Eight Mile 125 LC
Owner's manual & warranty conditions

macbor.com

This owner's manual is a practical guide to help keep your motorcycle in top condition. The wear and durability of all components will depend on responsible use of this manual. As you may already know, at Macbor we put passion and enthusiasm into every detail, we can't help it, and this manual is good proof of that.
We hope you find it useful and that it helps you take your Macbor wherever you want to go. That part is up to you.

This model is equipped with a combined braking system (CBS).

Smart yourself.

Foreword

Thank you for choosing our motorcycle. To ensure pleasant and safe riding, please read this manual carefully before carrying out any operation. This manual explains the correct method for using and maintaining this motorcycle model. If you strictly follow the rules and guidelines in the manual, your motorcycle will remain in good condition and will last for many years.
The after-sales staff at your authorised dealer have received specialist training and are highly experienced. They have a full range of suitable tools and equipment and will provide an excellent service with a friendly, professional approach. All data, photographs and specifications refer to the most recent products available when this manual was published. Due to continuous improvements and other product changes, there may be some differences compared with the actual condition of your motorcycle. We reserve the right to make appropriate changes at any time. This manual includes the following messages, each with a specific meaning:

WARNING: Indicates a potentially dangerous situation which, if not avoided, could result in serious injury or death.
CAUTION: Indicates a potentially hazardous situation which, if not avoided, may damage your motorcycle.
NOTE: Provides information to assist with maintenance or instructions.

Table of Contents

1. User Instructions

SAFE RIDING INSTRUCTIONS

Riding a motorcycle is great fun and very exciting. Motorcycle riding requires additional precautions to ensure safe riding, as well as compliance with traffic regulations and the following provisions.

Wear a safety helmet
Motorcycle safety begins with wearing a helmet, which is an essential item for safe riding. The first item of protection when riding is a helmet that complies with safety and quality standards.

Riding gear
Loose or unusual clothing will make you feel uncomfortable and unsafe when riding. Choose close-fitting, high-quality protective clothing designed for motorcyclists.

Pre-ride inspection
Carefully read the instructions in the “Pre-ride inspection” section of this manual, and check everything according to the instructions, which ensure the safety of the rider and passengers.

Do not ride under the influence of drugs or alcohol
Alcohol and drugs can affect your perception and reaction time. Do not drink alcohol or take drugs before or while riding.

Familiarise yourself with the motorcycle
Your riding skills and mechanical knowledge are the basis for safe riding. First, practise on the motorcycle until you fully understand its mechanical performance and how to control it. Remember: practice makes perfect.

Take account of the speed limit and safe speed
Never ride too fast or allow the engine revs to become too high. Ride at a pace that feels comfortable for you, stay within your limits and avoid taking unnecessary risks.

Do not modify the mechanics
Modifications to this type of vehicle without the manufacturer's approval may pose an unpredictable hazard. It is also illegal to modify or dismantle the motorcycle's original devices, as the safety of the motorcycle can no longer be guaranteed. Users must comply with traffic regulations on the use of vehicles.

Take care when riding on rainy days

Pay particular attention when riding in cloudy and rainy conditions. Remember that the braking distance is twice as long as on sunny days. When riding, avoid speed bumps and raised areas, and pay attention to paint and oil on the road to avoid skidding. If the road surface is not ideal, reduce your riding speed.

INFORMATION ON LOAD AND ACCESSORIES

Incorrect loading, inappropriate modification of the motorcycle or incorrect installation of accessories may create riding safety risks and even cause accidents. Special care must therefore be taken when loading the motorcycle and when modifying or installing accessories.

The maximum load capacity of this model is 150 kg, including the rider, baggage and accessories. Exceeding this limit will make the motorcycle more difficult to handle, increase the braking distance or cause other problems that may pose a hazard. Avoid overloading!

- To reduce the impact on the motorcycle's centre of gravity, all loaded baggage should be positioned as low as possible. The weight of the load should be balanced on both sides of the motorcycle, and baggage should not be loaded at the rear of the motorcycle.
- Baggage must be firmly secured so that it does not move to the left or right while riding. If you notice any instability while riding, stop immediately to check and readjust the load.

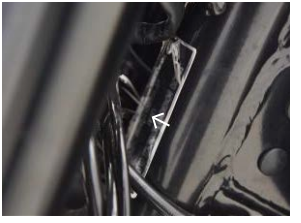
- Do not load objects that are too heavy or bulky. Overloading will affect weight distribution, which in turn will affect the motorcycle's handling and braking performance.
- Do not install or carry accessories that affect the motorcycle's performance. Check that they do not affect the lights, ground clearance, braking performance, handling or other functions.
- Additional electrical accessories may overload the electrical system. Severe overloading may damage the wiring, stop the engine while riding or even cause a fire in the vehicle.

SERIAL NUMBER LOCATION

The motorcycle identification number (VIN) and engine number are used for motorcycle registration. When ordering accessories or requesting special services, this number will help the dealer provide you with a better service.

Vehicle identification number (VIN)
The vehicle identification number (VIN) is stamped on the steering head of the frame.

Engine number
The engine number is stamped on the left-hand side of the crankcase.



Metal plate
The metal plate is located on the right-hand vertical frame tube.

Record the motorcycle identification numbers for future reference.

Motorcycle identification number (VIN)	**Engine number**

SAFETY INFORMATION

Read and follow the instructions in this Manual carefully. The symbols **WARNING**, **CAUTION** and **NOTICE** are used to indicate the level of caution required.
Study and make sure you fully understand their meanings.

2. Component locations

Figure: front view

1. Fuel tank cap
2. Left handlebar switch
3. Clutch lever
4. Odometer
5. Front brake fluid reservoir
6. Front brake level
7. Throttle grip
8. Right handlebar switch
   Front light
9. Front light
10. Rear-view mirror
11. Fuel tank
12. Passenger grab handle

Figure: view from the left

13. Seat lock
14. Tail light
15. Rear number plate light
16. Rear sprocket
17. Drive chain
18. Rectifier
19. Side stand
20. Gear shift pedal
21. Fuel filter
22. Evaporative emissions control device.
23. Front brake
24. Front brake disc
25. Rear indicator
26. Seat
27. Side cover
28. Throttle assembly
29. Front indicator
30. Air intake pipe
31. Rear brake pedal
32. Rear brake fluid reservoir
33. Silencer

Figure: view from the right

34. Rear brake disc
35. Rear brake

3. Control

Key
This motorcycle is supplied with two keys. Keep one in a safe place as a spare.

Ignition switch
The ignition switch has three positions:

Position	Specifications
ON position	When the circuit is switched on, the engine can be started and the key cannot be removed.
OFF position	All circuits are switched off, the engine cannot be started and the key can be removed.
Steering lock	Steering locked, engine off and electrical circuits switched off.

Locking the steering

1. Turn the handlebars fully to the left.
2. Press the key in and turn it anticlockwise to the steering lock position. Remove the key.
3. Remove the key

WARNING:

1. Never push the motorcycle while the steering is locked, as this may cause it to lose balance.

INSTRUMENT PANEL

Name	Function
1. Tachometer	This gauge indicates the engine speed in revolutions per minute.
2. Speedometer	The speedometer shows the current riding speed in km/h or mph.
3. ODO and TRIP meter	ODO: Displays the motorcycle's total accumulated mileage. TRIP: The trip meter shows the distance travelled since it was last reset. Use the passing light switch as the selector switch. (1) Press the passing light switch twice within 3 seconds: Switches between ODO and TRIP (2) Press the passing light switch three times within 3 seconds: Resets the TRIP display. (3) Press the passing light switch four times within 3 seconds: When the ODO display is shown, switches between km/h and mph.

	(4) The selector function only works when the motorcycle is stationary. When the motorcycle is moving, the selector function is disabled.
4. Fuel level indicator	This fuel level indicator shows the amount of fuel in the tank. The tank is full when the indicator points to “F” and empty when it points to “E”, at which point refuelling is required.
5. Indicator light	When the indicators are operated to turn left or right, the indicator light flashes at the same time.
6. Neutral indicator	When this light is on, the motorcycle is in neutral and can be parked safely.

7. Warning light	When the ignition switch is ON and the engine stop switch is in the “OFF” position, the warning light does not come on. When the ignition switch is ON and the engine stop switch is in the “ON” position, the warning light comes on. Once the engine has started and is running, the indicator goes off if no fault is detected. If the indicator remains on or flashes for an extended period while the engine is running or the motorcycle is being ridden, a fault has been detected in the EFI system. If this occurs, contact a qualified workshop or authorised dealer to have the fault code read and the necessary inspection and maintenance carried out.
8. Main beam indicator	The main beam indicator light comes on when the main beam is switched on or the passing light switch is pressed.

9. Coolant temperature indicator	When the motorcycle is running, this indicator comes on if the coolant temperature is too high. If the indicator light is on, do not allow the engine to continue running. Running the engine for too long in this condition may cause serious damage due to overheating. When the indicator light comes on, switch off the engine. Once the engine has cooled, check the coolant level in the coolant expansion tank.
10. Gear indicator	Displays the motorcycle's current gear position: 1, 2, 3, 4, 5 or 6. The corresponding number is displayed when the gear is changed. When neutral is selected, neutral indicator light 6 comes on.

WARNING:

1. When the engine coolant indicator is on, it means that the engine is overheated. If you continue riding when the engine is overheated, the engine components will suffer serious damage.

LEFT HANDLEBAR CONTROL SYSTEM

Name	Function
1. Clutch lever	When starting the engine, stopping or changing gear, pull the clutch lever firmly to disengage the clutch plates and interrupt power transmission.
2. Passing light switch	Pressing this switch turns on the main beam and the main beam indicator light on the instrument panel. When released, it returns to its original position. When overtaking, press this button to signal your intention and improve safety.
3. Headlight dip switch	Main beam/dipped beam operation When the headlight dip switch is set to position "≡D " (main beam), the headlight main beam comes on, together with the main beam indicator light on the instrument panel. When the headlight dip switch is set to position "≡D " (dipped beam), the dipped beam comes on.
4. Horn button	Press the button to sound the horn.
4. Horn button	Press the button to sound the horn.

5. Turn signal switch	When the indicator switch is moved to position "←" or "→", the indicator light on the instrument panel flashes at the same time. To cancel the indicator, press the switch inwards and release it, or return it to the centre position.
Starter button	Press to activate the electric start system.
Hazard warning button	Setting the switch to this position activates all four indicators.

WARNING:

1. When changing lanes or turning, switch on the indicators in good time. Switch off the indicator immediately after changing lanes. Failure to do so could cause an accident.
2. To prevent poor electrical contact caused by water, do not spray water directly onto the handlebar switch when washing the motorcycle.

RIGHT HANDLEBAR CONTROLS

Name	Function
1. Engine stop switch	When the ignition switch is ON, if the engine stop switch is pressed to position "", the ignition circuit is disconnected, the engine is switched off and cannot be started. When it is pressed to position "", the circuit is connected and the engine can be started.
2. Front brake level	The front brake lever is located on the right-hand side of the handlebar. To apply the front brake, pull the brake lever towards the handlebar. The brake light comes on automatically. As the motorcycle is equipped with hydraulic disc brakes, only moderate pressure is required when braking.
3. Throttle grip	The throttle grip is used to control the engine speed. Turn the throttle grip towards you to increase the engine speed (rotate it outwards, away from the motorcycle). Conversely, to reduce the engine speed, turn the throttle grip towards you anticlockwise (rotate it outwards, away from the motorcycle).

4. Starter switch	When the ignition switch is in position "⟳" and the engine stop switch is in position "⟳", press starter button "⟳" to start the engine.

WARNING:

1. Do not press the starter button continuously when starting the engine, and do not hold it down for more than 5 seconds. Otherwise, the starter circuit and starter motor may overheat due to excessive current draw, and the battery power may temporarily decrease. If the engine does not start after several attempts, check the fuel system and starting circuit.
2. To prevent poor electrical contact caused by water, do not spray water directly onto the handlebar switch when washing the motorcycle.

FUEL TANK CAP

To open fuel tank cap 1, first open small cover 2, insert the key into the lock and lift the fuel tank cap while turning the key clockwise. To close it, insert the key, place the cap in the fuel tank opening and press it down until it clicks shut. Once the key is in the correct position, remove it and then close the small cover.

1. Fuel tank cap
2. Small cover

WARNING:

1. Before refuelling, switch off the engine and make sure that no one is sitting on the motorcycle. Do not refuel in an area where naked flames are being used. After refuelling, make sure that the fuel tank cap is properly closed and locked. Otherwise, leaking petrol could cause a fire.

NOTICE:

1. When washing the motorcycle, do not spray the fuel tank cap with high-pressure water, as this could allow water to enter the fuel tank.

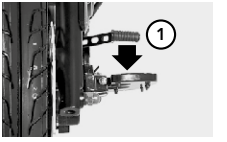
SEAT CUSHION LOCK

Insert the key into the seat lock, turn it anticlockwise, open the seat lock, lift the seat and remove it. To lock the seat, insert the front seat tab and press the rear of the seat down until the lock engages.

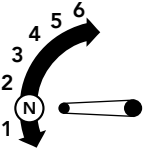
NOTICE:

1. Once the seat has been fitted, pull it upwards to check that it is securely locked.

GEAR SHIFT LEVER



This motorcycle has a six-speed gearbox. To change gear correctly, pull in the clutch lever and close the throttle while operating the gear shift pedal. Lift the gear shift pedal to change up and press it down to change down. Each movement of the gear shift pedal changes the gear by one position. Neutral is located between first and second gear. To select neutral, lift the gear shift pedal to the position between first and second gear.



NOTICE:

1. To avoid damaging the engine, gearbox and drive chain, which are not designed to withstand the shocks caused by gear changes, always use the clutch when changing gear.

CAUTION:

1. The indicator on the instrument panel is shown in green. Even when the light is on, release the clutch lever slowly to make sure that neutral is engaged.

REAR BRAKE PEDAL

Pressing the rear brake pedal applies the rear brake and switches on the brake light at the same time. During emergency braking, combine front-wheel braking with engine braking to reduce the braking distance.

SIDE STAND

To lower the motorcycle's side stand, place your foot on the outer end of the stand and press it down firmly until it reaches its fully extended position. After checking that the motorcycle is stable, you may leave it parked. The side stand must be raised before riding.

NOTICE:

1. If the side stand is not fully retracted, it may cause an accident when turning left. Before riding, check that the side stand is fully raised and is not stuck in any other position. Never ride the motorcycle without first raising the side stand.

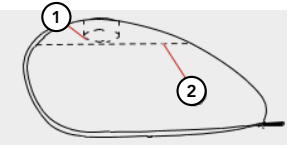
CAUTION:

1. Park the motorcycle on firm, level ground. If you have to park on a slope, point the front of the motorcycle uphill and engage first gear to reduce the risk of the side stand retracting if the motorcycle moves.

4. Fuel and engine oil recommendations

FUEL

Only unleaded petrol may be used. Use petrol with an octane rating of 92 or higher. If the engine knocks or backfires slightly, this may be caused by the use of lower-grade fuel and the fuel should be replaced.



1. Fuel tank opening
2. Fuel level

NOTICE:

1. Only unleaded petrol may be used. Using leaded petrol may damage the valves, piston rings, other internal engine components and the emissions control system.

CAUTION:

1. Do not overfill the fuel tank. When refuelling, make sure that the fuel nozzle is inserted into the fuel tank and stop refuelling when the petrol reaches the bottom of the filler opening. The fuel level must not rise above the bottom of fuel tank opening 1. Otherwise, thermal expansion may cause petrol to overflow onto the hot engine.

2. Refuel in a well-ventilated area. Make sure that the engine is switched off to prevent petrol from splashing onto the hot engine. Do not smoke, and make sure that there are no sources

of heat or naked flames nearby.

3. Petrol is toxic and may cause injury. Take great care when handling petrol. If you swallow petrol, inhale excessive petrol fumes or get petrol in your eyes, seek medical attention immediately. If petrol splashes onto your skin, wash it off with soapy water. If petrol gets onto your clothing, change your clothes immediately.

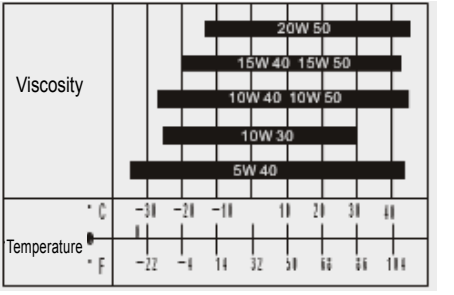
ENGINE OIL

Engine oil not only helps to cool the engine while the motorcycle is running, but also lubricates, cleans and helps prevent corrosion. For the oil to reach the lubricated components effectively, it must have the correct viscosity to ensure adequate flow within the specified temperature range. Using a high-quality four-stroke engine oil can help extend engine life. The engine oil should therefore be changed regularly to maintain effective lubrication. API grade SJ or higher is recommended for the engine oil. The viscosity should be SAE 10W-40. The recommended oil is suitable for most ambient temperature ranges. However, if the temperature and riding conditions in your area change, a different oil viscosity may be required. Select the appropriate oil according to the reference table.

Although one oil is recommended for most uses, the oil viscosity may need to be adapted to the climatic conditions in the area where the motorcycle is ridden.

Code	S G	SH	SJ	SL	. . .
Grade	Low →				High

API service classification



WARNING:

1. Diesel fuel, engine oil and grease must be kept out of the reach of children. The relevant warning label must be clearly visible on the container or displayed prominently to warn of the potential health hazard.

NOTICE:

1. Dispose of used engine oil properly. Do not pollute the environment. We recommend placing used oil in a sealed container and taking it to your local recycling centre. Do not dispose of it in household waste or pour it onto the ground.

5. Running-in the new motorcycle

Correct running-in of a new motorcycle is very important for extending its service life and ensuring maximum performance. The correct running-in procedures are described below.

MAXIMUM ENGINE SPEED

The following table shows the recommended maximum engine speed during the running-in period.

First 1,000 km	Below 5,000 rpm
From 1,000 to 1,600 km	Below 8,000 rpm
After 1,600 km	Below 10,000 rpm

WARNING:

1. New tyres are very slippery and may cause loss of control and injury.
2. The tyres require a running-in period of 160 km to achieve normal grip. During this period, avoid repeated braking, rapid acceleration and sharp turns.

VARY THE ENGINE SPEED

The engine speed should be varied rather than kept constant. This allows the components to be placed under load and then unloaded so that they can cool. This helps the components to bed in correctly. The engine components must be subjected to some load during the running-in period to ensure that they bed in properly. However, do not place excessive load on the engine.

ALLOW THE OIL TO CIRCULATE BEFORE RIDING

After starting the engine, whether hot or cold, allow it to idle for long enough before placing it under load or increasing the engine speed. This allows the lubricating oil time to reach all essential components.

AVOID PROLONGED RIDING AT A CONSTANT LOW SPEED

If the engine is operated at a constant low speed for a long period, components and parts may wear and bed in incorrectly. Provided that the recommended maximum engine speed is not exceeded, the rider may change down to increase the engine speed. During the first 1,000 km, do not overload the engine and avoid prolonged operation with the throttle fully open or any riding conditions that could cause the engine to overheat.

FIRST SERVICE AND PERIODIC MAINTENANCE

The 1,000 km service is the most important service your motorcycle will receive. During the running-in period, all engine components will have bedded in and all other parts will have settled. All adjustments will be checked and readjusted, all fasteners will be tightened, and the used engine oil and oil filter will be replaced. Carrying out the 1,000 km service on time will help ensure optimum engine performance and service life. After 1,000 km, the engine oil and air filter element must be replaced.

6. Pre-ride inspection

Before riding, always check the following items carefully.
Do not underestimate the importance of these checks.

Item to check	Inspection details
Fuel	• Check the fuel level in the tank. • Top up if necessary • Check the fuel system for leaks
Engine oil	• Check the engine oil level • Top up to the specified level as required • Check the engine for oil leaks
Steering system	• Steering moves freely without obstruction • No movement or play
Throttle	• Check the throttle free play • Adjust if necessary • Make sure that it operates smoothly and returns correctly

Clutch	• Check its operation • Lubricate the cables as necessary • Check the clutch lever free play • Adjust if necessary
Braking system	• Check the operation of the front and rear brakes • Check the brake pads and brake discs for wear and replace them if necessary • Check the brake fluid reservoir level and top up if necessary • Check the hydraulic system for fluid leaks • Check the rear brake pedal free play and adjust it if necessary
Drive chain	• Check the drive chain slack • Adjust if necessary • Clean and lubricate as necessary
Tyre	• Check for damage • Check the tread depth • Replace if necessary • Check the tyre pressure • Adjust if necessary

Lights and indicators	• Check that all lights and indicator lights operate correctly
Horn	• Check that it operates correctly
Brake light switch	• Check that it operates correctly
Coolant	• Check the coolant level when the engine is cold • Top up the coolant if necessary • Check the cooling system for leaks

7. Riding

If this is your first time riding this motorcycle, we recommend practising on a quiet road until you are fully familiar with its controls and operation.

Removing your hands from the handlebar or your feet from the footrests while riding may be dangerous. Removing even one hand or foot may reduce your ability to control the motorcycle. While riding, always keep both hands on the handlebar and both feet on the footrests.

Do not change gear while turning, and reduce your speed before entering a turn. Braking and cornering performance are reduced on wet roads and when tyre grip is low, so reduce your speed well in advance. Follow traffic regulations and observe the speed limit.

START THE ENGINE

(1) Insert the key into the ignition switch and turn it clockwise to position "⟳" to switch on the motorcycle.
(2) Check that the motorcycle is in neutral. When neutral is selected, the neutral indicator (N) on the instrument panel comes on. If a gear is engaged, select neutral to prevent the motorcycle from moving forwards during starting.
(3) Move the engine stop switch to the "⟳" position and leave the motorcycle in neutral for 3–5

seconds. Wait for the electrical components to complete their self-check. The fuel pump will make a sound during this process.
(4) Once the self-check is complete, press starter button "" to start the engine. There is no need to turn the throttle grip when starting.

WARNING:

1. Select neutral and pull in the clutch lever before starting the engine to prevent the motorcycle from moving if a gear is engaged accidentally.
2. It is dangerous to run the engine indoors or in a garage. Exhaust gases contain carbon monoxide, a colourless and odourless gas that can cause death or serious injury. Do not run the engine in an enclosed area.

NOTICE:

1. Do not hold the starter button down continuously for more than 5 seconds. Otherwise, the starter motor may overheat and the battery charge may temporarily decrease. Wait 15 seconds between starting attempts to allow the starter motor to cool and the battery charge to recover.
2. Do not leave the engine idling for too long without riding, as overheating may damage internal components.

RIDING

Raise the side stand, pull in the clutch lever, pause briefly and press the gear shift pedal to select first gear. Slowly turn the throttle grip towards you while gradually releasing the clutch lever. The motorcycle will then begin to move forwards. To change up to the next gear, first reduce your speed, then close the throttle and pull in the clutch lever at the same time. Use the gear shift pedal to select the next higher gear, release the clutch lever and gradually open the throttle to accelerate. You can then continue changing up through the gears.

WARNING:

1. Before riding, make sure that the side stand is fully raised and never allow it to remain in any other position.

USING THE TRANSMISSION

The transmission is designed to keep the engine running smoothly within its normal operating range. The gear ratios have been carefully selected to suit the characteristics of the engine. The rider should always select the gear most appropriate for the riding conditions. Never use the clutch to control your speed on the road. Instead, select a lower gear so that the engine operates within its normal speed range.

WARNING:

1. Never allow the engine speed to enter the red zone in any gear.

NOTICE:

1. Do not coast or push the motorcycle over long distances with the engine switched off, even when the transmission is in neutral. The transmission is only lubricated while the engine is running. Inadequate lubrication may damage the transmission.

RIDING ON SLOPES

When riding up steep slopes, the motorcycle may begin to slow down and lose power. If this happens, change down to a lower gear so that the engine returns to its normal power range. Change down promptly to prevent the motorcycle from losing momentum. When riding downhill, use engine braking by changing down to a lower gear. Take care not to over-rev the engine.

NOTICE:

1. Correct use of the gears helps control engine power when accelerating or riding uphill.

STOPPING AND PARKING

(1) Turn the throttle grip away from you to close the throttle fully.
(2) Apply the front and rear brakes evenly and simultaneously to maintain stability. (3) Select a lower gear to reduce speed. (4) Before the motorcycle comes to a stop, select neutral while holding the clutch lever against the handlebar grip. Check that the neutral indicator light is on to confirm that neutral is selected. (5) When parking the motorcycle on the side stand on a slight slope, point the front of the motorcycle uphill to prevent it from falling towards the side stand. Leave the motorcycle in gear to prevent it from rolling. Select neutral before starting the engine. (6) Turn the ignition key to position "⊠" (OFF). (7) Lock the steering for security. Remove the key from the ignition switch.

WARNING:

1. The engine and silencer become very hot during normal operation and may cause serious burns. Do not touch the engine or silencer while the engine is running or after it has been switched off, as they remain very hot.

8. Inspection and maintenance

The rider is responsible for ensuring safety. You must check, adjust and lubricate your motorcycle regularly to keep it in a safe and efficient operating condition. The following section explains what must be checked and how to adjust and lubricate the components. Checks should be carried out at the specified intervals in months or kilometres, whichever comes first. Each check must be carried out using the method described, and the controls and other components must be inspected carefully. As a general rule, regular checks and lubrication should be carried out to keep the motorcycle in good condition. However, maintenance intervals may need to be shortened depending on the climate, terrain, location and individual riding conditions.

If the motorcycle is ridden in harsh conditions, such as during a sandstorm or where the throttle is frequently opened wide, special maintenance will be required to ensure reliability. In such cases, your dealer can provide further information. As the steering system, shock absorber and wheel axles are safety-critical components, they must be inspected and maintained by specially trained technicians. For safety reasons, we recommend entrusting this work to your dealer.

WARNING:

1. During periodic maintenance, one or more parts may need to be replaced. We recommend using genuine manufacturer parts or standard parts of equivalent quality. Even if you are an experienced motorcycle technician or have repair experience, it is best to ask an authorised dealer or your usual maintenance technician to resolve any problems.

2. For other items that are not specifically marked, you may carry out the work yourself by following this manual.

NOTICE:

1. Maintenance is required once a new motorcycle has completed its first 1,000 km. This will help ensure that the motorcycle remains safe to ride and in good condition. Periodic maintenance must be carried out in accordance with the instructions in this manual.

PERIODIC INSPECTION AND MAINTENANCE SCHEDULE

Items to check	Odometer km reading				
	1st Serv. At 1,000 km (odo)	2nd Serv. At 5,000 km (odo) and every 5,000 km	3rd Serv. At 10,000 km (odo) and every 10,000 km	5th Serv. At 20,000 km (odo) and every 20,000 km	Annual service
1. Engine air filter*		C	R: every 10,000 km		I
2. Engine oil filter*#	R		~~R: every~~ 10,000 km or 1 year		R
3. Strainer (internal engine mesh) oil filter			C: every 20,000 km		
4. Engine oil*#	~~R~~	R	R: every 5,000 km or 1 year		R
5. Engine oil level	I: every 1,000km				
6. Emissions control system		I	I: every 5,000 km		
7. Spark plugs			R: every 10,000 km		
8. Valve clearance	I		I: every 10,000 km		

9. Idling speed	I	I	I: every 5,000 km	I
10. Hoses, clamps and radiator of the cooling system#		I	I: every 5,000 km or 1 year	I
11. Coolant#			R: every 2 years or 20,000 km	I
12. Coolant level	I	I: every 1,000 km		I
13. Fuel system/hoses#	I	I	I: every 5,000 km or 1 year	I
14. Sprocket/Crown/Drive chain*	I/G: every 500km			I
15. Brake operation	I	I	I: every 5,000 km	I
16. Brake fluid#			R: every 2 years or 20,000 km	I
17. Brake fluid level	I	I	I: every 5,000 km	I
18. Brake hoses		I	R: every 4 years	I
19. Brake discs/pads*	I	I	I: every 5,000 km	I
20. Front */rear suspension function**	I	I	Front suspension oil R: every 2 years	I
21. Wheels and tyres#	I	I	I: every 5,000 km or 1 year	I
22. Spoke tension	I	I: every 5,000 km		
23. Tyre pressure	I	I: every 1,000 km		I

24. Steering column bearings	I		I G: every 20,000 km	I
25. Shafts-joints and cables	G	G	G: every 5,000 km	G
26. Throttle function	I	I	I: every 5,000 km	I
27. Clutch function	I	I	I: every 5,000 km	I
28. Tightening of bolts and nuts	I	I	I: every 5,000 km	I
29. Stands	I/G	I/G	I/G: every 5,000 km	I/G
30. Electrical system	I	I	I: every 5,000 km	I
31. EFI system fault code reading	I	I	I: every 5,000 km	I

I : Inspect and/or adjust. Replace if necessary.
C: Clean. Replace if necessary.
R: Replace
G: Grease
Odo: Total kilometres read on the instrument panel.

NOTE:
First service at 1,000 total km, second service at 5,000 total km (4,000 km after the first), and the third and subsequent services every 5,000 km.

*: Increase service frequency when riding in adverse conditions, such as dust, humidity, mud, etc.
#: Service annually or at the indicated odometer reading intervals, whichever occurs first.
**: When the total kilometres read on the instrument panel exceed those shown here, repeat the maintenance work for the corresponding interval.
***: It is advisable to change the front suspension oil every 2 years.

IMPORTANT:
Check tyre pressure, oil level, and coolant level every 1,000 km. Engine overheating caused by running with low oil and/or coolant levels is not covered by the warranty.

Requirements to keep the warranty valid
The maintenance plan must be carried out at Macbor authorised service centres. Unauthorised personnel may not make adjustments or repairs.

The maintenance plan must be followed using original parts and oil recommended by Macbor. If the mileage indicated for services is not reached, an annual service is required.

Recommendations
Request a detailed invoice for the services from the official Macbor service centre.
Ask the official Macbor service centre to record the vehicle's service history on the Macbor website.

BATTERY

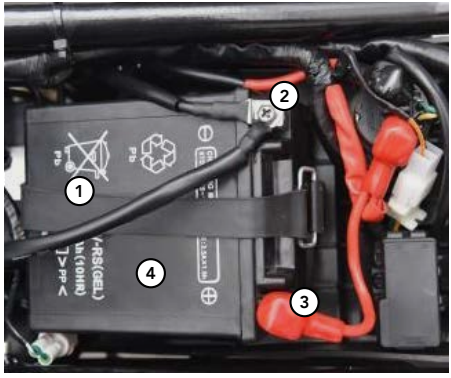
This motorcycle is equipped with a maintenance-free battery. Electrolyte was added to the battery before it left the factory. There is no need to check the battery electrolyte level or add electrolyte. Do not remove the sealed battery cap. The sealed cap does not need to be removed when charging the battery.

NOTICE:

1. Refer to the battery instruction manual the first time this maintenance is carried out.
2. When replacing the battery, select one of the same model and specification.

BATTERY REMOVAL

(1) Make sure that the ignition is switched off. (2) Remove the seat. (3) Loosen retaining strap 1. (4) Remove the protective cover from negative cable 2 and disconnect the negative (–) cable. (5) Remove the protective cover from positive cable 3 and disconnect the positive (+) cable. (6) Remove battery 4.



1. Retaining strap 2. Negative terminal 3. Positive terminal 4. Batte

Clean the battery terminals.
(1) Remove the battery. (2) If a terminal begins to corrode and is covered with a white deposit, clean it with warm water and wipe it dry with a cloth.
(3) If the terminals are heavily corroded, clean and polish them with a wire brush or sandpaper. Wear safety glasses during this operation. (4) Refit the battery after cleaning.

Installation
Fit the components in the reverse order of removal. Always connect the positive (+) terminal first. Make sure that all screws and nuts are securely tightened.

Use and maintenance

(1) Each starting attempt must not exceed 5 seconds. If several starting attempts fail in succession, check the fuel supply, starting system and ignition system.
(2) Frequent starting, short journeys, prolonged operation at low speed, electrical accessories or bulbs with a rating above the specified value may discharge the battery, prevent it from charging sufficiently and shorten its service life. (3) If the engine fails to start, the lights are dim or the horn sounds weak, charge the battery immediately. (4) If the motorcycle will not be used for a long period, fully charge the battery before storing the motorcycle and then recharge it once a month. Use a dedicated motorcycle battery charger. (5) To dispose of the battery, contact a qualified person or waste disposal company, as it must be disposed of correctly to avoid harming the environment.

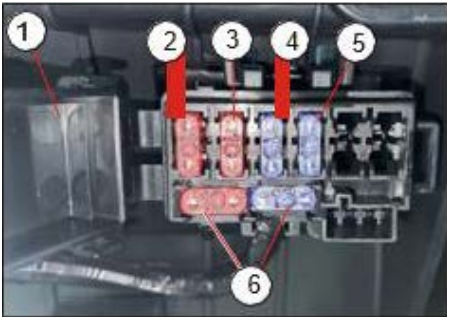
ery

WARNING:

1. Under normal operating conditions, the battery releases explosive hydrogen gas. This gas is flammable and explosive under certain conditions, and the battery continues to contain hydrogen even after it has been discharged. Keep the battery away from flames and sparks.

FUSE

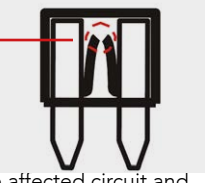
The main fuse box protecting the motorcycle's electrical equipment is located beneath the seat, together with a spare fuse for replacement if the main fuse blows. If a sudden electrical fault occurs while riding, the circuit may be interrupted. First check whether the fuse has blown and replace it with a new fuse of the same rating.



1. Fuse box cover.
2. 10 A fuse: Fuel pump / Headlight / Radiator fan
3. 10 A fuse: ECU
4. 15 A fuse: Motorcycle circuit
5. 15 A fuse: Charging circuit
6. Replacement fuse: 10 A/15 A

Checking and replacing the fuse

(1) Turn the ignition key to position "⚿" and switch off all electrical circuits. (2) Open the fuse box cover. (3) Remove the fuse and check whether it has blown.



A: Check whether the fuse element is broken.

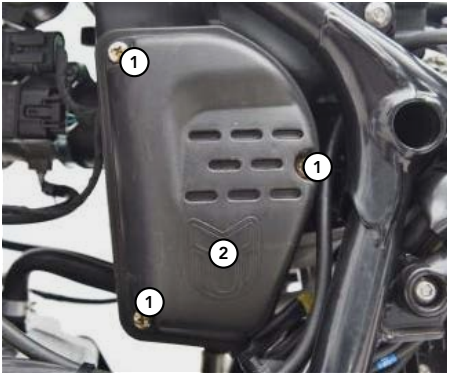
B: If the fuse has blown, make sure that the replacement fuse has the same specification. After replacing it, turn the key to position "⚿", switch on the affected circuit and check that it operates normally. If the fuse blows again immediately, ask your dealer to check the electrical system. If the fuse blows frequently, there may be a short circuit or overload. Have it checked by an authorised service centre.

NOTICE:

1. Do not use a fuse with a higher current rating than recommended, as this could cause serious damage to the electronic systems or even a fire.
2. Switch off the ignition before checking or replacing a fuse to prevent short circuits. When replacing a fuse, use one that meets the specified requirements. Do not replace it with any other material.

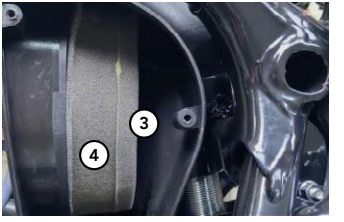
AIR FILTER

The air filter is the motorcycle's respiratory system. Its function is to clean the air entering the engine, which may contain dust and impurities, thereby reducing abnormal wear of the cylinder, piston and piston rings and extending engine life. If the air filter is blocked with dust, intake resistance will increase, engine power will decrease, fuel consumption will rise, and the engine may become difficult to start or may stall easily. Large amounts of dust inside the cylinder will increase wear of the engine components. Therefore, after 3,000 km, follow the steps below to check and clean the air filter element.

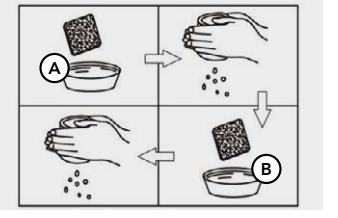


1. Outer air filter cover bolt
2. Outer cover

(1) Remove the left-hand side cover. (2) Remove the screw from outer air filter cover 1 and remove outer cover 2. (3) Remove the retaining screws from the filter element. (4) Remove filter element 4. Refit the air filter element in the reverse order of removal. Make sure that the element is correctly positioned and properly sealed. (5) Pour a non-flammable cleaning solution into a suitably sized container and immerse the element in the liquid. (6) Squeeze the element with both hands to avoid damaging it. (7) Immerse the element in engine oil and squeeze out the excess oil until the element remains slightly damp.
(8) Wipe the air filter housing and element with a clean cloth.
Refit the air filter element in the reverse order of removal. (9) Make sure that the element is correctly positioned and properly sealed.



3. Retaining bolt
4. Filter element



A. Non-flammable cleaning solution
B. Engine oil

NOTICE:

1. If the motorcycle is frequently used in very dusty conditions, clean or replace the filter element more often.

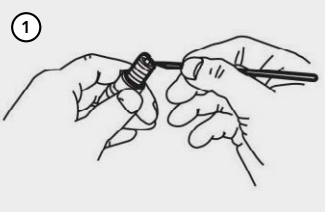
SPARK PLUG

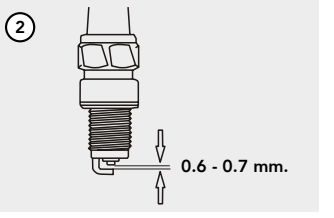
Spark plugs are important engine components and must be checked periodically. As heat and deposits may gradually corrode the spark plug, it must be removed and inspected in accordance with the periodic inspection and maintenance schedule. The condition of the spark plug may also indicate the condition of the engine. Check whether the colour of the ceramic insulator around the centre electrode is normal. If the spark plug colour is clearly abnormal, this may indicate an engine fault. Do not attempt to diagnose this type of problem yourself. Take the motorcycle to a workshop for inspection. If the spark plug electrode shows corrosion, carbon deposits or other defects, clean them off. Different engine types use different spark plug models, mainly because of differences in heat range, thread size and other specifications. Always use the specified spark plug model. The spark plug must be cleaned every 6,000 km.

Removing the spark plug
(1) Remove the spark plug cap. (2) Fit the spark plug socket and position it for removal. (3) Turn the spark plug socket anticlockwise. (4) Remove the spark plug.

Checking and adjustment

(1) Remove carbon deposits from the spark plug using a wire brush or steel needle.
(2) Check the spark plug gap with a feeler gauge and adjust it if necessary.





NOTICE:

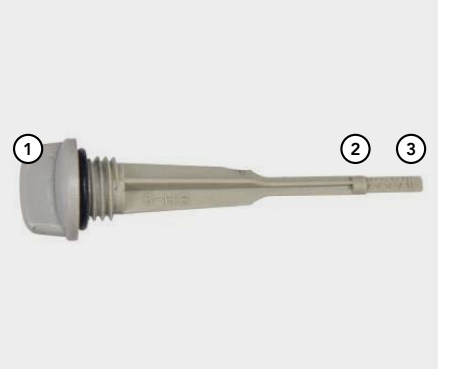
1. Incorrect installation of the spark plug may damage the engine. The cylinder head may be damaged if the spark plug tightening torque is too high or if the thread is misaligned.
2. The spark plug must be removed and fitted using the correct tool. Otherwise, the ignition coil connector may be damaged.
3. Using other brands of spark plug may cause operating problems. Therefore, consult your dealer before using a different brand of spark plug.

ENGINE OIL

Engine durability depends on selecting a high-quality engine oil and changing it regularly. Engine oil consumption and deterioration vary according to riding conditions and the length of time the oil has been in use. The two most important maintenance tasks are checking the engine oil level before each journey and changing the oil regularly.

Checking the oil level

(1) Hold the motorcycle upright on firm, level ground using a suitable support stand. A lifting stand or similar support may also be used. (2) Start the engine and allow it to idle for more than 3 minutes. (3) Switch off the engine and wait 3 minutes.
(4) Check the engine oil level using oil dipstick 1 on the right-hand side of the engine. The oil level must be between the upper and lower



1. Oil dipstick
2. Upper mark
3. Lower mark

marks on the dipstick. If the oil level is outside the specified range:
Top up with oil.

NOTICE:

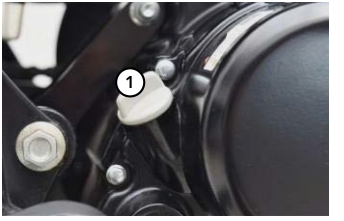
1. Too much or too little engine oil may damage the engine. If the oil level is too high, use a syringe or another suitable device to remove the excess oil from the reservoir. If the oil level is too low, add the recommended oil until the correct level is reached.
2. If the engine oil level is below or close to the lower limit, the engine will not start. When adding oil, do not exceed the upper limit mark.

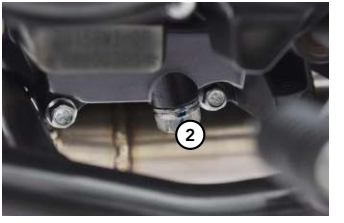
OIL CHANGE

Change the oil while the engine is warm. This allows the old engine oil to drain more effectively.

Oil change procedure

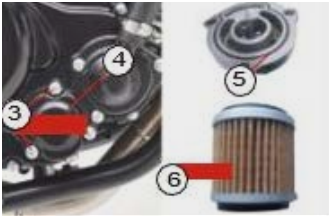
(1) Start the engine and allow it to idle for a few minutes to warm the oil. (2) Switch off the ignition and wait 2–3 minutes. (3) Park the motorcycle on a firm, level surface. The motorcycle may be held upright using a lifting stand. (4) Place a suitable container beneath the engine oil drain bolt to collect the used oil. (5) Remove engine oil filler cap 1 and engine oil drain bolt 2, and drain the engine oil. (6) Clean the oil filler cap and oil drain bolt. Check whether the O-ring on the oil filler cap is damaged and replace it if necessary. (7) Remove bolt 3 from the filter cover, then remove oil filter cover 4, sealing washer 5 and filter 6. (8) Drain the remaining oil. (9)





1. Oil dipstick
2. Engine oil drain bolt

Clean the oil filter, or replace it, and clean the mounting surface on the engine. Check whether the gasket is damaged and replace it if necessary.
(10) Refit the oil filter and tighten the oil filter cover bolts.
Tightening torque: 10 Nm (11) Add the recommended oil through the engine oil filler opening, then refit the engine oil filler cap. (12) Start the engine, allow it to idle for a few minutes and check for oil leaks around the removed components. (13) Switch off the engine, wait a few minutes for the oil level to stabilise, then check the level using the dipstick on the right-hand side of the engine.



3. Bolt
4. Filter cover
5. Sealing washer
6. Filter

Oil capacity:

- When changing the engine oil only: 1,100 ml
- When changing the engine oil and oil filter: 1,200 ml
- When the engine is completely dry: 1,400 ml

See the section
“Checking the oil level”.

NOTICE:

1. Do not add chemical additives to the engine oil. This may cause the clutch to slip, as the engine oil also lubricates the clutch.

THROTTLE CABLE FREE PLAY

(1) Remove cable cover 1. (2) Loosen locknut 2. (3) Turn adjuster 3 to set the throttle cable free play to 2–6 mm. (4) Hold the adjuster in position and tighten locknut 2. (5) Refit cable cover 1.

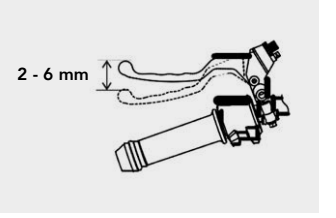
1. Cable cover
2. Locknut
3. Adjuster

NOTICE:

1. After adjusting the throttle cable free play, make sure that the throttle operates smoothly and reliably and returns automatically to its original position.

CLUTCH

The clutch lever free play at the lever end should be 10–20 mm. If the free play is outside this range or is excessive, this may cause premature clutch wear. If the free play is incorrect, adjust it as follows:



Minor adjustment
Adjust using the adjuster at the upper end of the clutch cable.

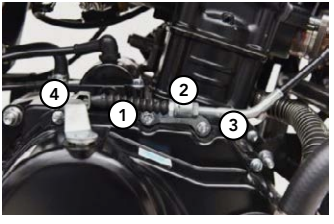
(1) Loosen upper locknut 1. (2) Turn cable adjuster 2 until the free play is 10–20 mm. (3) Tighten upper locknut 1 and check the free play again.

1. Locknut
2. Cable adjuster

MAJOR ADJUSTMENT

If the upper clutch cable adjuster has been turned to its limit or the correct free play cannot be obtained, use the lower clutch cable adjuster.

(1) Remove cable cover 1. (2) Loosen locknut 2 on the clutch cable adjuster. (3) Move cable adjuster 3 up or down to obtain the correct free play. (4) Check that clutch release arm 4 and the cable end are securely fitted. (5) Once correctly adjusted, tighten locknut 2.
(6) Refit cable cover 1.



1. Cable cover
2. Locknut
3. Cable adjuster
4. Clutch release arm

NOTICE:

1. After adjustment, start the engine and check that the clutch does not slip and disengages normally.

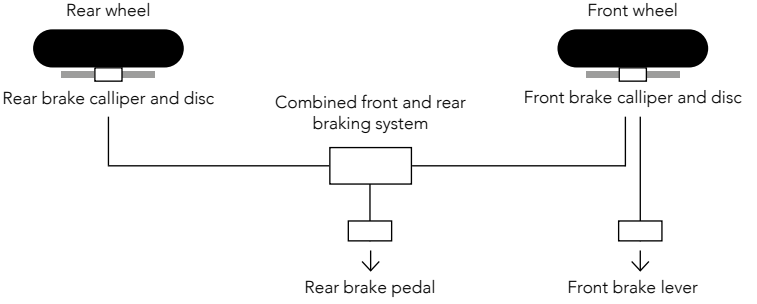
BRAKING SYSTEM

This model is equipped with front and rear disc brakes. Correct brake operation is essential for safe riding. Remember to have the braking system checked periodically by a qualified service centre.

WARNING:

1. If the braking system requires maintenance, we strongly recommend that you entrust the work to an authorised service centre. They have a full range of specialised tools and equipment and can carry out the work safely and economically.

The motorcycle is equipped with a combined braking system, known as CBS (Combined Braking System). The front and rear brakes are interconnected.
When the rear brake is applied, a certain amount of braking force is automatically applied to the front brake. This system is particularly useful for inexperienced riders.

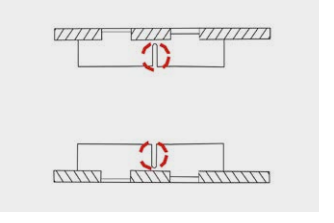


Before each use, check the following braking system components. These routine checks take very little time and help ensure safe, reliable riding.

(1) Check the front and rear braking systems for leaks. (2) Check the fluid level in the front and rear brake fluid reservoirs. (3) Check the front and rear brake hoses for leaks or damage. (4) Check the front and rear brake pads for wear. (5) Check the thickness and wear of the front and rear brake discs.

BRAKE PADS

Check whether the front and rear brake pads are worn to the wear limit. If they are worn to the wear limit, contact the designated dealer to have the front and rear brake pads replaced.



Wear limit

WARNING:

1. Do not ride immediately after fitting new brake pads. First, operate the brake control several times so that the brake pads and brake disc make full contact, normal lever or pedal resistance is restored and the brake fluid circulates fully.
2. Do not operate the brake control unless the brake pads are correctly fitted. If the brake control is operated, the brake piston may be forced out of the calliper and may be difficult to refit. Forcing the piston back into position may cause brake fluid leaks and damage to the piston.

NOTICE:

1. If only one brake pad in a pair is replaced, braking may not be smooth. Brake pads must be replaced in pairs.

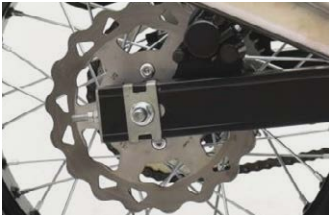
BRAKE DISC

The brake disc is an important part of the braking system. During use, check whether the brake disc is damaged, cracked or deformed, or whether its thickness is below the specified limit. If any of these conditions are found, replace the brake disc.

Minimum brake disc thickness:

Front brake disc	3.5 mm
Rear brake disc	3.5 mm

Front brake disc



Rear brake disc

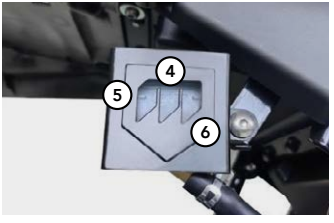
WARNING:

1. Do not allow grease or dirt to build up on the friction surface of the brake disc, as this will seriously reduce braking performance and may cause an accident.
2. After replacing the brake disc, the braking distance may initially be longer than before. Optimum braking performance will only be achieved after approximately 300 km, once the brake disc and brake pads have fully bedded in. Until then, allow a greater braking distance while riding.
3. Do not ride immediately after fitting a new brake disc. First, operate the brake control several times so that the brake pads and brake disc make full contact, normal lever or pedal resistance is restored and the brake fluid circulates fully.

BRAKE FLUID

Check the fluid level in the front and rear brake fluid reservoirs. With the reservoir held level, the brake fluid level should be between the upper and lower level marks. If the brake fluid level is below the lower mark, check the brake pads for wear. If the brake pads are not worn, this may indicate a brake fluid leak. In this case, take the motorcycle to an authorised dealer for maintenance of the braking system.

Front: 1. Front brake fluid reservoir
2. MAX upper level mark
3. MIN lower level mark



Rear: 4. Rear brake fluid reservoir
5. Upper level mark
6. Lower level mark

WARNING:

1. An insufficient amount of brake fluid may allow air to enter the braking system, resulting in ineffective braking. When topping up the brake fluid, use the same type of brake fluid. Mixing different types of brake fluid may cause a chemical reaction and damage the system.

REAR BRAKE

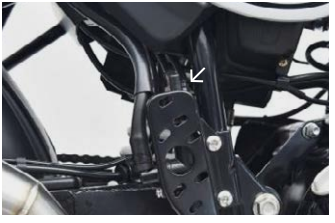
To adjust the rear brake pedal, first loosen the adjusting nut, set the pedal to the most comfortable riding position, then turn the travel adjusting nut to maintain a free play of 20–30 mm.

Adjusting nut

FRONT/REAR BRAKE LIGHT SWITCH

The front brake light switch is located beneath the brake lever. Pulling the front brake lever lightly switches on the brake light. The rear brake light switch is located next to the rear brake hose. The brake light becomes brighter when the brake pedal is pressed.

Front



Rear

DRIVE CHAIN

The drive chain is one of the motorcycle's main components. Its condition directly affects the motorcycle's durability, comfort and reliability. The drive chain slack and lubrication must be checked before riding each day. If the drive chain is too loose or too tight due to excessive wear or incorrect adjustment, this will increase resistance or reduce performance.

WARNING:

1. For safety reasons, if the drive chain has stretched, it must not be shortened and refitted to the motorcycle. Contact your dealer or an authorised workshop to have it replaced with a new one.

NOTICE:

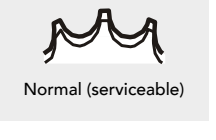
1. The motorcycle's drive chain is made from special materials. When replacing the chain, use a genuine replacement part supplied by the manufacturer.
2. Other brands may cause problems. The drive chain contains special O-rings.

Checking the drive chain

The drive chain must be inspected and lubricated periodically. If the motorcycle is frequently ridden in harsh conditions, at high speed or with repeated rapid acceleration, check the drive chain more often. If the drive chain is worn, have it replaced by an authorised workshop or dealer.

When inspecting the drive chain, check for the following:
(1) Smooth operation (2) Unusual noise (3) Damaged roller (4) Loose pin
(5) Stiff links and rusted joints (6) Excessive wear (7) Incorrect chain adjustment

Drive chain wear is related to wear of the front and rear sprockets. When inspecting the drive chain, also check the front and rear sprockets for the following:
(1) Is the sprocket excessively worn? (2) Are any teeth broken or damaged?
(3) Is the sprocket retaining nut loose?



Drive chain maintenance

Dust on the drive chain will accelerate wear of both the chain and sprockets. The chain must therefore be cleaned and lubricated periodically in accordance with the periodic inspection and maintenance schedule. If the drive chain is dirty, clean it with a dry cloth, a suitable chain-cleaning device and a soft brush. After cleaning and drying the drive chain, apply special chain lubricant to the inner side of the lower chain run so that it penetrates between the rollers and sleeves. Apply lubricant to the O-rings until they are fully coated, then wipe off any excess.

WARNING:

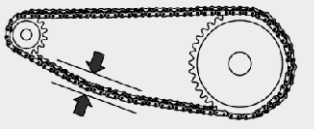
Do not use a steam cleaner, high-pressure cleaner, wire brush, unsuitable chain cleaner, petrol or any other chemical detergent to clean the drive chain. Otherwise, the O-rings and drive chain may be damaged.

NOTICE:

1. Never use engine oil or any other unsuitable lubricant, as it may contain substances that could damage the O-rings.
2. After washing the motorcycle or riding in wet or dusty conditions, lubricate the drive chain.

Drive chain adjustment

The motorcycle's drive chain must be adjusted regularly in accordance with the requirements to keep it in good condition. During adjustment, make sure that the chain is correctly aligned and tensioned. To check the chain slack correctly, move the drive chain up and down by hand. If the drive chain is too tight or too loose, adjust it so that the slack is within the standard range of 10–20 mm. If riding conditions are severe, the chain should be adjusted more frequently than specified in the periodic maintenance schedule. If the motorcycle is ridden for a long period without adjusting the drive chain, the chain will stretch due to wear or deformation. Excessive chain slack may cause accidents or serious engine damage. Adjust the drive chain as follows.



(1) Support the motorcycle on the centre stand and park it on firm, level ground. (2) Place the transmission in neutral. (3) Loosen rear axle locknut 1. (4) Loosen left and right locknuts 2. (5) Turn adjusting nuts 3 by the same number of turns on both sides until the drive chain slack is within the standard range. (6) To ensure that the drive chain is correctly aligned with the wheel, check that the scale marks on the left and right sides are in the same position relative to the adjusters. (7) Check the drive chain slack. (8) Retighten left and right locknuts 2. (9) Tighten rear axle locknut 1. (10) Check the chain slack again.

- Turn the adjusting nut clockwise to tighten the drive chain.
- Turn it anticlockwise to loosen the drive chain.

1. Rear axle locknut
2. Locknut
3. Adjusting nut
4. Alignment mark

- The marks on both sides must be aligned. If they are not aligned, turn the adjuster bolt on the left or right-hand side until the marks on both sides are aligned.

Tightening torques:
Rear axle locknut: 60–70 Nm
Locknut: 20–30 Nm

WARNING:

1. Wheel misalignment may cause abnormal tyre wear and lead to dangerous riding conditions. Incorrect drive chain adjustment may cause the engine or other important motorcycle components to seize or break. To prevent this, keep the chain adjustment within the specified range.

NOTICE:

2. After adjustment, visually check that alignment marks (4) are in the same position on both sides.

TYRES

Check the tyres before every ride. Check the tyres for cuts, cracks, exposed fabric, embedded nails or other foreign objects in the sidewalls or tread. Also check whether the tread depth at the centre has reached the specified limit and whether there are any bulges or abnormal swelling on the tyre sidewall. During periodic maintenance, make sure that the tyre pressure and tread depth are checked. To ensure maximum safety and a long service life, carry out these checks regularly in addition to routine maintenance.

The tyre type fitted to your motorcycle is:	
Front tyre	100/90-18
Rear tyre	130/80-17

NOTICE:

1. Using poor-quality tyres may cause problems. We strongly recommend using tyres of the specified standard. Correct tyre inflation pressure is very important for the motorcycle's performance and safety. Check the tyre pressure and condition frequently.

Basic parameter	Pressure
1 person	Front: 2.25 bar Rear: 2.25 bar
2 people	Front: 2.25 bar Rear: 2.25 bar

WARNING:

1. If you notice a drop in tyre pressure, check the tyre for nails or other sharp objects, small punctures and damage to the sidewall or wheel rim. Tubeless tyres deflate gradually when they have small punctures.

NOTICE:

2. Tyre pressure is affected by ambient temperature and altitude. Therefore, if the temperature or altitude changes while riding, check and adjust the tyre pressure.

Tyre condition

Riding with excessively worn tyres will reduce stability and may result in loss of control. Tyre wear also affects the tyre profile and alters its performance. Check the tyre condition and pressure every day before riding. If the tyre is visibly damaged or worn to the limit, replace it.

Tread wear indicator (△TWI)

Tread

WARNING:

1. The front and rear tyres must be of the same make and design. Otherwise, differences in their handling characteristics may cause an accident.

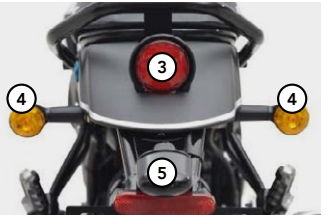
NOTICE:

1. The triangular marks indicate the position of the tread wear indicators. If a tread wear indicator is flush with the tyre surface, the tyre has reached its wear limit. The tyres must then be replaced.
2. After replacing a tyre, ride at a moderate speed at first, as the tyre surface must be run in before it can provide optimum performance.

HEADLIGHTS. TAIL LIGHTS. INDICATORS

All the lights on this motorcycle are LED: the headlight, tail light, indicators and number plate light. They are more durable than conventional bulbs. However, because of their design, if they are damaged they must be replaced as complete units. In the event of a fault, we recommend that you do not attempt to repair them yourself. Take the motorcycle to your dealer or local distributor for repair.

1. Headlight
2. Front indicators



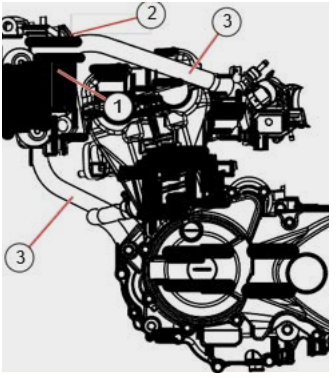
3. Tail light
4. Rear indicators
5. Number plate light

NOTICE:

1. Before working on any electrical component, switch it off to prevent short circuits. When replacing a bulb, follow the manufacturer's instructions to avoid injury or damage.

COOLING SYSTEM

On motorcycles equipped with a liquid-cooling system, engine heat dissipation is greatly improved, helping the engine operate within the correct temperature range. The cooling system plays an important role in engine performance and service life. Proper maintenance of the cooling system helps the engine operate at a stable temperature and extends its service life.



(1) Radiator The radiator tubes must be free from damage and the cooling fins must be in good condition. Clean dust and dirt from the fins regularly to ensure effective heat dissipation. Repair or replace damaged tubes and fins immediately.
(2) Coolant expansion tank Stores the coolant required for circulation through the cooling system. The expansion tank is connected to the main coolant tank, allowing for thermal expansion and contraction of the coolant. When the engine is hot, excess coolant flows from the main reservoir into the expansion tank, where it is held temporarily. When the coolant level falls, coolant returns from the expansion tank to the main tank to maintain the correct level. The

coolant level in the expansion tank should remain around half full or above.
(3) Coolant hose Make sure that both ends of each coolant hose are securely connected and that there are no leaks. Inspect the hoses regularly for cracks and replace them if necessary.

NOTICE:

1. Do not use a high-pressure water jet to clean the radiator, as this may damage the radiator fins and reduce heat dissipation efficiency. Do not install accessories in front of the radiator or behind the fan, as this may obstruct or alter the airflow through the radiator, causing the engine to overheat and become damaged.

Coolant
Select a coolant with a high-quality standard as antifreeze, anti-boil, and anti-corrosion. The main function of the coolant is to cool the engine and reduce its temperature, allowing it to continue operating correctly and protecting its components. Do not use coolant that has already been opened or has expired, as this may cause premature damage to the cylinder block and radiator cooling components or shorten engine life.

Coolant selection
(1) To prevent chemical reactions caused by precipitation or corrosion, do not mix different types of coolant. (2) Select the coolant according to the minimum local temperature range. As a general rule, choose a coolant with a freezing point 5–10°C below the lowest local temperature to allow for changes in weather conditions.

Checking the coolant
As the coolant level varies with engine temperature, allow the engine to cool before checking the coolant level in the expansion tank.
(1) Park the motorcycle on firm, level ground. The motorcycle may be held upright using a lifting stand. (2)

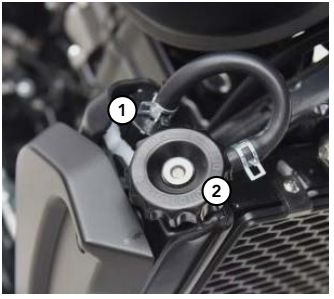
Remove the right-hand radiator tank cover. (3) Check the coolant level in the expansion tank. (4) If the coolant level is below the minimum mark on the expansion tank, top it up.

NOTICE:

1. If the expansion tank is empty, have the cooling system repaired immediately before adding coolant.

Adding coolant

(1) Open main reservoir cap 1 and expansion tank cap 2. (2) Place a suitable container, such as a funnel, in the filler opening of the main reservoir and add coolant until the level reaches the reservoir opening. If the coolant is already level with the reservoir opening, no more needs to be added. (3) Add coolant to the expansion tank until the level reaches at least half the tank capacity. (4) After topping up, refit main reservoir cap 1 and expansion tank cap 2.



WARNING:

1. Coolant is harmful. Swallowing or inhaling it is hazardous to health. Do not allow coolant to come into contact with the skin, eyes or clothing. If it comes into contact with the eyes, rinse immediately with clean water and seek medical attention. If it comes into contact with the skin or clothing, wash the affected area immediately with soap and water. If accidentally swallowed, seek medical attention immediately. Keep coolant out of the reach of children and handle it carefully.
2. Do not open the coolant reservoir cap while the engine is hot, as hot coolant may spray out and cause burns.

NOTICE:

1. If the coolant level falls due to a leak in the cooling system, top up with the same type of coolant.

Changing the coolant

The coolant must be replaced regularly in accordance with the periodic inspection and maintenance schedule. We recommend entrusting this work to the designated dealer or an authorised workshop.

- Coolant replacement interval:
  every 2 years or 20,000 km

- Coolant replacement capacity:
  1,100 ml

EFI SYSTEM

ECU

The Electronic Control Unit (ECU) is located beneath the fuel tank. This component is the main part of the EFI system. Its function is to receive information from the various sensors, determine the current operating condition of the engine and send signals to the fuel injection and ignition systems. Protect it from impact and rain, and keep it away from strong electromagnetic fields while riding. If the ECU is damaged, the motorcycle cannot be ridden.

Points requiring attention:

(1) When connecting the ECU and wiring harness connector, make sure that the system power supply is switched off. Do not disconnect the ECU while the ignition switch is ON. (2) Prevent the exposed pins of the ECU or ECU wiring harness connector from coming into contact with any live part of the motorcycle body. (3) The ECU is an electronic component. Faults are generally uncommon, but if one occurs, it can be detected easily and the module must be replaced. Never remove the ECU from the motorcycle while the ignition switch is ON, as this may cause irreversible damage. During maintenance, check whether any cables are disconnected or damaged and make sure that the connector is securely fitted to prevent ECU damage caused by vibration or impact. Take care when disconnecting the ECU connector.

Protect the ECU when washing the motorcycle. Do not allow the ECU to come into contact with water, as this may damage it through a short circuit or other fault.

Fuel pump

The fuel pump is fitted at the bottom of the fuel tank. During operation, fuel is drawn from the fuel tank and delivered to the high-pressure fuel line after being pressurised. When cleaning, fitting or replacing the fuel pump, tighten the bolts diagonally. When fitting the high-pressure fuel line, make sure that it is not twisted or bent at the outlet.

Points requiring attention:

(1) Make sure that there is sufficient fuel in the tank. Do not allow the fuel pump to run dry or with insufficient fuel. Otherwise, the fuel pump may be damaged internally. (2) When replacing the fuel pump, take care to prevent dust from entering. Special tools must be used to remove the fuel pump. After removal, prevent fuel from spilling and drain it into a suitable container. Take care not to drop the fuel pump while carrying out this work, as this may cause internal damage. Keep the pump away from naked flames and other sources of heat or ignition.

THROTTLE BODY ASSEMBLY

The throttle body assembly includes the throttle body, throttle position sensor, intake air temperature and pressure sensors, and an idle speed stepper motor. The rider operates it directly using the throttle grip. The throttle opening determines the amount of air entering the engine and is measured by the throttle position sensor. Damage to the throttle position sensor will prevent the motorcycle from operating correctly. If the throttle valve control does not return smoothly, this may cause a serious accident and must be repaired immediately.

1. Throttle body assembly
2. Fuel injector
3. Intake pipe

Points requiring attention:
(1) The throttle body assembly connector must be fitted correctly to prevent damage to the terminal. (2) To ensure correct operation, prevent liquid from entering the throttle body. (3) Prevent dust or small particles from blocking the bypass passage, as this will affect idle stability. (4) Do not adjust the idle screw, as this will affect idle airflow. (5) Do not remove the throttle position sensor, as this will affect the sensor's idle voltage. (6) Do not remove the idle speed stepper motor, as this will affect the idle airflow.

FUEL INJECTOR

The fuel injector is fitted in the intake pipe. Its function is to inject fuel into the engine intake port at the correct time and in the correct quantity, in accordance with signals from the ECU. Damage to the fuel injector may affect the normal operation of the motorcycle.

Points requiring attention:
(1) Do not immerse the injector tip in lubricant, as this may block the injection port. (2) Do not operate the injector without fuel pressure, as this may damage its components. (3) Do not strike the injector if a fault occurs, as this may damage it. (4) When fitting the injector, take particular care not to cut the sealing ring on the mounting seat.

OXYGEN SENSOR

The oxygen sensor is fitted at the front end of the exhaust pipe to detect the oxygen concentration in the exhaust gases. The ECU uses this information to adjust the amount of fuel injected and maintain the optimum air-fuel ratio. A faulty oxygen sensor may cause high fuel consumption or loss of power. Replace it immediately.

Points requiring attention:
(1) Take care when fitting the oxygen sensor. Do not drop or strike the oxygen sensor, as its ceramic interior is fragile. (2) Route the oxygen sensor wiring harness as far away from the exhaust pipe as possible to prevent chafing and mechanical damage. (3) Do not remove the specified high-temperature lubricant from the oxygen sensor thread. Removing the sensor from the silencer may be difficult because the two parts can seize together. (4) Do not use cleaning fluids or lubricants on the oxygen sensor plug connection. Incorrect use may contaminate the oxygen sensor.

Precautions for the EFI system

(1) Do not remove any EFI system component or connector from its fitted position without good reason, as this may cause accidental damage or allow foreign matter such as water or oil to enter the connectors, affecting normal EFI system operation.

(2) To prevent short circuits or system damage caused by poor electrical contact, before replacing, fitting or removing any electrical system component, first turn the ignition key to the OFF position and disconnect the battery wiring. (3) The fuel supply pressure in the EFI system is relatively high, and all fuel lines are made from high-pressure-resistant fuel hose. Even when the engine is not running, high fuel pressure remains in the fuel circuit. Therefore, take care not to disconnect the fuel line accidentally during maintenance. When the fuel system needs to be repaired, depressurise it before repairing the fuel line. Fuel lines must be removed and replaced by qualified personnel in a well-ventilated area. (4) When removing the electric fuel pump from the fuel tank, do not energise the fuel pump, as this may cause electrical sparks and fire. When starting the motorcycle for the first time after refuelling, removing the fuel line or replacing the fuel pump, there may be air bubbles in the fuel line. Wait one minute or turn the ignition switch on and off several times until the fuel pump self-check sound gradually becomes quieter and the engine can start normally. (6) After replacing the fuel pump or draining the fuel from it, several starting attempts may be required before the engine starts again. If the engine still does not start, check whether the fuel pump or fuel injector is operating. If the fuel pump is operating correctly, check whether the fuel injector is injecting fuel. (7) As the idling speed is controlled entirely by the electronic fuel injection system, no manual adjustment is required. The throttle body stop screw is factory-set and the user must not alter its original position. (8) To prevent damage to the terminals or wires, never pull forcefully on the sensor wiring. During installation,

make sure that the sensors are fitted in their correct positions. Otherwise, the motorcycle will not operate correctly. (9) All EFI component connectors must be fitted correctly and the connections must be checked to make sure that they are in good condition. The wiring to all connectors must not be pulled too tightly and sufficient slack must be left. Never pierce the cable insulation to check the component's electrical input and output signals. (11) EFI system faults are related to the electrical circuit. As a general rule, check the circuit first.
The most common circuit fault is poor electrical contact, which may sometimes be difficult to detect or reproduce. Check components where poor contact may occur, such as the battery wiring, fuses, ignition coil connector and other connectors. (12) Check that the connections at both ends of the throttle body assembly are securely tightened. If there is an air leak or a loose connection is detected, rectify it immediately. Otherwise, the system may become unstable and the motorcycle may not operate correctly. (13) Regularly check the sensor for obvious signs of damage or deterioration. If any damage is found, replace the affected parts with new ones, as they cannot be repaired. Check whether the connecting wires are loose or disconnected, frayed,

short-circuited or broken, and whether the cable connectors are properly plugged in. Also check that all components are correctly positioned and look for signs of corrosion or oxidation. Any faults must be rectified. Where conditions permit, measure the voltage and resistance at the terminals of each sensor to check that they are within the specified range.

ELECTRONIC FUEL INJECTION SYSTEM FAULT CODES

No. Series	Error code	Description
1	P0118	Engine coolant temperature sensor circuit high/open circuit
2	P0117	Engine coolant temperature sensor circuit low
3	P0116	Engine coolant temperature sensor circuit range/ performance
4	P1116	Engine coolant temperature sensor out of range
5	P0335	Crankshaft position sensor “A” circuit
6	P2301	Ignition coil “A” primary control circuit high
7	P2300	Ignition coil “A” primary control circuit low/open circuit
8	P0123	Throttle position sensor/switch “A” circuit high

9	**P0122**	Throttle position sensor/switch “A” circuit low/open circuit
10	**P0232**	Fuel pump short circuit high
11	**P0231**	Fuel pump short circuit low/open circuit
12	**P0601**	Internal control module memory checksum error
13	**P0262**	Cylinder 1 fuel injector circuit “A” high
14	**P0261**	Cylinder 1 fuel injector circuit “A” low/open circuit
15	**P0108**	Manifold absolute pressure sensor circuit high
16	**P0107**	Manifold absolute pressure sensor circuit low/open circuit
17	**P3106**	Manifold absolute pressure sensor performance
18	**P0105**	Manifold absolute pressure sensor circuit malfunction
19	**P0113**	Intake air temperature sensor circuit high/open circuit
20	**P0112**	Intake air temperature sensor circuit low
21	**P0111**	Intake air temperature sensor circuit range/performance

22	**P0114**	Intake air temperature sensor performance
23	**P0132**	O_2 sensor circuit high voltage, bank 1 sensor 1
24	**P0131**	O_2 sensor circuit low voltage/open circuit, bank 1 sensor 1
25	**P2195**	O_2 sensor lean signal, bank 1 sensor 1
26	**P014D**	O_2 sensor slow response, lean to rich, bank 1 sensor 1
27	**P014C**	O_2 sensor slow response, rich to lean, bank 1 sensor 1
28	**P0031**	O_2 sensor heater control circuit low, bank 1
29	**P0032**	O_2 sensor heater control circuit high, bank 1
30	**P00D1**	O_2 sensor 1 heater current sensor circuit low
31	**P0301**	Cylinder 1 misfire detected
32	**P0505**	Idle air control system fault

9. Troubleshooting guide

Although the motorcycles undergo a thorough inspection before delivery, operating faults may still occur. Problems with the fuel system, engine compression or ignition system may cause loss of power and prevent the engine from starting. The troubleshooting table below provides quick and simple checks that you can carry out yourself. However, if the motorcycle requires repair, take it to your dealer, who has the qualified technicians, tools and specialist knowledge required to repair it properly.

NOTICE:

1. Before attempting to resolve the problem, it is best to consult your dealer. If your motorcycle is still within the warranty period. Consult your dealer before carrying out any repairs. Otherwise, altering the motorcycle during the warranty period may invalidate your warranty rights.

If the engine does not start, carry out the following checks to determine the cause.

Check the fuel and oil supply

(1) Make sure that there is sufficient fuel in the tank. (2) Check that the fuel pump is operating normally. (3) Disconnect the fuel line from the injector and check that fuel flows from the fuel filter to the injector and that there are no air leaks.

Checking for intermittent sparking in the ignition system.

(1) If there are no problems with the fuel supply, check the ignition system.
(2) Remove the spark plug and reconnect it to the high-tension lead. (3) Position the spark plug, turn the ignition switch to position "⟳" and, with the engine stop switch in position "⟳", press the starter button. If the ignition system is operating normally, a blue spark will jump between the spark plug electrodes. If there is no spark, contact an authorised service centre for repair.

Check the engine idling speed

WARNING:

1. Prevent fuel from spilling. Collect any fuel in a suitable container. Fuel may not be reaching the engine, and the exhaust pipe may be hot. Carry out this check as far away as possible from any naked flame. Keep fuel away from sources of heat or ignition.
2. Do not test the spark plug near the cylinder head, as fuel vapour in the cylinder may ignite and cause a fire. To reduce the risk of electric shock, make sure that the metal body of the spark plug is in contact with the motorcycle frame. To prevent electric shock, this procedure must not be carried out by anyone with a heart condition or fitted with a cardiac pacemaker.

Troubleshooting example

Incorrect operation		Cause	Solution
Engine does not start		1. Engine stop switch is not ON 2. No fuel in the tank 3. Side stand not fully raised 4. Blocked filter 5. Blocked fuel hose 6. Faulty spark plug	1. Set the engine stop switch to ON. 2. Fill the tank with fuel 3. Raise the side stand fully. 4. Clean the filter. 5. Replace or clean the fuel hose. 6. Replace the spark plug.
Engine is difficult to start or stalls easily.	**Weak spark or no spark**	1. Dirty spark plug. 2. Faulty magneto. 3. Switch off the ignition coil. 4. High-tension lead leakage. 5. Ignition coil fault.	1. Clean and dry the spark plug. 2. Repair or replace the magneto. 3. Inspect the circuits and connect them correctly. 4. Replace the high-tension lead. 5. Replace the ignition coil.

The engine starts but it continues	**Engine**	1. Leak in the intake pipe. 2. Incorrect ignition timing. 3. Battery low or discharged. 4. Wiring harness connector not connected. 5. Throttle position sensor fault.	1. Check for leaks and replace the gasket secured by the bolt 2. Readjust the ignition timing. 3. Charge the battery. 4. Check the wiring harness connector and connect it. 5. Check the fault code and inspect whether the throttle position sensor is loose.
The engine turns over but does not start.	**Remove the spark plug and check the electrode.**	1. If the spark plug is wet. 2. If the spark plug is dry	3. Clean it with a dry cloth, check and adjust the spark plug gap, or replace the spark plug. 4. Ask your dealer to inspect the motorcycle.

The engine runs poorly.	**Low engine idling speed.**	1. Incorrect valve clearance. 2. Incorrect ignition timing 3. Loose intake pipe or leaking gasket. 4. Weak spark or no spark. 5. The oil passage is partially blocked.	1. Adjust the valve clearance and check whether the rocker arm screw is damaged. Replace it if necessary. 2. Readjust the ignition timing. 3. Replace the intake pipe gasket and tighten the bolt 4. See “Weak spark or no spark” for the solution. 5. Drain the fuel line

The engine runs poorly.	**Poor performance at high engine speed.**	1. Incorrect ignition timing. 2. Incorrect valve clearance. 3. No fuel. 4. Blocked oil passage. 5. Incorrect valve timing. 6. Valve spring failure.	1. Readjust the ignition timing. 2. Readjust the valve clearance. 3. Fill with fuel. 4. Replace the oil line. 5. Readjust the valve timing. 6. Replace the spring.
Engine noise.	**Valve noise.**	1. Excessive valve clearance. 2. Valve wear.	1. Readjust the valve clearance. 2. Repair or replace the worn valve components.

Engine noise.		1. Piston or valve wear. 2. Carbon deposit in the cylinder. 3. Wear of the piston pin and piston pin bore. 4. Clutch spring failure. 5. Chain wear.	1. Replace the piston or valve. This work must be carried out by qualified personnel. 2. Remove the carbon deposits. 3. Replace the piston and piston pin. This work must be carried out by qualified personnel. 4. Replace 5. Replace
Spark plug normal.	**Low cylinder compression.**	1. Loose starter arm assembly cannot turn the engine. 2. Valve clearance too small. 3. Sticking valves. 4. Cylinder or piston ring wear. 5. Damaged cylinder head gasket.	1. Retighten the starter arm. Replace it if damaged. 2. Adjust the valve clearance. Intake: 0.10–0.15 mm when cold. Exhaust: 0.15–0.20 mm when cold. 3. Remove the carbon deposits. This work must be carried out by qualified personnel. 4. Replace the gasket. This work must be carried out by qualified personnel. 5. Replace the sealing gasket. This work must be carried out by qualified personnel.

10. Cleaning and storage

Before cleaning and storing the motorcycle, park it on a firm, level surface and make sure that it is stable. Prepare the necessary cleaning equipment, such as buckets, soft cloths, soft brushes and neutral cleaning products specifically intended for motorcycles. When washing the motorcycle, do not increase the water pressure or use a high-pressure water jet. Do not spray water onto sensitive areas such as the EFI system, electrical components, fuel system, exhaust pipe or other components. If the motorcycle is to be stored or will not be used for more than 60 days, clean it first and take the necessary storage precautions to prevent damage.

Cleaning
Before cleaning, allow the engine, silencer, brakes and other high-temperature components to cool.

(1) Cover the silencer outlet with a plastic bag to prevent water from entering. (2) Wash the motorcycle thoroughly using a low-pressure hose to remove loose dirt. (3) Mix a neutral detergent with water in a suitable container. Clean the motorcycle with a sponge or soft cloth. Use a soft brush or bottle brush for areas that are difficult to reach. If necessary, use a mild detergent to remove accumulated grease, but do not apply it to oil seals, cylinder head gaskets, the drive chain or wheel axles. (4) After cleaning, rinse the motorcycle carefully with clean water to remove all residue and prevent damage to its components. (5) After washing, dry the motorcycle with a soft, absorbent cloth. While drying it, check the motorcycle for dents or

scratches.
(6) Start the engine and allow it to idle for a few minutes. The heat from the engine will help dry any damp areas. (7) Lubricate the drive chain to prevent corrosion. (8) Lubricate all moving parts and bearings. (9) To prevent corrosion, we recommend applying a layer of rust inhibitor to all chrome-plated, nickel-plated and other metal surfaces. (10) Wax the painted surfaces to prevent corrosion. Rubber and plastic parts must be maintained using suitable products. (11) Wax the painted surfaces to prevent corrosion. (12) Allow the motorcycle to dry completely before storing or covering it.

NOTICE:

1. Do not use a high-pressure water jet to wash the motorcycle.
2. Do not use steel wool or other abrasive cleaning materials on aluminium components.
3. Do not apply wax to unpainted rubber or plastic parts.

Storage

Store the motorcycle in a cool, dry place. If the motorcycle is parked off the road, consider using a full motorcycle cover to protect it from dust. If the motorcycle will not be used for a long period, follow these guidelines:

(1) Clean the entire motorcycle thoroughly. (2) Run the engine for approximately five minutes to warm the oil, then switch off the engine and drain the engine oil. (3) Add new engine oil. (4) Drain the fuel tank, fuel pump and fuel line, and remove any remaining fuel from the fuel line. (5) Check the tyres and adjust the tyre pressure. Place the motorcycle on a suitable stand or support the front and rear wheels on blocks so that neither tyre touches the ground, and prevent the rubber tyres from becoming damp. (6) Lubricate the drive chain, all control cables, axles, side stand and associated mounting points. (7) Cover the silencer outlet with a plastic bag to prevent moisture from entering. (8) If the motorcycle is stored in a damp or salty environment, apply a thin layer of oil to all metal surfaces to prevent corrosion. Take care not to apply oil to the motorcycle's plastic parts or seat, as this may cause premature deterioration. (9) Remove the battery and store it away from direct sunlight, moisture and temperatures below freezing. During storage, charge the battery once a month. Keep the battery fully charged, especially in cold weather. (10) Fit a dust cover to prevent dust and dirt from accumulating.

WARNING:

1. Petrol ignites very easily and may explode under certain conditions. Therefore, switch off the ignition before carrying out any work. Do not smoke. Make sure that the work area is well ventilated and free from any sources of heat or ignition.
2. Engine oil and petrol are toxic substances. Handle used engine oil and petrol correctly. Keep them out of the reach of children and observe all relevant warnings. Failure to do so may endanger human health.

NOTICE:

1. Store the motorcycle in a dry, well-ventilated place. If you frequently wash the motorcycle in the garage and store it there, the humidity level in the garage will be high. High humidity increases corrosion. If air does not circulate, the wet motorcycle may corrode even in a warm environment.
2. Carry out any necessary repairs before storing the motorcycle. After replacing a tyre, ride at a moderate speed at first, as the tyre surface must be run in before it can provide optimum performance.

11. Technical specifications

Load parameter	
Total length	**2100 mm**
Total width	**820 mm**
Total height	**1120 mm**
Wheelbase	**1440 mm**
Minimum ground clearance	**160 mm**
Unladen weight	**139 kg**
Maximum load capacity	**150 kg**
Max speed	**95 km/h**
Gradeability	**≥20°**
Starting performance	**≤15 s**

Wheels and brakes	
Front suspension	Hydraulic telescopic fork
Rear suspension	Oil-damped spring
Steering angle	Left/right: ≤48°
Front tyre size	100/90-18 56P
Rear tyre size	130/80-17 65P
Front tyre pressure	225 kPa
Rear tyre pressure	225 kPa
Wheel rims (front/rear)	Light alloy/Light alloy
Front wheel rim size	J18 × MT 2.50
Rear wheel rim size	J17 × MT 3.50
Front brake	Disc brake
Rear brake	Disc brake
Brake fluid	DOT 4

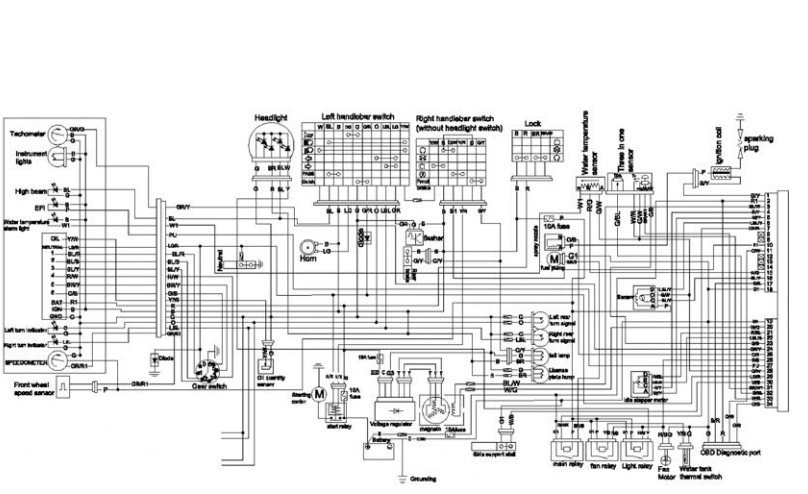
Engine	
Type	Liquid-cooled, four-stroke
Number of cylinders	One
Bore × stroke	58 mm × 47 mm
Engine capacity	124 ml
Compression ratio	12:1
Spark plug	CR9E
Rated power	9.5 kW at 9,500 rpm
Maximum torque	10.3 Nm at 6,500 rpm
Idling speed	1,600 ± 160 rpm
Ignition system	ECU-controlled electronic ignition
Lubrication system	Pressure and splash lubrication
Lubricant	SAE 10W-40/SJ
ECU model	SE 08

Transmission system	
Clutch	Wet multi-plate clutch
Transmission	Six-speed constant-mesh
Primary reduction ratio	3.350
Final reduction ratio	3.643
First gear	2.833
Second gear	1.875
Rated power	9.5 kW at 9,500 rpm
Third gear	1.421
Fourth gear	1.190
Fifth gear	1.043
Fifth gear	0.880

Engine		
Starting system		Electric starter
Headlight	Main beam	12 V 9 W
	Dipped beam	12 V 9 W
	Front position light	12 V 4 W
Tail light	Rear position light	12 V 0.4 W
	Brake light	12 V 2 W
Number plate light		12 V 5 W
Indicators		12 V 0,8 W
Horn		12 V 3 A
Battery		12 V 7 Ah

Fuse	Fuel pump / Headlight / Radiator fan	10 A
	ECU	10 A
	Motorcycle circuit	15 A
	Charging circuit	15 A
	Spare fuse	10 A/15 A
Fuel system and capacity		
Fuel		Use unleaded petrol only
Fuel capacity		14.5 L
Fuel pump	Rated voltage	12 V
	Operating pressure	350 kPa
Engine oil	Oil change only	1,100 ml
	Oil and oil filter change	1,200 ml
	Total oil capacity	1,400 ml

WIRING DIAGRAM



RED	BLACK	GREEN	BLUE	YELLOW	ORANGE	BROWN	PINK
R	B	G	BL	Y	O	BR	P
GREY	WHITE	PURPLE	LIGHT GREEN		LIGHT BLUE	DARK GREEN	
GR	W	PU	LG		LBL	GD	

12. Warranty conditions

Dear customer,

With the “Macbor Warranty” we aim to eliminate the possibility of any potential material, assembly or manufacturing defects causing inconvenience or expense. This warranty is intended to offer you the highest level of protection, provided you commit to following the established maintenance schedule and use original
materials and recommended oil, and always through an official Macbor dealer or authorised Macbor service centre. Following this maintenance schedule will help extend the service life of your vehicle while ensuring you enjoy it in the best possible condition. The warranty has no mileage limit and is valid throughout Spain.

FAILURE TO CARRY OUT THE INSPECTIONS ESTABLISHED IN THE MAINTENANCE PLAN WITHIN THE INDICATED PERIOD WILL INVALIDATE THE WARRANTY.

GENERAL WARRANTY TERMS

1. **Warranty conditions**
   Macbor guarantees that the vehicle covered by this warranty is free from defects in materials and construction. If any issue arises during the warranty period, you must go to an official Macbor dealer or authorised Macbor workshop to carry out the necessary repairs to ensure the proper functioning of your vehicle.

   THE WARRANTY IS VALID THROUGHOUT SPAIN.
   The warranty covers the replacement or repair of defective parts, including the labour required to carry out the operation.
   There is no limit to the number of repairs.

2. **Duration**
   Your motorcycle is covered for the period established by the applicable legal warranty in force on the date of registration. If the vehicle is unregistered, the warranty will start from the date of sale to the user.

3. **Warranty limitations**
   The warranty will apply in all cases where the Macbor Technical Assistance Service finds anomalies in the vehicle's performance due to material or assembly defects originating from the factory, excluding the parts listed under the "Exclusions" section.

4. Exclusions

The following are excluded from the warranty:

- Vehicles used in sporting competitions or for rental purposes.
- Vehicles that have been totally or partially modified.
- Vehicles repaired outside the authorised Macbor network.
- Vehicles repaired or modified using non-original Macbor parts.
- Vehicles modified with kits, even if manufactured or sold by Macbor, or in any way that alters the vehicle's original features.
- Vehicles that have not followed the established maintenance schedule.
- Vehicles not used according to the instructions provided by Macbor in the owner's
- manual and maintenance guide.
- Vehicles with tampered identification numbers on the chassis.
- Vehicles with damage due to misuse or improper handling.
- Noises caused by wear.
- The cost of the necessary maintenance interventions and the specific maintenance operations (change of spark plugs, oil, etc.).

PARTS, OPERATIONS AND DAMAGE NOT COVERED BY THE WARRANTY

Wear and consumable materials
Spark plugs, gaskets, seals (except engine seals), clutch, brake pads, brake shoes and brake discs, tyres and inner tubes, bulbs, LEDs, fuses, transmission and control cables, hoses and other rubber parts, bearings, starter motor brushes, air and fuel filters, petrol and oil, chain, secondary transmission sprocket and pinion, tools, fasteners, piston rings.

Brake fluid and lubricants
Oil, grease and other fluids specified by Macbor.

Aesthetic defects
Paintwork, bodywork and any aesthetic issue that does not cause serious safety defects or affect performance, as well as damage caused by weather conditions (rust, corrosion, colour changes, peeling adhesives, etc.) due to lack of maintenance, care or cleaning of the vehicle.

Damage
- Caused by **overheating** of the engine due to improper use or insufficient engine oil or coolant.
- Caused to **people or property** by traffic accidents or any other event, or in any case resulting from damage covered by Macbor's warranty.

- Resulting from **incidents or falls** not attributable to manufacturing defects and/or caused by careless driving or improper use of the vehicle.

5. Important notes regarding warranty validity

- These warranty conditions must be kept in their entirety and shown to the official Macbor dealer or Macbor authorised workshop together with the confirmation that the periodic checks have been carried out for each repair request.The warranty may be transferred to future owners until the end of the warranty period.Macbor reserves the right to introduce modifications or improvements to any of its models without being obliged to apply such modifications to vehicles already in circulation.

How to request a repair

F. Go to an official Macbor dealer or authorised Macbor service centre.
G. Check whether the part(s) causing the fault are covered by the warranty.
H. Ensure that the warranty conditions have been met.
I. Submit:
   Copies of invoices for the periodic maintenance checks recommended by Macbor.
J. The dealer will report the fault to Macbor's Warranty Service, which will analyse the issue and inform the dealer of the outcome.

7. Maintenance instructions

The description and frequency of the regular maintenance required for your motorcycle are provided in the user manual supplied with the motorcycle. It is the owner's responsibility to ensure that the maintenance checks are carried out according to Macbor's recommended schedule. The cost of maintenance checks are borne by the customer.

ATTENTION

To avoid invalidating the warranty, it is essential to:

- Perform the periodic maintenance checks specified by Macbor.
- Have them carried out at an official Macbor dealer or authorised service centre.

8. Transfer of ownership

The warranty may be transferred to subsequent owners until the end of the original warranty period.

9. Disclaimer

Macbor shall be released from the obligation to provide this warranty, in addition to the cases outlined in section "4. Exclusions", in the event that a repair request is found to be false, misleading and/or dishonest regarding the defect, the stated mileage, and/or any other inaccurate claim. If it becomes clear during the course of the repair that the issue is

not covered under this warranty, the full cost incurred up to that point must be borne by the vehicle owner, even if Macbor initially agreed to proceed with the repair on a provisional basis.

10. Reservation of Rights

Macbor reserves the right to inspect the vehicle and/or the part causing the defect in order to determine whether the warranty is applicable. It is the responsibility of the Macbor Warranty Service to notify the customer of this requirement within 7 days of receiving the repair request.

Macbor
Avda. Castellbisbal, 120 08191 Rubí (Barcelona)
Tel. +34 935 881 133 Fax. +34 935 883 049
eresdelosnuestros@macbor.com
www.macbor.com

First edition: May 2024

PRINTED IN SPAIN

macbor
SMART YOURSELF

Avda. Castellbisbal, 120 08191 Rubí (Barcelona)
Tel. +34 935 881 133 Fax. +34 935 883 049
eresdelosnuestros@macbor.com

www.macbor.com