32/CLUTCH

Warning

Checking fluid level of hydraulic clutch

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 gets into your eyes, rinse thoroughly with water and contact a doctor immediately.

Info

The fluid level rises with increasing wear of the clutch lining disc. Avoid contact between brake fluid and painted parts. Brake fluid is corrosive and will damage painted surfaces. Use only clean brake fluid from a sealed container!



- Move the clutch fluid reservoir mounted on the handlebar to a horizontal position.
- Remove screws 1.
- Remove cover 2 with membrane 3.
- Check the fluid level.

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

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

Brake fluid DOT 4 / DOT 5.1 (* p. 224)

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

Info

Clean up overflowed or spilt fluid immediately with water.

Changing the hydraulic clutch fluid

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 gets into your eyes, rinse thoroughly with water and contact a doctor immediately.

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 fluid level rises with increasing wear of the clutch lining disc. Avoid contact between brake fluid and painted parts. Brake fluid attacks paint! Use only clean brake fluid from a sealed container!



- Move the clutch fluid reservoir mounted on the handlebar to a horizontal position.
- Remove screws 1.
- Remove cover 2 with membrane 3.

32/CLUTCH





- Fill bleeding syringe ④ with the appropriate hydraulic fluid.
 - Bleed syringe (50329050000) (* p. 228) Brake fluid DOT 4 / DOT 5.1 (* p. 224)
- On the slave cylinder, remove bleeder screw **9** and mount bleeding syringe **9**.
- Inject the liquid into the system until it escapes from bore hole
 of the master cylinder without bubbles.
- To prevent overflow, drain fluid occasionally from the master cylinder reservoir.
- Remove the bleeding syringe. Mount and tighten the bleeder screw.
- Correct the fluid level of the hydraulic clutch.

Guideline

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Fluid level under top level of container	4 mm (0.16 in)

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

• Info

Clean up overflowed or spilt fluid immediately with water.

33/TRANSMISSION

Removing the engine sprocket



Installing the engine sprocket



- Activate the rear brake and remove screw **①** with the spring washer.
- Pull the engine sprocket and chain off of the countershaft. Remove the engine sprocket.

- With the collar facing the engine, mount the engine sprocket in the chain and slide both onto the countershaft.
- Press the rear brake. Fit and tighten screw
 with spring washer.
 Guideline

Screw, engine sprocket	M10	60 Nm	Loctite [®] 243™
		(44.3 lbf ft)	

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- Install the engine sprocket cover. (* p. 38)

Cooling system



Water pump **1** in the engine circulates the coolant.

The water cycle through the radiator is controlled on the basis of the coolant temperature. The cooling system is subdivided into two circuits. In the warming-up phase, the engine circulates the water through the smaller cooling circuit. This warms up the engine rapidly. Thermostat @ warms up and opens the entry to the radiator (large circuit). In this way, the engine temperature can be kept constant.

The pressure resulting from the warming of the cooling system is regulated by a valve in radiator cap ③. The specified coolant temperature is therefore permissible without danger of function problems.

120 °C (248 °F)

Cooling is effected by the air stream.

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

(EXC SIX DAYS, XC-W ZA)

The radiator fan provides extra cooling. It is controlled by a thermoswitch.

Checking the antifreeze and coolant level

Danger of scalding The coolant gets very hot when the motorcycle is driven and is under high pressure.

Do not remove any radiator caps/plugs, radiator hoses or other cooling system components when the engine is hot. Allow
the engine and cooling system to cool down. In case of burns, rinse immediately with lukewarm water.



Warning

Warning

Danger of poisoning Coolants are poisonous and a health hazard.

Avoid contact between coolants and skin, eyes and clothing. If fuel 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 coolants out of the reach of children.



Condition

The engine is cold.

- Stand the motorcycle upright on a horizontal surface.
- Remove radiator cap.
- Check the coolant antifreeze.

	-2545 °C (-1349 °F)		
_	 » If the coolant antifreeze does not meet specifications: – Correct the coolant antifreeze. – Check the coolant level in the radiator. 		
	Coolant level () above the radiator fins.	10 mm (0.39 in)	
	 If the coolant level does not meet specifications: Correct the coolant level. 		

Alternative 1

Coolant (* p. 224)

Alternative 2

Coolant (mixed ready to use) (* p. 224)

Mount the radiator cap.

Checking the coolant level

Warning

Danger of scalding The coolant gets very hot when the motorcycle is driven and is under high pressure.

Do not remove any radiator caps/plugs, radiator hoses or other cooling system components when the engine is hot. Allow
the engine and cooling system to cool down. In case of burns, rinse immediately with lukewarm water.

Warning

Danger of poisoning Coolants are poisonous and a health hazard.

 Avoid contact between coolants and skin, eyes and clothing. If fuel 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 coolants out of the reach of children.

Condition The engine is cold.

- Stand the motorcycle upright on a horizontal surface.
- Remove radiator cap.
 - Check the coolant level in the radiator.



Mount the radiator cap.

Draining coolant

Warning

Danger of scalding The coolant gets very hot when the motorcycle is driven and is under high pressure.

Do not remove any radiator caps/plugs, radiator hoses or other cooling system components when the engine is hot. Allow
the engine and cooling system to cool down. In case of burns, rinse immediately with lukewarm water.

Warning

Danger of poisoning Coolants are poisonous and a health hazard.

Avoid contact between coolants and skin, eyes and clothing. If fuel 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 coolants out of the reach of children.



Condition

The engine is cold.

- Stand the vehicle upright.
- Place a suitable container under the water pump cover.
- Remove screw **①**. Remove the radiator cap **②**.
- Completely drain the coolant.
- Mount and tight screw **1** with a new seal ring.

Guideline

Screw, water pump cover M6x25 10 Nm (7.4 lbf lt)	Screw, water pump cover	M6x25	10 Nm (7.4 lbf ft)
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Refilling coolant



Warning Danger of poisoning Coolants are poisonous and a health hazard.

A

Avoid contact between coolants and skin, eyes and clothing. If fuel 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 coolants out of the reach of children.





- Stand the vehicle upright. _
- _ Pour coolant in up to measurement () above the radiator fins.

Guideline 10 mm (0.39 in)

10 mm (0.05 m)		
Coolant	0.95 l (1 qt.)	Coolant (🕶 p. 224)
		Coolant (mixed ready to use) (

- Refit the radiator cap. _
- Make a short test ride.
- Check the coolant level. (* p. 176)

38/LUBRICATION SYSTEM

Oil circuit



8	Lubrication, rocker arm shaft	
9	Oil jet, rocker arm lubrication	
10	Gear oil screen	
11	Gear oil pump	
12	Oil channel, transmission lubrication	
13	Lubrication, clutch push rod	
14	Suction pump	

Checking engine oil level

i

Info

The engine oil level must be checked when the engine is cold.

- Stand the motorcycle upright on a horizontal surface.

38/LUBRICATION SYSTEM



Condition

Engine is cold.

- Check the engine oil level.

The engine oil must be between the halfway mark and the top of the oil level viewer ${\bf \bullet}.$

- » If the engine oil level is below the specified level:
 - Top up the engine oil. (* p. 181)

Changing engine oil and oil filter, cleaning engine oil screen



- Drain the engine oil and clean the engine oil screen. (
 p. 179)
- Remove the oil filter. (***** p. 179)
- Mount the oil filter. (🕶 p. 180)

Draining engine oil, cleaning engine oil screen

Warning

Danger of scalding Engine oil and gear oil get very hot when the motocycle is driven.

 Wear suitable protective clothing and protective gloves. If you get scalded, immediately flush the affected areas 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.



- Stand the motorcycle on its side stand on a horizontal surface.
- Place a suitable container under the engine.
- Remove engine oil plug screen ①.
- Completely drain the engine oil.
- Thoroughly clean the plug and gear oil screen.
- Clean the sealing area on the engine.
- Mount and tighten the plug of engine oil screen ①.
 Guideline

Plug, engine oil screen	M17x1.5	20 Nm
		(14.8 lbf ft)

Removing the oil filter



Warning

Danger of scalding Engine oil and gear oil get very hot when the motocycle is driven.

 Wear suitable protective clothing and protective gloves. If you get scalded, immediately flush the affected areas 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.

38/LUBRICATION SYSTEM





Mounting oil filter



- Place a suitable container under the engine.
 - Remove screws **①**. Remove oil filter cover **②** with O-ring.

Pull the oil filter insert
 out of the oil filter casing.

Circlip pliers reverse	(51012011000) (•	p. 229)
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- Completely drain the engine oil.
- Thoroughly clean parts and sealing area.

- Lay the motorcycle on its side and fill the oil filter housing to about 1/3 full with engine oil.
- Fill the oil filter **1** with engine oil and place it in the oil filter container.
- Lubricate the O-ring 2 of the oil filter cover.

Refit the oil filter cover **③**. Mount and tighten screws **④**.

Screw, oil filter cover

Stand the motorcycle up.

Guideline



Filling up with engine oil

Info

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



- Remove the screw cap **1** on the generator cover and fill up with engine oil.

Engine oil (1st partial quantity	0.35 l (0.37 qt.)	Engine oil (SAE 10W/50) (, 224)
approx.)		

Mount and tighten the screw connection on the generator cover.

Danger

 ${\bf Danger\ of\ poisoning}$ $% {\bf Danger\ of\ poisoning}$ Exhaust gases are poisonous and can result in unconsciousness and/or death.

Μ6

10 Nm (7.4 lbf ft)

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