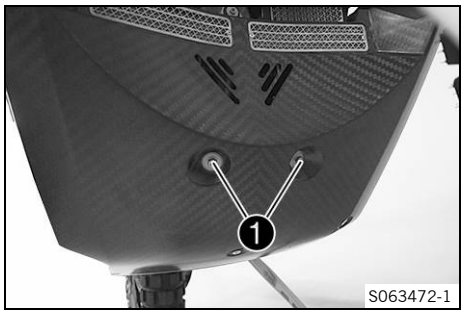
– Position cover ❹ with diaphragm ❺. Mount and tighten screws ❸.

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



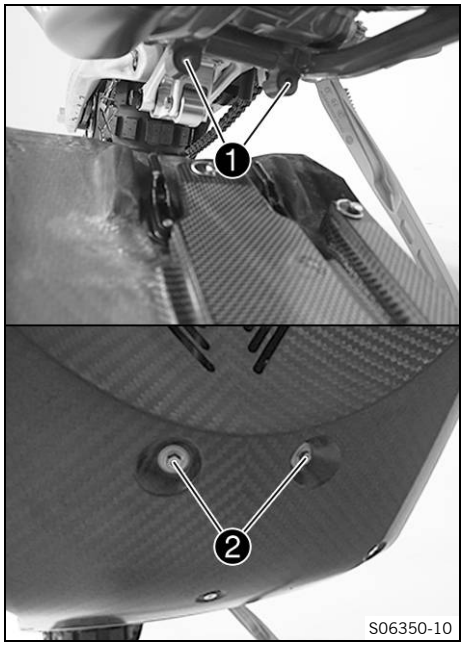
– Position fuel pump controller ❷.
– Mount and tighten screw ❶.

12.43 Removing the skid plate



– Remove ❶ screws. Take off the engine guard to the front.

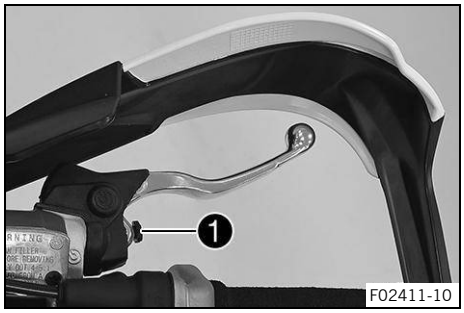
12.44 Installing the skid plate



– Slide the engine guard into holders ❶ at the rear.
– Mount and tighten screws ❷.

Screw, engine guard	
M8	25 Nm (18.4 ft·lb$_f$)

13.1 Adjusting the basic position of the hand brake lever



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

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.

Only turn the adjusting screw by hand, and do not use force.

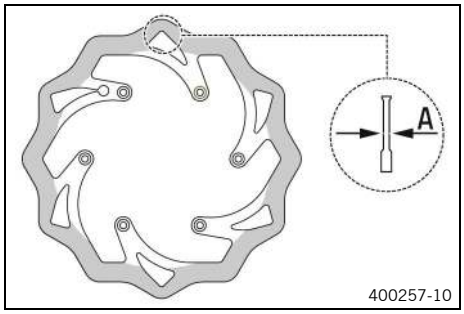
Do not make any adjustments while riding.

13.2 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	3.6 mm (0.142 in)
rear	3.5 mm (0.138 in)

Note

Wear reduces the thickness of the brake discs at the contact surface of the brake pads.

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

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

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

13.3 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.

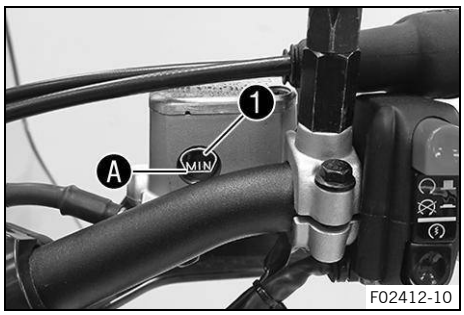
– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule.
– Make sure that only clean, approved brake fluid from a tightly sealed container is used.

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 the brake fluid level in sight glass 1.
  » If the brake fluid level has dropped below the **MIN** marking A:
    – Add brake fluid for the front brake. (p. 100)

13.4 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.

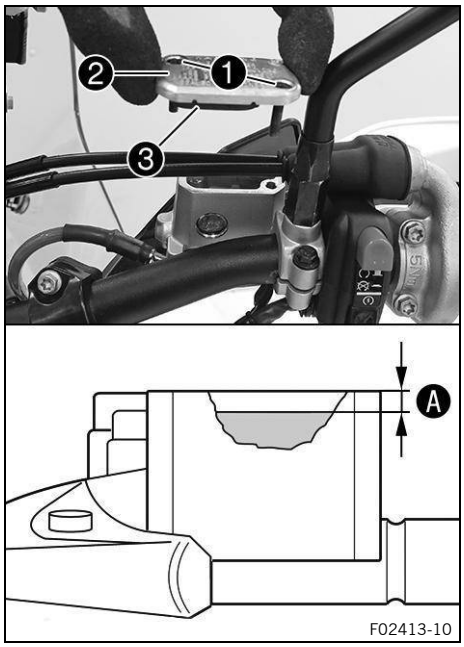
NOTE

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.



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

Level Ⓐ	5 mm (0.20 in)

Brake fluid DOT 5.1 (p. 180)

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

Note

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

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

WARNING

Danger of accidents Worn brake pads reduce the brake action.

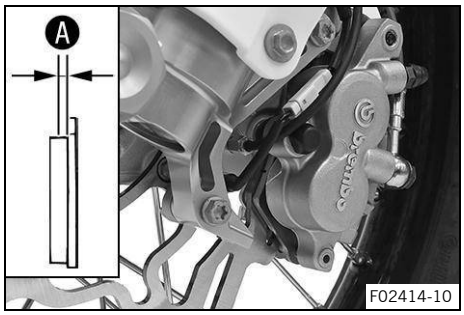
– Make sure that worn brake pads are replaced immediately.

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 minimum thickness Ⓐ.

Minimum pad thickness Ⓐ	≥ 1 mm (≥ 0.04 in)

» If the minimum thickness is less than specified:
  – Change the front brake pads. (p. 102)
– Check the brake linings for damage and cracking.
» If damage or wear is encountered:
  – Change the front brake pads. (p. 102)

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

13.6 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.

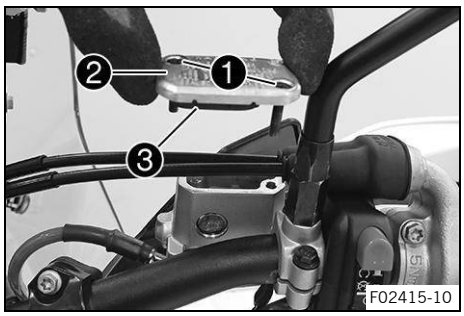
WARNING
Danger of accidents Brake fluid which is too old or of the wrong type impairs the function of the brake system.
– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule.
– Make sure that only clean, approved brake fluid from a tightly sealed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

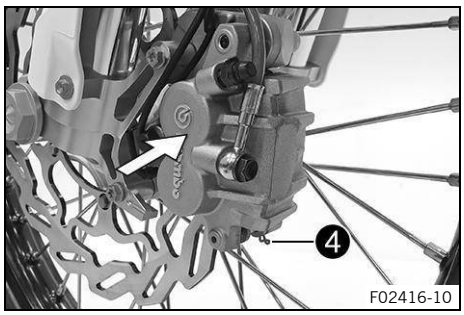
WARNING
Health hazard Brake fluid is a harmful substance.
– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes, or clothing.
– Consult a doctor immediately if brake fluid has been 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.



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



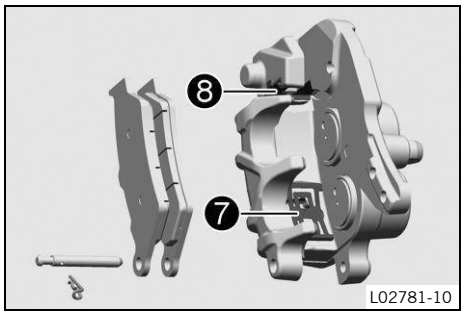
– Manually press the brake caliper toward the brake disc to push back the brake pistons. Ensure that brake fluid does not flow out of the brake fluid reservoir; extract some if necessary.

Note
Make sure that you do not press the brake caliper against the spokes when pushing back the brake pistons.

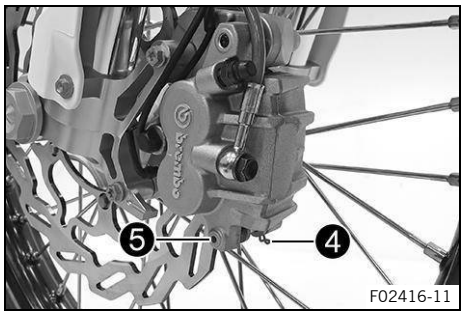
– Remove cotter pin ❹.



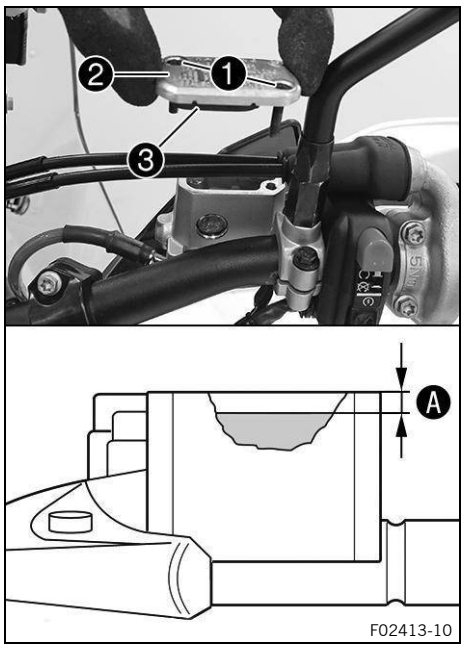
– Drive out pin ❺ with drift ❻ toward rim and remove brake linings.



– Clean brake caliper and brake caliper support.
– Check that spring steel clip ❼ in the brake caliper and brake pad guide plate ❽ in the brake caliper support are properly seated.



– Insert the new brake linings, insert pin ❺, and mount cotter pin ❹.



– 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 to level Ⓐ.

Level Ⓐ	5 mm (0.20 in)

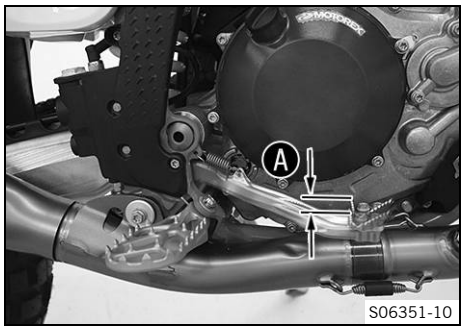
Brake fluid DOT 5.1 (p. 180)

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

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

13.7 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.



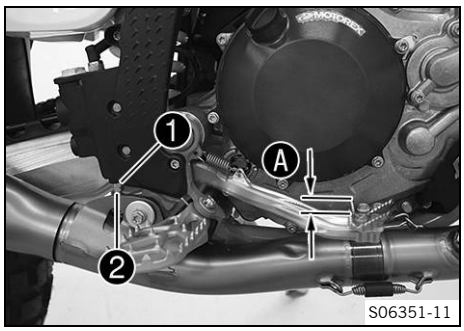
– Detach the spring from the foot brake lever.
– Move the brake pedal back and forth between the end stop and the brake pedal cylinder piston actuation and check free travel Ⓐ.

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. 104)
– Attach the spring to the foot brake lever.

13.8 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 screw ❷ to adjust free travel Ⓐ.

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

– Hold screw ❷ and tighten nut ❶.

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

13.9 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.

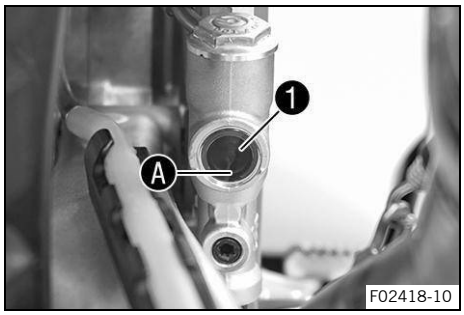
– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule.
– Make sure that only clean, approved brake fluid from a tightly sealed container is used.

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 sight glass ❶.
  » If the brake fluid level has fallen below marking Ⓐ:
    – Add brake fluid for the rear brake. (p. 105)

13.10 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.

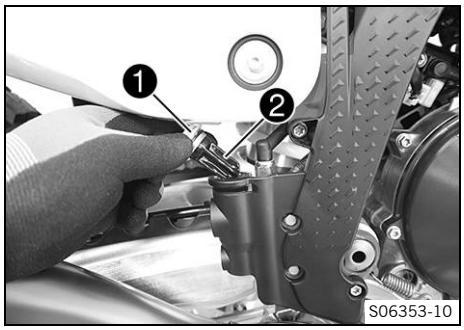
NOTE

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.



– Stand the vehicle upright.
– Remove screw cap 1 with the washer and membrane 2.
– Add brake fluid to the marking on the inside of the compensating tank.

Brake fluid DOT 5.1 (p. 180)

– Mount the screw cover with washer and the membrane.

Note

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

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

WARNING

Danger of accidents Worn brake pads reduce the brake action.

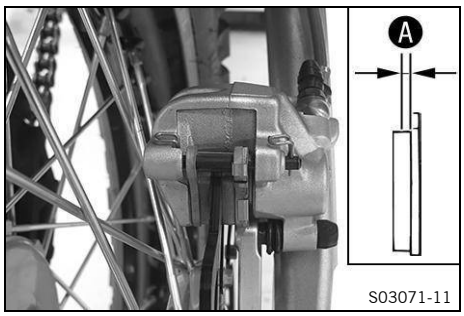
– Make sure that worn brake pads are replaced immediately.

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 minimum thickness Ⓐ.

Minimum pad thickness Ⓐ	≥ 1 mm (≥ 0.04 in)

» If the minimum thickness is less than specified:
– Change the rear brake pads. (p. 107)

– Check the brake linings for damage and cracking.
» If damage or wear is encountered:
– Change the rear brake pads. (p. 107)

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

13.12 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.

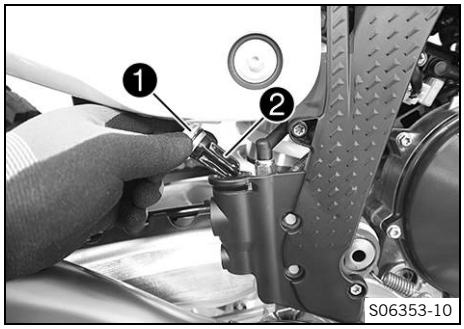
WARNING
Danger of accidents Brake fluid which is too old or of the wrong type impairs the function of the brake system.
– Make sure that brake fluid for the front and rear brake is changed in accordance with the service schedule.
– Make sure that only clean, approved brake fluid from a tightly sealed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

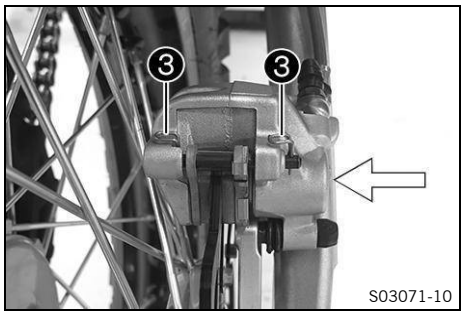
WARNING
Health hazard Brake fluid is a harmful substance.
– Keep brake fluid out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Do not allow brake fluid to come into contact with the skin, the eyes, or clothing.
– Consult a doctor immediately if brake fluid has been 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.



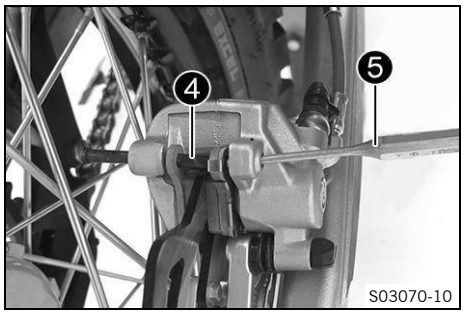
– Stand the vehicle upright.
– Remove screw cap ❶ with the washer and membrane ❷.



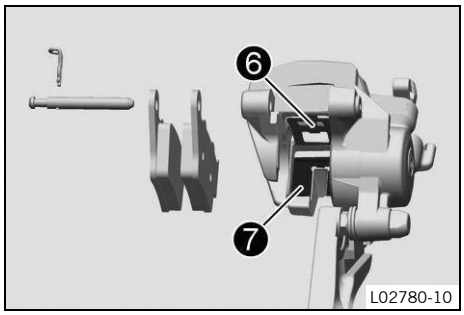
– Manually press the brake caliper toward the brake disc to push back the brake pistons. Ensure that brake fluid does not flow out of the brake fluid reservoir; extract some if necessary.

Note
Make sure that you do not press the brake caliper against the spokes when pushing back the brake pistons.

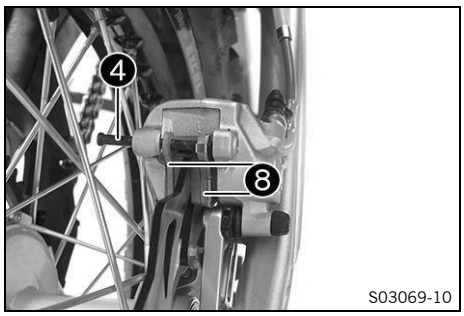
– Remove cotter pin ❸.



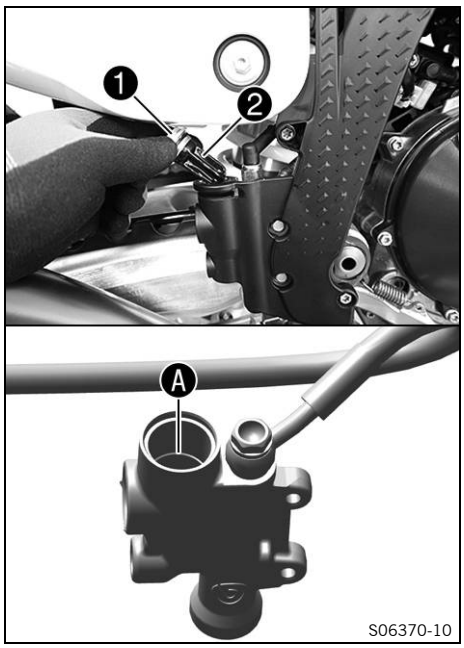
– Drive out pin ❹ with drift ❺ toward rim and remove brake linings.



– Clean brake caliper and brake caliper support.
– Check that spring steel clip ❻ in the brake caliper and brake pad guide plate ❼ in the brake caliper support are properly seated.



– Insert new brake linings ❽, insert pin ❹, and mount cotter pin.



– Actuate the brake disc repeatedly until the brake pads are in contact with the brake disc and a pressure point is achieved.
– Correct the brake fluid level to mark Ⓐ.

Brake fluid DOT 5.1 (p. 180)

– Mount and tighten screw cap ❶ with membrane ❷ and the shim.

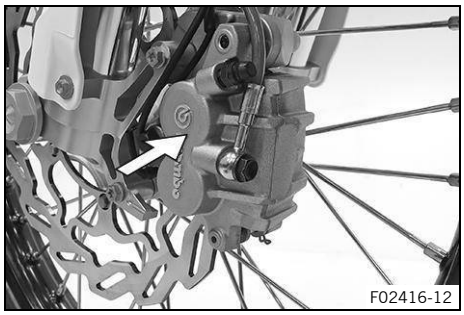
Note
Immediately clean up any brake fluid that has overflowed or spilled with water.

14.1 Removing the front wheel

Preparatory work

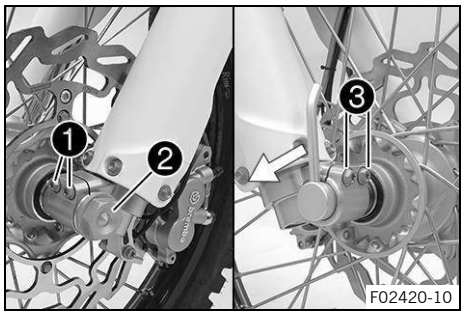
– Raise the motorcycle with a lift stand. (p. 62)

Main work


F02416-12

– Manually press the brake caliper toward the brake disc to push back the brake pistons.

Note
Make sure that you do not press the brake caliper against the spokes when pushing back the brake pistons.



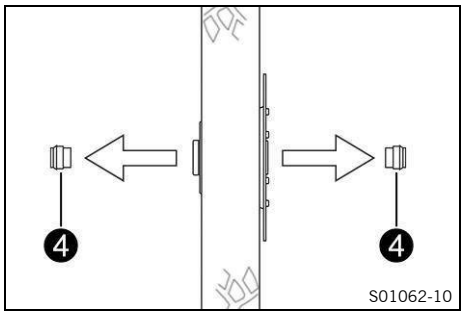
F02420-10

– Loosen screws ❶.
– Remove screw ❷.
– Loosen screws ❸.

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.

Note
Do not actuate the hand brake lever when the front wheel is removed.



S01062-10

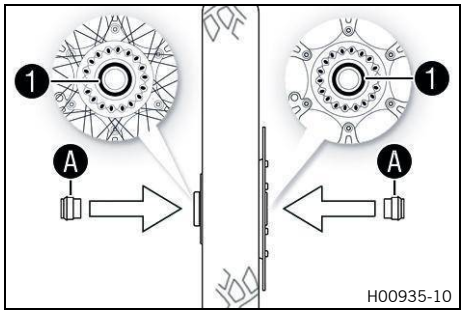
– Remove spacers ❹.

14.2 Installing the front wheel

WARNING

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

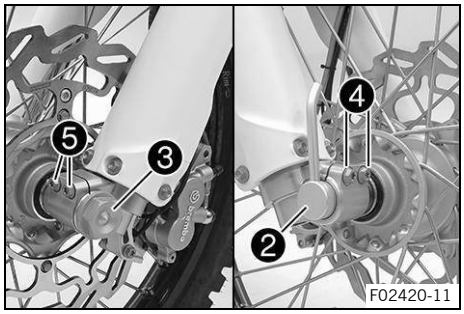
– Always keep the brake discs free of oil, fat and wax.
– Clean the brake discs with brake cleaner when necessary.



– Check the wheel bearing for damage and wear.
  » If the wheel bearings are damaged or worn:
    – Change the wheel bearing.
– Clean and grease radial shaft seal 1 and contact surfaces A on the spacers. Clean and grease the radial shaft seal rings and the contact surface of the wheel spindle.

Long-life grease (p. 179)

– Insert spacers.



– Position front wheel and insert wheel spindle 2.
  ✓ The brake pads are positioned correctly.
– Mount and tighten screw 3.

Screw, wheel spindle, front	
M24×1.5	50 Nm (36.9 ft·lb$_f$)

Make sure that the handle of the wheel spindle does not touch the right fork leg.

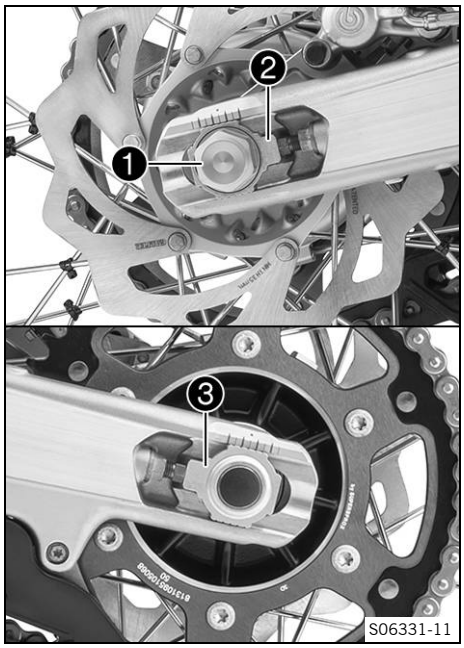
– Operate the hand brake lever several times until the brake pads are in contact with the brake disc.
– Remove the motorcycle from the lift stand. (p. 62)
– Operate the front brake and compress the fork a few times firmly.
  ✓ The fork legs straighten.
– Tighten screws 4 and 5.

Screw, fork shoe	
M8	15 Nm (11.1 ft·lb$_f$)

14.3 Removing the rear wheel

Preparatory work

– Raise the motorcycle with a lift stand. (p. 62)



Main work

– Manually press the brake caliper toward the brake disc to push back the brake pistons.

Note
Make sure that you do not press the brake caliper against the spokes when pushing back the brake pistons.

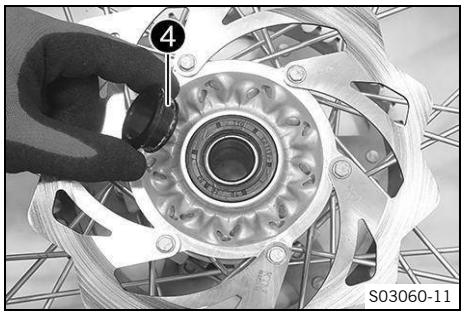
– Remove nut ❶.
– Remove chain tension adjuster ❷.
– Pull out wheel spindle ❸ far enough to allow the rear wheel to be pushed forward.
– Push the rear wheel forward as far as possible. Remove the chain from the rear sprocket.

Note
Protect the components against damage by covering them.

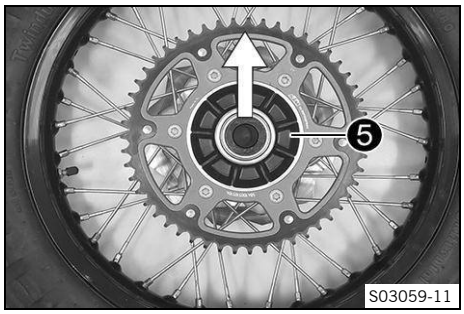
WARNING
Danger of accidents Damaged brake discs reduce the braking action.
– Always lay the wheel down in such a way that the brake disc is not damaged.

– Hold the rear wheel and remove wheel spindle ❸. Take the rear wheel out of the swingarm.

Note
Do not actuate the brake pedal when the rear wheel is removed.



– Remove spacer ❹.



– Remove rear sprocket carrier ❺.

14.4 Installing the rear wheel

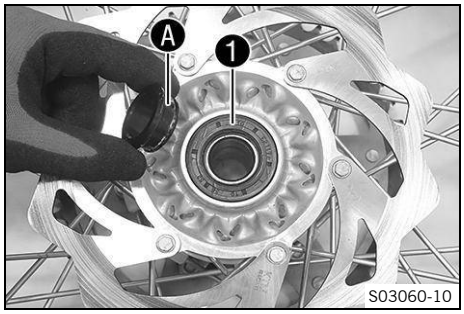
WARNING

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.

Main work

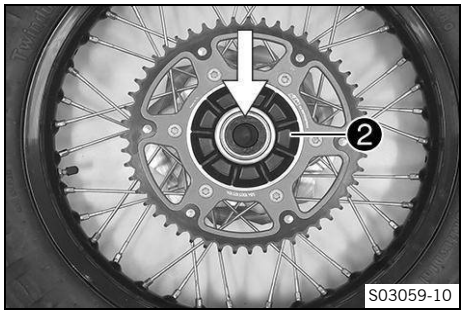
– Check the rear hub damping rubber pieces. (p. 114)



– Check the wheel bearing for damage and wear.
  » If the wheel bearings are damaged or worn:
    – Change the wheel bearing.
– Clean and grease shaft seal ring ❶ and contact surface Ⓐ of the spacer.

Long-life grease (p. 179)

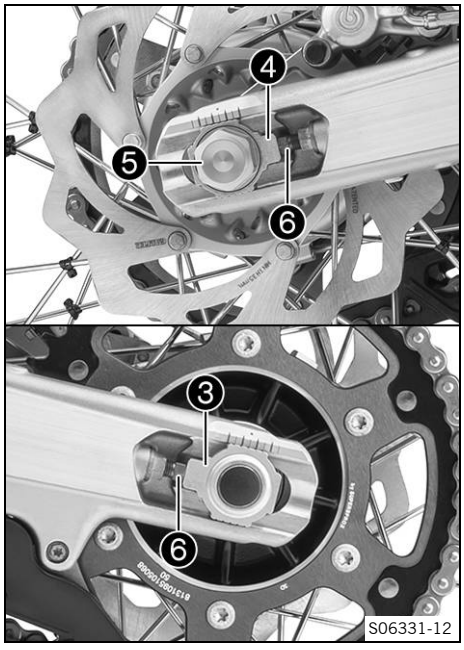
– Insert a spacer.



– Clean and grease the spacers of the rear sprocket carrier.

Long-life grease (p. 179)

– Insert rear sprocket carrier ❷ into the rear hub.



– Position rear wheel and insert wheel spindle ❸.
  ✓ The brake pads are positioned correctly.
– Attach the chain.
– Position chain adjuster ❹. Mount nut ❺, but do not tighten yet.
– Make sure that the chain adjusters are fitted correctly on the adjusting screws ❻.
– Check the chain tension. (p. 87)
– Tighten nut ❺.

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

Note

The wide adjustment range of the chain adjusters enables different secondary ratios with the same chain length.

Chain adjusters ❹ can be turned by 180°.

– 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 lift stand. (p. 62)

14.5 Checking the rear hub damping rubber pieces

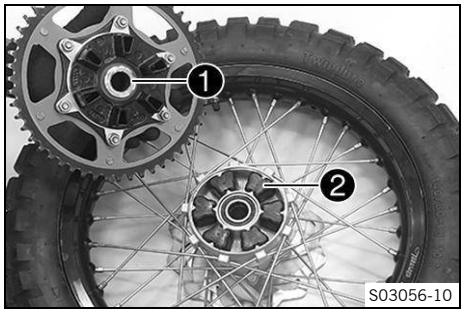
Note

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.

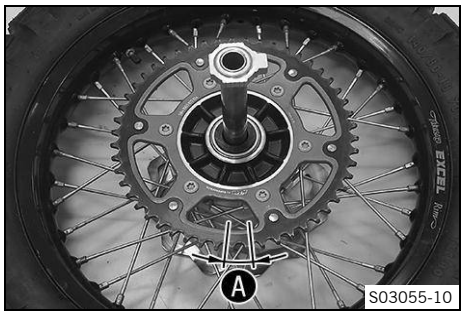
Preparatory work

– Raise the motorcycle with a lift stand. (p. 62)
– Remove the rear wheel. (p. 111)

Main work



– Check bearing 1.
  » If the bearing is damaged or worn:
    – Change the bearings.
– Check damping rubber pieces 2 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 upward and insert the wheel spindle in the hub.
– To check the play A, hold the rear wheel tight and try to rotate the rear sprocket.

Play of damping rubber pieces on rear wheel	≤ 5 mm (≤ 0.20 in)

Note

Measure the play on the outside of the rear sprocket.

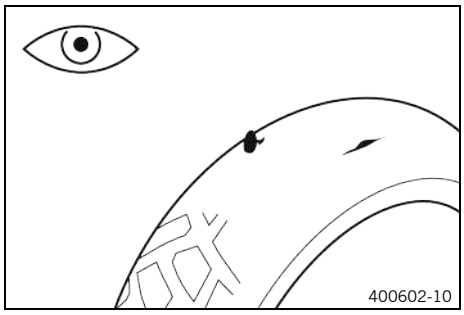
  » If clearance A is larger than the specified value:
    – Change all the damping rubber pieces of the rear hub.

Reworking

– Install the rear wheel. (p. 113)
– Remove the motorcycle from the lift stand. (p. 62)

14.6 Checking the tire condition

Note
Only mount tires approved and/or recommended by KTM.
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.

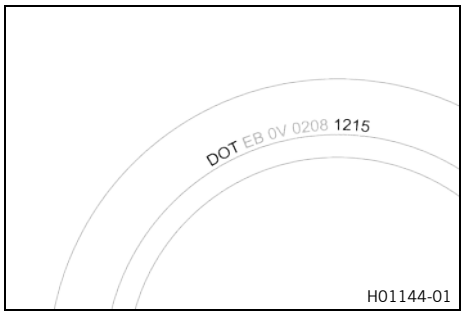


– Check the front and rear tires for cuts, embedded objects, and other damage.
  » If the tires have cuts, run-in objects, or other damage:
    – Change the tires.
– Check the tread depth.

Minimum tread depth	≥ 2 mm (≥ 0.08 in)

Note
Adhere to the legally required minimum tread depth specific to the country concerned.

  » If the tread depth is less than the minimum tread depth:
    – Change the tires.



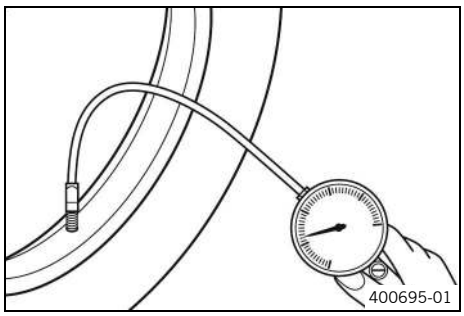
– Check the tire age.

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 five years at the latest, regardless of the actual wear.

  » If the tires are older than five years:
    – Change the tires.

14.7 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.

Off-road tire pressure	
front	1.0 bar ... 1.5 bar (14.5 psi ... 21.8 psi)
rear	1.0 bar ... 1.5 bar (14.5 psi ... 21.8 psi)

Street tire pressure	
front	2.0 bar (29.0 psi)
rear	2.0 bar (29.0 psi)

» If the tire pressure does not meet specifications:
  – Correct tire pressure.
– Mount the protection cap.

14.8 Checking the spoke tension

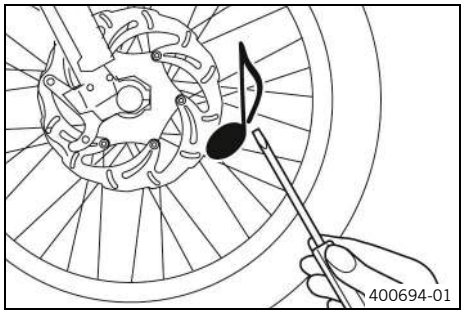
WARNING

Danger of accidents Incorrectly tensioned spokes impair the handling characteristic and can result in secondary damage.

If the spokes are too tight, they can break due to being overloaded.

Loose spokes can cause lateral or radial run-out in the wheel and other spokes will loosen as a result.

– Check the spoke tension regularly, especially on a new vehicle.



– Briefly tap each spoke with a screwdriver.

You should hear a high-pitched sound.

Note

The frequency of the sound depends on the spoke length and spoke diameter.

If you hear different pitches on different spokes of equal length and diameter, this is an indication of different spoke tensions.

» If the spoke tension differs:
  – Correct the spoke tension.
– Check the spoke torque.

Spoke nipple, front wheel	
M4,5	5 Nm ... 6 Nm (3.7 ft·lb$_f$ ... 4.4 ft·lb$_f$)
Spoke nipple, rear wheel	
M5	5 Nm ... 6 Nm (3.7 ft·lb$_f$ ... 4.4 ft·lb$_f$)

Torque wrench kit (58429094000)

15.1 Removing the 12 V battery

WARNING

Risk of injury 12–V batteries contain harmful substances.

- Keep 12–V batteries out of the reach of children.
- Keep the battery away from sparks or open flames.
- Only charge batteries in well-ventilated rooms.
- Maintain a minimum distance from flammable materials when charging 12-V batteries.

Minimum distance	1 m (3 ft – 3 in)

- Do not charge deeply discharged 12– V batteries if the charge is already below the minimum voltage.

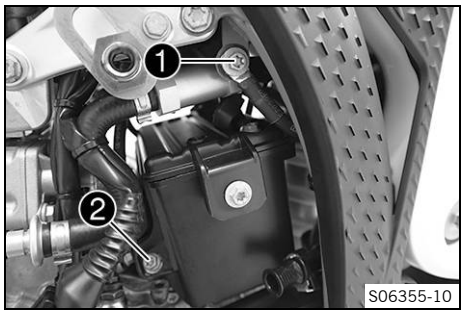
Minimum voltage before starting charging	9 V

- Dispose of 12 V batteries correctly if they have less than the minimum voltage.

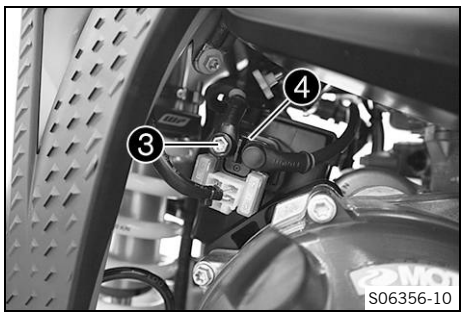
Preparatory work

- Remove the seat. (p. 76)
- Remove the skid plate. (p. 97)
- Remove front left fuel tank. (p. 81)

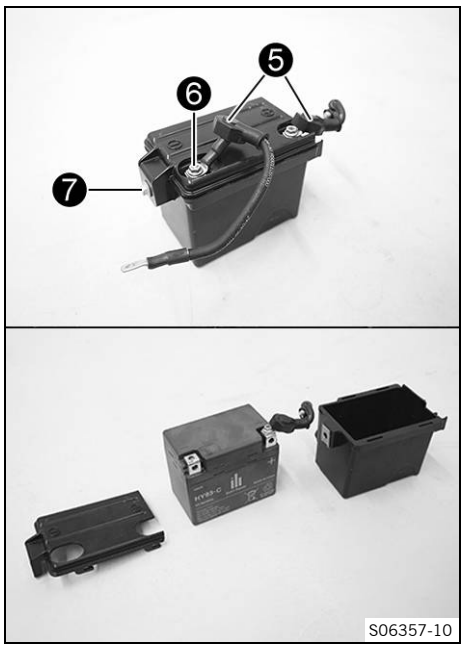
Main work



- Remove screw ❶ with the washer.
- Insulate the ground wire and hang it to the side.
- Remove screw ❷.

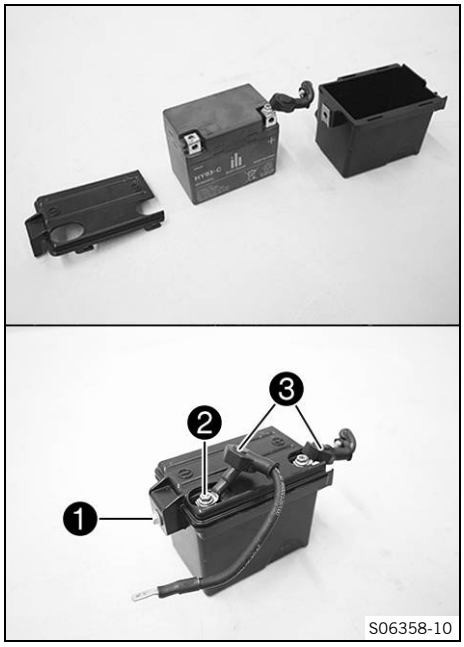


- Remove screw ❸ on starter relay.
- Disconnect positive cable from starter relay.
- Pull off starter relay ❹ from battery compartment.
- Pull out battery compartment on the left side of the motorcycle.



– Take off terminal covers ❺.
– Remove screw ❻ and take off negative cable.
– Remove screw ❼ and take off battery compartment cover.
– Lift out the 12 V battery.

15.2 Installing the 12 V battery



Main work

– Insert the 12 V battery into the battery compartment.

12-V battery (HY93-C)

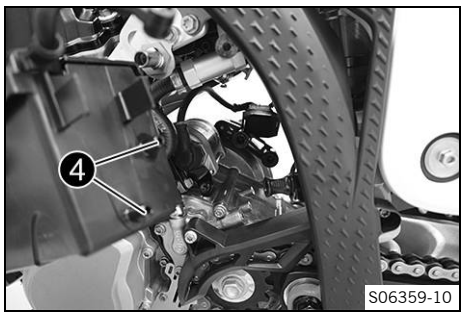
– Position battery compartment cover.
– Mount and tighten screw ❶.

Screw, battery compartment	
M6	8 Nm (5.9 ft·lb$_f$)

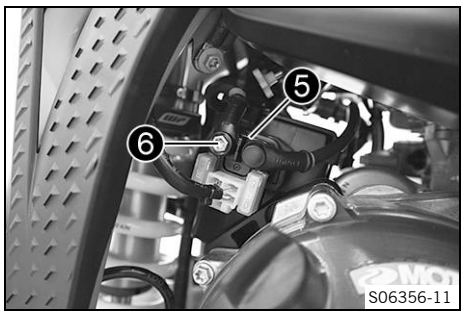
– Mount and tighten negative cable and screws ❷.

Screw, cable on 12 V battery	
M6	5 Nm (3.7 ft·lb$_f$)

– Mount terminal covers ❸.

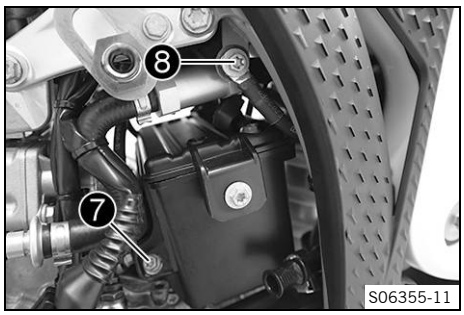


– Attach battery compartment to the bracket using the holding lugs ❹.



– Mount starter relay ❺ on the battery compartment.
– Position positive cable ❻ on starter relay and mount and tighten the screw.

Screw, cable on starter relay	
M6	5 Nm (3.7 ft·lb$_f$)



– Mount and tighten screw ❼.

Screw, battery compartment	
M6	8 Nm (5.9 ft·lb$_f$)

– Position the negative cable.
– Mount and tighten screw ❽.

Screw, cable on 12 V battery	
M6	5 Nm (3.7 ft·lb$_f$)

Reworking

– Install the front left fuel tank. 🔧 📖 (p. 84)
– Install the skid plate. 📖 (p. 98)
– Mount the seat. 📖 (p. 77)

15.3 Charging the 12 V battery 🔧

WARNING

Risk of injury 12–V batteries contain harmful substances.

– Keep 12–V batteries out of the reach of children.
– Keep the battery away from sparks or open flames.
– Only charge batteries in well-ventilated rooms.
– Maintain a minimum distance from flammable materials when charging 12-V batteries.

Minimum distance	1 m (3 ft – 3 in)

– Do not charge deeply discharged 12– V batteries if the charge is already below the minimum voltage.

Minimum voltage before starting charging	9 V

– Dispose of 12 V batteries correctly if they have less than the minimum voltage.

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

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 or charging voltage are exceeded, the 12-V battery will be irreparably damaged.
If the 12-V battery is left in a discharged state for an extended period, it will become over-discharged and will be irreparably damaged.
The 12 V battery is maintenance-free.

Preparatory work

– Remove the seat. (p. 76)
– Disconnect the negative cable of the 12-V battery to avoid damage to the onboard electronics.

Main work


S06360-01

– Connect a charger to the 12 V battery. Switch the charger on.

Read the accompanying instructions.	
The charging current, charging voltage, and charging time must not be exceeded.	
Maximum charging voltage	14.4 V
Minimum charging voltage	3.0 A
Maximum charging time	12 H
Recharge the 12 V battery regularly when the motorcycle is not being used.	6 months
If the 12 V battery is depleted from starting the vehicle repeatedly, the battery must be charged immediately.	

Battery charger and tester (A54029974000)

Note

This charger tests whether the 12 V battery retains its voltage. It is also impossible to overcharge the 12 V battery with this charger. The charging time may be longer at low temperatures.

Note

These chargers are only suitable for lithium iron phosphate batteries.

– Switch off the charger after charging and disconnect from the 12 V battery.
– Connect the negative cable to the 12-V battery.

Reworking

– Mount the seat. (p. 77)

15.4 Changing the main fuse

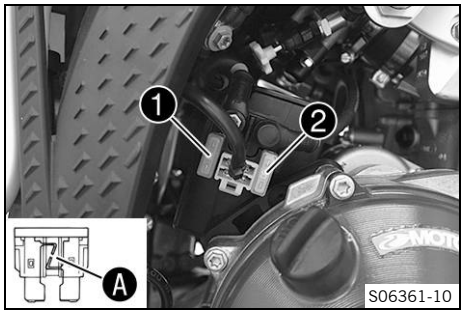
WARNING

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. It is located in the starter relay housing under the seat.



– Take off the protection cap and remove faulty main fuse ❶.
– Insert the main fuse.

Fuse (58011109130)

Note

Replace a faulty fuse Ⓐ by an equivalent fuse only.

A spare fuse ❷ is located in the starter relay.

– Check that the electrical equipment is functioning properly.

Tip

Insert a new spare fuse so that it is available if needed.

– Mount the protection caps.

15.5 Changing the fuses of individual electrical power consumers

Note

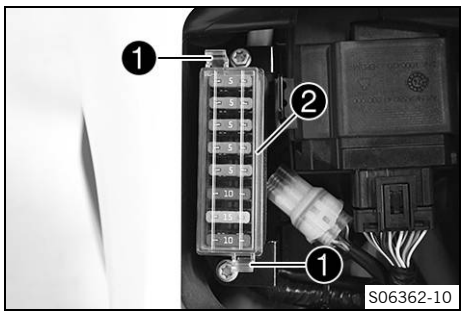
The fuse box containing the fuses of individual electrical power consumers is located under the seat.

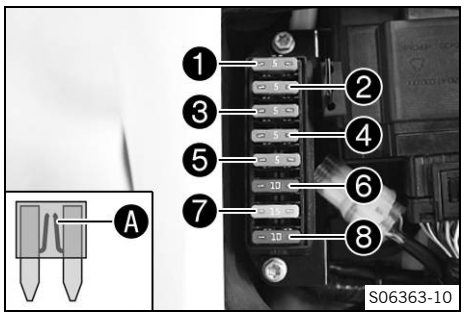
Preparatory work

– Remove the seat. (p. 76)

Main work

– Push on locks ❶ and take off fuse box cover ❷.





– Remove the faulty fuse.

Fuse **1** - 5 A - ICO Speedocap, turn signal, instrument
Fuse **2** - 5 A - roadbook
Fuse **3** - 5 A - Iritrack
Fuse **4** - 5 A - GPS
Fuse **5** - 5 A - brake light, coolant temperature indicator lamp, oil pressure warning lamp, horn
Fuse **6** - 10 A - high beam, low beam, position light, roadbook lighting, tail light
Fuse **7** - 15 A - radiator fan
Fuse **8** - 10 A - front fuel pump, rear fuel pump, diagnostics, EFI, lambda sensor heater, map switch, malfunction indicator lamp, fuel vapor valve

Note
A faulty fuse has a burned-out fuse wire Ⓐ.

WARNING
Fire hazard Incorrect fuses overload the electrical system.
– Use only fuses with the prescribed amperage.
– Do not bypass or repair fuses.

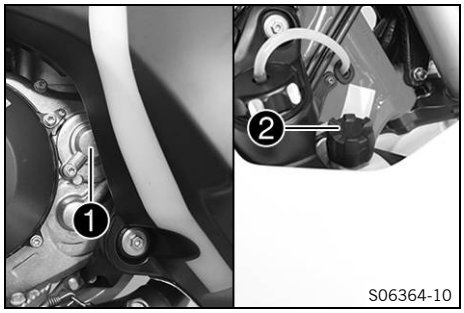
– Insert the spare fuse with the correct rating.

Fuse (75011088005)
Fuse (75011088010)
Fuse (75011088015)

– Check the function of the electrical power consumer.
– Close the fuse box cover.

Reworking
– Mount the seat. (p. 77)

16.1 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 coolant is cooled by the air stream.

The lower the vehicle speed, the lower the cooling effect. Dirty cooling fins also reduce the cooling effect.

Additional cooling is provided by the radiator fans, which are activated at high temperature.

16.2 Checking the frost protection and coolant level

WARNING

Health hazard Coolant is harmful to health.

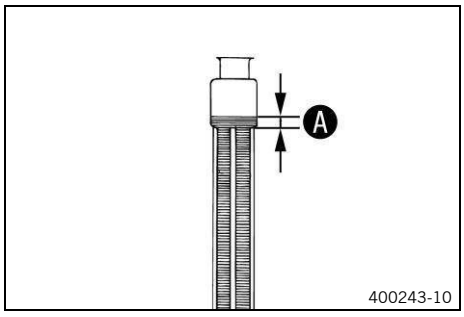
- Keep coolant out of the reach of children.
- Do not allow coolant to come into contact with skin, eyes, or clothing.
- Consult a doctor immediately if coolant has been ingested.
- Rinse the affected area immediately with plenty of water in the event of contact with skin.
- Rinse eyes thoroughly with 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



- Stand the motorcycle upright on a level surface.
- Take off the radiator cap.
- Check the frost protection in the coolant.

−45 °C ... −25 °C (−49.0 °F ... −13.0 °F)

  - » If the frost protection in the coolant does not match the specified value:
    - Correct the frost protection in the coolant.
- Check the coolant level in the radiator.

Coolant level Ⓐ above the radiator fins	10 mm (0.39 in)

» If the coolant level does not meet the specifications:
– Correct the coolant level.

coolant	
Coolant (p. 180) Antifreeze protection to at least: −25 °C (−13.0 °F)	1.0 l (0.26 liq. gal_{US})

– Mount the radiator cap.

16.3 Checking the coolant level

WARNING

Health hazard Coolant is harmful to health.

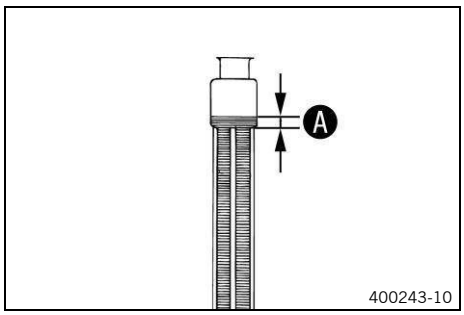
– Keep coolant out of the reach of children.
– Do not allow coolant to come into contact with skin, eyes, or clothing.
– Consult a doctor immediately if coolant has been ingested.
– Rinse the affected area immediately with plenty of water in the event of contact with skin.
– Rinse eyes thoroughly with 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



– Stand the motorcycle upright on a level surface.
– Take off the radiator cap.
– Check the coolant level in the radiator.

Coolant level A above the radiator fins	10 mm (0.39 in)

» If the coolant level does not meet the specifications:
– Correct the coolant level.

coolant	
Coolant (p. 180) Antifreeze protection to at least: −25 °C (−13.0 °F)	1.0 l (0.26 liq. gal_{US})

– Mount the radiator cap.

16.4 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.

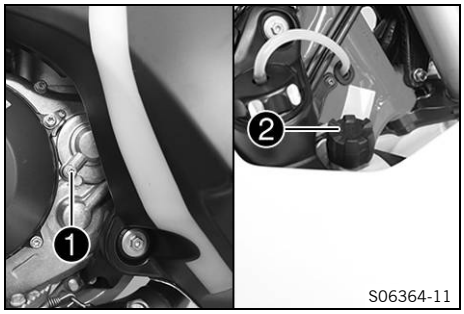
- Do not open the radiator, the radiator hoses, or other cooling system components if the engine or the cooling system are at operating temperature.
- Allow the cooling system and the engine to cool down before you open the radiator, the radiator hoses, or other components of the cooling system.
- In the event of scalding, rinse the area affected immediately with lukewarm water.

Condition: The engine is cold

Preparatory work

- Remove the skid plate. (p. 97)

Main work



- Stand the motorcycle upright.
- Place an appropriate container under the water pump cover.
- Remove screw ❶. Take off radiator cap ❷.
- Completely drain the coolant.
- Mount screw ❶ with the new sealing ring and tighten.

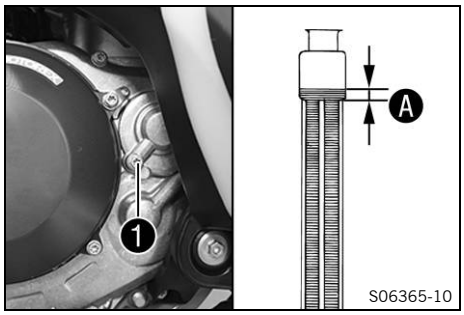
Screw, water pump cover	
M6	10 Nm (7.4 ft·lb$_f$)

16.5 Refilling 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.



Main work

– Make sure that screw ❶ is tightened.
– Stand the motorcycle upright.
– Pour coolant in up to level Ⓐ above the radiator fins.

Coolant level Ⓐ above the radiator fins	10 mm (0.39 in)

coolant	
Coolant (p. 180) Antifreeze protection to at least: −25 °C (−13.0 °F)	1.0 l (0.26 liq. gal_{US})

– Mount the radiator cap.

Reworking

– Install the skid plate. (p. 98)
– Go for a short test ride.
– Check the coolant level. (p. 124)

16.6 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

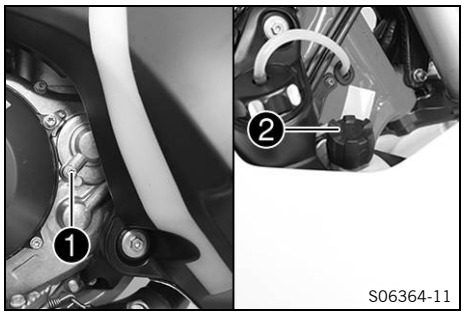
Danger of scalding The coolant heats up and is under high pressure when the vehicle is operated.

– 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

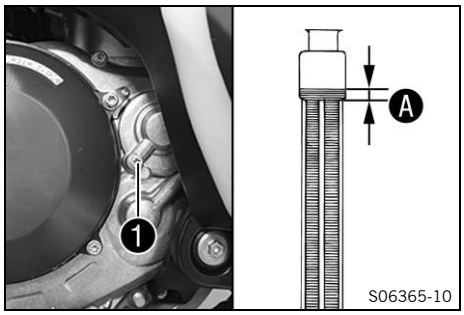
Preparatory work

– Remove the skid plate. (p. 97)



Main work

– Stand the motorcycle upright.
– Place an appropriate container under the water pump cover.
– Remove screw ❶. Take off radiator cap ❷.
– Completely drain the coolant.



– Mount screw ❶ with the new sealing ring and tighten.

Screw, water pump cover	
M6	10 Nm (7.4 ft·lb$_f$)

– Pour coolant in up to level Ⓐ above the radiator fins.

Distance Ⓐ above the radiator fins	10 mm (0.39 in)

coolant	
Coolant 📖 (p. 180) Antifreeze protection to at least: −25 °C (−13.0 °F)	1.0 l (0.26 liq. gal$_{US}$)

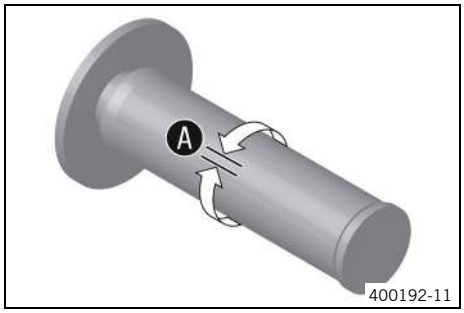
– Mount the radiator cap.
– Go for a short test ride.
– Check the coolant level. 📖 (p. 124)

Reworking

– Install the skid plate. 📖 (p. 98)

◀

17.1 Checking the play in the throttle cable



– Check the throttle grip for smooth operation.
– Move the handlebar to the straight-ahead position. Turn the throttle twist grip back and forth slightly and determine the play in throttle cable Ⓐ.

Throttle cable play	3 mm ... 5 mm (0.12 in ... 0.20 in)

» If the throttle cable play does not meet the specified value:
– Adjust the throttle cable play. (p. 128)

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 let it run at idle speed. Move the handlebar back and forth over the entire steering range.

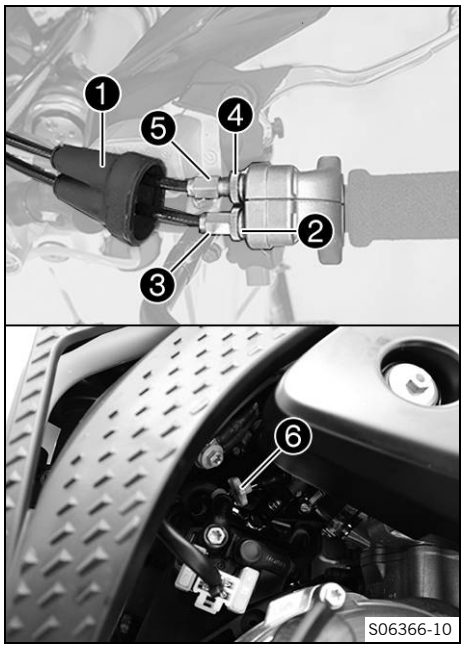
The idle speed must not change.

» If the idle speed changes:
– Adjust the throttle cable play. (p. 128)

17.2 Adjusting the throttle cable play

Note
If the correct routing of the throttle cables has already been secured, the fuel tank does not need to be removed.

Preparatory work
– Remove the seat. (p. 76)
– Remove the skid plate. (p. 97)
– Remove front right fuel tank. (p. 82)
– Check the throttle cable routing. (p. 92)



Main work

– Move the handlebar to the straight-ahead position.
– Push back boot ❶.
– Loosen nut ❷.
– Screw adjusting screw ❸ in as far as possible.
– Loosen nut ❹.
– Press cold start button ❻ all the way to the stop.
– Turn adjusting screw ❺ so that the cold start button moves to the basic position when the throttle twist grip is turned forward.
– Tighten nut ❹.
– Turn adjusting screw ❸ so that there is play in the throttle cable at the throttle twist grip.

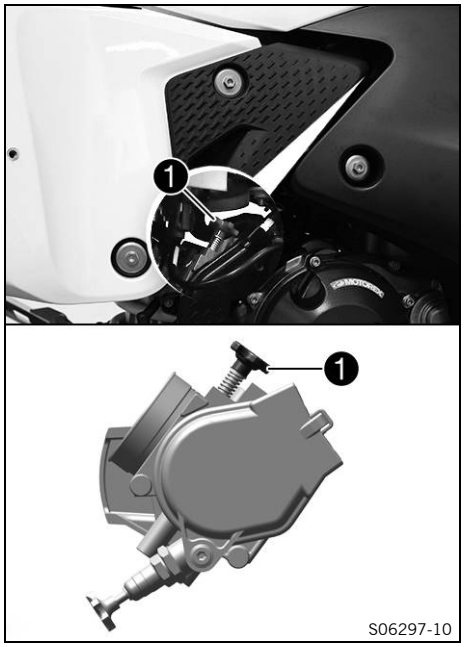
Throttle cable play	3 mm ... 5 mm (0.12 in ... 0.20 in)

– Tighten nut ❷.
– Slide on boot ❶.
– Check the throttle grip for smooth operation.

Reworking

– Install the front right fuel tank. (p. 85)
– Install the skid plate. (p. 98)
– Mount the seat. (p. 77)
– Check the play in the throttle cable. (p. 128)

17.3 adjusting the idle speed



– Run the engine until warm.
– Check whether the cold start button has returned to its basic position.

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.

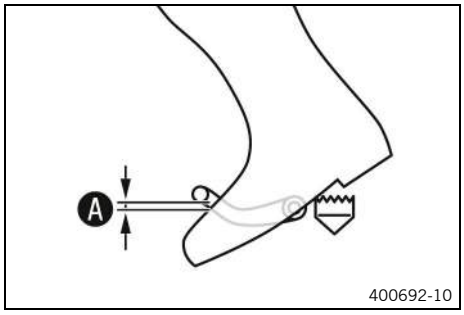
– Adjust the idle speed by turning idle speed adjusting screw ❶.

Make the adjustment in small steps.	
Idle speed	2,400 ±200 rpm (40.00 ±3.33 Hz)

Note
Turning counterclockwise lowers the idle speed.
Turning clockwise increases the idle speed.
An incorrect idle speed can have a negative impact on overall engine running.

17.4 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.
When the gear shift lever keeps touching the boot, the transmission will be subject to an excessive load.

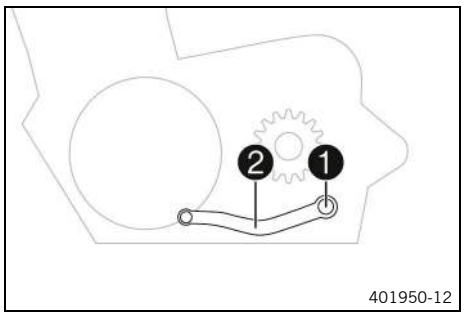


– Sit on the vehicle in the riding position and measure the distance Ⓐ between the upper edge of your boot and the shift lever.

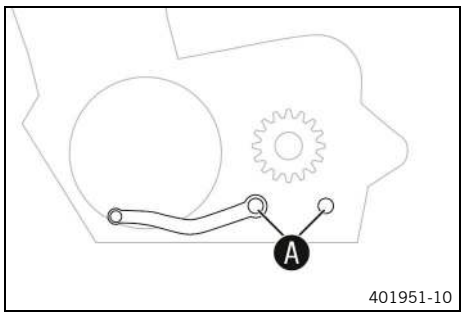
Distance between the gear shift lever and upper edge of boot	10 mm ... 20 mm (0.39 in ... 0.79 in)

» If the distance does not meet the specifications:
– Adjust the basic position of the gear shift lever. (p. 130)

17.5 Adjusting the basic position of the gear shift lever



– Remove screw ❶ with the washers and take off shift lever ❷.



– Clean gear teeth Ⓐ of the shift lever and shift shaft.
– Mount shift lever ❷ on the shift shaft in the required position and engage the gearing.

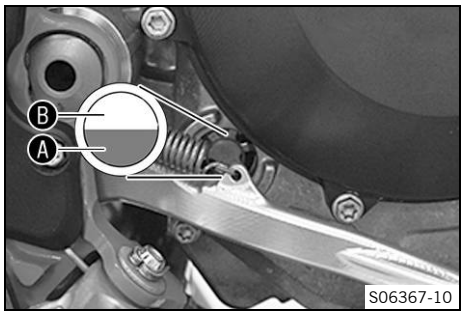
The gear shift lever must not come into contact with any other vehicle components during the shift procedure.

Note
The range of adjustment is limited.

– Mount and tighten screw ❶ with washers.

Screw, shift lever	
M6×16	14 Nm (10.3 ft·lb$_f$) **Loctite® 243**

18.1 Checking the engine oil level



Preparatory work

– Stand the motorcycle upright on a level surface.

Main work

Condition: The engine is at operating temperature

– Check the engine oil level.

The engine oil level is between Ⓐ and Ⓑ.
After switching off the engine, wait one minute before checking the level.

» When the engine oil level is below the Ⓐ marking:
  – Add engine oil. (p. 135)

» When the engine oil level is at or above the Ⓑ marking:
  – Correct the engine oil level.

18.2 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.

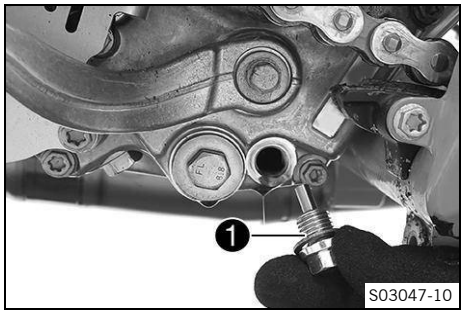
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc. correctly and in accordance with the applicable regulations.

Condition: Engine is at operating temperature

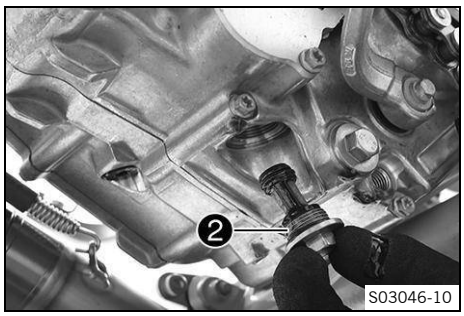
Preparatory work

– Remove the skid plate. (p. 97)
– Park the motorcycle on a level surface.

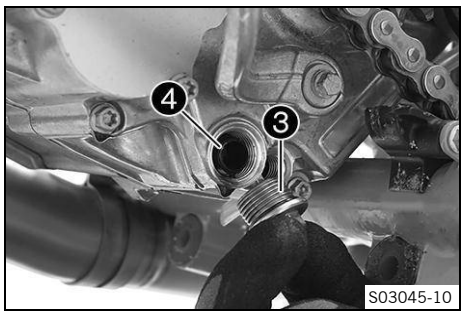
Main work



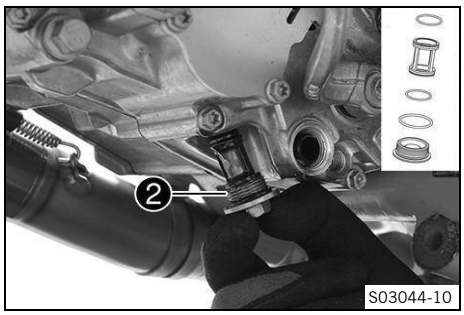
– Position an appropriate container under the engine.
– Remove oil drain plug ❶ with the magnet and seal ring.



– Remove screw plug ❷ with the short oil screen and the O-rings.

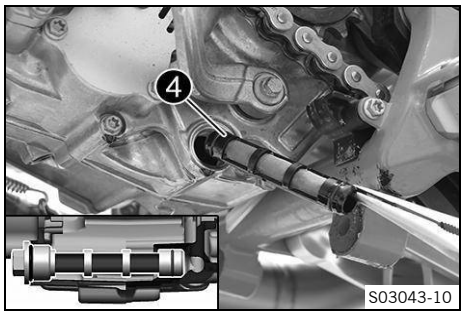


– Remove screw plug ❸ with long oil screen ❹ and the O-rings.
– Allow the engine oil to drain completely.
– Thoroughly clean the parts and the sealing surfaces.

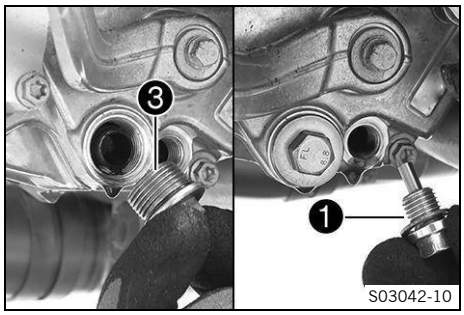


– Mount and tighten screw plug ❷ with the short oil screen and the O-rings.

Plug, oil screen	
M20×1.5	15 Nm (11.1 ft·lb$_f$)



– Position oil screen ❹ with the O-rings on a pin wrench.
– Position the pin wrench through the drill hole of the screw plug in the opposite section of the engine case.
– Push the oil screen all the way into the engine case.

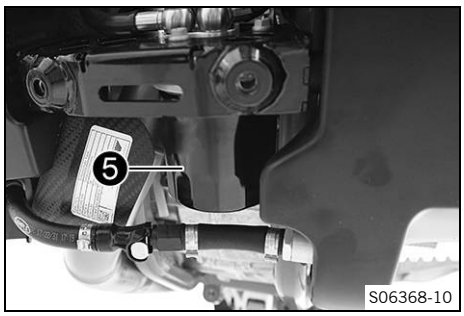


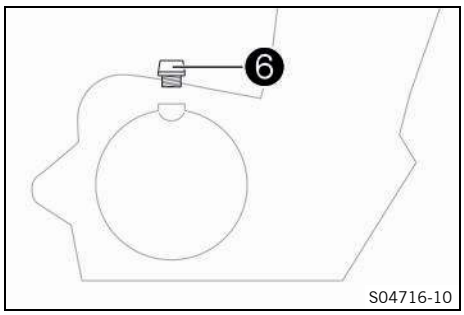
– Mount and tighten screw plug ❸ with O-ring.

Plug, oil screen	
M20×1.5	15 Nm (11.1 ft·lb$_f$)

– Mount and tighten oil drain plug ❶ with the magnet and a new seal ring.

Oil drain plug with magnet	
M12×1.5	20 Nm (14.8 ft·lb$_f$)





– Remove oil filter ❺.
– Allow the engine oil to drain completely.
– Grease the O-ring of the new oil filter.
– Fill oil filter with engine oil.
– Mount and tighten oil filter.

Oil filter screw connection	
	10 Nm (7.4 ft·lb$_f$)

– Remove oil plug ❻ from the clutch cover together with the O-ring, and fill up with engine oil.

engine oil	
engine oil (20W/60) 📖 (p. 179) fully synthetic	Condition: Total filling level, oil change 1.40 l (0.370 liq. gal$_{US}$)
	Condition: Total filling level, engine service (with oil radiator) 1.80 l (0.476 liq. gal$_{US}$)

Note
Too little engine oil or poor-quality engine oil will result in premature wear of the engine.

– Mount and tighten the oil plug together with the O-ring.

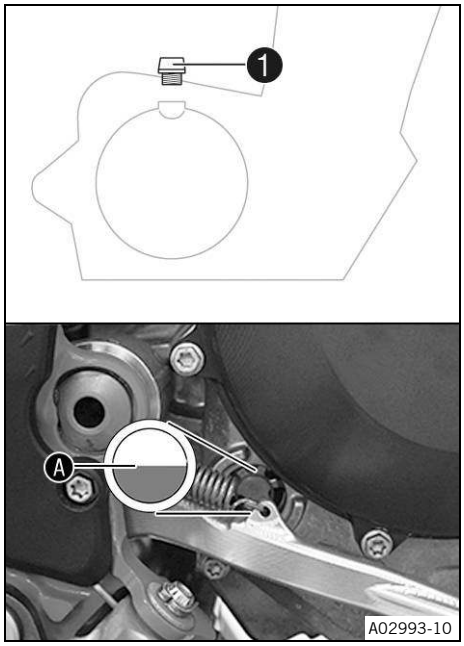
DANGER
Danger of poisoning Exhaust gases are toxic and inhaling them may result in unconsciousness and death.
– Always ensure that there is sufficient ventilation when running the engine.
– Use suitable exhaust extraction when starting or running the engine in an enclosed space.

– Start the engine and check it for leaks.

Reworking
– Check the engine oil level. 📖 (p. 132)
– Install the skid plate. 📖 (p. 98)

18.3 Adding engine oil

Note
Too little engine oil or poor-quality engine oil will result in premature wear of the engine.



Main work

– Remove oil filler plug 1 with the O-ring from the clutch cover.
– Fill engine oil to the middle A of the level viewer.
– Add the same engine oil used when the last oil change was carried out.

engine oil	
engine oil (20W/60) (p. 179) fully synthetic	Condition: Total filling level, oil change 1.40 l (0.370 liq. gal_{US})
	Condition: Total filling level, engine service (with oil radiator) 1.80 l (0.476 liq. gal_{US})

Note
For optimal performance of the engine oil, do not mix different types of engine oil.
We recommended changing the engine oil when necessary.

– Mount and tighten the filler plug together 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

– Check the engine oil level. (p. 132)

19.1 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

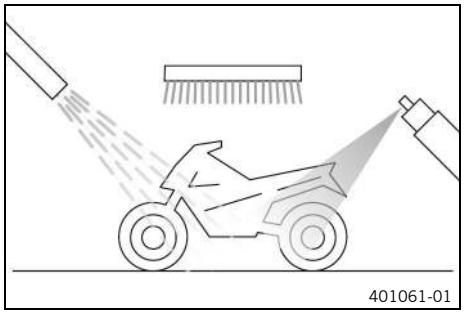
Environmental hazard Hazardous substances cause environmental damage.

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

Note

To maintain the value and appearance of the motorcycle over a long period, clean it regularly.

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.

Note

Use warm water containing standard motorcycle cleaner and a soft sponge.

– 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.

– Push back the protection caps of the handlebar controls to allow any water that has penetrated to evaporate.

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.

– After the motorcycle has cooled off, lubricate all moving parts and pivot points.
– Clean the chain. (p. 87)
– Treat bare metal (except for brake discs and the exhaust system) with an anticorrosive.
– Treat all plastic parts and powder-coated parts with a mild cleaning and care product.

Preserving materials (p. 182)

– Oil steering lock.

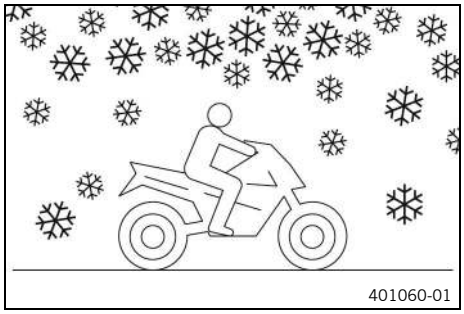
Universal oil spray (p. 179)

19.2 Checks and maintenance steps for winter operation

WARNING
Danger of accidents Salt on the roads impairs the brake system.
– Brake carefully several times to remove salt from the brake linings and the brake discs.

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.

Note
If you use the motorcycle in winter, salt can be expected on the roads. You should therefore take precautions against aggressive road salt.


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– Clean the motorcycle. (p. 136)
– Clean brake system.

After **EVERY** trip on salted roads, thoroughly clean the brake calipers and brake linings, after they have cooled down and without removing them, with cold water and dry them carefully.
After riding on salted roads, thoroughly clean the motorcycle with cold water and dry it well.

Note
Warm water enhances the corrosive effects of salt.

– Treat the engine, swingarm, and all other bare or zinc-plated parts (except the brake discs) with a wax-based anticorrosive.

Corrosion inhibitor must not come in contact with the brake discs as this would greatly reduce the braking force.

– Clean the chain. (p. 87)

20.1 Storage

WARNING

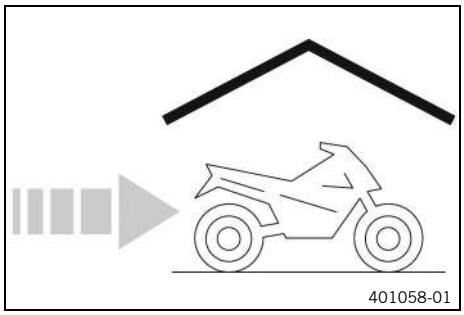
Danger of poisoning Fuel is harmful to health.

- 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

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.



- When refueling for the last time before taking the motorcycle out of service, add fuel additive.
- Refuel. (p. 48)

Tip

Fill the fuel tank completely as specified, using fuel with the lowest possible ethanol content.

- Clean the motorcycle. (p. 136)
- Change the engine oil and the oil filter, clean the oil screens. (p. 132)
- Check the frost protection and coolant level. (p. 123)
- Check the tire pressure. (p. 115)
- Remove the 12 V battery. (p. 117)
- Charge the 12 V battery. (p. 119)

Storage temperature of the 12 V battery without direct sunlight	0 °C ... 35 °C (32.0 °F ... 95.0 °F)
Charging level of the 12 V battery for storage	50 % ... 75 %

- Store the vehicle in a dry location that is not subject to large fluctuations in temperature.

Note

KTM recommends putting the motorcycle on a stand or lift.

- Raise the motorcycle with a lift stand. (p. 62)

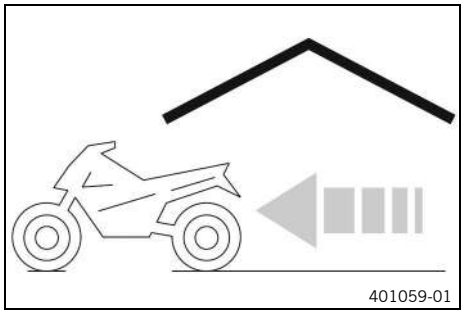
– Cover the vehicle with a tarpaulin or similar cover that is permeable to air.

Note

Do not use non-porous materials since they prevent humidity from escaping, thus causing corrosion.

Avoid running the engine of a motorcycle in storage for a short time only. Because the engine will not warm up sufficiently, the water vapor produced during combustion will condense, causing engine parts and the exhaust system to rust.

20.2 Preparing for use after storage


401059-01

– Remove the motorcycle from the lift stand. (p. 62)
– Install the 12 V battery. (p. 118)
– Perform checks and maintenance measures when preparing for use. (p. 44)
– Take a test ride.

21.1 troubleshooting

Cause	Finding	Remedy
The engine does not turn over when the start button is actuated	Operating error 12 V battery discharged Main fuse blown Starter relay defective Starter motor defective	– Carry out the starting procedure. (p. 44) – Charge the 12 V battery. (p. 119) – Check the charging voltage. – Check the open-circuit current. – Check the stator winding of the alternator. – Change the main fuse. (p. 121) – Check the starter relay. – Check the starter motor.
The engine turns but does not start	Operating error Quick-lock coupling not joined Fuse **8** blown Idle speed is not set correctly Spark plug sooty or wet Plug gap of spark plug too wide Faulty ignition Short-circuit cable in wiring harness frayed, kill switch faulty Malfunction in the electronic fuel injection	– Carry out the starting procedure. (p. 44) – Join quick-lock couplings. – Change the fuses of individual electrical power consumers. (p. 121) – Adjust the idle speed. (p. 129) – Clean and dry the spark plug, or change it if necessary. – Adjust plug gap. Plug gap of spark plug: 0.8 mm (0.031 in) – Check the ignition system. – Check the wiring harness. (Visual check). – Check the electrical system. – Read out the fault memory using the diagnostics tool.
Engine does not speed up	Malfunction in the electronic fuel injection Faulty ignition	– Read out the fault memory using the diagnostics tool. – Ignition coil - check the secondary winding. – Check the spark plug connector. – Check the stator winding of the alternator.
Engine has too little power	Air filter is very dirty Fuel filter is very dirty Malfunction in the electronic fuel injection Exhaust system leaks, deformed or too little glass fiber filling in the silencer Valve clearance too little Faulty ignition	– Clean the air filter and air filter box. (p. 78) – Change the fuel filter. – Read out the fault memory using the diagnostics tool. – Check exhaust system for damage. – Change the damping material on the main silencer. (p. 80) – Adjust the valve clearance. – Ignition coil - check the secondary winding.

Cause	Finding	Remedy
		– Check the spark plug connector. – Check the stator winding of the alternator.
The engine dies during the trip	Lack of fuel	– Refuel. (p. 48)
Engine overheats	Too little coolant in cooling system Too little air stream Radiator fins very dirty Foam formation in the cooling system Bent radiator hose Thermostat defective Defect in radiator fan system	– Check the transmission and cooling system for leaks. – Check the coolant level. (p. 124) – Switch off the engine when standing. – Clean the radiator fins. – Drain the coolant. (p. 125) – Refill the coolant. (p. 125) – Change the radiator hose. – Check the thermostat. – Check fuse **7**. – Check the radiator fan.
FI warning lamp (**MIL**) lights up/flashes	Malfunction in the electronic fuel injection	– Check wiring for damage and electrical plug-in connectors for corrosion and damage. – Read out the fault memory using the diagnostics tool.
High oil consumption	Engine vent hose bent The engine oil level is too high The engine oil is too thin (low viscosity) Piston and cylinder worn	– Route the vent hose without bends or change it if necessary. – Check the engine oil level. (p. 132) – Change the engine oil and the oil filter, clean the oil screens. (p. 132) – Measure the piston/cylinder mounting clearance.
12 V battery discharged	The 12-V battery is not being charged by the alternator unwanted electrical load	– Check the charging voltage. – Check the stator winding of the alternator. – Check the open-circuit current.
Combination instrument values deleted (time, stop watch, lap times)	The combination instrument battery is empty	– Change combination instrument battery.
The turn signal and the combination instrument are not working	Fuse **1** blown	– Change the fuses of individual electrical power consumers. (p. 121)
The brake light is not working	Fuse **5** blown	– Change the fuses of individual electrical power consumers. (p. 121)
The high beam, low beam, position light, tail light, license plate lamp, and horn are not working	Fuse **6** blown	– Change the fuses of individual electrical power consumers. (p. 121)

22.1 Engine

22.1.1 Technical data - engine

Design	1-cylinder 4-stroke engine, water-cooled
Displacement	449.9 cm³ (27.455 in³)
Stroke	63.4 mm (2.496 in)
Bore	95 mm (3.74 in)
Compression ratio	12.6:1
Idle speed	2,200 rpm ... 2,300 rpm (36.67 Hz ... 38.33 Hz)
Control	OHC, 4 valves controlled via rocker arm
Valve diameter, intake	40 mm (1.57 in)
Valve diameter, exhaust	33 mm (1.30 in)
Valve clearance	
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)	0.12 mm ... 0.17 mm (0.0047 in ... 0.0067 in)
Crankshaft bearing	2-cylinder roller bearing
Big (bottom) end bearing	Plain bearing
Wrist pin bearing	No bearing bush – DLC coated piston pin
Piston	Forged light alloy
Piston rings	1 compression ring, 1 oil scraper ring
Engine lubrication	Pressure circulation lubrication with 2 trochoidal pumps
Primary transmission	31:76
Clutch	Multidisc clutch in oil bath, hydraulically activated
Transmission	6 speed transmission, claw shift
Gear ratios	
1st gear	16:32
2nd Gear	18:30
3rd Gear	20:28
4th Gear	22:26
5th Gear	24:24
6th Gear	27:23
Alternator	• 12 V • 200 W (0.268 hp)
Ignition system	Contactless controlled fully electronic ignition with digital ignition adjustment
Spark plug	NGK LMAR9AI-8

Plug gap of spark plug	0.8 mm (0.031 in)
Cooling	Liquid cooling, permanent circulation of coolant by water pump
Starting aid	Starter motor

22.1.2 Capacities - engine

engine oil	
engine oil (20W/60) (p. 179) fully synthetic	Condition: Total filling level, oil change 1.40 l (0.370 liq. gal_{US})
	Condition: Total filling level, engine service (with oil radiator) 1.80 l (0.476 liq. gal_{US})
coolant	
Coolant (p. 180) Antifreeze protection to at least: −25 °C (−13.0 °F)	1.0 l (0.26 liq. gal_{US})

22.2 Chassis

22.2.1 Technical data - chassis

Frame	Central tube frame of chrome molybdenum steel tubing, powder-coated
Suspension travel:	
front	310 mm (12.20 in)
rear	300 mm (11.81 in)
Brake system	Disc brakes, floating brake calipers
Brake discs - diameter	
front	300 mm (11.81 in)
rear	240 mm (9.45 in)
Brake disc wear limit	
front	3.6 mm (0.142 in)
rear	3.5 mm (0.138 in)
Street tire pressure	
front	2.0 bar (29.0 psi)
rear	2.0 bar (29.0 psi)
Off-road tire pressure	

front	1.0 bar ... 1.5 bar (14.5 psi ... 21.8 psi)
rear	1.0 bar ... 1.5 bar (14.5 psi ... 21.8 psi)
Final drive	14:51 (14:50)
Rear sprockets available	• 50 • 51 • 52
Chain	5/8 x 1/4"
Wheelbase	1,530 ±10 mm (60.24 ±0.39 in)
Steering head angle	62.5° (1.091 rad)
Seat Height unloaded	947 mm (37.28 in)
Ground clearance unloaded	326 mm (12.83 in)
Weight, when ready for use approx.	140 kg (308.6 lb)
Maximum permissible front axle load	161 kg (354.9 lb)
Maximum permissible rear axle load	174 kg (383.6 lb)
Maximum permissible total weight	335 kg (738.5 lb)

22.2.2 Technical data - tires

Tire front	Rear tire
90/90 - 21 M/C 54S M+S TT Continental TKC 80	**140/80 - 18 M/C 70R M+S TT** Continental TKC 80
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.	

22.2.3 Capacities - vehicle

Fuel tank capacity, approx.	
Super unleaded (ROZ 95) (p. 178)	Condition: front left 9.1 l (2.40 liq. gal_{US})
	Condition: front right 9.1 l (2.40 liq. gal_{US})
	Condition: rear 15.8 l (4.17 liq. gal_{US})
	Condition: Total 34.0 l (8.98 liq. gal_{US})

22.3 Electrics

22.3.1 Battery

12-V battery	HY93-C	Lithium-ion battery Battery voltage: 12 V Nominal capacity: 4.5 Ah Maintenance-free
Button cell	CR 2430	Battery voltage: 3 V

22.3.2 Fuses

Fuse	75011088005	5 A
Fuse	75011088010	10 A
Fuse	75011088015	15 A
Fuse	58011109130	30 A

22.3.3 Lamps

high beam	LED	
Low beam	LED	
Parking light	LED	
Dashboard illumination and indicator lights	LED	
Turn signal	RY10W / Sockel BAU15s	12 V 10 W (0.013 hp)
Brake/tail light	LED	
License plate lighting	LED	

22.4 Fork

22.4.1 Technical data - fork

Fork part number	A580C140Y403200

Fork	**WP XPLOR PRO 7548**
Compression damping	
Comfort	15 clicks
Standard	12 clicks
Sport	9 clicks
Rebound damping	
Comfort	23 clicks
Standard	20 clicks
Sport	17 clicks
Spring rate	
Weight of rider: 55 kg ... 65 kg (121.3 lb ... 143.3 lb)	5.6 N/mm (31.98 lb_f/in)
Weight of rider: 65 kg ... 75 kg (143.3 lb ... 165.3 lb)	5.8 N/mm (33.12 lb_f/in)
Weight of rider: 75 kg ... 85 kg (165.3 lb ... 187.4 lb)	6.0 N/mm (34.26 lb_f/in)
Weight of rider: 85 kg ... 95 kg (187.4 lb ... 209.4 lb)	6.2 N/mm (35.40 lb_f/in)
Fork length	965 mm (37.99 in)

22.4.2 Capacities - fork

Oil capacity fork leg without cartridge	
Fork oil (48601166S1) (SAE 4) (p. 179)	440 ml (14.88 fl. oz_{US})
Oil capacity per cartridge	
Fork oil (48601166S1) (SAE 4) (p. 179)	175 ml (5.92 fl. oz_{US})

22.5 Shock absorber

22.5.1 Technical data - shock absorber

Shock absorber part number	A580C440Y411200

Shock absorber	**WP XPLOR PRO 7750**
Low-speed compression damping	
Comfort	15 clicks
Standard	12 clicks
Sport	9 clicks
High-speed compression damping	
Comfort	18 clicks

Standard	15 clicks
Sport	12 clicks
Rebound damping	
Comfort	17 clicks
Standard	14 clicks
Sport	11 clicks
Preload	
Standard	8 mm (0.31 in)
Spring rate	
Weight of rider: ≤ 65 kg (≤ 143.3 lb)	54 N/mm (308.3 lb_f/in)
Weight of rider: 65 kg ... 75 kg (143.3 lb ... 165.3 lb)	57 N/mm (325.5 lb_f/in)
Weight of rider: 75 kg ... 85 kg (165.3 lb ... 187.4 lb)	60 N/mm (342.6 lb_f/in)
Weight of rider: 85 kg ... 95 kg (187.4 lb ... 209.4 lb)	63 N/mm (359.7 lb_f/in)
Weight of rider: ≥ 95 kg (≥ 209.4 lb)	66 N/mm (376.9 lb_f/in)
Spring length	260 mm (10.24 in)
Gas assisted	8 bar (116 psi)
Static sag	46 mm (1.81 in)
Rider sag	108 mm (4.25 in)
Installation position	459 mm (18.07 in)

22.5.2 Shock absorber capacity

Shock absorber oil	
Shock absorber oil (50180751S1) (SAE 2.5) (p. 180)	Fill to the maximum mark

22.6 Tightening torque

22.6.1 engine tightening torques

Screw, oil nozzle bent for piston cooling	M4	2 Nm (1.5 ft·lb_f) **Loctite® 243**
Oil nozzle for the clutch lubrication (alternator cover sealing surface)	M4	0.8 Nm (0.59 ft·lb_f)

Screw, gear position sensor M5×14	5 Nm (3.7 ft·lb$_f$) **Loctite® 243**
Oil nozzle for piston cooling M5	2 Nm (1.5 ft·lb$_f$) **Loctite® 243**
Detent arm screw M5	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Screw, clutch spring retainer M5	8 Nm (5.9 ft·lb$_f$)
Screw, bearing retainer M5	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Screw, suction pump cover M5×16	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Stator screw M5	6 Nm (4.4 ft·lb$_f$) **Loctite® 2701**
Crankshaft speed sensor screw and cable retainer M5	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Oil nozzle for timing chain lubrication M5	2 Nm (1.5 ft·lb$_f$) **Loctite® 243**
Screw, lock washer, oil pump idler gear M5×10	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Screw, clutch adjusting ring M5×16	6 Nm (4.4 ft·lb$_f$)
Screws, main bearing lock washer, transmission bearings M5×12	6 Nm (4.4 ft·lb$_f$)
Vacuum fitting, evaporative emission system M6	2.5 Nm (1.84 ft·lb$_f$) **Loctite® 243**
Nut, water pump impeller M6	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Exhaust flange screw M6×16	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, torque governor M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, pressure pump cover M6×16	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**

Screw, starter motor M6×25	10 Nm (7.4 ft·lb$_f$)
Screw, clutch cover M6	10 Nm (7.4 ft·lb$_f$)
Screw, engine case M6	10 Nm (7.4 ft·lb$_f$)
Screw, oil filter cover M6×16	10 Nm (7.4 ft·lb$_f$)
Shift star screw M6×30	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, shift lever M6×16	14 Nm (10.3 ft·lb$_f$) **Loctite® 243**
Timing chain-securing guide screw M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, timing chain tensioner M6	10 Nm (7.4 ft·lb$_f$)
Slide rail screw M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, valve cover M6	10 Nm (7.4 ft·lb$_f$)
Screw, clutch slave cylinder M6	10 Nm (7.4 ft·lb$_f$)
Screw, water pump cover M6×20	10 Nm (7.4 ft·lb$_f$)
Screw, water pump cover M6×25	10 Nm (7.4 ft·lb$_f$) **Loctite® 243**
Screw, balancer shaft fastening to water pump cover M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 222**
Remaining screws on water pump cover M6	10 Nm (7.4 ft·lb$_f$) **Loctite® 222**
Screw, ignition cover M6	10 Nm (7.4 ft·lb$_f$)
Screw, cylinder head M6×75	10 Nm (7.4 ft·lb$_f$)
Remaining screws, clutch cover M6	10 Nm (7.4 ft·lb$_f$)
Remaining screws, alternator cover M6	10 Nm (7.4 ft·lb$_f$)
Screws, section of the engine case M6	10 Nm (7.4 ft·lb$_f$)

Screw, rocker arm bearing M7×1		15 Nm (11.1 ft·lb$_f$)
Oil channel screw plug M7		9 Nm (6.6 ft·lb$_f$) **Loctite® 243**
Crankshaft locking bolt plug M8		10 Nm (7.4 ft·lb$_f$)
Screw plug, timing chain tensioner M8		8 Nm (5.9 ft·lb$_f$)
Coolant temperature sensor M10×1.25		12 Nm (8.9 ft·lb$_f$)
Front sprocket screw M10		60 Nm (44.3 ft·lb$_f$) **Loctite® 2701**
Oil channel screw plug M10		15 Nm (11.1 ft·lb$_f$) **Loctite® 243**
Screw, cylinder head M10×1.25 Engine oil	1.	Apply oil to collar and thread
	2.	10 Nm (7.4 ft·lb$_f$)
	3.	30 Nm (22.1 ft·lb$_f$)
	4.	50 Nm (36.9 ft·lb$_f$)
Spark plug M10×1		10 Nm ... 12 Nm (7.4 ft·lb$_f$ ... 8.9 ft·lb$_f$)
Screw, rotor M10×1		70 Nm (51.6 ft·lb$_f$)
Oil drain plug with magnet M12×1.5		20 Nm (14.8 ft·lb$_f$)
Screw plug, oil pressure control valve M12×1.5		20 Nm (14.8 ft·lb$_f$)
Screw plug, crankcase M16×1.5		15 Nm (11.1 ft·lb$_f$)
Nut, inner clutch hub M18×1.5		100 Nm (73.8 ft·lb$_f$)
Nut, primary gear wheel M18LH×1.5		120 Nm (88.5 ft·lb$_f$)
Plug, oil screen M20×1.5		15 Nm (11.1 ft·lb$_f$)
Screw plug, alternator cover M24×1.5		18 Nm (13.3 ft·lb$_f$)

22.6.2 Chassis tightening torques

Screw, radiator hoses clip	2.4 Nm (1.77 ft·lb$_f$)
License plate lamp screw **EJOT PT®**	1.5 Nm (1.11 ft·lb$_f$)
Screw, license plate holder, bottom **EJOT PT®**	3 Nm (2.2 ft·lb$_f$)
Screw, tail light **EJOT PT®**	2 Nm (1.5 ft·lb$_f$)
Screw, start button	2 Nm (1.5 ft·lb$_f$)
Screw, combination instrument **EJOT PT®**	2 Nm (1.5 ft·lb$_f$)
Screw, intake hose clamp	2.8 Nm (2.07 ft·lb$_f$)
Mushroom head screw for spoiler on tank	2.5 Nm (1.84 ft·lb$_f$)
Screw, combination instrument **EJOT PT®**	2 Nm (1.5 ft·lb$_f$)
Screw-in nozzle for rising pipe	7.5 Nm (5.53 ft·lb$_f$)
Oil filter screw connection	10 Nm (7.4 ft·lb$_f$)
Screw, rear tank air vent M4	2 Nm (1.5 ft·lb$_f$)
Remaining nuts on chassis M5	5 Nm (3.7 ft·lb$_f$)
Remaining screws on chassis M5	5 Nm (3.7 ft·lb$_f$)
Screw, foot brake lever stub M5	6 Nm (4.4 ft·lb$_f$) **Loctite® 243**
Screw, frame protector M5	3 Nm (2.2 ft·lb$_f$)
Spoke nipple, rear wheel M5	5 Nm … 6 Nm (3.7 ft·lb$_f$ … 4.4 ft·lb$_f$)
Screw, intake temperature sensor M5	2 Nm (1.5 ft·lb$_f$)
Screw, frame protector M5	2.5 Nm (1.84 ft·lb$_f$)
Screw, fuse box on electrical compartment M5	3 Nm (2.2 ft·lb$_f$)
Screw, LED module M5	8 Nm (5.9 ft·lb$_f$)
Screw, connector support on tower M5	2.8 Nm (2.07 ft·lb$_f$)

Air filter support on frame M6	10 Nm (7.4 ft·lb$_f$)
Nut, rim lock M6	12 Nm (8.9 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, battery compartment M6	8 Nm (5.9 ft·lb$_f$)
Screw, rear brake disc M6	14 Nm (10.3 ft·lb$_f$) **Loctite® 243**
Screw, front brake disc M6	14 Nm (10.3 ft·lb$_f$) **Loctite® 243**
Screw connection, foot brake cylinder M6	12 Nm (8.9 ft·lb$_f$) **Loctite® 243**
Screw, throttle twist grip M6	5 Nm (3.7 ft·lb$_f$)
Screw, cable on starter relay M6	5 Nm (3.7 ft·lb$_f$)
Screw, cable on 12 V battery M6	5 Nm (3.7 ft·lb$_f$)
Screw, radiator bracket, bottom M6	5 Nm (3.7 ft·lb$_f$)
Screw, steering damper M6	15 Nm (11.1 ft·lb$_f$)
Screw, steering damper bracket M6	15 Nm (11.1 ft·lb$_f$)
Screw, ground wire on frame M6	5 Nm (3.7 ft·lb$_f$)
Screw, sprocket protector M6	15 Nm (11.1 ft·lb$_f$)
Screw, roadbook on carrier M6	5 Nm (3.7 ft·lb$_f$)
Screw, roadbook switch M6	5 Nm (3.7 ft·lb$_f$)
Screw, roadbook carrier M6	5 Nm (3.7 ft·lb$_f$)
Screw, seat lock M6	10 Nm (7.4 ft·lb$_f$)
Screw, voltage regulator M6	8 Nm (5.9 ft·lb$_f$)
Nut, cable on starter motor M6	10 Nm (7.4 ft·lb$_f$)

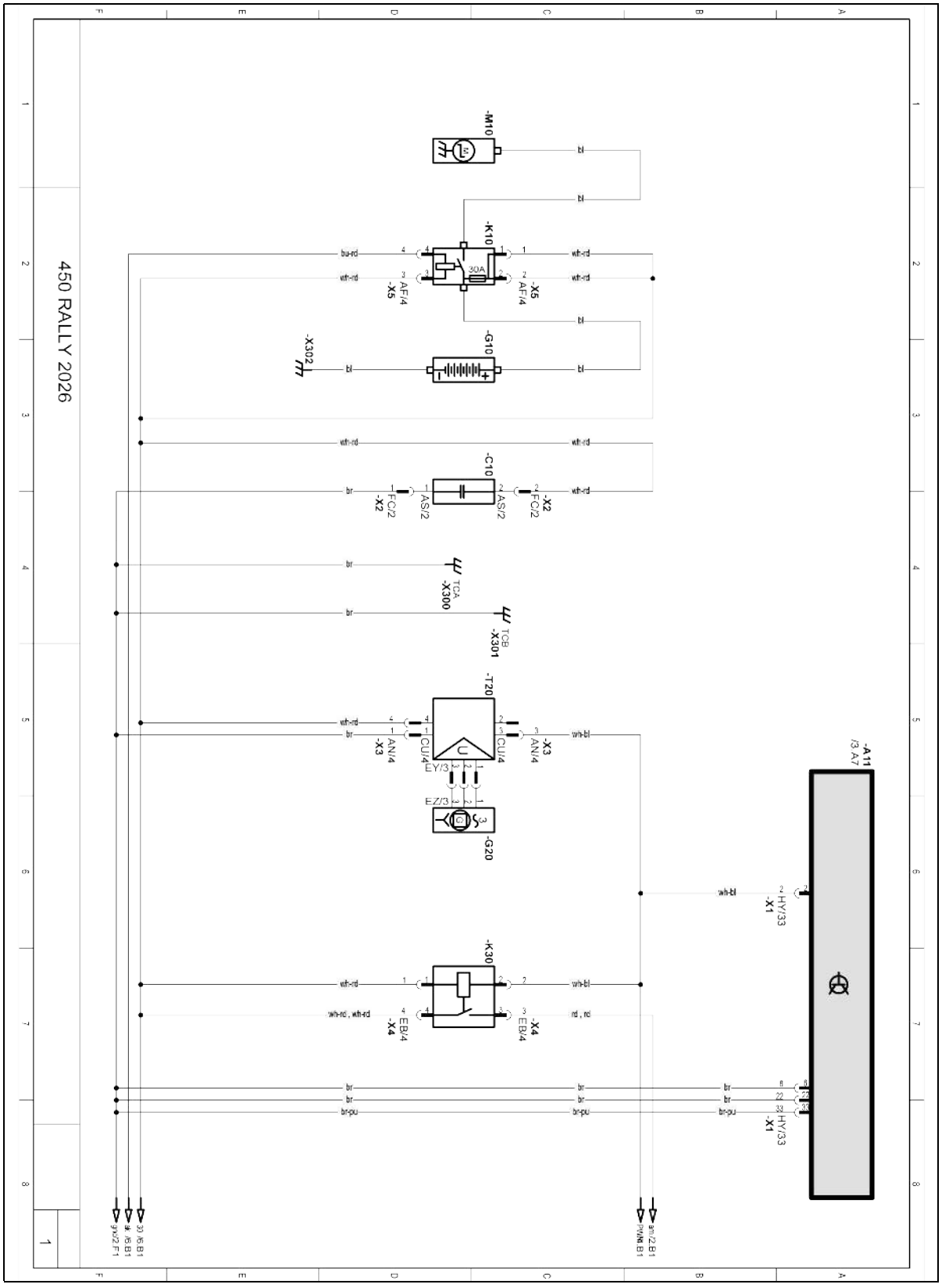
Screws, Iritrack bracket M6	5 Nm (3.7 ft·lb$_f$)
Screws, roadbook holding bracket M6	5 Nm (3.7 ft·lb$_f$)
Screws, tripmaster M6	5 Nm (3.7 ft·lb$_f$)
Screw, brake line guide M6	5 Nm (3.7 ft·lb$_f$)
Screw, seat, air intake M6	8 Nm (5.9 ft·lb$_f$)
Screw, splash protection on fuel tank M6	8 Nm (5.9 ft·lb$_f$)
Screw, front fender on triple clamp M6	12 Nm (8.9 ft·lb$_f$)
Adjusting screw for brake pedal M6	20 Nm (14.8 ft·lb$_f$)
Screw, headlight carrier on tower M6	5 Nm (3.7 ft·lb$_f$)
Screw, evaporative canister on bracket M6	3 Nm (2.2 ft·lb$_f$)
Screw, oil cooler M6	2.8 Nm (2.07 ft·lb$_f$)
Nut, rear sprocket screw M8	35 Nm (25.8 ft·lb$_f$) **Loctite® 243**
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, front brake caliper M8	27 Nm (19.9 ft·lb$_f$) **Loctite® 243**
Screw, top triple clamp M8	19 Nm (14.0 ft·lb$_f$)
Screw, bottom triple clamp M8	15 Nm (11.1 ft·lb$_f$)
Screw, fork shoe M8	15 Nm (11.1 ft·lb$_f$)
Screw, steering stem, bottom M8	22 Nm (16.2 ft·lb$_f$) **Loctite® 243**
Screw, upper steering stem M8	22 Nm (16.2 ft·lb$_f$) **Loctite® 243**
Screw, fuel tank bracket M8	15 Nm (11.1 ft·lb$_f$)
Screw, license plate holder, top M8	20 Nm (14.8 ft·lb$_f$)

Screw, chain slider guard M8	15 Nm (11.1 ft·lb$_f$) **Loctite® 243**
Screw, chain slider M8	15 Nm (11.1 ft·lb$_f$)
Screw, front fuel tank M8	16 Nm (11.8 ft·lb$_f$)
Handlebar clamp screw M8	20 Nm (14.8 ft·lb$_f$)
Screw, engine guard M8	25 Nm (18.4 ft·lb$_f$)
Screw, side stand M8	34 Nm (25.1 ft·lb$_f$) **Loctite® 243**
Screw, instrument support on frame M8	25 Nm (18.4 ft·lb$_f$)
Screw, header attachment M8	15 Nm (11.1 ft·lb$_f$)
Screw, silencer on fuel tank M8	13 Nm (9.6 ft·lb$_f$)
Banjo bolt M10×1	12 Nm (8.9 ft·lb$_f$)
Fitting, engine mounting bracket M10	60 Nm (44.3 ft·lb$_f$) **Loctite® 243**
Turn signal nut M10×1.25	8 Nm (5.9 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$_f$)
Fitting, shock absorber, top M10	65 Nm (47.9 ft·lb$_f$) **Loctite® 243**
Fitting, bottom shock absorber M10	65 Nm (47.9 ft·lb$_f$) **Loctite® 243**
Screw, foot brake lever M10	45 Nm (33.2 ft·lb$_f$)
Fitting, rear fuel tank M10	30 Nm (22.1 ft·lb$_f$) **Loctite® 243**
Screw, handlebar mount M10	46 Nm (33.9 ft·lb$_f$) **Loctite® 243**
Fuel hose banjo bolt M10	8 Nm (5.9 ft·lb$_f$)

Fuel hose M10	8 Nm (5.9 ft·lb$_f$)
Screw, PHDS handlebar mount M10	17 Nm (12.5 ft·lb$_f$) **Loctite® 243**
Screw, chain adjuster M10	6 Nm (4.4 ft·lb$_f$)
Screw, front sprocket M10	60 Nm (44.3 ft·lb$_f$)
Screw, tail assembly M10	30 Nm (22.1 ft·lb$_f$) **Loctite® 243**
Screw plugs/connecting pipes M10	8 Nm (5.9 ft·lb$_f$)
Screw, oxygen sensor M12	25 Nm (18.4 ft·lb$_f$)
Screw, bleeder flange M12	8 Nm (5.9 ft·lb$_f$)
Nut, linkage lever on angle lever M14×1.5	80 Nm (59.0 ft·lb$_f$)
Nut, angle lever to link fork M14×1.5	80 Nm (59.0 ft·lb$_f$)
Screw, temperature sensor on radiator M15	20 Nm (14.8 ft·lb$_f$)
Nut, swingarm pivot M16×1.5	100 Nm (73.8 ft·lb$_f$)
Screw, linkage lever on frame M16	80 Nm (59.0 ft·lb$_f$) **Loctite® 243**
Screw, top steering head M20×1	12 Nm (8.9 ft·lb$_f$)
Screw, wheel spindle, front M24×1.5	50 Nm (36.9 ft·lb$_f$)
Nut, wheel spindle, rear M25×1.5	90 Nm (66.4 ft·lb$_f$)
Spoke nipple, front wheel M4,5	5 Nm ... 6 Nm (3.7 ft·lb$_f$ ... 4.4 ft·lb$_f$)
Screw, radiator and radiator protection K50x10	3.5 Nm (2.58 ft·lb$_f$)
Screw, fan bracket on radiator K50x12	1 Nm (0.7 ft·lb$_f$)
Remaining screws on chassis K50x18	2 Nm (1.5 ft·lb$_f$)
Screw, headlight protection K50x18	2 Nm (1.5 ft·lb$_f$)
Screw, brake hose bracket on fork protector K60x20	2 Nm (1.5 ft·lb$_f$)

23 Wiring diagram

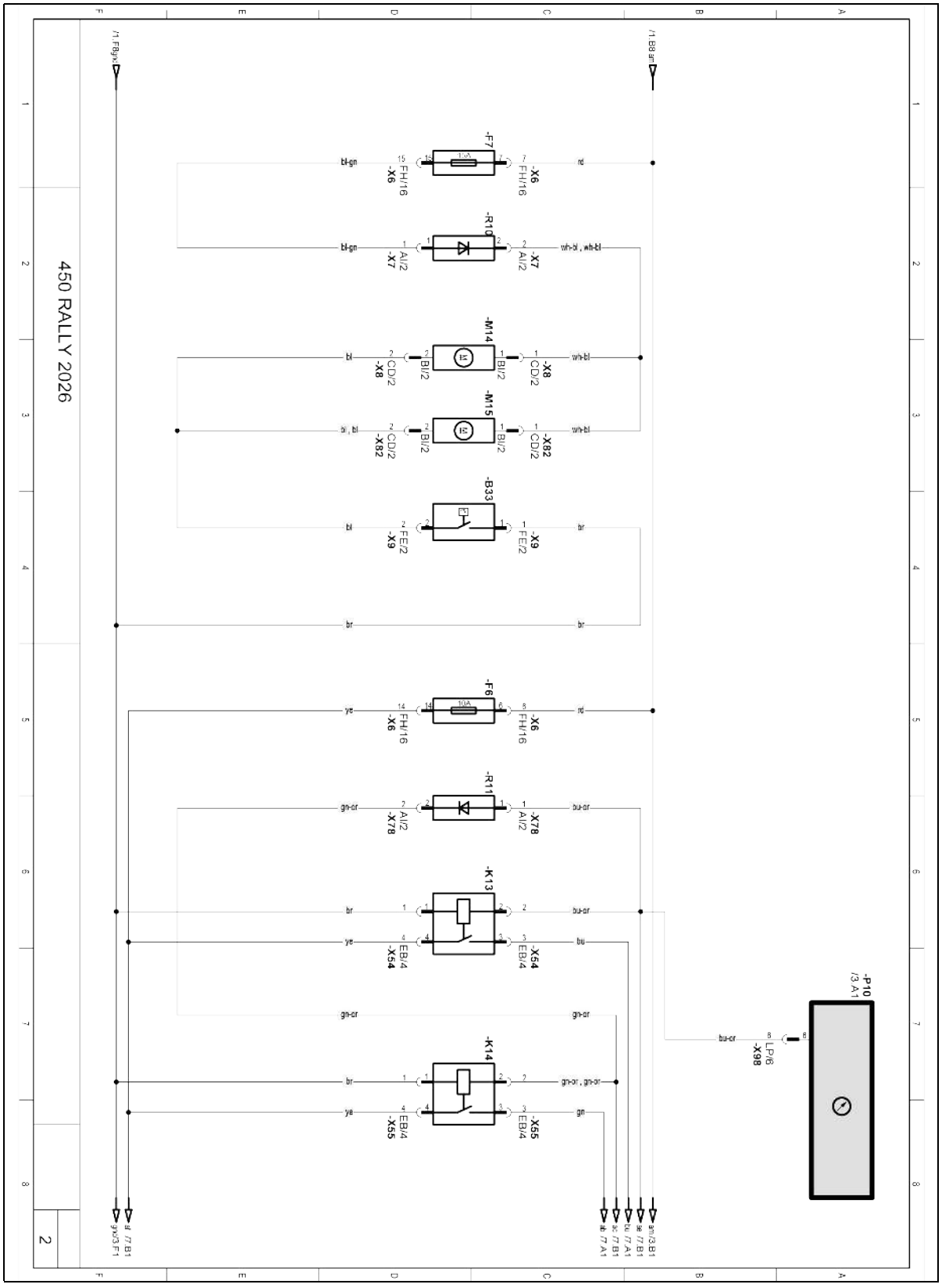
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Components:

A11	Engine control unit	K10	Starter relay with main fuse
C10	Capacitor	K30	Power relay
G10	12 V battery	M10	Starter motor
G20	Alternator	T20	Voltage regulator

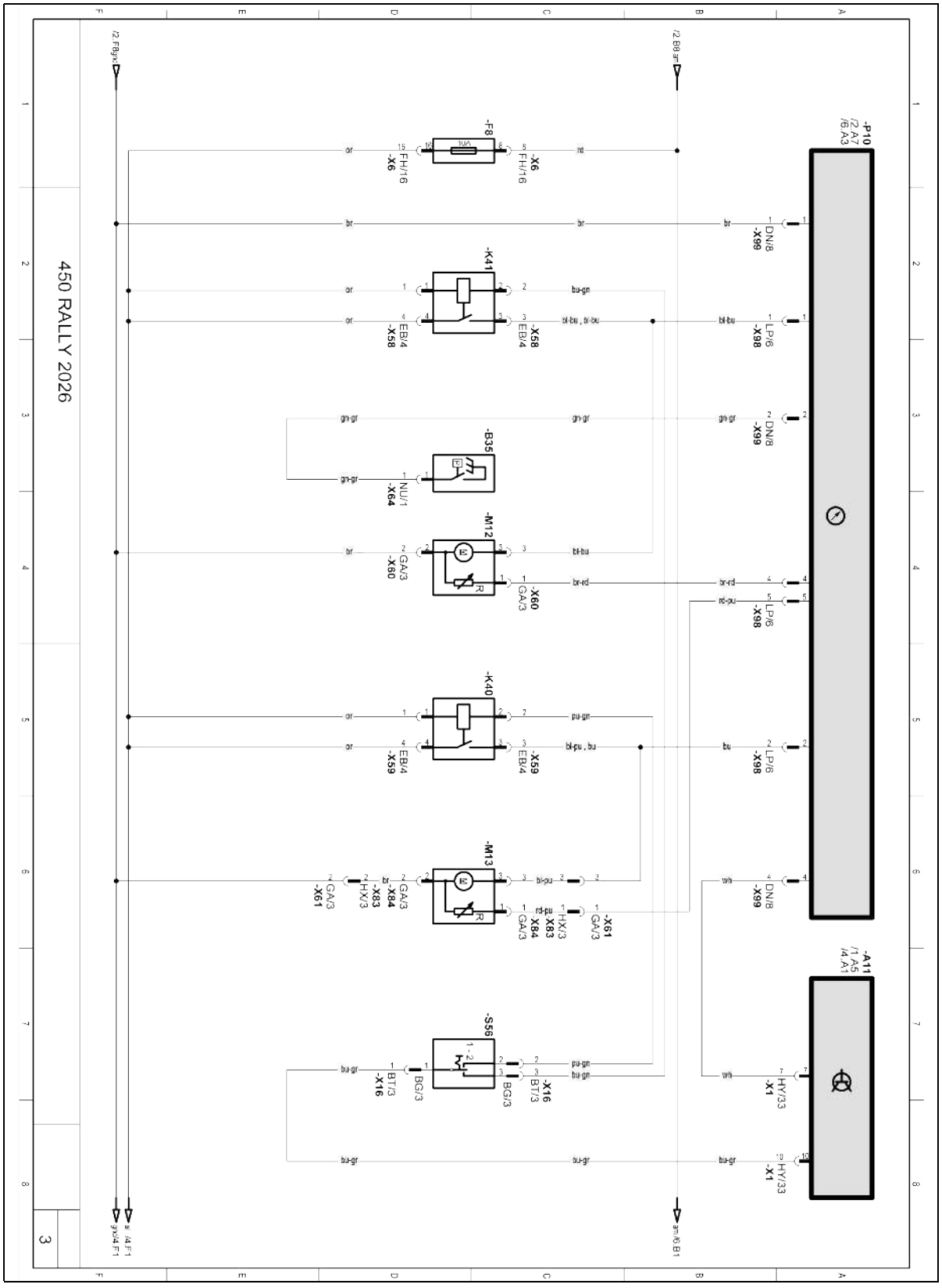
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Components:

F7	Fan
R10	Diode
M14	Radiator fan 1
M15	Radiator fan 2
B33	Temperature switch
F6	Low beam relay, high beam relay, position light, tail light
R11	Diode
K13	High beam relay
K14	Low beam relay
P10	dashboard

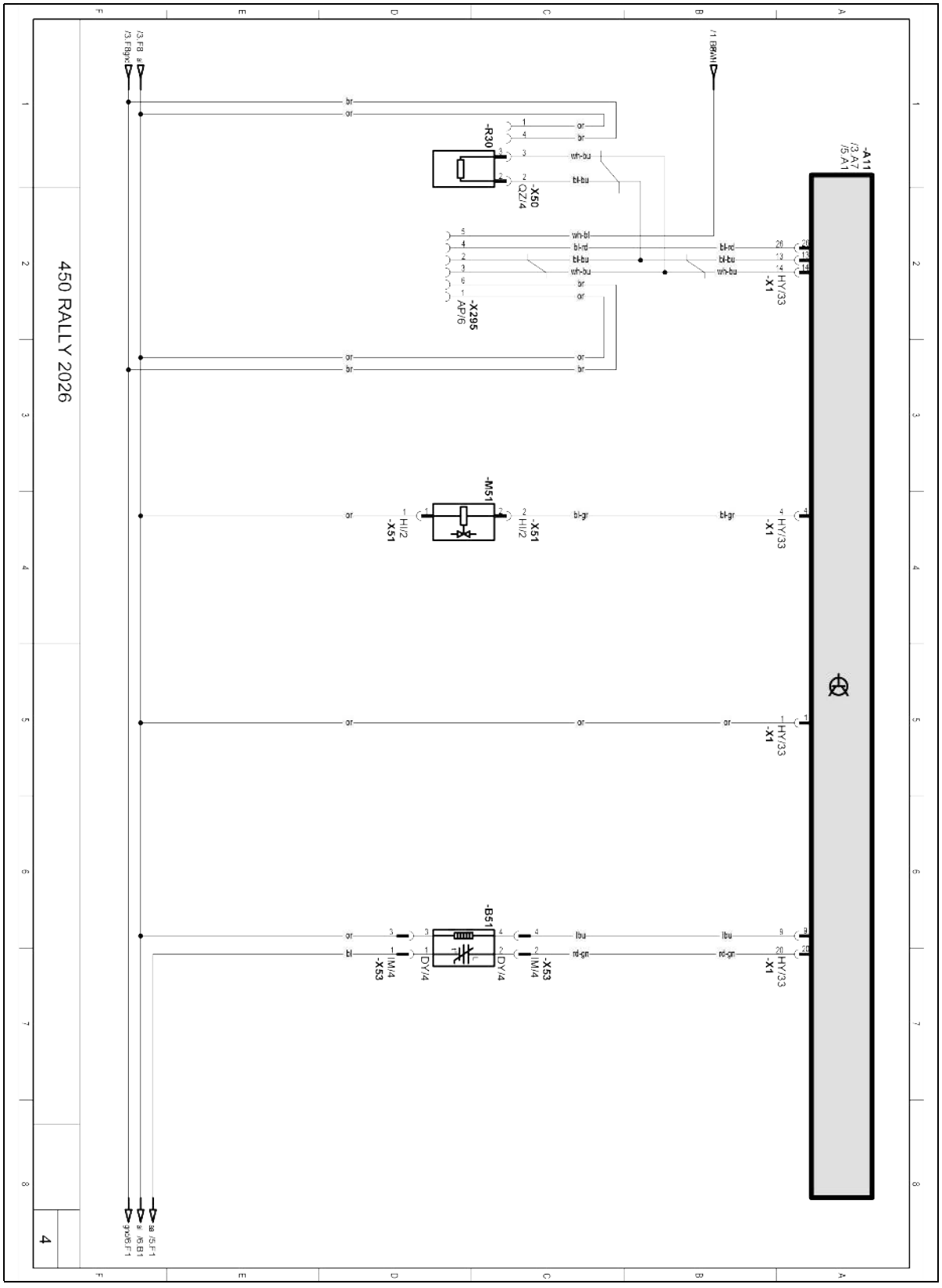
23.3 page 3 of 9



Components:

F8	Fuel pumps	M13	Front fuel pump
K41	Relay for rear fuel pump	S56	Fuel pump switch
B35	Oil pressure sensor	P10	dashboard
M12	Rear fuel pump	A11	Engine control unit
K40	Relay for front fuel pump		

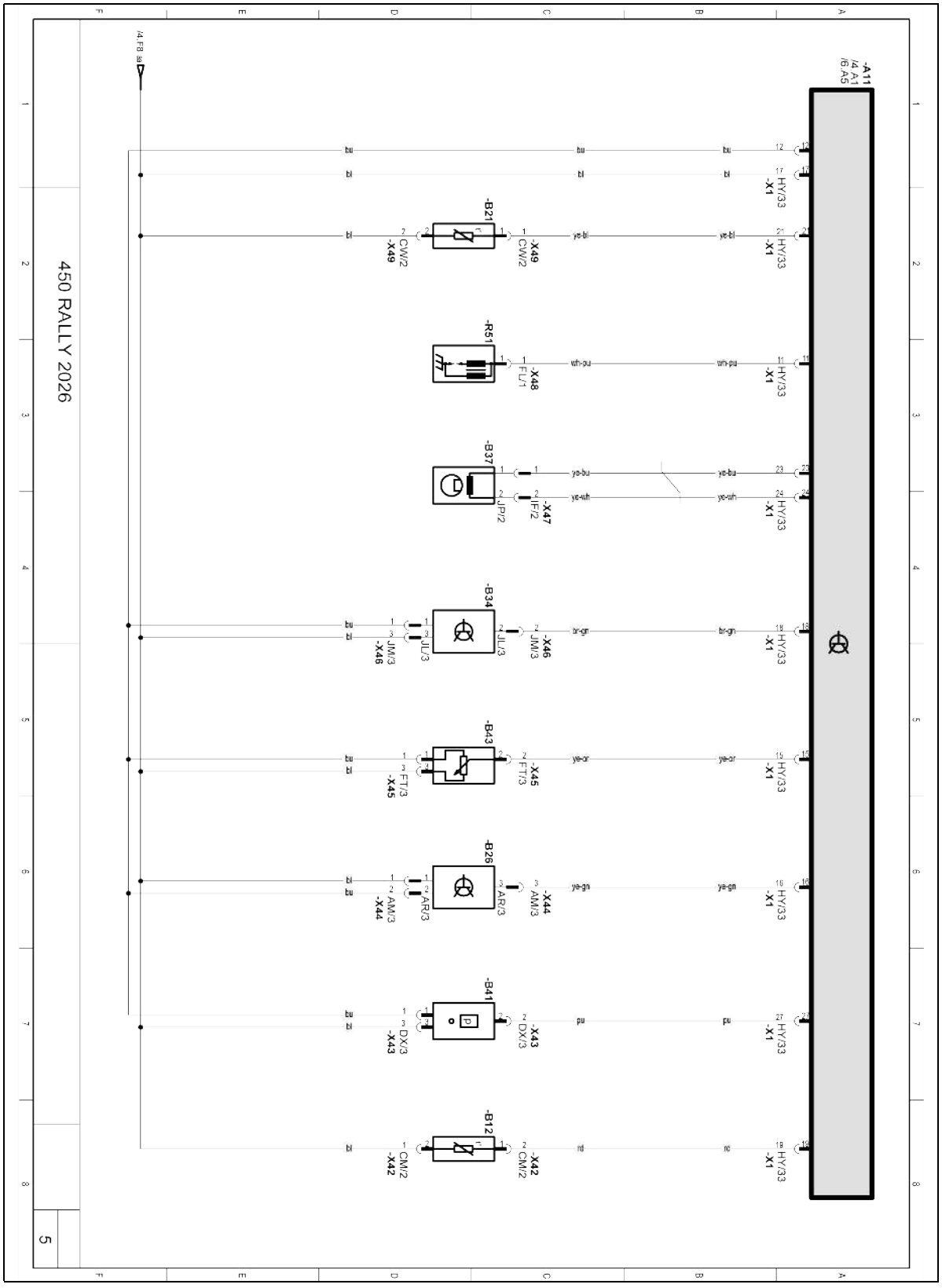
23.4 Page 4 of 9



Components:

A11	Engine control unit	R30	CAN bus terminating resistor
B51	Lambda sensor (if installed)	X295	Diagnostic connector
M51	Injector		

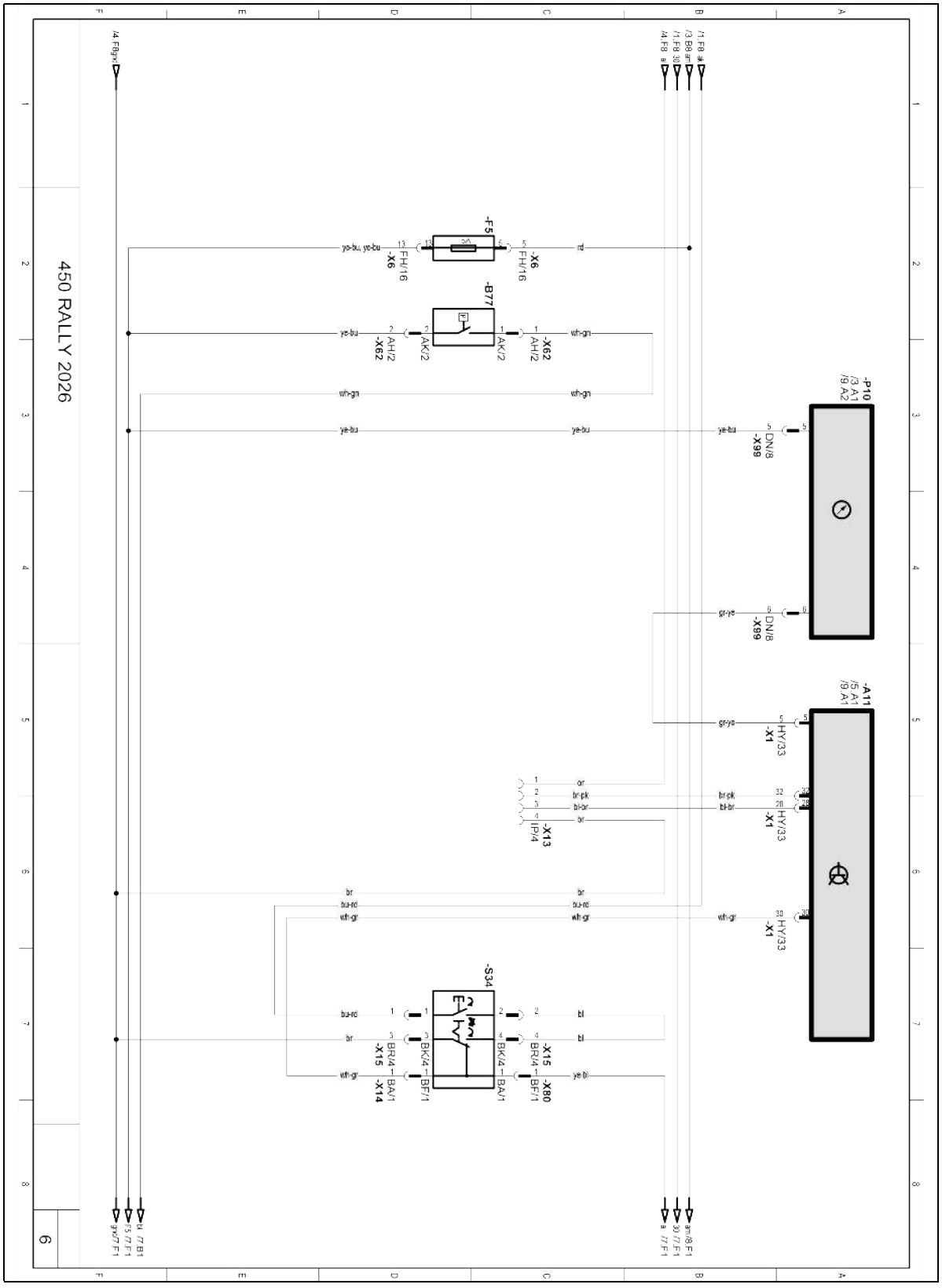
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Components:

A11	Engine control unit
B12	Intake air temperature sensor
B21	Coolant temperature sensor
B26	Tilt sensor
B34	Gear position sensor
B37	Crankshaft position sensor
B41	Induction manifold pressure sensor
B43	Throttle valve position sensor
R51	Ignition coil

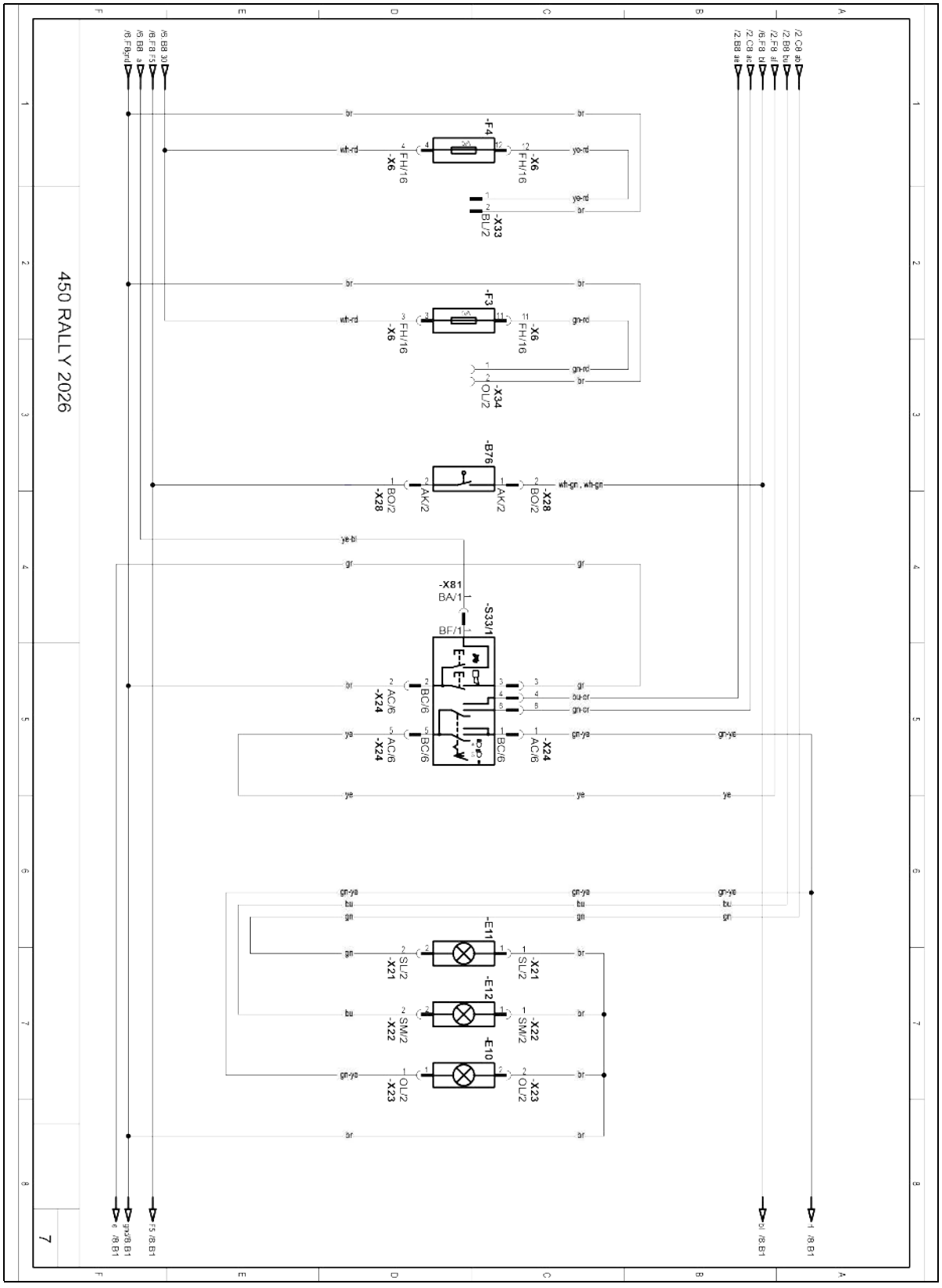
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Components:

F5	Horn, tell-tale bar	P10	dashboard
B77	Rear brake light switch	A11	Engine control unit
S34	Start-stop		

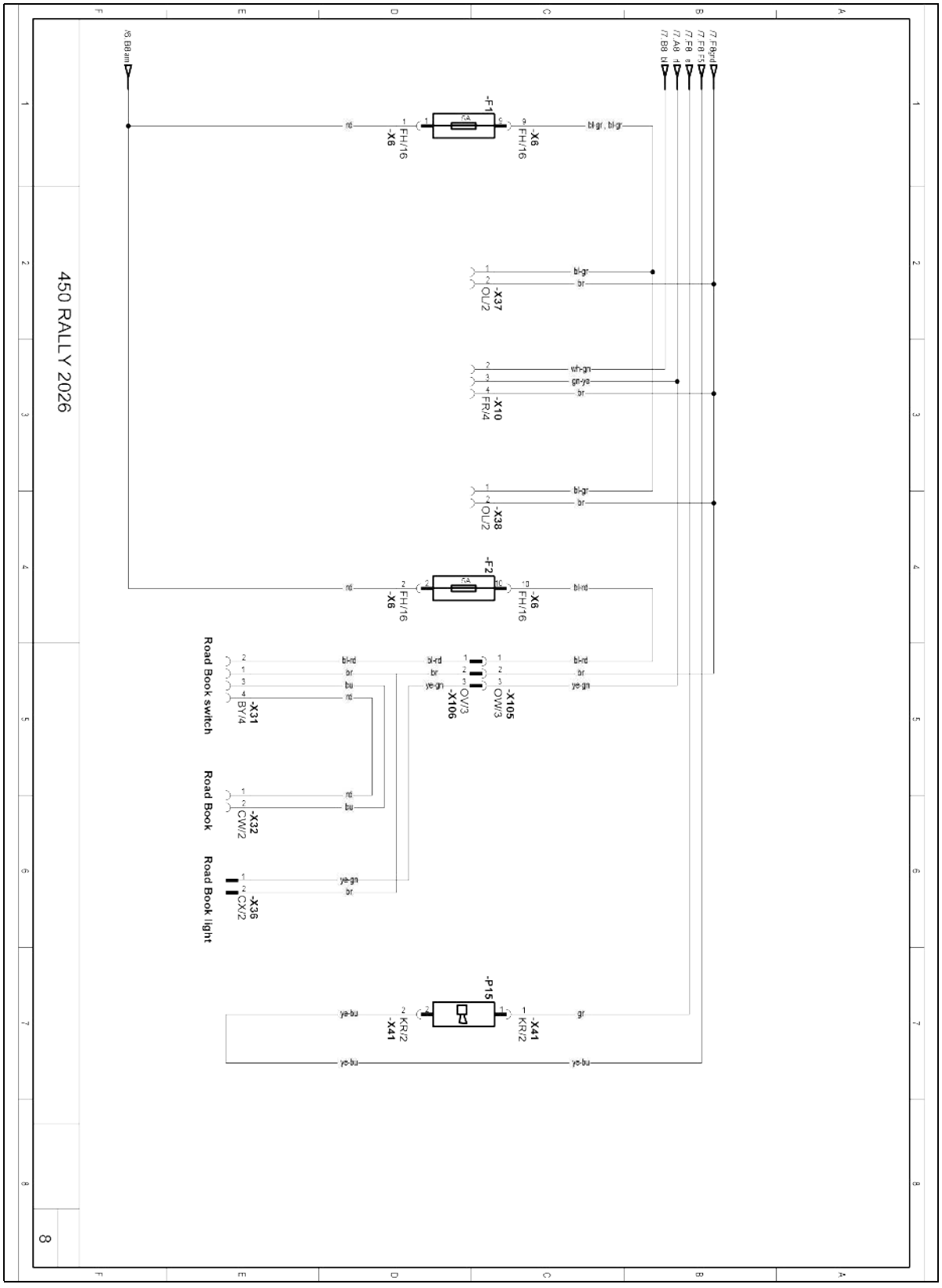
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Components:

E10	Parking light	F3	IRITRACK
E11	Low beam	F4	GPS
E12	high beam	S33/1	Combination switch, left
B76	Front brake light switch		

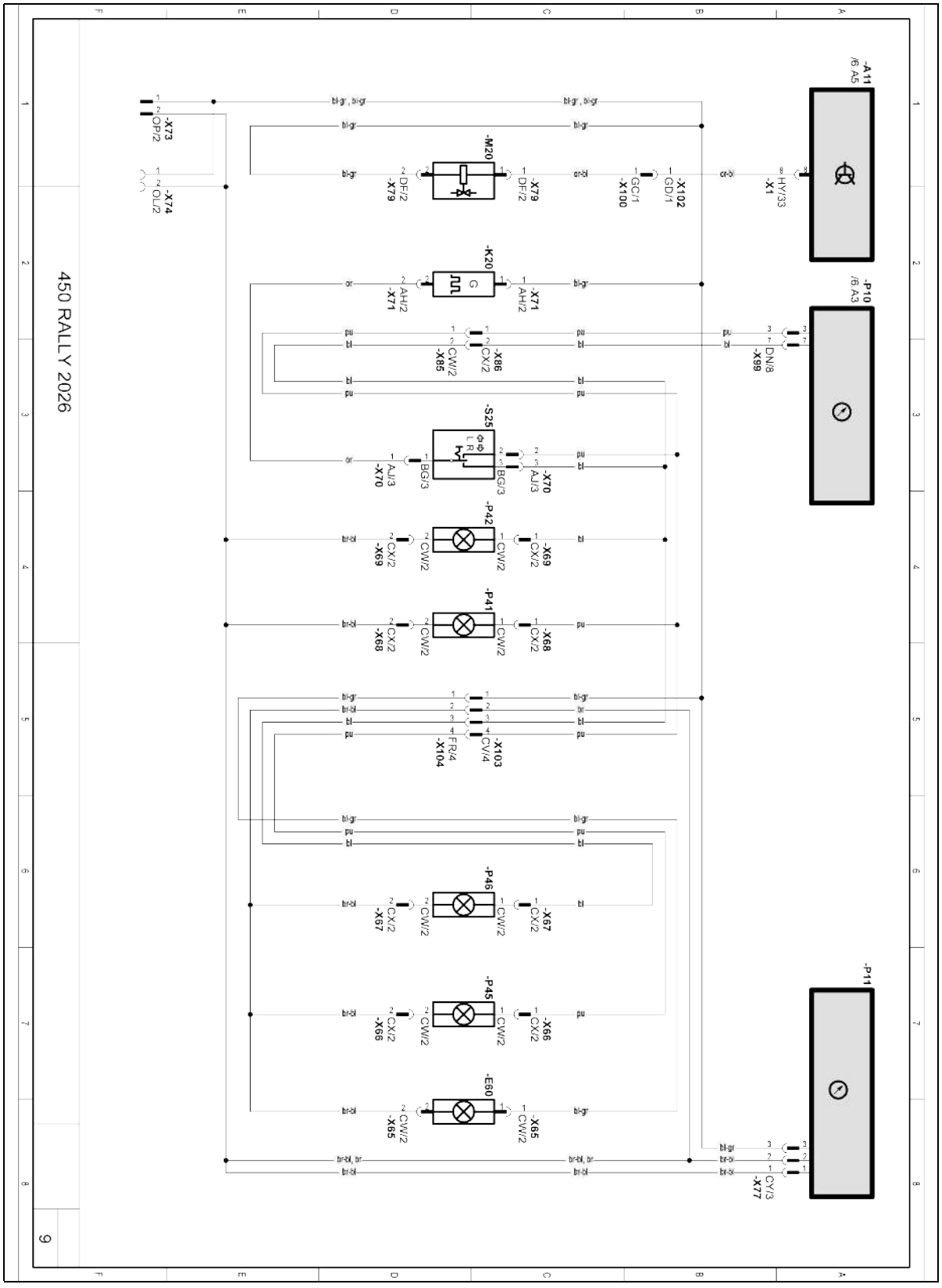
23.8 page 8 of 9



Components:

F1	Speedocap	P15	Horn
F2	Roadbook		

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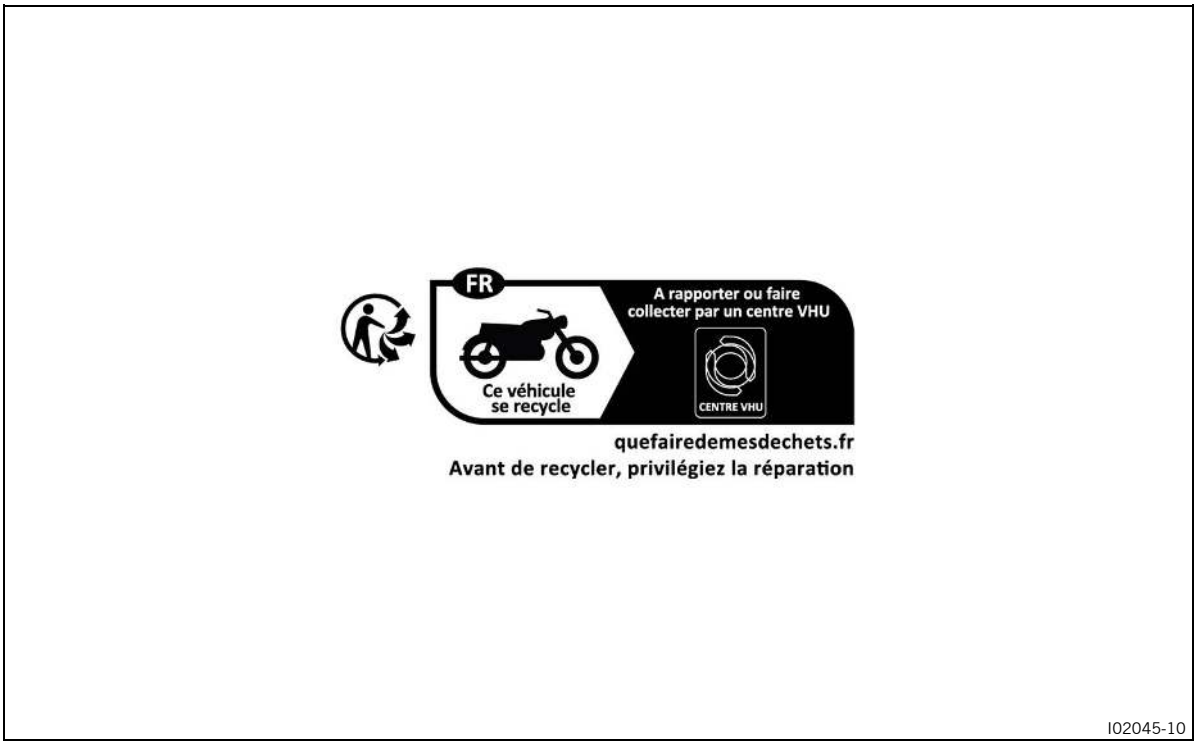
Components:

A11	Engine control unit	P41	Front left turn signal
E60	License plate lighting	P42	Front right turn signal
K20	Turn signal relay	P45	Left rear turn signal
M20	Purge valve	P46	Right rear turn signal
P10	Dashboard	S25	Turn signal switch
P11	Telltale bar		

Cable colors:

bl	black	or	Orange
br	brown	pk	Pink
bu	blue	pu	Violet
gn	green	rd	Red
gr	Gray	wh	White
lbu	Light blue	ye	Yellow

24.1 Recycling



Further information is available at the following website.
Recycling information website: https://www.quefairedemesdechets.fr

A Technical terms

OBD	On-board diagnosis	Vehicle system that monitors the specified parameters of the vehicle electronics.

B Fuels

Super unleaded

Standards

• ROZ 95	→ DIN EN 228

C Operating material

Off-road chain spray

Recommended supplier

MOTOREX®

- **CHAINLUBE OFF ROAD**

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®

- **CROSS POWER 4T**

Standards

→ JASO T903 MA2

- 10W/50 → SAE

Properties

- fully synthetic

engine oil

Recommended supplier

MOTOREX®

- **RACING FULLY SYNTATIC 4T**

Standards

→ JASO T903 MA2

- 20W/60 → SAE

Properties

- fully synthetic

High viscosity grease

Recommended supplier

SKF®

- **LGHB 2**

Silicone spray

Recommended supplier

MOTOREX®

- **SILICONE SPRAY**

Shock absorber oil

Order details

- 50180751S1

Standards

- SAE 2.5 → SAE

Oil for foam air filter

Recommended supplier

MOTOREX®

- **RACING BIO AIR FILTER OIL**

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 Cleaning agents

Chain cleaner

Recommended supplier
MOTOREX®
• CHAIN CLEAN

Preserving materials

Recommended supplier
MOTOREX®
• MOTO PROTECT

Air filter cleaning agent

Recommended supplier
MOTOREX®
• RACING BIO AIR FILTER CLEANER

E Icons

E.1 Symbol colors

E.1.1 Red symbols

Red symbols indicate a fault status that requires immediate intervention.

	The coolant temperature warning lamp lights up red
	The oil pressure warning lamp lights up red

E.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.

	Malfunction indicator lamp lights up/flashes yellow
	Right fuel level warning lamp lights up orange
	Left fuel level warning lamp lights up orange

E.1.3 Green and blue symbols

Green and blue symbols convey information.

	Turn signal indicator lamp flashes green
	The high beam indicator lamp lights up blue

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