SETUP INSTRUCTIONS 2018

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790 Duke

Art. no. 3213835en

KTM

Perform the work described in these setup instructions before the vehicle is delivered to the customer.

Read the setup instructions in their entirety before beginning work.

These setup instructions were written to correspond to the latest state of this series. We reserve the right to make changes in the interest of technical advancement without at the same time updating this manual.
We shall not provide a description of general workshop methods. Likewise, safety rules that apply in a workshop are not specified here. It is assumed that the work will be performed by a fully trained mechanic.

All specifications are non-binding. KTM Sportmotorcycle GmbH 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 figures and descriptions, misprints, and other errors. The models portrayed partly contain special equipment that does not belong to the regular scope of supply.

REG.NO. 12 100 6061

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 GmbH
Stallhofnerstraße 3
5230 Mattighofen, Austria

This document is valid for the following models:

790 Duke EU (F9603R5, F9603R6)

790 Duke L EU (F9603R8)

3213835en

03/2018

1 MEANS OF REPRESENTATION

1.1 Symbols used

The meaning of specific symbols is described below.

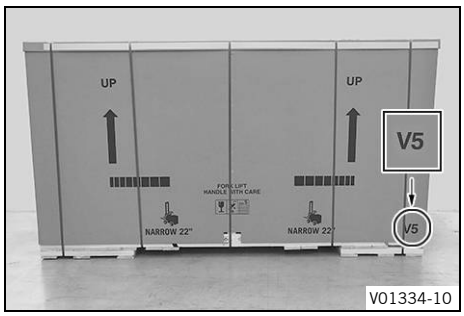
✓	Indicates an expected reaction (e.g. of a work step or a function).
✗	Indicates an unexpected reaction (e.g. of a work step or a function).
	Indicates a page reference (more information is provided on the specified page).
i	Indicates information with more details or tips.
»	Indicates the result of a testing step.
V	Indicates a voltage measurement.
A	Indicates a current measurement.
Ω	Indicates a resistance measurement.
◀	Indicates the end of an activity including potential rework.

1.2 Formats used

The typographical formats used in this document are explained below.

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

2.1 Unpacking and setting up the vehicle

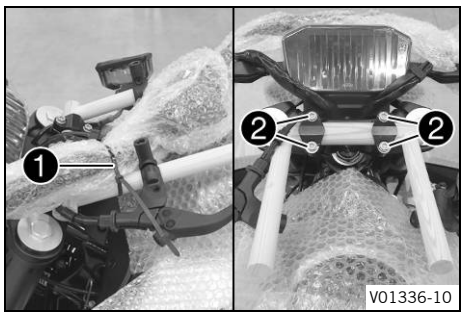


– Remove the straps and box.

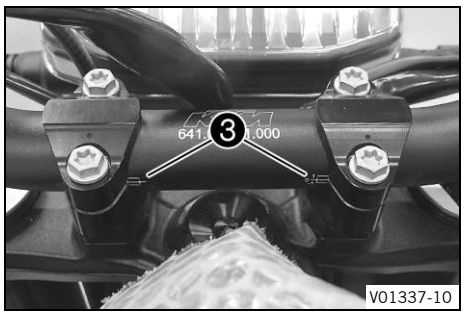
– Remove the adhesive tape in the upper area of the motorcycle.
– Roll down the film at the sides.

Info
To avoid damaging the motorcycle during unpacking, leave the other films on the vehicle until you have finished work on the vehicle.

– Remove the separate enclosure and unpack it. Check the separate enclosure for completeness.
– Check the vehicle for transport damage.



– Remove cable tie(s) ❶. Place handlebar at the front.
– Remove the clutch and brake assembly from the transport holder.
– Remove screws ❷ from the handlebar clamps. Take off the handlebar clamps and transport holder.



Warning
Danger of accidents A repaired handlebar poses a safety risk.
If the handlebar is bent or straightened, the material becomes fatigued. The handlebar may break as a result.
– Change the handlebar if the handlebar is damaged or bent.

– Unpack handlebar and position.

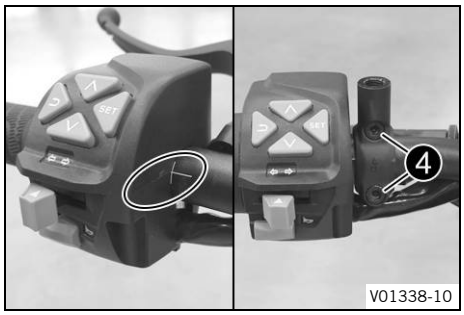
Info
Make sure the cables and wiring are positioned correctly.
The markings ❸ on the handlebar should be at the height of the gap between the handlebar supports and the handlebar clamps.

– Position the handlebar clamps. Mount and tighten the screws evenly.

Guideline

Screw, handlebar clamp	M8	20 Nm (14.8 lbf ft)

Info
Keep the installed gap widths equal when tightening.



– Align the controls of the left handlebar half with the markings on the handlebar. Tighten the screws.

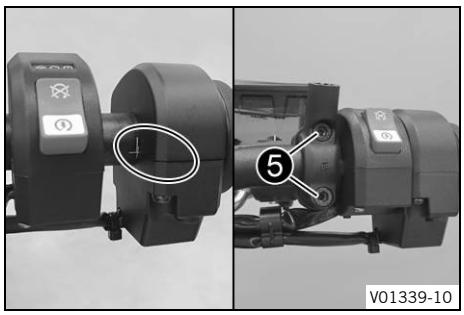
Guideline

Screw, combination switch, left	M5	2 Nm (1.5 lbf ft)

– Position clutch assembly on the handlebar.
– Position the clutch assembly clamp on the handlebar.
– Mount and tighten screws ❹.

Guideline

Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)



– Align the control of the right handlebar half with the markings on the handlebar. Tighten the screws.

Guideline

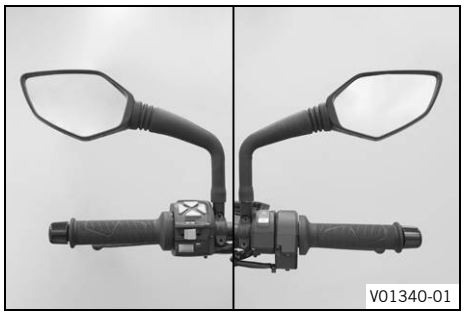
Screw, throttle grip	M5	3.5 Nm (2.58 lbf ft)
Screw, combination switch, right	M5	5 Nm (3.7 lbf ft)

– Check the throttle grip for smooth operation.
– Position brake assembly on the handlebar.
– Position brake assembly clamp on the handlebar.
✓ Clamp catch engages in the combination switch.
– Mount and tighten screws ❺.

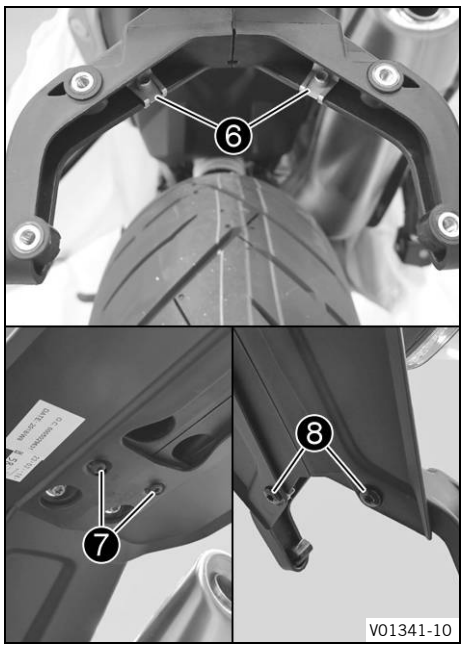
Guideline

Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)

– Tie the cables together with the rubber bands supplied.



– Mount and tighten the rear mirror on both sides.

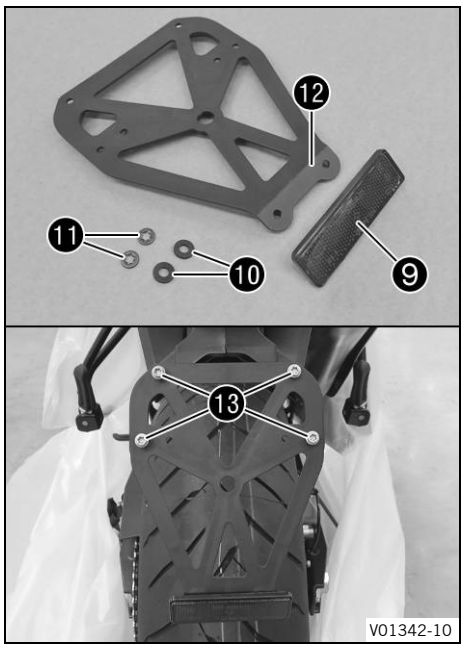


– Mount speed nuts ❻ on the license plate support.
– Position the splash protector.
– Mount and tighten screws ❼.
  Guideline

Remaining screws, chassis	**EJOTPT®** K50x18	2 Nm (1.5 lbf ft)

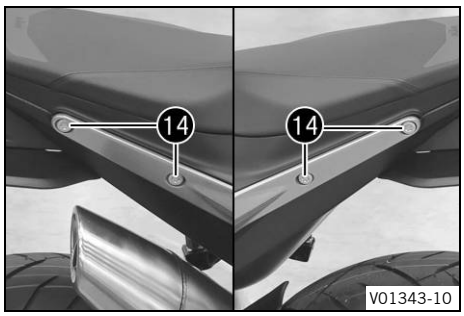
– Mount and tighten screws ❽.
  Guideline

Remaining screws, chassis	M5	5 Nm (3.7 lbf ft)

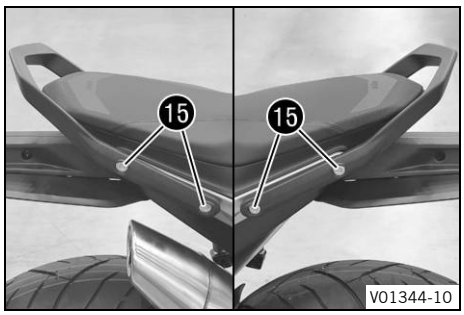


– Mount reflector ❾ with rubber bushings ❿ and tension washers ⓫ on the license plate holder ⓬.
– Position license plate holder on the license plate support.
– Mount and tighten screws ⓭.
  Guideline

Screw, license plate holder	M6	10 Nm (7.4 lbf ft) **Loctite®243™**



– Remove screws ⓮.



– Position grab handle and mount and tighten screws ⓯.

Guideline

Screw, grab handle	M8x50	25 Nm (18.4 lbf ft) **Loctite®243™**

– Remove the protective film.
– Carefully loosen and remove the rear tension belt.

Info
An assistant prevents the motorcycle from falling over.

– Carefully loosen and remove the tension belts around the fork legs.
  ✔ The vehicle is released at the front.
– Together with an assistant, take the vehicle off the pallet.
– Remove the passenger seat. (📖 p. 7)
– Remove the spare key and **KEYCODECARD** keep in a safe place for the handover.

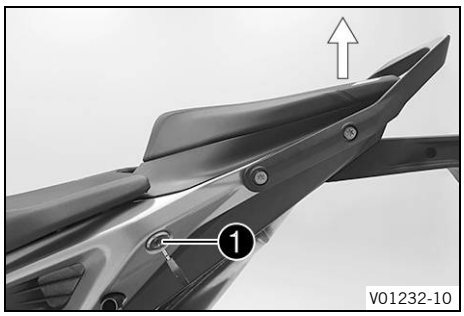
Warning
Risk of injury Battery acid and battery gases cause serious chemical burns.
– Keep batteries out of the reach of children.
– Wear suitable protective clothing and safety glasses.
– Avoid contact with battery acid and battery gases.
– Keep sparks or open flames away from the battery.
– Only charge batteries in well-ventilated rooms.
– Rinse the affected area immediately with plenty of water in the event of contact with the skin.
– Rinse eyes with water for at least 15 minutes and consult a doctor immediately if battery acid and battery gases get into the eyes.

– Fill the battery.

Info
Read the notes in the battery package.

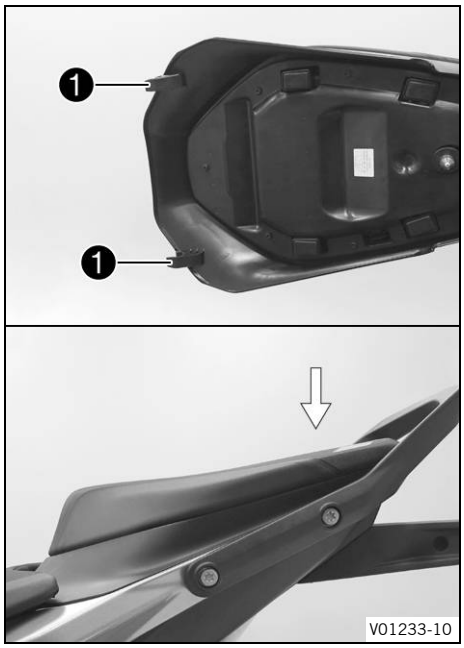
– Recharge the battery. (📖 p. 7)
– Stow the tool set between the battery and the front rider's seat.
– Mount the passenger seat. (📖 p. 7)
– Refuel. (📖 p. 9)
– Check the headlight setting. (📖 p. 12)
– Adjust the time and date.
– Set kilometers or miles.
– Prepare the vehicle according to the specifications in the **KTM Dealer.net** for handover to the customer.

3.1 Removing the passenger seat



– Insert the ignition key in seat lock ❶ and turn it clockwise.
– Raise the rear of the passenger seat cover, push it toward the rear, and remove it upward.
– Remove the ignition key from the seat lock.

3.2 Mounting the passenger seat



– Hook catches ❶ of the passenger seat onto the storage compartment, lower the rear, and push forward.
– Press passenger seat downward until it clicks into place.

Warning

Danger of accidents The seat can come loose from the anchoring if it is not mounted correctly.

– After assembly, check whether the seat is correctly locked and cannot be pulled up.

– Finally, check that the passenger seat is correctly mounted.

3.3 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 safety glasses.
– Avoid contact with battery acid and battery gases.
– Keep sparks or open flames away from the battery.
– Only charge batteries in well-ventilated rooms.
– Rinse the affected area immediately with plenty of water in the event of contact with the skin.
– Rinse eyes with water for at least 15 minutes and consult a doctor immediately if battery acid and battery gases get into the eyes.

Note

Environmental hazard Batteries contain environmentally-hazardous materials.

– Do not dispose of batteries as household waste.
– Dispose of batteries at a collection point for used batteries.

Note

Environmental hazard Hazardous substances cause environmental damage.

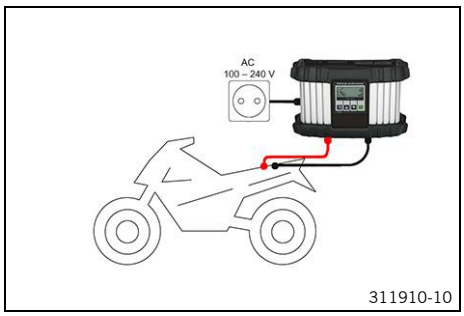
– Dispose of oils, grease, filters, fuel, cleaning agents, brake fluid, etc., correctly and in compliance with the applicable regulations.

Info

Even when there is no load on the battery, it discharges steadily.
The charging level and the method of charging are very important for the service life of the battery.
Rapid recharging with a high charging current shortens the service life of the battery.
If the charging current, charging voltage, and charging time are exceeded, the battery will be destroyed.
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 sulfated, destroying the battery.
The battery is maintenance-free, i.e., the acid level does not have to be checked.

Preparatory work

– Switch off the ignition by turning the ignition key to the position ⊠.
– Remove the passenger seat. (🕮 p. 7)
– Disconnect the negative cable of the battery. (🕮 p. 9)



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Main work

– Connect the battery charger to the battery. Adjust the battery charger.

EU battery charger **XCharge-professional** (00029095050)

Alternative 1

US battery charger **XCharge-professional** (00029095051)

Alternative 2

UK battery charger **XCharge-professional** (00029095052)

Alternative 3

CH battery charger **XCharge-professional** (00029095053)

Info

Follow the instructions of the charger and the manual.

– Disconnect the battery charger after charging the battery.

Guideline

The charging current, charging voltage, and charging time must not be exceeded.	
Charge the battery regularly when the motorcycle is not in use	3 months

Finishing work

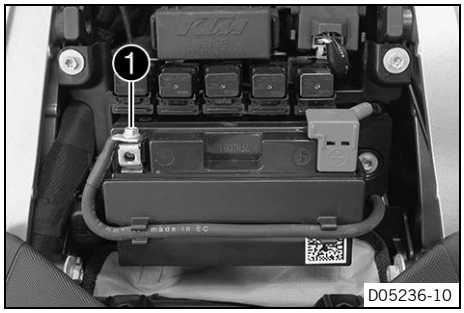
– Connect the negative cable of the battery. (🕮 p. 9)
– Mount the passenger seat. (🕮 p. 7)
– Adjust the time and date.

3.4 Disconnecting the negative cable of the battery

Preparatory work

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

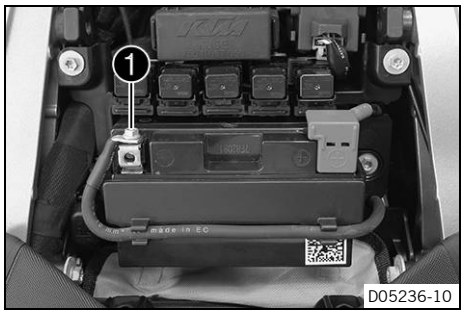
– Remove the passenger seat. (📖 p. 7)



Main work

– Disconnect negative cable ❶ of the battery.

3.5 Connecting the negative cable of the battery



Main work

– Connect negative cable ❶. Tighten the screw.

Guideline

Screw, battery terminal	M6x12	4.5 Nm (3.32 lbf ft)

Finishing work

– Mount the passenger seat. (📖 p. 7)

– Adjust the time and date.

3.6 Refueling

Danger

Fire hazard Fuel is highly flammable.

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

– Do not refuel the vehicle in the vicinity of open flames or lit cigarettes.

– Switch off the engine for refueling.

– Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.

– If any fuel is spilled, wipe it off immediately.

– Observe the specifications for refueling.

Warning

Danger of poisoning Fuel is poisonous and a health hazard.

- Avoid skin, eye and clothing contact with fuel.
- Immediately consult a doctor if you swallow fuel.
- Do not inhale fuel vapors.
- In case of skin contact, rinse the affected area with plenty of water.
- Rinse the eyes thoroughly with water, and consult a doctor in case of fuel contact with the eyes.
- Change your clothing in case of fuel spills on them.

Note

Material damage Inadequate fuel quality causes the fuel filter to quickly become clogged.

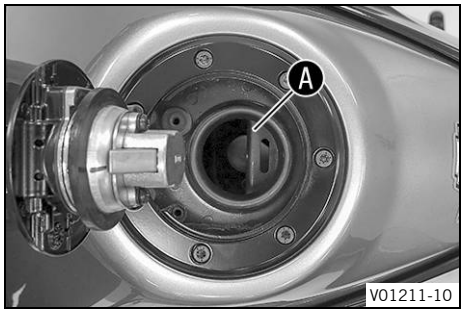
In some countries and regions, the available fuel quality and cleanliness may not be sufficient. This will result in problems with the fuel system.

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

Note

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

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



- Switch off the engine.
- Open the filler cap. (📖 p. 10)
- Fill the fuel tank with fuel up to the lower edge Ⓐ of the filler neck.

Total fuel tank capacity, approx.	14 l (3.7 US gal)	Super unleaded (ROZ 95/RON 95/PON 91) (📖 p. 16)

- Close the filler cap. (📖 p. 11)

3.7 Opening the filler cap

Danger

Fire hazard Fuel is highly flammable.

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

- Do not refuel the vehicle in the vicinity of open flames or lit cigarettes.
- Switch off the engine for refueling.
- Make sure that no fuel is spilled; particularly not on hot parts of the vehicle.
- If any fuel is spilled, wipe it off immediately.
- Observe the specifications for refueling.

Warning

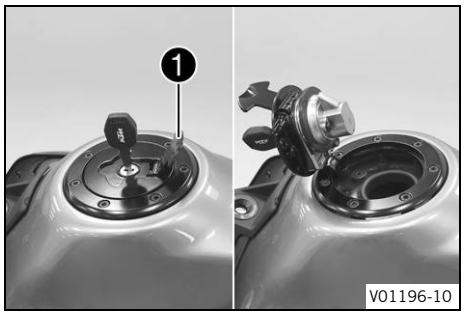
Danger of poisoning Fuel is poisonous and a health hazard.

- Avoid skin, eye and clothing contact with fuel.
- Immediately consult a doctor if you swallow fuel.
- Do not inhale fuel vapors.
- In case of skin contact, rinse the affected area with plenty of water.
- Rinse the eyes thoroughly with water, and consult a doctor in case of fuel contact with the eyes.
- Change your clothing in case of fuel spills on them.
- Keep fuels correctly in a suitable canister, and out of the reach of children.

Note

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

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



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

Note

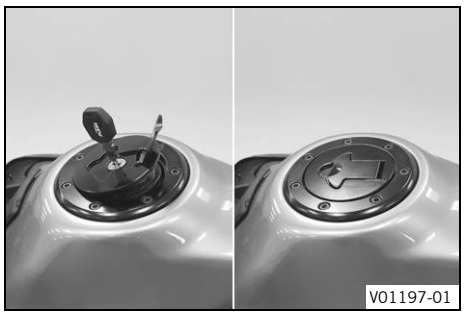
Danger of damage The ignition key may break if overloaded.

Damaged ignition keys must be replaced.

- Push down on the filler cap to take pressure off the ignition key.

- Turn the ignition key 90° clockwise.
- Open the filler cap.

3.8 Closing the filler cap



- Fold down the filler cap.
- Turn the ignition key 90° clockwise.
- Push down the filler cap and turn the ignition key counterclockwise until the lock closes.

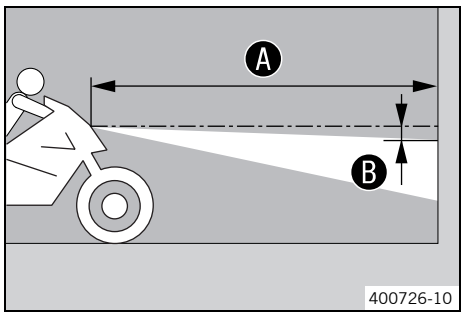
Warning

Fire hazard Fuel is highly flammable, toxic and a health hazard.

- Check the filler cap is locked correctly after closing.
- Change your clothing in case of fuel spills on them.
- Rinse the affected area immediately with plenty of water in the event of contact with the skin.

- Remove the ignition key and close the cover.

3.9 Checking the headlight setting



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

Distance Ⓑ	5 cm (2 in)

– Position the vehicle perpendicular to the wall at a distance Ⓐ from the wall and switch on the low beam.
Guideline

Distance Ⓐ	5 m (16 ft)

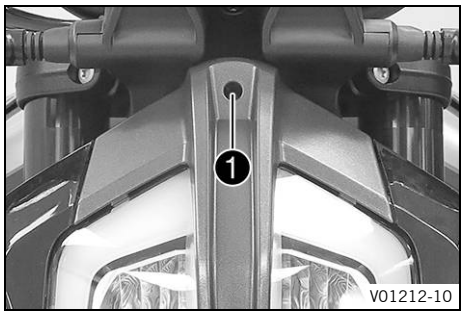
– The rider now mounts the motorcycle with luggage and passenger if applicable.
– Check the headlight setting.

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

» If the light-dark border does not meet specifications:
– Adjust the headlight range. (📖 p. 12)

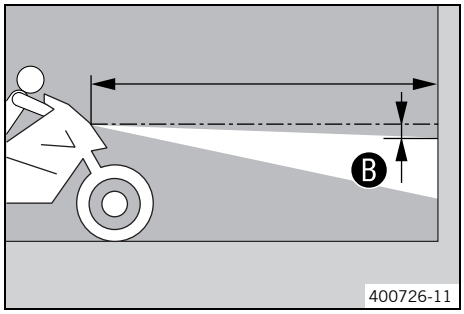
3.10 Adjusting the headlight range

Preparatory work
– Check the headlight setting. (📖 p. 12)



Main work
– Turn adjusting screw ❶ to adjust the headlight range.

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.
Screw ❶ also secures the headlight. Ensure the screw is always screwed in far enough.



– Set the headlight to marking Ⓑ.
Guideline

The light-dark boundary must lie exactly on the lower marking Ⓑ when the motorcycle is ready for use with the rider mounted along with any luggage and a passenger if applicable.

4.1 Chassis tightening torques

Remaining screws, chassis	**EJOTPT®** K45x12	1 Nm (0.7 lbf ft)
Remaining screws, chassis	**EJOTPT®** K50x12	1 Nm (0.7 lbf ft)
Remaining screws, chassis	**EJOTPT®** K50x14	1 Nm (0.7 lbf ft)
Remaining screws, chassis	**EJOTPT®** K50x16	2 Nm (1.5 lbf ft)
Remaining screws, chassis	**EJOTPT®** K50x18	2 Nm (1.5 lbf ft)
Screw, headlight	**EJOTPT®** K50x14	2 Nm (1.5 lbf ft)
Remaining nuts, chassis	M4	3 Nm (2.2 lbf ft)
Remaining screws, chassis	M4	3 Nm (2.2 lbf ft)
Screw, fixed grip, left	M4	2 Nm (1.5 lbf ft)
Clamp, front brake line	M5	2 Nm (1.5 lbf ft)
Remaining nuts, chassis	M5	5 Nm (3.7 lbf ft)
Remaining screws, chassis	M5	5 Nm (3.7 lbf ft)
Screw, air filter box	M5	3 Nm (2.2 lbf ft)
Screw, brake fluid reservoir of rear brake	M5	5 Nm (3.7 lbf ft)
Screw, cable on starter motor	M5	3 Nm (2.2 lbf ft)
Screw, combination instrument	M5	4 Nm (3 lbf ft)
Screw, combination switch, left	M5	2 Nm (1.5 lbf ft)
Screw, combination switch, right	M5	5 Nm (3.7 lbf ft)
Screw, engine sprocket cover	M5	5 Nm (3.7 lbf ft) **Loctite®243™**
Screw, headlight mask	M5	5 Nm (3.7 lbf ft) **Loctite®243™**
Screw, heat guard	M5	5 Nm (3.7 lbf ft) **Loctite®243™**
Screw, side stand switch	M5	2 Nm (1.5 lbf ft) **Loctite®243™**
Screw, support roller	M5	4 Nm (3 lbf ft) **Loctite®243™**
Screw, throttle grip	M5	3.5 Nm (2.58 lbf ft)
Screw, trim	M5	3 Nm (2.2 lbf ft)
Nut, hand brake lever	M6	Attach torque to nut. 10 Nm (7.4 lbf ft)
Nut, push rod, foot brake lever	M6	6 Nm (4.4 lbf ft)
Nut, shift rod	M6	6 Nm (4.4 lbf ft)
Nut, shift rod	M6LH	6 Nm (4.4 lbf ft)
Remaining nuts, chassis	M6	10 Nm (7.4 lbf ft)
Remaining screws, chassis	M6	10 Nm (7.4 lbf ft)
Screw, angle sensor	M6	5 Nm (3.7 lbf ft)
Screw, ball joint of push rod on foot brake cylinder	M6	10 Nm (7.4 lbf ft) **Loctite®243™**
Screw, battery terminal	M6x12	4.5 Nm (3.32 lbf ft)
Screw, battery terminal	M6x20	4.5 Nm (3.32 lbf ft)
Screw, brake assembly	M6	5 Nm (3.7 lbf ft)
Screw, clutch assembly	M6	5 Nm (3.7 lbf ft)

Screw, exhaust pipe clamp	M6	8 Nm (5.9 lbf ft) Copper paste
Screw, foot brake cylinder	M6	10 Nm (7.4 lbf ft) **Loctite®243™**
Screw, foot brake lever stub	M6	10 Nm (7.4 lbf ft) **Loctite®243™**
Screw, fuel spoiler	M6	3 Nm (2.2 lbf ft)
Screw, fuel tank bracket	M6	10 Nm (7.4 lbf ft) **Loctite®243™**
Screw, ground wire on frame	M6	6 Nm (4.4 lbf ft)
Screw, ground wire to starter motor	M6	10 Nm (7.4 lbf ft)
Screw, ignition lock (tamper-proof screw)	M6	22 Nm (16.2 lbf ft) **Loctite®243™**
Screw, license plate holder	M6	10 Nm (7.4 lbf ft) **Loctite®243™**
Screw, lower radiator bracket	M6	5 Nm (3.7 lbf ft)
Screw, magnetic holder on side stand	M6	2 Nm (1.5 lbf ft) **Loctite®243™**
Screw, seat lock	M6	10 Nm (7.4 lbf ft) **Loctite® 222™**
Screw, shift lever stub	M6	10 Nm (7.4 lbf ft) **Loctite®243™**
Screw, shift rod	M6	10 Nm (7.4 lbf ft) **Loctite®243™**
Screw, shift shaft deflector on shift shaft	M6	10 Nm (7.4 lbf ft) **Loctite®243™**
Screw, wheel speed sensor	M6	6 Nm (4.4 lbf ft)
Nut, manifold on cylinder head	M8	20 Nm (14.8 lbf ft) Copper paste
Pin, rear brake caliper	M8	22 Nm (16.2 lbf ft)
Remaining nuts, chassis	M8	25 Nm (18.4 lbf ft)
Remaining screws, chassis	M8	25 Nm (18.4 lbf ft)
Screw, bottom triple clamp	M8	12 Nm (8.9 lbf ft)
Screw, cross member	M8x18	25 Nm (18.4 lbf ft) **Loctite®243™**
Screw, cross member in rear	M8x35	25 Nm (18.4 lbf ft) **Loctite®243™**
Screw, foot brake lever	M8	25 Nm (18.4 lbf ft) **Loctite®2701™**
Screw, footrest bracket, rear	M8x25	25 Nm (18.4 lbf ft) **Loctite®243™**
Screw, footrest bracket, rear	M8x40	25 Nm (18.4 lbf ft) **Loctite®243™**
Screw, fork stub	M8	15 Nm (11.1 lbf ft)
Screw, front brake disc	M8	30 Nm (22.1 lbf ft) **Loctite®2701™**
Screw, grab handle	M8x50	25 Nm (18.4 lbf ft) **Loctite®243™**
Screw, handlebar clamp	M8	20 Nm (14.8 lbf ft)

Screw, linkage bracket, front engine fixing arm	M8	25 Nm (18.4 lbf ft) **Loctite®243™**
Screw, main silencer fastening	M8	15 Nm (11.1 lbf ft)
Screw, passenger seat bracket	M8	25 Nm (18.4 lbf ft) **Loctite®243™**
Screw, presilencer on frame	M8	25 Nm (18.4 lbf ft) **Loctite®243™**
Screw, rear brake disc	M8	30 Nm (22.1 lbf ft) **Loctite®2701™**
Screw, shift lever	M8	25 Nm (18.4 lbf ft) **Loctite®2701™**
Screw, spring holder on side stand bracket	M8	15 Nm (11.1 lbf ft) **Loctite®2701™**
Screw, steering damper on holder	M8	8 Nm (5.9 lbf ft) **Loctite®243™**
Screw, steering damper on triple clamp	M8	8 Nm (5.9 lbf ft) **Loctite®243™**
Screw, steering stem	M8	20 Nm (14.8 lbf ft) **Loctite®243™**
Screw, top triple clamp	M8	15 Nm (11.1 lbf ft)
Securing bolt for brake linings	M8	10 Nm (7.4 lbf ft)
Engine carrying screw	M10	45 Nm (33.2 lbf ft) **Loctite®243™**
Remaining nuts, chassis	M10	45 Nm (33.2 lbf ft)
Remaining screws, chassis	M10	45 Nm (33.2 lbf ft)
Screw, front footrest bracket	M10x30	45 Nm (33.2 lbf ft) **Loctite®243™**
Screw, front footrest bracket	M10x60	45 Nm (33.2 lbf ft) **Loctite®243™**
Screw, front footrest bracket	M10x80	45 Nm (33.2 lbf ft) **Loctite®243™**
Screw, handlebar support	M10	45 Nm (33.2 lbf ft) **Loctite®243™**
Screw, side stand	M10	35 Nm (25.8 lbf ft) **Loctite®243™**
Screw, subframe	M10	50 Nm (36.9 lbf ft) **Loctite®243™**
Banjo bolt, brake line	M10x1	25 Nm (18.4 lbf ft)
Screw, front brake caliper	M10x1.25	45 Nm (33.2 lbf ft) **Loctite®243™**
Screw, bottom shock absorber	M12	80 Nm (59 lbf ft) **Loctite®2701™**
Screw, swingarm pivot	M12	100 Nm (73.8 lbf ft)
Screw, top shock absorber	M12	80 Nm (59 lbf ft) **Loctite®2701™**
Lambda sensor	M18x1.5	50 Nm (36.9 lbf ft)
Swingarm adjusting screw	M20LHx1.5	10 Nm (7.4 lbf ft)
Nut, rear wheel spindle	M25x1.5	90 Nm (66.4 lbf ft)
Screw, front wheel spindle	M25x1.5	45 Nm (33.2 lbf ft)
Screw, steering head	M25x1.5	18 Nm (13.3 lbf ft)

Super unleaded (ROZ 95/RON 95/PON 91)

Standard/classification

– 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).

READY TO RACE
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