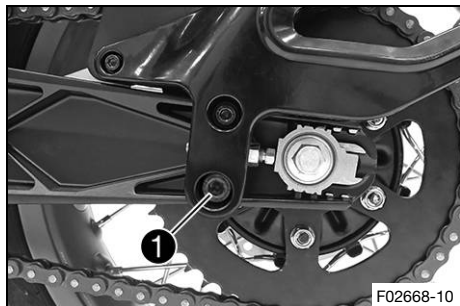


5.1 Raising the motorcycle with the rear lifting gear

Note

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

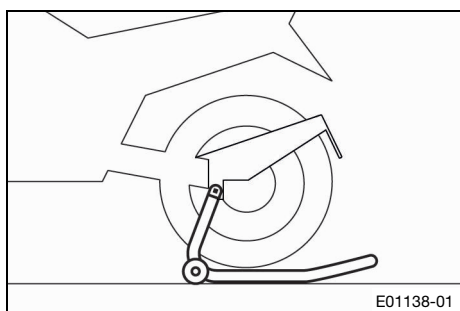
- Park the vehicle on a firm and level surface.



Condition

Rear wheel is not removed.

- Remove screw ①.



- Mount the supports of the lifting gear.

Guideline

Screw on left side: M10x70

- Insert the adapter in the rear lifting gear.

Retaining adapter (61029955244) (p. 369)
--

Rear wheel work stand (6932995500033) (p. 374)
--

- Stand the motorcycle upright, align the lifting gear to the link fork and the adapters, and raise the motorcycle.

Condition

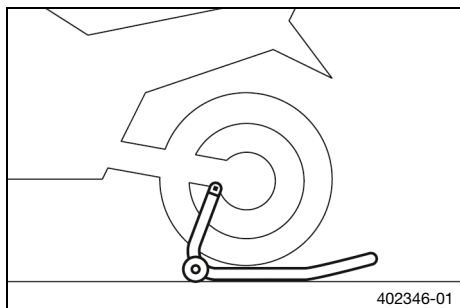
Rear wheel is removed.

- Remove the license plate bracket. (p. 99)
- Mount the supports of the lifting gear.
- Insert the adapter in the rear lifting gear.

Retaining adapter (61029955244) (p. 369)
--

Rear wheel work stand (6932995500033) (p. 374)
--

- Stand the motorcycle upright, align the lifting gear to the link fork and the adapters, and raise the motorcycle.

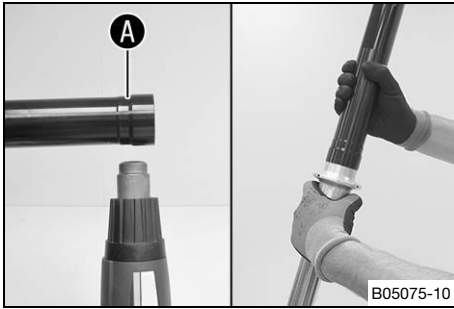


5.2 Removing the rear of the motorcycle from the lifting gear

Note

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

- Park the vehicle on a firm and level surface.



- Warm up the outside fork tube in area **A** of the lower sliding bushings.

Guideline

50 °C (122 °F)

- Hold the lower sliding bushing with the longer side of the special tool.

Mounting tool (T528S) (p. 380)

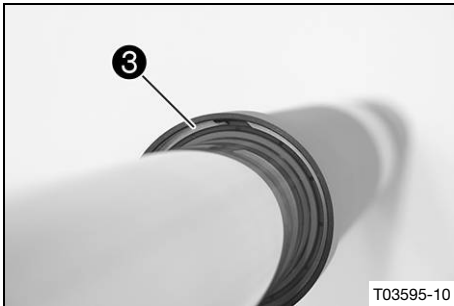
- Slide on the outside fork tube.
- Press the sliding bushing all the way into the outside fork tube.



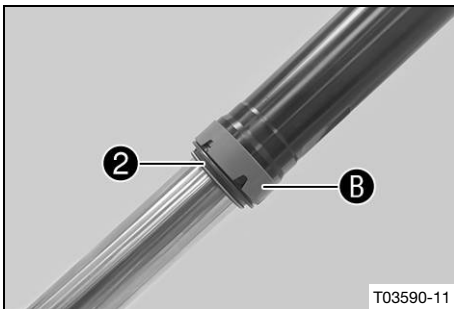
- Position the support ring.
- Hold the seal ring with shorter side of the special tool.

Mounting tool (T528S) (p. 380)

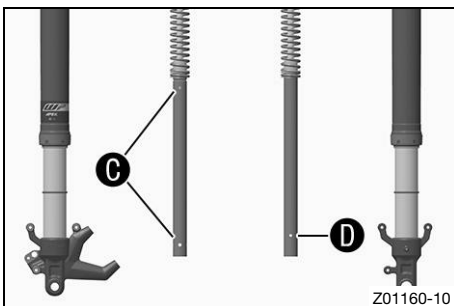
- Press the seal ring and support ring all the way into the outside fork tube.



- Mount lock ring **3**.
- ✓ The lock ring engages audibly.



- Mount dust boot **2**.
- Mount fork protection ring **B**.



- Assemble the individual components that belong together.

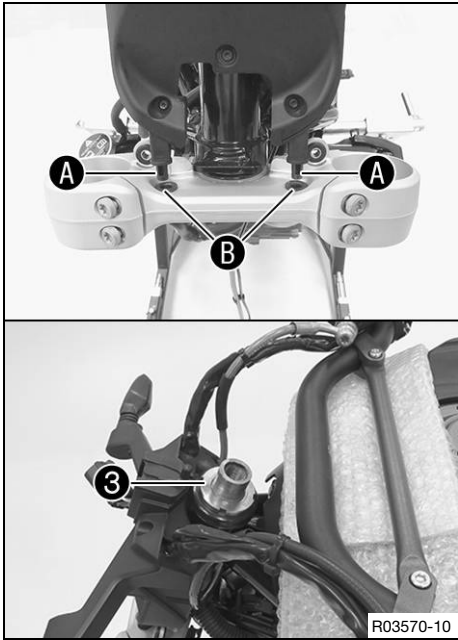


Info

Compression damping side: cartridge with upper oil hole **C**, white adjuster, axle clamp with brake caliper bracket.

Rebound damping side: cartridge with lower oil hole **D**, red adjuster, axle clamp without brake caliper bracket.

6 FORK, TRIPLE CLAMP



Alternative 1

A new steering head bearing is used.

- Insert the lower triple clamp with the steering stem.
 - ✓ Holding lugs **A** engage in holes **B**.
- Mount and tighten nut **3**.

Guideline

Nut, steering head	M30x1	1st stage 50 Nm (36.9 lbf ft) 2nd stage (loosen, counter-clockwise) 2 turns 3rd stage 5 Nm (3.7 lbf ft)
--------------------	-------	---

Groove nut wrench (90129050100) (📖 p. 373)

Alternative 2

The steering head bearing is used again.

- Insert the lower triple clamp with the steering stem.
 - ✓ Holding lugs **A** engage in holes **B**.
- Mount and tighten nut **3**.

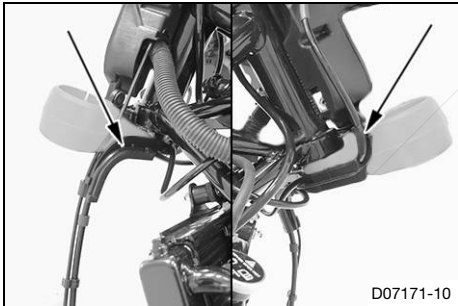
Guideline

Nut, steering head	M30x1	5 Nm (3.7 lbf ft)
--------------------	-------	-------------------

Groove nut wrench (90129050100) (📖 p. 373)

- Place the handlebar at the front.

Info
Cover the components to protect them against damage.
Do not kink the cables and lines.



- Secure the cable in the bracket.

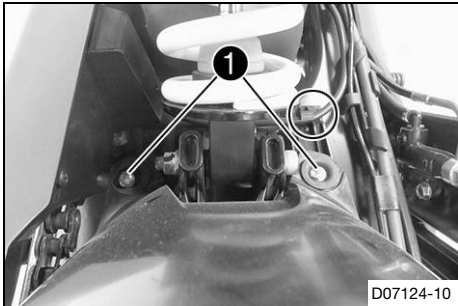
9.5 Removing the shock absorber

Preparatory work

- Remove the bag carrier. (📖 p. 91)
- Remove the passenger seat. (📖 p. 90)
- Remove the front rider's seat. (📖 p. 90)
- Remove the left side cover. (📖 p. 91)
- Raise motorcycle with work stand. (📖 p. 15)

Main work

- Remove screws ❶ with the washers.
- Expose the cable.
- Take off the splash protector.

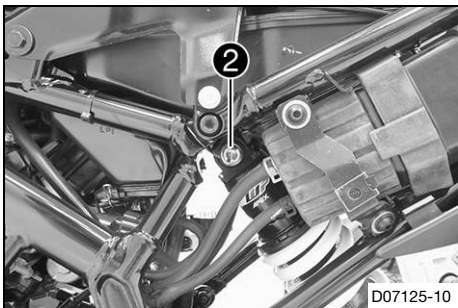


- Remove screw ❷.

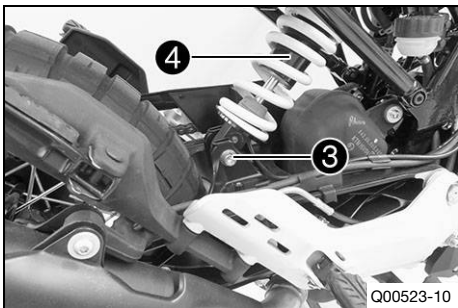
Info

Cover the components to protect them against damage.

Ensure that the chain and brake line are not damaged.



- Remove fitting ❸.
- Remove the shock absorber ❹ toward the rear.



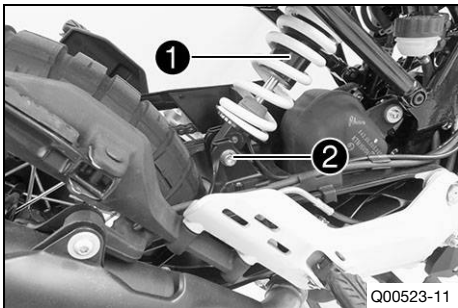
9.6 Installing the shock absorber

Main work

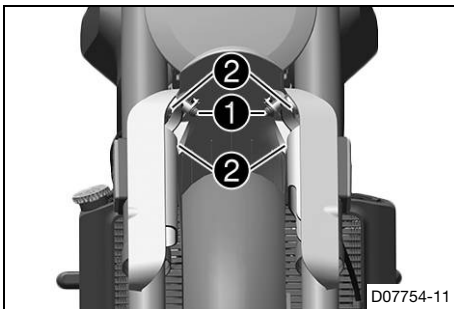
- Position shock absorber ❶.
- Mount fitting ❷, but do not tighten yet.

Guideline

Screw, bottom shock absorber	M10x1.25	51 Nm (37.6 lbf ft) Loctite®243™
------------------------------	----------	--



12.16 Installing the front fender



- Position the front and side parts of the fender between the fork legs in relation to each other.

- Mount and tighten screws **1** with the washers.

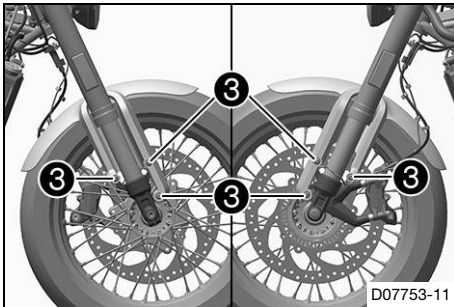
Guideline

Screw, fender	M5x12	5 Nm (3.7 lbf ft)
---------------	-------	-------------------

- Mount and tighten screws **2** with the sleeves.

Guideline

Screw, fender	M5x20	2 Nm (1.5 lbf ft)
---------------	-------	-------------------



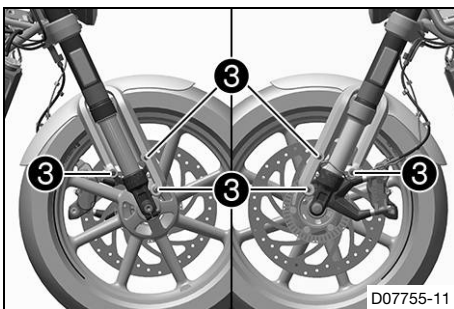
(Option: Wire spoked wheels)

- Position the fender.

- Mount and tighten screws **3** with the washers.

Guideline

Screw, fender on axle clamp	M6	12 Nm (8.9 lbf ft)
-----------------------------	----	--------------------



(Option: Cast wheels)

- Position the fender.

- Mount and tighten screws **3** with the washers.

Guideline

Screw, fender on axle clamp	M6	12 Nm (8.9 lbf ft)
-----------------------------	----	--------------------

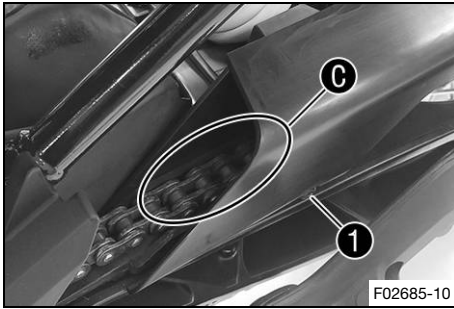
12.17 Removing the license plate bracket



- Take the cable out of holders.



- Remove the cable ties.



- Check the chain sliding guard for wear.
 - » If in area **C** by the chain sliding guard screw **1** is visible from above:
 - Change the chain sliding guard.
- Check that the chain sliding guard is firmly seated.
 - » If the chain sliding guard is loose:
 - Tighten the screw of the chain sliding guard.

Guideline

Screw, chain sliding guard	M6	9 Nm (6.6 lbf ft)
----------------------------	----	-------------------

Finishing work

- Remove the rear of the motorcycle from the lifting gear. (p. 13)

13.8.8 Cleaning the chain



Warning

Danger of accidents Lubricants on the tires reduces the road grip.

- Remove lubricants from the tires using a suitable cleaning agent.



Warning

Danger of accidents Oil or grease on the brake discs reduces the braking effect.

- Always keep the brake discs free of oil and grease.
- Clean the brake discs with brake cleaner when necessary.



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

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

Preparatory work

- Raise the motorcycle with the rear lifting gear. (p. 13)

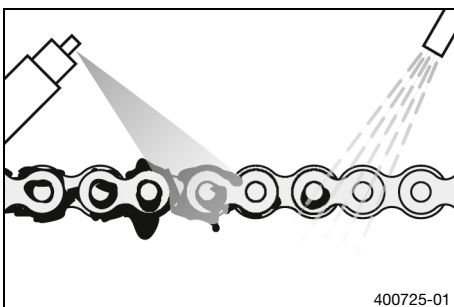
Main work

- Clean the chain regularly.
- Rinse off the loose dirt with a gentle jet of water.
- Remove grease residue with chain cleaner.

Chain cleaner (p. 362)

- After drying, apply chain spray.

Street chain spray (p. 363)



Finishing work

- Remove the rear of the motorcycle from the lifting gear. (p. 13)



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 12-V battery, it discharges steadily each day.

The charging level and the method of charging are very important for the service life of the 12-V battery.

Rapid recharging with a high charging current shortens the service life of the battery.

If the charging current, charging voltage, or charging time is exceeded, electrolyte escapes through the safety valves. This reduces the capacity of the 12-V battery.

If the 12-V battery is depleted by repeated starting, the 12-V battery must be charged immediately.

If the 12-V battery is left in a discharged state for an extended period, it will become deeply discharged and sulfating occurs, destroying the battery.

The 12-V battery is maintenance-free. The acid level does not have to be checked.

Preparatory work

- Remove the passenger seat. (📖 p. 90)
- Remove the front rider's seat. (📖 p. 90)
- Disconnect the negative cable of the 12-V battery. (📖 p. 141)

Main work

- Connect a battery charger to the 12-V battery. Adjust the battery charger.

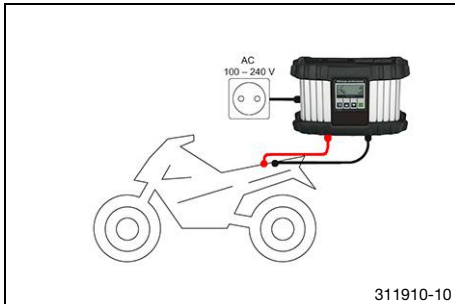
EU battery charger **XCharge-professional** (00029095050)
(📖 p. 365)

Alternative 1

US battery charger **XCharge-professional**
(00029095051) (📖 p. 365)

Alternative 2

UK battery charger **XCharge-professional**
(00029095052) (📖 p. 365)



Info

Follow the instructions of the charger and the manual.

- Disconnect the battery charger after charging the 12-V battery.

Guideline

The charging current, charging voltage, and charging time must not be exceeded.

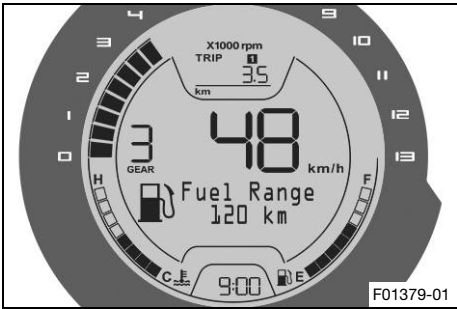
Recharge the 12-V battery regularly when the motorcycle is not being used	3 months
---	----------

Finishing work

- Connect the negative cable of the 12-V battery. (📖 p. 142)
- Mount the front rider's seat. (📖 p. 91)
- Mount the passenger seat. (📖 p. 90)
- Set the clock. (📖 p. 180)



16.13 TRIP 1 display



Press the **MODE** button briefly and repeatedly until **TRIP 1** appears in the display.

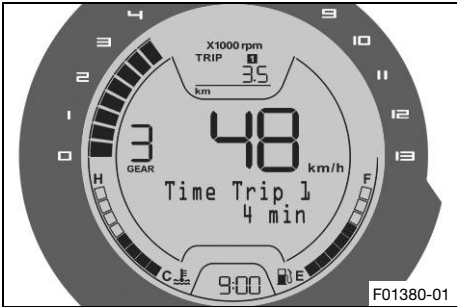
Info

TRIP 1 shows the distance since the last reset, such as between two refueling stops. **TRIP 1** is always running and counts up to **9999.9**.

Press the **SET** button briefly to change to the next menu in the display.

Press the **MODE** button briefly to change to the next display mode in the display.

16.13.1 Time Trip 1

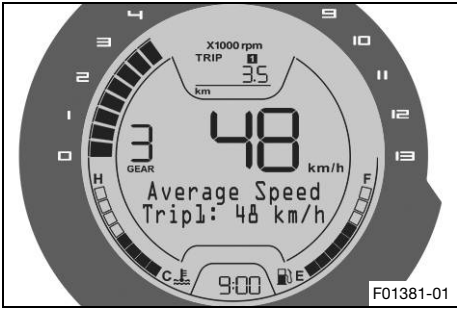


- Press the **MODE** button briefly and repeatedly until **TRIP 1** appears on the display.
- Press the **SET** button briefly and repeatedly until the desired menu appears.

Riding time 1 based on **TRIP 1** is shown in this menu.

Press the SET button briefly.	Next menu on the display
Press the SET button for three seconds.	Display of TRIP 1 is reset
Press the MODE button briefly.	Next display mode in the display

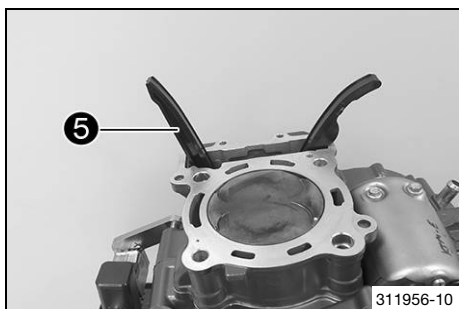
16.13.2 Average Speed Trip1



- Press the **MODE** button briefly and repeatedly until **TRIP 1** appears on the display.
- Press the **SET** button briefly and repeatedly until the desired menu appears.

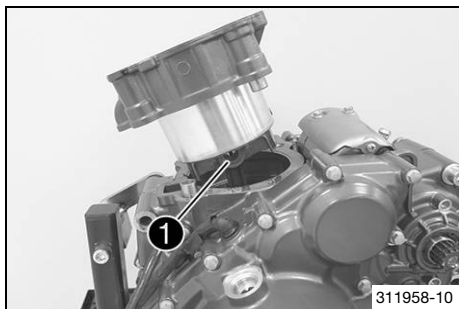
Average speed 1 based on **TRIP 1** is shown in this menu.

Press the SET button briefly.	Next menu on the display
Press the SET button for three seconds.	Display of TRIP 1 is reset
Press the MODE button briefly.	Next display mode in the display



- Remove guide rail **5**.

18.3.12 Removing the piston



- Push the cylinder upward.



Info

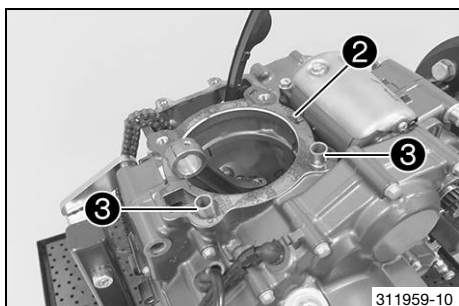
Only push the cylinder as far up as necessary to take the piston pin out.

- Remove piston ring lock **1**.
- Remove the piston pin.
- Take off the cylinder and piston.
- Push the piston upward out of the cylinder.



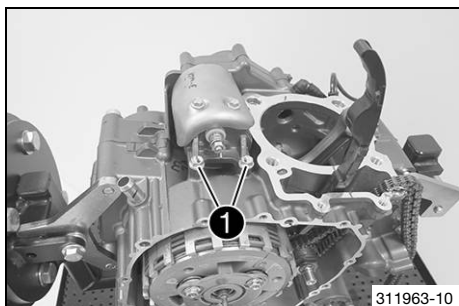
Info

If no further work is to be performed on the cylinder and piston, the piston can remain in the cylinder.



- Take off cylinder base gasket **2**.
- Remove dowels **3**.

18.3.13 Removing the starter motor



- Remove screws **1**.
- Take off the starter motor.

18.4.23 Assembling the countershaft

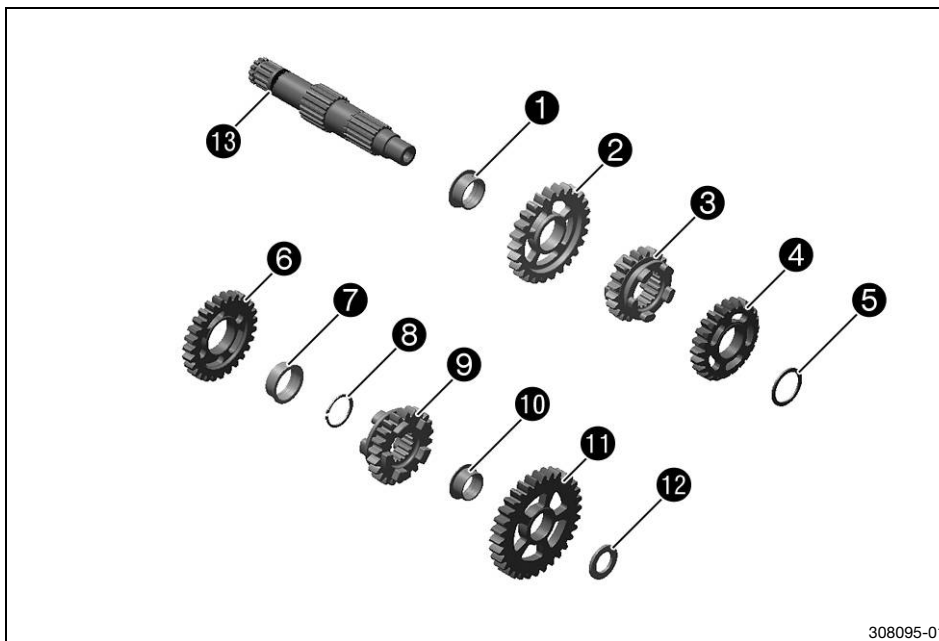


Info

Use new lock rings with every repair.

Preparatory work

- Carefully lubricate all parts before assembling.
- Check the transmission. (📖 p. 234)



Main work

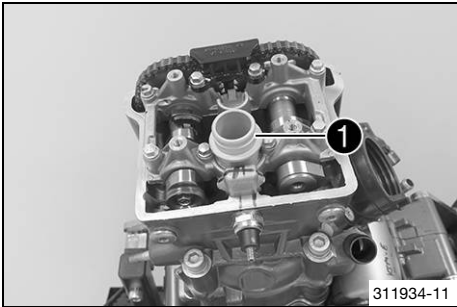
- Secure the countershaft in the bench vise with the toothed end facing downward.

Guideline

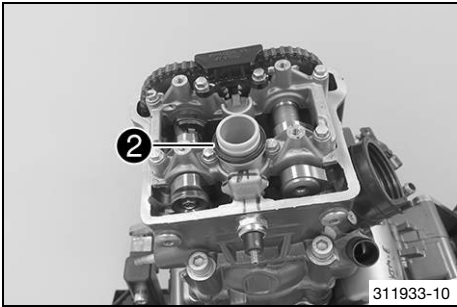
Use soft jaws.

- Mount collar bushing ①.
- Mount second-gear idler gear ②.
- Mount fifth-gear sliding gear ③ with the shift groove facing up.
- Mount fourth-gear idler gear ④.
- Mount washer ⑤.
- Mount third-gear idler gear ⑥.
- Mount collar bushing ⑦.
- Mount lock ring ⑧.
- Mount sixth-gear sliding gear ⑨ with the shift groove facing downward.
- Mount collar bushing ⑩.
- Mount first-gear idler gear ⑪.
- Mount stop disk ⑫.
- Replace O-ring ⑬ of the countershaft.
- Finally, check all the gear wheels for smooth operation.

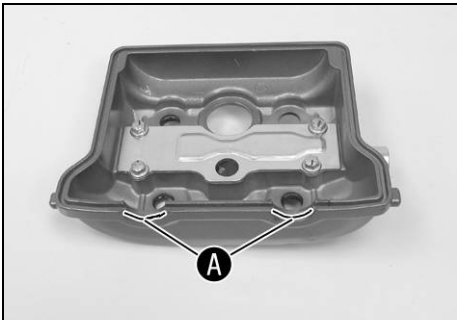
18.5.34 Installing the valve cover



- Grease the O-rings and mount spark plug shaft insert **1**.



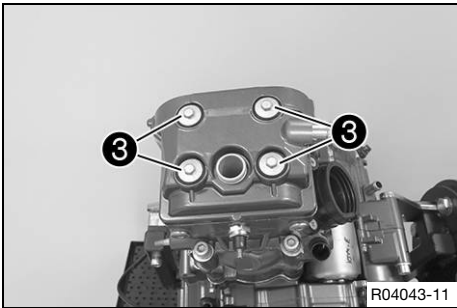
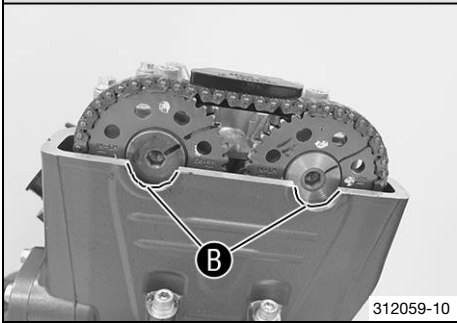
- Mount gasket **2**.



- Degrease the sealing areas and thinly coat with sealing compound in areas **A** and **B**.

Loctite® 5910

- Position the gasket in the valve cover.



- Position the valve cover with the gasket.
- Mount and tighten screws **3** with the gaskets.

Guideline

Screw, valve cover	M6	12 Nm (8.9 lbf ft)
--------------------	----	--------------------

Finishing work

- Install the right side cover. (📖 p. 94)
- Mount the front rider's seat. (📖 p. 91)
- Mount the passenger seat. (📖 p. 90)
- Install the bag carrier. (📖 p. 91)



21.5 Checking the coolant level



Warning

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

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



Warning

Danger of poisoning Coolant is toxic and a health hazard.

- Keep coolant out of the reach of children.
- Do not allow coolant to come into contact with the skin, the eyes and clothing.
- Consult a doctor immediately if coolant is swallowed.
- Rinse the affected area immediately with plenty of water in the event of contact with the skin.
- Rinse eyes thoroughly with water and consult a doctor immediately if coolant gets into the eyes.
- Change clothing if coolant spills onto your clothing.

Condition

The engine is cold.

- Stand the motorcycle upright on a horizontal surface.
- Check the coolant level in compensating tank ❶.

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

» If the coolant level does not match the specified value:

- Correct the coolant level.

Coolant (📖 p. 360)



E01308-10



E01305-10

- Remove radiator cap ❷ and check the coolant level in the radiator.

The radiator must be filled completely.

» If the coolant level does not match the specified value:

- Check the coolant level and the reason for the loss.

» If you had to add more coolant than the specified amount:

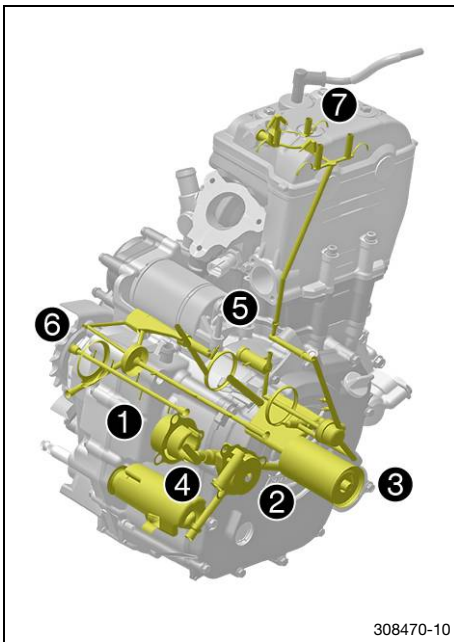
> 0.20 l (> 0.21 qt.)

- Fill/bleed the cooling system. (📖 p. 276)

- Mount the radiator cap.



23.1 Oil circuit



- ① Suction pump
- ② Pressure pump
- ③ Oil filter
- ④ Oil pressure control valve
- ⑤ Oil nozzle for piston cooling
- ⑥ Oil spray tube
- ⑦ Oil nozzle for cam follower lubrication

308470-10

23.2 Checking the engine oil level

Condition

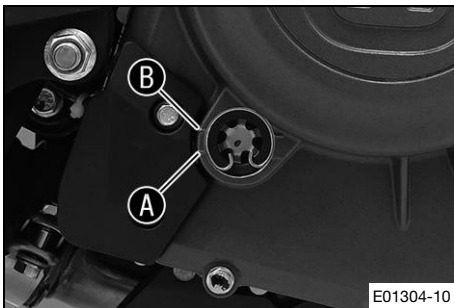
The engine is at operating temperature.

Preparatory work

- Stand the motorcycle upright on a horizontal surface.

Main work

- Check the engine oil level.



E01304-10



Info

After switching off the engine, wait one minute before checking the level.

The engine oil must be between the **A** and **B** markings .

- » When the engine oil level is below the **A** marking:
 - Add engine oil. (📖 p. 299)
- » When the engine oil level is above the **B** marking:
 - Correct the engine oil level.



23.3 Checking the oil pressure



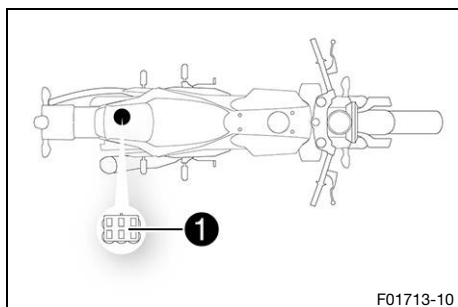
Warning

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

- Wear suitable protective clothing and safety gloves.
- In the event of scalding, rinse the area affected immediately with lukewarm water.

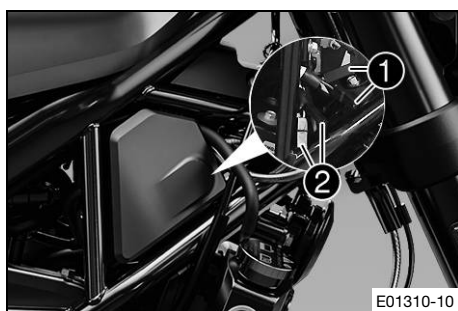
Combination instrument lighting and indicator lamps	LED	
Turn signal (EU/JP/UK/AR, ASEAN/CN/CO/PH)	LED	
Turn signal (US)	RY10W / socket BAU15s	12 V 10 W
Brake/tail light	LED	
License plate lamp	LED	

26.6.1 Diagnostics connector



Diagnostics connector ① is located under the passenger seat.

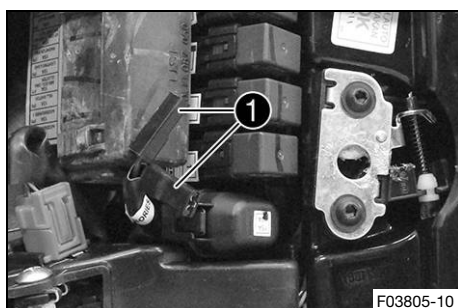
26.6.2 Front ACC1 and ACC2



Installation location

- Power supplies ACC1 ① and ACC2 ② front are located under the cover of the ABS module.

26.6.3 ACC2 rear



Installation location

- Rear ACC2 ① power supplies are located under the passenger seat.

