



Your Sachs dealer

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SACHS
Recommends



SACHS

Fahrzeug- und Motorentechnik GmbH



owners manual



MADASS

PREFACE

**You have purchased a Sachs MadAss
Congratulations – and thank you for
putting your trust in us.**

The MadAss is a sturdy light motorcycle in modern design.

Its sound construction, the meticulous selection of materials, the advanced manufacturing techniques and conscientious work of dedicated employees provide the motorcycle with all the characteristics that are typical of Sachs: economical operation, quality, reliability and a high residual value.

Because the factory is continuously involved with the further development of all models, we reserve the right to change the scope of delivery in the form of model versions and technology.

Technical changes to the standard motorcycles can void the EC operating license. Therefore before implementing a change, ask a specialized dealer whether it is allowable.

We cannot be held liable for any consequential damage caused by accessories not approved by the factory.

The scope of delivery and version of the motorbike is determined by the purchase agreement concluded with the dealer.

This operating manual includes important instructions for handling a light motorcycle. Read it carefully, because professional treatment – in addition to regular care and maintenance – serves to maintain the motorbike's value and is one of the requirements for guarantee claims.

We wish you at all times a safe journey.

SACHS Fahrzeug- und Motorentechnik GmbH

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Safety symbols and notes

Observe the following:



WARNING

Precautionary measures against the risk of accidents, injury and/or death.



FIRE HAZARD

The bike is supplied with a catalyst. The exhaust system becomes very hot. While riding, idling or parking, make sure that no easily inflammable materials (such as hay, leaves, grass, coverings, luggage, etc.) can come into contact with it.



CAUTION

Important instructions and precautionary rules to be followed in order to prevent the motorbike from being damaged. Non-observation can lead to the guarantee becoming void.



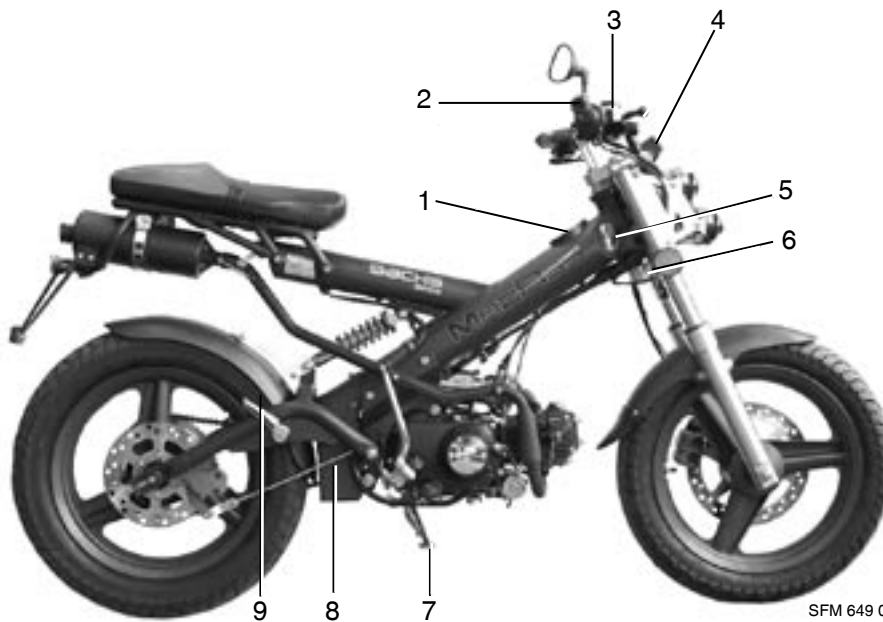
NOTE

Special instructions for better handling during operation and inspection and when carrying out adjustment procedures and service activities.

SUMMARY AND OPERATION

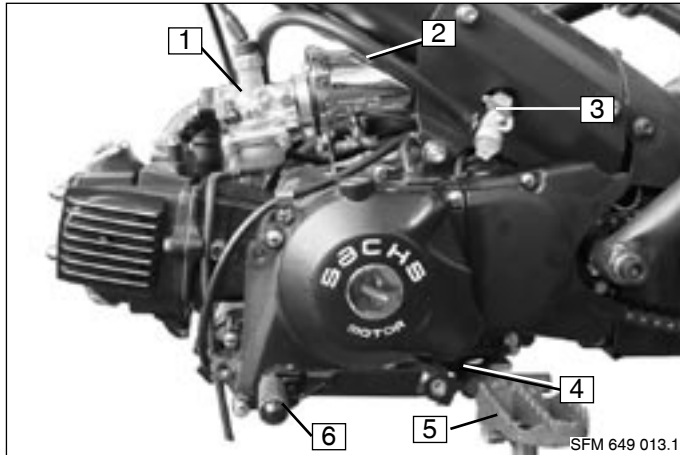
Right-hand side view

- 1 Fuel tank cap
- 2 Handlebar fittings
- 3 Brake fluid reservoir front brake
- 4 Speedometer
- 5 Chassis number and rating plate
- 6 Fork column lock
- 7 Side stand
- 8 Battery and fuse
- 9 RH pillion footrest, fold-up



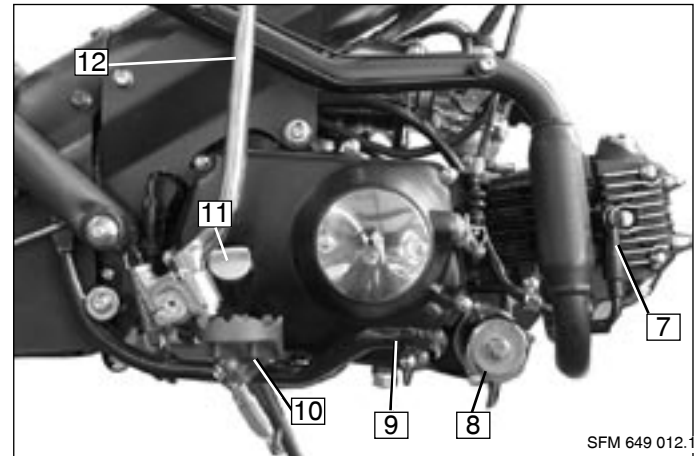
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Engine left-hand side view



- 1 Carburrattor
- 2 Air filter
- 3 Fuel cock with filter
- 4 Engine number
- 5 LH Foot rest
- 6 Gear lever

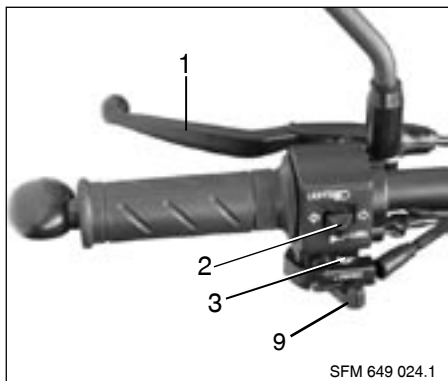
Engine right-hand side view








- 7 Spark plug connector
- 8 Electric starter
- 9 Footbrake lever
- 10 RH footrest
- 11 Oil filler cap
- 12 Kick starter

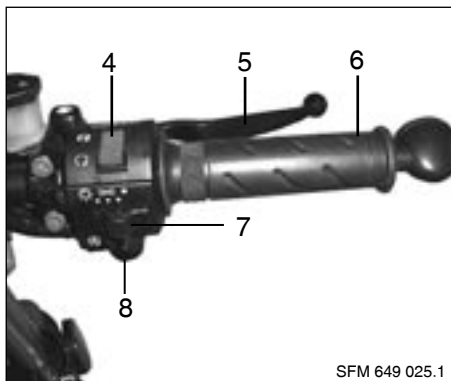
SUMMARY AND OPERATION







Left-handle handlebar fittings



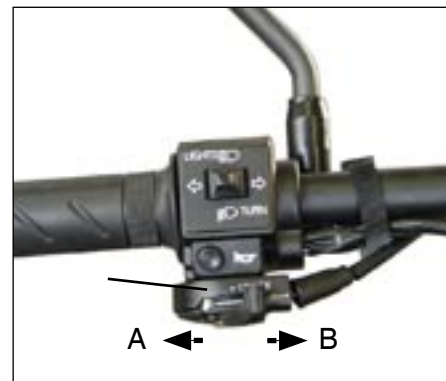
- 1 Clutch lever
- 2 Head light switch
 -  Push button upwards for the upper low beam
 -  Push button downwards for the below low beam
- 2 Direction-indicator switch
 -  Push to the left: left-hand direction indicators are activated
 -  Push to the right: right-hand direction indicators are activated
- 3  Push-button horn


Right-handle handlebar fittings



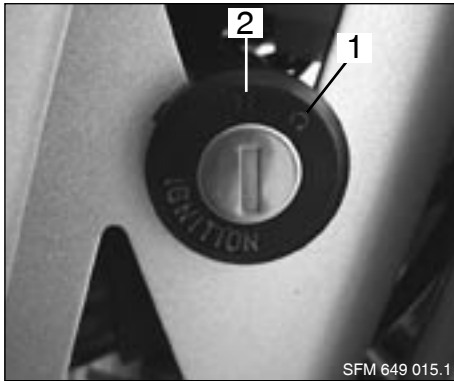
- 4 Emergency off switch
 -  engine will not start
 -  engine starts
- 5 Handbrake lever
- 6 Throttle
- 7 light switch
 -  off
 -  position light
 -  driving light
- 8  Starter button

Choke lever right





- 9 Choke lever ()
Operating positions:
 - A Cold start
 - B Warm start

Ignition-lock




Key positions

1 =  Operating position: ignition and all circuits activated.

2 =  Ignition off.



WARNING

While riding, do not switch the ignition off !



NOTE

Activate the parking light only for a limited period. Take into account the charge of the battery.

The key can be removed in positions .

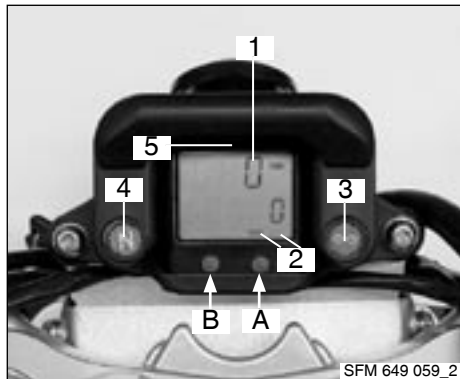


NOTE

The ignition-lock as well as the tank cap are operated with the same key.

SUMMARY AND OPERATION

Cockpit



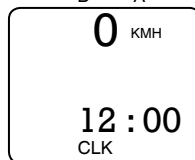
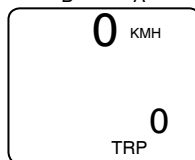
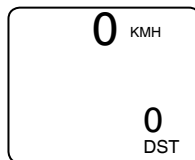
Seedometer

- 1 KMH - odometer or switchable on MPH - speedometer (in miles)
- 2 DST - total distance (km)
TRP - trip odometer
CLK - time announcement

Instrument lights

- 3 Right and left direction indicator \leftrightarrow green
- 4 Change-over gear Neutral (N) N green
- 5 Speedometer light

Speedometer set-up



Button A press once
set-up from odometer
(DST) to trip odometer (TRP)

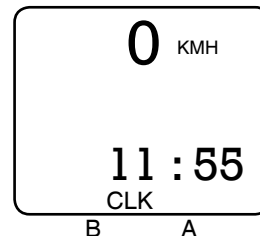
or

Button A press once
set-up from trip odometer (TRP)
to clock (CLK)

or

Button A press once
set-up from clock (CLK) to odo-
meter (DST)

Speedometer time adjustment



Button B press once
the clock (CLK) appears
the time can be set.

Button B press once the hour signal is
flashing
set the hours by pressing button
A.

Button B press once the minute signal is
flashing
set the minutes by pressing
button A.

Button B press once the time is set
and (:) is flashing.

Speedometer battery change



NOTE

If there is no reading on the display or very poor change the batteries. Always replace both batteries.

Remove the speedometer for battery change.

- Remove the screws (1) and take off the speedometer.



- Remove the screws (2) and take off the cover (3).

Conversion of kilometer to miles

In order to change the speedometer from kilometer to miles, the key (5) must be pressed approximately 2 seconds with a ball-point pen.



- Remove the batteries (4) and replace against new once, type AG 13.
- Set-in the batteries with the plus terminal showing upwards.
- Close the cover (3) properly.



NOTE

The batteries must be changed within 30 seconds, so that the odometer memory is not deleted.



DISPOSAL

Take a dead battery to a collection point. Never dispose of one with household refuse.

SAFETY TEST

Checklist

Before each ride, carry out a safety check using the checklist.

Take the safety check seriously. Carry out maintenance activities before you start your ride (⇒ MAINTENANCE) or ask a specialized Sachs dealer to do so. This will provide you with the certainty that your motorcycle corresponds to traffic regulations. A technically faultless motorcycle is a basic requirement for the safety of both yourself and other road users.

Before starting your ride, check the following:

- Steering (smooth and free of play)
- Clutch lever play
- Fuel quantity
- Engine oil (level)
- Front brake
- Rear brake
- Tyres (profile and pressure)
- Telescopic fork
- Load / lights

- Total weight
- Lights
- Clutch (operation)
- Brake fluid (level)
- Brakes (operation)

In case of problems or difficulties, contact a Sachs dealer, who will do everything possible to assist you.



WARNING

While the engine is running or the ignition is on, do not touch the ignition system.



FIRE HAZARD

The exhaust system becomes very hot. While riding, idling or parking, make sure that no inflammable materials (e.g. hay, leaves, grass, coverings or luggage, etc.) can come into contact with it!

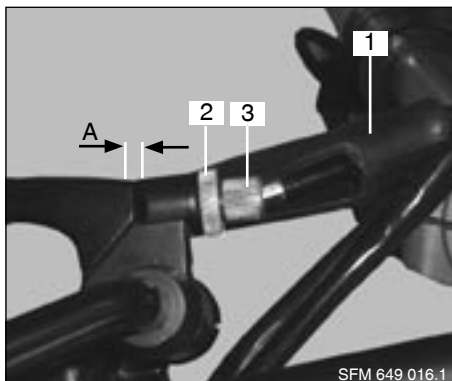
Important notes for the operation with a catalyst.

The catalyst is designed for an optimal performance and lifetime. Note the following:

- Operate a catalyst bike only with lead free fuel.
- Don't turn off the ignition if the bike still rolls.
- Don't drive on at misfiring, decline in performance and poor engine run.
- In case of problems, contact the next Sachs dealer.
- Longer starting tests by moving the bike in cold or warm operating state should be refrained.

At the mentioned operating states unburned fuel can reach the catalyst, burn and cause overheating of the exhaust system.

Clutch



Clutch lever play



CAUTION

If you drive with no clutch lever play, the clutch will be damaged.

Checks:

- Pull the lever until there is discernable resistance.
- Measure the play. Required value:
A = min. 3-4 mm

Adjustment:

- Remove the rubber cap (1).
- Release the lock nut (2).
- Turn setting screw (3) as appropriate.
- Tighten up the lock nut (2).
- Check the play.

If this adjustment is not sufficient, adjust by turning the setting screw at the other end of the clutch cable in the direction of the engine

➡ MAINTENANCE.

SAFETY TEST

Fuel



WARNING

Fuel is highly inflammable and can explode. Do not smoke or bring a naked flame near the fuel tank.



Tank cap (1)



NOTE

For opening the tank cap (1) only insert the ignition key (3) and do not turn. Open by using the cover (2).

The fuel-tank cap (1) is designed to allow for ventilation. Do not make any changes to the cap.

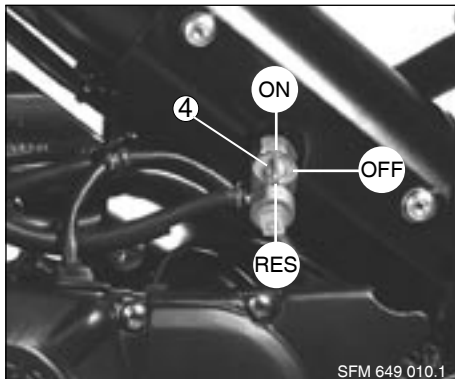
Opening:

- Tilt up the cover (2) in the direction of the arrow.
- Insert the ignition key (3), turn the cover (2) to the left and open the tank cap (1).

Closing:

- Close the tank cap (1) by turning the cover (2) to the right and pull out the ignition key.

Fuel

**Fuel cock (4)****Fuel cock positions:****ON = OPEN**

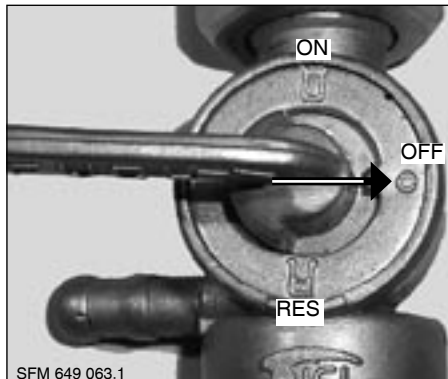
fuel tank will empty down to a reserve quantity of approx. 0,35 litres

RES = RESERVE

fuel tank is drained. There is a remaining quantity which can not be used.

OFF = CLOSED

fuel supply closed.

**CAUTION**

When you stop the engine, always set the fuel cock to OFF. Otherwise, fuel could enter the engine and this could make starting difficult or lead to serious engine damage.

We cannot be held liable under the guarantee for damage caused by non-observance of this caution.

**WARNING**

Fuel expands under the influence of heat and the sun. Therefore, never fill the tank to the brim. Never fill the tank while the engine is running.

Never bring a glowing cigarette or naked flame near an open tank, because fuel vapour could suddenly ignite.

Checking the fuel level

- Open the tank cap (1) on the fuel tank.
- Visually inspect the fuel level.
- Close the tank cap (1) on the fuel tank.

Filling up with fuel

- Use only normal lead-free fuel (min. 91 octane)

Engine oil



Checking the oil level



CAUTION

Checking the oil while the engine is cold will lead to a wrong measurement and therefore the wrong oil quantity. In order to avoid engine damage, never exceed the maximum oil level nor let it drop below the minimum level.



- Stop the warmed-up engine, wait for approx. 5 minutes and hold the motorcycle upright.



NOTE

Make sure that the motorcycle during oil-level checks stands level in all respects. Even the slightest inclination towards the side will produce measurement errors.

- Stop the engine and remove the oil filler cap (1) on the lower right of the crankcase.
- Clean the oil filler cap at the MIN-MAX area with a clean rag.



CAUTION

For checking the oil level only insert the oil filler cap and don't screw in! Otherwise there will be a wrong measurement in order to avoid engine damage.

- The oil level must be between the minimum and maximum marks.

If required, replenish the engine oil SAE 15W/40 via the oil-filler opening of the oil filler cap.

- Tighten the oil filler cap by hand.

Engine oil

CAUTION

Do not use additives. Since the oil also serves to lubricate the clutch, do not use car engine oils supplemented with friction modifiers (such energy-conserving oils can lead to the clutch slipping). Use a suitable, light engine oil for motorcycles, such as Motorex SAE 15W/40 mineral oil API (SG or higher).

- If required, replenish the engine oil (for classification and viscosity, see the table) via the oil-filler opening up to the maximum level marking.

Engine oil:

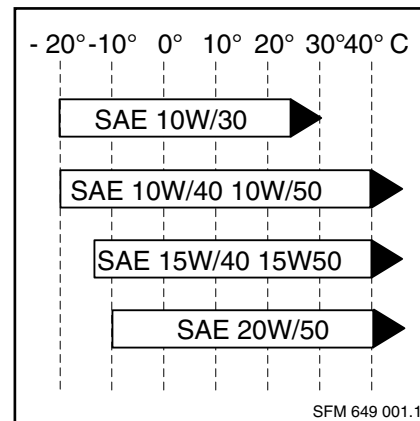
Recommended grade:

Per API: SG or higher or also with additional release status: ACEA A3/96 (CCMC G5).

Recommended viscosity:

Viscosity depends on the outside temperature. For short while, the temperature may exceed or fall short of the limits of the SAE grades.

The recommended viscosity grade SAE 15W/40 covers the ambient temperature range -15 C to $+40\text{ C}$ and therefore represents the optimum for our latitudes.



Front brake



WARNING

Sudden changes in play or a spongy feel of the brake lever can be caused by faults in the hydraulic system. Do not ride on when in doubt about the operability of the brake system. Immediately consult a Sachs dealer.

Check the brake-fluid level

WARNING

Every two years, the brake fluid must be changed by a Sachs dealer. The level must not drop below the MIN mark. Use only brake fluid of the DOT 4 classification.

- Turn the handlebars until the brake-fluid tank is level.
- The sight glass must be fully covered with brake fluid.
- If air bubbles can be seen, check the brake linings for wear; if necessary, replenish the brake fluid.

CAUTION

Do not spill any brake fluid on painted or plastic surfaces as it will damage the surface severely.

Checking the brake linings

WARNING

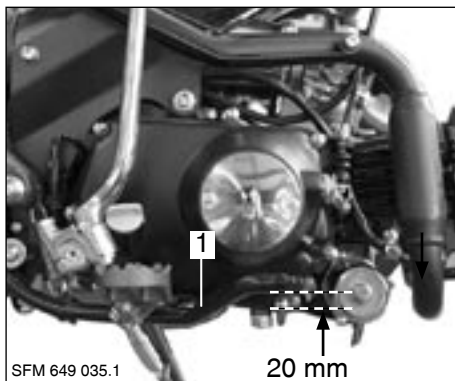
The brake disks and brake linings must be free of oil and grease.

Brake linings are subject to wear. In order to guarantee the operability of the brake system, the wear limits of the brake linings must not have been reached.

Checking the brake linings:

➡ MAINTENANCE

Rear brake



⚠ WARNING

Check the play of the footbrake lever (1) before riding.

Target value 20 mm.

Adjusting the footbrake lever play:

➡ MAINTENANCE

Checking the brake linings

⚠ WARNING

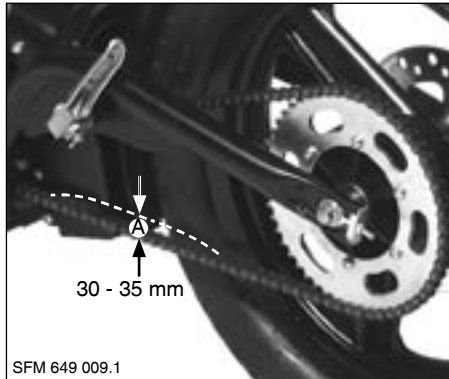
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Brake linings are subject to wear. In order to guarantee the operability of the brake system, the wear limits of the brake linings must not have been reached.

Checking the brake linings:

➡ MAINTENANCE

Drive chain



CAUTION

The chain setting affects the wear on the drive chain and sprocket as well as the spring excursion of the rear wheel.

Regularly clean and lubricate the drive chain.

Check the chain setting and the drive chain for damage before each run.

Check the chain tension

- Shift the gear to neutral.
- Prop the motorbike up on the side stand.
- Let the motorbike rear end drop to the limit imposed by the suspension.
- Push in the drive chain from the top half way between the sprocket and pinion. Measure the travel.

Required value: A =30-35 mm

- Adjust the drive chain is necessary.

→ MAINTENANCE

Tyre profile, tyre pressure and size



Checking the tyre profiles

! WARNING

Observe the minimum profile depth prescribed by law.

- Measure the profile depth at the centre (1) of the tyre's tread.

Recommended minimum profile depth:

Front	2.0 mm
Rear	2.5 mm

! WARNING

Never ride without valve caps. Firmly tightened valve caps prevent the tyre from suddenly losing pressure.

Checking the tyre pressure

! WARNING

Adjust the tyre pressure according to the total weight load. Never exceed the rated total weight or the bearing capacity of the tyres.

Incorrect tyre pressure will have a considerable effect on the riding properties of the motorbike and the lifespan of the tyres.

- While the tyres are cold:
- Twist off the valve caps.
- Check/adjust the tyre pressure.
- Twist on the valve caps.

Tyre pressure	Solo	With passenger
Front	2.0 bar	2.2 bar
Rear	2,5 bar	2.7 bar

Tyre size

The standard motorbike is provided with the following tyre sizes:

Front	90/90-16 48J
Rear	120/80-16 60J

! WARNING

Use only tyres approved by the manufacturer. The use of non-approved tyre brands, types or sizes leads to the operating permit of the vehicle becoming null and void. Use only pairs of tyres produced by the same manufacturer.

➡ TECHNICAL DATA

SAFETY TEST

Load / lights

WARNING

For the sake of your safety, use only original Sachs accessories or products released by Sachs.

Sachs cannot judge for each third-part product whether it can be safely used in combination with your Sachs motorcycle. Nor can a official approval give such a guarantee in all cases, since the test scope is not always sufficient.

NOTE

Sachs accessories and Sachs-approved products as well as qualified advice are available from all specialized Sachs dealers.

Correctly loaded

- Make sure that the left-right weight distribution is balanced.
- Check that fastenings are correct and tight.
- Do not transport bulky loads.
- Do not cover the lights.

WARNING

**The total allowable weight of 280 kg may not be exceeded.
Adjust the telescopic forks and tyre pressures to the total weight.**

Checking the lights

WARNING

Before any ride, check the operation of all lighting components.

- Check that the headlamps and lenses are clean.

Adjusting the headlamps

→ MAINTENANCE.

Ride safely



CAUTION

Riding safety is largely also determined by the manner of riding.

Therefore:

- Put on a tested/approved safety helmet and correct close the buckle.
- Wear suitable protective clothes.
- Rest your feet on the footrests.
- Do not ride if your riding ability has been compromised.

Your reactions can be adversely affected not only by alcohol, but also by drugs and medicines.

- Strictly observe all traffic regulations.
- Always adapt your riding speed to the traffic and road conditions.

On smooth, slippery roads take into account that your riding stability and braking power are limited by the grip of the tyres on the road top.

Ride economically and be aware of the environment

Fuel consumption, environmental pollution and wear of engine, brakes and tyres depend on various factors.

Your personal riding style is highly determinant for economical fuel consumption and exhaust gas and noise generation.

While idling, the engine takes a long time to warm up to operational temperature. In the warm-up phase, however, the wear level and pollutant emissions are very high. It is therefore best to start riding immediately after start-up.

Avoid rapid acceleration

Open the throttle not further than needed, in order to reduce fuel consumption as well as pollution and wear levels.

Do not use excessive revs; change up as soon as possible and do not change down until it is necessary to do so.

Ride as evenly as possible and look ahead as far as possible.

Unnecessary acceleration and braking operations must be paid for with a high fuel consumption and a higher environmental burden.

Unnecessary acceleration and hard braking cause high fuel consumption and increased pollution levels.

Turn the engine off when waiting in traffic.

Different riding conditions affect fuel consumption. The following conditions are unfavourable for fuel consumption:

- High traffic density, especially in big cities with many stops for traffic lights.
- Frequent short rides with repeated starts and warm-ups of the engine.
- Riding in a column of motor cycles at low speed, meaning riding with relatively high revs.

Plan rides ahead of time in order to avoid heavy traffic.

Ride economically and be aware of the environment

Fuel consumption is also affected by conditions that are out of your control, for instance, poor road condition, hills, riding in winter.

Observe the following aspects for economical fuel consumption:

- The planned inspection intervals must be closely observed.
- Regular service by a specialized Sachs dealer will guarantee not only continued operability, but also economical fuel consumption, low environmental pollution and a long lifespan.
- Check the tyre pressure every two weeks.

Low tyre pressure increases rolling resistance. This increases fuel consumption and tyre wear and adversely affects riding behaviour.

- Continually check fuel consumption.
- Frequently check the engine-oil level.

Running-in

Running-in instructions for engine and transmission



CAUTION

Excessive revs while running-in the engine increases the wear of the engine. Engine faults during the running-in period must be immediately reported to a specialized Sachs dealer.



NOTE

During the running-in period, ride in frequently changing load and rpm ranges. Select winding and slightly hilly routes. Avoid constantly low rpm counts and full throttle under load.

Maximum speed of the gears during running-in period:

Kilometer	km/h of each gear			
	1.	2.	3.	4.
0-500	18	28	35	40
500-1000	25	35	40	45

Slowly increase the rpm. Avoid high rpm running until 1000 km.



CAUTION

The first inspection must be carried out immediately after the first 1000 km.

You can save yourself delays by making an appointment with a specialized Sachs dealer in advance.

Running-in new tyres



CAUTION

New tyres have a smooth surface. They must therefore be roughened by carefully running them in at various slanted positions.

Only then will the surface obtain its full grip!

Running-in new brake linings



WARNING

New brake linings must be run-in and will not have their full friction power until after 500 km.

The slightly reduced braking effect can be compensated for by an increase in the pressure on the brake lever.

During this period, avoid unnecessary hard braking actions!

Side stand

Propping up the motorbike on the side stand.

 **WARNING**

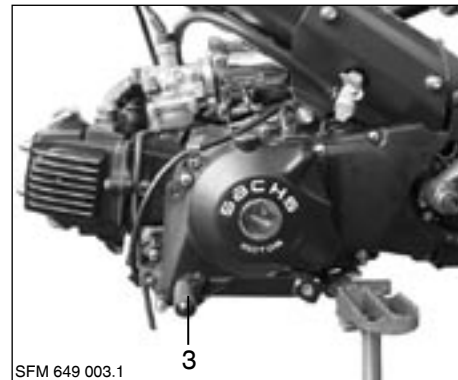
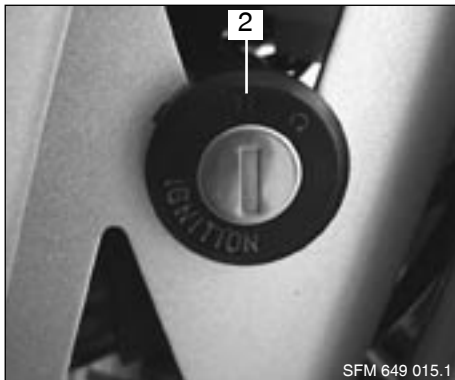
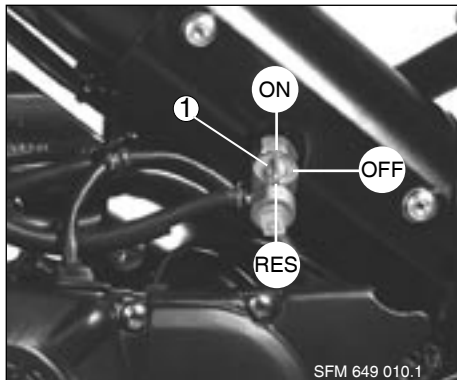
Always make sure that the stand is resting on firm ground. On sloping roads, always park the motorbike facing uphill and in 1st gear. When you kick the stand in, do not stand within the pivoting arc of the stand.

The stand pivots automatically upwards with considerable momentum. It is essential that the side stand is folded up before starting off!

-Risk of accidents !

- Switch off the engine.
- Left hand on the left-hand handlebar grip.
- Right hand on the seat.
- Fold out the side side stand as far forward as it will go and stop by foot.
- Slowly tilt the motorbike to the left until its weight is supported.

Starting



Before starting

- Put the motorcycle in a vertical position and allow the side stand to tilt up.
- Turn the fuel cock (1) to **ON** or **RES**.
- Mount the motorcycle.

- Turn the ignition key (2) to its operating position ↻.

- Shift the foot-operated gear lever (3) to neutral.



WARNING

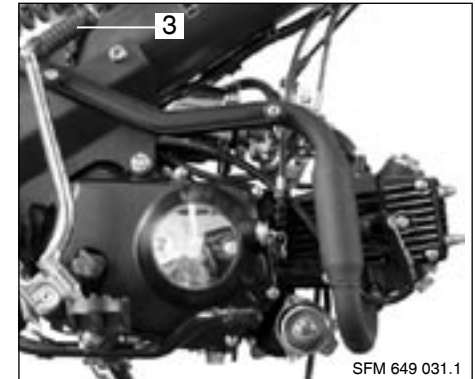
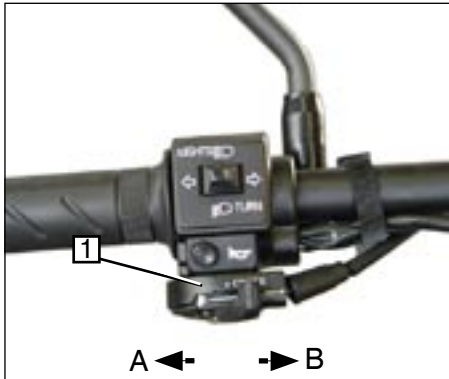
Before beginning a ride, the side stand must be tilted up all the way (danger of crashing).





NOTE

Once you have shifted to neutral, the green neutral indicator light must become active.

Starting with kick starter



 **CAUTION**

Avoid high engine-speed counts after a cold start.

- Turn the CHOKE  (1) in the direction of the arrow "A" for cold start.
- Do not open the throttle.
- Push down the EMERGENCY-OFF switch (2) to position .
- Depress the kick starter lever (3) quickly and the engine will start.

 **CAUTION**


After starting the engine, check that the kick starter lever is returned to its normal position.


- As soon as the engine is no longer running smoothly, turn back the CHOKE  (1) one lock in position "B".

 **WARNING**


Never allow the engine to run in an enclosed space. Exhaust gases are highly toxic and can kill.

 **NOTE**

The EMERGENCY OFF switch is a safety device and should normally be in position .

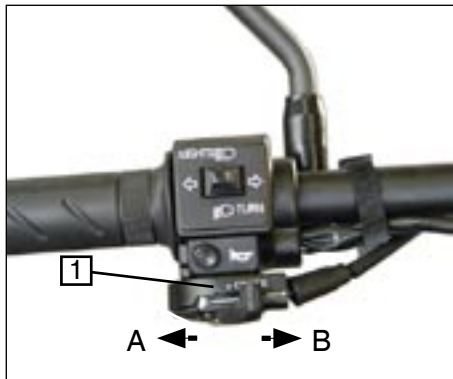
 **ON:**

Switch downwards. The engine will start when the kick starter lever is used.

 **OFF:**




Switch upwards. The engine will not start.

Starting with electric starter




CAUTION

Avoid high engine-speed counts after a cold start.

- Turn the CHOKE  (1) in the direction of the arrow "A" for cold start.
- Do not open the throttle.
- Push down the EMERGENCY-OFF switch (2) to position .
- Operate the start button  (3).

CAUTION

If the engine won't start immediately, release the start button, wait a few seconds and push it again. Each time, push the start button for just a few seconds in order to save the battery. Never push the start button for more than 10 seconds.


- When the operating temperature is increasing, turn back the CHOKE  (1) all the way in the opposite direction to the arrow "B".

WARNING

Never allow the engine to run in an enclosed space. Exhaust gases are highly toxic and can kill.



NOTE

The EMERGENCY OFF switch is a safety device and should normally be in position .



ON:

Switch downwards. The engine will start when the electric starter is used.

OFF:

Switch upwards. The engine will not start.

Riding, shifting gears



Starting / shifting up

- Pull in the clutch lever
- Push down on the foot-operated gear lever (without opening the throttle)
- Carefully engage the clutch
- Simultaneously slightly open the throttle
- Accelerate after engaging the clutch.

Shifting up to gears 2, 3 and 4 is done similarly.

Shifting down

- Close the throttle
- Pull in the clutch lever
- Push down on the foot-operated gear lever
- Accelerate after engaging the clutch
- When stopping, change into neutral (control light N in cockpit lights green).

 **CAUTION**

Avoid:

- Crashing the gears
- Changing gear without operating the clutch
- Changing down at high rpm's
- Too low and too high rpms (unnecessary wear and fuel consumption).

Braking

Wet brakes

Washing the motorcycle or riding through water or rain can delay the braking effect due to wet or (in winter) ice-covered brake discs and linings.



The brakes must first be operated until they are dry

Salt film on the brakes

When riding on salted streets without braking for a while, the full braking effect may be delayed.

Oil and grease



The brake discs and linings must be free of oil and grease!



If the motorcycle is not used for a while, a rust film may form on the brakes and thus increase the braking effect. A thick rust film can cause the brakes to lock up. When setting out on a ride after a long lay-up period, carefully operate the brakes several times until they work normally.



NOTE

Make sure you practice braking for emergency situations, but do so where you will not pose a risk to yourself or others (e.g. a deserted parking area).



Operate the brakes to grind off the salt deposited on the brake discs.

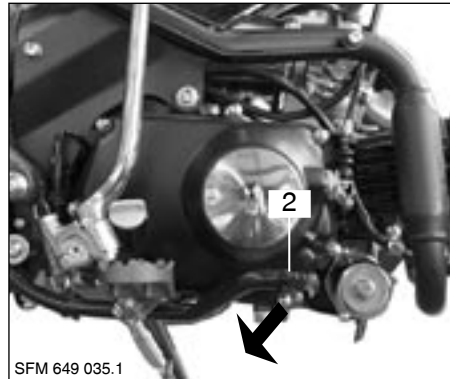
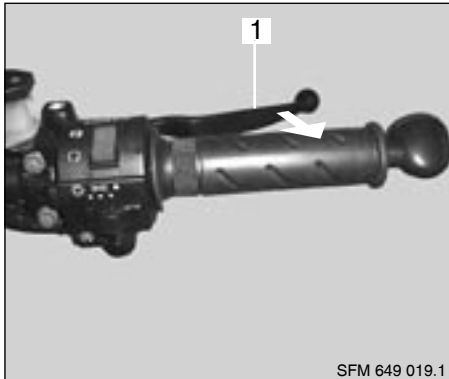
Dirty brakes

When riding on dirty streets, the braking effect can be delayed due to dirty brake discs and linings.



Operate the brakes until they are clean. Lining wear is increased by dirty brakes!

Braking



Brake with care. Locked wheels do not have much braking effect and can lead to skidding / crashing. In principle, do not brake on a curve, but before the curve. Braking on a curve increases the danger of sliding.

Braking

The front brake and rear brake are operated independently from each other. The front brake is operated via the handbrake lever (1) on the handlebars, and the rear brake is operated by stepping on the footbrake lever (2) with the right foot.


When stopping or slowing down, release the throttle gas and operate **both** brakes at the same time.

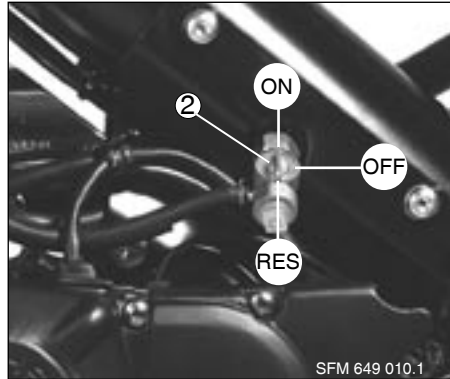
On tight curves, sandy / dirty streets, wet asphalt and icy roads, use the front brake carefully: if the front wheel locks, the bike will slide sideways.

Stopping the engine



Stopping the engine

- Turn the ignition key to the position  (1).
- Pull out the ignition key.

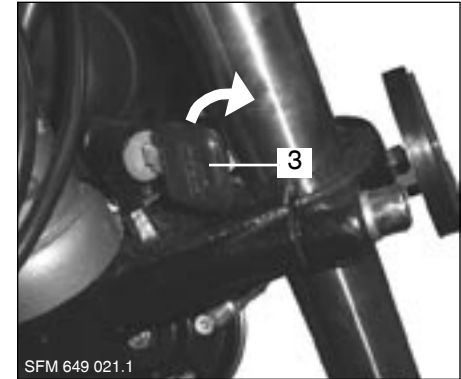


CAUTION

Turn the fuel chock (2) to the **OFF** position. In the **ON** or **RES** position, fuel could enter the engine, leading to serious damage when starting the engine.

Non-observance of this caution will lead to the guarantee becoming null and void for any damage attributable to such.

Fork- column Lock



Safeguard the steering assembly against unauthorized use.

Locking:

- Turn handlebars to extreme left.
- Insert key (3) in lock and turn in clockwise direction.
- Remove key.

Unlocking:

- Insert key (3) in lock and turn in counterclockwise direction.
- Remove key.



CAUTION

Always remove the key before travelling.

Servicing the motorbike / cleaning agents**NOTE**

Regular, expert service will help maintain the value of your motorcycle and is a condition for guarantee claims for corrosion and other such damage.

**CAUTION**

Rubber and plastic parts will be damaged by caustic or penetrating cleaning agents or solvents.

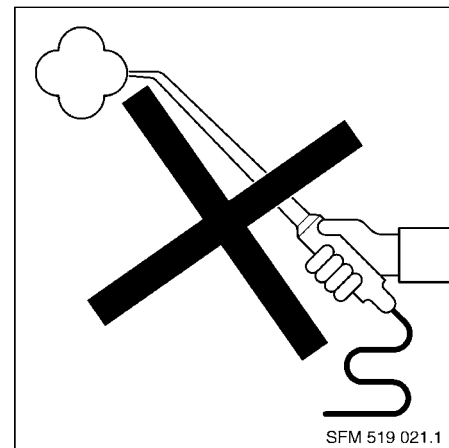
**WARNING**

Always carry out a brake test after cleaning and before starting a ride!

**CAUTION**

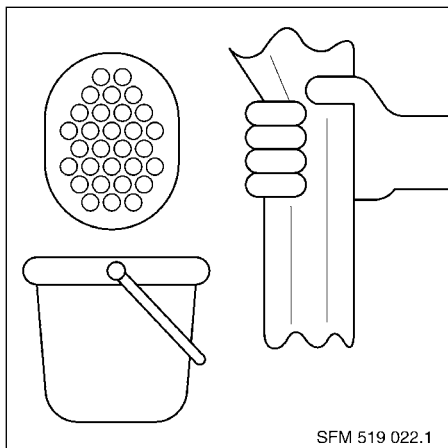
Do not use steam or high-pressure jet devices!

Such devices can damage seals, the hydraulic braking system and the electrical system.



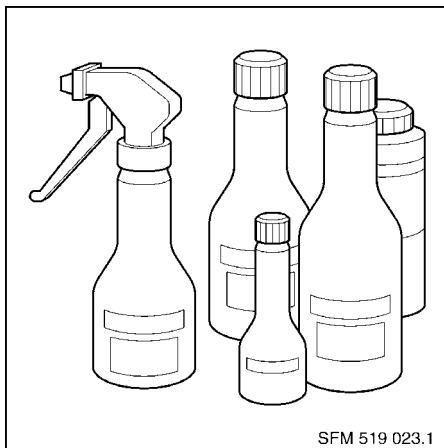
SERVICE INSTRUCTIONS

Servicing the motorbike / cleaning agents



Cleaning

- To wash the motorcycle, use a soft sponge and clean water.
- Afterwards, dry off with a polishing cloth or chamois.
- Do not wipe off dust or dirt with a dry cloth, to avoid scratching the paint or covering.



Preservation agents

- When necessary, the motorcycle must be preserved with commercially available preserving and cleaning agents.
- By way of precaution (especially in winter), regularly treat parts liable to corrosion with preservation agents.



CAUTION

Never use paint-polishing agents on plastic parts.

- After a longish ride, thoroughly clean the chassis and the aluminium parts and preserve them with a commercially available anti-corrosion agent.

Operation in winter and anti-corrosion protection



NOTE

Protect the environment by using only environmentally friendly preservation agents, and use them frugally.

Winter operation / anti-corrosion protection

Use of the motorcycle in the winter can cause considerable damage due to the presence of salt on the roads.

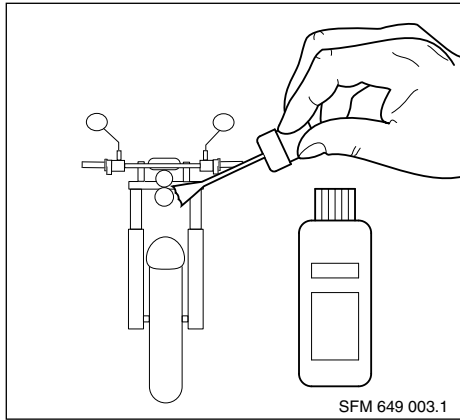


CAUTION

Do not use hot water, which would increase the effect of the salt.

- At the end of each ride, wash the motorcycle with cold water.
- Thoroughly dry the motorcycle.
- Treat parts liable to corrosion with wax-borne anti-corrosion agents.

Repairing paint damage / servicing the tyres



Repairing paint damage

Minor paint damage should be immediately repaired. Major damage must be repaired by a Sachs dealer.

Servicing tyres

If the motorcycle is not used for a longer period, it is recommended to support the motorcycle so that its weight is not on the tyres.

You can prevent the tyres from becoming dry and brittle by spraying them with a silicone-rubber treatment. First thoroughly clean the tyres.

Do not store the motorcycle or the tyres in hot spaces (such as a boiler room) for longer periods.



WARNING

A minimum tyre-profile depth of 2.0 mm must be maintained at all times.

Lay-up / commission

Lay-up

- Clean the motorcycle.
- Remove the battery.
Observe the maintenance instructions.
- Spray suitable lubricants onto the brake-lever and clutch-lever joints and the side-standard and main-standard bearings.
- Rub bright / chromium-plated parts with acid-free grease (Vaseline).
- Store the motorcycle in a dry room and jack it up so that its weight is not on the wheels.



NOTE

Before laying up the motorcycle, have a Sachs dealer change the engine oil. Combine lay-up / commission activities with an inspection by a Sachs dealer.

Commission

- Remove the preservation agents from the outside
- Clean the motorcycle.
- Install the charged battery.
- Preserve the battery terminals with terminal grease.
- Check / adjust the tyre pressure .
- Check the brakes.
- Carry out activities according to the inspection plan.
- Carry out the safety checks.

Technical changes, accessories and spare parts



WARNING

Technical changes to the motorcycle can lead to cancellation of the EC operating license.

Should you want to make technical changes, observe our guidelines. This will serve to prevent the motorcycle from being damaged and the traffic and operational safety being retained. A specialised Sachs dealer can carry out these activities with meticulous care.

Always consult a Sachs dealer before buying accessories or making any technical changes.



CAUTION

We recommend using only approved Sachs accessories and original Sachs spare parts for Sachs motorcycles.

This is in your own interests: the safety, suitability and reliability of these accessories and parts will have been tested specifically for Sachs motorcycles.

Although we keep track of the market, we cannot evaluate nor be held liable for the quality of non-approved accessories and parts, even if they have a certificate of acceptance from an officially recognised technical testing/supervision agency, or a license issued by the authorities.

For approved Sachs accessories and original Sachs spare parts, see a specialised Sachs dealer.

He will also ensure that they are professionally installed.

Maintenance activities



Before carrying out any maintenance activities, read the relevant section of this operating manual.

- Checking the fork-column bearing
- Removing the front wheel
- Installing the front wheel
- Removing the rear wheel
- Installing the rear wheel
- Checking , adjusting the drive chain
- Front brake
- Rear brake
- Adjusting the clutch lever play
- Spark plug
- Battery, fuse
- Replacing bulbs
- Adjusting the headlamps

Checking the fork-column bearings



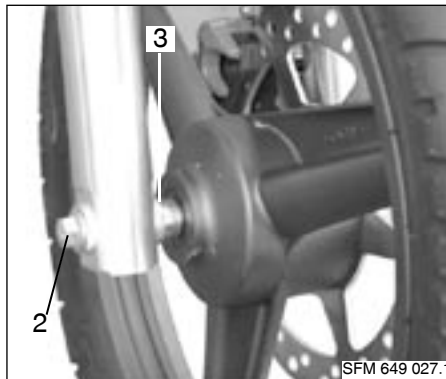
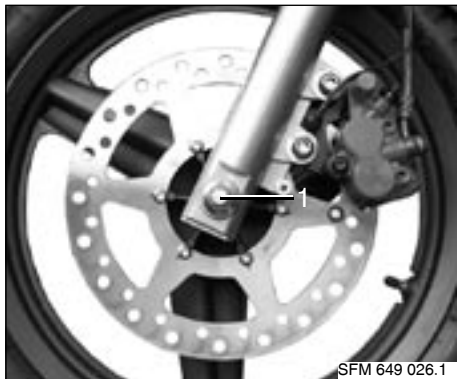
NOTE

The telescopic fork must not stick when turned, and at both limit positions it must easily tilt back.

- Jack up the machine on a sturdy installation jack.
- Take hold of the lower fork tubes and try to move them to and fro in the direction of the arrow.

If the fork-column bearing shows noticeable play, it must be adjusted by a specialised Sachs dealer.

Removing the front wheel



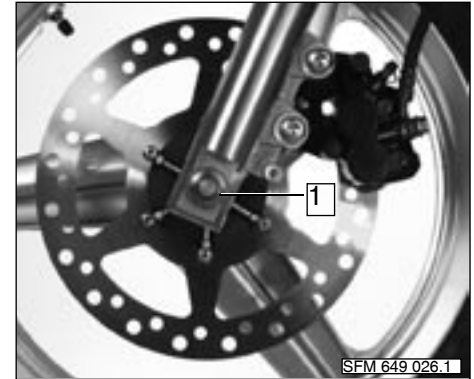
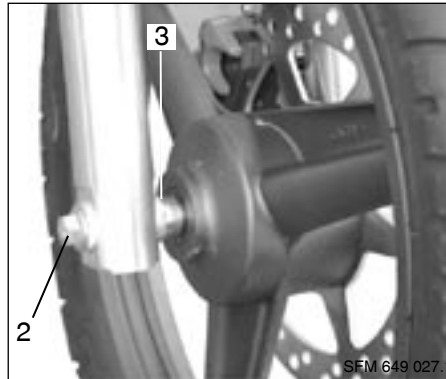
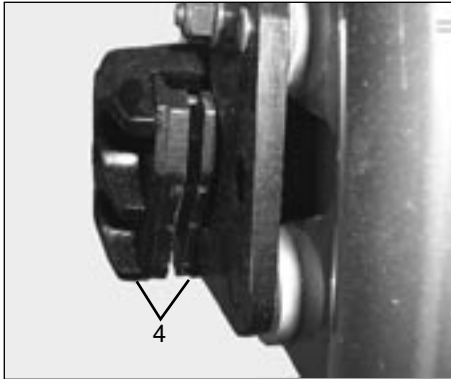
CAUTION

Take care not to damage the brake discs and linings while removing them. Do not operate the handbrake lever after the wheel has been removed. Protect the wheel bearings from dirt and moisture.

- Support the motorcycle so that the front wheel can move freely and the motorcycle is standing securely.
- Loosen the axle nut (1).
- Lift the front wheel and pull out the full-floating axle (2) and remove the spacer bush (3).
- Remove the front wheel downwards.

MAINTENANCE

Installing the front wheel



CAUTION

Take care not to damage the brake discs and linings (4) while installing them. Have a Sachs dealer check the tightening torques.

- Roll the front wheel in between the fork tubes and insert the spacer bush (3) (on the right as seen from the riding direction).

- Grease the full floating axle (2) and push it in from the right as far as it will go.
- Attach the axle nut (1) and screw tight.

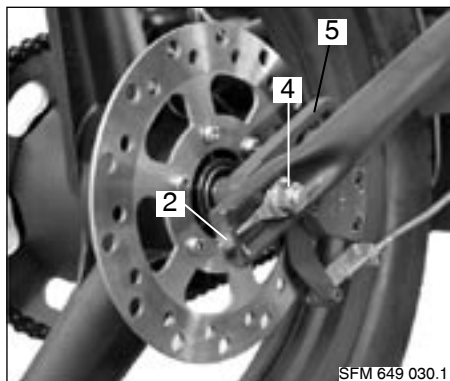
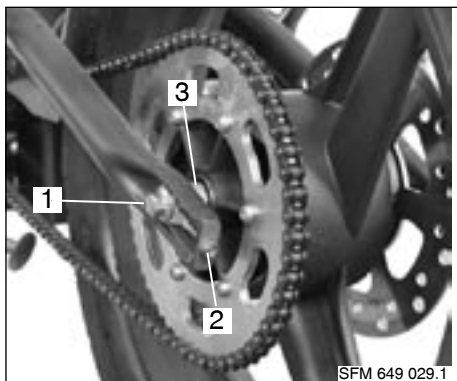
- Before tightening the screws, stand the motorbike on its wheels and push the telescopic forks several times to prevent twisting of the fork struts.

Torque

Axle nut (1):

35-45 Nm

Removing the rear wheel



CAUTION

Do not damage brake disc and linings during removal!

Protect the wheel bearings from dirt and moisture!

- Prop up the motorbike so that the rear wheel can turn freely and that the motorbike is secure.
- Hold the full floating axle (1) and release the axle nut (4).
- Unscrew the setting nuts (2) on the left and right-hand sides of the chain adjuster all the way.
- Remove the drive chain.

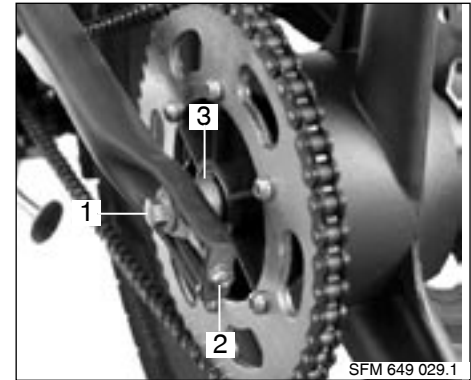
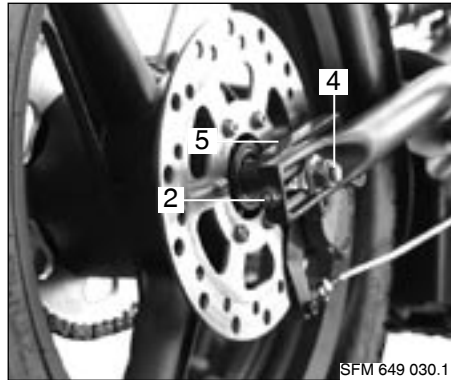
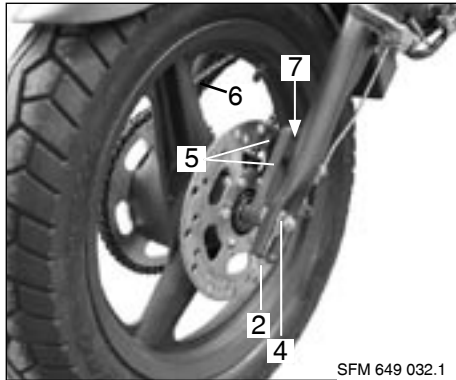


NOTE

When taking off the rear wheel, make sure that the bush (3) to the left of the wheel hub is not lost.

- Raise the rear wheel, remove the full floating axle (1) with brake support (5) and brake caliper and take off the rear wheel to the back.

Installing the rear wheel



CAUTION

Do not damage brake disc and linings during installation!
Have a Sachs dealer check the tightening torques.

- Clean and grease the full floating axle (1).
- Introduce full floating axle, chain adjuster (2), brake support (5) with brake caliper into rear suspension



NOTE

Insert brake support into the guide (7) of rear suspension.

- Install the drive chain (6).
- Install rear wheel with spacer bush (3) and full floating axle (1).
- Insert left chain adjuster (2) and reassemble with axle nut (4).

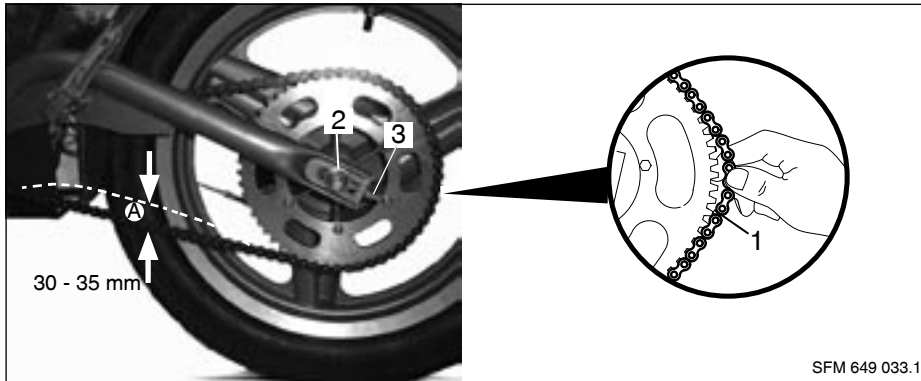
- Adjust the drive chain (s. adjusting drive chain page 45).
- Tighten axle nut (4).

Torque

Axle nut (4):

50-60 Nm

Checking, adjusting the drive chain



Checking the chain for wear



CAUTION

The chain, sprocket and pinion must be changed as a single unit.

- Prop the motorbike up on the side stand.
- Take hold of the chain (1) at the point on the sprocket furthest to the rear and pull the chain off.
- When the chain tension is correct, it should not be possible to raise the chain further than the height of the sprocket teeth.
- If the chain can be pulled further away, have the chain, sprocket and pinion replaced by your Sachs dealer.

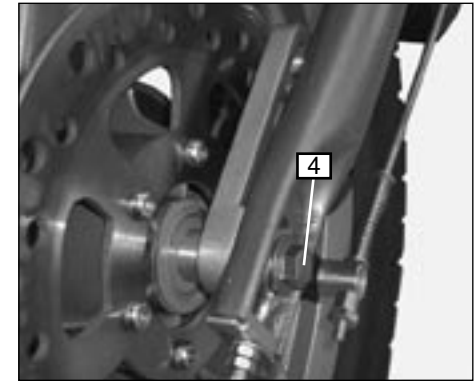
Adjusting the chain



CAUTION

How the chain is adjusted affects the rate of wear on the chain and sprocket. It is essential to have the tightening torques checked by a Sachs dealer.

A too tight adjustment of the chain will cause bearing- damages on engine and rear wheel. The chain will wear out sooner.



- Release the axle nut (4).
- Evenly adjust the setting nuts (3) on both sides of the chain adjuster (rear wheel must be aligned with the front wheel).
- Let the motorbike rear end drop to the limit imposed by the suspension.
- Push in the drive chain from the top half way between the sprocket and pinion. Measure the travel.

Required value: A =30-35 mm

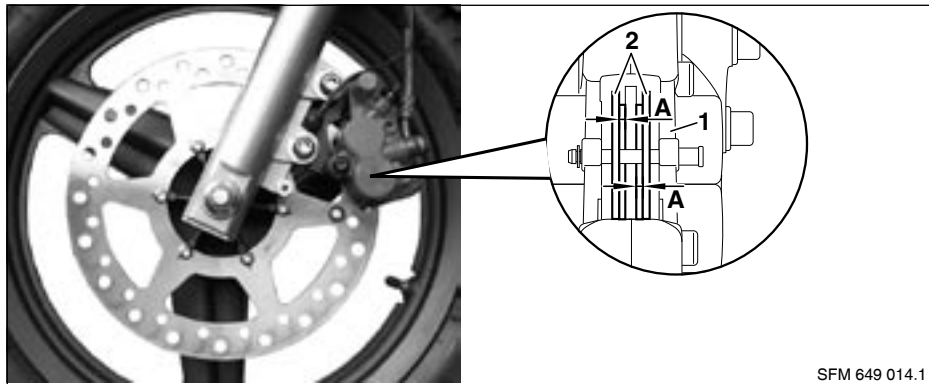
- Tightening lock nuts (3).

Torque

Axle nut (2):

50-60 Nm

Front brake



Checking the brake linings



CAUTION

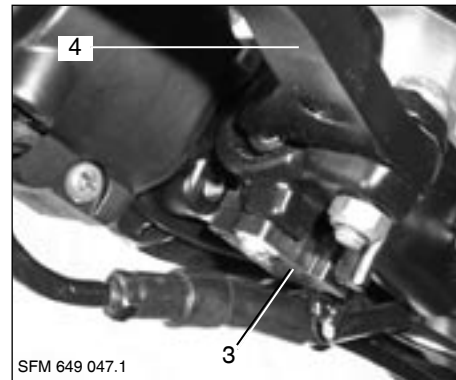
The minimum lining thickness must be maintained.



NOTE

For your own safety, we recommend having activities to the brake system carried out by a Sachs dealer.

- Visually inspect the brake calliper (1).
- Check the thickness of the brake lining: minimum thickness: **A = 2,5 mm**
- If the lining thickness is below the minimum, **have the brake lining (2) replaced by a Sachs dealer.**



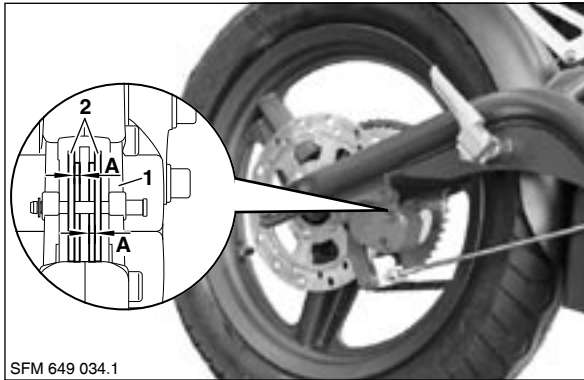
Brake light switch



NOTE

The brake light switch (3) is placed in the hand brake lever. By operating the front brake lever (4) the brake light must flash up immediately. An adjustment is not required.

Rear brake



SFM 649 034.1

Checking the brake linings



CAUTION

The minimum lining thickness must be maintained.

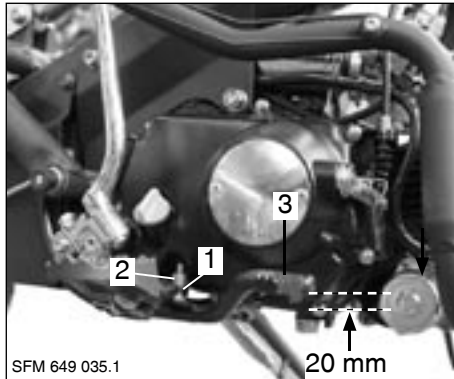


NOTE

For your own safety, we recommend having activities to the brake system carried out by a Sachs dealer.

- Visually inspect the brake calliper (1) on the right motorbike side.
- Check the thickness of the brake lining: minimum thickness: **A = 1,5 mm**
- If the lining thickness is below the minimum, **have the brake lining (2) replaced by a Sachs dealer.**

Rear brake



Setting the footbrake pedal position



NOTE

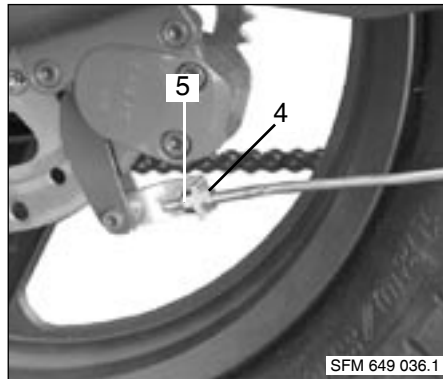
The footbrake pedal position can be adjusted with the setting screw (1).

- Release the lock nut (2).
- Adjust the foot brake pedal (3) position with the setting screw (1).



WARNING

Check the play on the footbrake pedal and ensure that the brake is functioning properly.



Adjusting the foot brake



NOTE

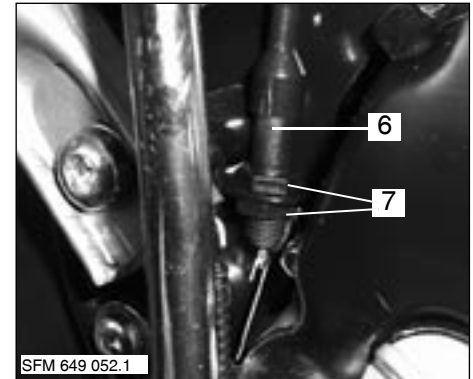
After a longer period of operation, adjustment of the brakes is essential due to natural wear of the brake-shoe linings.

- Release the lock nut (4) so that the pedal (3) has reached a guideline of approx. 20 mm.



CAUTION

Insufficient play on the brake lever may cause the rear wheel brake to drag when jouncing. Have adjustment checked by a Sachs dealer.



Adjusting the brake light switch



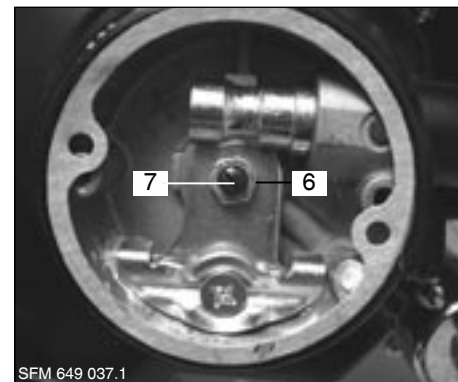
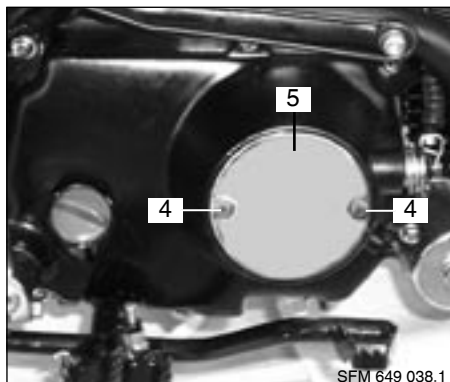
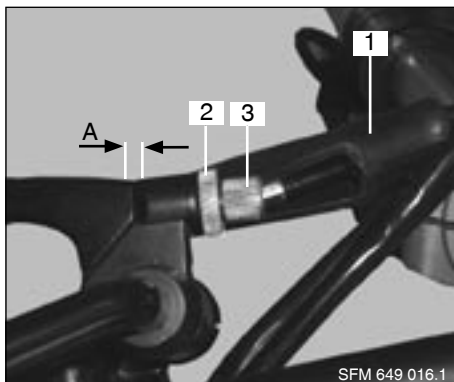
NOTE

By correct adjustment of the brake light switch (6) the brake light must flash up immediately.

Adjustment

- Release the lock nuts (7) and adjust the brake light switch.
- Tighten up the lock nuts.

Adjusting the clutch lever play



CAUTION

If you drive with no clutch lever play, the clutch will be damaged.

Check:

- Pull the lever until there is discernable resistance.
- Measure the play. Required value:
A = min. 3-4 mm

Adjustment:

- Push back protective cap (1).
- Release the lock nut (2).
- Turn setting screw (3) as appropriate.
- Tighten up the lock nut (2).
- Check the play.

NOTE

If the clutch play cannot be corrected with this adjustment, the following adjustment must be made.

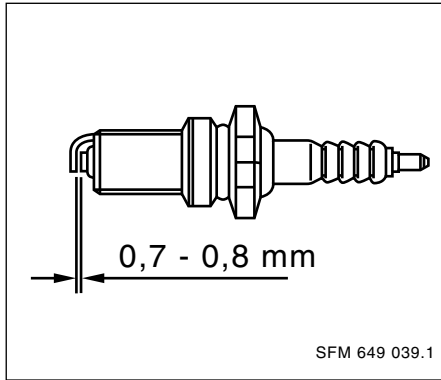
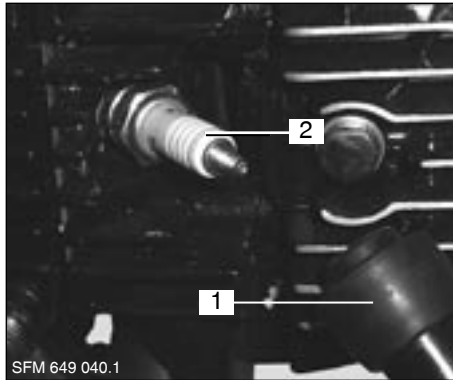
- Release the lock nut (2).
- Tighten setting screw (3) all the way, so that the clutch cable can be made as slack as possible.
- Tighten up the lock nut (2).

- Remove screws (4) and take off the clutch cover (5).
- Release the lock nut (6).
- Adjust the setting screw (7) until the desired clutch lever play (A = 3-4 mm) is reached.
- Tighten up the lock nut (6).
- Reassemble the clutch cover (5) with gasket.

CAUTION

Have adjustment checked by a Sachs dealer.

Spark plug



Check and change



CAUTION

Check or change the spark plug only when the engine is cold.

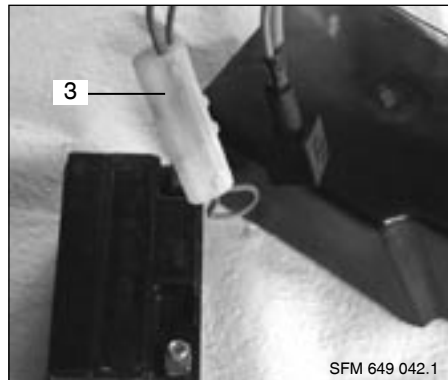
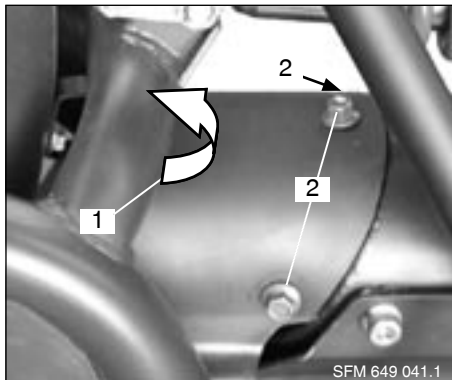
- Pull the spark plug connector (1).
- Unscrew the spark plug (2).
- Check the electrode gap (0,7-0,8 mm), replace the plug if it is severely burnt away.

- Insert new spark plug **NGK CR7 HSA** and tighten up.

Torque 20 Nm.

- Plug in the connector (1).

Fuse



CAUTION

Never install a fuse with a larger rating, since this could destroy the entire electrical system.

The fuse is located behind the battery cover (1).

Replace fuse

- Remove three screws (2) and lift off cover (1) to the left side.
- Open the fuse case (3).
- A faulty or blown fuse must be replaced by a new one with 15 A.

NOTE

The spare fuse is placed in the fuse case.

Battery



WARNING

Always wear safety glasses.
Keep children away from acids and batteries.



EXPLOSION DANGER

A battery being charged produces a highly explosive gas, which is why fire, sparks, naked flames and smoking are prohibited.



FIRE HAZARD

Avoid generating sparks and electrostatic discharges when handling cables and electrical devices.
Avoid short circuits.



DANGER - CAUSTIC ACTION

Battery acid is highly caustic, so always wear safety gloves and glasses.
Do not tilt the battery as acid can leak from the ventilation openings.



FIRST AID

If acid comes into contact with an eye, immediately flush the eye for several minutes with fresh water. Then immediately visit / call a doctor.

Acid on the skin or clothing must immediately be neutralised using acid converter or soap suds, and the spots must be flushed with plenty of water.

If acid is swallowed, immediately visit / call a doctor.



CAUTION

Do not expose batteries to direct sunlight. Discharged batteries can freeze, so they must be stored in a place where the temperature remains above 0 °C.

Professional maintenance, charging and storage will increase the lifespan of the battery and are a condition for the honouring of guarantee claims.



DISPOSAL

Take a dead battery to a collection point.
Never dispose of one with household refuse.

Charging the battery

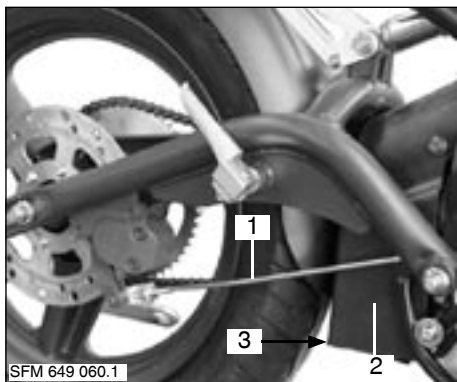
After a long lay-up (3-4 months), charge the battery. The charging current (in amperes) must not exceed 1/10th of the battery capacity (Ah).

The battery must not be fast-charged. The battery may only be charged using a special charger approved for MF batteries.

Maintenance

Although the battery is maintenance-free. Never leave the battery discharged. Keep the battery clean and dry and make sure that the connection terminals are firmly seated.

Battery

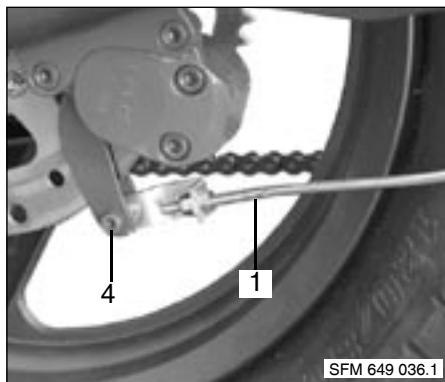


Removing and installing the battery

CAUTION

For removing the battery hang out the brake rod (1) and remove the splint pin behind the screw (4). For installing use a new splint pin. For reasons of safety, the work should be done by a Sachs dealer.

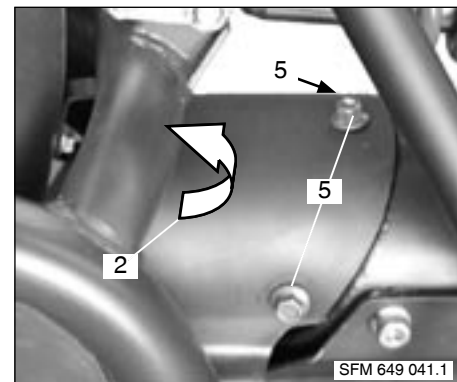
The Battery is located behind the cover (2).



- Remove the screw (4) with the splint pin and hang out the brake rod (1).
- Remove three screws (5) and lift off cover (2) to the left side.
- Remove the battery band (3) and uninstall the battery.
- Assemble in reverse order.

CAUTION

Tighten screw (4) and lock with a new split pin.



CAUTION

The battery may only be connected or disconnected while the ignition is inactive.

First disconnect the minus terminal (black cable). When installing the battery, first connect the plus terminal (red cable). The battery is maintenance-free. Do not try to open it.

Changing the bulbs



NOTE

Use only tested, incandescent bulbs with the 'E' designation. Use of non-approved bulbs will void the operating license. Do not touch the bulbs with bare fingers. Hold bulbs with a clean, dry cloth when installing or removing them.

Headlight

1 = low beam

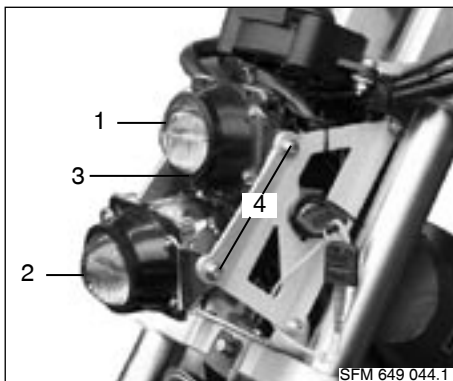
bulb S3 12V 15W E9

2 = low beam

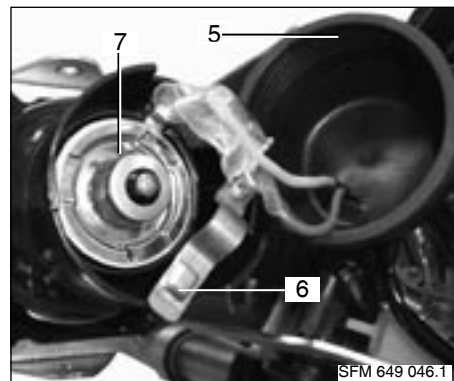
bulb S3 12V 15W E9

3 = Position light

bulb 12V/3W



SFM 649 044.1



SFM 649 046.1

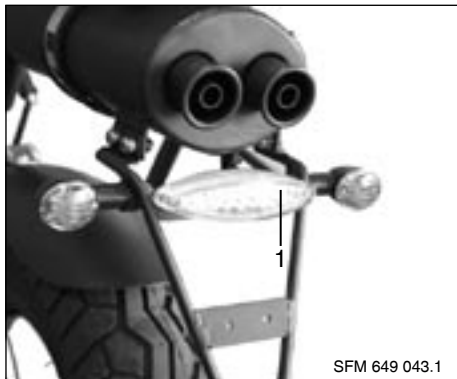
- Remove the screws (4) on both sides.
- Detach the rubber cover (5) from the headlight.
- Release the holder clamp (6) and remove the bulb (7).
- Pull the position light (3) with the bulb holder carefully out of the headlight housing and remove the bulb (7).
- Assemble in reverse order.



NOTE:

When assemble, bend the holder clamp (6) for a safety contact.

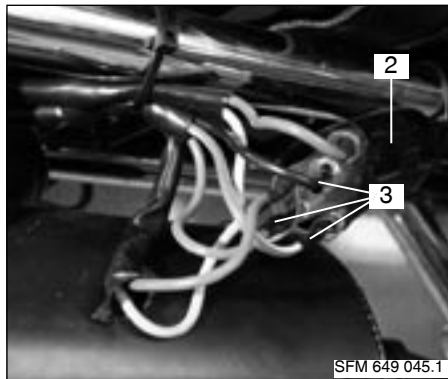
Tail / brake light bulb



Tail / brake light bulb

The tail light is not fitted with a replaceable light bulb (diode light).

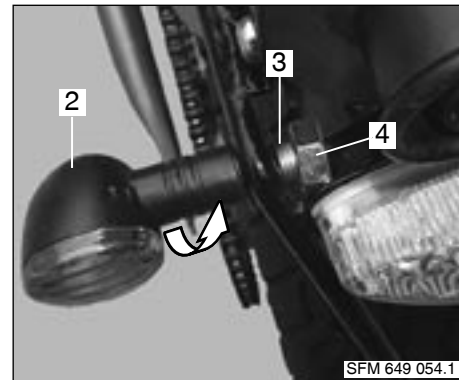
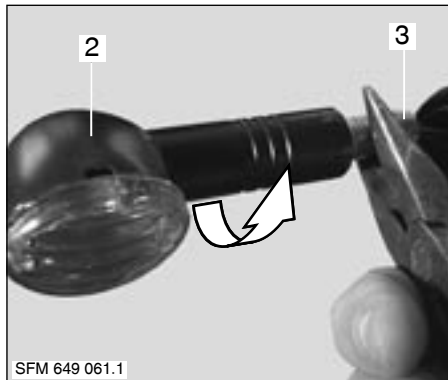
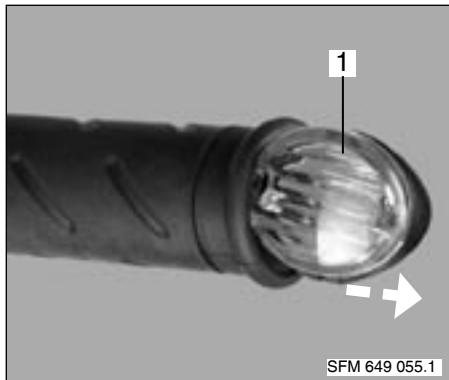
If the tail light does not work you should first check, whether a cable connection is interrupted.



- Push back the cable protection (2) underneath the seat. Check the cable connections (3) green/ yellow, green and black.

If this is not the case, the tail light must be replaced by a Sachs dealer.

Changing the bulbs



Indicator lamps



NOTE

For changing the bulbs an opening of the glass cover (1) is not required.

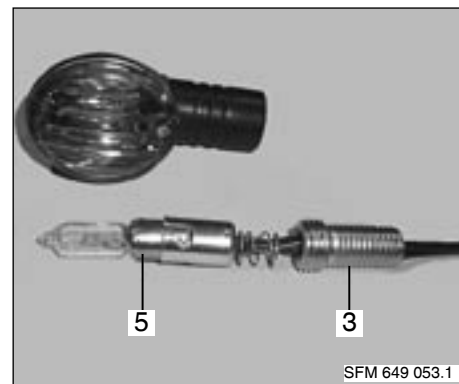
Do not touch the bulbs with your bare hands. Use a clean, dry cloth for installation and removal.

Front:

- Pull the light case (2) carefully out of the handlebar and hold the thread bolt (3) with a pair of pliers.
- Release the light case.
- Push the bulb (5) back and release it by turning to the left. Take the bulb out.

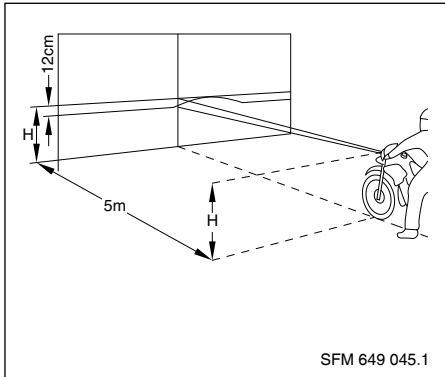
Rear:

- Release the nut (4) and hold the thread bolt (3) with a pair of pliers.
 - Release the light case (2).
 - Push the bulb (5) back and release it by turning to the left. Take the bulb out.
- Installation is in reverse order to removal.



- Indicator bulbs front/rear:
12 V/21W

Adjusting the headlamps



WARNING

Do not run the engine in an enclosed space (risk of asphyxiation).

Position the motorcycle on a level floor 5 m (measured from the headlamp) from a light coloured wall with a rider seated on the motorcycle and the tyres filled at the correct pressure.



Adjusting the headlight

- Activate the dipped beam.
- Use the adjusting screw (1 and 2) on both sides to adjust the angle of the asymmetrically illuminated surface area of the road top.
- Release screws (1) and (2), adjust and tighten up.



NOTE

If you have problems adjusting the headlamps, see a specialised Sachs dealer. An incorrect adjustment is punishable by law. Remember, you are responsible for the correct adjustment of the motorbike's headlamp.

- Measure the distance from the floor to the centre of the headlamp and mark the height on the wall with a cross. Draw a second cross 12 cm beneath the first cross.
- Start the motorcycle and run the engine.

TECHNICAL DATA

Engine

Type:	FY139FMB
Construction:	One cylinder 4-stroke petrol engine
Valve steering:	1 overhead cam with rocker arms
Valve:	2 valve
Valve clearance, cold:	intake + exhaust 0.05 mm - 0.08 mm
Piston displacement:	49,5 cm ³
Bore:	ø 39 mm
Stroke:	41,4 mm
Compression ratio:	10:1
Lubrication system:	forced oil lubrication
Cooling:	air cooled
Maximum net power output:	2,0 kW at 7.000 1/min
Maximum net torque:	3,2 Nm at 4.300 1/min
Ignition system:	transistorized ignition system with electronic ignition control (CDI)
Spark plug:	NGK CR7 HSA electrode gap 0,7- 0,8 mm
Carburettor:	Mikuni type VM 12 101 6
Air-filter:	paper air-filter
Idle speed:	1.800 +/- 200 1/min
Typ of starter:	electric starter / kick starter

Power transmission

Clutch:	Wet multi-plate type
Gear box:	4-speed constant mesh, foot operated
Gear ratios:	1. gear = 36/11 (3,273)
	2. gear = 31/16 (1,938)
	3. gear = 27/20 (1,350)
	4. gear = 24/23 (1,044)
Primary transmission ratio:	4,059
Chain pinion:	11 teeth
Sprocket:	53 teeth
Drive chain:	420

TECHNICAL DATA

Chassis

Motorbike version:	Type 649
Frame:	Center-type frame made of tubular steel
Front suspension:	Telescopic fork \varnothing 37 mm , hydraulic shock absorption, travel 100 mm
Rear suspension:	Mono shock absorber, travel 65 mm
Wheels:	Light metal (Alu) Front rim size: = 1,85 x 16" Rear rim size: = 2,50 x 16"
Tires:	Front = 90/90-16 48J Rear = 120/80-16 60J
Tire pressure, solo pillion driver	Front = 2,0 rear = 2,5 bar Front = 2,2 rear = 2,7 bar
Brakes, front: Minumim lining thickness	Disc brake \varnothing 260 mm, hydraulic two piston floating caliper 2,0 mm
Brakes, rear: Minumim lining thickness	Disc brake \varnothing 215 mm, mechanical two piston caliper 1,5 mm

Lubricants and operating fluids

Fuel tank capacity:	4,6 litres, including 0,35 litres reserve
Fuel:	Unleaded fuel min. 91 octane
Telescopic-fork oil:	Viscosity SAE 10 W
Filling quantity per fork tube:	180 cm ³
Engine oil: Filling quantity:	SAE 15 W 40 mineral oil API (SG or higher) 800 cm ³
Brake fluid:	DOT 4

TECHNICAL DATA

Electrical Equipment

Generator:	12 V 80 W
Battery:	12 V 3 Ah MF
Fuse:	15 A
Lights: - Headlight: - Position light: - Instrument lights: - Brake/rear light: - Turn signal light:	Low beam 2x 12V 15W 12 V 3W Direction-indicator 12V 3W Change over gear 12 V 3W Cockpit 12 V 3W 12 V diode light 12V 21W

Dimensions and weights

Overall length:	1830 mm
Width across handlebars without rear view mirror:	780 mm
Maximum height:	1010 mm without rear view mirror
Wheel base:	1235 mm
Seat height:	865 mm
Weight empty:	85 kg
Weight in running order:	89,5 kg
Max. transport weight allowed:	190,5 kg
Max. permitted total weight:	280 kg
Top speed:	45 km/h

Warranty conditions

In case of an occurring fault the company Sachs Fahrzeug- und Motorentechnik GmbH will provide the customer with the following performances through the authorized Sachs-dealer (seller) within the scope of its statutory warranty obligations:

1. Within a period of 24 months after the delivery of the motorbike to the end customer the company Sachs Fahrzeug- und Motorentechnik GmbH will rectify any deficiencies caused by material or manufacturing faults through the authorized Sachs-dealer (seller) by repairing or replacing the affected part according to the statutory warranty regulations. Sachs Fahrzeug- und Motorentechnik GmbH may deny the requested repair or replacement of the faulty part if this would only be possible with disproportionately high costs. In this case Sachs Fahrzeug- und Motorentechnik GmbH may rectify the deficiency through the authorized Sachs-dealer (seller) by applying the other possible type of subsequent fulfillment. If both types of subsequent fulfillment are only possible with unproportionately high costs, Sachs Fahrzeug- und Motorentechnik GmbH may deny the subsequent fulfillment altogether through the authorized

Sachs-dealer (seller). The customer is then entitled to legal claims. Replaced parts pass over into the possession of Sachs Fahrzeug- und Motorentechnik GmbH.

2. The installation of spare parts within the scope of warranty does not extend the warranty period that has started with the date of delivery of the motorcycle.
3. The warranty does not cover normal wear and tear caused by normal use as well as wear and tear caused by inappropriate handling and inappropriate use. Oxidation and corrosion are caused by environmental influences and are also not covered under warranty
4. Warranty claims lodged by the customer will be rejected in case of: Manipulations to the motorcycle, installation of a different exhaust system, changes to the gearbox or secondary transmission ratio and installation of accessories or spare parts which have not been approved by Sachs Fahrzeugtechnik. Repairs carried out in workshops not authorized by Sachs Fahrzeug- und Motorentechnik GmbH and the non-compliance with the maintenance intervals in the workshop of an authorized Sachs-dealer will also cause the rejection of warranty claims.

5. When lodging a warranty claim the customer must present the correctly filled in service book to the seller.
6. The following table gives the customer an overview of the average limits of the respective wear parts:

List of wear parts:

Wear parts	Wear limits
Tires, hoses, rims	depending on riding style, load and tire pressure the wear limit may already be reached after only 1000 km or even earlier.
Wheels, hubs	depending on riding style, load and tire pressure the wear limit may already be reached after only 2500 km or even earlier. Check during each maintenance. Oxidation is a lack of maintenance!
Oils, air filter, leakage inspection on engine	during the first inspection, then with every maintenance interval. Check oil level before every ride.
Spring fork, spring strut	Cleaning / inspection during every maintenance.
Lamps, incandescent bulbs, electric system	depending on road conditions / unevenness of the road surface the lifetime will be reduced, this may already occur after 500 km.
Brake linings, brake shoes, brake lines	depending on riding style and load these may already be worn after 2500 km, in cross-country operation even earlier.
Sedal rings, sealants, O-rings	must be replaced during each maintenance interval to ensure proper function.
Radial seals on engine, gearbox, fork and wheels	depending on road conditions and care wear may start after 500 km. Dirt reduces the lifetime. Do not clean with a high pressure cleaner!
Wheel bearings, steering bearings	depending on road conditions and care wear may start after 500 km. Soiling of the wheel hub reduces the lifetime. Check during each maintenance interval, do not clean with a high pressure cleaner!
Swing arm bearing	depending on load and care after 2500 km, check with every maintenance.
Cables	depending on care starting after 500 km. Check with every maintenance.

WARRANTY

List of wear parts:

Wear parts	Wear limits
Cleaning and lubrication of drive chain	according of use and of every washing.
Drive chain, pinion, sprocket wheels, chain guidance, chain pulley	depending on road conditions / ground and care, a wear is possible after 1500 km. Do not wash with high pressure cleaner! Control during every maintenance.
Starter battery, batteries, fuses, starter brushes	depending on ambient temperatures failures can be expected in the 6th month, when used for short rides even earlier.
Mirror glasses	depending on ambient temperatures and care failures can be expected in the 6th month, in winter operation even earlier. Oxidation is a lack of maintenance!
Bowden cables, brake cables, throttle cables	depending on use and care from the 6th month.
Free-wheel sprockets, free-wheel of starter	depending on care from the 6th month.
Self-locking nuts, cotter pins locking plates bonded screw connections	during each maintenance interval or after unscrewing the nut or unlocking the lock.
Inspection, cleaning and adjustment of the carburettor	after each cleaning and max. every 200 hours, at least 1x per year.
Clutch linings / friction discs	depending on riding style and load these may be worn after 2500 km.
Pistons, cylinders, crankshaft, conrods, engine bearings	depending on riding style, load and care these parts may be worn after 500 hours. When riding mainly with full throttle even earlier.
Spark plugs	with each or every second maintenance interval, max. very 200 hours.
Exhaust system, inspection of mountings	depending on use and care from the 6th month, in winter and short distance operation even earlier. Oxidation is a lack of maintenance!

Inspection plan

Please observe the following:

- During and after the warranty period all inspections should solely be performed by a specialised dealer approved by us.
- Observe the inspection intervals and have the specialised dealer confirm them on the guarantee certificate.
- Use only original spare parts.



CAUTION

In case of non-compliance the warranty will become null and void.

The various activities carried out are listed on the inspection plan.

During the warranty period the following inspection intervals must be complied with:

At	1.000 km (1 st service)
Every	4.000 km / or after 4 months
Every	8.000 km / or after 8 months

After the warranty period the inspection intervals specified in this manual must be applied as follows:

Every	4.000 km / 4 months
Every	8.000 km / 8 months



WARNING

For safety reasons, do not carry out any repair or adjustment activities to the motorcycle and chassis that exceed a closely restricted scope. Tinkering with safety-relevant parts could threaten the safety of yourself and third parties.

This applies especially to the exhaust system, carburettor, ignition system, clutch, gears, fork column, brake system and lights.

Before starting work on the electrical system, disconnect the minus terminal of the battery.

WARRANTY

Inspection plan type 649

Component Assembly	Servicing Tasks (*Only by an authorised Sachs dealer)	Before each trip	1st service after 1000 km	Every 4.000 km / 4 months	Every 8.000 km / 8 months
Valves	Check and adjust valves if necessary (cold)*		x	x	
Spark plugs	Check condition and accordingly clean or replace		x	x	
	Replace				x
Air filter	Clean filter and housing.*		x	x	
	Replace paper filter*			x	
Carburetor	Check and adjust idle and cold start*	x	x	x	
	Throttle cable	x	x	x	
Fuel filter	Clean (fuel cock)		x	x	
Fuel hoses	Check and replace if necessary (change at least every 4 years)	x	x	x	
Engine oil	Change (operating temperature)		x	x	
Exhaust system	Check for leads and repair if necessary*		x	x	
Brakes	Check brake function and brake fluid as well as housing, correcting if necessary. Adjust rear brake*	x	x	x	
	Check and replace brake pads*		x	x	
Brake fluid	Change*	Every 24.000km / 2 Years			
Brake hoses	Check and renew* (min. every 4 years)*	x	x	x	
Clutch	Check and adjust	x	x	x	

Inspection plan type 649

Component Assembly	Servicing Tasks (*Only by an authorised Sachs dealer)	Before each trip	1st service after 1000 km	Every 4.000 km / 4 months	Every 8.000 km / 8 months
Rear suspension	Check, retighten, replace if necessary or lubricate*	Every 24.000km / 2 Years			
Tyres	Check general condition and profile depth and replace if necessary	x	x	x	
Wheels	Check for damage, balance*	x	x	x	
Steering and bearings	Check and adjust free play*	x	x	x	
Front forks	Check general condition as well as for leaks and repair if necessary*	x	x	x	
Chain	Check adjustment and condition and grease, adjust and renew if necessary	inspect	clean and lubricate every 1000 km		
Side stand	Check, grease, repair if necessary*	x	x	x	
Nut and bolt tightness	Check that all bolts and nuts are tightened to the correct torque settings*		x	x	
Cables	Check the throttle, brake and clutch cables for damage and smooth operation, if necessary replace*		x	x	
Headlight	Check and adjust	x	x	x	
Battery	Check, recharge if necessary	x	x	x	
General safety check	Check for traffic/operational safety: clutch, gear, idling speed, handbrake and footbrake, fork column, lighting and direction-indicator system, check indicator lights, check tyre pressure	x	x	x	

WARRANTY

Maintenance confirmations

Workshop activities carried out			Workshop activities carried out		
Activities carried out	km	date	Activities carried out	km	date

Maintenance confirmations

Workshop activities carried out			Workshop activities carried out		
Activities carried out	km	date	Activities carried out	km	date

WARRANTY

Maintenance confirmations

<p>1.000 km/1 months 1st service dealer stamp:</p> <p>km date.....</p>	<p>4.000 km/4 months dealer stamp:</p> <p>km date.....</p>	<p>After 8.000 km/8 months dealer stamp:</p> <p>km date.....</p>	<p>After 12.000 km/12 months dealer stamp:</p> <p>km date.....</p>
<p>After 16.000 km/16 months dealer stamp:</p> <p>km date.....</p>	<p>After 20.000 km/20 months dealer stamp:</p> <p>km date.....</p>	<p>After 24.000 km/24 months dealer stamp:</p> <p>km date.....</p>	<p>After 28.000 km/28 months dealer stamp:</p> <p>km date.....</p>

Maintenance confirmation

After 32.000 km/32 months
dealer stamp

km
date.....

After 36.000 km/36 months
dealer stamp

km
date.....

After 40.000 km/40 months
dealer stamp

km
date.....

After 44.000 km/44 months
dealer stamp

km
date.....

After 48.000 km/48 months
dealer stamp

km
date.....

After 52.000 km/52 months
dealer stamp

km
date.....

After 56.000 km/56 months
dealer stamp

km
date.....

After 60.000 km/60 months
dealer stamp

km
date.....

WARRANTY

Maintenance confirmation

New brake fluid
Yes no

Km.....
Date

Stamp, signature

New brake fluid
Yes no

Km.....
Date

Stamp, signature

New brake fluid
Yes no

Km.....
Date

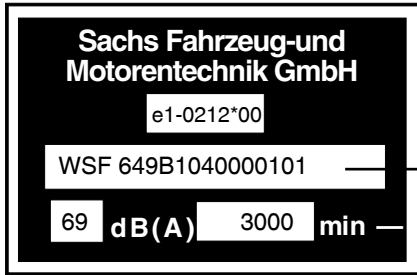
Stamp, signature

New brake fluid
Yes no

Km.....
Date

Stamp, signature

Rating plate (sample):



EC-license:

Federal Bureau for Motorised Vehicles (State's Eagle)
Förderstraße 16 D-24944 Flensburg

EC Operating License

According EEC 92/61

EC license: e1 2002/24 0212 00

Motorcycle: (under §18 StVZO)

Vehicle type: 649

Holder of the EC operating license and manufacturer:

Sachs Fahrzeug- und Motorentechnik GmbH
90327 Nürnberg



Motorbike data

(fill out on purchase)

Model designation:

Vehicle identity No:
(Chassis No)

Key No:
.....

EC license:

Owner:
.....
.....

Important

If you lose the operating license, **immediately** have a motor-vehicle approval agency write out a certificate of approval.

Send us the certificate along with the vehicle data. You will then receive from us a copy of the operating license for a fee.





