OWNER'S MANUAL 2013

WWW.KTM.COM

990 Adventure Baja

Art. no. 3211908en

DEAR KTM CUSTOMER

Congratulations on your decision to purchase a KTM motorcycle. You are now the owner of a state-of-the-art sports motorcycle that will give you enormous pleasure if you service and maintain it accordingly.

We wish you a lot of enjoyment in riding this vehicle.

Please enter the serial numbers of your vehicle below.

Chassis number (☛ p. 28)	Dealer's stamp
Engine number (☛ p. 30)	
Key number (☛ p. 29)	

The owner's manual contained the latest information for this model at the time of going to print. Minor differences due to developments in design cannot be ruled out completely.

All specifications are non-binding. KTM Sportmotorcycle AG specifically reserves the right to modify or delete technical specifications, prices, colors, forms, materials, services, designs, equipment, etc., without prior notice and without specifying reasons, to adapt these to local conditions, as well as to stop production of a particular model without prior notice. KTM accepts no liability for delivery options, deviations from illustrations and descriptions, as well as misprints and other errors. The models portrayed partly contain special equipment that does not belong to the regular scope of supply.

DEAR KTM CUSTOMER

ISO 9001(12 100 6061)
According to the international quality management standard ISO 9001, KTM uses quality assurance processes that lead to the maximum possible quality of the products.
Issued by: TÜV Management Service

KTM-Sportmotorcycle AG
5230 Mattighofen, Austria

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1 MEANS OF REPRESENTATION

1.1 Symbols used

The meaning of specific symbols is described below.

Indicates an expected reaction (e.g. of a work step or a function).

Indicates an unexpected reaction (e.g. of a work step or a function).

All work marked with this symbol requires specialist knowledge and technical understanding. In the interest of your own safety, have these jobs performed by an authorized KTM workshop. There, your motorcycle will be optimally cared for by specially trained experts using the specialist tools required.

Indicates a page reference (more information is provided on the specified page).

1.2 Formats used

The typographical formats used in this document are explained below.

Specific name	Identifies a proprietary name.
Name®	Identifies a protected name.
Brand™	Identifies a brand available on the open market.

2 SAFETY ADVICE

2.1 Use definition - intended use

KTM sport motorcycles are designed and constructed to meet the normal demands of regular road and light offroad operation (dirt roads), but not for use on race courses.

Info

The motorcycle is only authorized for operation on public roads in the homologated version.

2.2 Safety advice

A number of safety instructions need to be followed to operate the vehicle safely. Therefore, read this manual carefully. The safety instructions are highlighted in the text and are referred to at the relevant passages.

Info

The vehicle has various information and warning labels at prominent locations. Do not remove information/warning labels. If they are missing, you or others may not recognize dangers and may therefore be injured.

2.3 Degrees of risk and symbols

Danger
Identifies a danger that will immediately and invariably lead to fatal or serious permanent injury if the appropriate measures are not taken.

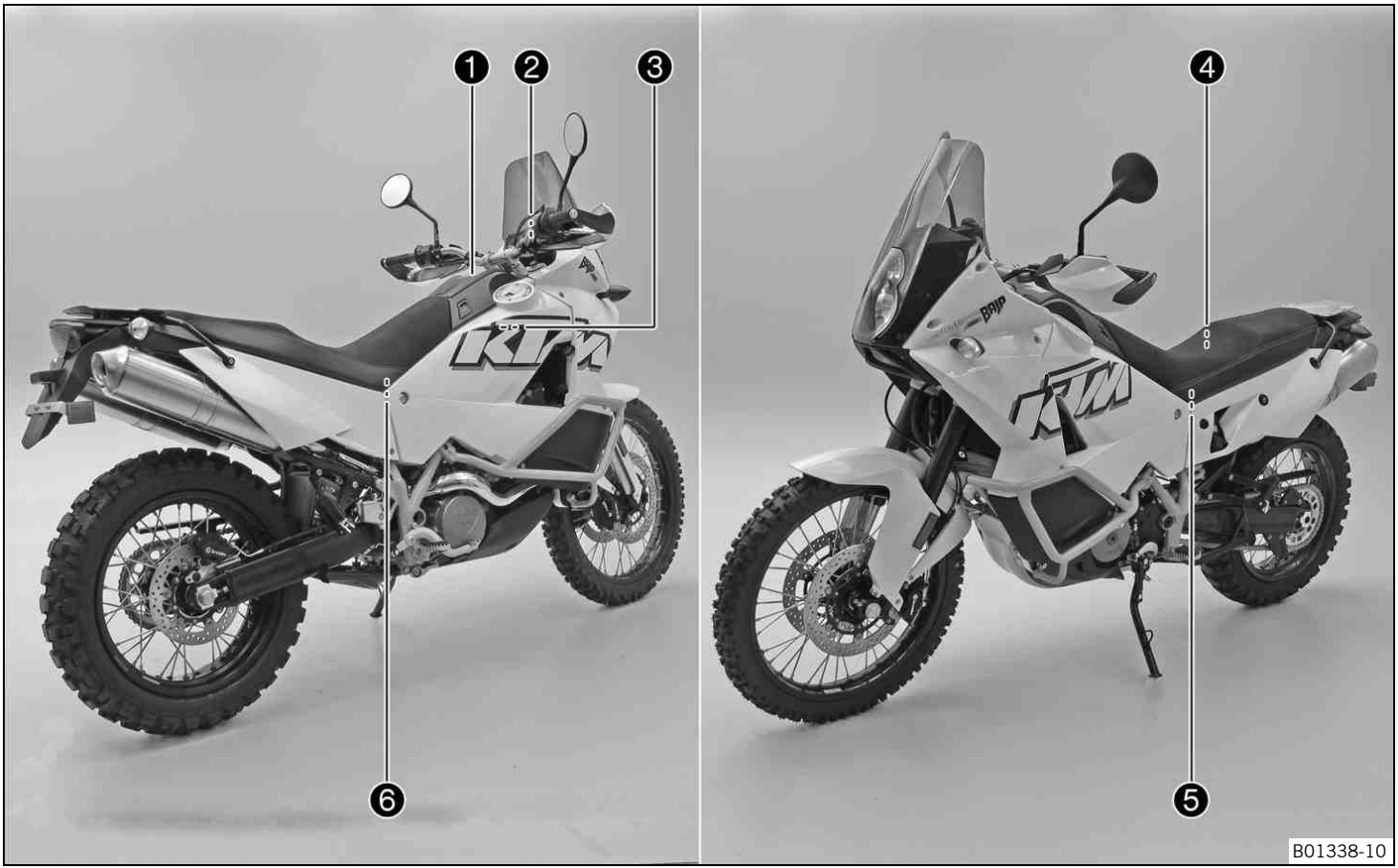
Warning
Identifies a danger that is likely to lead to fatal or serious injury if the appropriate measures are not taken.

Caution
Identifies a danger that may lead to minor injuries if the appropriate measures are not taken.

Note
Identifies a danger that will lead to considerable machine and material damage if the appropriate measures are not taken.

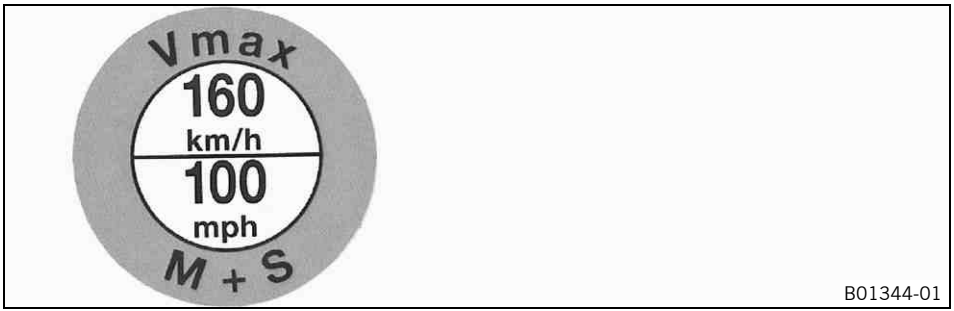
Warning
Identifies a danger that will lead to environmental damage if the appropriate measures are not taken.

2.4 Overview of labels

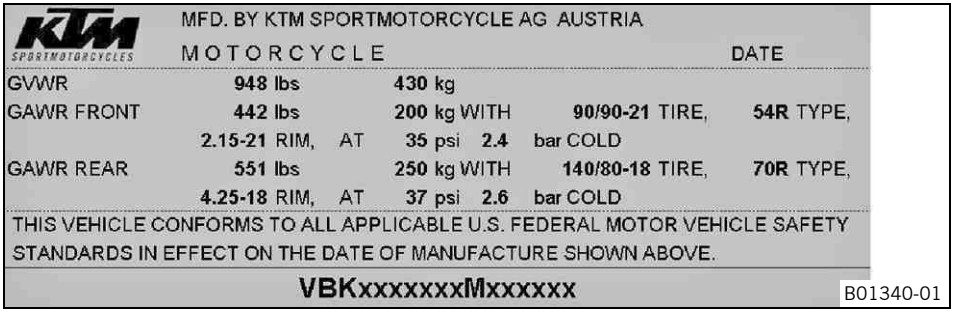


1	Information on starting up
2	Information on tires
3	USA type label
4	Information on emission control
4	Information on suspension tuning
4	Information on refueling
4	Information on chain tension
5	Information on noise emission
6	Canada type label

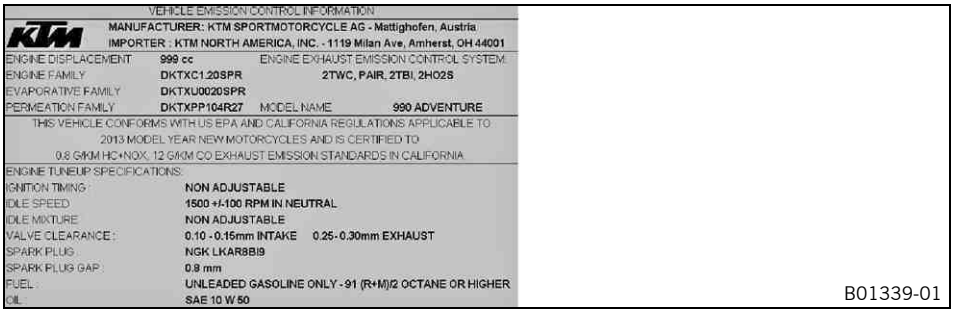
Information on starting up



Information on tires



USA type label



VEHICLE EMISSION CONTROL INFORMATION

MANUFACTURER: KTM SPORTMOTORCYCLE AG - Mattighofen, Austria
IMPORTER : KTM NORTH AMERICA, INC. - 1119 Milan Ave, Amherst, OH 44001

ENGINE DISPLACEMENT	999 cc	ENGINE EXHAUST EMISSION CONTROL SYSTEM:	
ENGINE FAMILY	DKTXC1.20SPR		2TWC, PAIR, 2TBI, 2HO2S
EVAPORATIVE FAMILY	DKTXU0020SPR		
PERMEATION FAMILY	DKTXPP104R27	MODEL NAME	990 ADVENTURE

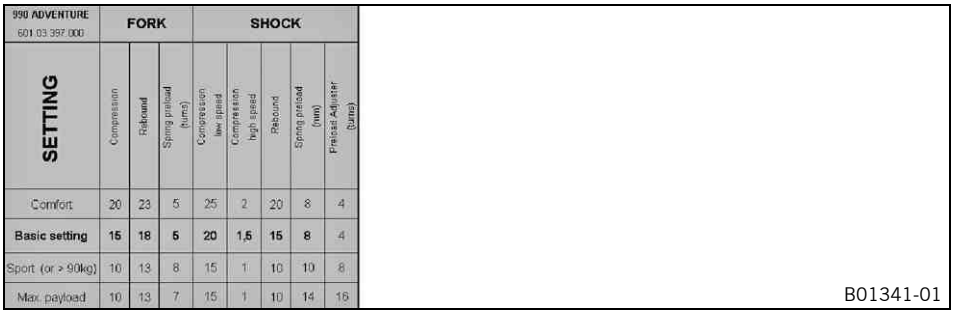
THIS VEHICLE CONFORMS WITH US EPA AND CALIFORNIA REGULATIONS APPLICABLE TO
2013 MODEL YEAR NEW MOTORCYCLES AND IS CERTIFIED TO
0.8 G/KM HC+NOX, 12 G/KM CO EXHAUST EMISSION STANDARDS IN CALIFORNIA

ENGINE TUNEUP SPECIFICATIONS:

IGNITION TIMING :	NON ADJUSTABLE
IDLE SPEED :	1500 +/-100 RPM IN NEUTRAL
IDLE MIXTURE :	NON ADJUSTABLE
VALVE CLEARANCE :	0.10 - 0.15mm INTAKE 0.25 - 0.30mm EXHAUST
SPARK PLUG :	NGK LKAR8BI9
SPARK PLUG GAP :	0.8 mm
FUEL :	UNLEADED GASOLINE ONLY - 91 (R+M)/2 OCTANE OR HIGHER
OIL :	SAE 10 W 50

B01339-01

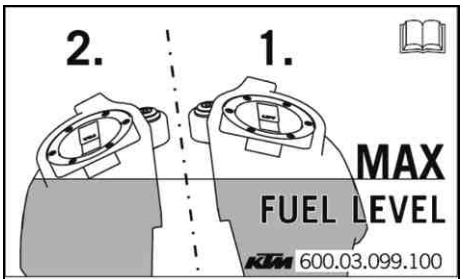
Information on emission control



990 ADVENTURE 601.03.397.000	FORK			SHOCK				
SETTING	Compression	Rebound	Spring preload (turns)	Compression low speed	Compression high speed	Rebound	Spring preload (mm)	Preload Adjuster (turns)
Comfort	20	23	5	25	2	20	8	4
Basic setting	**15**	**18**	**5**	**20**	**1,5**	**15**	**8**	4
Sport (or > 90kg)	10	13	8	15	1	10	10	8
Max. payload	10	13	7	15	1	10	14	16

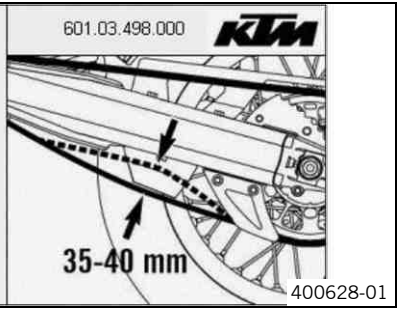
B01341-01

Information on suspension tuning



Information on refueling

990 ADVENTURE / 990 ADVENTURE S	
Fuel	RON 95 unleaded (USA = PREMIUM RON 91)
Tyre front	90/90-21, speed index V
Air pressure	rider only 2.4 bar (34 psi) / max. payload 2.4 bar (34 psi)
Tyre rear	150/70-18, speed index V
Air pressure	rider only 2.6 bar (37 psi) / max. payload 2.8 bar (40 psi)
Max. payload	210 kg (463 lbs), max. total weight 430 kg (948 lbs)
Engine oil	fully syntetic 10W/50 (5W/40 under 0°C, 32°F)
Chain tension	see figure
Further information see owners handbook	



Information on chain tension

MOTORCYCLE NOISE EMISSION CONTROL INFORMATION
KTM SPORTMOTORCYCLE AG, AUSTRIA

THIS 2013 KTMD210999 MOTORCYCLE 601.05.182.100 AND 601.05.183.100 MEETS U.S. EPA NOISE EMISSION REQUIREMENTS OF 80 dBA AT 4250 RPM BY THE U.S. FEDERAL TEST PROCEDURE. MODIFICATIONS WHICH CAUSE THIS MOTORCYCLE TO EXCEED FEDERAL NOISE STANDARDS ARE PROHIBITED BY U.S. FEDERAL LAW. SEE OWNER'S MANUAL.

Motorcycle Type : 990 ADVENTURE B01342-01

Information on noise emission

MANUFACTURED BY/FABRIQUÉ PAR:			KTM SPORTMOTORCYCLE AG			
GVWR/PNBV:	430	KG	DATE:			
V.I.N./N.I.V.:	VBKxxxxxxxMxxxxxx					
TYPE:	MC					
GAWR/PNBE			TIRE/PNEU-DIMENSION-RIM/JANTE		COLD INFL. PRESS. PRESS. DE GONFL. À FROID PSI/LPC	KPA
1st	200	KG	90/90-21	2.15-21	35	240
2nd	250	KG	140/80-18	4.25-18	37	260

THIS VEHICLE CONFORMS TO ALL APPLICABLE STANDARDS PRESCRIBED UNDER THE CANADIAN SAFETY REGULATIONS IN EFFECT ON THE DATE OF MANUFACTURE - CE VÉHICULE EST CONFORME À TOUTES LES NORMES QUI LUI SONT APPLICABLES EN VERTU DU RÈGLEMENT SUR LA SÉCURITÉ DES VÉHICULES AUTOMOBILES DU CANADA EN VIGUEUR À LA DATE DE SA FABRICATION

B01343-01

Canada type label

2.5 Reporting safety defects

If you believe that your vehicle has a defect which could cause an accident resulting in injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying KTM North America, Inc.
If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or KTM North America, Inc.

To contact NHTSA, you may either call the Vehicle Safety Hotline toll-free at 1–888–327–4236 or visit the website www.nhtsa.dot.gov, or write to: NHTSA Headquarters, 1200 New Jersey Avenue, SE, West Building, Washington, DC 20590. You can also obtain other information about motor vehicle safety from the Hotline.

2.6 Noise emission warranty

KTM Sportmotorcycle AG warrants that this exhaust system, at the time of sale, meets all applicable U.S. EPA federal noise standards. This warranty extends to the first person who buys this exhaust system for purposes other than resale, and to all subsequent buyers.
Warranty claims should be directed to:
KTM North America, Inc., Customer Support, 1119 Milan Ave., Amherst, OH 44001, USA
Phone: (440) 985–3553
www.ktmusa.com
KTM Canada, Inc., Customer Support, 1375-1 Marie-Victorin, Saint-Bruno, QC J3V 6B7
Phone: (450) 441–4451 x 4250
www.ktmcanada.com

2.7 Operating noise warning

This product should be checked for necessary repairs or replacement parts if motorcycle noise has increased significantly through use. Otherwise, the owner may become subject to penalties depending on local laws.

2.8 Consumer rights

Warranty claims should be submitted to a KTM workshop. If you are not satisfied, please contact:
KTM North America, Inc., Customer Support, 1119 Milan Ave., Amherst, OH 44001, USA
Phone: (440) 985–3553
www.ktmusa.com
KTM Canada, Inc., Customer Support, 1375-1 Marie-Victorin, Saint-Bruno, QC J3V 6B7
Phone: (450) 441–4451 x 4250
www.ktmcanada.com
Your rights may vary depending on national and regional laws.

2.9 Tampering warning

Tampering with noise control system prohibited. Federal law prohibits the following acts or the causing thereof:

1 The removal or rendering inoperative by any person other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use, or

2 the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

Among those acts presumed to constitute tampering are the acts listed below.

1 Removal of, or puncturing the muffler, baffles, header pipes or any other components which conducts exhaust gases.

2 Removal or puncturing of any part of the intake system.

3 Lack of proper maintenance.

4 Replacing any moving part of the vehicle, or parts of the exhaust or intake system, with parts other than those specified by the manufacturer.

2.10 Safe operation

Danger

Danger of accidents Danger arising from the rider's judgement being impaired.

– Do not operate the vehicle while under the influence of alcohol, drugs and certain medications or physically or mentally impaired.

Danger

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

– When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.

Warning

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

– Do not touch hot components such as exhaust system, radiator, engine, shock absorber, and the brake system. Allow these components to cool down before starting work on them.

Only operate the vehicle when it is in perfect technical condition, in accordance with its intended use, and in a safe and environmentally compatible manner.
The vehicle should only be used by trained persons. An appropriate driver's license is needed to ride the vehicle on public roads.
Have malfunctions that impair safety promptly eliminated by an authorized KTM workshop.
Adhere to the information and warning labels on the vehicle.

2.11 Protective clothing

Warning

Risk of injury Missing or poor protective clothing presents an increased safety risk.

– Wear protective clothing (helmet, boots, gloves, pants and jacket with protectors) every time you ride the vehicle. Always wear protective clothing that is in good condition and meets the legal requirements.

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

2.12 Work rules

Special tools are necessary for some of the work. These are not included with the vehicle and can be ordered under the number in parentheses. Ex: valve spring mounter (59029019000)
During assembly, non-reusable parts (e.g. self-locking screws and nuts, seals and seal rings, O-rings, pins, lock washers) must be replaced by new parts.
Where thread lockers are used on screw connections (e.g., **Loctite®**), follow the instructions for use from the manufacturer.
Parts that you want to reuse following repairs and servicing should be cleaned and checked for damage and wear. Change damaged or worn parts.
Following repairs or servicing, the vehicle must be checked for roadworthiness.

2.13 Environment

Motorcycling is a wonderful sport and we naturally hope that you can enjoy it to the full. However, it can also lead to problems with the environment and conflict with other persons. Responsible behavior in handling the motorcycle can help to avoid such problems and conflicts. To protect the future of motorcycle sport, make sure that you use your motorcycle legally, display environmental consciousness, and respect the rights of others.

2.14 Owner's Manual

It is important that you 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 maintain your motorcycle. Only then will you find out how to customize the vehicle ideally for your own use and how you can protect yourself from injury.
Keep the Owner's Manual in an accessible place to enable you to refer to it as needed.
If you would like to know more about the vehicle or have questions on the material you read, please contact an authorized KTM dealer.
The Owner's Manual is an important component of the vehicle and should be handed over to the new owner if the vehicle is sold.

3 IMPORTANT NOTES

3.1 Warranty

The work prescribed in the service schedule must be carried out by an authorized KTM workshop only and confirmed in the customer's service record and in the **KTM dealer.net**; otherwise, all warranty claims will be void. No warranty claims can be considered for damage resulting from manipulations and/or alterations to the vehicle.
Additional information on the guarantee or warranty and the procedures involved can be found in the service record.

3.2 Operating and auxiliary substances

Warning
Environmental hazard Improper handling of fuel is a danger to the environment.

– Do not allow fuel to get into the ground water, the ground, or the sewage system.

Use operating and auxiliary substances (such as fuel and lubricants) as specified in the Owner's Manual.

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 KTM workshop. 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 KTM dealer will be glad to advise you.

The current **KTM PowerParts** for your vehicle can be found on the KTM website.
International KTM Website: http://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 are properly carried out as described in the owner's manual. Poor adjustment and tuning of the engine and suspension can lead to damage and breakage of components.
Using the motorcycle in extreme conditions such as very muddy or wet roads can lead to above-average wear of components such as the transmission train or the brakes. For this reason, it may be necessary to service or replace worn parts before the limit specified in the service schedule is reached.

3 IMPORTANT NOTES

Pay careful attention to the prescribed running-in period and service intervals. Close adherence to these periods will significantly lengthen the service life of your motorcycle.

3.5 Figures

The figures contained in the manual may depict special equipment.
In the interest of clarity, some components may be shown disassembled or may not be shown at all. It is not always necessary to disassemble the component to perform the activity in question. Please follow the instructions in the text.

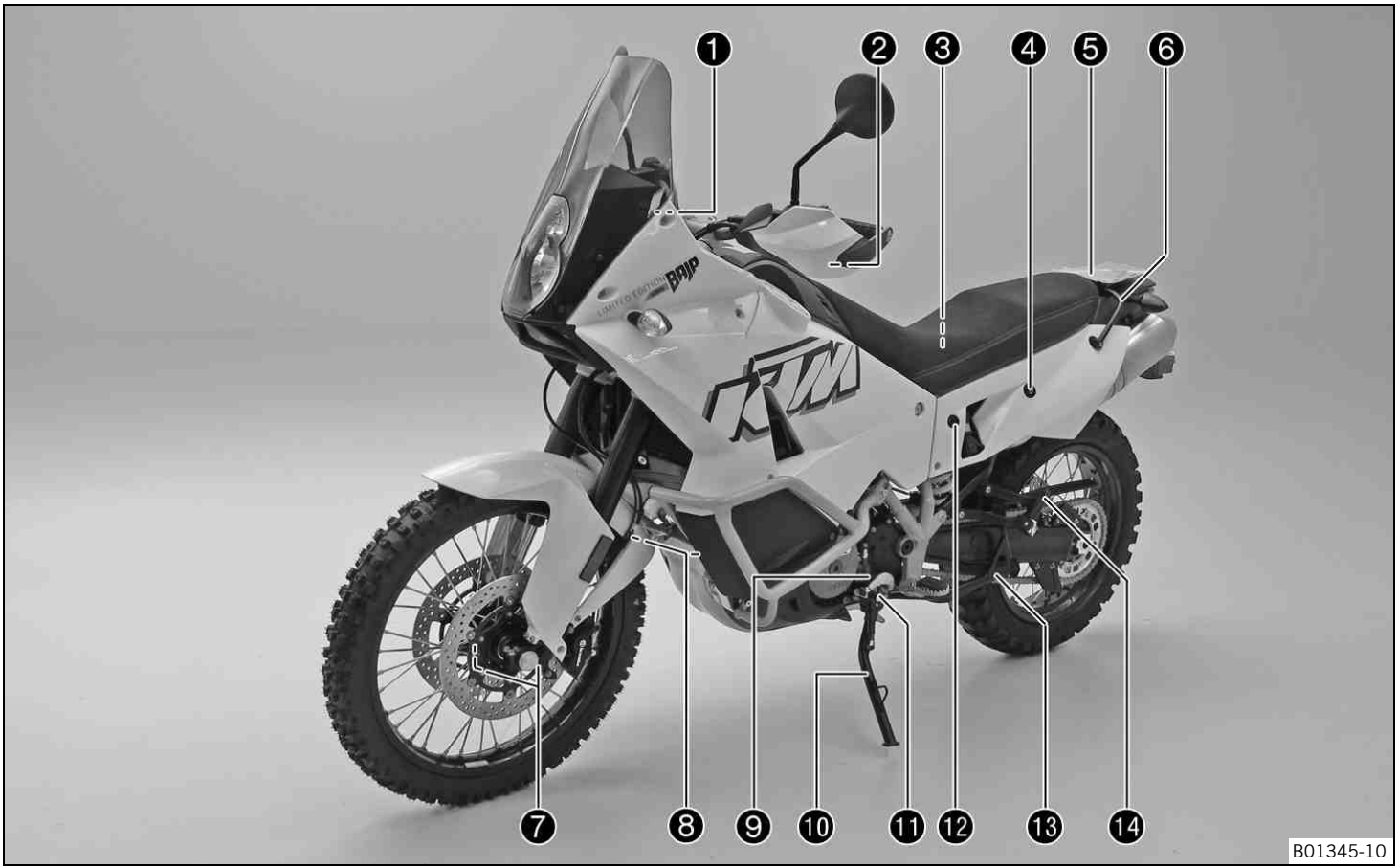
3.6 Customer service

Your authorized KTM dealer will be happy to answer any questions you may have on your vehicle and KTM.

A list of authorized KTM dealers can be found on the KTM website.
International KTM Website: http://www.ktm.com

4 VIEW OF VEHICLE

4.1 View of vehicle, front left side (example)



4 VIEW OF VEHICLE

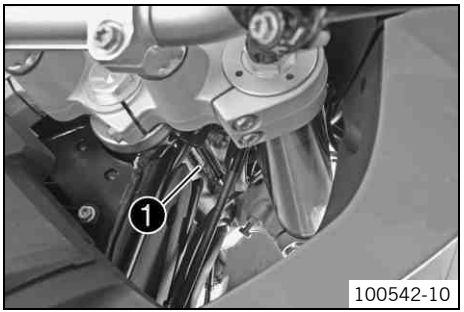
1	Indicator lamps (☛ p. 39)
1	Function buttons (☛ p. 38)
2	Clutch lever (☛ p. 32)
3	Tool set (☛ p. 53)
4	Seat lock (☛ p. 53)
5	Luggage rack plate (☛ p. 54)
6	Handrails (☛ p. 54)
7	Fork compression adjustment
8	Fuel taps (☛ p. 52)
9	Engine number (☛ p. 30)
10	Side stand (☛ p. 57)
11	Shift lever (☛ p. 55)
12	Shock absorber compression adjustment
13	Center stand (☛ p. 57)
14	Passenger footrests (☛ p. 55)

4.2 View of vehicle, rear right side (example)

1	Fork rebound adjustment
2	Light switch (☛ p. 34)
2	Turn signal switch (☛ p. 35)
2	Horn button (☛ p. 33)
2	Headlight flasher switch (☛ p. 34)
3	Hazard warning flasher switch/hazard warning flasher (☛ p. 47)
3	Ignition/steering lock (☛ p. 36)
4	Socket for electrical accessories (☛ p. 48)
5	Emergency OFF switch (☛ p. 35)
5	Electric starter button (☛ p. 36)
6	Hand brake lever (☛ p. 32)
7	Chassis number (☛ p. 28)
8	Shock absorber, rebound adjustment
9	Foot brake lever (☛ p. 56)
10	Oil dipstick
11	Compensating tank, cooling system

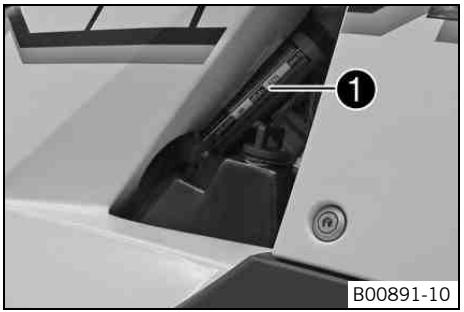
5 SERIAL NUMBERS

5.1 Chassis number

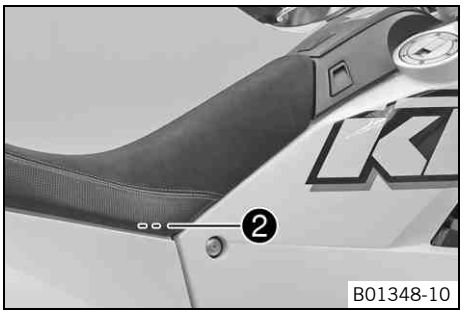


The chassis number ❶ is stamped on the right side of the steering head.
The chassis number is also found on the type label.

5.2 Type label

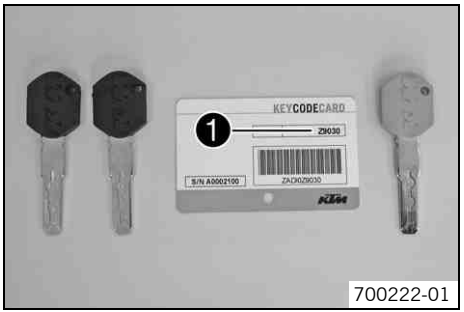


The USA ❶ type label is located on the right frame tube in the area of the oil tank.



The Canada ❷ type label is located on the right frame tube under the seat.

5.3 Key number



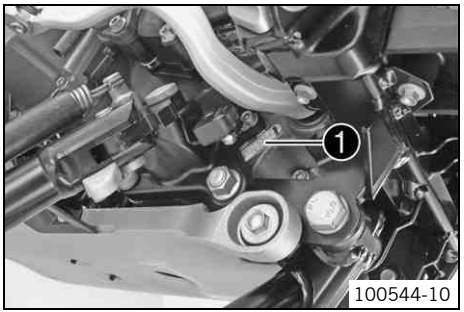
The key number **Code number** ❶ can be found on the **KEYCODECARD**.

Info

You need the key number to order a spare key. Keep the **KEYCODECARD** in a safe place.

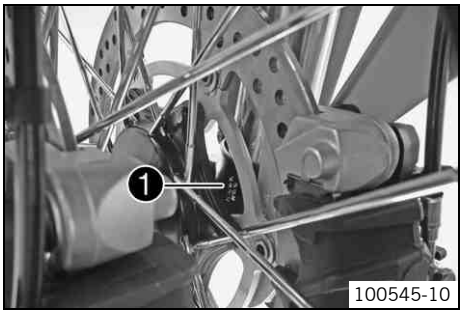
Use the orange programming key to activate and deactivate the black ignition key. Keep the orange programming key in a safe place: it must only be used for learning and programming functions.

5.4 Engine number



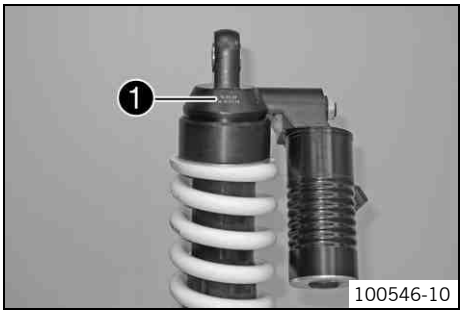
The engine number ❶ is stamped on the left side of the engine under the engine sprocket.

5.5 Fork part number



The fork part number ❶ is stamped on the inner side of the fork stub.

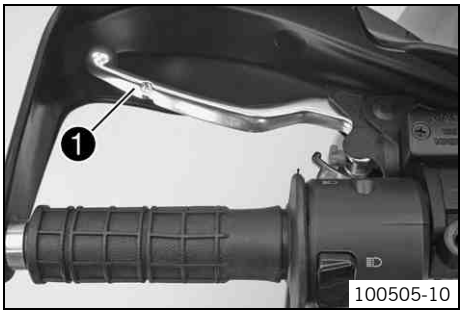
5.6 Shock absorber part number



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

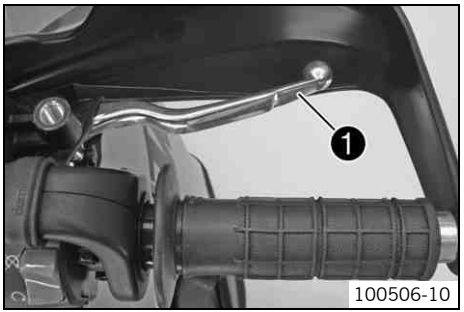
6 CONTROLS

6.1 Clutch lever



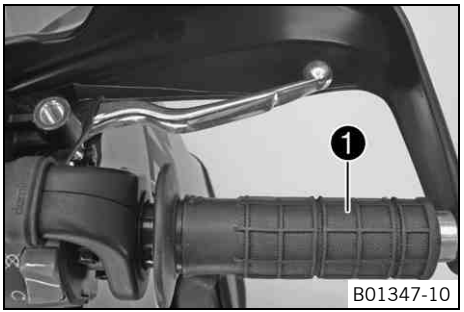
The clutch lever ❶ is fitted on the left side of the handlebar.
The clutch is hydraulically operated and self-adjusting.

6.2 Hand brake lever



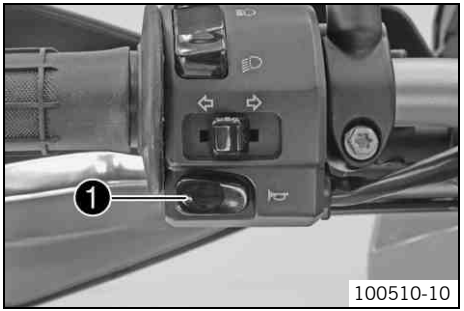
The hand brake lever ❶ is fitted on the right side of the handlebar.
The front brake is engaged using the hand brake lever.

6.3 Throttle grip



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

6.4 Horn button

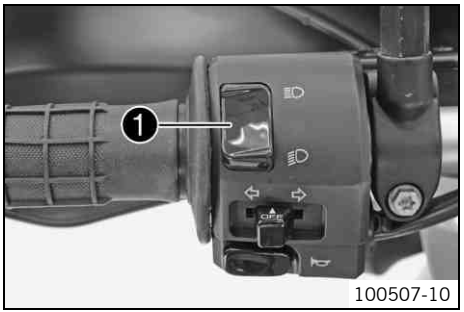


The horn button ❶ is fitted on the left side of the handlebar.

Possible states

- Horn button ⌓ in neutral position
- Horn button ⌓ pressed – The horn is operated in this position.

6.5 Light switch

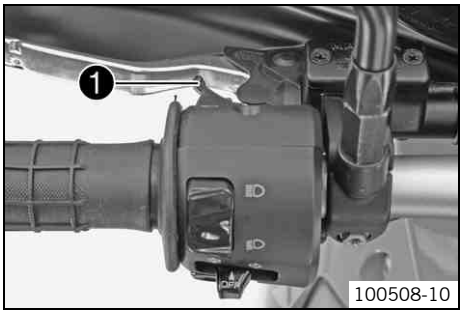


The light switch ❶ is fitted on the left side of the handlebar.

Possible states

	Low beam on – The light switch is turned downwards. In this position, the low beam and tail light are switched on.
	High beam on – The light switch is turned upwards. In this position, the high beam and tail light are switched on.

6.6 Headlight flasher switch

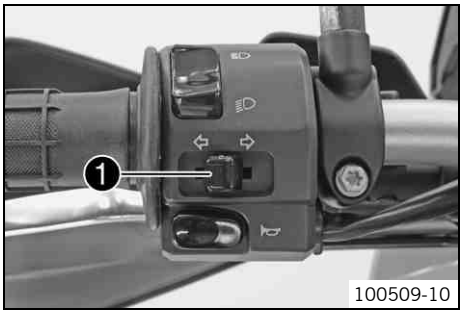


The headlight flasher switch ❶ is fitted on the left side of the handlebar.

Possible states

- Headlight flasher switch in neutral position
- Headlight flasher switch pressed – The headlight flasher switch (high beam) is operated in this position.

6.7 Turn signal switch



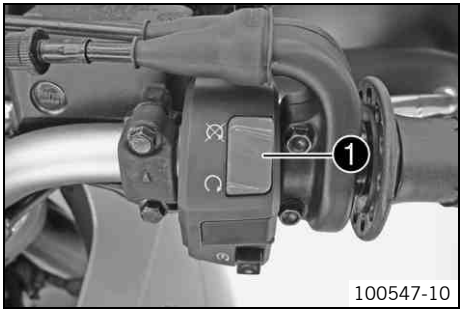
The turn signal switch ❶ is fitted on the left side of the handlebar.

Possible states

	Turn signal off
⇦	Turn signal, left, on – The turn signal switch is pressed to the left. The turn signal switch automatically returns to the central position after use.
⇨	Turn signal, right, on – The turn signal switch is pressed to the right. The turn signal switch automatically returns to the central position after use.

To switch off the turn signal, press the turn signal switch towards the switch case.

6.8 Emergency OFF switch

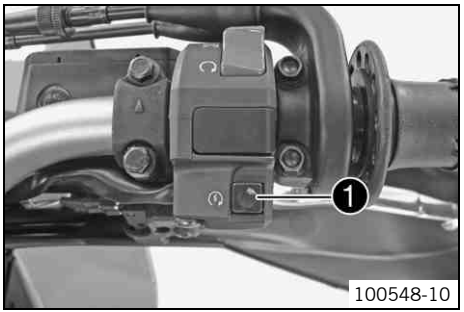


The emergency OFF switch ❶ is fitted on the right side of the handlebar.

Possible states

	Emergency OFF switch off – In this position, the ignition circuit is interrupted, a running engine stops, and the engine cannot be started.
	Emergency OFF switch on – This position is necessary for operation as it closes the ignition circuit.

6.9 Electric starter button

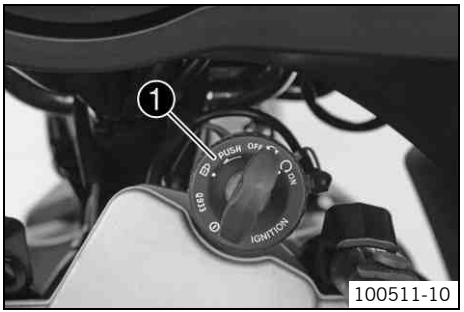


The electric starter button ❶ is fitted on the right side of the handlebar.

Possible states

- Electric starter button ⚡ in basic position
- Electric starter button ⚡ is pressed – The electric starter is actuated in this position.

6.10 Ignition/steering lock



The ignition/steering lock ❶ is in front of the upper triple clamp.

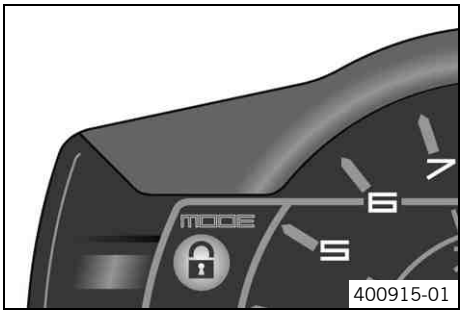
Info

The ignition may only be switched on using a black ignition key.
Use the orange programming key to activate and deactivate the black ignition key.

Possible states

	Ignition **OFF** – In this position, the ignition circuit is interrupted, a running engine stops, and a non-running engine will not start. The black ignition key can be removed.
	Ignition **ON** – In this position, the ignition circuit is closed and the engine can be started.
	Steering locked – In this position, the ignition circuit is interrupted and the steering locked. The black ignition key can be removed.

6.11 Immobilizer



The electronic immobilizer secures the vehicle against unauthorized use.
The immobilizer is activated automatically and the engine electronics are locked when the ignition key is withdrawn.
The red warning lamp flashes at 15 second intervals after one minute.
The red warning lamp can also indicate errors by flashing.

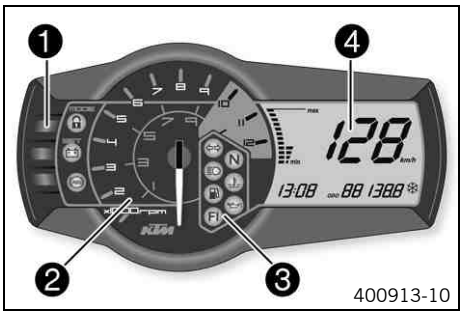
Info

The ignition key contains electronic components. Never attach multiple ignition keys to a single key ring; this may cause mutual interference and lead to problems.

A lost black ignition key must be deactivated to prevent unauthorized persons from operating the vehicle.
The second black ignition key is activated when the vehicle is shipped.
Another two spare ignition keys (key number on the **KEYCODECARD**) can be ordered from an authorized KTM workshop, but they need to be activated for use.

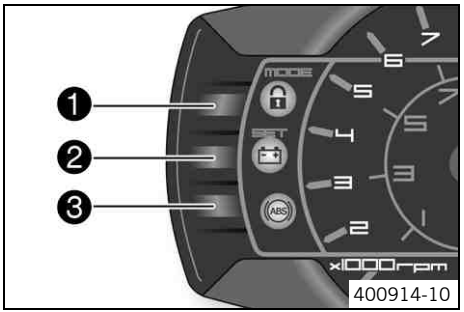
6.12 Combination instrument

6.12.1 Overview



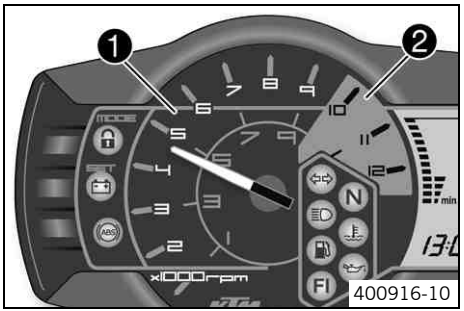
The combination instrument is installed in front of the handlebar.
The combination instrument is divided into 4 function areas.
❶ Function buttons
❷ Tachometer
❸ Indicator lamps
❹ Display

6.12.2 Function buttons



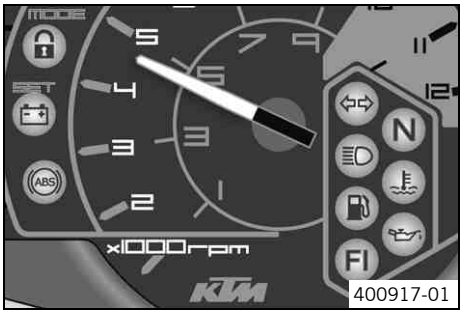
You can change the display mode with the **MODE** button ❶.
Possible display modes are the distance traveled (**ODO**), trip master 1 (**TRIP 1**), trip master 2 (**TRIP 2**) and the ambient temperature.
Press the **SET** button ❷ to reset the trip master 1 function (**TRIP 1**) and trip master 2 function (**TRIP 2**) to **0.0**.
Button ❸ has no function.

6.12.3 Tachometer



The tachometer ❶ shows the engine speed in revolutions per minute.
The red marking ❷ shows the overspeed range of the engine.

6.12.4 Indicator lamps



The indicator lamps offer additional information about the operating state of the motorcycle.

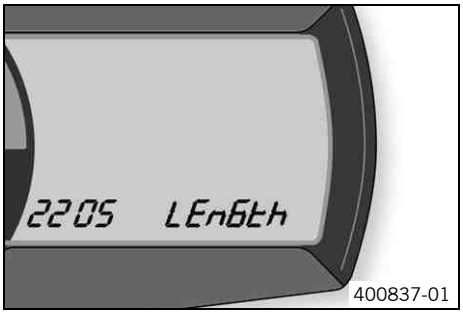
Possible states

	The turn signal indicator lamp flashes green simultaneously with the turn signal – The turn signal is switched on.
	The idle speed indicator lamp lights up green – The transmission is switched to idle.
	The high beam indicator lamp lights up blue – The high beam is switched on.
	The temperature warning lamp lights up red – The coolant temperature has reached a critical value.
	The fuel level warning lamp lights up orange – The fuel level has reached the reserve mark. The display switches to **TRIP F**.
	The oil pressure warning lamp lights up red – The oil pressure is too low.
	FI warning lamp (**MIL**) lights up/flashes orange – The OBD (on-board diagnosis) has detected an emission- or safety-critical error.
	The immobilizer indicator lamp lights up or flashes red – Status or error message for immobilizer/alarm system.
	The battery warning lamp lights up red – The voltage in the vehicle system is too low.

6.12.5 Display

400892-01

When you switch on the ignition, all display segments light up for one second as a function test.



400837-01

LEnGth

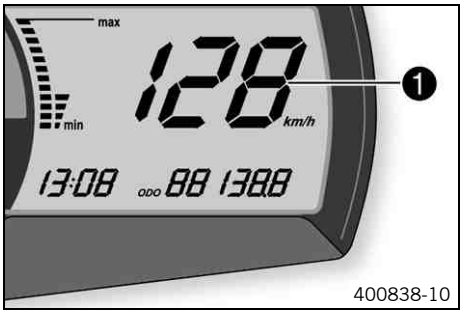
Following the display function test, the wheel circumference **LEnGth** is shown for one second.

Info

2205 mm equals the circumference of the 21" front wheel with a series production tire.

The display then changes to the last selected mode.

6.12.6 Speed display

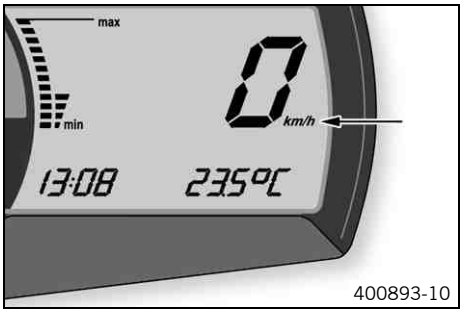


The speed ❶ is shown in kilometers per hour **km/h** or in miles per hour **mph**.

6.12.7 Setting kilometers or miles

Info
If you change the unit, the value **ODO** is retained and converted accordingly.
Making the setting according to the country.

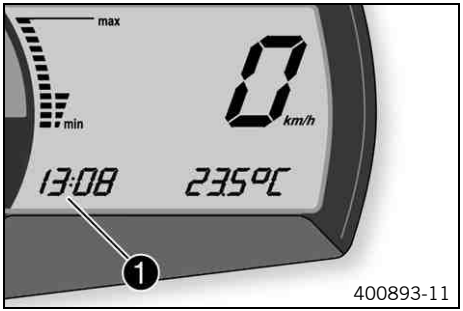
Condition
The motorcycle is standing.



400893-10

– Switch on the ignition by turning the black ignition key to the position **ON** ⎔.
– Press the **MODE** button repeatedly until the **ODO** mode is active.
– Keep the **MODE** button pressed until the display mode changes from **km/h** to **mph** or from **mph** to **km/h**.

6.12.8 Time



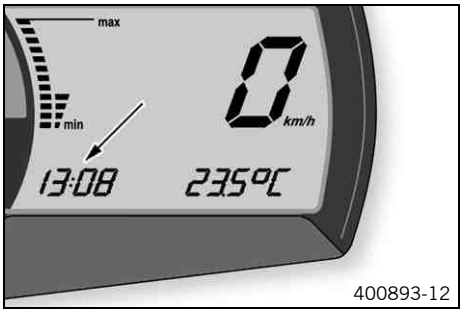
400893-11

The time is shown in area ❶ of the display.

Info
After reconnecting the battery or changing the fuse, the time must be reset.

6.12.9 Setting the clock

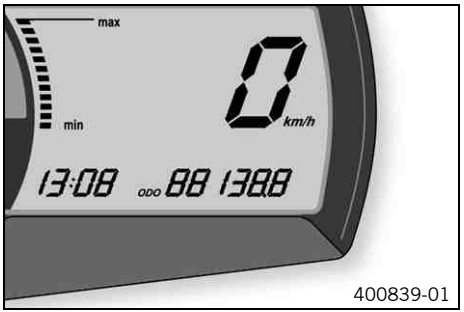
Condition
The motorcycle is standing.



400893-12

– Switch on the ignition by turning the black ignition key to the position **ON** ⎔.
– Press the **MODE** button repeatedly until the **ODO** mode is active.
– Keep the **MODE** button and the **SET** button pressed simultaneously.
  ✔ The time display begins to flash.
– Press the **MODE** button to set the hour.
– Press the **SET** button to set the minute.
– Keep the **MODE** button and the **SET** button pressed simultaneously.
  ✔ The time is set.

6.12.10 ODO display



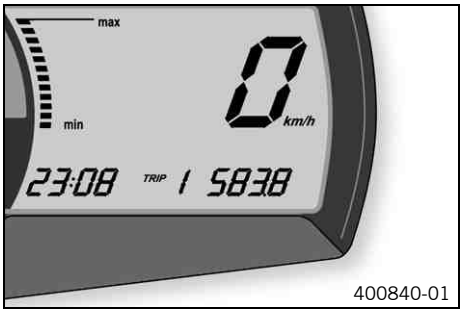
400839-01

In the **ODO** display mode, the total distance traveled is shown in kilometers or miles.

Info
This value is retained, even if the battery is disconnected and/or the fuse blows.

6.12.11 Setting/resetting display TRIP 1

Info
The **TRIP 1** trip counter is always running and counts up to **999.9**.
The trip counter can be used to measure the distance covered during trips or between two refueling stops. After the value **999.9** is reached, the trip counter starts at **0.0** again.

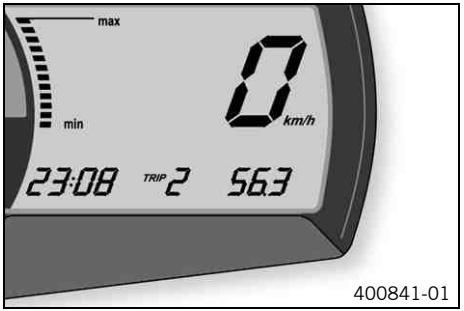


400840-01

– Switch on the ignition by turning the black ignition key to the position **ON** ⎔.
– Press the **MODE** button repeatedly until the **TRIP 1** mode is active.
– Keep the **SET** button pressed.
  ✔ The **TRIP 1** display is set to **0.0**.

6.12.12 Setting/resetting display TRIP 2

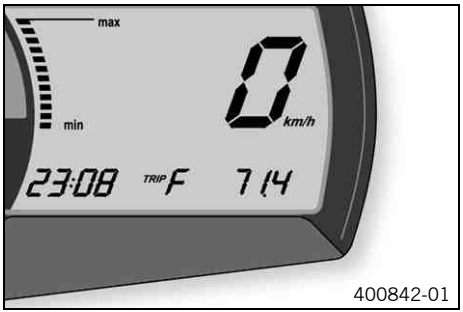
Info
The **TRIP 2** trip counter is always running and counts up to **999.9**.
The trip counter can be used to measure the distance covered during trips or between two refueling stops. After the value **999.9** is reached, the trip counter starts at **0.0** again.



400841-01

– Switch on the ignition by turning the black ignition key to the position **ON** ⎔.
– Press the **MODE** button repeatedly until the **TRIP 2** mode is active.
– Keep the **SET** button pressed.
  ✔ The **TRIP 2** display is set to **0.0**.

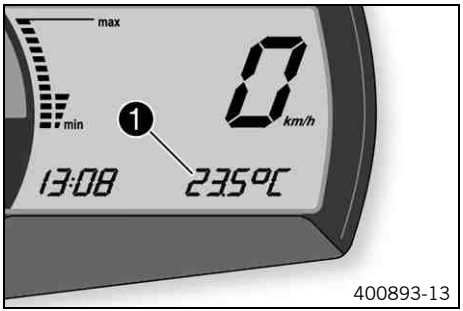
6.12.13 TRIP F display



If the fuel level drops to the reserve mark, the display automatically changes to **TRIP F** and starts to count from **0.0**, regardless of the previous display mode.

Info
The low fuel warning lamp lights up in parallel to the **TRIP F** display.

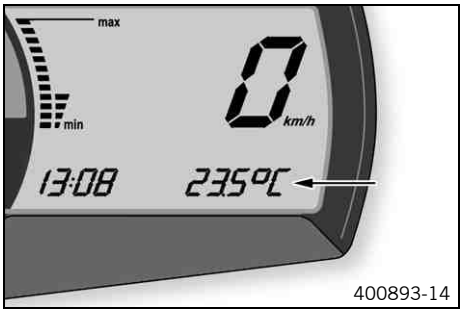
6.12.14 Ambient temperature indicator



The ambient temperature ❶ is displayed in **°C** or **°F**.

6.12.15 Setting the temperature unit of measure

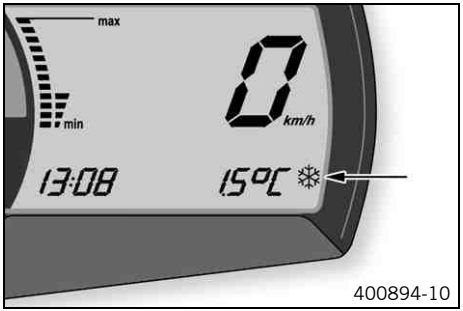
Condition
The motorcycle is standing.



400893-14

– Switch on the ignition by turning the black ignition key to the position **ON** ⎔.
– Press the **MODE** button repeatedly until the ambient temperature is active.
– Keep the **MODE** button pressed until the display mode changes from **°C** to **°F** or from **°F** to **°C**.

6.12.16 Warning of icy roads



400894-10

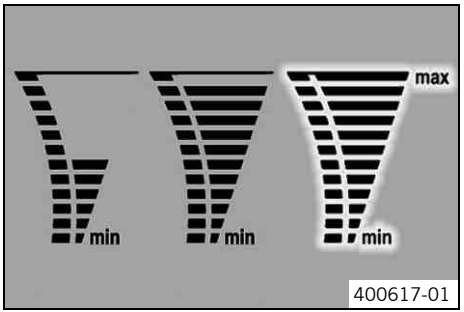
The ice symbol ❄ lights up to indicate an increased danger of slippery roads.
The ice symbol ❄ appears in the display when the ambient temperature drops below the specified value.

Temperature	3 °C (37 °F)

The ice symbol ❄ goes out in the display when the ambient temperature rises above the specified value again.

Temperature	4 °C (39 °F)

6.12.17 Coolant temperature indicator

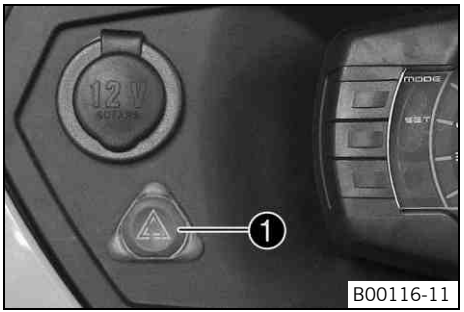


The temperature display consists of 12 bars. The more bars that light up, the hotter the coolant. When the upper bar lights up, all bars in the display begin to flash and the temperature warning lamp lights up.

Possible states

- Engine cold – Up to five bars light up.
- The engine is warm – Six to eleven bars light up.
- Engine hot – All twelve bars flash.

6.13 Hazard warning flasher switch/hazard warning flasher



The hazard warning flasher switch ❶ is found to the left of the combination instrument. The hazard warning flasher is used to indicate emergency situations.

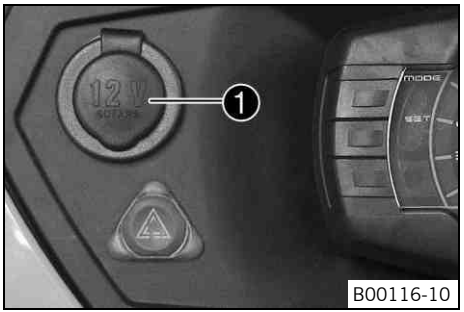
Info

The hazard warning flasher can be activated or deactivated while the ignition is switched on or up to 30 seconds after the ignition is switched off.
To spare battery power, only press the hazard warning flasher as long as necessary.

Possible states

	Hazard warning flasher off
	Hazard warning flasher on – All four turn signals, the hazard warning flasher switch and the green turn signal indicator lamp in the combination instrument flash.

6.14 Socket for electrical accessories



The socket ❶ for electrical accessories is located to the left of the combination instrument. It is connected to the battery without an additional switch.

Socket for electrical accessories	
Voltage	12 V
Maximum current consumption	10 A

6.15 Opening the filler caps

Danger

Fire hazard Fuel is highly flammable.

- Never refuel the vehicle near open flames or burning cigarettes, and always switch off the engine first. Be careful that no fuel is spilt, especially on hot vehicle components. Clean up spilt fuel immediately.
- Fuel in the fuel tank expands when warm and can escape if the tank is overfilled. See the notes on refueling.

Warning

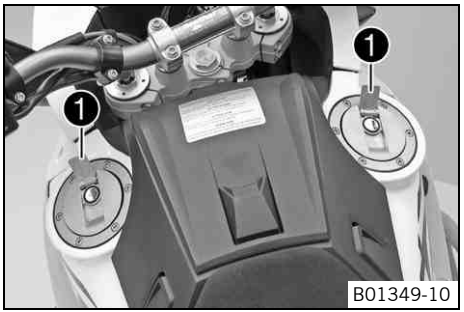
Danger of poisoning Fuel is poisonous and a health hazard.

- Avoid contact between fuel and skin, eyes and clothing. Do not inhale fuel vapors. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If fuel is swallowed, contact a doctor immediately. Change clothing that has come into contact with fuel. Store fuel in a suitable canister according to regulations and keep it out of the reach of children.

Warning

Environmental hazard Improper handling of fuel is a danger to the environment.

– Do not allow fuel to get into the ground water, the ground, or the sewage system.



– Lift the cover ❶ of the filler cap and insert the ignition key in the lock.

Note

Danger of damage Ignition key breakage.

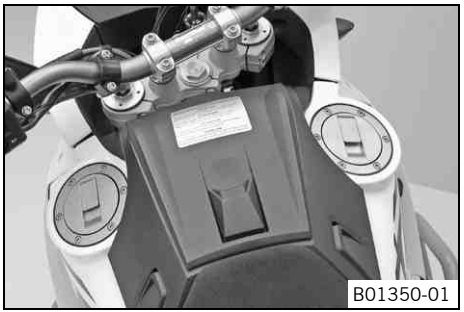
– To take pressure off of the ignition key, push down on the filler cap. Damaged ignition keys must be replaced.

– Turn the ignition key 90° clockwise.
– Raise the filler cap, withdraw the ignition key and open the second filler cap.
– Remove the ignition key.

Info

The motorcycle is equipped with two fuel tanks and two filler necks. The fuel tanks are connected to each other with a fuel line that equalizes the fuel level. The two filler caps are equipped with a ventilation system.

6.16 Closing the filler caps



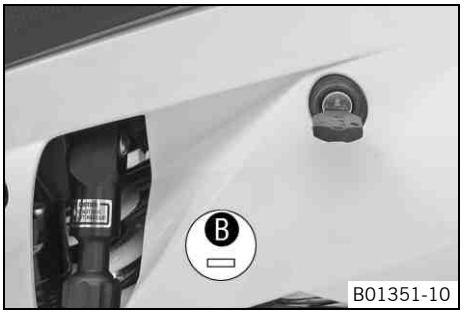
Warning

Fire hazard Fuel is highly flammable, poisonous and harmful to your health.

– When closing the filler cap, ensure that it is closed correctly. Change clothing that came into contact with fuel. Immediately clean skin that came into contact with fuel using soap and water.

– Push the filler caps closed until the locks engage.
– Close the covers.

6.17 Unlocking the storage compartment

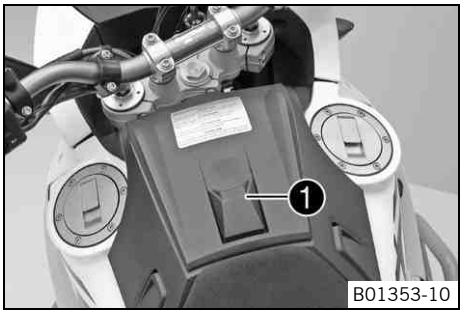


– Insert the ignition key into the seat lock.
– Turn the ignition key to position ❶.
– Remove the ignition key.

6.18 Locking the storage compartment

– Insert the ignition key into the seat lock.
– Turn the ignition key to position ❹.
– Remove the ignition key.

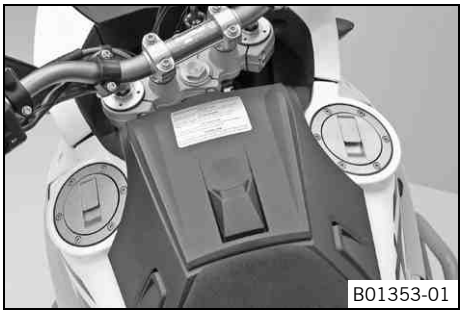
6.19 Opening the storage compartment



– Unlock the storage compartment. (☛ p. 50)
– Press button ❶ toward the seat and raise the cover at the same time.

Info
The storage compartment can only be opened if it was first unlocked using the seat lock.

6.20 Closing the storage compartment

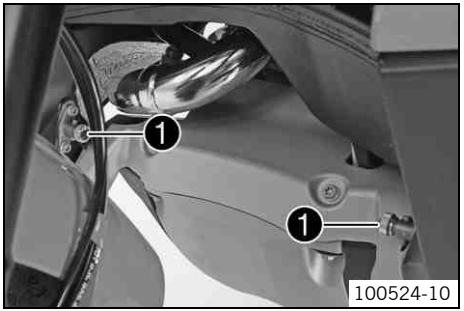


– Push down on the rear of the cover until it audibly engages.

Info
The storage compartment can be opened again as long as it has not been locked using the seat lock.

– Lock the storage compartment. (☛ p. 51)

6.21 Fuel taps



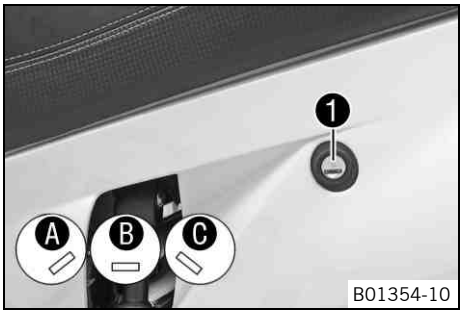
There is a fuel tap ❶ on every fuel tank.

Info
The fuel taps must be open during operation.
The fuel taps are only closed when dismantling the fuel tank.

Possible states

- Fuel supply closed – The knurled screws are turned clockwise as far as possible. The level cannot be compensated and no fuel can flow out of the fuel tank.
- Fuel tap open – The knurled screws are turned counterclockwise as far as possible. The level can be compensated and the fuel can flow out of the fuel tank.

6.22 Seat lock



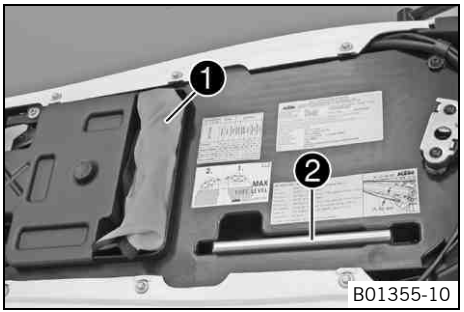
The seat lock ❶ is located in the left side cover below the seat.
The seat lock unlocks the seat and locks and unlocks the storage compartment.

Possible states

- Ⓐ Storage compartment locked
- Ⓑ Storage compartment unlocked
- Ⓒ Seat unlocked

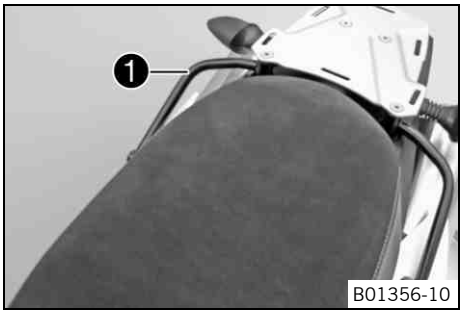
The seat lock can be locked with the ignition key.

6.23 Tool set



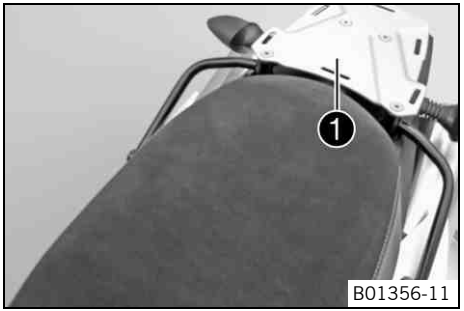
The tool set ❶ is located in the storage compartment under the seat.
The extension ❷ can be mounted on several of the wrenches in the tool set.

6.24 Handrails



The handrails ❶ are used for moving the motorcycle around.
When you have a passenger, the passenger can hold on the handrails during the trip.

6.25 Luggage rack plate

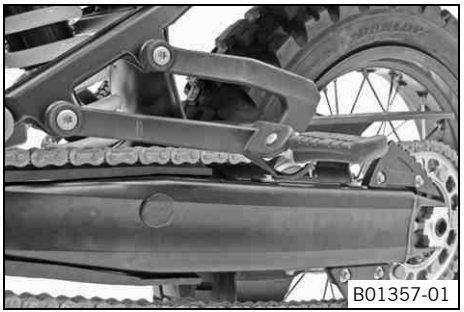


The luggage rack plate ❶ is located behind the seat.
The base plate of a luggage system (optional) can be attached to the luggage rack plate.
The luggage rack plate may not be loaded with more than the specified weight.

Maximum permissible load on luggage rack plate	8 kg (18 lb.)

Info
Note the information provided by the luggage manufacturer.

6.26 Passenger footrests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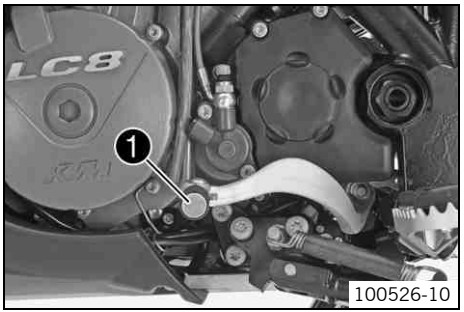
The passenger footrests can be folded up and down.

Possible states

- Passenger footrests folded up – For operation without a passenger.
- Passenger footrests folded down – For operation with a passenger.

6.27 Shift lever



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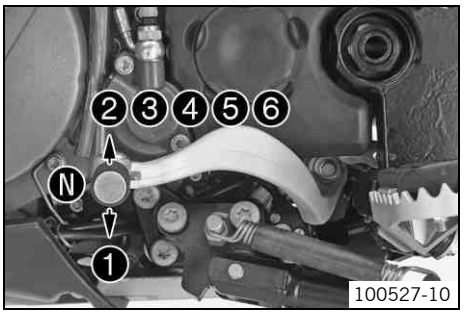
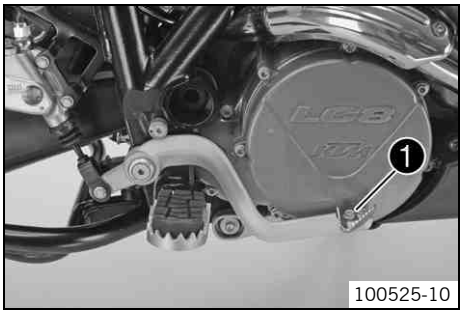
Shift lever ❶ is mounted on the left side of the engine.



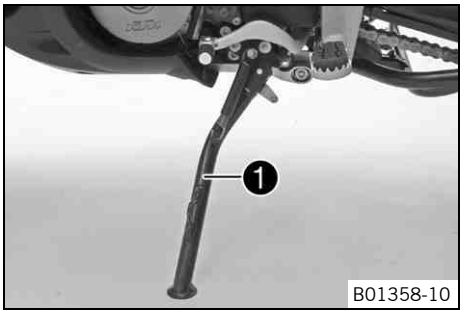
The gear positions can be seen in the photograph.
The neutral or idle position is between the first and second gears.

6.28 Foot brake lever



Foot brake lever ❶ is located in front of the right footrest.
The rear brake is activated using the foot brake lever.

6.29 Side stand



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

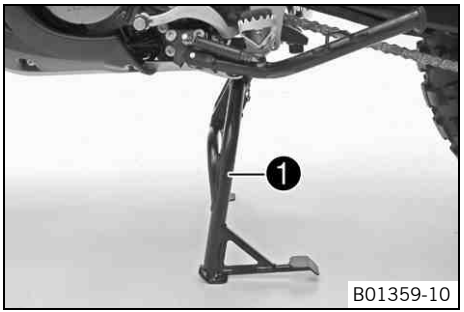
Info

The side stand must be folded up during motorcycle use.
Side stand is coupled with the safety start system; see the riding instructions.

Possible states

- Side stand folded out – The vehicle can be leaned on the side stand. The safety start system is active.
- Side stand folded in – This position is mandatory for all trips. The safety start system is inactive.

6.30 Center stand



The vehicle is equipped with a center stand ❶ in addition to a side stand.

7 PREPARING FOR USE

7.1 Information on first use

Danger

Danger of accidents Danger arising from the rider's judgement being impaired.

– Do not operate the vehicle while under the influence of alcohol, drugs and certain medications or physically or mentally impaired.

Warning

Risk of injury Missing or poor protective clothing presents an increased safety risk.

– Wear protective clothing (helmet, boots, gloves, pants and jacket with protectors) every time you ride the vehicle. Always wear protective clothing that is in good condition and meets the legal requirements.

Warning

Danger of crashing Poor vehicle handling due to different tire tread patterns on front and rear wheels.

– The front and rear wheels must be fitted with tires with similar tread patterns to prevent loss of control over the vehicle.

Warning

Danger of accidents Uncontrollable handling characteristic due to non-approved and/or non-recommended tires/wheels.

– Only tires/wheels approved by KTM and with the corresponding speed index should be used.

Warning

Danger of accidents Reduced road grip with new tires.

– New tires have a smooth rolling surface and therefore cannot provide full road grip. The entire rolling surface must be roughened in the first 200 kilometers (124.3 miles) by moderate riding at alternating angles. The full grip levels are not achieved until the tires have been run in.

Warning

Danger of accidents Failure of brake system.

– If the foot brake lever is not released, the brake linings drag continuously. The rear brake may fail due to overheating. Take your foot off the foot brake lever when you are not braking.

Info

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

– Make sure that the pre-delivery inspection work has been carried out by an authorized KTM workshop.
  ✓ You receive a delivery certificate and the service record at vehicle handover.
– Before your first trip, read the entire operating instructions carefully.
– Get to know the controls.
– Adjust the basic setting of the clutch lever. (☛ p. 108)
– Adjust the free travel of hand brake lever. (☛ p. 111)
– Adjust the basic position of foot brake lever.
– Get used to handling the motorcycle on a suitable piece of land before making a longer trip. Try also to ride as slowly as possible and in a standing position to get a better feeling for the vehicle.
– Hold the handlebar firmly with both hands and keep your feet on the footrests when riding.
– Run the engine in.

7.2 Running in the engine

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

Guideline

Maximum engine speed	
During the first: 1,000 km (621.4 mi)	6,500 rpm
After the first: 1,000 km (621.4 mi)	9,500 rpm

– Avoid full-throttle operation!

7.3 Loading the vehicle

Warning

Danger of accidents Unstable handling characteristics.

– Do not exceed the maximum permitted weight and axle loads. The overall weight consists of: motorcycle operational and with a full tank, driver and passenger with protective clothing and helmet, baggage.

Warning

Danger of accidents Unstable handling characteristics due to incorrect mounting of suitcase and/or tank rucksack.

– Mount and secure suitcase and tank rucksack according to the manufacturer's instructions.

Warning

Danger of accidents Unstable handling characteristics at high speed.

– Adapt your speed according to your payload. Ride more slowly if your motorcycle is loaded with cases or other baggage.

Maximum speed with luggage 130 km/h (80.8 mph)

Warning

Danger of accidents Risk of breakage of suitcase system.

– If you have fitted suitcases on your motorcycle, read the manufacturer's specifications concerning the maximum payload.

Warning
Danger of accidents Poor visibility for other road users due to slipped baggage.

– If the tail light is covered, you are less visible to traffic behind you, especially in the dark. Check that your baggage is fixed properly at regular intervals.

Warning
Danger of accidents Changed handling characteristics and longer stopping distance with excessive payload.

– Adapt your speed according to your payload.

Warning
Danger of accidents Unstable handling characteristics due to slipped baggage.

– Check the way your baggage is fixed regularly.

Warning
Danger of burns A hot exhaust system can burn baggage.

– Fasten your baggage in such a way that it cannot be burned or singed by the hot exhaust system.

– If you are carrying baggage, make sure 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.
– Do not exceed the maximum permitted total weight and the axle loads.

Guideline

Maximum permissible total weight	430 kg (948 lb.)
Maximum permissible front axle load	200 kg (441 lb.)
Maximum permissible rear axle load	250 kg (551 lb.)

8.1 Checks and maintenance measures when preparing for use

Info

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

- Check the engine oil level. (☛ p. 167)
- Check the front brake fluid level. (☛ p. 113)
- Check the rear brake fluid level. (☛ p. 117)
- Check the front brake linings. (☛ p. 115)
- Check the rear brake linings. (☛ p. 119)
- Check that the brake system is functioning properly.
- Check the coolant level in the compensating tank. (☛ p. 158)
- Check the chain for dirt. (☛ p. 100)
- Check the chain tension. (☛ p. 102)
- Check the tire condition. (☛ p. 128)
- Check the tire air pressure. (☛ p. 129)
- Check the spoke tension. (☛ p. 130)
- Check the settings of all controls and ensure that they can be operated smoothly.
- Check that the electrical equipment is functioning properly.
- Check that baggage is correctly secured.
- Sit on the motorcycle and check the rear mirror setting.
- Check the fuel level.

8.2 Starting

Danger

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

– When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.

Caution

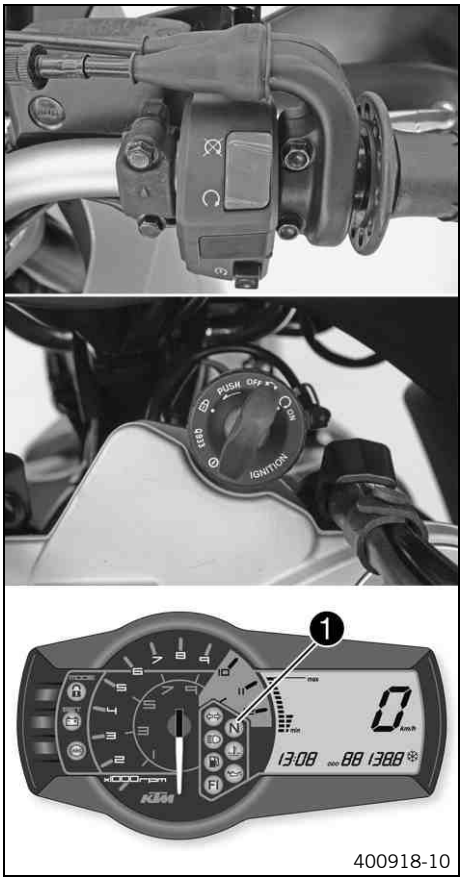
Danger of accidents If the vehicle is operated with a discharged battery or without a battery, electronic components and safety equipment may be damaged.

– Never operate the vehicle with a discharged battery or without a battery.

Note

Engine failure High engine speeds in cold engines have a negative effect on the service life of the engine.

– Always warm up the engine at low engine speeds.



– Turn the emergency OFF switch to the position ○.
– Switch on the ignition by turning the black ignition key to the position **ON** ○.
  ✔ After you switch on the ignition, you can hear the fuel pump working for about two seconds. The function test of the combination instrument is run at the same time.
– Shift the transmission to neutral.
  ✔ The green idling speed indicator lamp **N** ❶ lights up.
– Press the electric starter button Ⓢ.

Info

Do not press the electric starter button until the function test of the combination instrument is finished.
When starting, **DO NOT** open the throttle. If you open the throttle during the starting procedure, fuel is not injected by the engine management system and the engine cannot start.
Press the starter for a maximum of 5 seconds. Wait for a least 5 seconds before trying again.
This motorcycle is equipped with a safety start system. You can only start the engine if the transmission is in neutral or if the clutch is pulled when a gear is engaged. If you engage a gear with the side stand folded down, the engine stops.

– Take the motorcycle off of the main stand or side stand.

8.3 Starting off

– Pull the clutch lever, engage 1st gear, release the clutch lever slowly and simultaneously open the throttle carefully.

8.4 Shifting, riding

Warning
Danger of accidents Abrupt load alterations can cause the vehicle to get out of control.

– Avoid abrupt load alterations and sudden braking actions, and adapt your speed to the road conditions.

Warning
Danger of accidents If you change down at high engine speed, the rear wheel can lock up.

– Do not change into a low gear at high engine speed. The engine races and the rear wheel can lock up.

Warning
Danger of accidents Malfunctions caused by incorrect ignition key position.

– Do not change the ignition key position during a journey.

Warning
Danger of accidents Distraction from traffic activity by adjustments to the vehicle.

– Make all adjustments when the vehicle is at a standstill.

Warning
Risk of injury Falling off of the passenger.

– The passenger must be able to hold himself or herself properly on the passenger seat, to hold onto the rider or to hold onto the handrails and place his or her feet onto the passenger footrests. Note the regulations governing the minimum age of passengers in your country.

Warning

Danger of accidents Danger of accidents caused by dangerous driving.

– Comply with traffic regulations and ride defensively and foresightedly to detect sources of danger early on.

Warning

Danger of accidents Reduced road grip with cold tires.

– On every journey, take the first miles carefully at moderate speed until the tires reach operating temperature and optimal road grip is ensured.

Warning

Danger of accidents Reduced road grip with new tires.

– New tires have a smooth rolling surface and therefore cannot provide full road grip. The entire rolling surface must be roughened in the first 200 kilometers (124.3 miles) by moderate riding at alternating angles. The full grip levels are not achieved until the tires have been run in.

Warning

Danger of accidents Unstable handling characteristics.

– Do not exceed the maximum permitted weight and axle loads. The overall weight consists of: motorcycle operational and with a full tank, driver and passenger with protective clothing and helmet, baggage.

Warning

Danger of accidents Unstable handling characteristics due to slipped baggage.

– Check the way your baggage is fixed regularly.

Warning

Danger of accidents Lack of roadworthiness.

– After a fall, check the vehicle as usual before preparing for use.

Note

Engine failure Unfiltered intake air has a negative effect on the service life of the engine.

– Never ride the vehicle without an air filter since dust and dirt can get into the engine and result in increased wear.

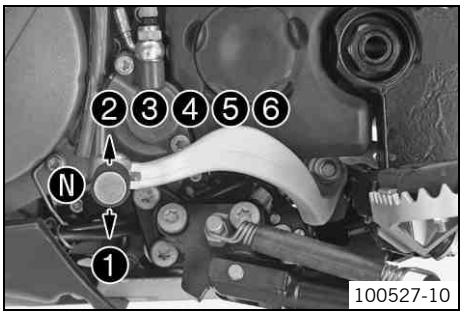
Note

Engine failure Overheating of engine.

– If the coolant temperature warning lamp lights up, stop and switch off the engine. Allow the engine to cool down and check the coolant level in the radiator, and top up if necessary. If you continue with the coolant temperature warning lamp alight, you may have engine failure.

Info

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



– When conditions allow (incline, road situation, etc.), you can shift into a higher gear.
– Release the throttle while simultaneously pulling the clutch lever, shift into the next gear, release the clutch and open the throttle.

Info

You can see the positions of the six forward gears in the figure. The neutral or idle position is between the first and second gears. First gear is used for starting off or for steep inclines.
The operating temperature is reached when 6 bars of the temperature indicator light up.

– After reaching maximum speed by fully opening the throttle grip, turn the throttle back so it is ¾ open. This will barely reduce the speed but fuel consumption will be considerably lower.
– Accelerate only up to a speed suitable for the road surface and weather conditions. When traveling in bends, do not shift, and accelerate very carefully.
– To shift down, brake if necessary and close the throttle at the same time.
– Pull the clutch lever and shift into a lower gear, release the clutch lever slowly and open the throttle or shift again.

– If the engine is killed at an intersection, for example, just pull the clutch lever and press the E starter button. The transmission does not need to be shifted into neutral.
– Switch off the engine if you expect to be standing for a long time.
– If the **FI** warning lamp (**MIL**) lights up during a trip, stop immediately. When you shift to neutral, the **FI** warning lamp (**MIL**) starts to flash.

Info
From the flashing rhythm, you can derive a two-digit number, the so-called flashing code. The flashing code tells you which component has a fault.

– If the ice symbol ❄ appears in the combination instrument, the streets may be icy. Adjust your speed to the road conditions.

8.5 Braking

Warning
Danger of accidents Reduced braking efficiency due to a wet or dirty brake system.

– Clean or dry a dirty or wet brake system by riding and braking gently.

Warning
Danger of accidents Reduced braking efficiency caused by spongy pressure point of front or rear brake.

– Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)

Warning
Danger of accidents Failure of brake system.

– If the foot brake lever is not released, the brake linings drag continuously. The rear brake may fail due to overheating. Take your foot off the foot brake lever when you are not braking.

Warning

Danger of accidents Longer stopping distance due to higher overall weight.

– Take the longer stopping distance into account when carrying a passenger and baggage.

Warning

Danger of accidents Delayed brake action on salted roads.

– There may be salt deposits on the brake discs. In order to restore the normal braking efficiency, you will need to remove the deposits from the discs by carefully applying the brakes.

Warning

Danger of accidents If you brake too hard, the wheels can lock.

– Adapt your braking to the traffic situation and the road conditions.

– When braking, first throttle back and then apply the front and rear brakes at the same time.
– On sandy, wet or slippery surfaces, use the rear brake.
– Braking should always be completed before you enter a bend. Change down to a lower gear that is appropriate for your speed.
– On long downhill stretches, use the braking effect of the engine. Do this by changing down two gears, but do not race the engine. You will require less braking force and the brakes will not overheat.

8.6 Stopping, parking

Warning

Risk of misappropriation Usage by unauthorized persons.

– Never leave the vehicle while the engine is running. Secure the vehicle against use by unauthorized persons. If you leave the vehicle, lock the steering and remove the ignition key.

Warning

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

– Do not touch hot components such as exhaust system, radiator, engine, shock absorber, and the brake system. Allow these components to cool down before starting work on them.

Note

Danger of damage The parked vehicle may roll away or fall over.

– Always place the vehicle on a firm and even surface.

Note

Fire hazard Some vehicle components become very hot when the vehicle is operated.

– Do not park the vehicle near flammable or explosive substances. Do not place objects on the vehicle while it is still warm from being run. Always let the vehicle cool first.

Note

Material damage Damage and destruction of components by excessive load.

– The side stand is designed for the weight of the motorcycle only. Do not sit on the motorcycle when it is supported by the side stand only. The side stand and/or the frame could be damaged and the motorcycle could fall over.

Note

Material damage Damage and destruction of components from excessive load.

– The center stand is only designed for the weight of the motorcycle and luggage. Do not sit on the motorcycle while it is resting on the center stand. The center stand or frame could be damaged and the motorcycle could fall over.
– Pull the motorcycle up onto the center stand using the handrail and not the handwheel of the shock absorber adjustment. The shock absorber could become leaky.

– Apply the brakes.
– Shift the transmission to neutral.

– Switch off the ignition by turning the black ignition key to the position **OFF** ⊠.

Info
If you switch off the engine with the emergency OFF switch but the ignition remains switched on at the ignition lock, power continues to flow to most power consumers and the battery is soon discharged. Therefore, always switch off the engine with the ignition key; the emergency OFF switch is provided for emergency situations only.

– Park the motorcycle on a firm surface.

Alternative 1

– Swing the side stand to the front with your foot as far as it will go and rest the vehicle on it.

Alternative 2

– Raise the vehicle using the center stand. (☛ p. 86)

– Lock the steering by turning the handlebar to the left, pressing the black ignition key down in the position **OFF** ⊠ and turning it to the position ⍾. To engage the steering lock more easily, move the handlebars gently back and forth. Remove the black ignition key.

8.7 Transport

Note

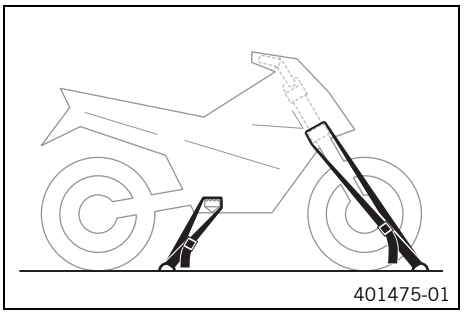
Danger of damage The parked vehicle may roll away or fall over.

– Always place the vehicle on a firm and even surface.

Note

Fire hazard Some vehicle components become very hot when the vehicle is operated.

– Do not park the vehicle near flammable or explosive substances. Do not place objects on the vehicle while it is still warm from being run. Always let the vehicle cool first.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– Switch off the engine and remove the ignition key.
– Use tension belts or other suitable devices to secure the motorcycle against accidents or falling over.

8.8 Refueling

Danger

Fire hazard Fuel is highly flammable.

– Never refuel the vehicle near open flames or burning cigarettes, and always switch off the engine first. Be careful that no fuel is spilt, especially on hot vehicle components. Clean up spilt fuel immediately.
– Fuel in the fuel tank expands when warm and can escape if the tank is overfilled. See the notes on refueling.

Warning

Danger of poisoning Fuel is poisonous and a health hazard.

– Avoid contact of the fuel with skin, eyes and clothing. Do not inhale fuel vapors. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If fuel is swallowed, contact a doctor immediately. Change clothing that has come into contact with fuel.

Note

Material damage Premature clogging of the fuel filter.

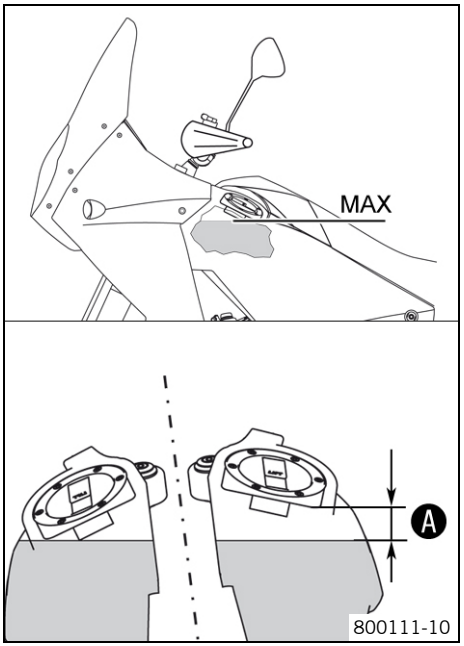
– In some countries and regions, the available fuel quality and cleanliness may not be sufficient. This will result in problems with the fuel system. (Your authorized KTM workshop will be glad to help.)

– Only refuel with clean fuel that meets the specified standards.

Warning

Environmental hazard Improper handling of fuel is a danger to the environment.

– Do not allow fuel to get into the ground water, the ground, or the sewage system.



– Switch off the engine.
– Lean the vehicle on the side stand.
– Open the filler caps. (☛ p. 48)
– Fill the right fuel tank with fuel no higher than level Ⓐ.

Guideline

Measurement of Ⓐ	75 mm (2.95 in)

– Fill the left fuel tank no higher than the lower edge of the filler neck.

Total fuel tank capacity, approx.	20 l (5.3 US gal)	Super unleaded (ROZ 95/RON 95/PON 91) (☛ p. 214)

Info

If the right fuel tank is filled to the filler neck, fuel may run out of the motorcycle if parked on the side stand and the fuel becomes warm.

– Close the filler caps. (☛ p. 50)

When using low octane fuel

Note

Engine failure Low-quality fuel damages the engine.

– Operate the vehicle with fuel with an octane rating below 95 (ROZ 95/RON 95/PON 91) for no more than one tank full.
– The ignition curve must be adjusted to low octane fuel.

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– Adjust the ignition curve to the fuel quality. (☛ p. 166)

– Press the **SET** button ❷ for two seconds.

✓ The fuel level warning lamp ❶ switches off. **TRIP F** is set to **0.0** and the previous display mode appears.

Info

If you do not press the **SET** button ❷, the reset takes place automatically after about three minutes.

9 SERVICE SCHEDULE

9.1 Service schedule

	K10N	K75A	K150A	K300A
Check that the electrical equipment is functioning properly.	•	•	•	•
Read out the trouble code memory using the KTM diagnostics tool.	•	•	•	•
Check the measured service values with the KTM diagnostics tool.		•	•	•
Change the engine oil and filter, clean the oil screens. (☛ p. 168)	•	•	•	•
Check the oil jet for the clutch lubrication.	•		•	•
Check the front brake linings. (☛ p. 115)	•	•	•	•
Check the rear brake linings. (☛ p. 119)	•	•	•	•
Check the brake discs. (☛ p. 112)	•	•	•	•
Check that the brake lines are undamaged and free of leaks.	•	•	•	•
Check the rear brake fluid level. (☛ p. 117)	•	•	•	•
Check the free travel of the foot brake lever. (☛ p. 116)	•	•	•	•
Check that the shock absorber and fork are leak tight. Perform a fork service and shock absorber service as needed and depending on how the vehicle will be used.	•	•	•	•
Check the swingarm bearing.		•	•	•
Check the wheel bearing for play.		•	•	•
Check the tire condition. (☛ p. 128)	•	•	•	•
Check the tire air pressure. (☛ p. 129)	•	•	•	•
Check the spoke tension. (☛ p. 130)	•	•	•	•
Check the rim run-out.	•	•	•	•
Check the chain, rear sprocket and engine sprocket. (☛ p. 105)		•	•	•
Check the chain tension. (☛ p. 102)	•	•	•	•

9 SERVICE SCHEDULE

	K10N	K75A	K150A	K300A
Lubricate all moving parts (e.g. side stand, hand lever, chain, ...) and check for smooth operation.	•	•	•	•
Clean dust boots of fork legs. (p. 88)		•	•	•
Check the front brake fluid level. (p. 113)	•	•	•	•
Bleed the fork legs. (p. 87)		•	•	•
Check the steering head bearing play. (p. 89)	•	•	•	•
Change the spark plugs.			•	•
Check the valve clearance.			•	•
Check all hoses (e.g. fuel, cooling, bleeding, drainage, ...) and sleeves for cracking, leaks, and incorrect routing.			•	•
Check the antifreeze and coolant level. (p. 155)	•	•	•	•
Check the wiring harness of the throttle valve body for damage and correct routing.			•	•
Check the cables for damage and kink-free routing.			•	•
Check the control cables for damage, kink-free routing and adjustment.	•	•	•	•
Change the air filter. Clean the air filter box.			•	•
Check the fuel pressure.		•	•	•
Check the value of the manifold absolute pressure sensor (PM value) with the KTM diagnostics tool.		•	•	•
Check the CO adjustment with the KTM diagnostics tool.		•	•	•
Check/rectify the fluid level of the hydraulic clutch. (p. 108)		•	•	•
Check the screws and nuts for tightness.	•	•	•	•
Change the coolant.				•
Change the front brake fluid.			•	•
Change the rear brake fluid.			•	•

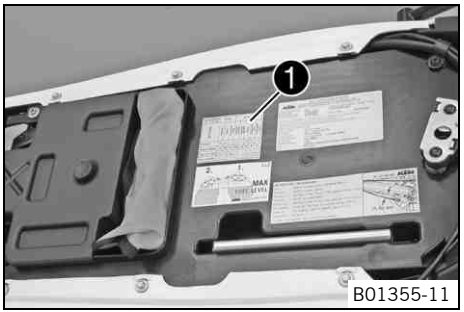
9 SERVICE SCHEDULE

	K10N	K75A	K150A	K300A
Check the clutch.			•	•
Check the headlight setting. (p. 148)	•	•	•	•
Check that the radiator fan is functioning properly.	•	•	•	•
Final check: Check that the vehicle is roadworthy and take a test ride.	•	•	•	•
Read out the error memory after the test ride using the KTM diagnostics tool.	•	•	•	•
Make the necessary service entries in the **KTM DEALER.NET** and service record.	•	•	•	•

K10N: Once after 1,000 km (621.4 mi)
K75A: Every 7,500 km (4,660 mi) or annually
K150A: Every 15,000 km (9,321 mi) or every 2 years
K300A: Every 30,000 km (18,641 mi) or every 4 years

10 TUNING THE CHASSIS

10.1 Fork/shock absorber



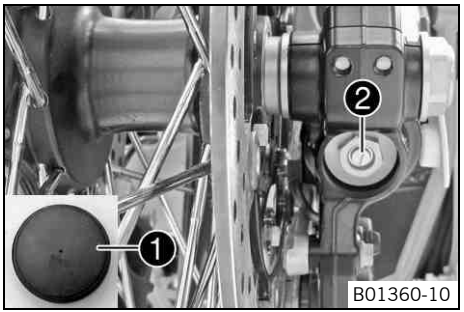
The fork and the shock absorber offer many options of adapting the suspension to your riding style and the payload.

Info
To help you adapt the vehicle, we have summarized our findings in Table ❶. You can find the table under the seat.

These adjustments should be understood as a guideline and should always be the basis of your own personal suspension adaptation. Do not change the adjustments at random or by more than ± 40%, since otherwise the riding characteristics could deteriorate, particularly at high speeds.

10.2 Adjusting the compression damping of the fork

Info
The hydraulic compression damping determines the fork suspension behavior.



– Remove protection covers ❶.
– Turn adjusting screws ❷ clockwise all the way.

Info
The adjusting screws are located at the bottom end of the fork legs.
Make the same adjustment on both fork legs.

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

Guideline

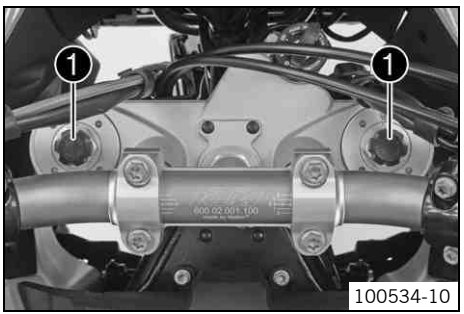
Compression damping	
Comfort	20 clicks
Standard	15 clicks
Sport	10 clicks
Full payload	10 clicks

Info
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

– Mount protection covers ❶.

10.3 Adjusting the rebound damping of the fork

Info
The hydraulic rebound damping determines the fork rebound behavior.



– Turn adjusting screws ❶ clockwise all the way.

Info
The adjusting screws are located at the top end of the fork legs.
Make the same adjustment on both fork legs.

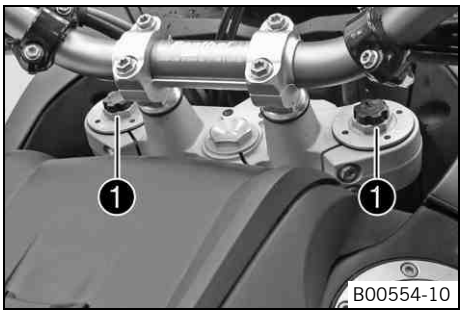
– Turn back counterclockwise by the number of clicks corresponding to the fork type.

Guideline

Rebound damping	
Comfort	23 clicks
Standard	18 clicks
Sport	13 clicks
Full payload	13 clicks

Info
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

10.4 Adjusting the spring preload of the fork



– Turn adjusting screws ❶ counterclockwise all the way.

Info
Make the same adjustment on both fork legs.

– Turn back clockwise by the number of turns corresponding to the fork type.

Guideline

Spring preload - **Preload Adjuster**	
Comfort	5 turns
Standard	5 turns
Sport	8 turns
Full payload	7 turns

Info

Turn clockwise to increase the spring preload; turn counterclockwise to reduce the spring preload.
Adjusting the spring preload has no influence on the absorption setting of the rebound damping.
Basically, however, you should set the rebound damping higher with a higher spring preload.

10.5 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 setting, for example, has an effect on the landing after a jump: the rear wheel suspension compresses more quickly.
The low-speed setting, for example, has an effect when riding over long ground swells: the rear wheel suspension compresses more slowly.
These two ranges can be adjusted separately, although the transition between high-speed and low-speed is gradual. Thus, changes in the high-speed range affect the compression damping in the low-speed range and vice versa.

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

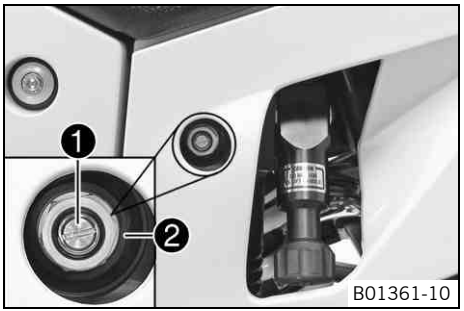
Caution

Danger of accidents Disassembly of pressurized parts can lead to injury.

– The shock absorber is filled with high density nitrogen. Adhere to the description provided. (Your authorized KTM workshop will be glad to help.)

Info

The low-speed setting can be seen during the slow to normal compression of the shock absorber.



– Turn adjusting screw ❶ clockwise with a screwdriver up to the last perceptible click.

Info
Do not loosen nut ❷!

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

Guideline

Compression damping, low-speed	
Comfort	25 clicks
Standard	20 clicks
Sport	15 clicks
Full payload	15 clicks

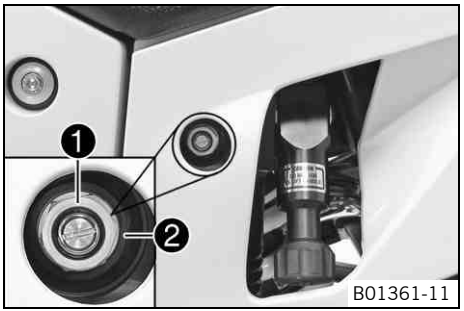
Info
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

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

Caution
Danger of accidents Disassembly of pressurized parts can lead to injury.

– The shock absorber is filled with high density nitrogen. Adhere to the description provided. (Your authorized KTM workshop will be glad to help.)

Info
The high-speed setting can be seen during the fast compression of the shock absorber.



– Turn adjusting screw ❶ clockwise all the way using a socket wrench.

Info
Do not loosen nut ❷!

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

Guideline

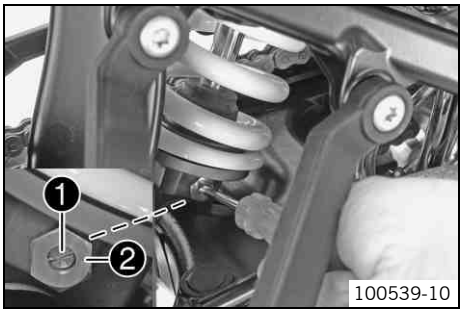
Compression damping, high-speed	
Comfort	2 turns
Standard	1.5 turns
Sport	1 turn
Full payload	1 turn

Info
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

10.8 Adjusting the rebound damping of the shock absorber

Caution
Danger of accidents Disassembly of pressurized parts can lead to injury.

– The shock absorber is filled with high density nitrogen. Adhere to the description provided. (Your authorized KTM workshop will be glad to help.)



– Turn adjusting screw ❶ clockwise up to the last perceptible click.

Info
Do not loosen nut ❷!

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

Guideline

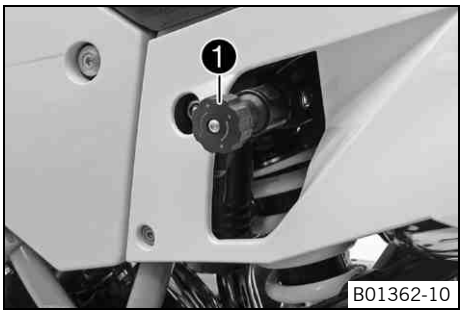
Rebound damping	
Comfort	20 clicks
Standard	15 clicks
Sport	10 clicks
Full payload	10 clicks

Info
Turn clockwise to increase damping; turn counterclockwise to reduce damping.

10.9 Adjusting the spring preload of the shock absorber

Caution
Danger of accidents Disassembly of pressurized parts can lead to injury.

– The shock absorber is filled with high density nitrogen. Adhere to the description provided. (Your authorized KTM workshop will be glad to help.)



– Turn handwheel ❶ counterclockwise as far as it will go.
– Turn it clockwise by the number of turns corresponding to the shock absorber type and use.

Guideline

Spring preload - **Preload Adjuster**	
Comfort	4 turns
Standard	4 turns
Sport	8 turns
Full payload	16 turns

Info

The handwheel can be swung out to make settings.
Turn clockwise to increase the spring preload; turn counterclockwise to reduce the spring preload.

11 SERVICE WORK ON THE CHASSIS

11.1 Raising the vehicle using the center stand

Note

Danger of damage The parked vehicle may roll away or fall over.

– Always place the vehicle on a firm and even surface.

Note

Material damage Damage and destruction of components from excessive load.

– The center stand is only designed for the weight of the motorcycle and luggage. Do not sit on the motorcycle while it is resting on the center stand. The center stand or frame could be damaged and the motorcycle could fall over.
– Pull the motorcycle up onto the center stand using the handrail and not the handwheel of the shock absorber adjustment. The shock absorber could become leaky.

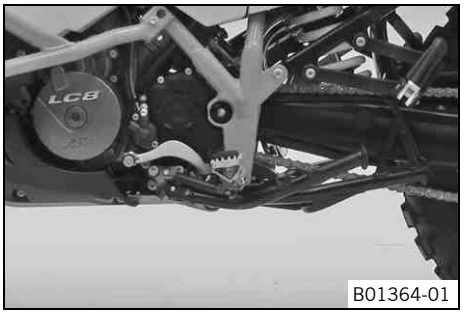
– Position yourself to the left of the vehicle.
– Hold the handlebar with the left hand and press the center stand onto the ground with your right foot.
– Put your full weight on extension arm ❶ of the center stand while pulling the vehicle up using the left handrail until the center stand folds forward all the way.

11.2 Raising the vehicle off of the center stand

Note

Danger of damage The parked vehicle may roll away or fall over.

– Always place the vehicle on a firm and even surface.

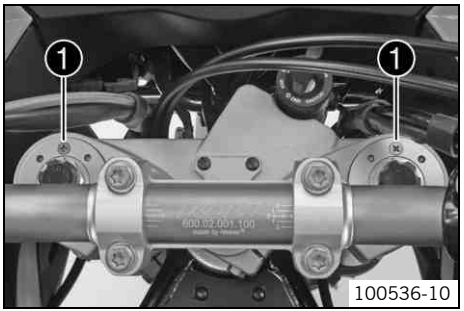


– Unlock the steering and move the vehicle forward with both hands on the handlebar.
– As the vehicle moves off of the center stand, activate the front brake to prevent the vehicle from rolling.
– Check that the center stand is folded all the way up.

11.3 Bleeding the fork legs

Preparatory work

– Raise the vehicle using the center stand. (☛ p. 86)



Main work

– Release bleeder screws ❶.

✓ Any excess pressure escapes from the interior of the fork.

– Tighten the bleeder screws.

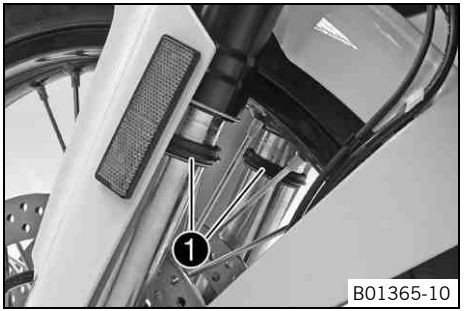
Info

Carry out this operation on both fork legs.

11.4 Cleaning the dust boots of the fork legs

Preparatory work

– Raise the vehicle using the center stand. (☛ p. 86)



Main work

– Push dust boot ❶ of both fork legs downwards.

Info

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

Warning

Danger of accidents Reduced braking efficiency due to oil or grease on the brake discs.

– Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.

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

Universal oil spray (☛ p. 217)

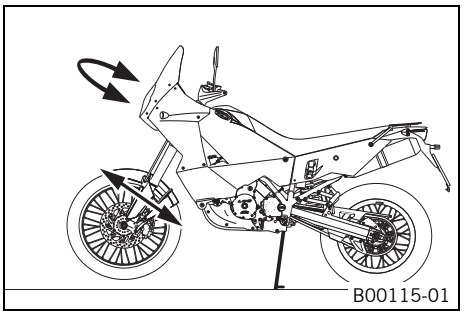
– Press the dust boots back into their normal position.
– Remove excess oil.

Finishing work
– Raise the vehicle off of the center stand. (☛ p. 87)

11.5 Checking the steering head bearing play

Warning
Danger of accidents Unstable vehicle handling from incorrect steering head bearing play.
– Adjust the steering head bearing play without delay. (Your authorized KTM workshop will be glad to help.)

Info
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 over time.



Preparatory work
– Raise the vehicle using the center stand. (☛ p. 86)

Main work
– Bear down on the rear of the vehicle or raise it on the underride guard.
✓ The front wheel is not in contact with the ground.
– Move the handlebar to the straight-ahead position. Move the fork legs back and forth in the direction of travel.

Play should not be detectable on the steering head bearing.

» If there is no detectable play:
– Adjust the steering head bearing play.

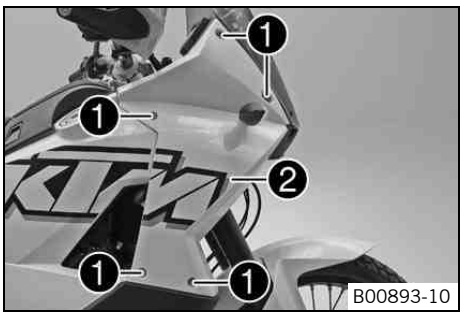
– Move the handlebar to and fro over the entire steering range.

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.
  – Check the steering head bearing and adjust if necessary.

11.6 Removing the front side cover

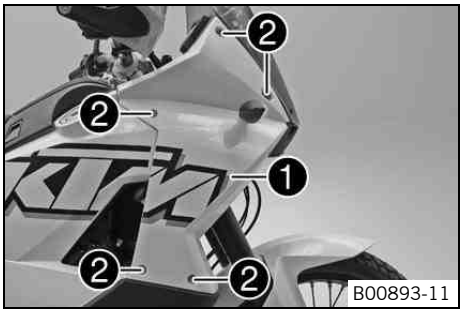
Info
The operations are the same on the left and right sides.



– Remove screws ❶.
– Carefully swing out the side cover ❷ at the top and disconnect the plug-in connectors of the turn signal cables.
– Pull off the overflow hose of the fuel tank and take off the trim.

11.7 Installing the front side cover

Info
The operations are the same on the left and right sides.



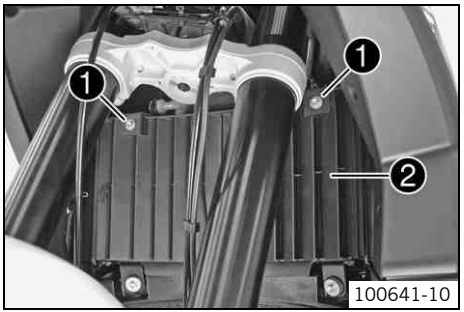
– Position side cover ❶ at the fuel tank on the bottom and hold it at an angle.
– Attach the overflow hose of the fuel tank to the connector.
– Connect the plug-in connectors of the turn signal cables and swing the side cover up toward the vehicle.
– Mount and tighten screws ❷ with the washers.

Guideline

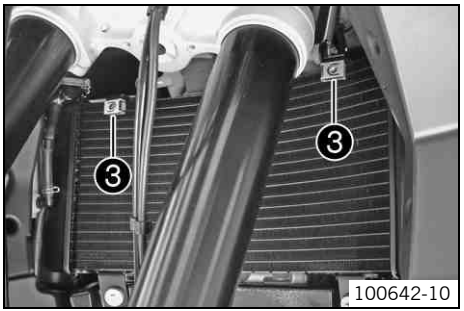
Remaining chassis nuts	M6	10 Nm (7.4 lbf ft)

– Check the function of turn signal.

11.8 Removing the radiator guard



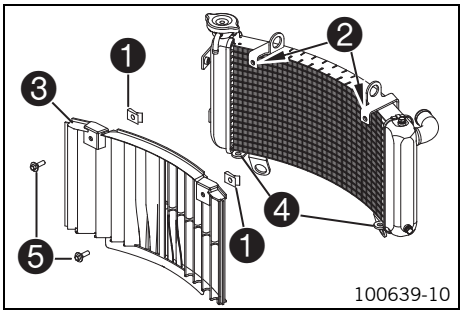
– Remove screws ❶ and radiator guard ❷.



– Pull nuts ❸ off of the radiator.

Tip
Insert the screws into the holes of the radiator guard and mount the nuts. This ensures that all required parts are available when needed.

11.9 Installing the radiator guard

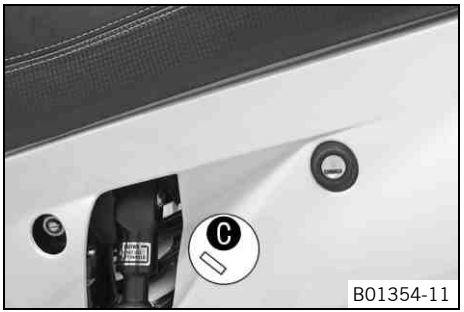


– Place nuts ❶ onto tabs ❷ of the radiator.
– Hook radiator guard ❸ into holes ❹ at the bottom and swing up to the radiator.
– Mount and tighten screws ❺.

Guideline

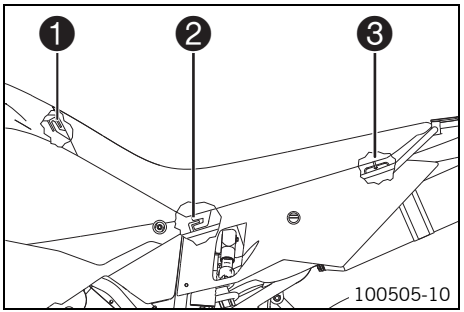
Remaining chassis nuts	M6	10 Nm (7.4 lbf ft)

11.10 Removing the seat



- Insert the ignition key into the seat lock.
- Turn the ignition key to position ❻.
- Lift up the seat at the rear, pull it back and remove from above.
- Remove the ignition key.

11.11 Mounting the seat

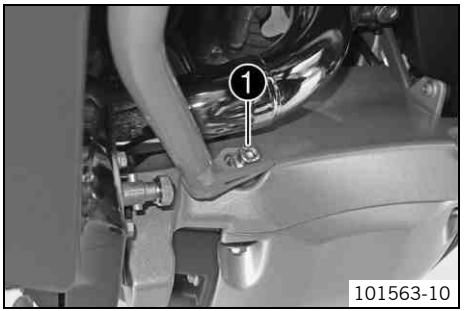


- Hook projection ❶ of the seat into the storage compartment, lower the seat at the rear and push it forward at the same time. The two projections ❷ must be inserted into the frame.
- Push locking pin ❸ into the lock housing and push the back of the seat down until the locking pin locks in place with an audible click.
- Finally, check that the seat is correctly mounted.

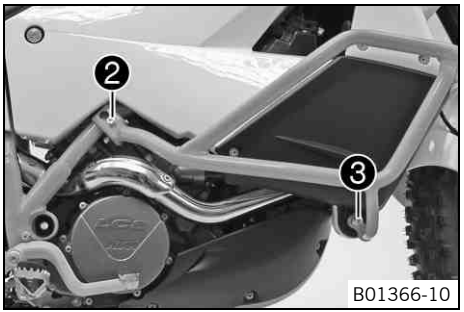
11.12 Removing the crash bar

Info
The operations are the same for the left and right sides.

Preparatory work
– Raise the vehicle using the center stand. (p. 86)



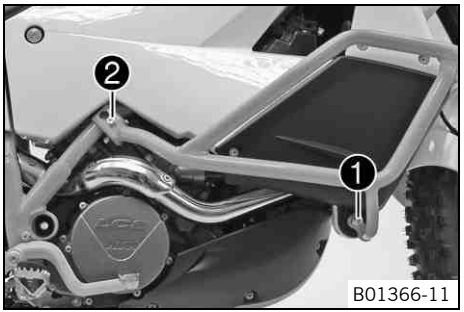
Main work
– Remove screw ❶.

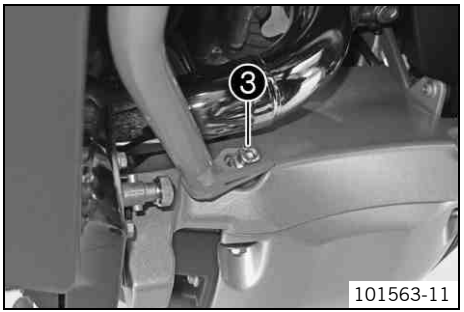


– Remove screws ❷ and ❸ and take off the crash bar.
– Remove the front spacer.

11.13 Installing the crash bar

Info
The operations are the same for the left and right sides.





Main work
- Position the crash bar and attach the clamp to the frame tube.
- Mount screws ❶ and ❷ but do not tighten yet.
- Position the spacer and mount screw ❸.
- Tighten screws ❶ and ❷.

  Guideline

Screw, crash bar	M8	15 Nm (11.1 lbf ft)

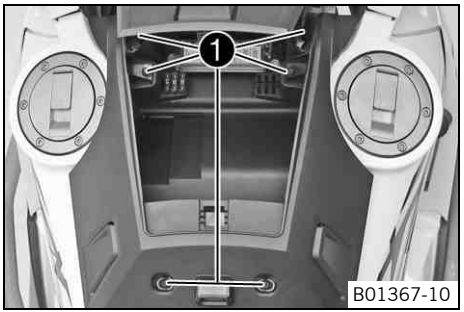
- Tighten screw ❸.

  Guideline

Remaining chassis screws	M8	25 Nm (18.4 lbf ft)

Finishing work
- Raise the vehicle off of the center stand. (☛ p. 87)

11.14 Removing the storage compartment and hanging it to one side



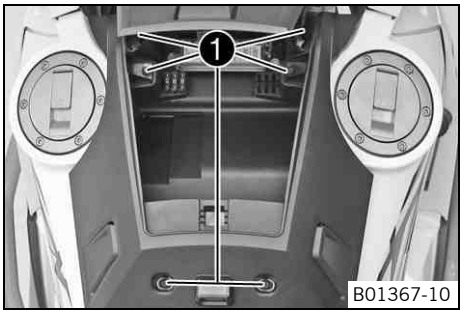
Preparatory work

– Remove the seat. (☛ p. 93)

Main work

– Open the storage compartment. (☛ p. 51)
– Remove screws ❶.
– Carefully remove the storage compartment and swing it to the right. Place a cloth between the right fuel tank and the storage compartment to prevent damage.

11.15 Installing the storage compartment



Main work

– Remove the cloth and position the storage compartment.
– Mount and tighten screws ❶.

Finishing work

– Close the storage compartment. (☛ p. 52)
– Mount the seat. (☛ p. 93)

11.16 Removing the left fuel tank

Danger

Fire hazard Fuel is highly flammable.

- Never refuel the vehicle near open flames or burning cigarettes, and always switch off the engine first. Be careful that no fuel is spilt, especially on hot vehicle components. Clean up spilt fuel immediately.
- Fuel in the fuel tank expands when warm and can escape if the tank is overfilled. See the notes on refueling.

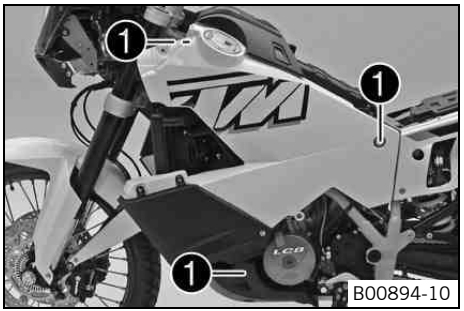
Warning

Danger of poisoning Fuel is poisonous and a health hazard.

- Avoid contact between fuel and skin, eyes and clothing. Do not inhale fuel vapors. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If fuel is swallowed, contact a doctor immediately. Change clothing that has come into contact with fuel. Store fuel in a suitable canister according to regulations and keep it out of the reach of children.

Preparatory work

- Switch off all power consumers and switch off the engine.
- Raise the vehicle using the center stand. (☛ p. 86)
- Remove the crash bar. (☛ p. 94)
- Turn the knurled screws on both fuel taps clockwise as far as possible.
- Remove the front side cover. (☛ p. 90)
- Remove the seat. (☛ p. 93)
- Remove the storage compartment and hang it to one side. (☛ p. 96)

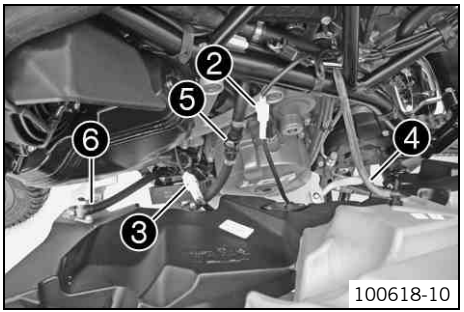


Main work

– Remove screws ❶.

– Lift the fuel tank slightly at the front, detach at the upper bracket and swing away from the vehicle at the top.

Info
Hold the fuel tank at roughly its installation height. Before it can be completely removed, several hoses and plug-in connections need to be detached.



– Disconnect the plug-in connections of the fuel level indicator ❷ and fuel pump ❸.

– Detach hose ❹.

– Disconnect fuel hose connection ❺.

Info
Remaining fuel may flow out of the fuel hose.

– Push the hose clamp toward the rear and pull fuel hose ❻ off of the fuel tap.

– Take off the fuel tank.

11.17 Installing the left fuel tank

Danger
Fire hazard Fuel is highly flammable.

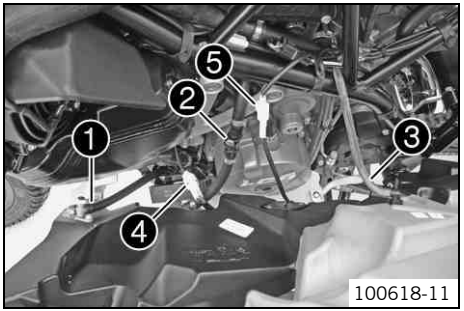
– Never refuel the vehicle near open flames or burning cigarettes, and always switch off the engine first. Be careful that no fuel is spilt, especially on hot vehicle components. Clean up spilt fuel immediately.

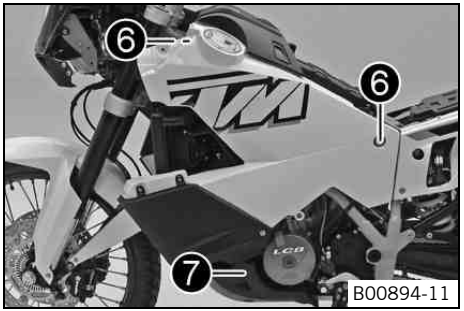
– Fuel in the fuel tank expands when warm and can escape if the tank is overfilled. See the notes on refueling.

Warning

Danger of poisoning Fuel is poisonous and a health hazard.

– Avoid contact between fuel and skin, eyes and clothing. Do not inhale fuel vapors. If fuel gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If fuel is swallowed, contact a doctor immediately. Change clothing that has come into contact with fuel. Store fuel in a suitable canister according to regulations and keep it out of the reach of children.





Preparatory work

– Clean the fuel hose connection and check the O-ring for damage.

Main work

– Hold the fuel tank at roughly the installation height to connect the hoses and plug-in connections.
– Attach fuel hose ❶ to the fuel tap and push the hose clamp forward.
– Join fuel hose connection ❷.
– Attach hose ❸ to the connection.
– Join the plug-in connection of fuel pump ❹ and fuel level indicator ❺.

– Lift the fuel tank slightly and attach it to the upper bracket.
– Mount and tighten screws ❻.

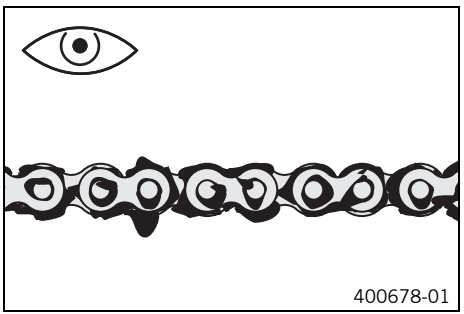
Guideline

Screw, fuel tank	M8	15 Nm (11.1 lbf ft)

Finishing work

- Install the storage compartment. (☛ p. 96)
- Close the storage compartment. (☛ p. 52)
- Mount the seat. (☛ p. 93)
- Install the front side cover. (☛ p. 90)
- Turn the knurled screws on both fuel taps counterclockwise as far as possible.
- Check the fuel system for leakage.
- Install the crash bar. (☛ p. 95)
- Raise the vehicle off of the center stand. (☛ p. 87)

11.18 Checking for chain dirt



- Check the chain for coarse dirt accumulation.
  - » If the chain is very dirty:
    - Clean the chain. (☛ p. 100)

11.19 Cleaning the chain

Warning

Danger of accidents Oil or grease on the tires reduces their grip.

- Remove oil and grease with a suitable cleaning material.

Warning

Danger of accidents Reduced braking efficiency due to oil or grease on the brake discs.

– Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.

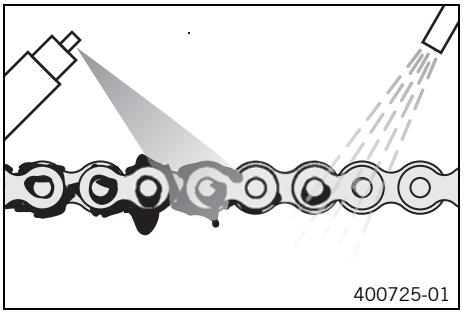
Warning

Environmental hazard Hazardous substances cause environmental damage.

– Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

Info

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



– Clean the chain regularly.
– Rinse off loose dirt with a soft jet of water.
– Remove old grease remains with chain cleaner.

Chain cleaner (☛ p. 215)

– After drying, apply chain spray.

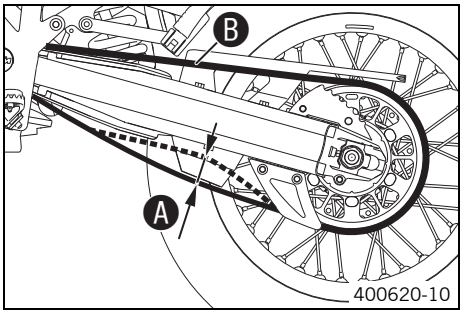
Chain lube for road use (☛ p. 215)

11.20 Checking the chain tension

Warning

Danger of accidents Danger caused by incorrect chain tension.

– If the chain tension is too high, the components of the secondary power train (chain, engine sprocket, rear sprocket, bearings in transmission and rear wheel) are under additional load. Apart from premature wear, in extreme cases the chain can rupture or the countershaft of the transmission can break. On the other hand, if the chain is loose, it can fall off the engine sprocket or the rear sprocket and block the rear wheel or damage the engine. Check the chain tension and correct if necessary.



– Lean the motorcycle on the side stand.
– Shift the transmission to neutral.
– Push the chain upwards near the lower chain guard screw and measure chain tension Ⓐ.

Info

The upper chain section Ⓑ must be taut.
Chain wear is not always even, so you should repeat this measurement at different chain positions.

Chain tension	35... 40 mm (1.38... 1.57 in)

» If the chain tension does not meet specifications:
– Adjust the chain tension. (☛ p. 103)

11.21 Adjusting the chain tension

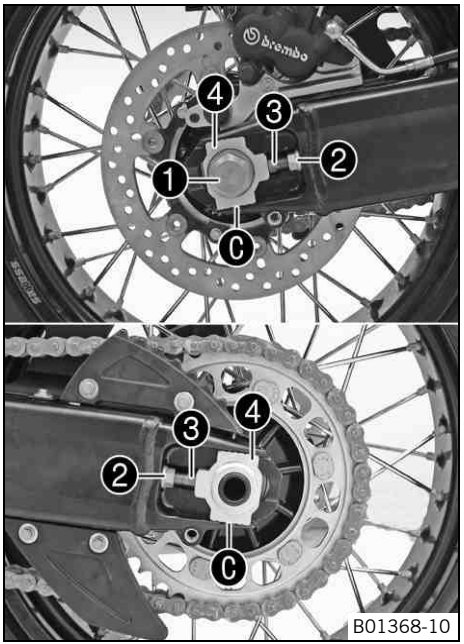
Warning

Danger of accidents Danger caused by incorrect chain tension.

– If the chain tension is too high, the components of the secondary power train (chain, engine sprocket, rear sprocket, bearings in transmission and rear wheel) are under additional load. Apart from premature wear, in extreme cases the chain can rupture or the countershaft of the transmission can break. On the other hand, if the chain is loose, it can fall off the engine sprocket or the rear sprocket and block the rear wheel or damage the engine. Check the chain tension and correct if necessary.

Preparatory work

– Check the chain tension. (☛ p. 102)



Main work

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

Guideline

Chain tension	35... 40 mm (1.38... 1.57 in)
Turn adjusting screws ❸ on the left and right so that the markings on the left and right chain adjuster ❹ are in the same position in relation to reference marks ❻. The rear wheel is then correctly aligned.	

Info

The upper chain section must be taut.
Chain wear is not always even, so you should check the setting at different chain positions.

– Tighten nuts ❷.
– Make sure that chain adjusters ❹ are resting against adjusting screws ❸.
– Tighten nut ❶.

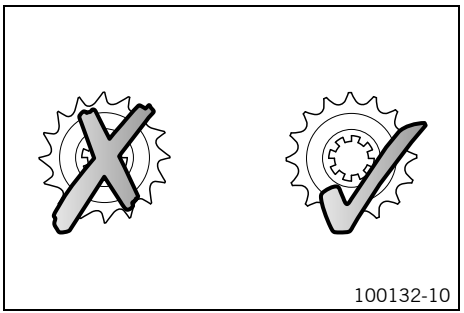
Guideline

Nut, rear wheel spindle	M25x1.5	90 Nm (66.4 lbf ft)	Thread greased

Info

Chain adjusters ❹ can be turned through 180°.

11.22 Checking the chain, rear sprocket and engine sprocket



Preparatory work

– Raise the vehicle using the center stand. (☛ p. 86)

Main work

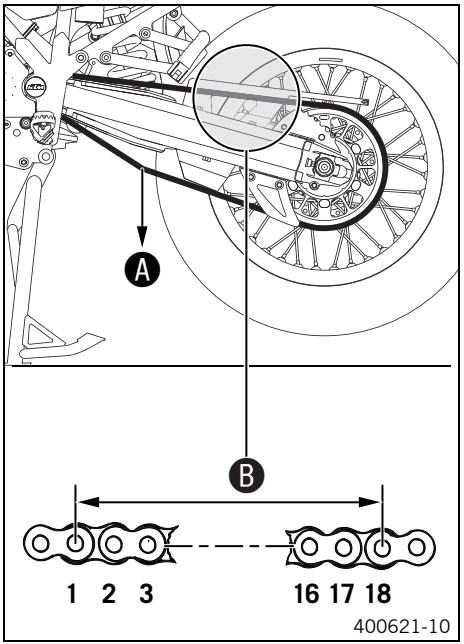
– Check the rear sprocket and engine sprocket for wear.

» If the rear sprocket or engine sprocket is worn:

– Change the power set.

Info

The rear sprocket, engine sprocket and chain should always be changed together.



– Shift the transmission to neutral.
– Pull the lower chain section with specified weight Ⓐ.

Guideline

Weight, chain wear measurement	15 kg (33 lb.)

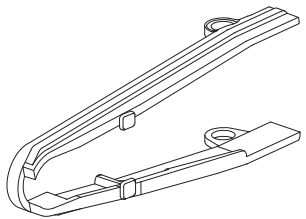
– Measure the distance Ⓑ of 18 chain links in the lower chain section.

Info
Chain wear is not always even, so you should repeat this measurement at different chain positions.

Maximum distance Ⓑ at the longest chain section	272 mm (10.71 in)

» If distance Ⓑ is greater than the specified measurement:
– Change the power set.

Info
When the chain is replaced, the rear sprocket and engine sprocket should also be changed.
New chains wear out faster on old, worn sprockets.
For safety reasons, the chain has no chain joint.

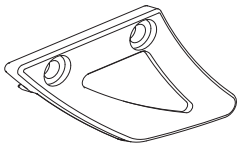


B00113-01

– Check the chain sliding guard for wear.
  » If the chain sliding guard is worn:
    – Change the chain sliding guard.
– Check the chain sliding guard for tightness.
  » If the chain sliding guard is loose:
    – Fully tighten the chain sliding guard.

    Guideline

Screw, chain sliding guard	M6	6 Nm (4.4 lbf ft)	**Loctite® 243™**



B00114-01

– Check the chain guide for wear.
  » If the chain guide is worn:
    – Change the chain guide.
– Check the chain guide for tightness.
  » If the chain guide is loose:
    – Fully tighten the chain guide.

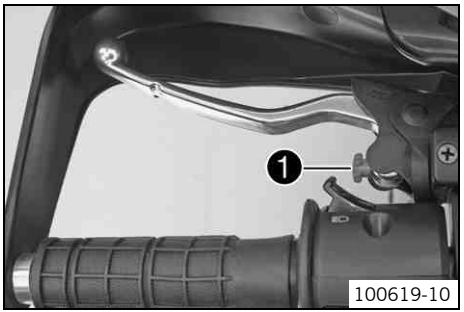
    Guideline

Screw, chain guide	M6	6 Nm (4.4 lbf ft)	**Loctite® 243™**

Finishing work

– Raise the vehicle off of the center stand. (p. 87)

11.23 Adjusting the basic setting of the clutch lever



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

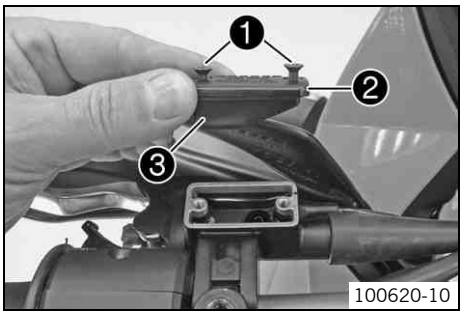
Info

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.
Turn the adjusting screw by hand only, and do not apply any force.
Do not make any adjustments while riding!

11.24 Checking/rectifying the fluid level of the hydraulic clutch

Info

The fluid level rises with increasing wear of the clutch lining disc.
Do not use brake fluid.



– Move the clutch fluid reservoir mounted on the handlebar to a horizontal position.
– Remove screws ❶.
– Remove cover ❷ with membrane ❸.
– Check the fluid level.

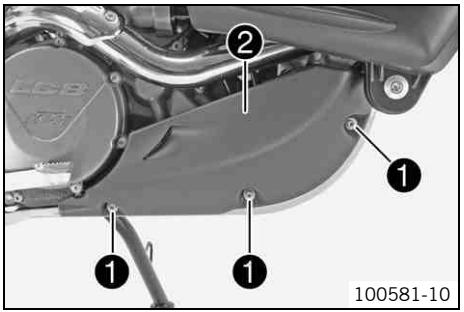
Fluid level below top edge of container	4 mm (0.16 in)

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

Hydraulic fluid (15) (☛ p. 213)

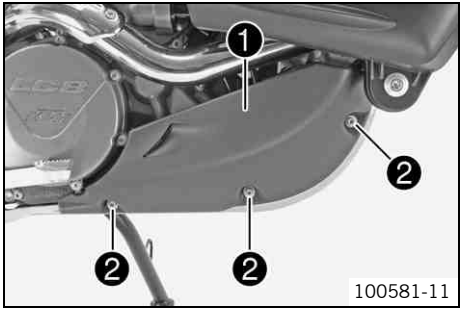
– Position the cover with the membrane. Mount and tighten the screws.

11.25 Removing the right underride guard



– Remove screws ❶. Remove the right underride guard ❷.

11.26 Installing the right underride guard

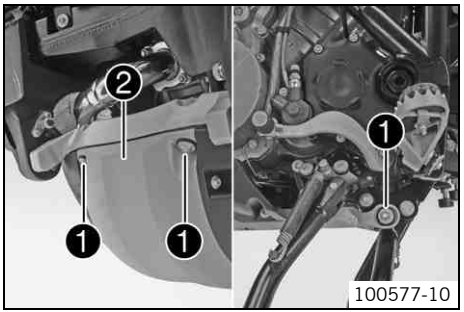


– Position right underride guard ❶. Mount and tighten screws ❷.

Guideline

Remaining chassis screws	M6	10 Nm (7.4 lbf ft)

11.27 Removing the underride guard



Preparatory work

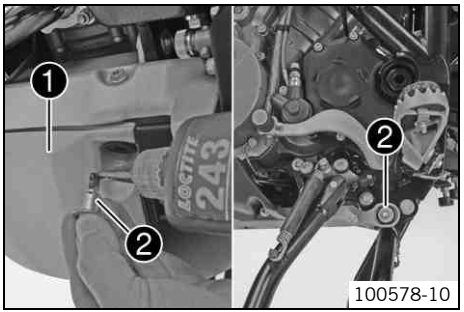
– Raise the vehicle using the center stand. (☛ p. 86)

Main work

– Swing the side stand downward.

– Remove all four screws ❶ and take off underride guard ❷.

11.28 Installing the underride guard



Main work

– Position underride guard ❶. Mount and tighten screws ❷.

Guideline

Screw, underride guard	M8	25 Nm (18.4 lbf ft)	**Loctite® 243™**

– Swing up the side stand.

Finishing work

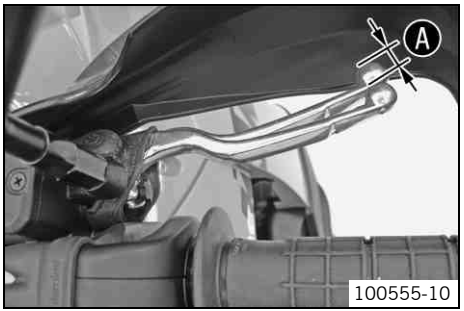
– Raise the vehicle off of the center stand. (☛ p. 87)

12.1 Checking the free travel of the hand brake lever

Warning

Danger of accidents Brake system failure.

– If there is no free travel on the hand brake lever, pressure builds up on the front brake circuit. The front brake can fail due to overheating. Adjust the free travel on hand brake lever according to specifications.



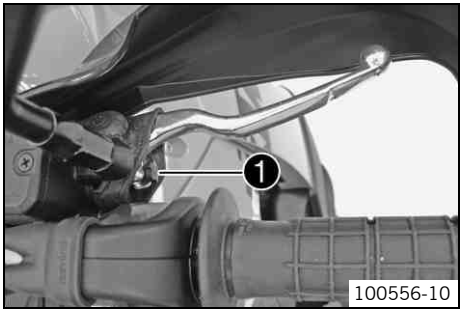
– Push the hand brake to the handlebar and check the free travel ❹.

Free travel of hand brake lever	≥ 3 mm (≥ 0.12 in)

» If the free travel does not meet specifications:

– Adjust the free travel of hand brake lever. (☛ p. 111)

12.2 Adjusting the free travel of the hand brake lever



– Check the free travel of the hand brake lever. (☛ p. 111)
– Adjust the free travel of the hand brake lever with the adjustment screw ❶.

Info

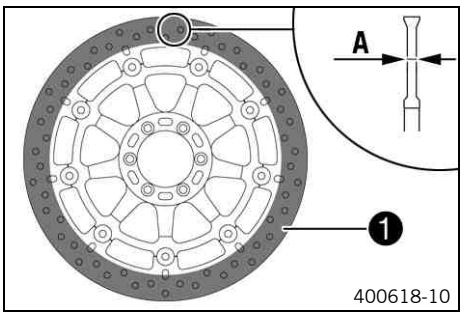
Turn the adjustment screw clockwise to reduce free travel. The pressure point moves away from the handlebar.
Turn the adjustment screw counterclockwise to increase free travel. The pressure point moves towards the handlebar.
The range of adjustment is limited.
Turn the adjusting screw by hand only, and do not apply any force.
Do not make any adjustments while riding!

12.3 Checking the brake discs

Warning

Danger of accidents Reduced braking efficiency due to worn brake disc(s).

– Change the worn brake disc(s) without delay. (Your authorized KTM workshop will be glad to help.)



– Check the thickness of the front and rear brake discs in several places to ensure that it conforms to measurement ❹.

Info

Wear reduces the thickness of the brake disc in area ❶ of the brake disc.

Brake discs - wear limit	
Front	4.5 mm (0.177 in)

Brake disc - wear limit	
Rear	4.5 mm (0.177 in)

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

  - Change the brake disc.
- Check the front and rear brake discs for damage, cracks and deformation.
  - » If damage, cracks or deformation are visible on the brake disc:
    - Change the brake disc.

12.4 Checking the front brake fluid level

Warning

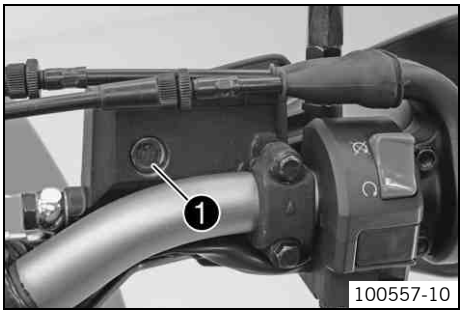
Danger of accidents Failure of the brake system.

- If the brake fluid level falls below the **MIN** mark, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)

Warning

Danger of accidents Reduced braking efficiency due to old brake fluid.

- Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)



- Move the brake fluid reservoir mounted on the handlebar to a horizontal position.
- Check the brake fluid level at level viewer ❶.
  - » If the brake fluid is below the **MIN** marking:
    - Add front brake fluid. (☛ p. 114)

12.5 Adding front brake fluid

Warning

Danger of accidents Failure of the brake system.

– If the brake fluid level falls below the **MIN** mark, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)

Warning

Skin irritation Brake fluid can cause skin irritation on contact.

– Avoid contact with skin and eyes, and keep out of the reach of children.
– Wear suitable protective clothing and goggles.
– If brake fluid comes into contact with the eyes, flush the eyes thoroughly with water and consult a physician immediately.

Warning

Danger of accidents Reduced braking efficiency due to old brake fluid.

– Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)

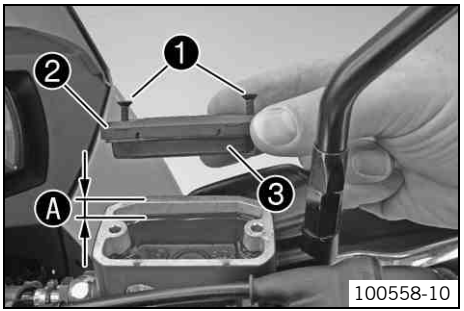
Warning

Environmental hazard Hazardous substances cause environmental damage.

– Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

Info

Never use DOT 5 brake fluid! It is silicone-based and purple in color. Oil seals and brake lines are not designed for DOT 5 brake fluid.
Avoid contact between brake fluid and painted parts. Brake fluid attacks paint!
Use only clean brake fluid from a sealed container.



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

Guideline

Measurement of Ⓐ	5 mm (0.2 in)

Brake fluid DOT 4 / DOT 5.1 (☛ p. 211)

– Position the cover with the membrane. Mount and tighten the screws.

Info
Clean up overflowed or spilt brake fluid immediately with water.

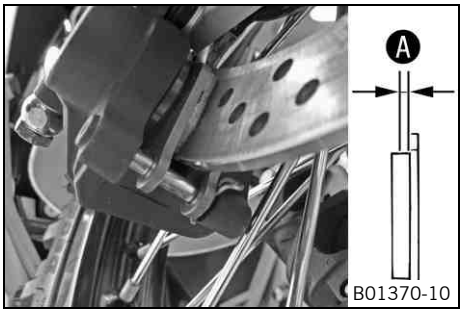
12.6 Checking the front brake linings

Warning
Danger of accidents Reduced braking efficiency caused by worn brake linings.

– Change worn brake linings immediately. (Your authorized KTM workshop will be glad to help.)

Note
Danger of accidents Reduced braking efficiency caused by damaged brake discs.

– If the brake linings are not changed in time, the steel brake lining carriers grind on the brake disc. The braking effect is greatly reduced and the brake discs are destroyed. Check the brake linings regularly.



– Check all brake linings on both brake calipers to ensure they have minimum thickness ❶.

Minimum thickness ❶	≥ 1 mm (≥ 0.04 in)

» If the minimum thickness is less than specified:
– Change the front brake linings.

– Check all brake linings on both brake calipers for damage and cracking.

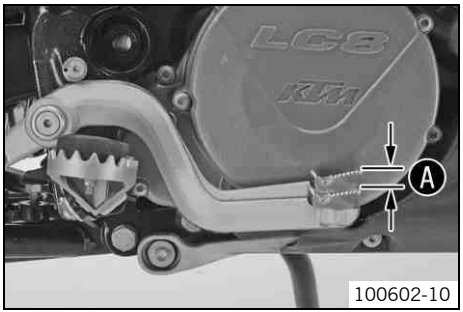
» If there is wear or tearing:
– Change the front brake linings.

12.7 Checking the free travel of the foot brake lever

Warning

Danger of accidents Brake system failure.

– If there is no free travel on the foot brake lever, pressure builds up on the rear brake circuit. The rear brake can fail due to overheating. Adjust the free travel on foot brake lever according to specifications.



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

Guideline

Free travel at foot brake lever	3… 5 mm (0.12… 0.2 in)

Info

You will know that contact has been made with the foot brake cylinder piston when there is increased resistance when you activate the foot brake lever.

» If the free travel does not meet specifications:
– Adjust the basic position of foot brake lever.

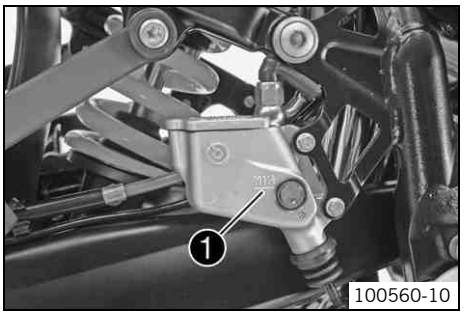
12.8 Checking the rear brake fluid level

Warning
Danger of accidents Failure of the brake system.

– If the brake fluid level falls below the **MIN** mark, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)

Warning
Danger of accidents Reduced braking efficiency due to old brake fluid.

– Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)



– Raise the vehicle using the center stand. (☛ p. 86)
– Check the brake fluid level of the brake fluid reservoir.
  » If the fluid level reaches the **MIN** mark ❶:
    – Add rear brake fluid. 🔧 (☛ p. 117)

12.9 Adding rear brake fluid 🔧

Warning
Danger of accidents Failure of the brake system.

– If the brake fluid level falls below the **MIN** mark, this indicates a leakage in the brake system or worn-out brake linings. Check the brake system and do not continue riding. (Your authorized KTM workshop will be glad to help.)

Warning

Skin irritation Brake fluid can cause skin irritation on contact.

– Avoid contact with skin and eyes, and keep out of the reach of children.
– Wear suitable protective clothing and goggles.
– If brake fluid comes into contact with the eyes, flush the eyes thoroughly with water and consult a physician immediately.

Warning

Danger of accidents Reduced braking efficiency due to old brake fluid.

– Change the brake fluid of the front and rear brake according to the service schedule. (Your authorized KTM workshop will be glad to help.)

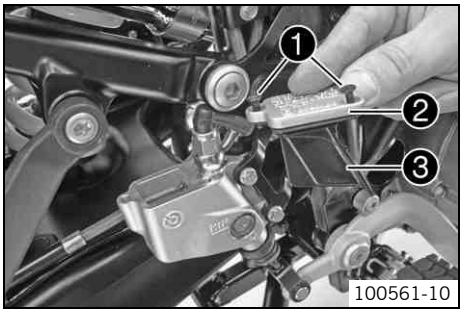
Warning

Environmental hazard Hazardous substances cause environmental damage.

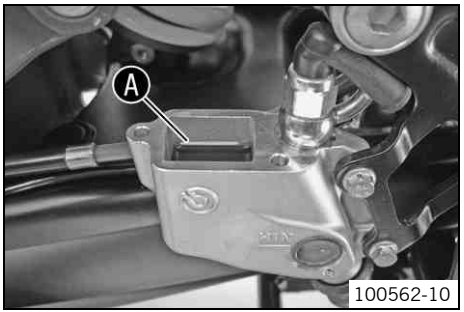
– Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

Info

Never use DOT 5 brake fluid! It is silicone-based and purple in color. Oil seals and brake lines are not designed for DOT 5 brake fluid.
Avoid contact between brake fluid and painted parts. Brake fluid attacks paint!
Use only clean brake fluid from a sealed container.



– Raise the vehicle using the center stand. (☛ p. 86)
– Remove screws ❶.
– Remove cover ❷ with membrane ❸.



– Add brake fluid to level Ⓐ.

Brake fluid DOT 4 / DOT 5.1 (☛ p. 211)

– Position the cover with the membrane. Mount and tighten the screws.

Info
Clean up overflowed or spilt brake fluid immediately with water.

12.10 Checking the rear brake linings

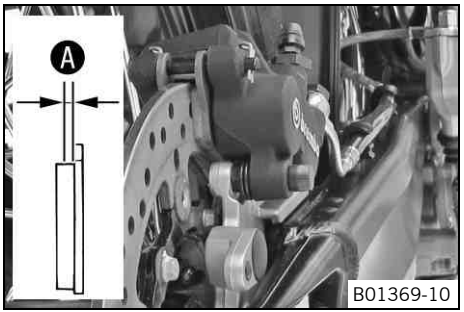
Warning
Danger of accidents Reduced braking efficiency caused by worn brake linings.

– Change worn brake linings immediately. (Your authorized KTM workshop will be glad to help.)

Note

Danger of accidents Reduced braking efficiency caused by damaged brake discs.

– If the brake linings are not changed in time, the steel brake lining carriers grind on the brake disc. The braking effect is greatly reduced and the brake discs are destroyed. Check the brake linings regularly.



– Check the brake linings for minimum thickness Ⓐ.

Minimum thickness Ⓐ	≥ 1 mm (≥ 0.04 in)

» If the minimum thickness is less than specified:

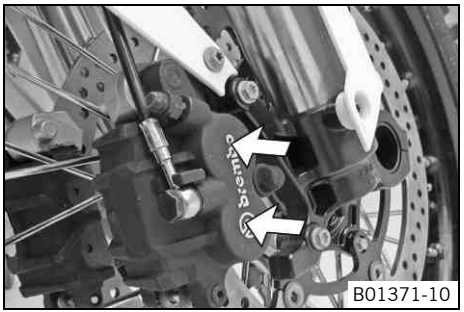
– Change the rear brake linings.

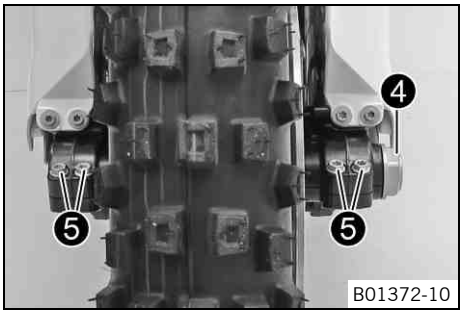
– Check the brake linings for damage and cracking.

» If there is wear or tearing:

– Change the rear brake linings.

13.1 Removing the front wheel





Preparatory work

– Raise the vehicle using the center stand. (☛ p. 86)

Main work

– Bear down on the rear of the vehicle or raise it on the underride guard.

  ✓ The front wheel is not in contact with the ground.

– Press the brake caliper onto the brake disc by hand in order to push back the brake pistons.

– Loosen screws ❹ and ❺.

– Unscrew screw ❹ about six turns and press your hand on the screw to push the wheel spindle out of the axle clamp.

Warning

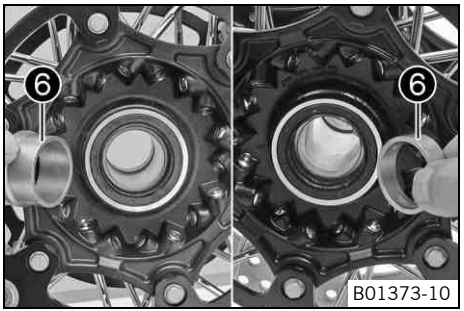
Danger of accidents Reduced braking efficiency due to damaged brake discs.

– Always lay down the wheel in such a way that the brake discs are not damaged.

– Holding the front wheel, withdraw the wheel spindle. Swing the brake calipers outward slightly and take the front wheel out of the fork.

Info

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

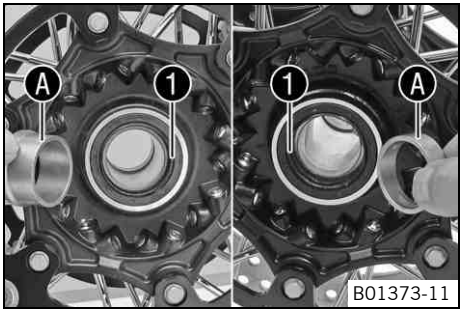


– Remove spacers ❻.

13.2 Installing the front wheel

Warning
Danger of accidents Reduced braking efficiency due to oil or grease on the brake discs.

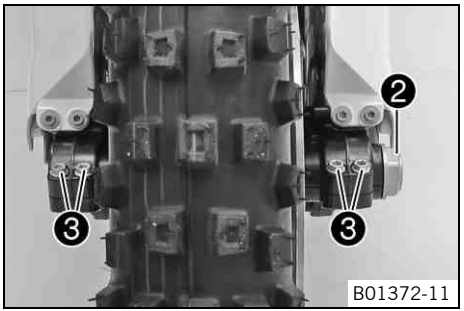
– Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.



– Check the wheel bearing for damage and wear.
  » If the wheel bearing is damaged or worn:
    – Change the wheel bearing.
– Clean and grease the shaft seal rings ❶ and bearing surface Ⓐ of the spacers.

Long-life grease (☛ p. 216)

– Insert the spacers.



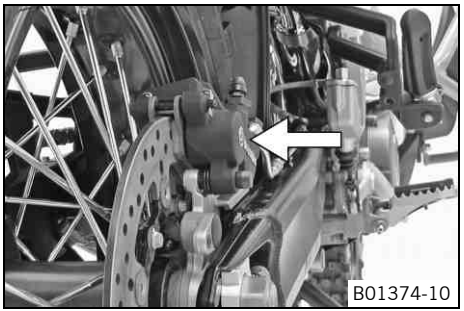
– Position the front wheel and insert the wheel spindle.
  ✓ The brake linings are correctly positioned.
– Mount and tighten screw ❷.
  Guideline

Screw, front wheel spindle	M25x1.5	45 Nm (33.2 lbf ft)

– Raise the vehicle off of the center stand. (☛ p. 87)
– Pull the front wheel brake and push down hard on the fork several times to align the fork legs.
– Fully tighten screws ❸.
  Guideline

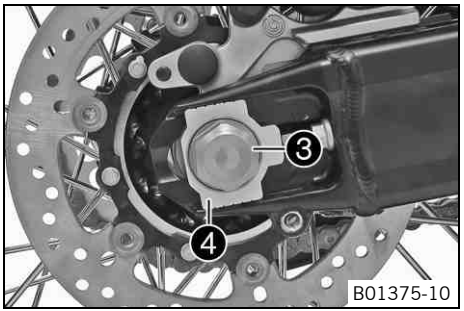
Screw, fork stub	M8	15 Nm (11.1 lbf ft)

13.3 Removing the rear wheel

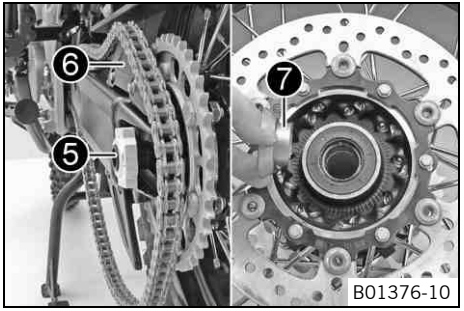


Preparatory work
– Raise the vehicle using the center stand. (☛ p. 86)

Main work
– Press the brake caliper by hand on to the brake disc in order to press back the brake pistons.



– Remove nut ❸. Remove chain adjuster ❹.



– Pull out wheel spindle ❺ only far enough to allow the rear wheel to be pushed forward.
– Push the rear wheel forward as far as possible. Take the chain off of the rear sprocket and place it on chain sprocket guard ❻.

Warning

Danger of accidents Reduced braking effect caused by damaged brake discs.

– Always lay the wheel down in such a way that the brake discs are not damaged.

– Holding the rear wheel, withdraw the wheel spindle. Take the rear wheel out of the swing arm.

Info

Do not operate the foot brake when the rear wheel is removed.

– Remove the spacer ❼.

13.4 Installing the rear wheel

Warning

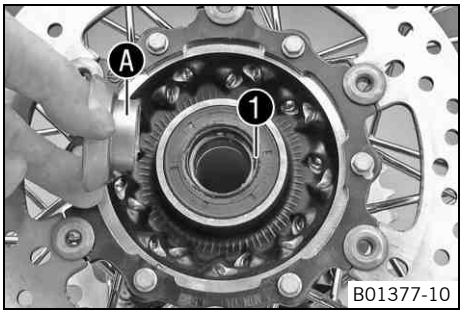
Danger of accidents Reduced braking efficiency due to oil or grease on the brake discs.

– Always keep the brake discs free of oil and grease, and clean them with brake cleaner when necessary.

Warning

Danger of accidents No braking effect when operating the rear brake.

– After installing the rear wheel, always operate the foot brake until the pressure point is reached.



Main work

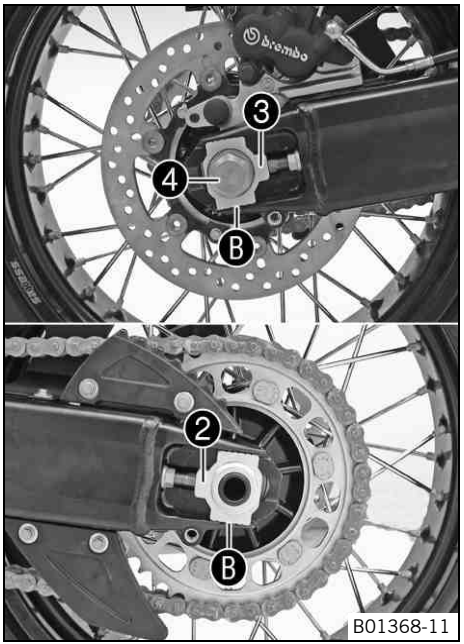
– Check the rear hub rubber dampers. (☛ p. 126)
– Check the wheel bearing for damage and wear.
  » If the wheel bearing is damaged or worn:
    – Change the wheel bearing.
– Clean and grease shaft seal ring ❶ and bearing surface Ⓐ of the spacer.

  Long-life grease (☛ p. 216)

– Clean and grease the thread of the wheel spindle and nut.

  Long-life grease (☛ p. 216)

– Mount the rubber dampers and rear sprocket carrier in the rear wheel.
– Position the rear wheel.
  ✓ The brake linings are correctly positioned.



– Mount the wheel spindle but do not push it in all the way.
– Push the rear wheel as far forward as possible and place the chain on the rear sprocket.
– Push the wheel spindle in all the way and mount chain adjuster ❸ and nut ❹.

Info
Mount chain adjuster ❷ and ❸ in the same position.

– Push the rear wheel forward so that the chain adjusters are in contact with the adjusting screws, and tighten nut ❹.

Guideline

In order for the rear wheel to be correctly aligned, the markings on the left and right chain adjusters must be in the same position relative to the reference marks ❽.

Nut, rear wheel spindle	M25x1.5	90 Nm (66.4 lbf ft)	Thread greased

– Operate the foot brake lever repeatedly until the brake linings lie on the brake disc and there is a pressure point.

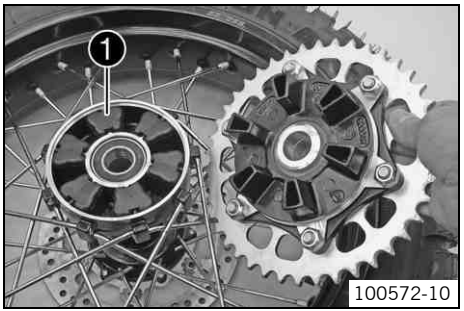
Finishing work
– Raise the vehicle off of the center stand. (☛ p. 87)

13.5 Checking the rear hub rubber dampers

Info
The engine power is transmitted from the rear sprocket to the rear wheel via 6 rubber dampers. They eventually wear out during operation. If the rubber dampers are not changed in time, the rear sprocket carrier and the rear hub will be damaged.

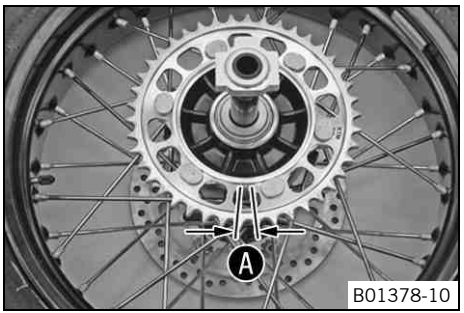
Preparatory work

– Raise the vehicle using the center stand. (☛ p. 86)
– Remove the rear wheel. 🔧 (☛ p. 123)



Main work

– Check the rubber dampers ❶ of the rear hub for damage and wear.
  » If the rubber dampers of the rear hub are damaged or worn:
    – Change all rubber dampers in the rear hub.



– Lay the rear wheel on a workbench with the rear sprocket facing upwards and insert the wheel spindle in the hub.
– To check the play Ⓐ, hold the rear wheel tight and try to rotate the rear sprocket.

Info
Measure the play on the outside of the rear sprocket.

Play in rubber dampers, rear wheel	≤ 5 mm (≤ 0.2 in)

  » If clearance Ⓐ larger than the specified value:
    – Change all rubber dampers in the rear hub.

Finishing work

– Install the rear wheel. 🔧 (☛ p. 125)
– Raise the vehicle off of the center stand. (☛ p. 87)

13.6 Checking the tire condition

Warning

Danger of accidents Uncontrollable vehicle handling in the event of a flat tire.

– In the interest of safety, replace damaged or worn tires immediately. (Your authorized KTM workshop will be glad to help.)

Warning

Danger of crashing Poor vehicle handling due to different tire tread patterns on front and rear wheels.

– The front and rear wheels must be fitted with tires with similar tread patterns to prevent loss of control over the vehicle.

Warning

Danger of accidents Uncontrollable handling characteristic due to non-approved and/or non-recommended tires/wheels.

– Only tires/wheels approved by KTM and with the corresponding speed index should be used.

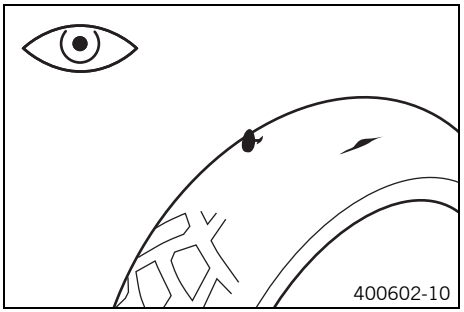
Warning

Danger of accidents Reduced road grip with new tires.

– New tires have a smooth rolling surface and therefore cannot provide full road grip. The entire rolling surface must be roughened in the first 200 kilometers (124.3 miles) by moderate riding at alternating angles. The full grip levels are not achieved until the tires have been run in.

Info

The type, condition and air pressure of the tires all have an impact on the braking and riding response of the vehicle.
Worn tires have a negative effect on vehicle handling, especially on wet surfaces.



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

Info
Note local national regulations concerning the minimum tread depth.

Minimum tread depth	≥ 2 mm (≥ 0.08 in)

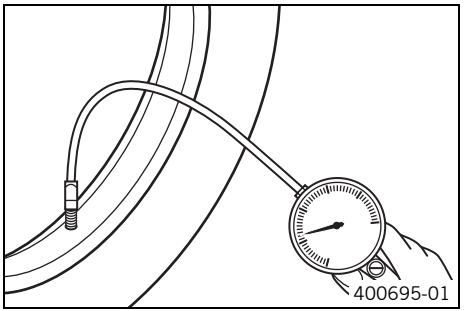
  » If the tread depth is less than the minimum permissible depth:
    – Change the tires.
– Check the age of the tires.

Info
The tire's date of manufacture is usually part of the tire markings and is indicated by the last four digits of the **DOT** marking. The first two digits refer to the week of manufacture and last two digits refer to the year of manufacture.
KTM recommends that the tires be changed after 5 years at the latest, regardless of the actual state of wear.

  » If a tire is more than five years old:
    – Change the tires.

13.7 Checking the tire air pressure

Info
Low tire air pressure leads to abnormal wear and overheating of the tire.
Correct tire air pressure ensures optimal riding comfort and maximum tire service life.



– Remove the dust cap.
– Check the tire air pressure when the tires are cold.

Tire air pressure, solo	
Front	2.4 bar (35 psi)
Rear	2.6 bar (38 psi)

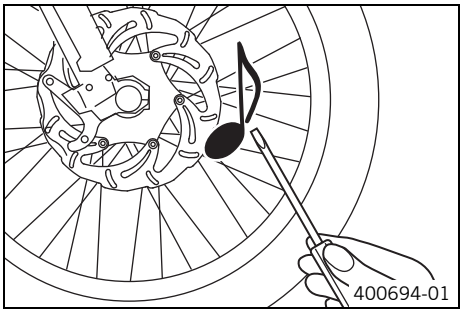
Tire air pressure with passenger/full payload	
Front	2.4 bar (35 psi)
Rear	2.8 bar (41 psi)

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

13.8 Checking spoke tension

Warning
Danger of accidents Instable handling due to incorrect spoke tension.
– Ensure that the spoke tension is correct. (Your authorized KTM workshop will be glad to help.)

Info
A loose spoke can cause wheel imbalance, leading to more loose spokes in a short time.
If the spokes are too tight, they can break due to local overload.
Check the spoke tension regularly, especially on a new motorcycle.



– Strike each spoke briefly using a screwdriver blade.

Info

The frequency of the sound is a function of the spoke length and spoke diameter.
If spokes of the same length and diameter vibrate with a different tone, this is an indication that the spoke tensions differ.

You should hear a high note.

» If the spoke tension differs:

– Correct the spoke tension.

14.1 Removing the battery

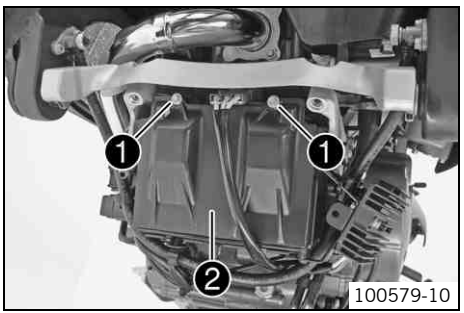
Warning

Risk of injury Battery acid and battery gases cause serious chemical burns.

- Keep batteries out of the reach of children.
- Wear suitable protective clothing and goggles.
- Avoid contact with battery acid and battery gases.
- Keep the battery away from sparks or open flames. Charge only in well-ventilated areas.
- In the event of skin contact, rinse with large amounts of water. If battery acid gets in the eyes, rinse with water for at least 15 minutes and contact a physician.

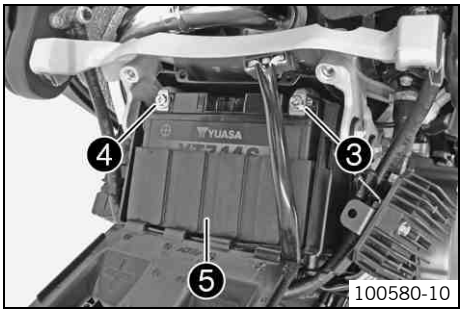
Preparatory work

- Switch off all power consumers and the engine.
- Raise the vehicle using the center stand. (☛ p. 86)
- Remove the underride guard. (☛ p. 110)



Main work

- Remove screws ❶. Fold cover ❷ down.

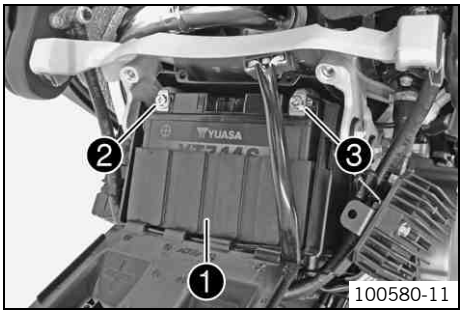


– Disconnect the negative (minus) cable ❸ of the battery.
– Disconnect the positive (plus) cable ❹ of the battery.
– Take the battery out of the battery compartment with battery tray ❺.

Info

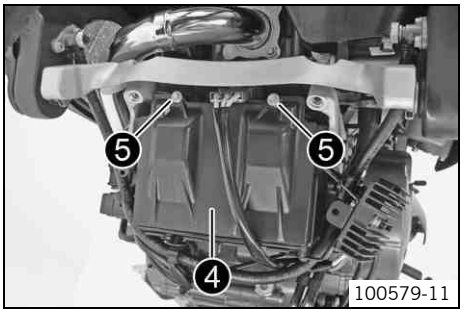
Never operate the motorcycle with a discharged battery or without a battery. In both cases, electrical components and safety equipment can be damaged. The vehicle is then no longer safe to ride.

14.2 Installing the battery



Main work

– Insert the battery into battery tray ❶.
– Slide the battery with the battery tray into the battery compartment.
– Connect plus cable ❷.
– Connect minus cable ❸.



– Hook cover ❹ into the battery compartment at the bottom and swing up.
– Mount and tighten screws ❺.

Finishing work

– Install the underride guard. 🔧 (☛ p. 110)
– Raise the vehicle off of the center stand. (☛ p. 87)
– Set the clock. (☛ p. 42)

14.3 Recharging the battery 🔧

Warning

Risk of injury Battery acid and battery gases cause serious chemical burns.

– Keep batteries out of the reach of children.
– Wear suitable protective clothing and goggles.
– Avoid contact with battery acid and battery gases.
– Keep the battery away from sparks or open flames. Charge only in well-ventilated areas.
– In the event of skin contact, rinse with large amounts of water. If battery acid gets in the eyes, rinse with water for at least 15 minutes and contact a physician.

Warning

Environmental hazard The battery contains elements that are harmful to the environment.

– Do not discard batteries with the household trash. Dispose of a defective battery in an environmentally compatible manner. Give the battery to your KTM dealer or to a recycling center that accepts used batteries.

Warning

Environmental hazard Hazardous substances cause environmental damage.

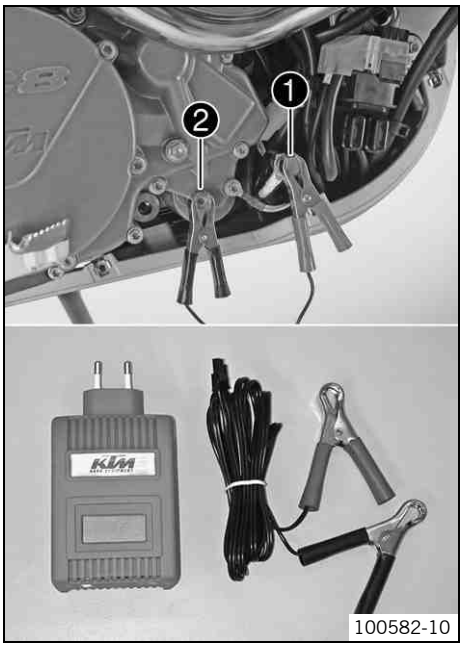
– Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

Info

Even when there is no load on the battery, it discharges steadily.
The charge state and the type of charge are very important for the service life of the battery.
Rapid recharging with a high charging current shortens the battery's service life.
If the charging current, charging voltage and charging time are exceeded, electrolyte escapes through the safety valves. This reduces the battery capacity.
If the battery is depleted from starting the vehicle repeatedly, the battery must be charged immediately.
If the battery is left in a discharged state for an extended period, it will become over-discharged and sulfate, destroying the battery.
The battery is maintenance-free, i.e., the acid level does not have to be checked.
If the battery is not charged using the KTM battery charger, the battery must be removed for charging. Otherwise, overvoltage may damage electronic components. Charge the battery according to the instructions on the battery casing.

Preparatory work

– Switch off all power consumers and switch off the engine.
– Remove the right underride guard. (☛ p. 109)



Main work

– Pull off the red protection cap of the positive terminal extension.

– Connect the positive cable of the charger to the positive terminal extension ❶ and the negative cable to an unpainted point on the engine ❷. Switch on the battery charger.

Battery charger (58429074000)

You can also use the battery charger to test the rest potential and start potential of the battery, and to test the alternator. With this device, you cannot overcharge the battery.

– Switch off and disconnect the battery charger after charging.

Guideline

Charge the battery regularly when the motorcycle is not in use	3 months

– Mount the red protection cap of the positive terminal extension.

Finishing work

– Install the right underride guard. (☛ p. 109)

14.4 Changing the main fuse

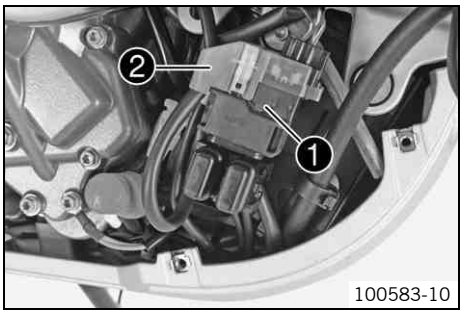
Warning

Fire hazard The electrical system can be overloaded if the wrong fuses are used.

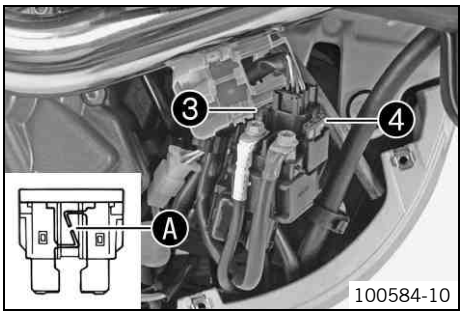
– Use only fuses with the prescribed amperage. Never by-pass or repair fuses.

Info
The main fuse is located in the starter relay under the right underride guard.

Preparatory work
– Switch off all power consumers and the engine.
– Remove the right underride guard. (☛ p. 109)



Main work
– Pull starter relay ❶ off of the holder and remove protective cover ❷.



– Remove the faulty main fuse ❸.

Info
A defective fuse can be identified by the burned-out fuse wire Ⓐ.
A reserve fuse ❹ is located in the starter relay.
The main fuse protects all power consumers of the vehicle.

– Install a new main fuse.

Fuse (58011109130) (☛ p. 202)

– Check that the electrical equipment is functioning properly.
– Mount the protective cover and place the starter relay onto the holder.

Tip
Place the spare fuse in the starter relay so that it is available if needed.

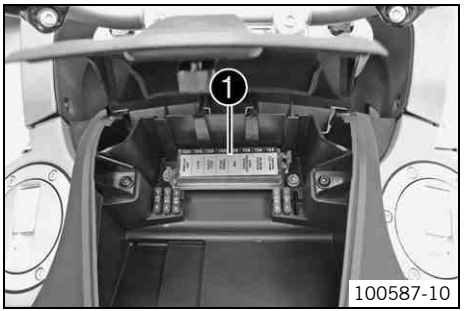
Finishing work
– Install the right underride guard. (☛ p. 109)
– Set the clock. (☛ p. 42)

14.5 Changing the fuses in the fuse box

Warning
Fire hazard The electrical system can be overloaded if the wrong fuses are used.
– Use only fuses with the prescribed amperage. Never by-pass or repair fuses.

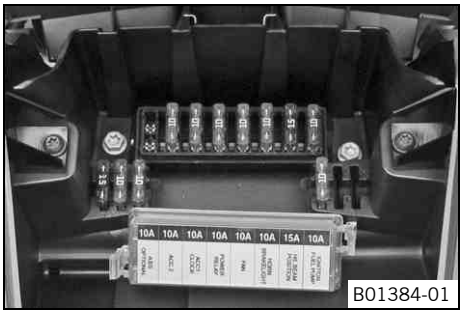
Info
The fuse box containing the fuses of remaining power consumers is located in the storage compartment.

Preparatory work
– Switch off all power consumers and the engine.
– Open the storage compartment. (☛ p. 51)



Main work

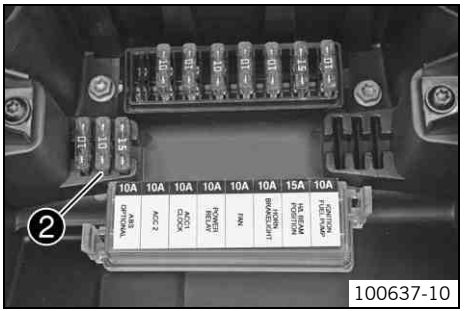
– Remove fuse box cover ❶.



– Remove the faulty fuse.

Guideline

Fuse **IGNITION, FUEL PUMP** - 10 A - ignition, fuel pump, immobilizer, alarm system (optional)
Fuse **H/L BEAM, POSITION** - 15 A - high beam, low beam, parking light, license plate lamp
Fuse **HORN, BRAKE LIGHT** - 10 A - horn, brake light, hazard warning flasher
Fuse **FAN** - 10 A - radiator fan
Fuse **POWER RELAY** - 10 A - ignition (EFI control unit)
Fuse **ACC1, CLOCK** - 10 A - combination instrument, socket, supplementary devices (permanent positive), alarm system (optional)
Fuse **ACC2** - 10 A - supplementary equipment (accessories connected to the ignition switch)
Fuse **ABS, OPTIONAL** - not used



– Use spare fuses with the correct rating only.

Fuse (58011109110) (☛ p. 202)
Fuse (58011109115) (☛ p. 202)

Info
Spare fuses ❷ are located next to the fuse box.

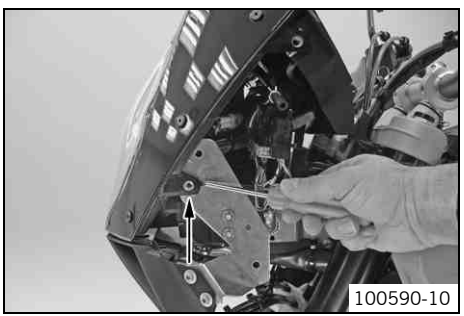
Tip
Replace the spare fuse in the fuse box so that it is available if needed.

– Check that the power consumers are functioning.
– Close the fuse box cover.

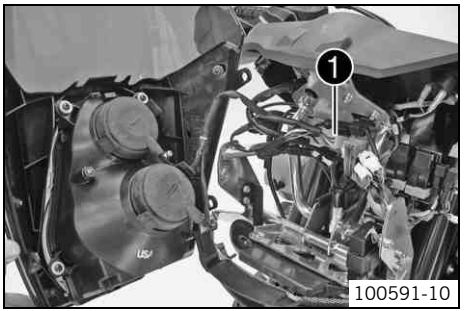
Finishing work
– Close the storage compartment. (☛ p. 52)

14.6 Removing the headlight mask with the headlight

Preparatory work
– Switch off all power consumers and the engine.
– Remove the front side cover. (☛ p. 90)

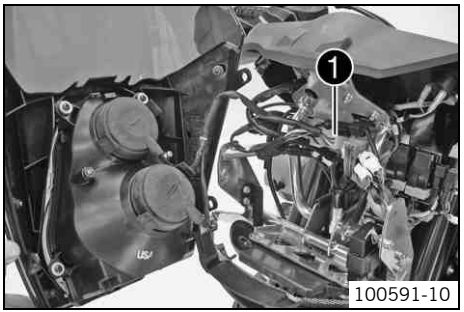


Main work
– Unhook the headlight mask from the cockpit holder and remove it toward the front.



– Disconnect plug-in connector ❶.
– Place the headlight mask down on a soft cloth to prevent the headlight and trim disc from being damaged.

14.7 Installing the headlight mask with the headlight



Main work
– Connect plug-in connector ❶.
– Check the lighting function.
– Position the headlight mask.

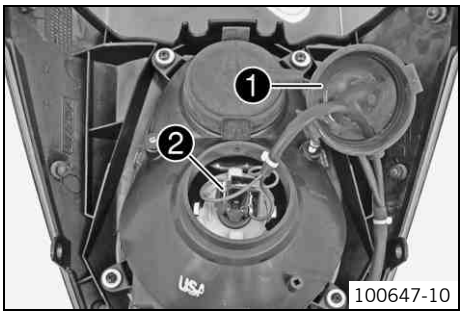
Finishing work
– Install the front side cover. (☛ p. 90)
– Check the headlight setting. (☛ p. 148)

14.8 Changing the headlight bulb

Note

Damage to reflector Reduced brightness.

– Grease on the lamp will evaporate due to the heat and be deposited on the reflector. Clean the lamp and keep it free of grease before mounting.

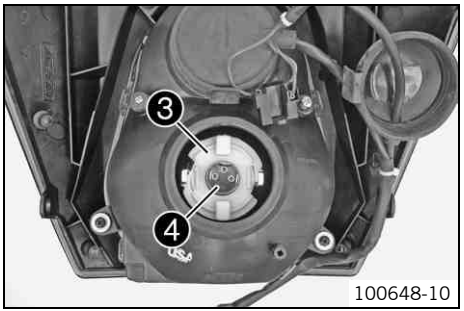


Preparatory work

– Switch off all power consumers and the engine.
– Remove the front side cover. (☛ p. 90)
– Remove the headlight mask with the headlight. (☛ p. 140)

Main work

– Remove rubber cap ❶ and connector ❷ from the bulb.



– Turn holding ring ❸ counterclockwise all the way and take bulb ❹ out of the headlight.
– Position the new bulb in the headlight and fix it with the holding ring.

Low beam/high beam (H4 / socket P43t) (☛ p. 202)

Info
The projections of the lamp must engage in the recess of the headlight housing.

– Connect the connector and mount the rubber cap.

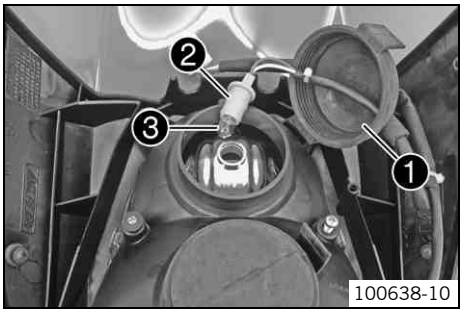
Finishing work
– Install the headlight mask with the headlight. (☛ p. 141)
– Install the front side cover. (☛ p. 90)
– Check the headlight setting. (☛ p. 148)

14.9 Changing the parking light bulb in the headlight

Note
Damage to reflector Reduced brightness.

– Grease on the lamp will evaporate due to the heat and be deposited on the reflector. Clean the lamp and keep it free of grease before mounting.

Preparatory work
– Switch off all power consumers and the engine.
– Remove the front side cover. (☛ p. 90)
– Remove the headlight mask with the headlight. (☛ p. 140)



Main work

– Remove rubber cap ❶.
– Pull socket ❷ out of the headlight and pull bulb ❸ out of the socket.
– Insert the new bulb into the socket and insert the socket into the headlight.

Parking light (W5W / socket W2.1x9.5d) (☛ p. 202)

– Replace the rubber cap.

Finishing work

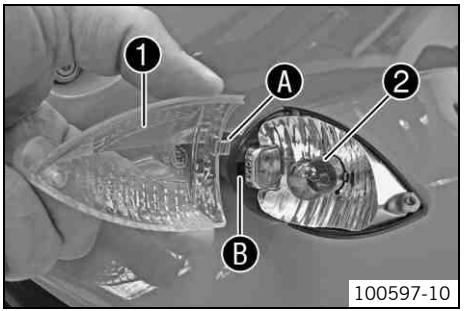
– Install the headlight mask with the headlight. (☛ p. 141)
– Install the front side cover. (☛ p. 90)
– Check the headlight setting. (☛ p. 148)

14.10 Changing the turn signal bulb

Note

Damage to reflector Reduced brightness.

– Grease on the lamp will evaporate due to the heat and be deposited on the reflector. Clean the lamp and keep it free of grease before mounting.



– Remove the screw on the rear of the turn signal housing.
– Carefully remove diffuser ❶.
– Press bulb ❷ carefully into the socket, turn it counterclockwise by about 30°, and pull it out of the socket.

Info
Do not touch the reflector with your fingers, and keep it free from grease.

– Press the new bulb carefully into the socket and turn it clockwise until it stops.

Turn signal (RY10W / socket BAU15s) (☛ p. 202)

– Check the turn signal to make sure it is functioning properly.
– Position the diffuser.

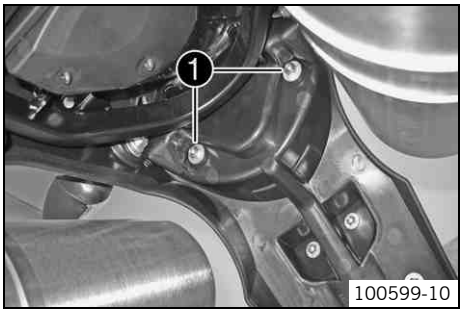
Info
Hook in projection Ⓐ at recess Ⓑ.

– Insert the screw and first turn it counterclockwise until it engages in the thread. Tighten the screw slightly.

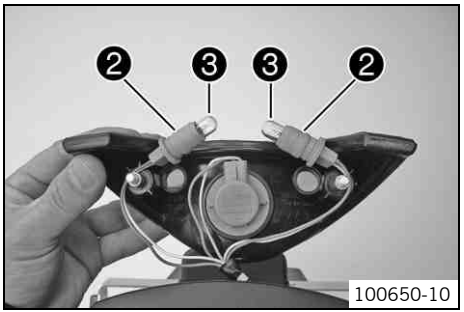
14.11 Changing the tail light bulb

Note
Damage to reflector Reduced brightness.

– Grease on the lamp will evaporate due to the heat and be deposited on the reflector. Clean the lamp and keep it free of grease before mounting.



– Remove nuts ❶ at the bottom of the rear fender and pull out the tail light toward the rear.



– Pull bulb sockets ❷ out of the tail light.
– Pull bulbs ❸ out of the sockets.
– Insert new bulbs into the sockets.

Tail light (W5W / socket W2.1x9.5d) (☛ p. 202)

– Insert the bulb sockets into the tail light.
– Check the lighting function.
– Position the tail light. Mount and tighten the nuts with the washers.

Guideline

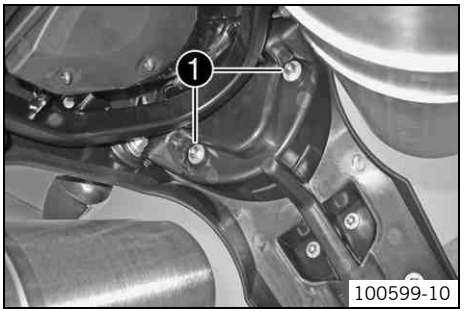
Nut, tail light	M6	8 Nm (5.9 lbf ft)

14.12 Changing the brake light bulb

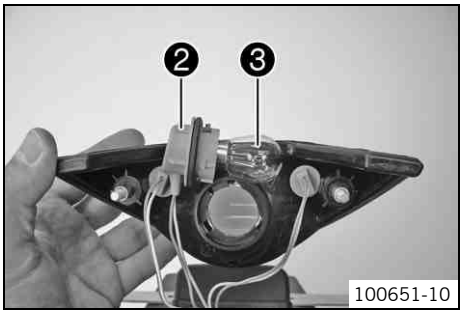
Note

Damage to reflector Reduced brightness.

– Grease on the lamp will evaporate due to the heat and be deposited on the reflector. Clean the lamp and keep it free of grease before mounting.



– Remove nuts ❶ at the bottom of the rear fender and pull out the tail light toward the rear.



– Turn bulb socket ❷ counterclockwise all the way and take it out of the tail light.
– Press bulb ❸ carefully into the socket, turn it counterclockwise by about 30°, and pull it out of the socket.
– Press the new bulb carefully into the socket and turn it clockwise until it stops.

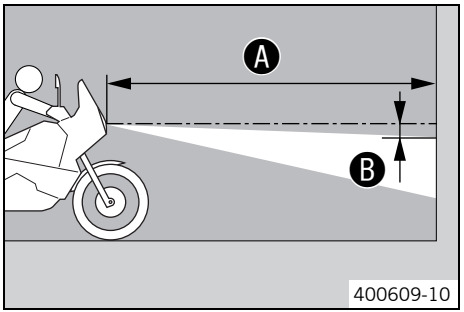
Brake light (P21W / socket BA15s) (☛ p. 202)

– Insert the bulb socket into the tail light and turn clockwise until it stops.
– Check the lighting function.
– Position the tail light. Mount and tighten nuts with the washers.

Guideline

Nut, tail light	M6	8 Nm (5.9 lbf ft)

14.13 Checking the headlight setting



– Park the vehicle on a horizontal surface in front of a light-colored wall and make a mark at the height of the center of the low beam headlight.
– Make another mark at a distance of Ⓑ under the first mark.

Guideline

Distance Ⓑ	5 cm (2 in)

– Park the vehicle at a distance of Ⓐ vertically in front of the wall and switch on the low beam headlight.

Guideline

Distance Ⓐ	5 m (16 ft)

– The rider, with luggage and passenger if applicable, now mounts the motorcycle.
– Check the headlight setting.

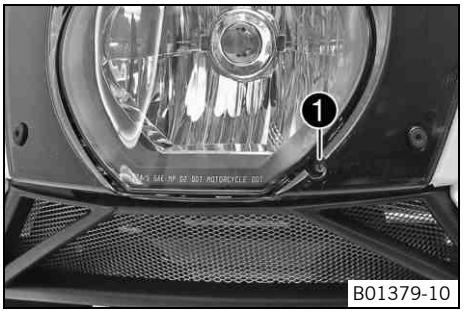
The light-dark boundary must lie exactly on the lower mark when the motorcycle is ready to operate with the rider mounted along with any luggage and a passenger if applicable.

» If the boundary between light and dark does not meet specifications:
– Adjust the headlight range. (☛ p. 148)

14.14 Adjusting the headlight range

Preparatory work

– Check the headlight setting. (☛ p. 148)



Main work

– Turn adjusting screw ❶ to adjust the headlight range.

Guideline

For a motorcycle with rider, and with luggage and a passenger if applicable, the light/dark boundary must be exactly on the lower mark (applied in: Checking headlight adjustment).

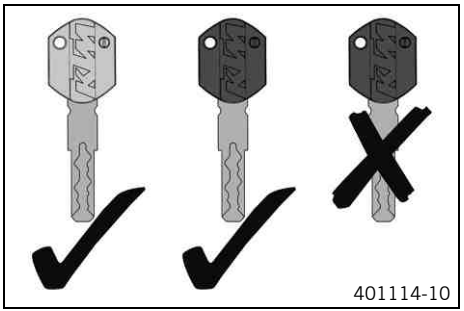
Info

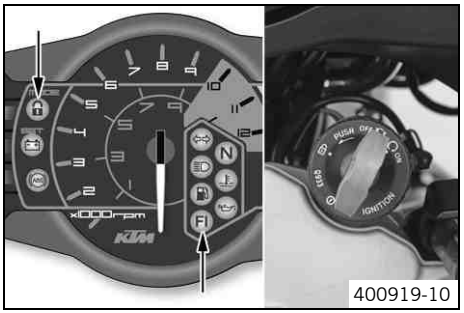
Turn clockwise to increase the headlight range; turn counterclockwise to reduce the headlight range.
If you have a payload, you may have to correct the headlight range.

14.15 Activating/deactivating the ignition key

Info

The orange programming key must only be used for activating and deactivating!
If a black ignition key is lost or needs to be replaced, the individual black ignition keys need to be enabled or disabled using the orange programming key. This will also prevent the vehicle from being operated without authorization with the lost black ignition key.
You can activate or deactivate up to four black ignition keys. Only the black ignition keys programmed during an activation procedure are valid. All black ignition keys not programmed during the activation procedure are invalid, but can be reprogrammed in a further activation procedure.


401114-10


400919-10

Loss of a black ignition key (second black ignition key available):

The following procedure deactivates all activated black ignition keys that are not included in the procedure.

– Turn the emergency OFF switch to the position ○.

– Insert the orange programming key in the ignition lock.
– Switch on the ignition by turning the orange programming key to the **ON** position ○.
  ✓ **FI** warning lamp Ⓕ (**MIL**) lights up, switches off, and then starts to flash.
  ✓ Immobilizer indicator lamp Ⓘ lights up.
– Switch off the ignition by turning the orange programming key to the **OFF** position ⊠.
– Pull out the orange programming key.
– Insert the black ignition key in the ignition lock.
– Switch on the ignition by turning the black ignition key to the position **ON** ○.
  ✓ **FI** warning lamp Ⓕ (**MIL**) lights up, switches off, and then starts to flash.
  ✓ The immobilizer indicator lamp Ⓘ lights up, switches off briefly, and switches on again.
– Switch off the ignition by turning the black ignition key to the position **OFF** ⊠.
– Remove the black ignition key.
– Insert the orange programming key in the ignition lock.
– Switch on the ignition by turning the orange programming key to the **ON** position ○.
  ✓ **FI** warning lamp Ⓕ (**MIL**) lights up, switches off, and then starts to flash.

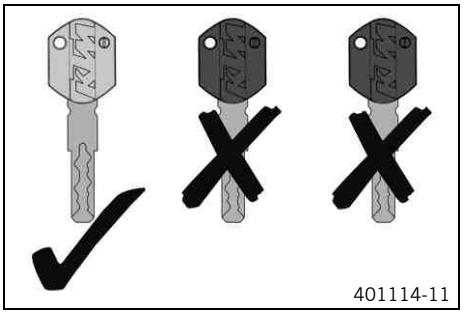
✔ The immobilizer indicator lamp Ⓐ lights up, switches off briefly and flashes; the number of flashes equals the number of functional black ignition keys including the orange programming key. In this case, twice.

– Switch off the ignition by turning the orange programming key to the **OFF** position ⊠.

– Pull out the orange programming key.

✔ The lost black ignition key is deactivated.

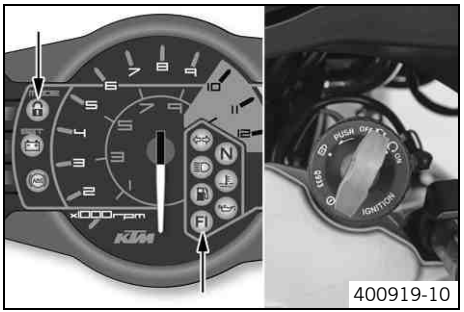
✔ The existing black ignition key is reactivated.


401114-11

Loss of both black ignition keys (no black ignition key available):

This procedure is important to prevent misuse of the lost black ignition key.

– Turn the emergency OFF switch to the position ○.


400919-10

– Insert the orange programming key in the ignition lock.

– Switch on the ignition by turning the orange programming key to the **ON** position ○.

✔ **FI** warning lamp Ⓕ (**MIL**) lights up, switches off, and then starts to flash.

✔ Immobilizer indicator lamp Ⓐ lights up.

– Switch off the ignition by turning the orange programming key to the **OFF** position ⊠.

– Switch on the ignition by turning the orange programming key to the **ON** position ○.

✔ **FI** warning lamp Ⓕ (**MIL**) lights up, switches off, and then starts to flash.

✔ The immobilizer indicator lamp Ⓐ lights up, switches off briefly and flashes; the number of flashes equals the number of functional black ignition keys including the orange programming key. In this case once, since all black ignition keys are deactivated.

– Switch off the ignition by turning the orange programming key to the **OFF** position ⊠.
– Pull out the orange programming key.
  ✔ All black ignition keys are deactivated.
– Order a new black ignition key according to the key number on the **KEYCODECARD** and activate it.

Activating the ignition key:

– Turn the emergency OFF switch to the position ○.
– Insert the orange programming key in the ignition lock.
– Switch on the ignition by turning the orange programming key to the **ON** position ○.
  ✔ **FI** warning lamp Ⓕ (**MIL**) lights up, switches off, and then starts to flash.
  ✔ Immobilizer indicator lamp ⓘ lights up.
– Switch off the ignition by turning the orange programming key to the **OFF** position ⊠.
– Pull out the orange programming key.
– Insert the black ignition key in the ignition lock.
– Switch on the ignition by turning the black ignition key to the position **ON** ○.
  ✔ **FI** warning lamp Ⓕ (**MIL**) lights up, switches off, and then starts to flash.
  ✔ The immobilizer indicator lamp ⓘ lights up, switches off briefly, and switches on again.
– Switch off the ignition by turning the black ignition key to the position **OFF** ⊠.
– Remove the black ignition key.
– To activate further ignition keys, repeat the last 4 steps with the respective ignition key.
– Insert the orange programming key in the ignition lock.
– Switch on the ignition by turning the orange programming key to the **ON** position ○.
  ✔ **FI** warning lamp Ⓕ (**MIL**) lights up, switches off, and then starts to flash.

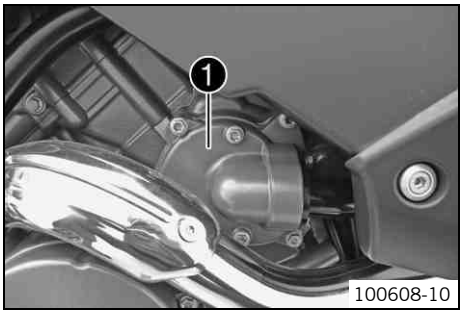
✓ The immobilizer indicator lamp ⓐ lights up, switches off briefly and flashes; the number of flashes equals the number of functional black ignition keys including the orange programming key.

– Switch off the ignition by turning the orange programming key to the **OFF** position ⊠.

– Pull out the orange programming key.

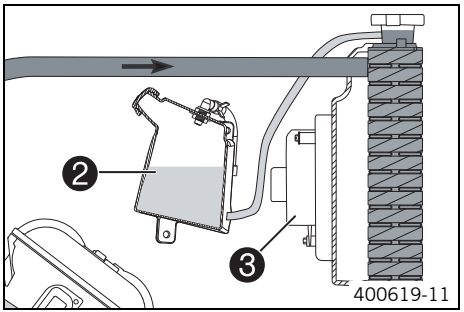
✓ All black ignition keys are activated included in this job sequence are activated.

15.1 Cooling system

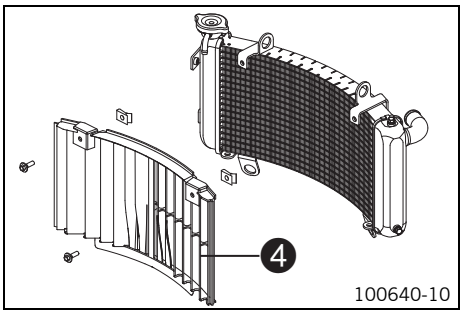


The water pump ❶ in the engine forces the coolant to flow.
The pressure in the cooling system resulting from heat is regulated by a valve in the radiator cap. This permits the specified coolant temperature without causing any malfunctions.

125 °C (257 °F)



Cooling takes place by means of the air stream and a radiator fan ❸, which is controlled by a thermoswitch.
The lower the speed, the less the cooling effect. Dirty cooling fins also reduce the cooling effect.
The heat expansion causes the surplus coolant to flow into the compensating tank ❷. When the temperature falls, this surplus coolant is sucked back into the cooling system.



A radiator guard ❹ is included with the vehicle. The radiator guard should be mounted when operating the vehicle offroad. It prevents damage to the radiator from flying stones and similar causes.

15.2 Checking the antifreeze and coolant level

Warning

Danger of scalding During motorcycle operation, the coolant gets very hot and is under pressure.

– Do not remove the radiator cap, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. In case of scalding, rinse immediately with lukewarm water.

Warning

Danger of poisoning Coolant is poisonous and a health hazard.

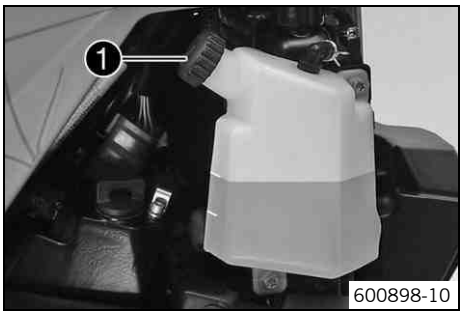
– Avoid contact between coolant and skin, eyes and clothing. If it gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with coolants. Keep coolant out of the reach of children.

Condition

The engine is cold.

Preparatory work

– Remove the front side cover. (☛ p. 90)



Only remove the right side cover.

Main work

– Park the motorcycle upright on a horizontal surface.
– Remove cap ❶ of the compensating tank.
– Check the coolant antifreeze.

−25... −45 °C (−13... −49 °F)

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

– Check the coolant level in the compensating tank.

The coolant level must be between **MIN** and **MAX**.

» If there is no coolant in the compensating tank:
– Check the cooling system for leaks.

Info
Do not start up the motorcycle!

– Fill/bleed the cooling system. (☛ p. 161)

» If the coolant in the compensating tank is not at the required level, but the tank is not empty:
– Add coolant to the **MAX** marking.

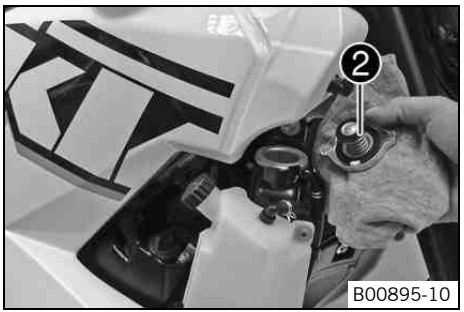
Alternative 1

Coolant (☛ p. 211)

Alternative 2

Coolant (mixed ready to use) (☛ p. 211)

– Mount the cap of the compensating tank.



– Remove radiator cap ❷.
– Check the coolant antifreeze.

−25... −45 °C (−13... −49 °F)

» If the antifreeze does not meet specifications:
  – Correct the coolant antifreeze.
– Check the coolant level in the radiator.

The radiator must be completely filled.

» If the coolant level does not meet specifications:
Coolant loss: < 0.50 l (< 0.53 qt.)
  – Check the cooling system for leaks.

Info
Do not start up the motorcycle!

  – Correct the coolant level.

Alternative 1

Coolant (☛ p. 211)

Alternative 2

Coolant (mixed ready to use) (☛ p. 211)

» If the coolant level does not meet specifications:
Coolant loss: > 0.50 l (> 0.53 qt.)
  – Check the cooling system for leaks.

Info
Do not start up the motorcycle!

  – Fill/bleed the cooling system. (☛ p. 161)

– Mount the radiator cap.

Finishing work

– Install the front side cover. (☛ p. 90)

15.3 Checking the coolant level in the compensating tank

Warning

Danger of scalding During motorcycle operation, the coolant gets very hot and is under pressure.

– Do not remove the radiator cap, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. In case of scalding, rinse immediately with lukewarm water.

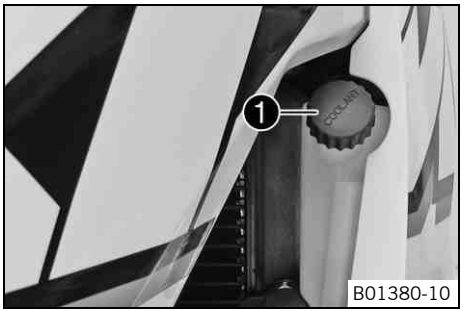
Warning

Danger of poisoning Coolant is poisonous and a health hazard.

– Avoid contact between coolant and skin, eyes and clothing. If it gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with coolants. Keep coolant out of the reach of children.

Condition

The engine is cold.
The radiator is completely full.



– Park the motorcycle on a horizontal surface.
– Check the coolant level in the compensating tank ❶.

The coolant level must be between **MIN** and **MAX**.

» If there is no coolant in the compensating tank:
– Check the cooling system for leaks. 🔧

Info
Do not start up the motorcycle!

– Fill/bleed the cooling system. 🔧 (☛ p. 161)

» If the coolant in the compensating tank is not at the required level, but the tank is not empty:
– Remove the compensating tank cap.
– Add coolant to the **MAX** marking.

Alternative 1

Coolant (☛ p. 211)

Alternative 2

Coolant (mixed ready to use) (☛ p. 211)

– Mount the cap of the compensating tank.

15.4 Draining the coolant 🔧

Warning
Danger of scalding During motorcycle operation, the coolant gets very hot and is under pressure.

– Do not remove the radiator cap, radiator hoses or other cooling system components when the engine is hot. Allow the engine and cooling system to cool down. In case of scalding, rinse immediately with lukewarm water.

Warning

Danger of poisoning Coolant is poisonous and a health hazard.

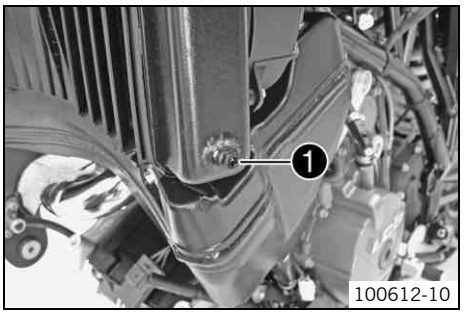
– Avoid contact between coolant and skin, eyes and clothing. If it gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with coolants. Keep coolant out of the reach of children.

Condition

The engine is cold.

Preparatory work

– Raise the vehicle using the center stand. (☛ p. 86)
– Switch off all power consumers and switch off the engine.
– Remove the crash bar. 🔧 (☛ p. 94)
– Turn the knurled screws on both fuel taps clockwise as far as possible.
– Remove the front side cover. (☛ p. 90)
– Remove the seat. (☛ p. 93)
– Remove the storage compartment and hang it to one side. 🔧 (☛ p. 96)
– Remove the left fuel tank. 🔧 (☛ p. 97)

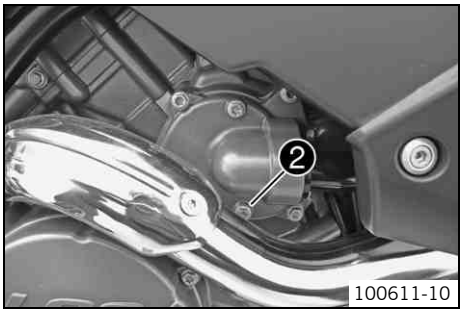


Main work

– Place a suitable container under the radiator.
– Remove screw ❶.
– Remove radiator cap.
– Completely drain the coolant.
– Mount screw ❶ with a new seal ring and tighten it.

Guideline

Remaining chassis screws	M6	10 Nm (7.4 lbf ft)



– Place a suitable container under the engine.
– Remove screw ❷.
– Completely drain the coolant.
– Mount screw ❷ with a new seal ring and tighten it.
Guideline

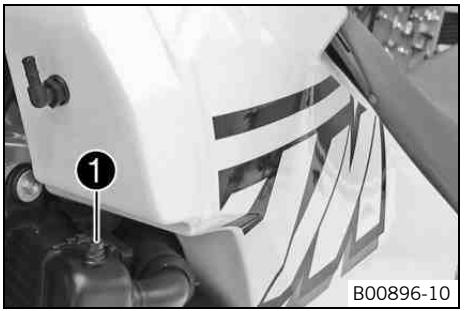
Screw, water pump cover	M6	10 Nm (7.4 lbf ft)

15.5 Filling/bleeding the cooling system

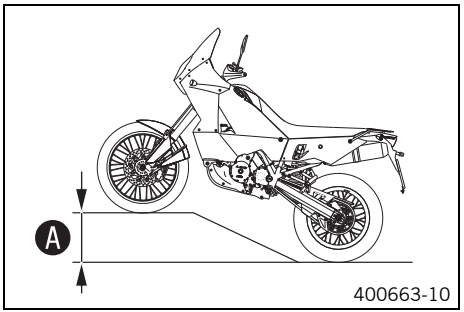
Warning
Danger of poisoning Coolant is poisonous and a health hazard.

– Avoid contact between coolant and skin, eyes and clothing. If it gets into your eyes, rinse immediately with water and contact a doctor. Wash affected skin areas immediately with soap and water. If coolant is swallowed, contact a doctor immediately. Change clothes that have come into contact with coolants. Keep coolant out of the reach of children.

Condition
The front side cover has been removed.



– Ensure that the drain plug on the radiator and the water pump cover are tightened.
– Remove bleeder screw ❶.



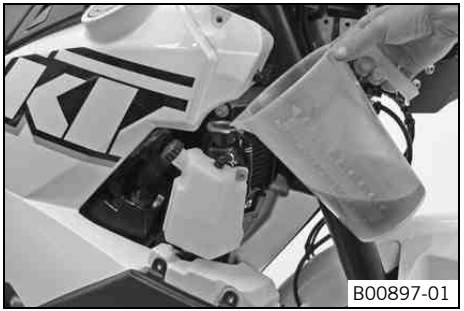
– Position the vehicle as shown and secure it against rolling. Height difference Ⓐ must be reached.

Guideline

Height difference Ⓐ	50 cm (19.7 in)

Info

To make sure that all of the air can escape from the cooling system, raise the front of the vehicle. A poorly bled cooling system is less effective at cooling and the engine can overheat.



– Pour in coolant until it emerges without bubbles at the vent hole, and then mount and tighten the bleeder screw immediately.

Alternative 1

Coolant (☛ p. 211)

Alternative 2

Coolant (mixed ready to use) (☛ p. 211)

– Fill the radiator completely with coolant. Mount the radiator cap.
– Lean the vehicle on the side stand.

– Check the coolant level in the compensating tank. (☛ p. 158)

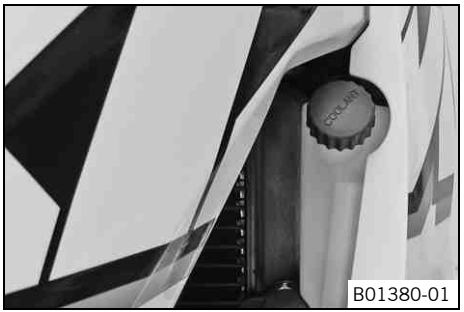
Danger

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

– When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.

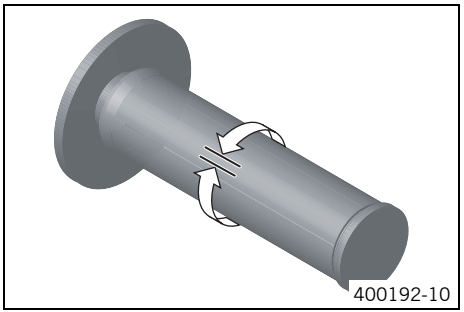
– Start the engine and run it until it reaches operating temperature.

✔ Six bars of the temperature display light up.



– Stop the engine and allow it to cool down.
– When the engine is cool, check the coolant level in the radiator and, if necessary, add coolant.
– Check the coolant level in the compensating tank and add coolant up to the **MAX** mark.

16.1 Checking the play in the throttle cable



– Check the throttle grip for smooth operation.
– Move the handlebar to the straight-ahead position. Move the throttle grip backwards and forwards to ascertain the play in the throttle cable.

Play in throttle cable	3... 5 mm (0.12... 0.2 in)

» If the throttle cable play does not meet specifications:
– Adjust the play in the throttle cable. (☛ p. 165)

Danger

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

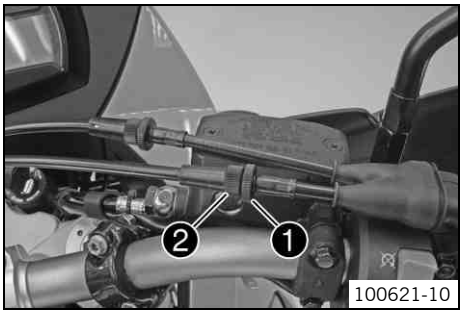
– When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.

– Start the engine and let it run idle. Move the handlebar to and fro over the entire steering range.

The idle speed must not change.

» If the idle speed changes:
– Adjust the play in the throttle cable. (☛ p. 165)

16.2 Adjusting the play in the throttle cable



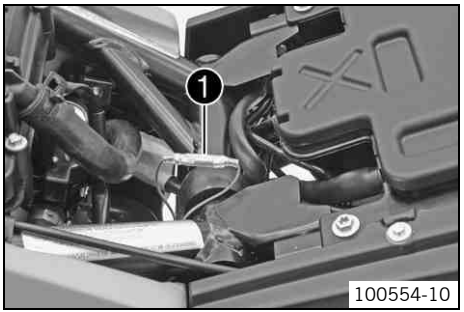
– Move the handlebar to the straight-ahead position.
– Use the KTM diagnostics tool to set the throttle stepper motor to the basic position.
– Loosen counter nut ❶.
– Set the play in the throttle cable by turning adjusting screw ❷.

Guideline

Play in throttle cable	3... 5 mm (0.12... 0.2 in)

– Tighten counter nut ❶.

16.3 Ignition curve plug-in connector



Plug-in connector ❶ is located under the seat close to where the top of the shock absorber is attached.
By disconnecting the plug-in connector, the ignition curve for fuel with an octane rating below 95 (ROZ 95 / RON 95 / PON 91) is activated. While the engine will have a slightly lower power output, this setting prevents engine damage by hindering spark knocking due to poor fuel quality.

Possible states

- Plug-in connector disconnected – Fuel with an octane rating of 80 to 94 (RON) can be used for one tank full.
- Plug-in connector connected – Fuel with an octane rating of 95 or higher can be used.

16.4 Adjusting the ignition curve to the fuel quality

Preparatory work

– Switch off the ignition by turning the black ignition key to the position **OFF** ⊠.

– Remove the seat. (☛ p. 93)

To activate the ignition curve for low octane fuel:

Note

Engine failure Low-quality fuel damages the engine.

– Operate the vehicle with fuel with an octane rating below 95 (ROZ 95/RON 95/PON 91) for no more than one tank full.

– The ignition curve must be adjusted to low octane fuel.

– Disconnect plug-in connector ❶. (Figure 100554-10☛ p. 165)

✓ Plug-in connector disconnected – Fuel with an octane rating of 80 to 94 (RON) can be used for one tank full. (☛ p. 165)

Activate the ignition curve for fuel with an octane rating of 95 or higher (ROZ 95 / RON 95 / PON 91):

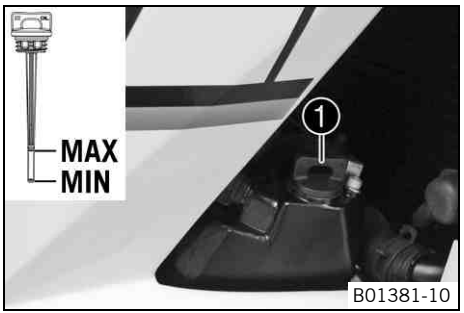
– Connect plug-in connector ❶. (Figure 100554-10☛ p. 165)

✓ Plug-in connector connected – Fuel with an octane rating of 95 or higher can be used. (☛ p. 165)

Finishing work

– Mount the seat. (☛ p. 93)

17.1 Checking the engine oil level



Preparatory work

– Raise the vehicle using the center stand. (☛ p. 86)

Danger

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

– When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.

– Start the engine and run it until it reaches operating temperature.

✓ Six bars of the temperature display light up.

Main work

– Switch off the engine.

– Unscrew oil dipstick ❶, wipe it off with a cloth and screw it back in all the way. Unscrew the oil dipstick and read off the engine oil level.

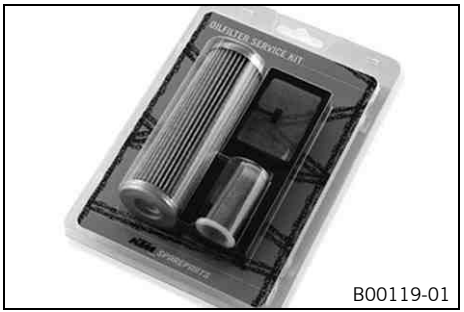
The engine oil level must be between the **MIN** and the **MAX** marking on the dipstick.

» If the engine oil level is not at the specified level:

– Add engine oil. (☛ p. 175)

– Replace the oil dipstick.

17.2 Changing the engine oil and filter, cleaning the oil screens



- Drain engine oil, clean oil screens. (p. 168)
- Install the oil filter. (p. 173)
- Install the left fuel tank. (p. 98)
- Fill up with engine oil. (p. 173)
- Install the underride guard. (p. 110)

17.3 Draining engine oil, cleaning oil screens

Warning
Danger of scalding Engine oil and gear oil get very hot when the motorcycle is ridden.

- Wear appropriate protective clothing and safety gloves. In case of burns, rinse immediately with lukewarm water.

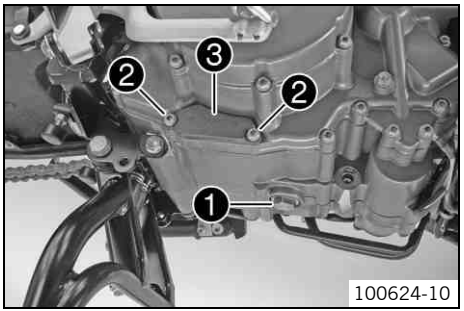
Warning
Environmental hazard Hazardous substances cause environmental damage.

- Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

Info
Drain the engine oil only when the engine is warm.

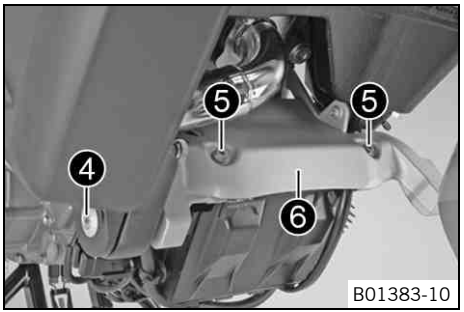
Preparatory work
- Raise the vehicle using the center stand. (p. 86)

– Remove the underride guard. (☛ p. 110)
– Switch off all power consumers and switch off the engine.
– Remove the crash bar. (☛ p. 94)
– Turn the knurled screws on both fuel taps clockwise as far as possible.
– Remove the front side cover. (☛ p. 90)
– Remove the seat. (☛ p. 93)
– Remove the storage compartment and hang it to one side. (☛ p. 96)
– Remove the left fuel tank. (☛ p. 97)

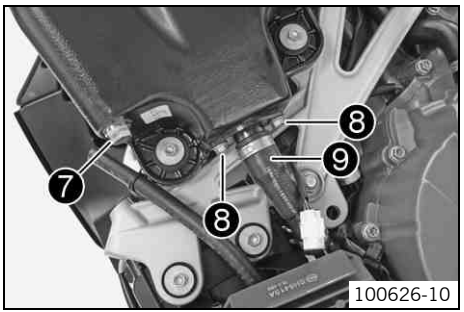


Main work

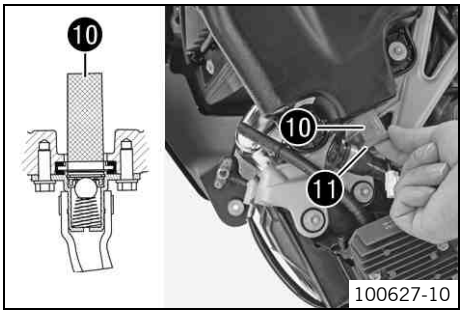
– Place a suitable container under the engine.
– Remove the oil drain plug ❶ with the magnet and seal ring.
– Fully drain the engine oil out of the engine.
– Remove screws ❷ and cover ❸.
– Pull oil screen out of the engine case with pliers.



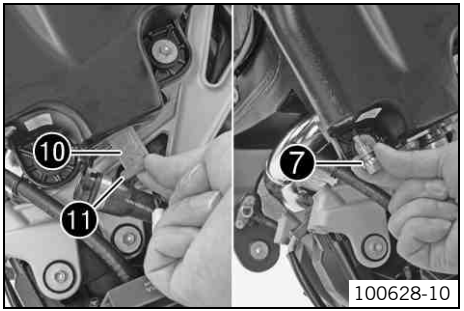
– Remove screw ❹ on the right fuel tank and remove screws ❺. Take off bracket ❻.



– Raise the vehicle off of the center stand. (☛ p. 87)
– Lean the vehicle on the side stand.
– Place a suitable container under the engine.
– Remove oil drain plug ❼.
– Fully drain the engine oil out of the oil tank.
– Remove screws ❽ and move oil line ❾ to one side.



– Pull oil screen ❿ out of the oil tank.
– Remove the oil filter. 🔧 (☛ p. 172)
– Clean all oil screens and oil drain plugs with a magnet.
– Clean all sealing areas.



– Check seal ring ⓫ of the oil screen for damage and correct seating.
– Insert oil screen ❿ into the oil tank.
– Position the oil line. Mount and tighten the screws.

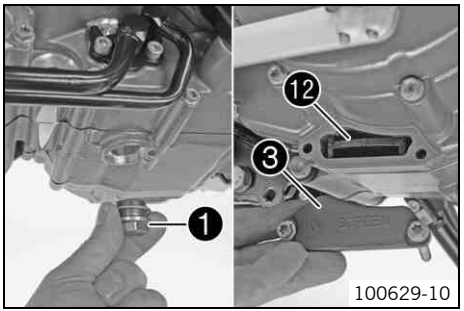
Guideline

Remaining chassis screws	M6	10 Nm (7.4 lbf ft)

– Mount oil drain plug ❼ with the magnet and new gasket and tighten.

Guideline

Oil drain plug with magnet	M12x1.5	25 Nm (18.4 lbf ft)



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

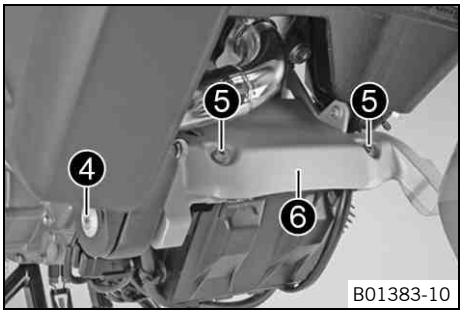
Guideline

Oil drain plug with magnet	M22x1.5	35 Nm (25.8 lbf ft)

– Slide oil screen ⓬ into the engine case with the **TOP** marking facing up.
– Check the form ring in cover ❸ for damage and correct seating.
– Position cover ❸. Mount and tighten the screws.

Guideline

Remaining engine screws	M6	10 Nm (7.4 lbf ft)



– Position bracket ❻. Mount and tighten screws ❺.

Guideline

Remaining chassis screws	M8	25 Nm (18.4 lbf ft)

– Mount and tighten screw ❹ on the right fuel tank.

Guideline

Screw, fuel tank	M8	15 Nm (11.1 lbf ft)

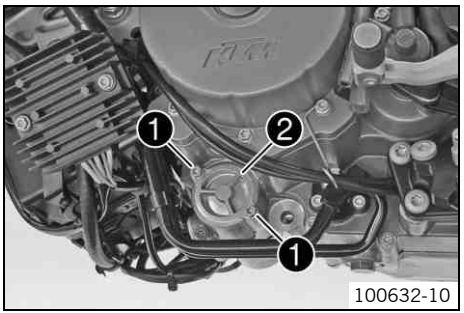
17.4 Removing the oil filter

Warning
Danger of scalding Engine oil and gear oil get very hot when the motorcycle is ridden.

– Wear appropriate protective clothing and safety gloves. In case of burns, rinse immediately with lukewarm water.

Warning
Environmental hazard Hazardous substances cause environmental damage.

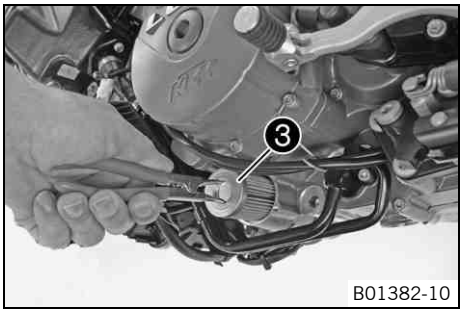
– Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.



Condition
The underride guard has been removed.

Preparatory work
– Place a suitable container under the engine.

Main work
– Remove screws ❶. Take off oil filter cover ❷ with the O-ring.

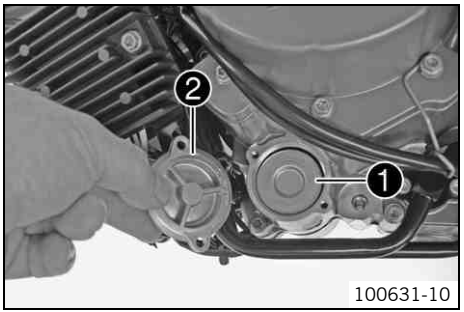


– Pull oil filter ❸ out of the oil filter housing.

Circlip pliers reverse (51012011000)

– Completely drain the engine oil.
– Thoroughly clean the parts and sealing surface.

17.5 Installing the oil filter



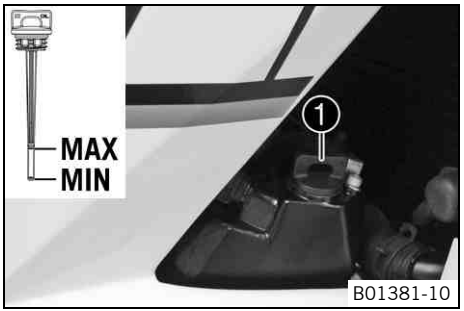
– Insert oil filter ❶.
– Lubricate the O-ring of the oil filter cover. Mount the oil filter cover ❷.
– Mount and tighten the screws.

Guideline

Remaining engine screws	M5	6 Nm (4.4 lbf ft)

17.6 Filling up with engine oil

Info
Too little engine oil or poor-quality engine oil results in premature wear to the engine.



– The oil must be added in two steps.

Engine oil	3.0 l (3.2 qt.)	External temperature: ≥ 0 °C (≥ 32 °F)	Engine oil (SAE 10W/50) (☛ p. 212)
		External temperature: < 0 °C (< 32 °F)	Engine oil (SAE 5W/40) (☛ p. 212)

– Remove the dipstick ❶ and add engine oil.

Engine oil (1st quantity) approx.	2.50 l (2.64 qt.)	External temperature: ≥ 0 °C (≥ 32 °F)	Engine oil (SAE 10W/50) (☛ p. 212)
		External temperature: < 0 °C (< 32 °F)	Engine oil (SAE 5W/40) (☛ p. 212)

– Replace the oil dipstick.
– Raise the vehicle using the center stand. (☛ p. 86)

Danger

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

– When running the engine, always make sure there is sufficient ventilation, and do not start or run the engine in an enclosed space without an effective exhaust extraction system.

– Start the engine and run it until it reaches operating temperature.

✓ Six bars of the temperature display light up.

– Check the lubrication system for leaks.
– Switch off the engine.

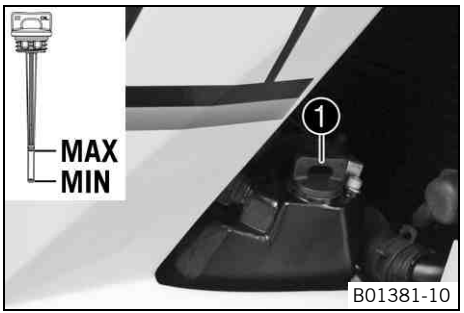
– Remove the oil dipstick and wipe it off with a cloth.
– Add engine oil to the **MAX** marking on the oil dipstick.

Engine oil (2nd quantity) approx.	0.50 l (0.53 qt.)	External temperature: ≥ 0 °C (≥ 32 °F)	Engine oil (SAE 10W/50) (☛ p. 212)
		External temperature: < 0 °C (< 32 °F)	Engine oil (SAE 5W/40) (☛ p. 212)

– Replace the oil dipstick.

17.7 Adding engine oil

Info
Too little engine oil or poor-quality engine oil results in premature wear to the engine.
The engine oil level must be corrected when the engine is warm.



– Remove oil dipstick ❶ and add engine oil to the **MAX** marking.

Condition
External temperature: ≥ 0 °C (≥ 32 °F)

Engine oil (SAE 10W/50) (☛ p. 212)

Condition
External temperature: < 0 °C (< 32 °F)

Engine oil (SAE 5W/40) (☛ p. 212)

Info

For optimal performance of the engine oil, do not mix different types of engine oil.
We recommend changing the engine oil, if necessary.

– Replace the oil dipstick.

18 CLEANING, CARE

18.1 Cleaning motorcycle

Note

Material damage Damage and destruction of components by high-pressure cleaning equipment.

– When cleaning the vehicle with a pressure cleaner, do not point the water jet directly onto electrical components, connectors, cables, bearings, etc. Maintain a minimum distance of 60 cm between the nozzle of the pressure cleaner and the component. Excessive pressure can cause malfunctions or destroy these parts.

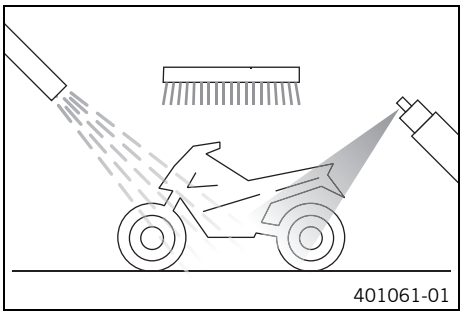
Warning

Environmental hazard Hazardous substances cause environmental damage.

– Oil, grease, filters, fuel, cleaners, brake fluid, etc., should be disposed of as stipulated in applicable regulations.

Info

If you clean the motorcycle regularly, its value and appearance will be maintained over a long period.
Avoid direct sunshine on the motorcycle during cleaning.



– Close off the exhaust system to keep water from entering.
– First remove coarse dirt particles with a gentle water spray.
– Spray very dirty areas with a normal motorcycle cleaner and then clean with a paintbrush.

Motorcycle cleaner (☛ p. 216)

Info

Use warm water containing normal motorcycle cleaner and a soft sponge.
Never apply motorcycle cleaner to a dry vehicle; always rinse the vehicle with water first.
If the vehicle was operated in road salt, clean it with cold water. Warm water would enhance the corrosive effects of salt.

– After rinsing the motorcycle with a gentle spray of water, allow it to dry thoroughly.
– Remove the closure of the exhaust system.

Warning

Danger of accidents Reduced braking efficiency due to a wet or dirty brake system.

– Clean or dry a dirty or wet brake system by riding and braking gently.

– After cleaning, ride the vehicle a short distance until the engine warms up.

Info

The heat produced causes water at inaccessible locations in the engine and on the brake system to evaporate.

– Push back the protection caps of the handlebar controls to allow any water that has penetrated to evaporate.
– After the motorcycle has cooled off, lubricate all moving parts and bearings.
– Clean the chain. (☛ p. 100)
– Treat bare metal parts (except for brake discs and exhaust system) with anti-corrosion materials.

Cleaning and preserving materials for metal, rubber and plastic (☛ p. 215)

– Treat all painted parts with a mild paint polish.

High-luster polish for paint (☛ p. 216)

– Treat all plastic parts and powder-coated parts with a mild cleaning and care product.

Paint cleaner and polish for high-gloss and matte finishes, bare metal and plastic surfaces (☛ p. 216)

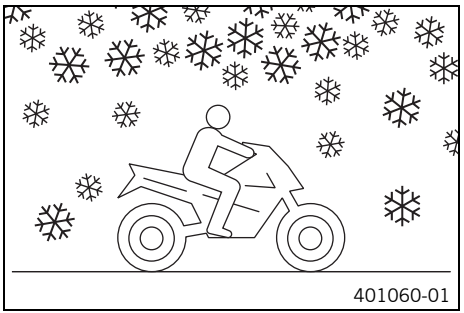
– Oil the ignition/steering lock, tank lock, and seat lock.

Universal oil spray (☛ p. 217)

18.2 Checks and maintenance steps for winter operation

Info

If you use the motorcycle in winter, you must expect salt on the roads. You should therefore take precautions against aggressive road salt.
If the vehicle was operated in road salt, clean it with cold water after riding. Warm water would enhance the corrosive effects of salt.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– Clean the motorcycle. (☛ p. 177)
– Clean the brakes.

Info

After **EVERY** trip on salted roads, thoroughly wash the brake calipers and brake linings with cold water and dry carefully. This should be done after the parts are cooled down and while they are installed.
After riding on salted roads, thoroughly wash the motorcycle with cold water and dry it well.

– Treat the engine, the swingarm, and all other bare or galvanized parts (except brake discs) with a wax-based anti-corrosion substance.

Info

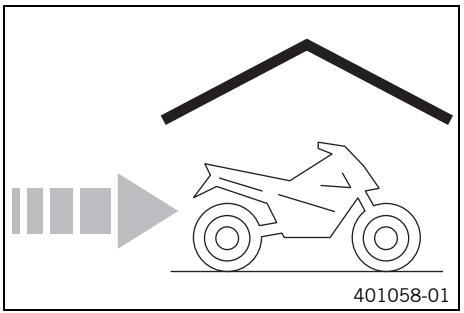
To prevent serious reduction of the braking efficiency, make sure no anti-corrosion substance gets on to the brake discs.

– Clean the chain. (☛ p. 100)

19.1 Storage

Info

If you want to garage the motorcycle for a longer period, take the following actions.
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 workshop overload). In this way, you can avoid long workshop waiting times at the start of the new season.



– When refueling for the last time before taking the motorcycle out of service, add fuel additive.

Fuel additive (☛ p. 215)

– Ride the motorcycle until the low fuel warning lamp lights up and the display changes to **TRIP F** so that you can fill up with fresh fuel when you take the motorcycle back into service.
– Clean the motorcycle. (☛ p. 177)
– Change the engine oil and filter, clean the oil screens. 🔧 (☛ p. 168)
– Check the antifreeze and coolant level. (☛ p. 155)
– Check the tire air pressure. (☛ p. 129)
– Remove the battery. 🔧 (☛ p. 132)
– Recharge the battery. 🔧 (☛ p. 134)

Guideline

Storage temperature of battery without direct sunshine	0… 35 °C (32… 95 °F)

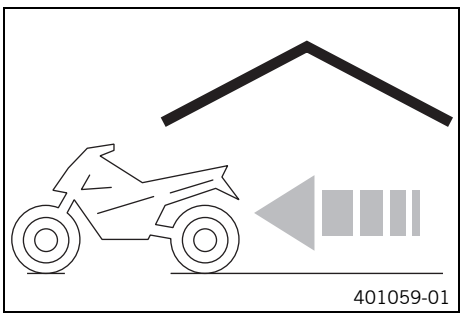
– Store the vehicle in a dry location that is not subject to large fluctuations in temperature.
– Raise the vehicle using the center stand. (☛ p. 86)

– Cover the motorcycle with a tarp or cover that is permeable to air.

Info

Do not use non-porous materials since they prevent humidity from escaping, thus causing corrosion.
Avoid running the engine for a short time only. Since the engine cannot warm up properly, the water vapor produced during combustion condenses and causes valves and exhaust system to rust.

19.2 Preparing for use after storage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– Raise the vehicle off of the center stand. (☛ p. 87)
– Recharge the battery. 🔧 (☛ p. 134)
– Install the battery. 🔧 (☛ p. 133)
– Set the clock. (☛ p. 42)
– Refuel. (☛ p. 72)
– Perform checks and maintenance measures when preparing for use. (☛ p. 62)
– Take a test ride.

Faults	Possible cause	Action
The engine does not turn when the starter button is pressed	Operating error	– Carry out the start procedure. (☛ p. 63)
	Battery discharged	– Recharge the battery. 🔧 (☛ p. 134) – Check the quiescent current. 🔧
	IGNITION, FUEL PUMP, or **POWER RELAY** fuse blown	– Change the fuses in the fuse box. (☛ p. 138)
	Main fuse burned out	– Change the main fuse. (☛ p. 136)
	Ignition/steering lock or emergency OFF switch defective	– Check the emergency OFF switch. 🔧 – Check the ignition/steering lock. 🔧
	Defect in safety start system	– Check the safety start system. 🔧
	ICU is not enabled	– Activate the ICU. 🔧
	Malfunction in CAN bus communication	– Check the CAN bus communication. 🔧
	Combination instrument defective	– Check the combination instrument. 🔧
	Control unit for electric start lock defective	– Check the control unit of the electric start lock. 🔧
Engine turns only if the clutch lever is drawn	The vehicle is in gear	– Shift the transmission to neutral.
	Defect in safety start system	– Check the safety start system. 🔧
Engine turns although a gear is engaged	Defect in safety start system	– Check the safety start system. 🔧
Engine turns but does not start	Coupling of fuel hose connection not connected	– Reconnect coupling of fuel hose connection.
	Defect in fuel injection system	– Read out the fault memory using the KTM diagnostics tool. 🔧
Engine has too little power	Air filter very dirty	– Change the air filter. 🔧

Faults	Possible cause	Action
Engine has too little power	Defect in fuel injection system	– Read out the fault memory using the KTM diagnostics tool.
	Ignition curve for low octane fuel activated	– Refuel with fuel with an octane rating of 95 or higher. – Connect plug-in connector ❶. (Figure 100554-10 p. 165)
Engine overheats	Too little coolant in cooling system	– Check the cooling system for leaks. – Check the coolant level in the radiator.
	Radiator fins very dirty	– Clean radiator fins.
	Foam formation in cooling system	– Drain the coolant. (p. 159) – Fill/bleed the cooling system. (p. 161)
	Buckled or damaged radiator hose	– Change the radiator hose.
	Fuse **FAN** blown	– Change the fuses in the fuse box. (p. 138)
	Thermostat defective	– Check the thermostat.
	Defect in radiator fan system	– Check the radiator fan system.
	Air in cooling system	– Fill/bleed the cooling system. (p. 161)
FI warning lamp (**MIL**) lights up/flashes	Defect in fuel injection system	– Read out the fault memory using the KTM diagnostics tool.
Engine dies during a trip	Lack of fuel	– Refuel. (p. 72)
	IGNITION, FUEL PUMP, or **POWER RELAY** fuse blown	– Change the fuses in the fuse box. (p. 138)
High oil consumption	Engine oil level too high	– Check the engine oil level. (p. 167)
	Engine oil too thin (low viscosity)	– Change the engine oil and filter, clean the oil screens. (p. 168)

Faults	Possible cause	Action
Headlight and parking light not functioning	Fuse **H/L BEAM, POSITION** blown	– Change the fuses in the fuse box. (☛ p. 138)
Turn signal, hazard warning flasher, brake light and horn are not functional	Fuse **HORN, BRAKE LIGHT** blown	– Change the fuses in the fuse box. (☛ p. 138)
Battery discharged	Ignition not switched off when vehicle was parked	– Recharge the battery. 🔧 (☛ p. 134)
	Battery is not charged by alternator	– Check the charging voltage. 🔧
Combination instrument shows nothing in the display	Fuse **ACC1, CLOCK** blown	– Change the fuses in the fuse box. (☛ p. 138)
Speedometer in combination instrument not functioning	Wiring harness of wheel revolution counter damaged or plug-in connector oxidized	– Check the wheel speed sensor. 🔧

Blink code of immobilizer indicator lamp	 12 Immobilizer indicator lamp flashes 1x short, 1 second pause, 2x short
Error level condition	All ignition keys inactive

Blink code of immobilizer indicator lamp	 13 Immobilizer indicator lamp flashes 1x short, 1 second pause, 3x short
Error level condition	Malfunction, ICU antenna

Blink code of immobilizer indicator lamp	 14 Immobilizer indicator lamp flashes 1x short, 1 second pause, 4x short
Error level condition	Malfunction in transponder of black ignition key

Blink code of immobilizer indicator lamp	 15 Immobilizer indicator lamp flashes 1x short, 1 second pause, 5x short
Error level condition	Black ignition key inactive

Blink code of immobilizer indicator lamp	 16 Immobilizer indicator lamp flashes 1x short, 1 second pause, 6x short
Error level condition	Malfunction, ICU encryption for black ignition key

21 IMMOBILIZER BLINK CODE

Blink code of immobilizer indicator lamp	 21 Immobilizer indicator lamp flashes 2x short, 1 second pause, 1x short
Error level condition	ICU is not enabled

Blink code of immobilizer indicator lamp	 31 Immobilizer indicator lamp flashes 3x short, 1 second pause, 1x short
Error level condition	Malfunction, encryption request from EFI control unit to ICU

Blink code of immobilizer indicator lamp	 32 Immobilizer indicator lamp flashes 3x short, 1 second pause, 2x short
Error level condition	Malfunction in CAN bus communication

Blink code of immobilizer indicator lamp	 60 Immobilizer indicator lamp flashes 6x short
Error level condition	**E²PROM** malfunction

Blink code of FI warning lamp (MIL)	 02 **FI** warning lamp (**MIL**) flashes 2x short
Error level condition	Crankshaft sensor circuit - circuit fault

Blink code of FI warning lamp (MIL)	 06 **FI** warning lamp (**MIL**) flashes 6x short
Error level condition	Throttle valve sensor circuit A - input signal too low
	Throttle valve sensor circuit A - input signal too high

Blink code of FI warning lamp (MIL)	 07 **FI** warning lamp (**MIL**) flashes 7x short
Error level condition	Throttle position sensor circuit B - input signal too low
	Throttle position sensor circuit B - input signal too high

Blink code of FI warning lamp (MIL)	 09 **FI** warning lamp (**MIL**) flashes 9x short
Error level condition	Manifold absolute pressure sensor cylinder 1 - input signal too low
	Manifold absolute pressure sensor cylinder 1 - input signal too high

Blink code of FI warning lamp (MIL)	 11 **FI** warning lamp (**MIL**) flashes 1x long, 1x short
Error level condition	Manifold absolute pressure sensor cylinder 2 - input signal too low
	Manifold absolute pressure sensor cylinder 2 - input signal too high

Blink code of FI warning lamp (MIL)	 12 **FI** warning lamp (**MIL**) flashes 1x long, 2x short
Error level condition	Coolant temperature sensor - input signal too low
	Coolant temperature sensor - input signal too high

Blink code of FI warning lamp (MIL)	 13 **FI** warning lamp (**MIL**) flashes 1x long, 3x short
Error level condition	Intake air temperature sensor - input signal too low
	Intake air temperature sensor - input signal too high

Blink code of FI warning lamp (MIL)	 14 **FI** warning lamp (**MIL**) flashes 1x long, 4x short
Error level condition	Ambient air pressure sensor - input signal too low
	Ambient air pressure sensor - input signal too high

Blink code of FI warning lamp (MIL)	 15 **FI** warning lamp (**MIL**) flashes 1x long, 5x short
Error level condition	Rollover sensor - input signal too low
	Rollover sensor - input signal too high

Blink code of FI warning lamp (MIL)	 17 **FI** warning lamp (**MIL**) flashes 1x long, 7x short
Error level condition	Lambda sensor cylinder 1, sensor 1 - circuit fault

Blink code of FI warning lamp (MIL)	 18 **FI** warning lamp (**MIL**) flashes 1x long, 8x short
Error level condition	Lambda sensor cylinder 2, sensor 1 - circuit fault

Blink code of FI warning lamp (MIL)	 24 **FI** warning lamp (**MIL**) flashes 2x long, 4x short
Error level condition	System voltage - circuit fault

Blink code of FI warning lamp (MIL)	 25 **FI** warning lamp (**MIL**) flashes 2x long, 5x short
Error level condition	Side stand - circuit fault

Blink code of FI warning lamp (MIL)	 33 **FI** warning lamp (**MIL**) flashes 3x long, 3x short
Error level condition	Injector cylinder 1 - circuit fault

Blink code of FI warning lamp (MIL)	 34 **FI** warning lamp (**MIL**) flashes 3x long, 4x short
Error level condition	Injection valve cylinder 2 - circuit fault

Blink code of FI warning lamp (MIL)	 37 **FI** warning lamp (**MIL**) flashes 3x long, 7x short
Error level condition	Ignition coil 1, cylinder 1 - circuit fault

Blink code of FI warning lamp (MIL)	 38 **FI** warning lamp (**MIL**) flashes 3x long, 8x short
Error level condition	Ignition coil 1, cylinder 2 - circuit fault

Blink code of FI warning lamp (MIL)	 41 **FI** warning lamp (**MIL**) flashes 4x long, 1x short
Error level condition	Fuel pump control - interruption/short circuit to ground
	Fuel pump control - input signal too high

Blink code of FI warning lamp (MIL)	 45 **FI** warning lamp (**MIL**) flashes 4x long, 5x short
Error level condition	Heating lambda sensor cylinder 1, sensor 1 - interruption/short circuit to ground
	Heating lambda sensor cylinder 1, sensor 1 - input signal too high

Blink code of FI warning lamp (MIL)	 46 **FI** warning lamp (**MIL**) flashes 4x long, 6x short
Error level condition	Heating lambda sensor cylinder 2, sensor 1 - interruption/short circuit to ground
	Heating lambda sensor cylinder 2, sensor 1 - input signal too high

Blink code of FI warning lamp (MIL)	 49 **FI** warning lamp (**MIL**) flashes 4x long, 9x short
Error level condition	Motor drive circuit A - circuit fault

Blink code of FI warning lamp (MIL)	 50 **FI** warning lamp (**MIL**) flashes 5x long
Error level condition	Motor drive circuit B - circuit fault

Blink code of FI warning lamp (MIL)	 53 **FI** warning lamp (**MIL**) flashes 5x long, 3x short
Error level condition	Fuel evaporation valve - short circuit to ground or open circuit
	Fuel evaporation valve - input signal too high

Blink code of FI warning lamp (MIL)	 54 **FI** warning lamp (**MIL**) flashes 5x long, 4x short
Error level condition	Secondary air valve - interruption/short circuit to ground
	Secondary air valve - input signal too high

Blink code of FI warning lamp (MIL)	 68 **FI** warning lamp (**MIL**) flashes 6x long, 8x short
Error level condition	Manifold absolute pressure sensor cylinder 1 - connection leaks

Blink code of FI warning lamp (MIL)	 69 **FI** warning lamp (**MIL**) flashes 6x long, 9x short
Error level condition	Manifold absolute pressure sensor cylinder 2 - connection leaks

Blink code of FI warning lamp (MIL)	 81 **FI** warning lamp (**MIL**) flashes 8x long, 1x short
Error level condition	Immobilizer control unit - circuit fault

Blink code of FI warning lamp (MIL)	 91 **FI** warning lamp (**MIL**) flashes 9x long, 1x short
Error level condition	CAN bus communication error

23 TECHNICAL DATA

23.1 Engine

Design	2-cylinder 4-stroke Otto motor, 75° V arrangement, water-cooled
Displacement	999 cm³ (60.96 cu in)
Stroke	62.4 mm (2.457 in)
Bore	101 mm (3.98 in)
Compression ratio	11.5:1
Idle speed	1,420... 1,520 rpm
Control	DOHC, 4 valves per cylinder, chain-driven
Valve - diameter	
Exhaust	33 mm (1.3 in)
Intake	38 mm (1.5 in)
Valve clearance	
Exhaust at: 20 °C (68 °F)	0.25... 0.30 mm (0.0098... 0.0118 in)
Intake at: 20 °C (68 °F)	0.10... 0.15 mm (0.0039... 0.0059 in)
Crankshaft bearing	Sleeve bearing
Conrod bearing	Sleeve bearing
Piston	Forged light alloy
Piston ring	1 L-ring, 1 tapered compression piston ring, 1 oil scraper ring
Engine lubrication	Dry sump lubrication system with two rotor pumps
Primary transmission	35:67
Clutch	Multidisc clutch in oil bath/hydraulically activated
Transmission	6-gears, claw-shifted
Transmission ratio	
1st gear	12:35

2nd gear	15:32
3rd gear	18:30
4th gear	20:27
5th gear	24:27
6th gear	27:26
Mixture preparation	Electronic fuel injection
Ignition system	Contactless controlled fully electronic ignition with digital ignition adjustment
Alternator	12 V, 450 W
Spark plug	NGK LKAR8BI9
Spark plug electrode gap	0.8 mm (0.031 in)
Cooling	Water cooling, permanent circulation of coolant by water pump
Cold start device	Electric starter

23.2 Engine tightening torques

Hose clip, intake flange	M4	1.5 Nm (1.11 lbf ft)	–
Screw, oil spray tube	M4	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Remaining engine screws	M5	6 Nm (4.4 lbf ft)	–
Screw, bearing retainer	M5	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, connecting angle on valve cover	M5	3 Nm (2.2 lbf ft)	**Loctite® 243™**
Screw, gear sensor	M5	3 Nm (2.2 lbf ft)	**Loctite® 243™**
Screw, locking lever	M5	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Nut, cylinder head	M6	8 Nm (5.9 lbf ft)	–
Plug, vacuum connection	M6	5 Nm (3.7 lbf ft)	**Loctite® 243™**

Remaining engine screws	M6	10 Nm (7.4 lbf ft)	–
Screw in alternator cover	M6	10 Nm (7.4 lbf ft)	–
Screw, bearing bolt in alternator cover	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, camshaft bearing support	M6	10 Nm (7.4 lbf ft)	–
Screw, clutch cover	M6	10 Nm (7.4 lbf ft)	–
Screw, clutch spring	M6	10 Nm (7.4 lbf ft)	–
Screw, damping weight, clutch cover	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, engine case	M6	10 Nm (7.4 lbf ft)	–
Screw, freewheel holder	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, freewheel hub	M6	13 Nm (9.6 lbf ft)	**Loctite® 648™**
Screw, oil pump housing	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, pulse generator	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, shift drum locating	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, shift lever	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, starter motor	M6	10 Nm (7.4 lbf ft)	–
Screw, stator	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, valve cover	M6	10 Nm (7.4 lbf ft)	–
Screw, water pump cover	M6	10 Nm (7.4 lbf ft)	–
Screw, water pump wheel	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Vacuum connection	M6	2.5 Nm (1.84 lbf ft)	**Loctite® 243™**
Oil jet	M6x0.75	4 Nm (3 lbf ft)	**Loctite® 243™**
Screw, camshaft bearing support	M8	Step 1 10 Nm (7.4 lbf ft) Step 2 18 Nm (13.3 lbf ft)	–

Screw, clutch cover	M8	15 Nm (11.1 lbf ft)	–
Screw, cylinder head	M8	Step 1 18 Nm (13.3 lbf ft) Step 2 23 Nm (17 lbf ft)	**Loctite® 243™**
Screw, timing chain guide rail	M8	15 Nm (11.1 lbf ft)	**Loctite® 243™**
Screw, timing chain tensioning rail	M8	20 Nm (14.8 lbf ft)	**Loctite® 243™**
Stud, exhaust flange	M8	15 Nm (11.1 lbf ft)	–
Nut, cylinder head (exterior)	M10	Step 1 23 Nm (17 lbf ft) Step 2 34 Nm (25.1 lbf ft)	Only applies when using: Box wrench attachment 13 mm (60029081000)
			Lubricated with engine oil
Nut, cylinder head on timing chain shaft	M10	Step 1 25 Nm (18.4 lbf ft) Step 2 38 Nm (28 lbf ft)	Lubricated with engine oil
Plug, clutch lubrication	M10	15 Nm (11.1 lbf ft)	–
Screw, bearing bolt of timing gears	M10	30 Nm (22.1 lbf ft)	–
Stud, cylinder head in engine case	M10	20 Nm (14.8 lbf ft)	–
Oil pressure sensor	M10x1	10 Nm (7.4 lbf ft)	–
Screw, conrod bearing	M10x1	Step 1 25 Nm (18.4 lbf ft) Step 2 30 Nm (22.1 lbf ft) Step 3 60°	–
Spark plug	M12x1.25	18 Nm (13.3 lbf ft)	–

Engine coolant temperature sensor	M12x1.5	12 Nm (8.9 lbf ft)	–
Plus, cylinder head (2nd cylinder)	M12x1.5	25 Nm (18.4 lbf ft)	–
Plug, oil filter housing	M14x1.5	15 Nm (11.1 lbf ft)	**Loctite® 243™**
Bleeder flange, alternator cover	M16x1.5	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Plug, timing-chain tensioner	M16x1.5	20 Nm (14.8 lbf ft)	–
Rotor screw	M16x1.5	150 Nm (110.6 lbf ft)	**Loctite® 243™**
Nut, balancer shaft	M20x1.5	120 Nm (88.5 lbf ft)	**Loctite® 243™**
Nut, engine sprocket	M20x1.5	100 Nm (73.8 lbf ft)	**Loctite® 243™**
Screw-in fitting, cooling system	M20x1.5	10 Nm (7.4 lbf ft)	**Loctite® 577™**
Nut, inner clutch hub	M22x1.5	130 Nm (95.9 lbf ft)	**Loctite® 243™**
Oil drain plug with magnet	M22x1.5	35 Nm (25.8 lbf ft)	–
Screw in alternator cover	M24x1.5	8 Nm (5.9 lbf ft)	–
Nut, primary gear	M33LHx1.5	130 Nm (95.9 lbf ft)	**Loctite® 243™**

23.3 Capacities

23.3.1 Engine oil

Engine oil	3.0 l (3.2 qt.)	External temperature: ≥ 0 °C (≥ 32 °F)	Engine oil (SAE 10W/50) (☛ p. 212)
		External temperature: < 0 °C (< 32 °F)	Engine oil (SAE 5W/40) (☛ p. 212)

23.3.2 Coolant

Coolant	2.10 l (2.22 qt.)	Coolant (☛ p. 211)	
		Coolant (mixed ready to use) (☛ p. 211)	

23.3.3 Fuel

Total fuel tank capacity, approx.	20 l (5.3 US gal)	Super unleaded (ROZ 95/RON 95/PON 91) (☛ p. 214)

Fuel reserve, approx.	4 l (1.1 US gal)

Frame	Lattice frame made of chrome molybdenum steel tubing, powder-coated
Fork	**WP Suspension** Up Side Down 4860 MXMA PA
Shock absorber	**WP Suspension** PDS 5018 DCC PA
Suspension travel	
Front	210 mm (8.27 in)
Suspension travel	
Rear	210 mm (8.27 in)
Brake system	
Front	Double disk brake with floating brake calipers and brake discs
Rear	Single disc brake with floating brake caliper and brake disc
Brake system	Two separate brake circuits without ABS (antilock brake system)
Brake discs - diameter	
Front	300 mm (11.81 in)
Rear	240 mm (9.45 in)
Brake discs - wear limit	
Front	4.5 mm (0.177 in)
Brake disc - wear limit	
Rear	4.5 mm (0.177 in)
Tire air pressure, solo	
Front	2.4 bar (35 psi)
Rear	2.6 bar (38 psi)
Tire air pressure with passenger/full payload	
Front	2.4 bar (35 psi)
Rear	2.8 bar (41 psi)

Secondary drive ratio	16:42
Chain	5/8 x 5/16” X-ring
Steering head angle	63.4°
Wheelbase	1,570 mm (61.81 in)
Seat height, unloaded	860 mm (33.86 in)
Ground clearance, unloaded	261 mm (10.28 in)
Weight without fuel, approx.	207 kg (456 lb.)
Maximum permissible front axle load	200 kg (441 lb.)
Maximum permissible rear axle load	250 kg (551 lb.)
Maximum permissible total weight	430 kg (948 lb.)

Battery	YTZ14S	Battery voltage: 12 V Nominal capacity: 11.2 Ah maintenance-free
Fuse	58011109110	10 A
Fuse	58011109115	15 A
Fuse	58011109125	25 A
Fuse	58011109130	30 A
Fuse	58011109140	40 A
Low beam/high beam	H4 / socket P43t	12 V 60/55 W
Parking light	W5W / socket W2.1x9.5d	12 V 5 W
Instrument lights and indicator lamps	LED	
Turn signal	RY10W / socket BAU15s	12 V 10 W
Tail light	W5W / socket W2.1x9.5d	12 V 5 W
Brake light	P21W / socket BA15s	12 V 21 W
License plate lamp	W5W / socket W2.1x9.5d	12 V 5 W

26 TIRES

Front tires	Rear tires
90/90 - 21 M/C 54R TT Dunlop Rally Raid D 908 F RR	**140/80 - 18 M/C 70R TT** Dunlop Rally Raid D 908 RR
Additional information is available in the Service section under: http://www.ktm.com	

Fork part number	14.18.7E.24
Fork	**WP Suspension** Up Side Down 4860 MXMA PA
Compression damping	
Comfort	20 clicks
Standard	15 clicks
Sport	10 clicks
Full payload	10 clicks
Rebound damping	
Comfort	23 clicks
Standard	18 clicks
Sport	13 clicks
Full payload	13 clicks
Spring preload - **Preload Adjuster**	
Comfort	5 turns
Standard	5 turns
Sport	8 turns
Full payload	7 turns
Spring length with preload spacer(s)	468 mm (18.43 in)
Spring rate	
Soft	4.6 N/mm (26.3 lb/in)
Medium (standard)	4.8 N/mm (27.4 lb/in)
Hard	5.0 N/mm (28.6 lb/in)
Fork length	880 mm (34.65 in)
Air chamber length	100^{+30}_{-20} mm ($3.94^{+1.18}_{-0.79}$ in)

Fork oil per fork leg	655 ml (22.15 fl. oz.)	Fork oil (SAE 5) (☛ p. 213)

28 SHOCK ABSORBER

Shock absorber part number	12.18.7E.08
Shock absorber	**WP Suspension** PDS 5018 DCC PA
Compression damping, low-speed	
Comfort	25 clicks
Standard	20 clicks
Sport	15 clicks
Full payload	15 clicks
Compression damping, high-speed	
Comfort	2 turns
Standard	1.5 turns
Sport	1 turn
Full payload	1 turn
Rebound damping	
Comfort	20 clicks
Standard	15 clicks
Sport	10 clicks
Full payload	10 clicks
Spring preload - **Preload Adjuster**	
Comfort	4 turns
Standard	4 turns
Sport	8 turns
Full payload	16 turns
Spring rate	
Soft	140 N/mm (799 lb/in)
Medium (standard)	150 N/mm (857 lb/in)

28 SHOCK ABSORBER

Spring length	225 mm (8.86 in)
Gas pressure	10 bar (145 psi)
Static sag	25 mm (0.98 in)
Fitted length	372 mm (14.65 in)
Shock absorber oil (☛ p. 213)	SAE 2.5

Screw, side stand switch	M4	2 Nm (1.5 lbf ft)	–
Screw, filler cap	M5	5 Nm (3.7 lbf ft)	–
Screw, foot brake lever stub	M5	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, fuel level indicator	M5	3 Nm (2.2 lbf ft)	–
Spoke nipple	M5	5 Nm (3.7 lbf ft)	–
Nut, positive terminal extension	M6	4 Nm (3 lbf ft)	–
Nut, tail light	M6	8 Nm (5.9 lbf ft)	–
Remaining chassis nuts	M6	10 Nm (7.4 lbf ft)	–
Remaining chassis screws	M6	10 Nm (7.4 lbf ft)	–
Screw, brake line holder on bottom triple clamp	M6	8 Nm (5.9 lbf ft)	**Loctite® 243™**
Screw, cable/line guide at top triple clamp	M6	8 Nm (5.9 lbf ft)	**Loctite® 243™**
Screw, chain guide	M6	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, chain sliding guard	M6	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, exhaust pipe bracket	M6	12 Nm (8.9 lbf ft)	**Loctite® 243™**
Screw, foot brake cylinder	M6	10 Nm (7.4 lbf ft)	**Loctite® 243™**
Screw, front brake disc	M6	14 Nm (10.3 lbf ft)	**Loctite® 243™**
Screw, fuel pump	M6	6 Nm (4.4 lbf ft)	–
Screw, fuel tap	M6	6 Nm (4.4 lbf ft)	–
Screw, heat guard on manifold	M6	8 Nm (5.9 lbf ft)	–
Screw, magnetic holder on side stand	M6	6 Nm (4.4 lbf ft)	**Loctite® 243™**
Screw, rear brake disc	M6	14 Nm (10.3 lbf ft)	**Loctite® 243™**

Nut, manifold on cylinder head	M8	Tightening sequence: Tighten the nuts evenly. Do not bend the metal.	–
Remaining chassis nuts	M8	25 Nm (18.4 lbf ft)	–
Remaining chassis screws	M8	25 Nm (18.4 lbf ft)	–
Screw, bottom triple clamp	M8	15 Nm (11.1 lbf ft)	–
Screw, crash bar	M8	15 Nm (11.1 lbf ft)	–
Screw, exhaust clamp	M8	8 Nm (5.9 lbf ft)	–
Screw, foot brake lever	M8	20 Nm (14.8 lbf ft)	–
Screw, fork stub	M8	15 Nm (11.1 lbf ft)	–
Screw, front brake caliper	M8	25 Nm (18.4 lbf ft)	**Loctite® 243™**
Screw, fuel tank	M8	15 Nm (11.1 lbf ft)	–
Screw, handlebar clamp	M8	20 Nm (14.8 lbf ft)	–
Screw, ignition lock (ratchet screw)	M8		**Loctite® 243™**
Screw, rear footrest bracket	M8	25 Nm (18.4 lbf ft)	**Loctite® 243™**
Screw, spring holder on side stand bracket	M8	25 Nm (18.4 lbf ft)	**Loctite® 243™**
Screw, steering stem	M8	20 Nm (14.8 lbf ft)	–
Screw, top triple clamp	M8	20 Nm (14.8 lbf ft)	–
Screw, underride guard	M8	25 Nm (18.4 lbf ft)	**Loctite® 243™**
Engine carrying screw	M10	45 Nm (33.2 lbf ft)	–
Remaining chassis nuts	M10	45 Nm (33.2 lbf ft)	–
Remaining chassis screws	M10	45 Nm (33.2 lbf ft)	–
Screw, handlebar support	M10	20 Nm (14.8 lbf ft)	–
Screw, side stand	M10	35 Nm (25.8 lbf ft)	**Loctite® 243™**

Screw, side stand bracket	M10	45 Nm (33.2 lbf ft)	**Loctite® 243™**
Screw, side stand holding plate	M10	40 Nm (29.5 lbf ft)	**Loctite® 243™**
Nut, rear sprocket screw	M10x1.25	50 Nm (36.9 lbf ft)	**Loctite® 243™**
Screw, subframe	M10x1.25	45 Nm (33.2 lbf ft)	**Loctite® 243™**
Oil drain plug with magnet	M12x1.5	25 Nm (18.4 lbf ft)	–
Screw, bottom shock absorber	M14x1.5	80 Nm (59 lbf ft)	Thread greased
Screw, top shock absorber	M14x1.5	80 Nm (59 lbf ft)	Thread greased
Nut, socket	M18x1	4 Nm (3 lbf ft)	–
Lambda sensor	M18x1.5	45 Nm (33.2 lbf ft)	–
Nut, swingarm pivot	M19x1.5	130 Nm (95.9 lbf ft)	Thread greased
Screw, top steering head	M20x1.5	12 Nm (8.9 lbf ft)	–
Nut, rear wheel spindle	M25x1.5	90 Nm (66.4 lbf ft)	Thread greased
Screw, front wheel spindle	M25x1.5	45 Nm (33.2 lbf ft)	–

Brake fluid DOT 4 / DOT 5.1

According to

– DOT

Guideline

– Use only brake fluid that complies with the specified standard (see specifications on the container) and that possesses the corresponding properties. KTM recommends **Castrol** and **Motorex®** products.

Supplier

Castrol

– **RESPONSE BRAKE FLUID SUPER DOT 4**

Motorex®

– **Brake Fluid DOT 5.1**

Coolant

Guideline

– Use only suitable coolant (also in countries with high temperatures). Use of low-quality antifreeze can lead to corrosion and foaming. KTM recommends **Motorex®** products.

Mixture ratio

Antifreeze protection: −25... −45 °C (−13... −49 °F)	50 % corrosion inhibitor/antifreeze 50 % distilled water

Coolant (mixed ready to use)

Antifreeze	−40 °C (−40 °F)

Supplier

Motorex®

– **COOLANT G48**

Engine oil (SAE 10W/50)

According to

– JASO T903 MA (☛ p. 218)
– SAE (☛ p. 218) (SAE 10W/50)

Guideline

– Use only engine oils that comply with the specified standards (see specifications on the container) and that possess the corresponding properties. KTM recommends **Motorex®** products.

Fully synthetic engine oil

Supplier
Motorex®

– **Power Synt 4T**

Engine oil (SAE 5W/40)

According to

– JASO T903 MA (☛ p. 218)
– SAE (☛ p. 218) (SAE 5W/40)

Guideline

– Use only engine oils that comply with the specified standards (see specifications on the container) and that possess the corresponding properties. KTM recommends **Motorex®** products.

Synthetic engine oil

Supplier
Motorex®

– **Power Synt 4T**

Fork oil (SAE 5)

According to

– SAE (☛ p. 218) (SAE 5)

Guideline

– Use only oils that comply with the specified standards (see specifications on the container) and that possess the corresponding properties. KTM recommends **Motorex®** products.

Supplier

Motorex®

– **Racing Fork Oil**

Hydraulic fluid (15)

According to

– ISO VG (15)

Guideline

– Use only hydraulic oil that complies with the specified standard (see specifications on the container) and that possesses the corresponding properties. KTM recommends **Motorex®** products.

Supplier

Motorex®

– **Hydraulic Fluid 75**

Shock absorber oil (SAE 2.5) (50180342S1)

According to

– SAE (☛ p. 218) (SAE 2.5)

Guideline

– Use only oils that comply with the specified standards (see specifications on the container) and that possess the corresponding properties.

Super unleaded (ROZ 95/RON 95/PON 91)

According to

– DIN EN 228 (ROZ 95/RON 95/PON 91)

Guideline

– Only use unleaded super fuel that matches or is equivalent to the specified fuel grade.

– Fuel with an ethanol content of up to 10 % (E10 fuel) is safe to use.

Info

Do **not** use fuel containing methanol (e. g. M15, M85, M100) or more than 10 % ethanol (e. g. E15, E25, E85, E100).

Chain cleaner

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Chain Clean**

Chain lube for road use

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Chainlube Road**

Cleaning and preserving materials for metal, rubber and plastic

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Protect & Shine**

Fuel additive

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Fuel Stabilizer**

High-luster polish for paint

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Moto Polish**

Long-life grease

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Bike Grease 2000**

Motorcycle cleaner

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Moto Clean 900**

Paint cleaner and polish for high-gloss and matte finishes, bare metal and plastic surfaces

Guideline

– KTM recommends **Motorex®** products.

Supplier
Motorex®

– **Clean & Polish**

Universal oil spray

Guideline

– KTM recommends **Motorex®** products.

Supplier

Motorex®

– **Joker 440 Synthetic**

JASO T903 MA

Different technical development directions required a new specification for 4-stroke motorcycles – the JASO T903 MA Standard. Earlier, engine oils from the automobile industry were used for 4-stroke motorcycles because there was no separate motorcycle specification. Whereas long service intervals are demanded for automobile engines, high performance at high engine speeds are in the foreground for motorcycle engines. In most motorcycles, the gearbox and the clutch are lubricated with the same oil as the engine. The JASO MA Standard meets these special requirements.

SAE

The SAE viscosity classes were defined by the Society of Automotive Engineers and are used for classifying oils according to their viscosity. The viscosity describes only one property of oil and says nothing about quality.

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KTM-Sportmotorcycle AG
5230 Mattighofen/Austria
http://www.ktm.com

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