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2008 10 002



owners manual

**MADASS 50**



## PREFACE

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**You have purchased a SFM 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 provides the motorcycle with all the characteristics that are typical of SFM, such as economical operation, quality, reliability and its lasting value.

SFM GmbH is continuously involved in the further development of all types and models. We therefore ask you for your kind understanding that we reserve the right to change the scope of delivery with respect to appearance, equipment and technology. No claims can thus be derived from the data and descriptions contained in this instruction manual.

Reprinting, reproduction and translation, even of excerpts, without our express consent is not permitted. All rights stipulated in the copyright law remain expressly reserved.

Technical changes to the standard motorcycles can cause the EC type approval to become invalid. Therefore before implementing a change, ask a specialized dealer whether this is allowed.

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 solely determined by the purchase agreement concluded with the dealer.

This operating manual includes important instructions for handling your light motorcycle. Read it carefully, because professional handling combined with regular care and maintenance helps to maintain the motorbike's value and is one of the requirements for warranty claims.

We wish you at all times a safe journey.

Your  
**SFM GmbH**

**OVERVIEW AND OPERATION**

Safety symbols ..... 3  
Chassis number, engine number ..... 3  
Side view ..... 4-5  
Engine ..... 6-7  
Handlebar fittings ..... 8  
Cockpit ..... 9  
Ignition lock ..... 9  
Speedometer ..... 10-11

**SAFETY TEST**

Checklist ..... 12  
Clutch ..... 13  
Fuel, fuel tank ..... 14  
Fuel tap ..... 15  
Engine oil ..... 16  
Checking the oil level ..... 17-18  
Brakes ..... 19-20  
Drive chain ..... 21  
Tyre profile, tyre pressure and size ..... 22  
Load / lights ..... 23

**RIDING INSTRUCTIONS**

Ride safely ..... 24  
Ride economically and be aware of the environment ..... 25  
Running-in instructions ..... 26  
Side stand ..... 27  
Starting ..... 28  
Starting with kick starter ..... 29  
Starting with electric starter ..... 30  
Start-up ..... 31  
Braking ..... 32-33  
Stopping the engine ..... 34  
Steering lock ..... 34

**SERVICE INSTRUCTIONS**

Servicing the motorbike / cleaning agents ..... 35-36  
Operation in winter and anti-corrosion protection ..... 37  
Repairing paint damage / servicing the tyres ..... 37  
Lay-up / commission ..... 38  
Technical changes, accessories and spare parts ..... 39

## CONTENTS

---

### NOTES ON MAINTENANCE

Checking steering bearing.....	40
Checking the telescopic fork and shock absorber .....	40
Adjusting the shock absorber .....	41
Removing the front wheel.....	42
Installing the front wheel.....	43
Removing the rear wheel.....	44
Installing the rear wheel.....	45
Checking, adjusting the drive chain.....	46-47
Front wheel brake .....	48
Rear wheel brake .....	48-49
Adjusting the clutch lever.....	50
Cleaning the air filter.....	51
Cleaning the fuel filter.....	52
Adjusting the play of the twist grip throttle control .....	52
Spark plug .....	53
Battery .....	54-55
Checking the fuse.....	56
Changing the bulbs .....	57-59
Adjusting the headlamps .....	60

### TECHNICAL DATA

Engine .....	61
Power transmission .....	62
Chassis.....	63
Lubricants and operating fluids.....	64
Electrical Equipment.....	65
Dimensions and weights.....	66

### WARRANTY AND SERVICE DATA

Warranty conditions .....	67
List of wear parts .....	68-69
Inspection plan .....	70-71
Maintenance confirmation .....	72-77
Motorbike data / Rating plate.....	79

**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.

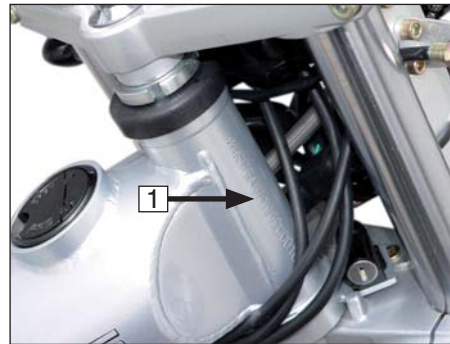
 **CAUTION**

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.

**Chassis number**



 **NOTE**

The description for right- and left-hand side is viewed from the driver.

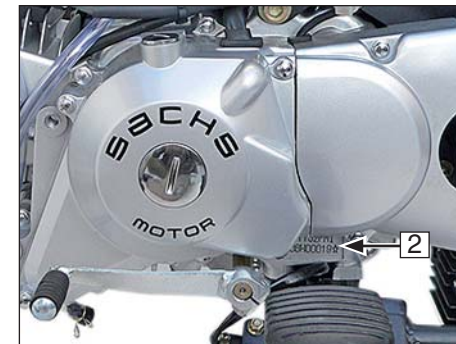
The chassis number (1) is located on the right-hand side in front of the frame.

**Key**

With the motorbike you get two indefinite ignition keys. Keep the spare key at a safety place.

With the key you control ignition, all functional circuits and steering lock.

**Engine number**



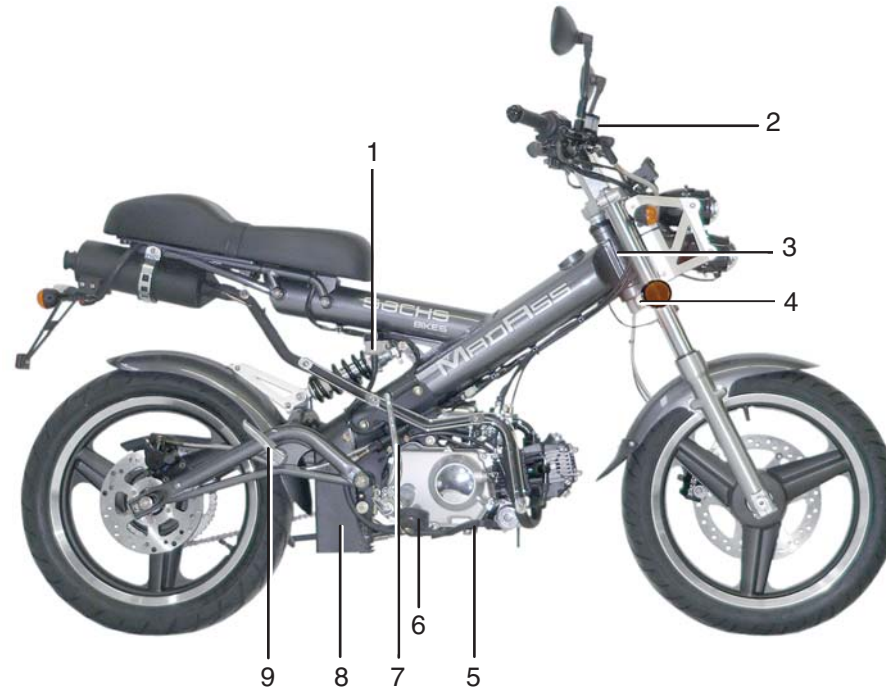
The engine number (2) is located on the left-hand side.

## OVERVIEW AND OPERATION

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### Right-hand side view

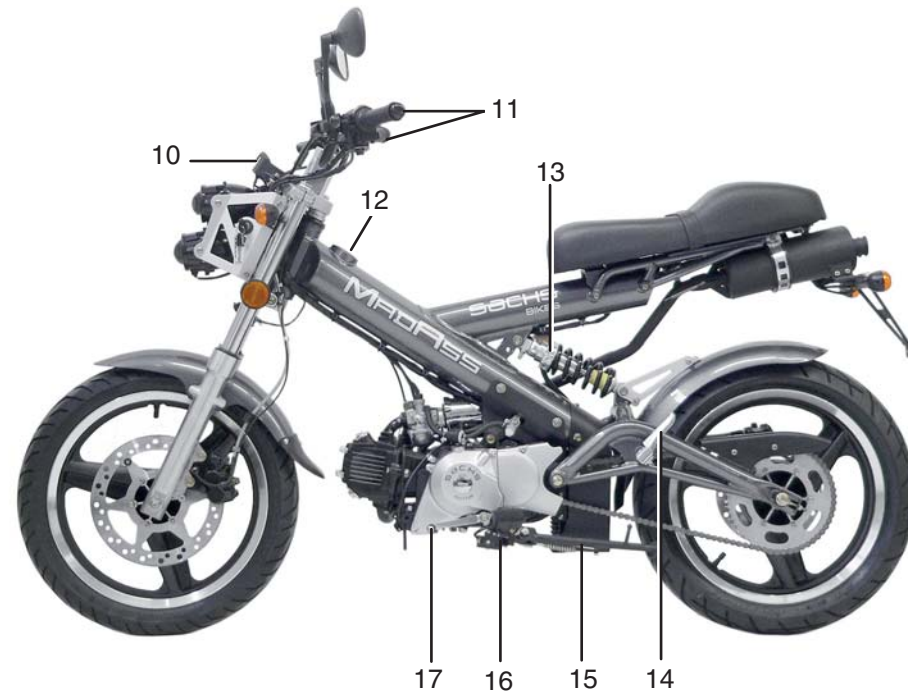
- 1 Brake fluid reservoir rear brake
- 2 Brake fluid reservoir front brake
- 3 Chassis number and rating plate
- 4 Fork column lock
- 5 Footbrake lever, rear brake
- 6 Footrest
- 7 Kick starter
- 8 Battery and fuse
- 9 Pillion footrest, fold-up



Illustration, 4- gear model

**Left-hand side view**

- 10 Cockpit
- 11 Handlebar fittings
- 12 Tank cap
- 13 Adjustment shock absorber
- 14 Pillion footrest, fold-up
- 15 Side stand
- 16 Footrest
- 17 Gear shift pedal



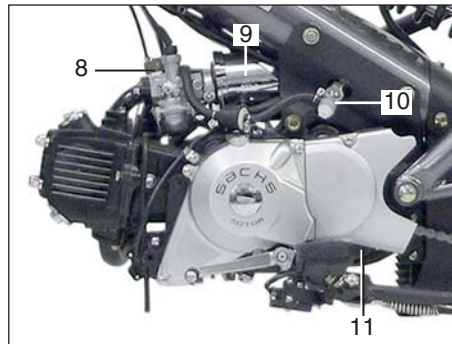
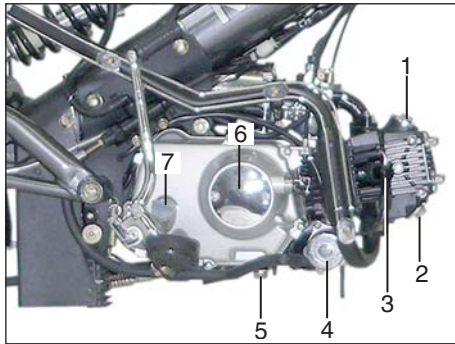
**Illustration, 4- gear model**



## OVERVIEW AND OPERATION

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Right hand view of engine, 4-gear model    Left hand view of engine, 4-gear model



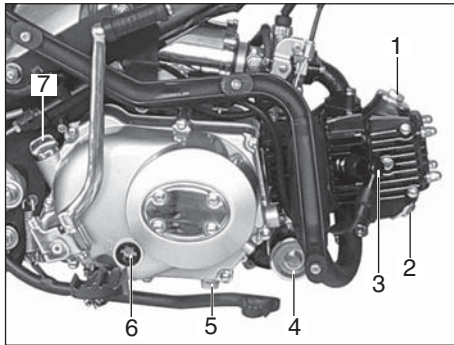
- 1 Intake valve adjuster cover
- 2 Exhaust valve adjuster cover
- 3 Spark plug connector
- 4 Electric starter
- 5 Oil drain plug
- 6 Clutch cover
- 7 Oil filler cap

- 8 Carburetor
- 9 Air filter housing
- 10 Fuel tap
- 11 Engine number

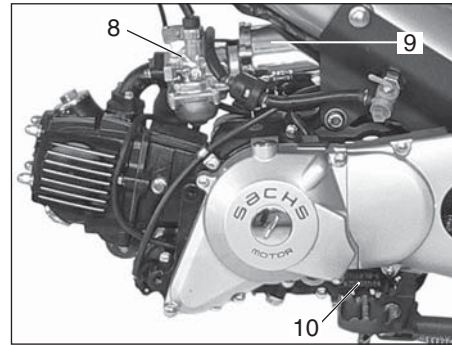
## OVERVIEW AND OPERATION

Right-hand view of engine, automatic model

Left-hand view of engine, automatic model



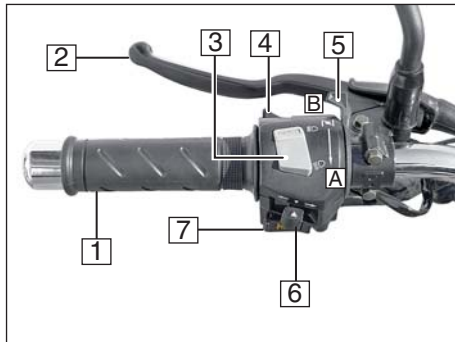
- 1 Service cover, intake valve
- 2 Service cover, exhaust valve
- 3 Spark plug socket
- 4 Starter
- 5 Oil drain plug
- 6 Oil level inspection glass
- 7 Oil filler plug




- 8 Carburettor
- 9 Air filter housing
- 10 Engine number

## OVERVIEW AND OPERATION

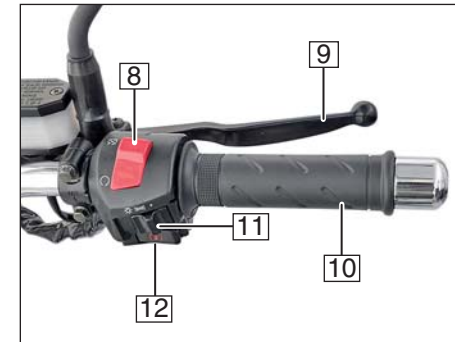
### Left-handle handlebar fittings




- 1 Fixed grip
- 2 Clutch lever
- 3 Head light switch
  - ☰ High beam
  - ☱ Low beam
- 4 Head light signal
- 5 Choke lever (|↘|)  
Operating positions:
  - A Cold start
  - B Warm start

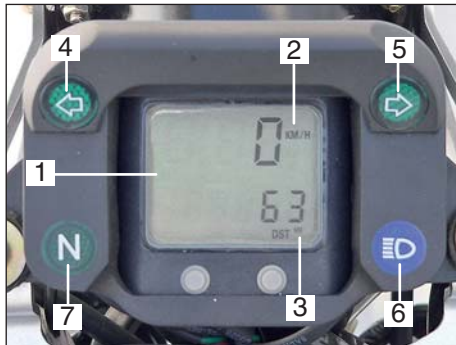
- 6 Direction-indicator switch
  - ↶ Switch to the left:  
Left indicator on
  - ↷ Switch to the right:  
Right indicator on
  - ▲ Push button for switch off
- 7  Push-button: horn

### Right-handle handlebar fittings



- 8 Emergency off switch
  - ⊗ engine will not start
  - ↻ engine starts
- 9 Handbrake lever
- 10 Throttle
- 11 light switch
  - off
  - ☰ position light
  - ☼ driving light
- 12  Starter button

**Cockpit**



- 1 Speedometer
- 2 KM/H -odometer
- 3 DST - total distance (km)  
TRIP- trip meter

**Instrument lights**

- 4 ↵ left direction indicator green
- 5 ⇨ right direction indicator green
- 6 ≡ high beam blue
- 7 N Change-over gear Neutral green  
4- gear model

**Ignition-lock**



**NOTE**

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

**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 ⏏.

## OVERVIEW AND OPERATION

### Speedometer set-up

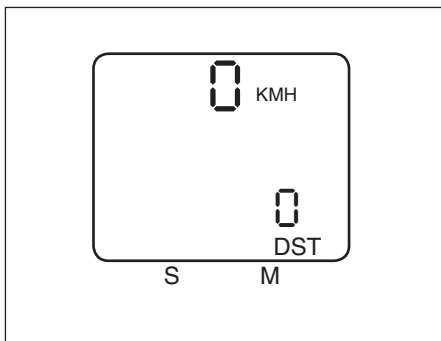


#### NOTE

The display is only visible when the ignition is on.

- M Mode for:  
DST = total distance (km)  
TRIP = trip odometer  
CLK = clock time
- S Set for clock time and to clear trip odometer
- Button M press once changing from DST to TRIP or to CLK
- Button S press in TRIP Mode to clear the trip odometer to zero

### Speedometer time adjustment

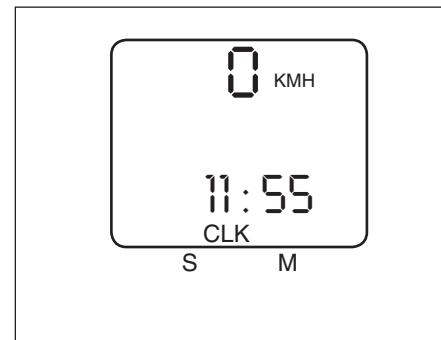
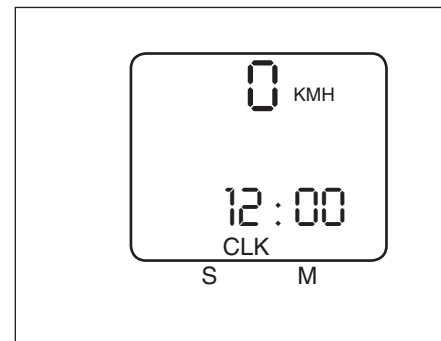


Button M press until the clock time (CLK) appears

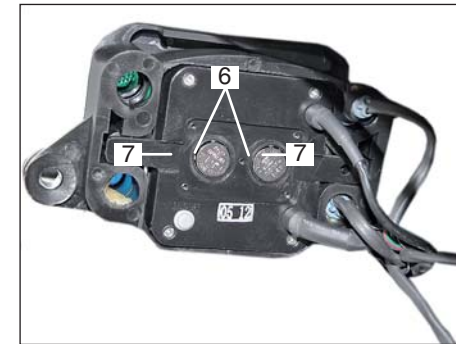
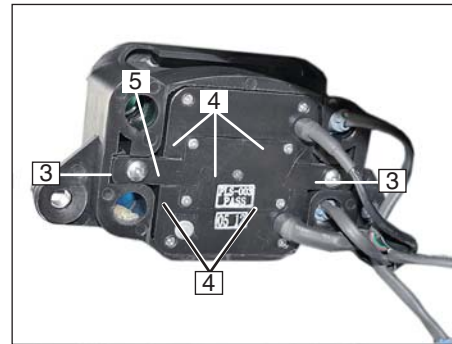
Button S press once, the hour value flashes  
The hour value can be set by pressing button M

Button S press once the minute value flashes  
The minute value can be set by pressing button M

Button S press once, the time is set and ( : ) flashes.



Speedometer battery change



**NOTE**

If the ignition is turned off the clock is supplied by the battery power. Always replace both batteries.

After disconnecting and reconnecting the battery the clock time needs to be reset.

- Remove the screws (1) and take off the speedometer (2).

- Remove the screws (3 + 4) and take off the cover (5).

- Replace the batteries (6) by using new batteries, type AG 13.
- Set-in the batteries with the plus terminal (+) showing upwards.
- Insert the O-rings (7) and close the cover properly.



**DISPOSAL**

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

## SAFETY TEST

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### 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 SFM 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 SFM 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

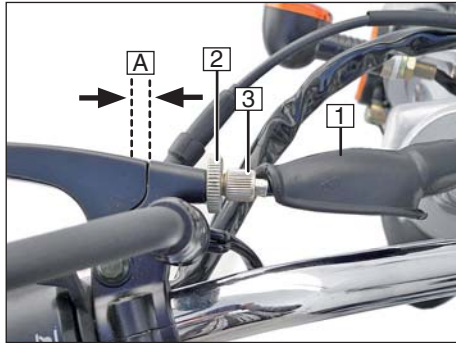
**The exhaust system becomes very hot. While riding, idling or parking, make sure that no inflammable materials (e.g. hay, leaves, grass, coverings or luggage, etc.) can come into contact with it!**

#### 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 SFM 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, 4-gear model****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 = 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.

**NOTE**

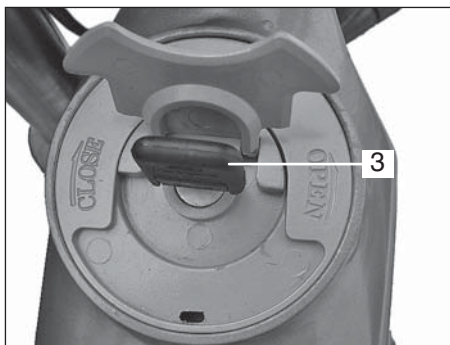
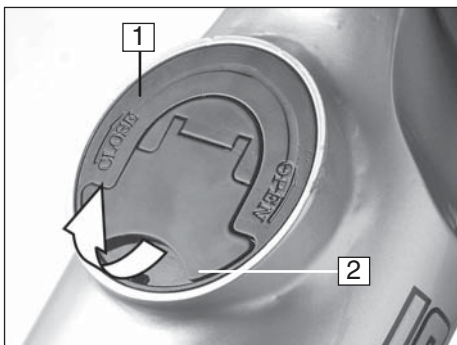
If this adjustment is not sufficient, adjust by turning the setting screw at the other end of the clutch cable in the direction of the engine

➡ MAINTENANCE.



## SAFETY TEST

### Fuel, fuel tank



#### **WARNING**

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

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.

#### **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:**

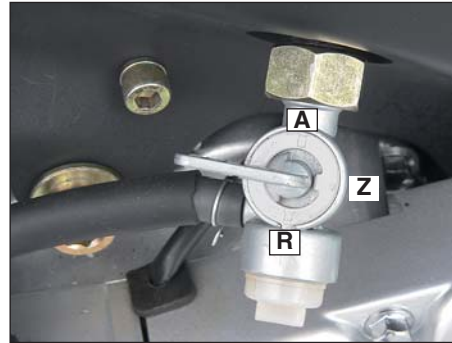
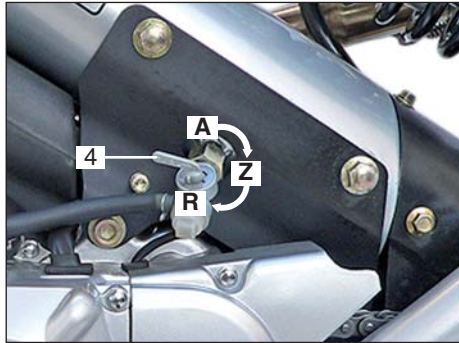
- Close the tank cap (1) by turning the cover (2) to the right and pull out the ignition key.

#### **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)

**Fuel tap****Fuel tap (4)****Fuel tap positions:****A = OPEN**

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

**R = RESERVE**

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

**Z = CLOSED**

fuel supply closed.

**CAUTION**

When you stop the engine, always set the fuel tap to position **CLOSE**. 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.

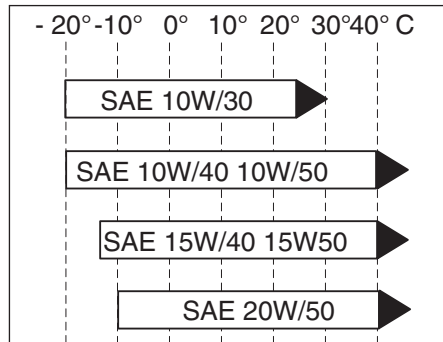
## SAFETY TEST

### 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 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.

#### 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  $-15\text{ }^{\circ}\text{C}$  to  $+40\text{ }^{\circ}\text{C}$  and therefore represents the optimum for our latitudes.

**Checking the oil level, 4-gear model**



**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.

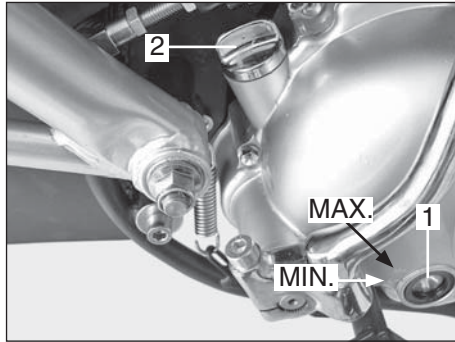
If required, replenish the engine oil SAE 15W/40 via the oil-filler opening of the oil filler cap.

- Tighten the oil filler cap by hand.

## SAFETY TEST

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### Checking the oil level, automatic model



#### CAUTION

Checking the oil on a cold engine will lead to misinterpretation and thus to an incorrect oil level!

In order to avoid engine damage: Do not exceed the maximum level! Do not allow to drop below the minimum level!

- Shut the engine down at operating temperature, wait approx. 5 minutes and hold the vehicle in level position.



#### NOTE

Keep the motorbike in level position throughout the oil level check. Even the slightest inclination towards the side will lead to measuring faults.

- Read the oil level in the inspection glass (1) at the bottom right hand side of the crankcase with the engine stopped.
- The oil level should be between the MIN and MAX-marks.

If necessary, replenish with engine oil SAE 15W/40 through the oil filler opening of the oil level inspection plug (2).

## Brakes

**⚠ 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 SFM dealer.

## Check the brake-fluid level

**⚠ WARNING**

Every two years, the brake fluid must be changed by a SFM dealer. The level must not drop below the MIN mark. Use only brake fluid of the DOT 4 classification. If air bubbles can be seen, check the brake linings for wear; if necessary, replenish the brake fluid.

**👉 CAUTION**

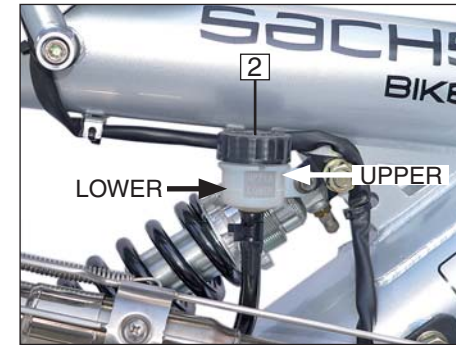
Do not spill any brake fluid on painted or plastic surfaces as it will damage the surface severely.

## Front brake-fluid tank



- Turn the handlebars until the brake-fluid tank (1) is level.
- The brake fluid level should be between the minimum (MIN) and the maximum marking (MAX).

## Rear brake-fluid tank

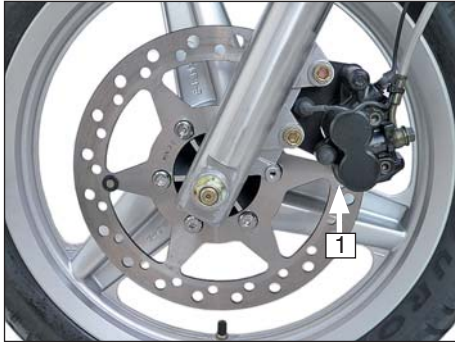


- Park the motorbike horizontally.
- The brake fluid level should be between the minimum (MIN) and the maximum marking (MAX) on the brake fluid tank (2).

## SAFETY TEST

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### Front brake



### Rear brake



### Checking the brake linings



#### **WARNING**

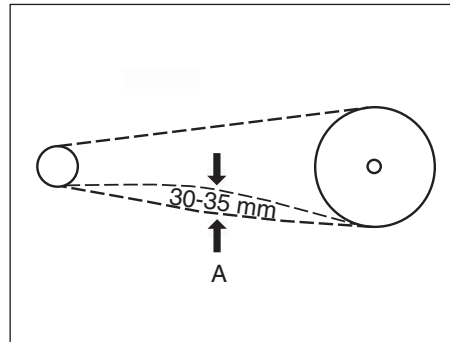
**The brake disks and brake linings must be free of oil and grease.**

Brake linings (1) 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**

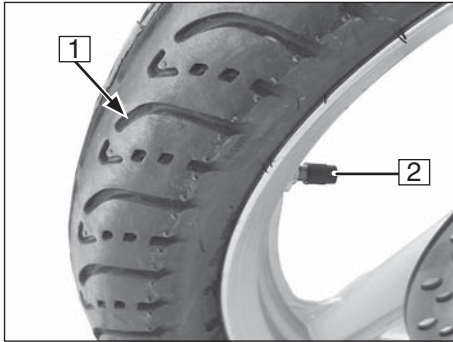
- Adjust the drive chain is necessary.

➡ MAINTENANCE



## SAFETY TEST

### Tyre profile



#### Checking the tyre profiles

#### **WARNING**

Observe the minimum profile depth prescribed by law.

Never ride without valve caps (2). Firmly tightened valve caps prevent the tyre from suddenly losing pressure.

- 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

### Tyre 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	2.2 bar	2.2 bar
Rear	2,5 bar	2.7 bar

### Tyre size

The standard motorbike is provided with the following tyre sizes:

Front 90/80-16 M/C 45P  
Rear 120/70-16 M/C 57P

All tyres are tubeless.

#### **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.

---

**Load / lights** **WARNING**

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

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

**NOTE**

SFM accessories and SFM-approved products as well as qualified advice are available from all specialized SFM 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 300 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.

## RIDING INSTRUCTIONS

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### 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 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.

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 SFM 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.

## RIDING INSTRUCTIONS

---

### Running-in instructions

running-in instructions for engine and gearbox



#### CAUTION

Exceeding the running-in speeds increases the wear of the engine!

In case of engine problems during the running-in period you should immediately consult your specialized SFM-dealer.



#### NOTE

During the running-in period, ride in frequently changing load -and engine speed ranges. Drive on winding and slightly hilly routes. Avoid constantly low engine speeds and full throttle under load.

Maximum top speed in the individual gears during the running-in period:

4-gear model				
Kilometre	km/h in the individual gears			
	1.	2.	3.	4.
0-500	18	28	35	40
500-1000	25	35	40	45

Automatic model	
0-500 km	Open the throttle control half.
500-1000 km	Do not open the throttle more than three-quarter.

Slowly increase the engine speeds. Up to 1000 km avoid longer rides with full load



#### CAUTION

Have the first inspection carried out after the first 1000 km.

Ask your SFM dealer in due time to avoid unnecessary waiting.

Running-in new tyres



#### WARNING

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



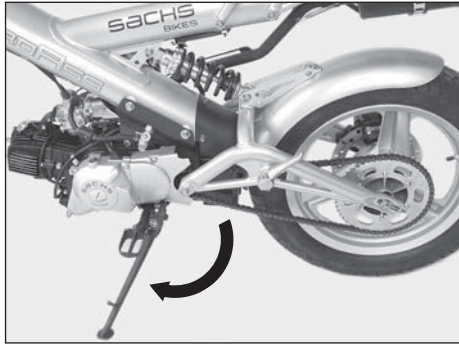
#### WARNING

New brake linings must be run-in and will only reach their full friction power after the initial 500 km.

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

During this period, avoid unnecessary hard braking actions!

**Side stand**



- Switch off the engine.
- Left hand on the left-hand handlebar grip.
- Right hand on the seat.
- Fold out the arm of the 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.

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.

It is essential that the side stand is folded up before starting off! -Risk of accidents !

**⚠ CAUTION**

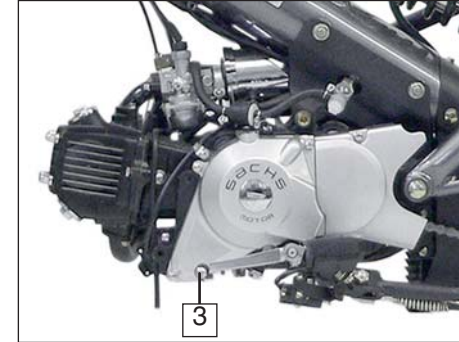
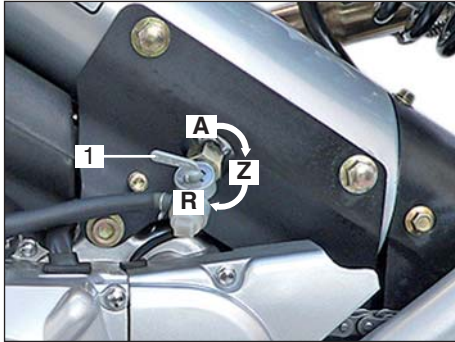
The motorbike is equipped with a side stand switch.

If the side stand is folded up and a gear is shifted the ignition will be disconnected.

The engine is shut off and will not start.

## RIDING INSTRUCTIONS

### Starting



#### Before starting

- Put the motorcycle in a vertical position and fold up the side stand.
- Turn the fuel cock (1) to position  
A = ON or  
R = RESERVE
- Mount the motorcycle.

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



#### WARNING

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

#### 4-gear model:

- Shift the gear pedal (3) to neutral.

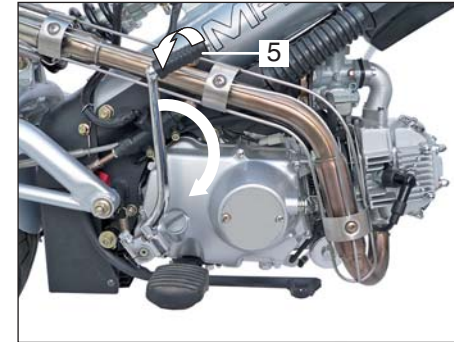
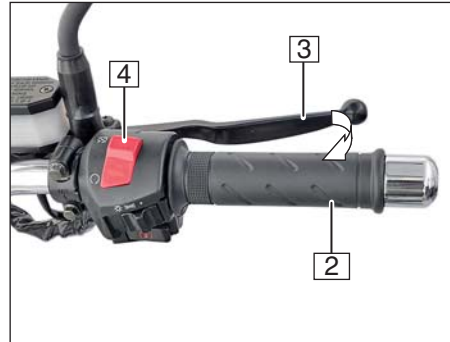
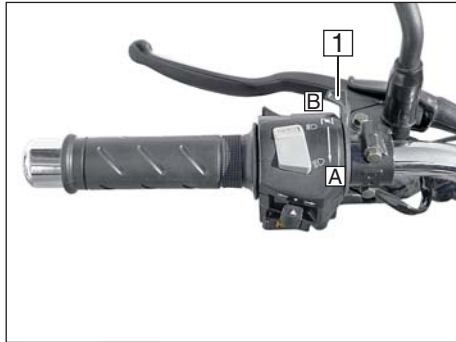


#### NOTE

#### 4-gear model:

After shifting to neutral, the green control light „N“ for the manual gearbox must light up.

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 (2).

**Automatic model:**

- Pull the hand brake lever (3) and hold it. Then operate the kick starter (5).
- Only release the hand brake just before setting off.
- Depress the kick starter lever (5) 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) in position "B".
- When the operating temperature is increasing, turn back the CHOKE 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.

 **CAUTION**

The EMERGENCY OFF switch (4) is a safety device and should normally be in position .

 **ON:**

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

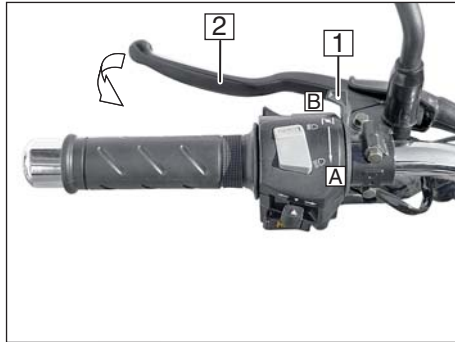
 **OFF:**

Switch upwards. The engine will not start.



## RIDING INSTRUCTIONS


### Starting with electric starter

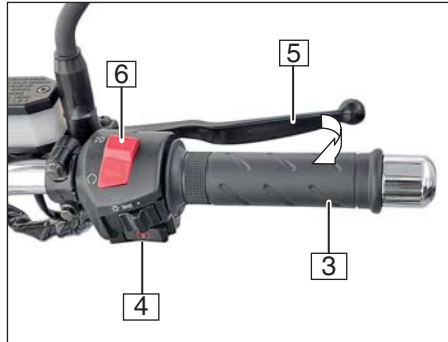


#### 4- gear model

##### CAUTION

Avoid high engine-speed counts after a cold start. The starter is active only with pulled clutch lever.


- Turn the CHOKE (1) in the direction of the arrow "A" for cold start.
- Do not open the throttle (3).
- Pull in the clutch lever (2).
- Operate the start button  (4).



#### Automatic model

##### 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 (3).
- Pull the hand brake lever (5) and hold it.
- Operate the start button  (4).
- Release the hand brake (5) just before setting off.

##### 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.


- As soon as the engine is no longer running smoothly, turn back the CHOKE (1) in position "B".
- When the operating temperature is increasing, turn back the CHOKE 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.

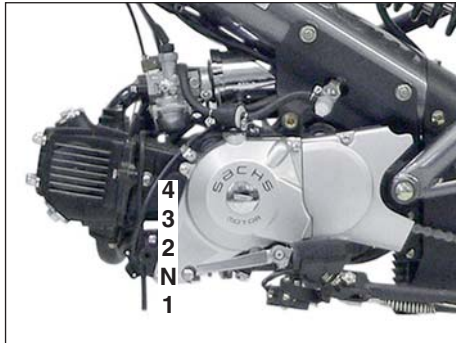
##### CAUTION

The EMERGENCY OFF switch (6) 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.

**Start-up**



**4- gear model shifting gears**

**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).**

**Starting / shifting up**

- Pull in the clutch lever (1).
- Push down on the foot-operated gear lever (without opening the throttle).
- Carefully engage the clutch.

- Simultaneously slightly open the throttle (2).

- Accelerate after engaging the clutch.

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

**Shifting down**

- Close the throttle.
- Adapt your riding speed.
- 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).

**Start-up, automatic model**

- Release the hand brake lever (3).
- Slightly open the twist grip throttle control (2) to accelerate the motorbike.

## RIDING INSTRUCTIONS

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### 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.



#### **WARNING**

**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



#### **WARNING**

**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).



#### **WARNING**

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

#### Dirty brakes

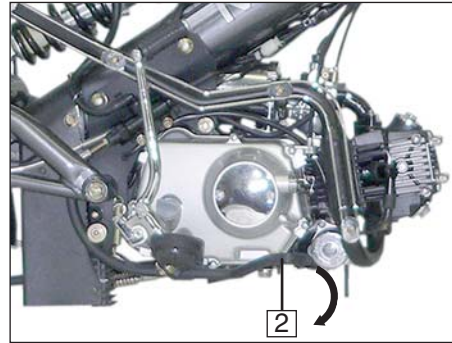
When riding on dirty streets, the braking effect can be delayed due to dirty brake discs and linings.



#### **WARNING**

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

### Braking



### 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.


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.

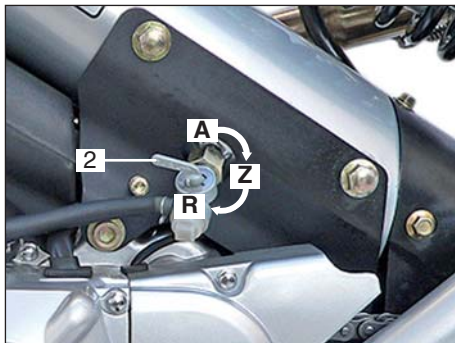
## RIDING INSTRUCTIONS

### 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 (Z). In the ON (A) or RES (R) 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.

### Steering lock



Safeguard the steering against unauthorized use.

#### Lock:

- Turn the handlebar fully to the left.
- Insert key (1) into the lock and turn it in clockwise direction.
- Pull out the key.

#### Unlock:

- Insert key (1) into the lock and turn it in anti-clockwise direction.
- Pull out the key.



#### CAUTION

Always remove the key before setting off.

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**

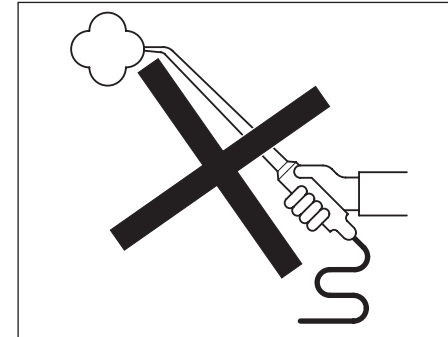
Always carry out a brake test after cleaning and before starting a ride!



**CAUTION**

Do not use steam or high-pressure jet devices!

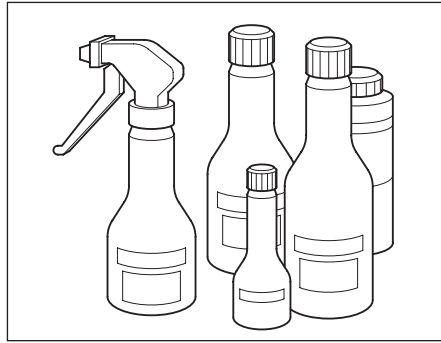
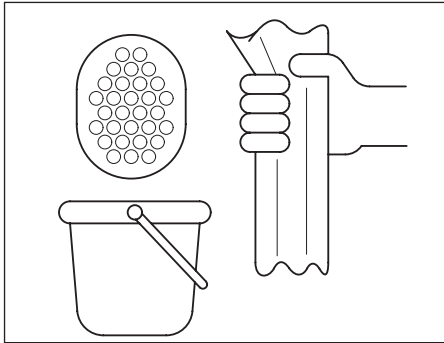
Such devices can damage seals, the hydraulic braking system and the electrical system.



## SERVICE INSTRUCTIONS

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### Servicing the motorbike / cleaning 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.

#### 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.

### Operation in winter and anti-corrosion protection



#### NOTE

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

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

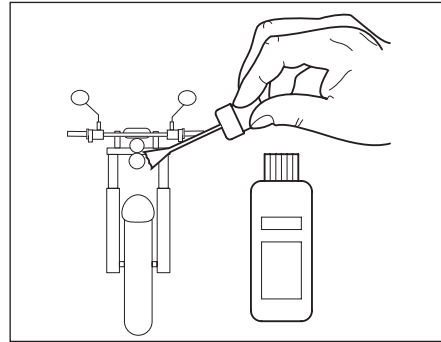


#### CAUTION

**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



Minor paint damage should be immediately repaired.

### 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.**



## SERVICE INSTRUCTIONS

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### 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 SFM dealer change the engine oil. Combine lay-up / commission activities with an inspection by a SFM 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 SFM dealer can carry out these activities with meticulous care.

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



#### CAUTION

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

**This is in your own interests: the safety, suitability and reliability of these accessories and parts will have been tested specifically for SFM 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 SFM accessories and original SFM spare parts, see a specialised SFM dealer.

He will also ensure that they are professionally installed.

## NOTES ON MAINTENANCE

### Checking the steering bearings



#### NOTE

The telescopic fork should not jam up when turned and it should swing back lightly to both end positions.

- Pull the hand brake to block the front wheel brake.
- Hold the handlebar with both hands and try to move the handle bar back and forth.

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

### Checking the telescopic fork



- Pull the hand brake to block the front wheel brake.
- Now pump the fork girders several times up and down using the handlebar.
- The suspension should respond perfectly.
- Check the fork girders for oil leaks.

#### Checking the fastening of the handlebar

- Check all four handlebar fastenings (1) for tight fit.

### Checking the shock absorber



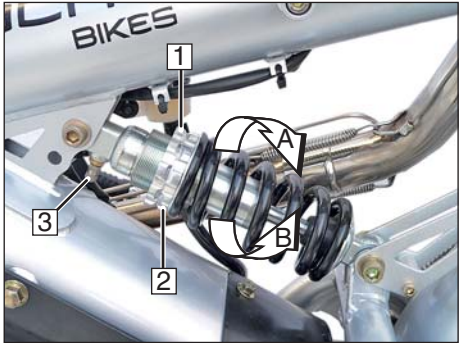
- Check the fastenings (2) of the spring strut for tight fit.
- Check the spring strut for oil leaks.



#### NOTE

If damage to the telescopic fork or the spring strut is found have the motorbike examined by a professional SFM dealer.

**Adjusting the shock absorber**



**⚠ WARNING**  
Before taking a ride adjust the spring preload of the spring strut according to the total weight!

A = harder  
B = softer

**Adjusting the spring preload**

**👉 NOTE**

The spring preload can be infinitely adjusted.

Slacken the locking nut (1) with a suitable spanner to adjust the spring preload.

Turn the adjustment nut (2) with the spanner in direction „A“ to increase the spring preload (harder suspension).

Turn the adjustment nut (2) with the spanner in direction „B“ to reduce the spring preload (harder suspension).

Retighten the lock nut (1).

**👉 CAUTION**  
The spring strut is manufactured with a gas filling.

**Do not open the valve cap (3) and do not make any changes.**

## NOTES ON MAINTENANCE

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### Removing the front wheel

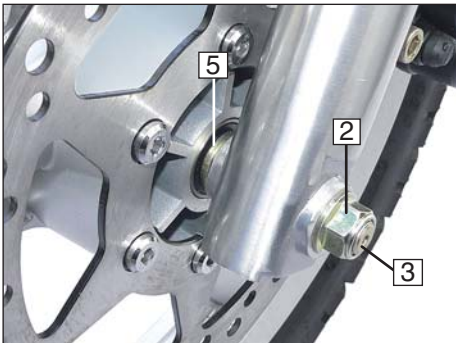


#### CAUTION

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 shaft-clamping screws (1).
- Loosen the axle nut (2).
- Lift the front wheel and pull out the full-floating axle (3).
- Remove the front wheel downwards.

Installing the front wheel



 **CAUTION**

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

- Roll the front wheel in between the fork tubes and insert the spacer bush (4) (on the right as seen from the riding direction).

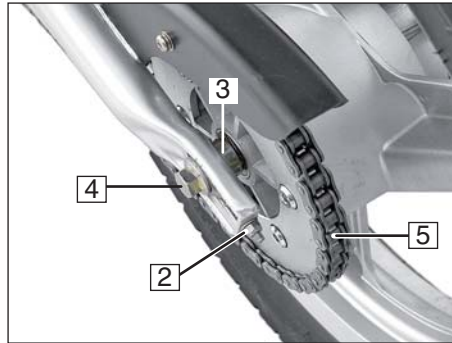
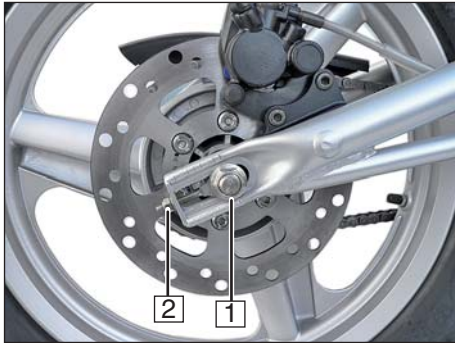
- Grease the full floating axle (3) and push it in with the spacer bushing (5) as far as it will go.
- Attach the axle nut (2) and screw tight.
- Before tightening the screw (1) stand the motorbike on its wheels and push the telescopic forks several times to prevent twisting of the fork struts.

**Torque**

<b>Axle nut (2):</b>	<b>35-45 Nm</b>
<b>Axle locking screws (1):</b>	<b>10 Nm</b>

## NOTES ON MAINTENANCE

### Removing the rear wheel



#### CAUTION

Do not damage brake disc and linings during removal!

Protect the wheel bearings from dirt and moisture!

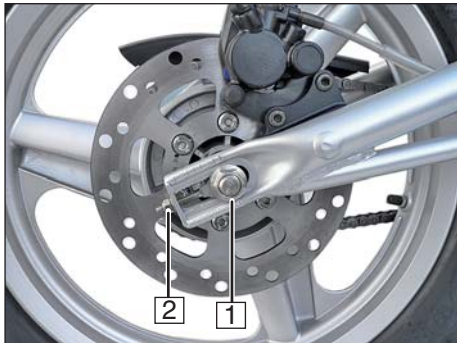
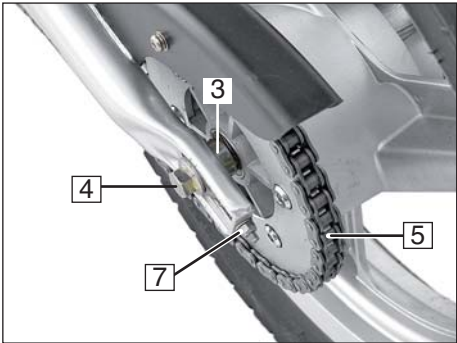
- Prop up the motorbike so that the rear wheel can turn freely and that the motorbike is secure.
- Hold the full floating axle (4) and release the axle nut (1).
- Unscrew the lock nuts (2) on the left and right-hand sides of the chain adjuster all the way.
- Remove the drive chain (5).


#### 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 (4) with brake support (6) 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 SFM dealer check the tightening torques.

- Clean and grease the full floating axle (4).
- Introduce full floating axle (4), chain adjuster (7), brake support (8) with brake caliper (6) into rear suspension.

 **NOTE**  
Insert brake support into the guide (9) of rear suspension.

- Install the drive chain (5).
- Install rear wheel with spacer bush (3) and full floating axle (4).

- Insert right chain adjuster (2) and reassemble with axle nut (1).
- Adjust the drive chain (5). (see adjusting drive chain).
- Tighten axle nut (1).

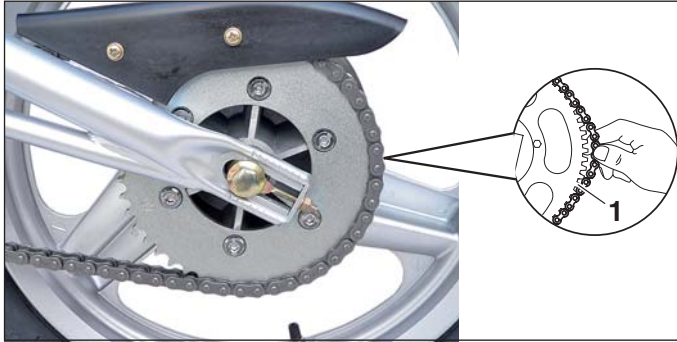
**Torque**  
**Axle nut (1):** **50-60 Nm**



## NOTES ON MAINTENANCE

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### Checking the drive chain



#### Checking the chain for wear

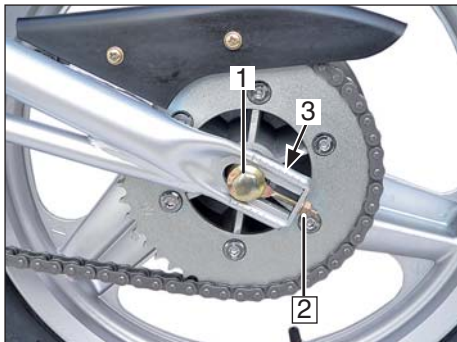
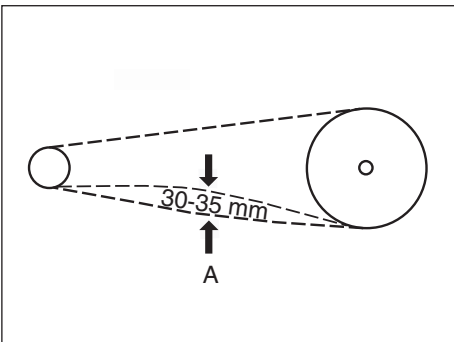


#### CAUTION

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

- Prop the motorbike up on the side stand.
- Hold the chain (1) at the furthest rear point of the sprocket and pull it off.
- With correct chain tension, it should not be possible to lift the chain higher than the teeth of the sprocket.
- If the chain can be pulled higher, have chain, sprocket and pinion replaced by your SFM-dealer.

Adjusting the drive chain



Adjusting the chain



**CAUTION**

The adjustment of the chain influences the wear of chain and sprocket.

It is essential to have the tightening torques checked by a SFM-dealer. Too tight adjustment of the chain will cause bearing damage on engine and rear wheel and result in excessive wear of the chain.

- Loosen the axle nut (1).
- Adjust the setting nuts (2) evenly on both sides of the chain tensioner (rear wheel must be in line with the front wheel).
- Let the rear end of the motorbike drop to the suspension limit.
- Push in the drive chain up half way between sprocket and pinion. Measure the travel.

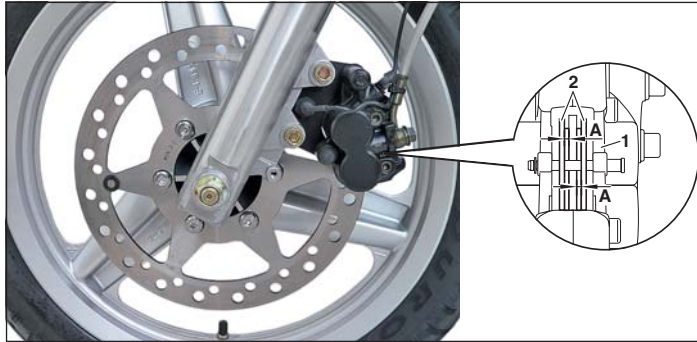
Nominal value: A = 30-35 mm

- Tighten the axle nut (1).
- Tighten setting nuts (2) on both sides.

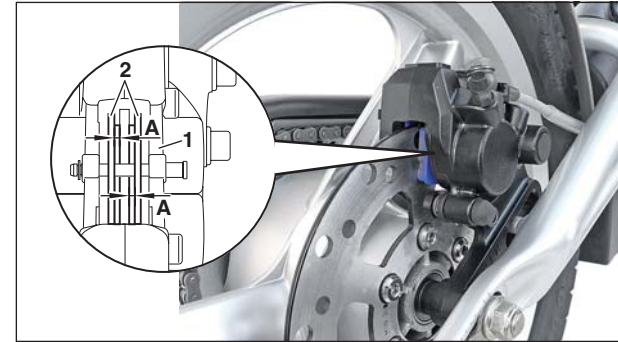
**Torque**  
**Axle nut (1):** 50-60 Nm  
**Setting nuts (2):** 22-35 Nm

## NOTES ON MAINTENANCE

### Front wheel brake



### Rear wheel 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 SFM dealer.

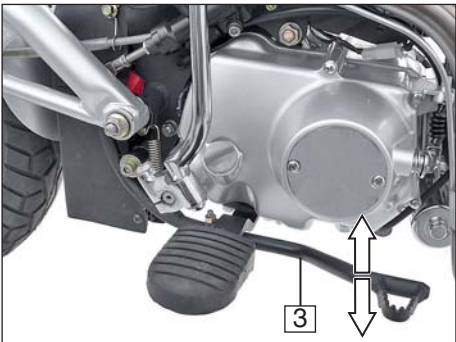
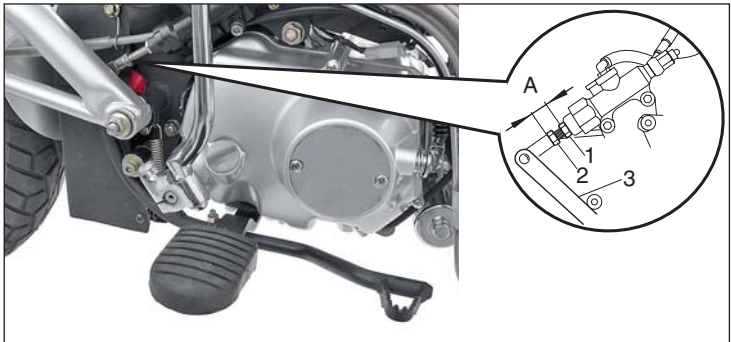
- Visually inspect the brake calliper (1).
- Check the thickness of the brake lining.
- If the lining thickness is below the minimum, **have the brake lining (2) replaced by a SFM dealer.**

Minimum thickness:

**Frontbrake**    **A = 2,5 mm**

**Rear brake**    **A = 1,5 mm**

Rear wheel brake



Adjusting the footbrake pedal position

**⚠ WARNING**  
Check the play on the footbrake pedal and ensure that the brake is functioning properly. A soft and spongy feel when operating the foot brake indicates that there is air in the brake system. You should have the brake system bled by a SFM-dealer. Air in the brake system is a considerable safety risk!



**NOTE**

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



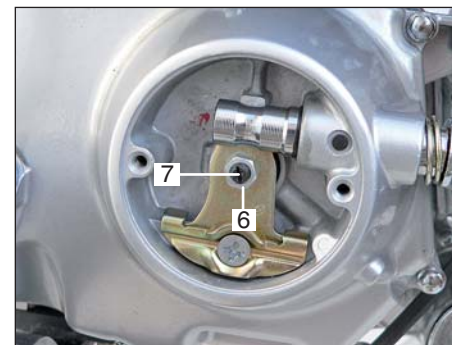
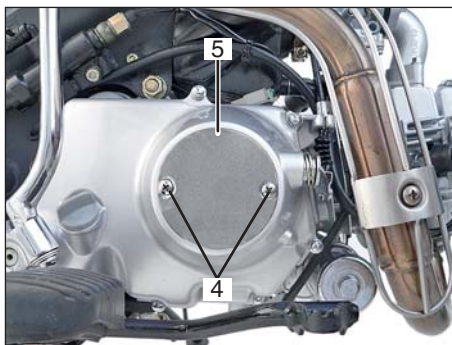
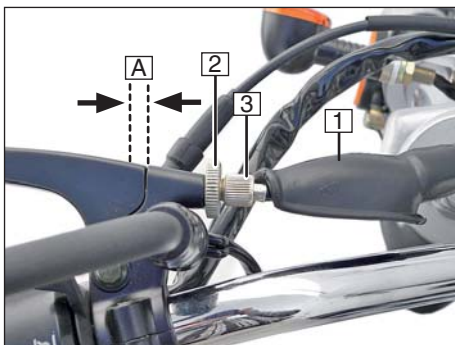
**WARNING**

The adjustment measurement A must not exceed 14 mm!

- Loosen lock nut (2) and adjust the footbrake pedal position (3) with setscrew (1).

## NOTES ON MAINTENANCE

### Adjusting the clutch lever 4-gear model



#### 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.

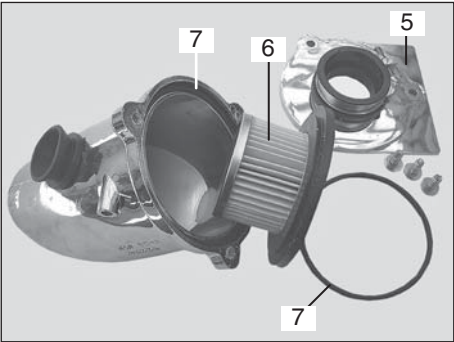
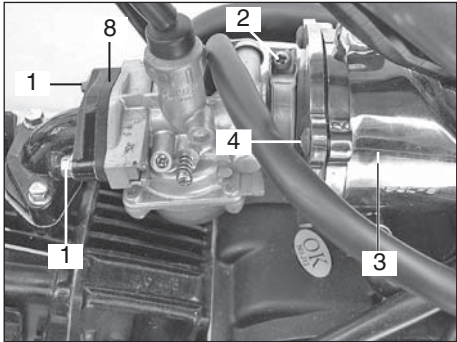
- Release the lock nut (2).
- Tighten setting screw (3) all the way, so that the clutch cable can be made as slack as possible.

- 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 SFM dealer.

**Cleaning the air filter**



**NOTE**

Before assembly check O-rings (7) and gasket (8) for damage and correct fit.

Installation takes place in reverse order to disassembly.

<b>Clean for the first time after</b>	<b>1.000 km</b>
<b>Replace every</b>	<b>4.000 km</b>

**Opening the air filter element**

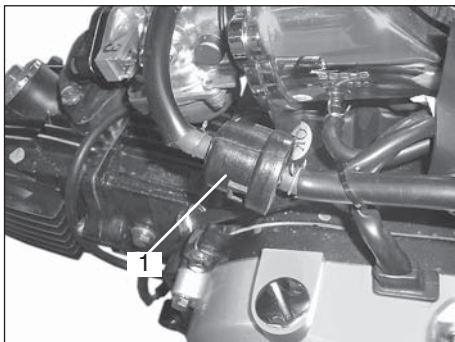
- Unscrew three screws (4).
- Take off the housing cover (5).
- Clean the air filter housing and replace the paper filter (6) if necessary.

**Removing the air filter**

- Remove screws (1) from the intake manifold and take off the carburettor with the air filter.
- Loosen the clamp (2) and pull the air filter (3) of the carburettor.

## NOTES ON MAINTENANCE

### Cleaning the fuel filter

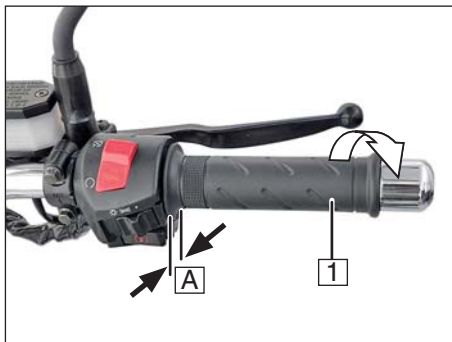


#### NOTE

We recommend to have the fuel filter (1) cleaned by a SFM-dealer.

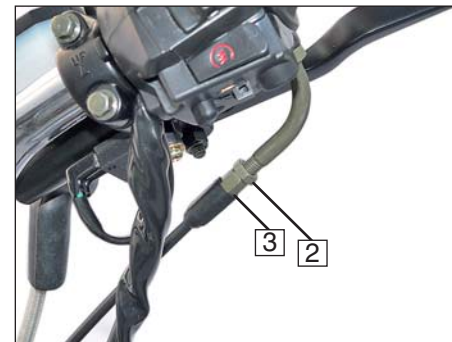
<b>Clean for the first time after</b>	<b>1.000 km</b>
<b>Clean every</b>	<b>4.000 km</b>

### Adjusting the play of the twist grip throttle control



#### CHECK:

- Check the throttle cable for light movement by turning the twist grip (1) from closed to open position.
- Move the handlebar to check whether the throttle cable moves freely.
- Check whether the throttle cable is obstructed by other parts.
- Open the twist grip throttle control until resistance can be felt.
- Measure the play.  
Nominal value: **A = 1-2 mm**



#### Adjustment:

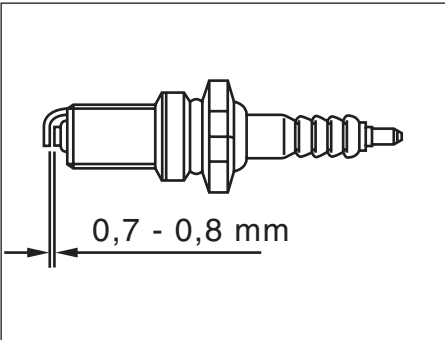
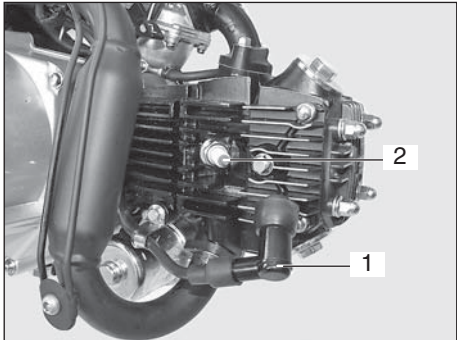
- Slacken the lock nut (2) on the handlebar.
- Turn setscrew (3) accordingly.
- Tighten lock nut (2).
- Check the play.




#### NOTE

If the play cannot be corrected this way, have the motorbike checked by your SFM dealer.

**Checking the 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.

- Use a new new spark plug **NGK CR7 HSA**.
- Screw in the spark plug by hand and than tighten up with a spark wrench 1/2 too 3/4 turnings.

**Torque 20 Nm.**

- Plug in the connector (1).



## NOTES ON MAINTENANCE

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### 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 5° - 15°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

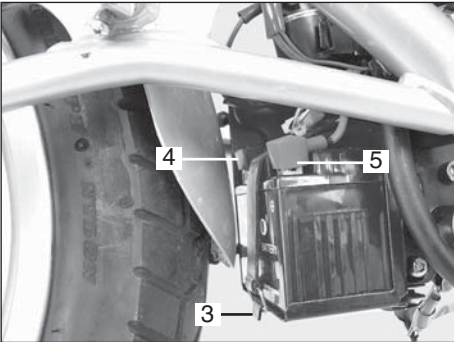
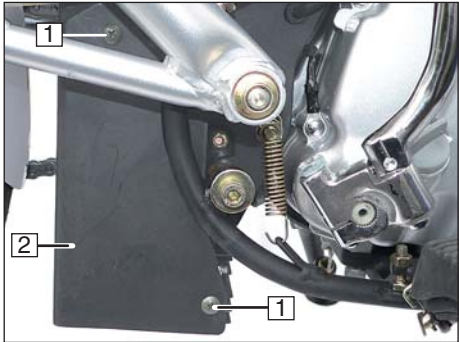
After a long lay-up (3-4 months), charge the battery. The charging current (in amperes) must not exceed 1/10<sup>th</sup> of the battery capacity (Ah).

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

First disconnect the minus terminal (4, black cable).

When installing the battery, first connect the plus terminal (5, red cable).

The battery is maintenance-free. Do not try to open it.

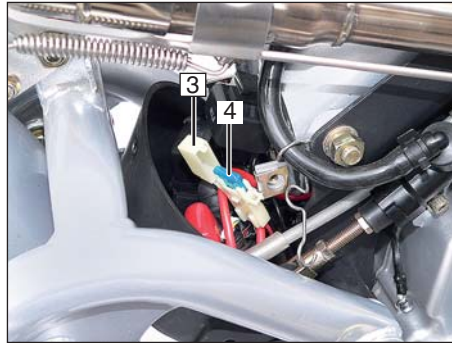
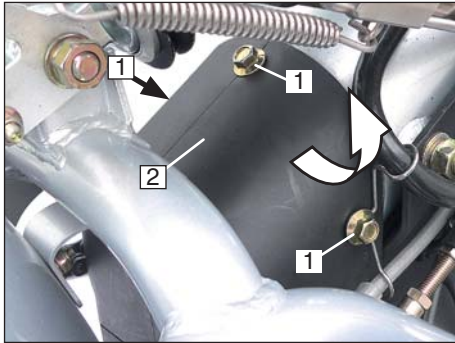
- Remove the screws (1) on both sides and take off the cover (2).
- Disconnect the rubber band (3) on the battery case.
- Remove the battery.

Installation takes place in reverse order to disassembly.

## NOTES ON MAINTENANCE

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### Checking the fuse



### CAUTION

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

The fuse is located behind the cover (2).

### Replace the fuse

- Turn off the ignition.
- Remove the lower battery cover.
- Remove the three screws (1) and take off the cover (2) to the left side.
- Open the fuse case (3).
- A faulty or blown fuse (4) must be replaced by a new one with 15 A.
- Check the fuse for correct contact. Loose fuse will blow.

**Changing the bulbs**

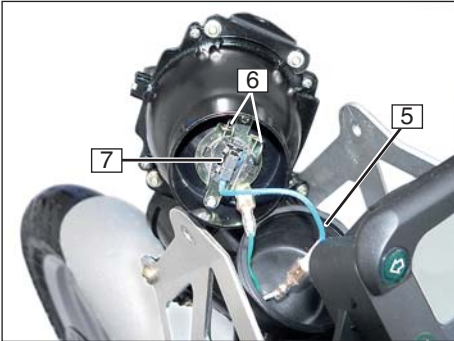
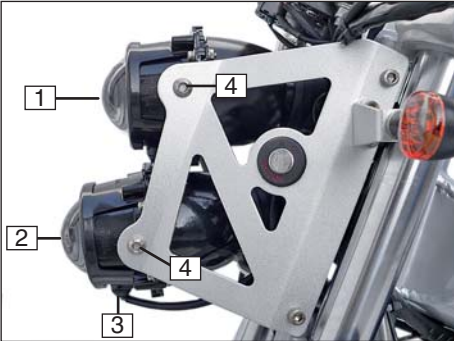


**NOTE**

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                    **12V 55W E1**
- 2 = High beam**  
bulb                    **12V 55W E1**
- 3 = Position light**  
bulb                    **12V/5W**



- Remove the screws (4) on both sides.
- Detach the rubber cover (5) from the headlight case.
- 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.

Installation takes place in reverse order to disassembly.

## NOTES ON MAINTENANCE

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### Tail / brake light

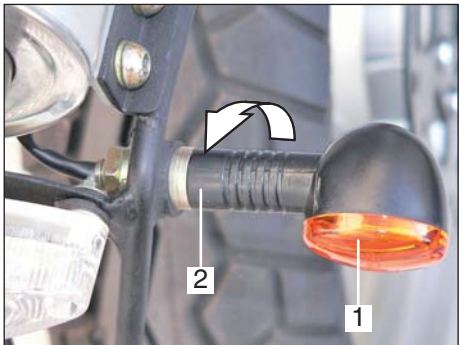


If this is not the case, the tail light must be replaced by a SFM dealer.

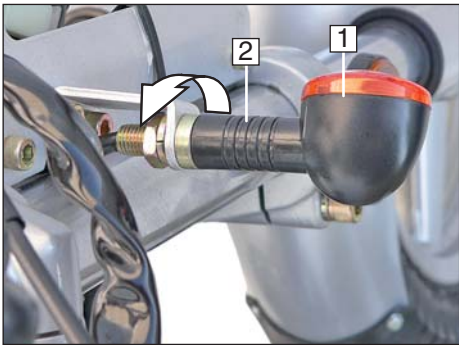
The tail / brake light (1) is not fitted with a replaceable light bulb (diode light).

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

Changing the bulbs

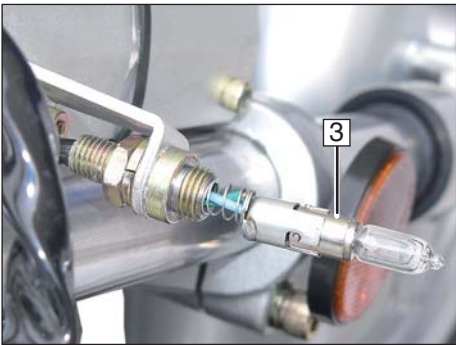


Rear indicator



Front indicator

- Release the light case (2).



- Push the bulb (3) back and release it by turning to the left. Take the bulb out.

Indicator lamps



NOTE

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

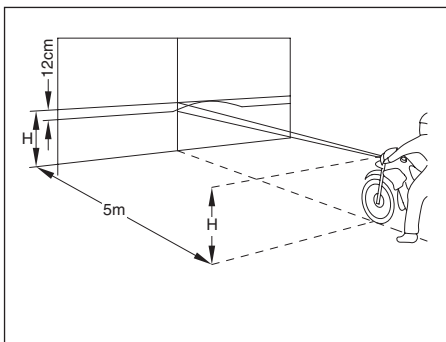
Do not touch the bulbs with your bare hands. Use a clean, dry cloth for installation and removal.

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

Installation takes place in reverse order to disassembly.

## NOTES ON MAINTENANCE

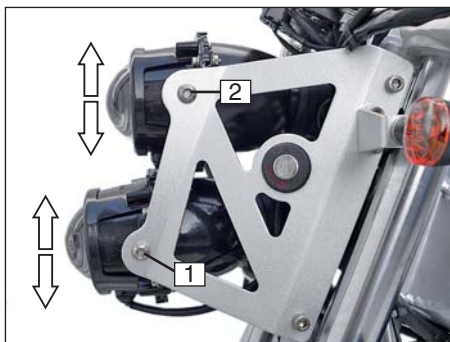
### Adjusting the headlamps



#### **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.



- 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.

### 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 SFM dealer. An incorrect adjustment is punishable by law. Remember, you are responsible for the correct adjustment of the motorbike's headlamp.

**TECHNICAL DATA****Engine**

Engine type:	4-gear model: FY139FMB Automatic model: FY139FMB-B
Design:	Single cylinder 4-stroke petrol engine
Valve control:	1 overhead cam with rocker arms
Valves:	2 valves
Valve clearance, cold:	Intake + exhaust 0.05 mm - 0.08 mm
Displacement:	49.5 cm <sup>3</sup>
Bore:	ø 39 mm
Stroke:	41.4 mm
Compression ratio:	10:1
Lubrication system:	Oil circulation lubrication
Cooling:	Air cooled
Rated power:	2.0 kW at 7.000 rpm
Rated torque:	3.2 Nm at 4.300 rpm
Ignition system:	Transistorized ignition system with electronic ignition control (CDI)
Spark plug:	NGK CR7 HSA electrode gap 0.7- 0.8 mm
Carburettor:	Mikuni constant vacuum carburettor type VM 12 101 6
Air-filter:	Dry air filter
Idle speed:	1.800 +/- 200 rpm
Typ of starter:	Electric starter / kick starter



**TECHNICAL DATA****Power transmission**

	4-gear model	Automatic model
Clutch:	Wet multi-disk clutch	Multi-disk automatic splashing oil-clutch
Gear shifting:	4-gear claw dog-clutch engagement Pedal gear shifting	2- gear transmission with permanent engagement
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)	
Drive pinion:	11 teeth	11 teeth
Sprocket:	53 teeth	53 teeth
Drive chain:	420	420

**TECHNICAL DATA****Chassis**

Motorbike version:	4-gear model: Type 649 003 Automatic model: Type 649 004
Frame:	Tube-type centre frame
Front suspension:	Telescopic fork $\varnothing$ 37 mm, hydraulic shock absorber, spring travel 100 mm
Rear suspension:	Mono shock absorber, travel 65 mm
Wheels:	Light metal (Alu) Front rim size: = 1,85 x 16" DOT Rear rim size: = 2,50 x 16" DOT
Tires:	Front = 90/80-16 M/C 45P Rear = 120/70-16 M/C 57P
Tire pressure: with pillion rider:	Front = 2.0 rear = 2.5 bar Front = 2.2 rear = 2.7 bar
Brakes, front: Minumim lining thick- ness:	Disc brake $\varnothing$ 260 mm, hydraulic two piston floating caliper 2.5 mm
Brakes, rear: Minumim lining thick- ness:	Disc brake $\varnothing$ 215 mm, hydraulic 1-piston floating caliper brake 1.5 mm

## TECHNICAL DATA

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### Lubricants and operating fluids

Fuel tank capacity:	5,1 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 <sup>3</sup>
Engine oil: Filling quantity:	SAE 15 W 40 mineral oil API (SG or higher) 0,8 litres
Brake fluid:	DOT 4

**TECHNICAL DATA**

**Electrical Equipment**

Generator:	12 V 150 W
Battery:	12 V 6 Ah MF
Fuse:	15 A
Lights:	
- Headlight:	Low beam 12V 55W E1, high beam 12V 55W E1
- Position light:	12 V 5W
- Instrument lights:	Direction-indicator 12V 3W Change over gear 12 V 3W Cockpit 12 V 3W
- Brake/rear light:	12 V diode light
- Turn signal light:	12V 21W

## TECHNICAL DATA

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### Dimensions and weights

Overall length:	1840 mm
Width across handlebars	760 mm without rear view mirror
Maximum height:	1035 mm without rear view mirror
Wheel base:	1235 mm
Seat height:	835 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 SFM GmbH will provide the customer with the following performances through the authorized SFM-dealer (seller) within the scope of its statutory warranty obligations:

1. Within a period of 24 months after the delivery of the scooter to the end customer the company SFM GmbH will rectify any deficiencies caused by material or manufacturing faults through the authorized SFM-dealer (seller) by repairing or replacing the affected part according to the statutory warranty regulations. SFM 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 SFM GmbH may rectify the deficiency through the authorized SFM-dealer (seller) by applying the other possible type of subsequent fulfillment. If both types of subsequent fulfillment are only possible with unproportionately high costs, SFM GmbH may deny the subsequent fulfillment all together through the authorized SFM-dealer (seller). The customer is then entitled to legal claims. Replaced parts pass over into the possession of SFM 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 SFM. Repairs carried out in workshops not authorized by SFM GmbH and the non-compliance with the maintenance intervals in the workshop of an authorized SFM-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:

## WARRANTY

### 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.
Seal 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 carburetor	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

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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 <sup>st</sup> 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, carburetor, ignition system, clutch, gears, fork column, brake system and lights.**

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

## INSPECTION PLAN

Components Assembly	Work to be performed (*Only by an authorised SFM dealer)	before Start-up	1. Service after 1000 km	every 4.000 km / 4 months	every 8.000 km / 8 months
Valves	Check valve clearance, adjust if necessary (cold)*	x	x	x	
Spark plugs	Check condition, if necessary clean or replace		x	x	
	Replace				x
Air filter	Clean filter and housing.*		x	x	
	Replace paper filter*			x	
Carburetor	Check idle speed position and cold start facility, adjust if necessary*	x	x	x	
	Adjust throttle cable play	x	x	x	
Fuel filter	Clean		x	x	
Fuel hoses	Check, replace if necessary (replace every 4 years)	x	x	x	
Engine oil	Change (at operating temperature)		x	x	
Exhaust system	Check for leaks and repair if necessary*		x	x	
Brakes	Function and brake fluid level, Check system for leaks, correct if necessary. Adjust rear wheel brake *	x	x	x	
	Check, if necessary 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, adjust if necessary	x	x	x	

## INSPECTION PLAN

Component Assembly	Servicing Tasks (*Only by an authorised SFM 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	

**MAINTENANCE CONFIRMATION**

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



**MAINTENANCE CONFIRMATION**

<p>1.000 km/1 months 1<sup>st</sup> 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**

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<p>After 32.000 km/32 months</p> <p>dealer stamp</p>          <p>km .....</p> <p>date.....</p>	<p>After 36.000 km/36 months</p> <p>dealer stamp</p>          <p>km .....</p> <p>date.....</p>	<p>After 40.000 km/40 months</p> <p>dealer stamp</p>          <p>km .....</p> <p>date.....</p>	<p>After 44.000 km/44 months</p> <p>dealer stamp</p>          <p>km .....</p> <p>date.....</p>
<p>After 48.000 km/48 months</p> <p>dealer stamp</p>          <p>km .....</p> <p>date.....</p>	<p>After 52.000 km/52 months</p> <p>dealer stamp</p>          <p>km .....</p> <p>date.....</p>	<p>After 56.000 km/56 months</p> <p>dealer stamp</p>          <p>km .....</p> <p>date.....</p>	<p>After 60.000 km/60 months</p> <p>dealer stamp</p>          <p>km .....</p> <p>date.....</p>

**MAINTENANCE CONFIRMATION**

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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

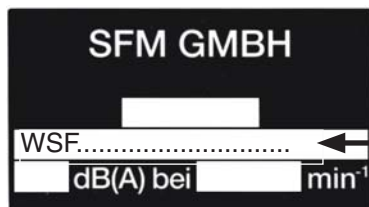
Km.....  
Date .....

Stamp, signature





Rating plate (Sample):



## Motorbike data

(Fill in on purchase)

Model designation: .....

Vehicle identity No: .....  
(Chassis No.)

Key No.: .....  
.....

EC-approval: .....

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

### Important

If the type approval should become invalid you should **immediately** contact a motor vehicle registration office to obtain an safeness certificate.

Send us the certificate along with the vehicle data. You will then receive from us a copy of the type approval document for a fee.



