

Instruction manual version 6, 2008
Norsjö Carrier 4-Stroke
Short and Long version



**Norsjö Carrier 4-Stroke
Model Post Petrol Short and Long version**

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INTRODUCTION

We thank you for the trust you have shown us by buying a Norsjö Carrier 4-Stroke. We hope that this manual will help you quickly get to know your new moped. Read through this instruction manual from beginning to end before you start to use your moped. Any queries will be answered by Norsjö Mekaniska AB.

About this instruction manual

This instruction manual describes how your carrier moped should be used, how service and inspections should be carried out to make sure that the moped operates correctly and safely. This instruction manual covers instructions for normal use and maintenance which can be carried out by the driver. More in-depth fault finding and maintenance should be carried out by qualified service personnel. Remember that a well-maintained moped will make your work more enjoyable and safer and will also lead to lower maintenance costs and maintain a high second-hand value for your moped!

Guarantee

Even with a quality product, on the odd occasion, material or manufacturing faults arise which are covered by the guarantee. Contact Norsjö Mekaniska AB if such a fault occurs.

Do not modify the moped

The moped is designed and type-approved so that it complies with current legal requirements. No modifications may be carried out on the moped to change the engine's power or increase its speed. In order to ensure correct working order and maintain a roadworthy moped, it is important that you always use original spare parts. A modern carrier moped is a technically advanced product. Always turn to a qualified specialist if the moped needs to be repaired or adjusted.

Running-in

Every engine needs a certain amount of time to wear in the moving parts against each other. It is therefore important that during the first 500 kms, the engine is not run too hard. You should therefore change down when going uphill or if the conditions are poor (uneven road surface for example). Do not use full acceleration except for short periods during the run-in period. Furthermore, avoid using full throttle while the engine is cold or when driving downhill. The moped requires service and inspection in connection with the run-in period. For further information, see page 20. "Service in connection with run-in period".

IDENTIFICATION of MOPED

Registration number

The moped's primary identity is its registration number. When ordering spare parts, the moped's registration number should always be quoted. The registration number can be found on the moped's rear fender.

Type plate and frame number

The moped's type plate and frame number are situated under the platform.

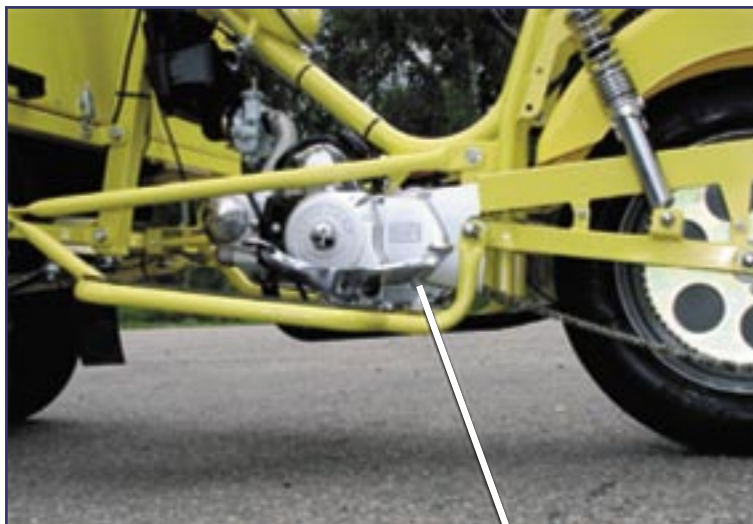
Engine number

The engine number can be found on the engine's left side under the gear lever.



Frame number

Type plate



Engine number

SAFETY INSTRUCTIONS

Risk of carbon monoxide poisoning

Exhaust fumes from internal combustion engines contain carbon monoxide. Breathing in the exhaust fumes can be lethal!

You should therefore consider the following:

- Never start the moped in a closed area which lacks good ventilation.
- Never breathe in the exhaust fumes.
- Always ensure that the exhaust pipe is free of obstruction.



Handling and filling up with fuel – fire risk

- Never fill the moped up with fuel when the engine is running.
- Never overfill the tank.
- If a spillage does arise when filling up with petrol, wipe away the petrol carefully and then wait 5-10 minutes until any petrol that remains has evaporated.
- Do not fill up in the proximity of fire.
- Never use a petrol-driven moped in an environment that is explosive or flammable.
- If there is a leakage in the fuel line, tank or any other part of the fuel system, the engine should be stopped immediately and the fault should be rectified immediately.
- Avoid breathing in petrol fumes.
- Avoid skin contact with petrol.



Work with the moped's battery

When working on the moped's battery, special safety precautions must be taken. See further, page 24, "The starter battery".



INSTRUMENT AND CONTROLS

Instrument

Ignition switch

The ignition switch has three positions, of which two of them are identical. The three positions are:

- Position 1 = Locked
- Position 2 = Drive
- Position 3 = Drive

The ignition switch's Locked position can be obtained by turning the key counter clockwise as far as it will go. In this position, all electrical functions, except for the indicators are switched off and the ignition key can be taken out.

The ignition switch's Drive position can be obtained by turning the key to the middle position, or as far clockwise as it will go. In this position, the engine's ignition system and the moped's electrical system except for the lights are operating.

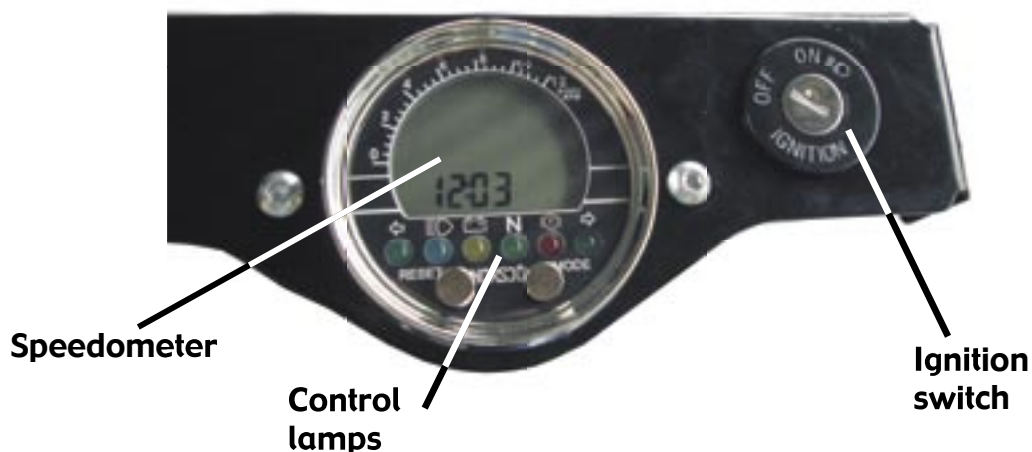
Power to the lights takes place via a generator which is completely separate from the battery and the lights may therefore only be used when the engine is running.

Never leave the ignition switch in the Drive position when the engine is switched off as this will discharge the battery. If left on for longer periods, the ignition system may also be damaged.

Control lamps

On the instrument panel, there are control lamps:

- Green lamp - when lit, the gearbox is in neutral.
- Blue lamp - when lit, the main beam is switched on.
- Green lamp - when lit, the indicators are switched on.



Handlebar controls – left side

Functions which can be found on the handlebar's left side are:

Full/half beam switch and full beam flash.

Full/half beam switch has two fixed positions which switch on the full beam/half beam. There is also a spring-back position which switches the full beam on (flash).

Half beam must be switched on when driving during daytime!

Horn

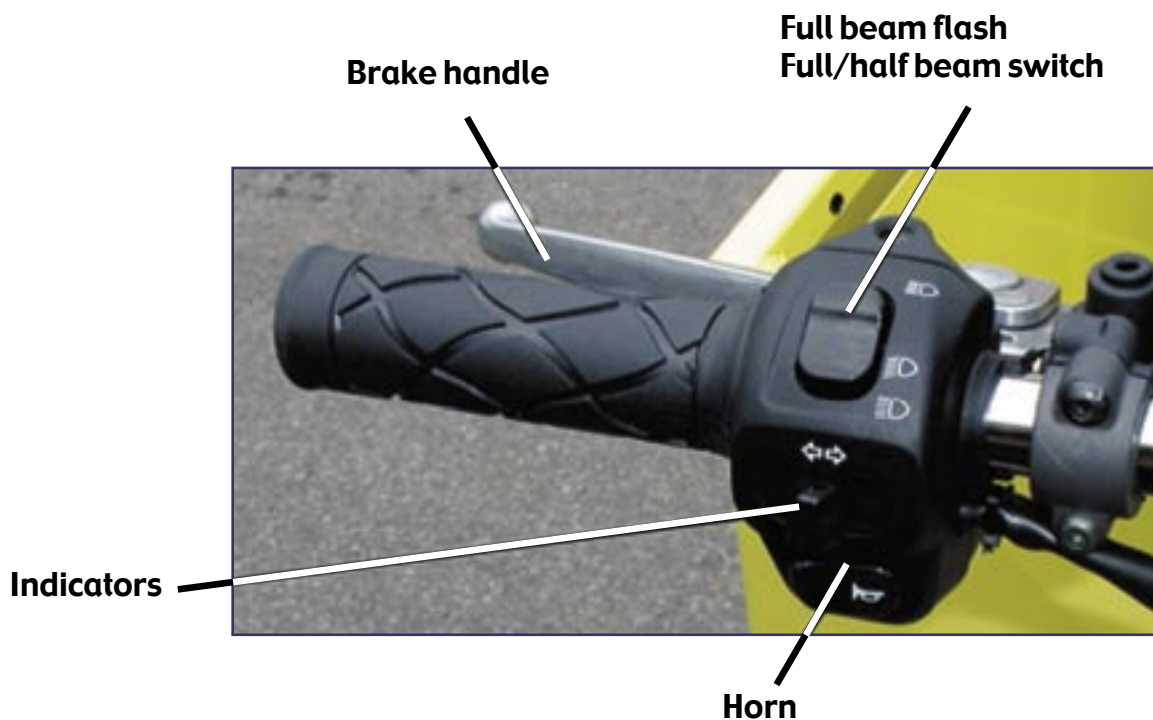
When the spring-cushioned switch is pressed in, the moped's horn sounds.

Indicator switch

If the direction indicator control is pushed to the left, the left indicator light starts to blink. If the direction indicator control is pushed to the right, the right indicator light starts to blink. To reset the direction indicator control to its neutral position, press it in.

Brake handle

The control for the rear wheel brake is on the left-hand side of the handlebar.



Handlebar controls – right-hand side

Emergency stop

The emergency stop may only be used in case of emergencies. If the emergency stop is used on a daily basis to stop the engine, it may result in damage to the ignition system's electronics.

Brake handle

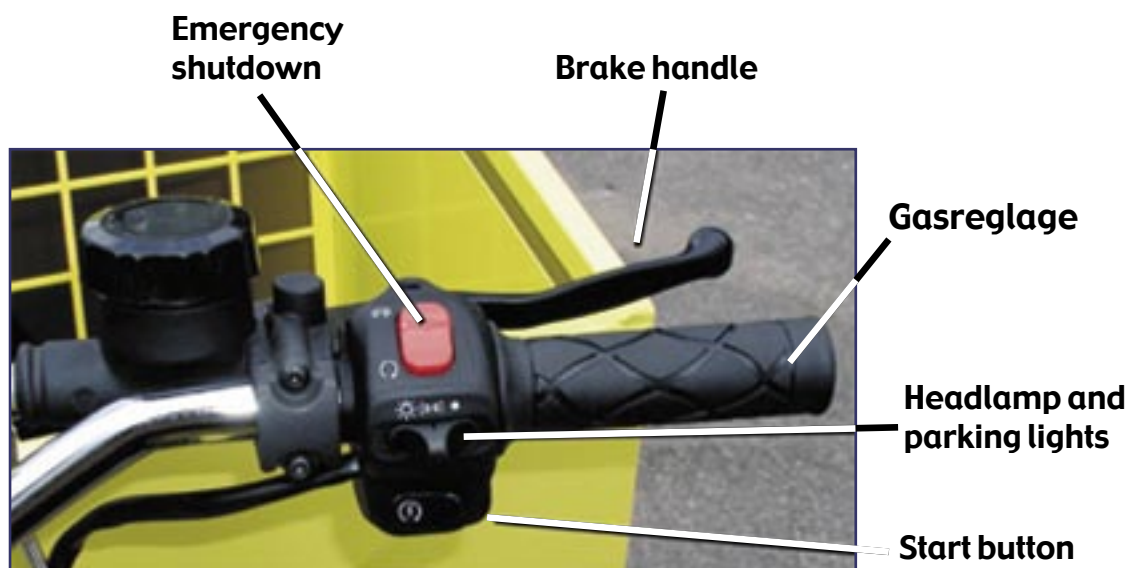
The control for the front wheel brakes is on the right-hand side of the handlebar.

Headlamp and parking lights

The sliding selector switch has 3 positions. The lights are fully switched off when the selector switch is moved to the right. In the middle position, the parking light is switched on, while full/half beam is activated when the selector switch is moved to the left.

Start button

Starts the engine when the start button is pressed in at the same time as one of the handbrakes is pressed in.



Foot controls – left side

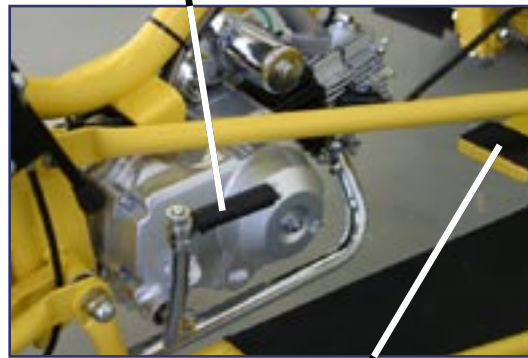
Gear lever

The gearbox has 4 gears and is manoeuvred with the left foot. The gears are placed with first gear, in the down position from neutral. The other gears are placed upwards.



Gear lever

Kick-start



Accelerator pedal

Foot control – right-hand side

Kick-start

Is used as an alternative to the electrical start.

Accelerator pedal

This control is used to accelerate and is foot-manoeuvred with the right foot.

Parking brake

The moped is fitted with a mechanically manoeuvred parking brake which operates on the rear wheel. It is operated with a lever placed on the frame tube underneath the saddle. The handbrake comes on when the lever is pulled upwards.

If the lever is pressed downwards, the handbrake is switched off/remains in the off position.



Parking brake

Petrol shutoff valve

The petrol shutoff valve is situated on the tank's left side. There are 3 positions:

- OFF -The petrol shutoff valve is switched off.
- ON -normal position.
- RESERV - this position provides a petrol reserve of approximately 0.5 litres. Only use this position on your way to a petrol station after you have run out of petrol.

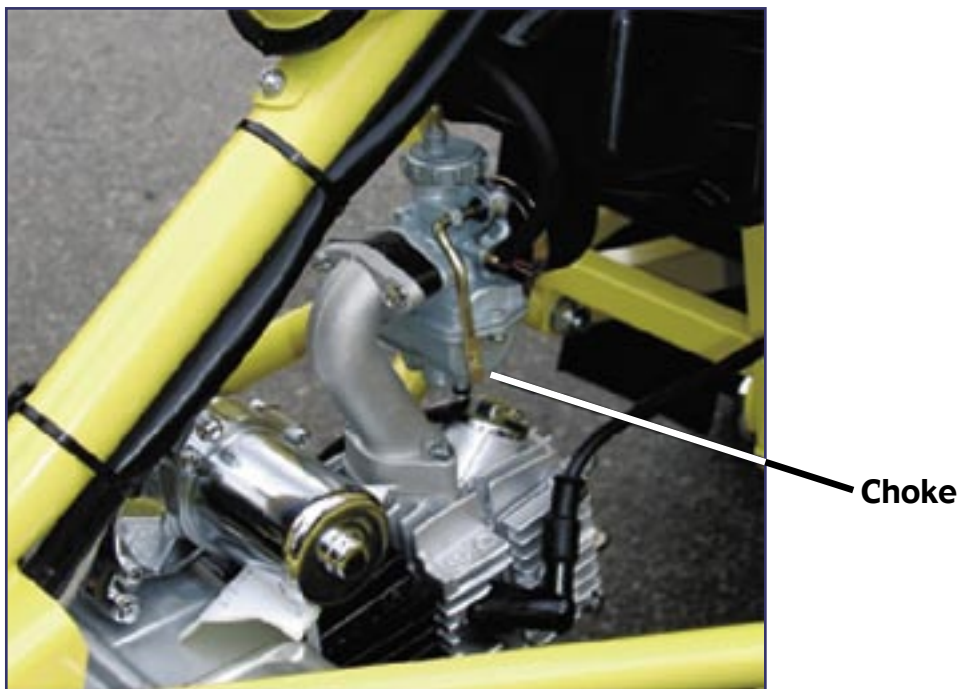
Do not forget to change to the "ON" position after you have filled up with petrol!

Petrol shutoff valve



Choke

A cold engine needs a richer mixture of fuel and air in order to start. This can be achieved by using the choke which is placed on the carburettor. Return the choke to its original position when the engine has become warm.



DRIVING POSITION



Positioning the saddle

Height of saddle

Position required height of saddle by loosening both of the saddle seat screws. Ensure that both of the saddle seat screws are tightly secured on the saddle post's flat surface.

Saddle tilt

To change the saddle tilt, loosen the saddle bolt. Adjust the saddle to the required tilt and tighten the saddle bolt so that the saddle sits securely in position.

Height adjustment of saddle

Loosen the saddle bolt and move the saddle backwards or forwards. After adjustment, tighten the saddle bolt so that the saddle sits securely in position.

Adjustment of rear shock absorbers (hardness)

Use universal pliers on the shock absorbers' adjustment tube to adjust the rear shock absorbers' hardness. Turn in the required direction to adjust the suspension, harder or softer.

When adjusting the shock absorbers, it is extremely important that both shock absorbers have the same adjustment (hardness/softness) on both sides.



FUEL

The moped is equipped with a modern 4-stroke engine which is fitted with a catalytic converter which means that it should be run on lead-free petrol, at least 95 octane. Normally, no additives are needed in the fuel - see Page 14, "DRIVING DURING THE WINTER".

Always switch off the engine before filling up with petrol. Ensure that the area where you are filling up with petrol is well-ventilated and avoid breathing in petrol fumes. Also avoid skin contact with petrol. Do not smoke and ensure that there are no flames or sparks in the vicinity of the moped when filling up.

Open the petrol cap by turning it counter clockwise. Close the petrol cap by turning it clockwise. Both opening and closing the petrol cap is made easier if you press the petrol cap lightly against the tank at the same time as it is turned.

To avoid leaks, the petrol tank must not be filled completely up to the top. This gives the petrol the possibility of expanding a little after filling up. Fuel at petrol stations often has a lower temperature than the moped's ambient temperature so the volume of the fuel will increase when it warms up in the tank.

When filling up, it is important to ensure that no water or other substances enter the tank.

MOTOR OIL

All motor oils have different types of additives to comply with requirements regarding function and longevity. The quality requirements and range of application which the oil is suitable for is specified by indicating which norm the oil fulfils.

The moped is equipped with an air-cooled 4-stroke engine. The motor oil must also lubricate the gearbox, the clutch as well as the engine. The standards which the oil must meet in order to do this are designated JASO MA and API SG.

Only use oils which comply with both of the above norms. Only use oils from known quality manufacturers. Incorrect oil or oil that is of low quality may lead to the risk of incorrect functioning of the gearbox and clutch and may also result in serious engine damage.

PRIOR TO START, DAILY CHECKS

Make it a habit to check the moped every day. Faults that are discovered and rectified early, keep maintenance costs low.

During the daily inspection, the following should be checked:

- Check the engine so that it is clean of dust and oil. If there is an oil leak, the reason must be investigated and rectified.
- Check the oil level in the engine and top up if required. When driving on hot days and when driving hard, an increase in oil consumption is normal.
- Check that the moped's lights, indicators, brake light and horn work as intended.
- Ensure that all of the moped's brakes function as intended.
- Check the brake fluid level in both containers.
- Check that the driving chain is correctly tightened and oiled.
- Check that the accelerator pedal moves easily and springs back to its original position.
- Check that the tyres are not damaged and that the air pressure is correctly adjusted.

STARTING AND STOPPING THE ENGINE

**Ensure that the gearbox is in its neutral position before the engine is started.
This is indicated when the red lamp on the instrument panel is lit.**

Using the electric starter motor

The moped is equipped with a push-button operated starter motor. So that the starter motor is not activated unintentionally, the moped's rear brake (left brake handle) or front brake (right brake handle) should be pressed in.

Release the starter button immediately after the engine has started. The starter motor must not be initiated when the engine is running, this can cause damage.

In order not to overload the starter motor, it is important that it is not used for more than three seconds at a time. On repeated start attempts, the starter motor must be allowed to rest for at least 10 seconds between every start attempt. This will provide the starter motor with the possibility of cooling down at the same time as the starter battery can recover for the next start attempt.

Normally, the engine will start after 1 - 2 seconds of running the starter motor.

If the engine does not start immediately, Check:

- that the emergency stop is not activated.
- that there is petrol and the petrol shutoff valve is open.

Use of kick-start

The moped is equipped with a foot-operated kick-start. Fold out the top part of the kick-start lever and press the kick-start down until the connecting mechanism moves into its operating position. Kick down calmly and resolutely with requisite force.

When the kick-start has reached its lowest position, it must be returned immediately to its original position. Carry out this procedure with your foot still on the kick-start lever.

Holding down the kick-start in its lowest position after the engine has started or releasing the kick-start in an uncontrolled manner leads to an abnormal amount of wear.

Starting a cold engine

Activate the choke by pulling the choke upwards. Turn the ignition key clockwise to position 2 or 3. Start the engine by pressing in the start button at the same time as the brake handle is pressed. Use little or no throttle during the starter. After the engine has started, open the throttle up a little.

Run the engine until it is warm and then activate the choke by pressing downwards.

Starting the engine when the engine is warm

A warm engine is started in the same way as a cold engine, with the exception that the choke is not used.

Stopping the engine

The engine is stopped by turning the ignition switch counter clockwise to position 1. Make it a habit to always switch off the petrol shutoff valve when driving has been completed.

Running the engine warm/hot

All parts of the engine expand when they are heated up. They are therefore manufactured so that they fit together optimally when the engine has reached its correct working temperature.

In order to ensure long working life, do not overload or rev up the engine before it has reached its correct working temperature.

The engine will reach its optimal working temperature when it is run with a light load 1-3 minutes dependent upon ambient temperature. The engine has reached its correct working temperature when it responds to the throttle without the choke having to be used.

DRIVING DURING THE WINTER

Risk of ice forming in the fuel system

When driving during the winter, considerable condensation may build up in the petrol tank. This is particularly so for vehicles which are exposed to great variations in temperature due to changes in the weather or if the vehicle is moved in and out of heated premises.

Condensation water can then freeze to ice and produce operating disturbances in the form of uneven running of the engine; in worst cases the engine will stop completely. Avoid this:

- Keep the petrol tank well-filled to avoid condensation.
- Add suitable amounts of carburettor spirits.

Check wires and the chain more often when it is cold.

Both the wires and the chain need extra attention during the winter period. This is particularly important when driving through areas where road salt has been used. You should therefore make it a habit to clean the chain and lubricate both the chain and wires more and at more regular intervals during the winter.

Use the right oil type to make it easier to start when the engine is cold.

Ordinary mineral oil is more viscous when the temperature drops which leads to the engine being more difficult to start during the winter. Half or fully synthetic oils have however excellent cold-start characteristics and are a more suitable choice of oil for the winter period.

CHANGING GEAR

The moped is equipped with a semi-automatic 4-speed gearbox. The gearbox is semi-automatic which means that it is equipped with a centrifugal clutch which is controlled by the engine speed. The engine is engaged when the accelerator pedal is pressed; this takes place at an engine speed which is a little greater than the engine's idle speed.

**All gear changing must take place when the engine is idling.
Gear changing with the throttle open may cause serious damage to the gearbox!**

Starting from rest

When starting from rest, engage first gear when the engine is idling. The moped will move forwards by calmly and slowly engaging the throttle.

If the moped is used on a flat and hard surface such as asphalt, use second gear to start. This can still be an advantage when driving short distances between mailboxes, as there will be no need to change up and down between each stop.

Changing gear up and down

Changing up to a higher gear is done by reducing the throttle so that the engine speed drops down to the idle speed. Engage the next gear by pressing with your heel on the gear lever's rear part.

When changing down, this should be done in a similar manner. Ensure however that the moped's speed has dropped to a suitable level for the gear you are going to engage before the gear-change is carried out.

Temporary stops

For short stops, for example when stopping at traffic lights, first gear may be engaged. For longer stops, the gearbox should be placed in neutral; for environmental reasons, you should also consider switching off the engine.

Never leave the moped with the engine running and in gear.

BRAKES

The moped is equipped with:

- a hydraulic brake which operates on both of the front wheels.
- a hydraulic brake which operates on the rear wheel.
- a mechanically operated parking brake.

Use both the front brake and the rear brake at the same time to ensure safe and efficient braking. Get to know how the brakes work by "test driving" in a secluded area away from normal traffic.

Use of the hydraulic brakes should produce an "immediate" effect. If the brake handle however feels as though there is too much or too little play, the brakes must be inspected immediately by a specialist.



Please note!

**It is extremely important that the brakes work properly and efficiently.
In order to ensure that they work properly,
all service and repairs must be carried out by an expert.**



Checking the brake fluid

If the brake fluid level is too low, air can enter the system which will either reduce the brakes' efficiency or cause them to stop functioning. Before you drive, always check the brake fluid level on both hand-operated brakes.

Important:

- There must be no impurities in the brake fluid. Before you fill up with brake fluid, ensure that the area around the filler cap is clean. Filling up with brake fluid must also take place in an area where the air is free from airborne pollutants.
- Used only recommended brake fluid. Incorrect brake fluid can damage rubber seals and hoses which will cause leakages and inefficient braking.
- Ensure that no water is mixed in with the brake fluid, as this will lower its boiling point. Vaporisation which occurs when brake fluid boils leads to inefficient braking or no braking effect at all.
- Brake fluid is highly corrosive on paint and plastic and spilled brake fluid must therefore be wiped away immediately.

Changing the brake fluid

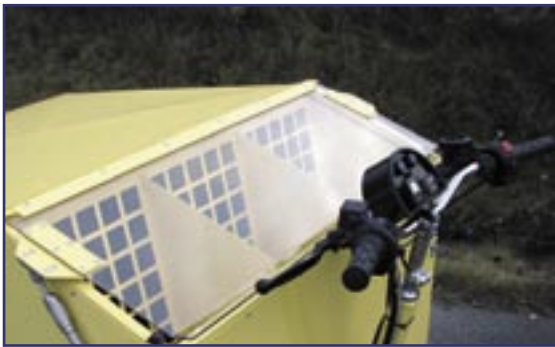
Brake fluid is a hygroscopic fluid which means that it absorbs water from the ambient air. As already mentioned, this will cause a reduction in the boiling point for the brake fluid. Furthermore, water mixed in with brake fluid leads to corrosion in the braking system. For these reasons, brake fluid must be changed every two years. This should be carried out by an expert.

PLATFORM LOADS

Loading

Ensure that the load is as evenly distributed over the loading area as possible. Also ensure that the centre of gravity is low by placing heavy objects as low-down as possible. If possible, position the load so that it cannot move when you are driving.

Always adjust your speed based on the load you are carrying, this is of particular importance when you're driving round curves and on uneven ground.



Weather protection in down position.



The weather protection in the up position functions as a windbreak for the driver.

Lockable box
for helmet

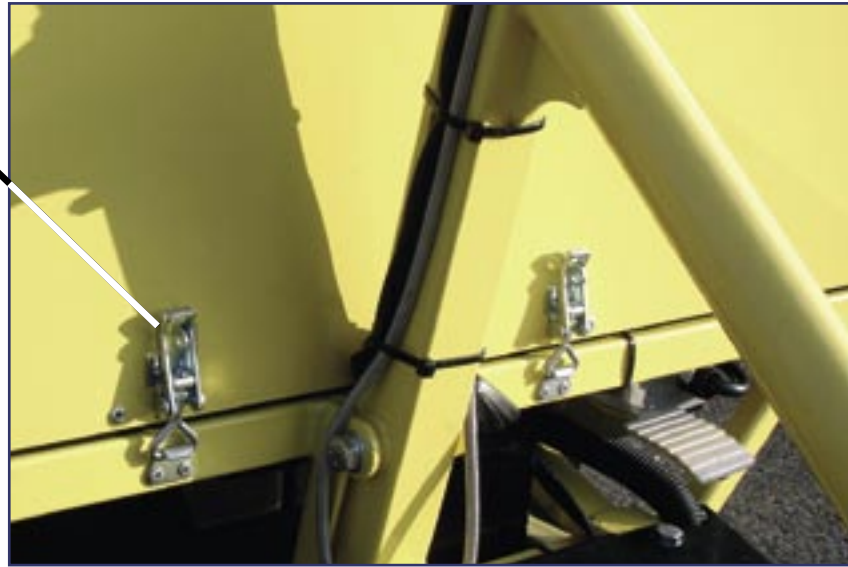


The lockable hatch door is kept in the open position by two gas springs.

Placing of the lock



Platform lock



With the platform in the up position, the battery, head-lamp and electric box can be accessed for service.

SERVICE AND MAINTENANCE

Service in connection with run-in period

The following should be carried out when the moped has been driven 200 - 500 kms.

- Clean, lubricate and check the tension in the chain.
- Lubricate the accelerator cable wire and the parking brake wire.
- Change the motor oil.
- Clean and adjust spark plugs.
- Check the brake fluid level.
- Adjust the engine's valve clearance.
- Tighten screws, nipples, bolts etc.

Maintenance schedule

| Action | Every week | Every fortnight | Every month | Every quarter | Annually |
|---|--|-----------------|-------------|---------------|----------|
| Clean, lubricate and check the tension in the chain | | | | | |
| Lubricate the accelerator cable wire and the parking brake wire | | | | | |
| Check the oil level | | | | | |
| Change the motor oil | | | | | |
| Clean and adjust the spark plug | | | | | |
| Clean the air filter | | | | | |
| Clean and adjust the carburettor | | | | | |
| Check the brake fluid level. | | | | | |
| Change brake fluid: | Change every two years irrespective of driving distance! | | | | |
| Adjust the engine's valve clearance. | | | | | |
| Dismantle and clean the petrol shut-off valve | | | | | |
| Check and adjust the steering stem | | | | | |
| Check and adjust steering spindle bearings | | | | | |
| Tighten screws, nipples, bolts etc. | | | | | |

Lubrication of wires

The wires to the accelerator pedal and parking brake must be lubricated a few times every year. It is very important that the wires are lubricated during the winter period and in particular if the moped is used in the wet.

Check that the wires' casings are in good order. Damaged casings allow dirt and water to enter the wire and impede its movement. A damaged wire casing means that the whole wire has to be changed.

Air filter

The moped is equipped with a washable/removable air filter made of foam rubber. The filter does not normally need to be changed, but it should be washed and soaked in oil regularly. When driving on gravel roads or in other demanding environments, the filter should be cleaned more often than otherwise indicated in the maintenance schedule.

Wash the filter in a mild soap solution and allow to dry. Soak the filter in motor oil. Squeeze out the excess oil before the filter is refitted.

A well-cleaned air filter keeps the moped's fuel consumption down and saves both money and the environment.

Tyres

Conduct regular checks of the tyre pressures and adjust if necessary. The moped is fitted with valves just like those on a car. Filling up with air and adjusting the air pressure may therefore be carried out at a petrol station.

Make it a habit to clean the area around the valve before the valve cap is removed so that dirt does not enter the valve.

Incorrect air pressure results in excessive wear on the tire and also affects drivability negatively.

If the air pressure is too low, roll friction increases which leads to impaired performance and increased petrol consumption.

Please observe that the values in the table below apply to cold tyres equivalent to the outside ambient temperature.

After a few kilometres of driving, the tyres become warm and the air pressure increases somewhat, which is completely normal.

| Tyres | Air pressure when cold |
|-------|------------------------|
| Front | 400 kPa (4 bar) |
| Rear | 400 kPa (4 bar) |

It is dangerous to drive with worn tyres as this affects the steering, brakes and pulling capacity as well as the moped's road holding in a negative way.

The driving chain

The driving chain consists of several moving parts and it therefore requires regular cleaning, lubrication and adjustment in order for it to work as intended. When driving in the wet, on dusty roads or in other demanding environments, tighter service intervals than those indicated in the maintenance schedule are required.

Lubricating the driving chain

First of all wipe clean the chain with a soft cloth. If the chain is extremely dirty, it can be cleaned in diesel or in any other similar solvent. Thereafter, lubricate the chain with a good quality chain spray.

Adjusting the chain

It is very important that the chain tension is correctly adjusted. If the chain is too taut, it may cause damage to the bearings in the engine's gear box and the rear wheel.

Furthermore, if the chain is too taut, it will work inefficiently which will impair engine performance. If the chain is too loose, it may come off. A damaged chain can also cause damage to the engine block and the chain sprocket.

If the chain is correctly adjusted, the play in the middle of the chain should be between 15 and 20 mm. To adjust the chain tension, first loosen the ring nuts. The rear wheel should then be moved forwards or backwards by loosening or tightening the chain tightener's ring nuts until the correct chain tension is obtained. Tighten both of the nuts with the same amount of tension.

Ensure that both chain wheels are in line with each other. Adjust if necessary and check once again that the chain tension is correct.



Check that the chain tension is correct by first pressing the chain downwards... ..and then pressing down. If correctly adjusted, the play should be 15-20 mm.



Ensure that both chain wheels are in line with each other, indicated by scales on both sides. The arrows should mark the same spot on both scales, see picture below. Adjust if necessary and check once again that the chain tension is correct.

Adjusting the headlamp

Adjustment of the headlamp is important so that it does not dazzle oncoming traffic. Adjustment can be made by loosening the screws which hold the headlamp in place.

Loosen the screws
on both sides.



Changing a bulb

When changing a bulb in the headlamp it is important not to touch the bulb with your fingers.

If any fat from your fingers adheres to the bulb, it will evaporate because of the heat and will be deposited on the reflector which will eventually become dull.

Do not touch the reflector's surface as it will become soiled and will therefore affect the luminous efficiency.

Cleaning and rust protection

Keep your moped clean by washing it regularly with water and car shampoo.

As an alternative to car shampoo, 5-10 cl of liquid detergent to 10 L of water may also be used. Rinse the whole moped down with lukewarm water until the dirt has softened. Wash the moped with a sponge and then rinse off to remove the dirt.

A degreasing agent may be used for extremely dirty surfaces.

Regular use of car wax will protect the moped's paintwork against oxidation, dirt and discolouration at the same time as a waxed surface is easier to keep clean. All types of surfaces can be protected by waxing. As well as the painted surfaces, aluminium, chrome and zinc surfaces can also be protected. It is a particular benefit to wax just before the winter period starts.

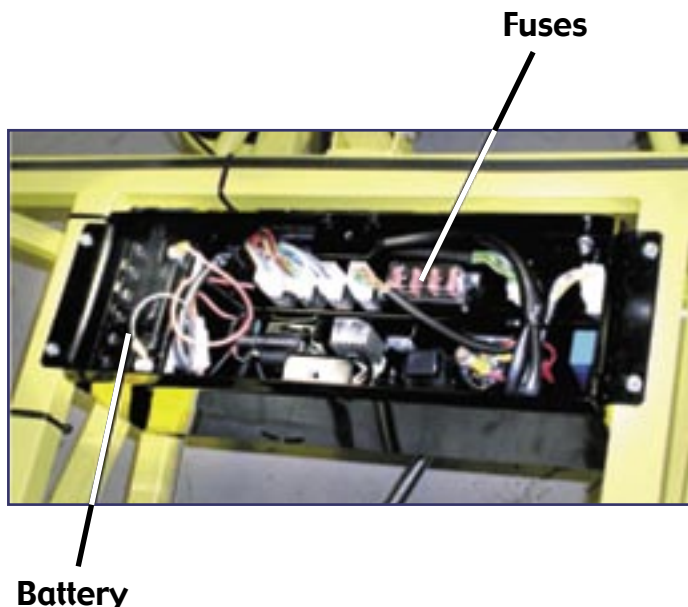
Use the same type of wax intended for use on cars. In particular, it is recommended that a modern polymer wax is used which is easy to apply at the same time as it provides a very hard, shiny and durable surface.

High-pressure jet cleaning must not be used as its powerful spray can cause damage by entering the carburettor, electrical equipment, wheel hub and other parts which are sensitive to water.

Bird droppings contain chemicals which affect and discolour the paint very quickly. Remove bird droppings immediately!

Fuses

To protect the moped's electrical system, it is equipped with 3 flat pin fuses placed in fuse box compartments 1-3 with 1 spare fuse in compartment 4.



The moped's electric box can be reached by lifting up the platform.

If any of the moped's electrical components do not work, this may be due to a burnt-out fuse as a result of a temporary overload. To check and inspect a fuse, it must be removed.

Pull the fuse upwards and check the wire. Always replace a faulty fuse with the same colour and ampere rating which on this moped means red 10A fuses.

If several fuses in the same area have burned out, there is something wrong with the electrical system and the fault must be rectified by an expert.

The starter battery

Working on the starter battery

When working on batteries, protective glasses must be used because battery acid is extremely corrosive.

If battery acid comes into contact with your eyes, rinse with clean water and seek medical attention immediately. If possible, rinse your eyes during transport to the doctor. Avoid spilling battery acid.

Batteries which are being charged emit explosive hydrogen gas (sometimes called oxy-hydrogen gas). It is therefore very important that charging takes place in a well-ventilated area. Open fires, smoking or sparks are strictly forbidden in the proximity of the charging area.



Check the battery acid level

Check the battery acid level in the battery regularly. There are level marks on the side of the battery, "UPPER" and "LOWER" filling levels. Only top up the battery with distilled water as tap water reduces the battery's life considerably. Also check that the battery is well-secured and that the battery's connections are secure.

To remove oxidation or spilled battery acid, use warm water. To stop continued oxidation on the battery's terminals, it is best to lubricate the terminals with terminal grease.

Avoid discharging the battery completely

A well-looked after and correctly used starter battery can last for many years.

Avoid charging the battery too much. If the starter battery is discharged so that it contains less than 70% of its maximum capacity, it will affect the battery's life negatively.

A total discharge of the battery is the equivalent of one year's normal use in terms of how long the battery will last. Avoid therefore discharging the battery.

In extremely cold weather there is also the risk that a heavily discharged battery will freeze and become damaged, this is because the battery acid's resistance to freezing reduces when the battery has to be charged. Never leave a discharged battery outdoors in cold weather conditions.

Charging

If the battery needs to be charged, this should be done with a battery charger which has a maximum capacity of 0.4-1.0A charging current. Using a battery charger with a capacity which is too high can cause damage to the battery.

When charging the battery, it must be disconnected from the moped. Always start by removing the battery's minus terminal. When refitting the battery, always attach the minus terminal last.

Return of worn-out batteries

For environmental reasons, discarded batteries should be taken care of in a proper manner. This can be arranged via the retailer or by depositing the battery with your local municipal waste station.

TOWING THE MOPED

If necessary, the moped may be towed short stretches. The tow rope should be attached to the moped's front axle. Ensure that the gearbox is in neutral before towing starts. The moped's brakes must work if the moped is to be towed. If the brakes are defective, the moped must be transported on a trailer or lorry.

**Tow speed must not be greater than 15 km/h.
Ensure that towing is carried out calmly and safely
and remember that braking distance is greater when towing.**

LONG-TERM STORAGE OF MOPED

If the moped is not going to be used for a longer period, there is a risk that corrosion damage will arise. Wash the moped thoroughly and lubricate the moped's moving parts. Carry out any repairs before storage.

If long-term storage is to take place in a damp environment or in a salty area, painted metal surfaces should be covered with a thin film of motor oil. Ensure that oil does not come into contact with plastic or rubber parts.

Maintenance and storing the battery

Remove the battery and charge it. Trickle charge the battery thereafter once every month. Store the battery in a dry place which has a temperature greater than 0°C but not greater than 30°C.

Petrol tank

A full petrol tank does not rust on the inside and it is therefore recommended. Petrol is however to be regarded as a perishable product and after being stored for a long period of time it may be necessary to change the petrol if the engine is difficult to start or produces too little power.

Engine conservation

It is recommended that the engine be prepared properly if the moped is to be stored:

- in a damp environment for a period greater than three months.
- in a normal indoor environment for a period greater than six months.

Start and run the engine until it is warm. Switch off the petrol supply and continue to run the engine until there is no petrol left in the carburettor.

Prepare cylinder and piston by removing the spark plug and spraying in 3-5 cm³ of anticorrosion oil in the spark plug hole. Connect the spark plug to the ignition cable and hold the plug against something that will ground it while the kick is used to slowly rotate the engine 15-20 revolutions. Refit the spark plug. Do not turn the engine until it is to be used again otherwise the protective oil of film will be disturbed.

Please note!

The electronic ignition system may be damaged if the engine is run without the ignition cable being connected.

FAULT FINDING

The engine is difficult to start or it will not start at all:

- The emergency stop is activated
- The instructions for how to start the engine have not been followed.
- There is no petrol left or the petrol shutoff valve is closed.
- The spark plug needs to be cleaned and adjusted.
The correct electrode distance should be between 0.6-0.7 mm
Change the spark plug if you suspect that it is defective.
- Ensure that the spark plug boot is correctly fitted to the spark plug.
- The carburettor's jets are completely or partly blocked.
Dismantle and clean the carburettor.
- The petrol supply from the tank is impeded. Ensure that petrol can run out from the tank without problem. If this is not happening, the fuel valve must be dismantled and cleaned.
- If the moped has not been used for a longer period of time, the fault may be that the petrol is too old - change the petrol before you continue to search for the fault.
- During the winter period, ice may form in the fuel system.
Place the moped somewhere warm and add a suitable amount of carburettor spirit.

The engine is misfiring and runs unevenly

- The sparking plug needs to be cleaned and adjusted.
The correct electrode distance should be between 0.6-0.7 mm
Change the spark plug if you suspect that it is defective.
- Ensure that the spark plug boot is correctly fitted to the spark plug.
- The carburettor's jets are partly blocked. Dismantle and clean the carburettor.
- The petrol supply is partly impeded. Ensure that petrol can run out from the tank without problem. If this is not happening, the fuel valve must be dismantled and cleaned.
- Water has collected in the carburettor's float chamber.
- If the moped has not been used for a longer period of time, the fault may be that the petrol is too old - change the petrol before you continue to search for the fault.
- During the winter period, ice may form in the fuel system.
Place the moped somewhere warm and add a suitable amount of carburettor spirit.

The engine works but there is little power:

- The air filter is clogged up.

- The carburettor is incorrectly adjusted.

- If the moped has not been used for a longer period of time, the fault may be that the petrol is too old - change the petrol before you continue to search for the fault.

The engine is using too much fuel

- Check the petrol tank, fuel hose and the carburettor to see if there are any leaks.

- The air filter is clogged up.

- The carburettor is incorrectly adjusted.

- Ensure that the tyres have the correct air pressure.

- Ensure that the driving chain is clean, lubricated and correctly adjusted.
Fuel consumption will increase if the driving chain is improperly maintained.

There are abnormal vibrations when the engine is running

- If there are heavy vibrations in the steering, this may be because either a tire or its rim is damaged. Check for damage and ensure that the air pressure is correct.

- If it is felt that the moped runs irregularly, the fault could be a defective driving chain or maintenance has been neglected.

TECHNICAL DATA

Engine

| | |
|--|---|
| Manufacture: | Zongshen Type 2S139FMB |
| Engine type: | 1 cylinder 4-stroke engine with overhead valves |
| Cylinder volume: | 49 cc |
| Cylinder diameter: | 39 mm |
| Length of stroke: | 40.2 mm |
| Engine cooling: | Air-cooled |
| Power: | 1.8 kW at 7600 rpm |
| Torque: | 3.1 Nm at 7600 rpm |
| Motor oil - type: | 10W40 |
| Engine oil - norms to be fulfilled: | JASO MA and API SG |
| Motor oil - volume: | 1 litre |
| Spark plug: | NKG CR7HSA |
| Electrode spacing: | 0.6 – 0.7 mm |
| Starter: | Electrical start/kick-start |

Fuel system

| | |
|--|--|
| Fuel: | Lead-free petrol 95 octane |
| Fuel consumption: | 0.3 litres/10 km (guideline, normal driving) |
| Petrol tank volume including reserve: | 5 litres |
| Petrol tank volume - reserve only: | 0.5 litres |

Electrical system

| | |
|---|------------------------------|
| Voltage: | 12 V, negative earth |
| Battery: | 12N7-3B |
| Generator: | 0.065 kW at 5000 rpm |
| Fuses: | 3 (plus 1 spare) 'car fuses' |
| Headlamp: | 1 x12 V 35/35 W |
| Parking lights: | 12 V 5 W |
| Rear light: | 1 x12 V 4 W BA9s |
| Brake light: | 1 x12 V 10 W BA15s |
| Indicators: | 4 x12 V 10 W BA15s |
| Control lamp – instrument panel: | 3 x 12 V 1.2 W |

Gearbox

| | |
|-------------------------|--------------------|
| Number of gears: | 4 |
| Clutch: | Centrifugal clutch |

Chain transmission motor – rear wheel

| | |
|-----------------------------|---------------------|
| Chain: | Type 428, 108 links |
| Chain wheel - front: | 15 teeth |
| Chain wheel – rear: | 65 teeth |

Exhaust system

Type: Silencer with integrated catalytic converter
Manufacture: Finnkat

Brakes

Front: Hydraulically manoeuvred drum brakes
Rear: Hydraulically manoeuvred drum brake
Parking brake: Mechanically manoeuvred drum brake,
operating on rear wheel
Brake fluid: DOT 4

Tyres

Tyre size - front: 4.00 - 8 55 M
Tyre air pressure - front: 400 kPa (4 bar)
Tyre size - rear: 4.00 - 12 67 J, or 110/100 - 12 67 J
Tyre air pressure - rear: 400 kPa (4 bar)

Dimensions and weights model

Short 997 mm
Total width: 2318 mm
Total length: 173 kg
Curb weight: 200 kg
Maximum load:

Dimensions and weights model

Long 997 mm
Total width: 2568 mm
Total length: 180 kg
Service weight: 200 kg
Maximum load:



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