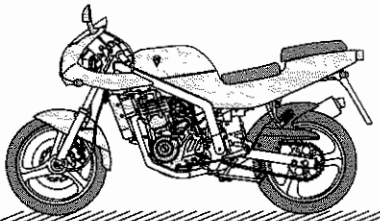
SKORPION

TOUR
SPORT
REPLICA

Reprint 2001



OPERATING INSTRUCTIONS

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We are constantly working towards the further development of all our models. Please understand that we must therefore reserve the right to make changes at any time to the design, accesories and technology of the products supplied by us. No claims may be made regarding the information, diagrams and descriptions in this manual.

Subject to change.

Copy deadline 10.05.95.

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Dear Owner,

We appreciate your purchase of a MuZ vehicle and thank you for your confidence in us.
The Scorpion is, as a result of our many years of experience in the manufacture of motorcycles, a sturdy, efficient, and reliable vehicle, in need of little maintenance work.

Before you drive your new vehicle, please read all the information in this manual.
This way you will become well-informed about the operating instructions and operation of the vehicle, as well as receive useful information regarding regular maintenance and care.

The observance of these instructions and information is not just important for the maintenance of your vehicle, but is also a prerequisite for any guarantee claims.

The operating instructions should always be kept with the motorcycle so that you can refer to them at any time.
These operating instructions are an important feature of the vehicle accessories and should remain with the motorcycle when resold.

Should a scheduled inspection be due, please bear in mind that the maintenance crew at your MuZ workshop are specially trained for this purpose. Should you have problems or questions concerning your Skorpion, please refer to your MuZ dealership for assistance. The crew there will always be of assistance to you.

Pleasant riding.

MOTORRAD- UND ZWEIRADWERK GmbH
Alte Marienberger Strasse 30 - 35
D-09405 Zschopau-Hohndorf

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MZ

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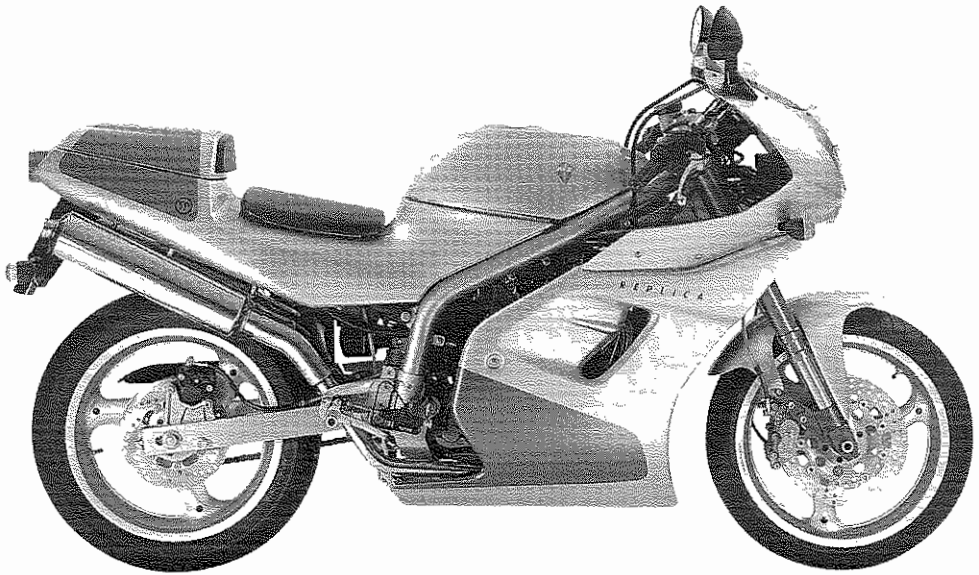

SKORPION TRAVELLER

MZ

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Please pay special attention to the statements and instructions that follow these signs:

Warning !

This sign indicates a strong possibility of severe personal injury or even loss of life if instructions are not followed.

Attention !

This sign indicates the possibility of equipment damage as a result of unsuitable or risky handling of the motorcycle.

Environment !

Here you will find important information regarding environmental protection.

Each one of these safety precautions informs you of the following:

- *what kind of danger is at hand*
- *what may happen*
- *what you can do to avoid or reduce the risk of injury or damage to equipment*

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Warning !

Driving a motorcycle requires the strict observance of certain safety precautions on your part, to ensure your personal safety. Please familiarize yourself with these precautionary measures before you drive.

Rules for safe driving

- *Always make a pre-ride inspection (page 19) before every outing. Through doing this you may prevent an accident or equipment damage.*
- *The motorcycle should only be driven by persons in possession of a valid motorcycle driver's license.*
- *Make yourself conspicuous to avoid an accident that wasn't your fault:*
  - *Wear bright or reflective clothing*
  - *Do not drive in the blind spot of other motorists*
- *Be especially alert at crossroads, exits and entrances and at side street junctions.*
- *Observe the regional laws and regulations.*
  - *Keep within the speed limits and never drive faster than conditions warrant.*
  - *Signal well before you make a turn or change lanes. Your size and manoevrability could surprise other motorists.*
- *While driving, keep both hands on the handlebars and keep both feet placed on the foot rests. Passengers should always hold onto the motorcycle or the driver with both hands and have both feet on the pillion foot rests.*

Protective apparel

- *Always wear a helmet. As well as boots, gloves and protective apparel you should also wear a face shield or protective goggles. Passengers should wear the same protective clothing.*
- *Do not wear any loose clothing! This could get caught in the operating elements, the foot rests, the driving chain or the wheels.*
- *During operation the exhaust system becomes very hot and remains hot for a while after the engine has been turned off. Be careful not to touch any parts of the hot exhaust system. Only wear clothing that covers your legs fully.*

Modifications

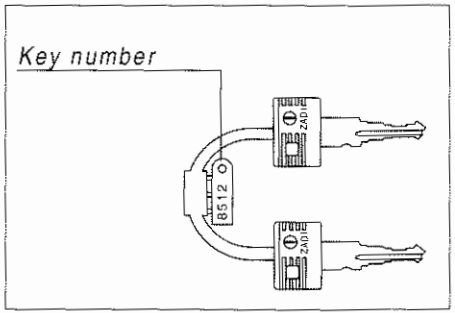
Warning !

Modifications to the motorcycle, removal of original parts, or the fitting of non-MuZ spare parts and accessories may render the motorcycle unsafe and illegal.

Warning !

The installation of the power kit SKORPION REPLICA entails the loss of road traffic admission.

Vehicle identification

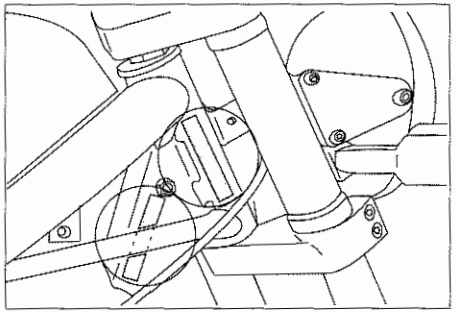


Key number:

The motorcycle comes with two keys for the ignition lock, the tank cap and the seat lock. On the key itself there is a shield with the key number on it.

Do not keep the second key with the motorcycle.

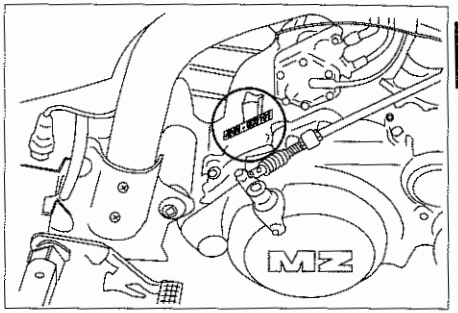
Write the key number in the empty space, as when ordering a replacement, this number must be given.



Vehicle identification number:

The vehicle identification number serves as identification for the motorcycle and is required when registering with the proper authorities.

This number is located on the right side of the steering head, with older motor cycles behind the steering head.



Engine number:

The serial number of the engine is imprinted on the fixing plate on the right side of the engine.

Vehicle identification number:

Engine number:

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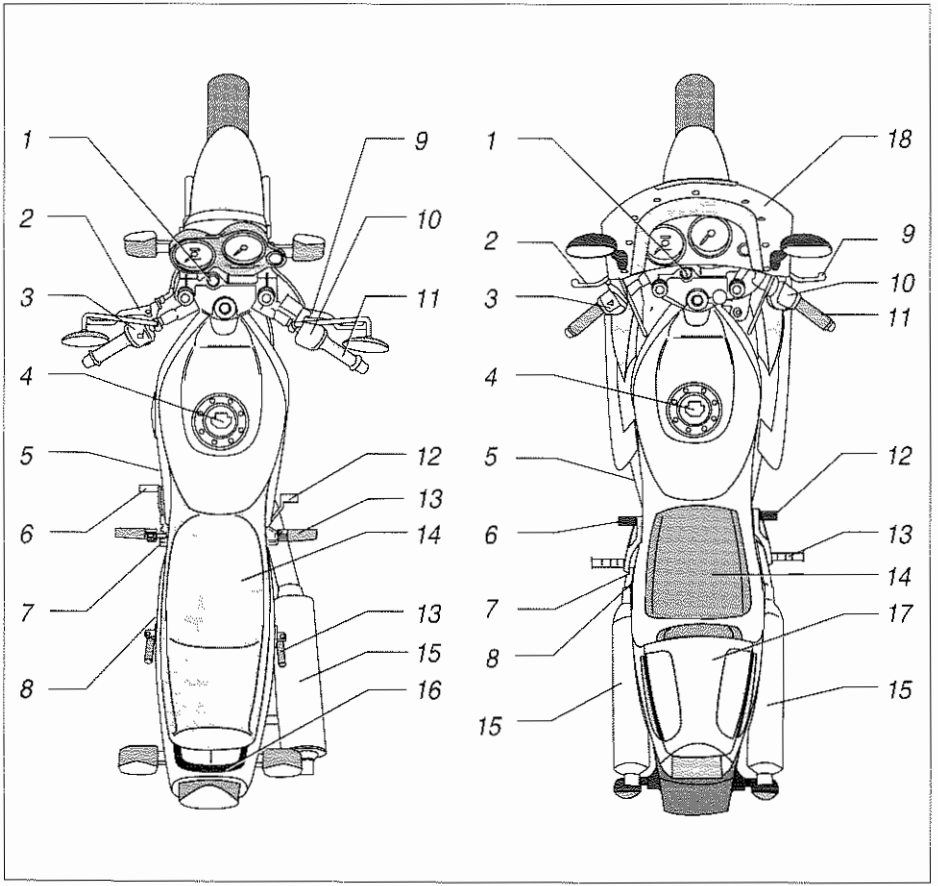

(1) Ignition lock
(2) Clutch lever
(3) Left handlebar controls
(4) Fuel tank cap
(5) Fuel cock
(6) Gear change pedal
(7) Side stand
(8) Seat lock
(9) Hand brake lever
(10) Right handlebar controls
(11) Throttle twist grip
(12) Foot brake
(13) Foot rests
(14) Seat
(15) Exhaust
(16) Grab handle, or on the SPORT model a strap across the seat
(17) Tail unit
(18) Covering

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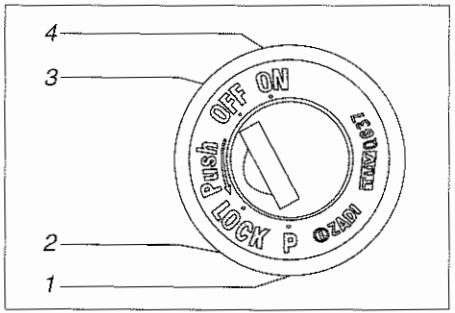
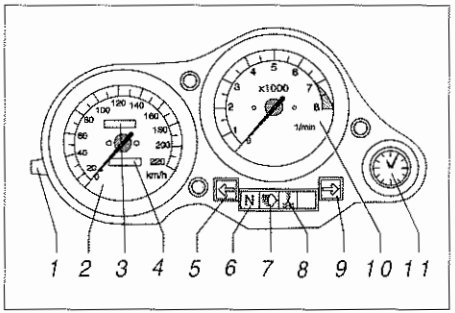
Ignition lock



(1)	**P**	*Parked position Ignition off, Parking lights on, Steering locked to the left or right*
(2)	**LOCK**	*Ignition off, Lights off, Steering locked to the left or right*
(3)	**OFF**	*Ignition off*
(4)	**ON**	*Ignition on**

* *USA model: Headlights on*

Instrument panel

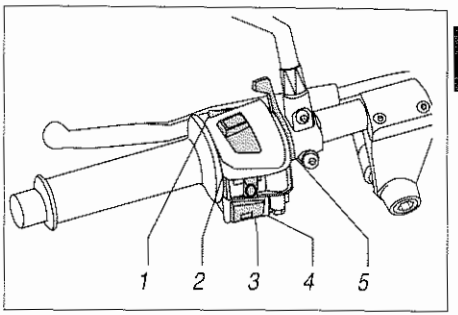


(1) *Reset knob of trip-mileage counter*
(2) *Speedometer*
(3) *Odometer*
(4) *Trip-mileage counter*
(5) *Left indicator*
(6) *Right indicator*
(7) *Neutral indicator*
(8) *Warning lamp for cooling system*
(9) *Temperature indicator*
(10) *Rev counter*
(11) *Clock*

Attention !

Warning lamp (8) flashes when cooling system is overloaded.
Pay attention to section maintenance - coolants p. 39, or see a MuZ dealer for this service!

Left handlebar controls



(1)	**PASSING**	*Headlight flasher*
(2)	**LIGHTS**	*Dipper switch*
	HI	*High beam*
	LO	*Low beam*
(3)	**TURN**	*Indicator switch*
	L	*Left turn*
	R	*Right turn*
(4)	**HORN**	*Horn button*
(5)	**CHOKE**	*Choke lever*

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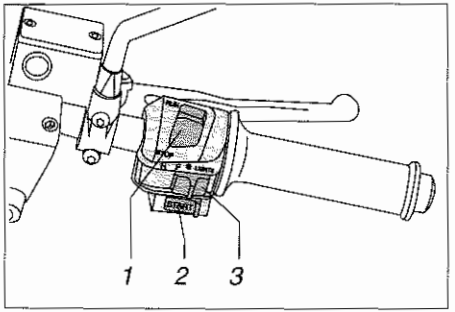
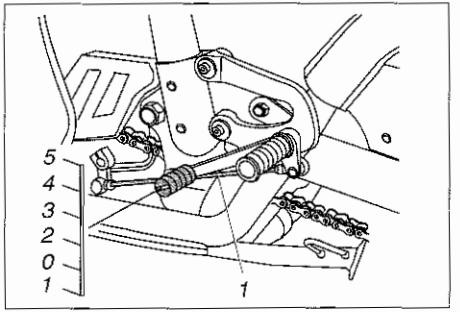
Right handlebar controls



(1) **ENGINE STOP** *Engine stop button*
OFF *Ignition interrupted*
RUN *Ignition turned on*
(2) **START** *Starter button*
(3) **LIGHTS** *Light switch**
Off
P *Parking light*
H *Headlight*

* *USA model:*
No light switch

Gear change pedal

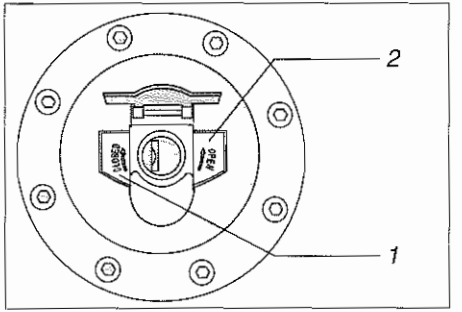


(1) *Pressure rod*

Gear shifting pattern
(1) *1. Gear*
(0) *Neutral*
(2) *2. Gear*
(3) *3. Gear*
(4) *4. Gear*
(5) *5. Gear*

Angular adjustment gear change pedal
The angular adjustment of the gear change pedal can be changed by turning the spindle after the nuts on the pressure rod (1) have been loosened. Afterwards tighten the nuts again.

Fuel tank cap

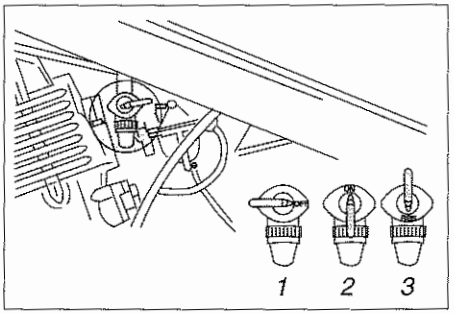


(1) **CLOSED** *closed*
(2) **OPEN** *open*

Warning !

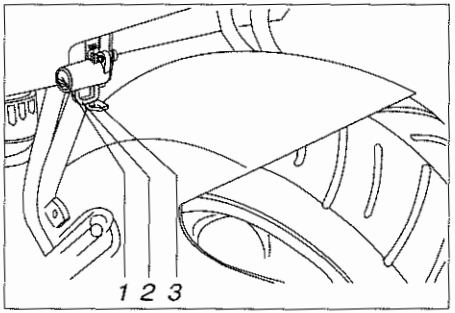
Before you drive make sure that the fuel tank is closed tightly.

Fuel cock



(1) **OFF** closed
(2) **ON** open
(3) **RES** reserve (3l, 0,66 Imp gal, 0,79 US gal)

Seat lock and helmet holder



(1) Seat lock
(2) Helmet support
(3) Lever

Removing the seat from the SKORPION TOUR model

To remove the seat, place the key in the seat lock and turn it to the right.
Pull down the lever to unlock the seat. Then remove the seat.

To reinstall the seat, pull the lever up, turn the key to the left, and click the seat in.

Make sure that the seat is fitted properly!

Removing the seat of the SKORPION SPORT/REPLICA model

To remove the seat/tail unit, place the key in the lock and turn it to the right.
Pull down the lever to unlock the seat/tail unit. Remove the pillion seat/tail unit. Under the pillion seat/tail unit there is a cable to unbolt the driver's seat.
To reinstall the seat/tail unit, first fit the driver's seat in, push the lever up, turn the key to the left and fit the pillion seat/tail unit in.

Make sure the seat/tail unit is fitted properly!

To secure the helmet, turn the key to the right, hang the helmet in position and then turn the key to the left.

STOP

Warning !

Never drive with the helmet attached to the holders. It may become caught on something or knock against something, causing you to lose your balance and crash.

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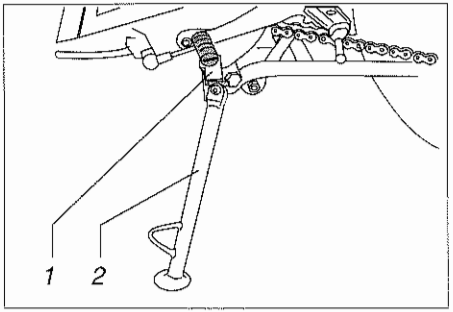
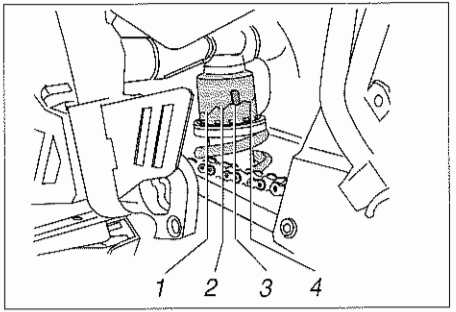
Side stand



(1) Switch
(2) Side stand

The side stand is equipped with a switch that interrupts the ignition, when the engine is in gear. This makes it impossible to drive off when the stand is extended.

Rear suspension

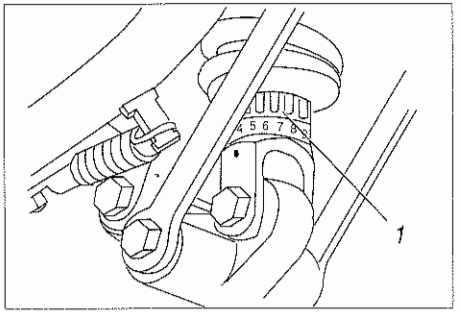


SKORPION TOUR/SPORT

There are four adjustment positions possible on the rear suspension:

(1) *Solo*
(2) *With pillion seat*
(3) *With pillion seat and luggage*
(4) *Heavy persons should use the adjustments 2-4 instead of 1-3*

Alterations to these adjustments can be made using the hook spanner found in the on-board tool kit, which can be extended with the tube end of the spark plug spanner for this occasion.



SKORPION REPLICA

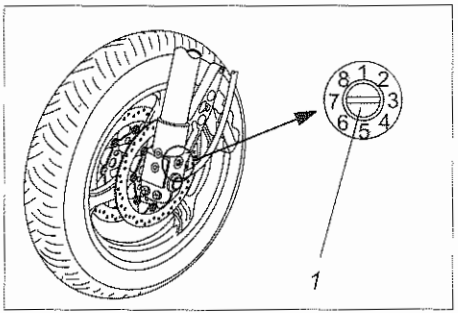
The spring preload has been preset in the factory for a person of approximately 75 kg. A change is only necessary for heavy drivers or if the height of the seat is changed. See a MuZ dealer for this service.
The damping can be adjusted on the ring (1) in 11 steps. The ***basic adjustment*** *for a person of approximately 75 kg is* ***4****. The higher the adjustment the higher the damping.*

- *When movements are instable and bouncing - select higher adjustment.*
- *When the suspension compression is too hard - reduce damping.*

Advice:

Do not apply more damping than necessary.

Front wheel suspension



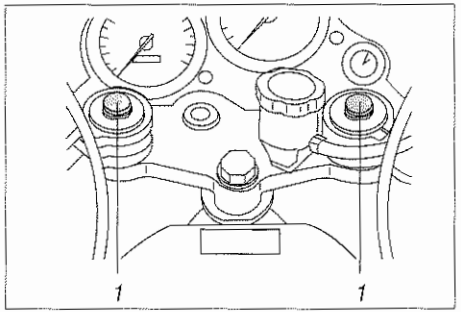
SKORPION REPLICA

Attention !

Never change compression and rebound damping at the same time when trying to make adjustments!

Compression stage adjustment:
The damping can be adjusted to stage 8 on both sides of the adjustment screw (1).
Set the ***basic adjustment*** *into* ***stage 3****.*

- *When the motorcycle bounces too much on the fork - select higher adjustment.*
- *When forks are too stiff select lower adjustment - turn to the left.*



Rebound stage adjustment:
The damping can be set in 20 stages on the adjustment buttons (1). The ***basic adjustment*** *is reached when* ***12 stages are turned back from the right stop****.*

- *When movements are instable and bouncing - select higher damping - turn to the right.*
- *When rebound is too slow reduce damping - turn to the left.*

Advice:
Do not apply more damping than necessary.

Attention !

The settings on both forks must always be the same.

Attention !

When uncertain check the adjustment of the damping before driving!

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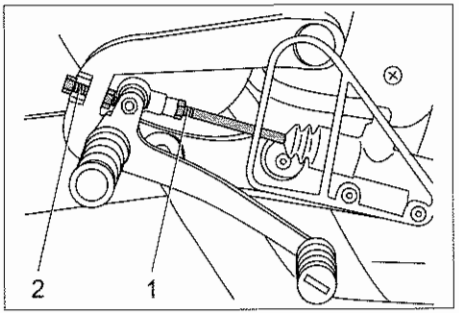
Foot rest adjustments

A change of the foot rest into the top or back position is possible. See a MuZ dealer for this service as the gear shift linkage has to be changed on the left side and on the SKORPION TOUR and SPORT the brake cylinder has to be turned by 180° on the right side.

To change the foot rest position on the right side of the SKORPION REPLICA another pressure rod (1) and another adjustment screw (2) are necessary.

Foot brake lever REPLICA



Angular adjustment of the SKORPION REPLICA:

The angular adjustment of the foot brake lever can be changed by turning the pressure rod after the nut of the pressure rod (1) has been loosened. Afterwards tighten the nut again.

The play of the foot brake lever can be set with the adjustment screw (2).

Handlebar adjustments

SKORPION TOUR

The handlebars can be adjusted in two directions:

- *handlebars down*
- *handlebars forward and backward (3 orientation notches for the symmetric adjustment on both sides)*

SKORPION SPORT

*The handlebars on this model are **not** adjustable.*

SKORPION REPLICA

Adjustment of the handlebar is possible in one direction:

- *handlebar forth and back*

Attention !

There must be a space of at least four inches between the tank and the handlebars when they are completely turned to one side!

	Torque
Handlebars angle downward and forward	*80+5 Nm*

Clock

Removing the clock:

- *Turn the lock of the snap-on hook*
- *Press the snap-on hook together*
- *Remove the clock from above*

Setting the clock:

- *Remove the clock from the clock holder*
- *Set the adjusting button on the side at the digit 3*

Changing the clock battery

- *Open the clock with a sharp instrument*

Accessories

The following accessories come with the SKORPION:

- *pressure rod for the gear change lever*
  TOUR 228 mm
  SPORT 266 mm
  REPLICA 250 mm
- *pressure rod for the foot brake lever*
  REPLICA 67 mm
- *threaded piece (adjustment screw) for the foot brake lever REPLICA M6x50*

Power Kit SKORPION REPLICA

By exchanging several performance-related components an increase in power is achieved.
See a MuZ dealer for installation of the power kit.

Warning !

The installation of the power kit SKORPION REPLICA entails the loss of road traffic admission.

Break in

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During the first few hours of operation there will be a higher degree of inner friction noticeable in the engine than later on, when all moving parts are worn in. Therefore during the first 1.000 km (600 mi) the following steps should be taken:

0 to 150 km (0 to 90 miles):

- *Avoid driving over 4.000 rpm.*
- *Change speed and number of revolutions from time to time.*

Warning !

New tyres must be worn in, as they do not reach their optimal adhesive property at the beginning. This should be compensated by careful driving during the first 100 km (60 mi).

Attention !

Even run-in tyres have to be „warmed up" before you reach the maximal adherence at concrete road conditions.

150 to 500 km (90 to 300 mi):

- *Avoid driving over 5.000 rpm*
- *In all gears it is possible to drive the full speed range of up to 5.000 rpm. Avoid driving at full throttle!*

Warning !

New brake linings must be worn in. This is why they do not reach their optimal frictional force for the first 200 km (120 mi).
The reduced braking effect can be balanced by increasing pressure on the brake pedal or handbrake. The same applies after brake linings have been changed.

500 to 1.000 km (300 to 600 mi):

- *Driving long journeys at full throttle, and longer stretches at over 6.000 rpm should be avoided.*

Attention !

The engine oil and oil filter should be changed after the first 1.000 km (600 mi).

After 1.000 km (600 mi)

- *Driving full throttle is permitted.*

Attention !

Do not drive so fast that the revs reach the red bond of the rev-counter.

At a RPM of 7.000 the ignition box switches off the ignition power (rev limiter). (SKORPION REPLICA with power kit - no rev limiter.)

Attention !

If there are any problems evident during the running-in period contact an authorized MuZ dealer immediately.

Safe driving

Warning !

Always make a pre-ride inspection. It is essential that this inspection is carried out.

Inspection of the motorcycle:

The following list of inspections does not take very long. Yet the safety gained through this process is worth much more than the few moments needed for the inspection.

- *Front and rear brakes:*
  Check the braking effect and brake fluid level.
- *Lights and horn:*
  Check that headlights, rear and brake lights, indicator, warning lights and horn function properly.
- *Tyres:*
  Check the condition and pressure (page 38).
- *Level of engine oil:*
  Check the oil level every 1.000 km as specified and if necessary fill it up (page 24).
- *Fuel availability:*
  Check the fuel level at the operating temperature of the engine and when necessary fill up (page 29).
- *Coolant:*
  Check the coolant level and if necessary fill it up (page 39).
- *Driving chain:*
  Check the condition and tension of the chain (page 38).
- *Throttle twist grip:*
  Check for smooth opening and closing in all steering positions.
- *Clutch:*
  Check efficiency, condition and free play (page 32).

Warning !

If you notice any irregularities before driving the motorcycle, the necessary repairs must be made before operating the motorcycle.

Individual driving style

Warning !

Your safety is also very much determined by your own conduct and the way you drive.

Therefore:

- *Do not drive when tired.*
- *Never drive when you are not fit to drive (for instance, when you are under the influence of alcohol, drugs, medication).*
- *Always adjust your speed to road and traffic conditions.*
- *Always observe traffic regulations strictly, especially speed limits.*

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Loading:

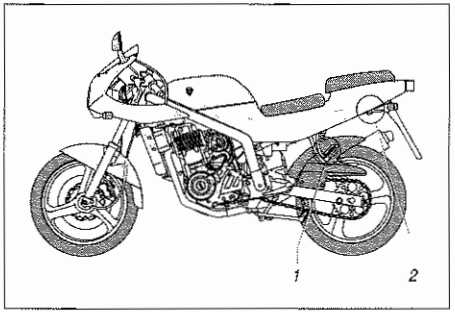
STOP

Warning !

The addition of cargo affects the motorcycle's performance and stability. Adjust your way of driving and speed accordingly.
Do not exceed the specified cargo load!

Please observe the following instructions:

- *Keep the cargo weight as low as possible.*
- *Place the cargo as close to the centre of the motorcycle as possible.*
- *Distribute the weight evenly on both sides.*
- *Check regulary that the cargo is secure.*

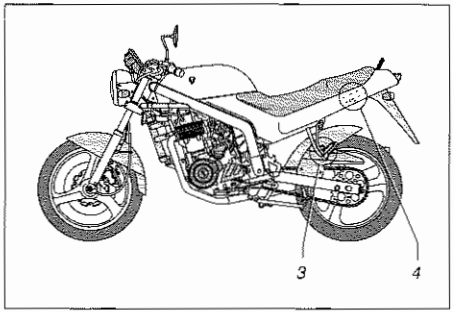


When carrying cargo on the pillion seat/tail unit of the SPORT/REPLICA model, the luggage should be secured using the rubber straps or tightening straps.
For this purpose use the rings (1) and (2) on the frame.

SKORPION REPLICA

The tail unit of the model REPLICA has additional room:

- *Take off the tail unit (page 13)*
- *Push back the lever in front of the bottom from the tail unit.*
- *Take off the back upholstery*



The TOUR model is equipped with a carrier system for this purpose.
The carrier system (which can be mounted on the left and right side) must be secured to the mountings of the pillion seat foot rests (3) and on the corner plate (4) of the rear frame bracket located under the side cover of the seat.

Drive economically and protect the environment

Environment !

The engine should not be warmed up when parked.

At idle speed it takes a very long time until the engine is warm enough to operate. During the warm-up period the wear and pollutant emissions are especially high. Therefore, drive off slowly after starting the engine.

Environment !

Avoid driving at full throttle.

Through moderate acceleration, fuel consumption, environmental damage and engine wear are considerably reduced.

Environment !

Do not drive at unnecessarily high speeds. Shift up as soon as possible and shift down only then when engine roughness is evident.

The fuel mileage in second gear is twice as much as it is in first gear. By reducing engine speed, the noise is also reduced.

Environemt !

Try to avoid driving at high speeds.

Fuel consumption, exhaust gases and vehicle noise increase disproportionately with speed.

Environment !

Drive at a steady speed and be alert.

Unnecessary speeding and braking result in higher fuel consumption.

Environment !

Turn off the engine during traffic delays.

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Attention !

Read the operating instructions carefully before riding your motorcycle.

Warning !

There is a risk of poisoning if the engine is run in a closed area.

Starting the cold engine:

- *Open the fuel cock*
- *Retract side stand*
- *Turn on the ignition (lights must be turned off)**
- *Shift the transmission into neutral gear (the control light for neutral must come on)*

Warning !

Make sure that the transmission is in neutral gear.

- *Turn the engine stop switch at* ***RUN***
- *Pull the choke back all the way*
- *Start the engine using the starter*
- *Close the choke halfway*
- *When the engine starts to run, close the choke completely*

Warning !

If the engine does not start immediately, release the starter button, wait for at least 20 seconds (to let the starter cool) then press it again. Never press the starter switch for longer than 5 seconds.

Starting the warm engine

- *Open fuel cock*
- *Retract side stand*
- *Turn on the ignition (light must be turned off)**
- *Shift transmission into neutral gear (control light must come on)*

Warning !

The transmission must be in neutral!

- *Set engine stop button at* ***RUN***
- *Do not use the choke*
- *Start the engine using the starter*

* *USA model:*
When starting the engine the light that comes on by turning on the ignition is turned off by a relay connection!

Changing gears

The shifting pattern is shown on page 10. In order to shift up or down, pull the clutch in completely, shift to the next gear and then release the clutch slowly.
To change gears when in neutral, pull the clutch in again (in the first gear some resistance will be noticed), then release it slowly.

Attention !

Never try to change gears without disengaging the clutch. This may cause serious damage to the gear box, engine and transmission.

Braking

Always apply both brakes simultaneously. Just using one brake reduces the braking effect.

Warning !

Never brake too hard.
This may lead to the wheels locking and loss of control of the motorcycle.

Please observe the following instructions:

- *Reduce speed when turning a curve. Braking in a curve may cause skidding.*
- *Apply brakes with care on wet roads*
- *On long, steep grades apply brakes by shifting down. Just to be safe you may also apply both brakes at short intervals.*

Stopping the engine

To switch off the motorcycle, turn off the ignition. To be able to switch the ignition lock from ***OFF*** *to* ***LOCK*** *or* ***P****, it must be pushed in shortly - having originally been set on* ***ON*** *(thus unlocking it).*
Lock the steering to prevent theft and lock the fuel cock.

Attention !

If the vehicle is left unattended (even for a short period) you should always remove the ignition key.
Do not park the vehicle on soft or sloping ground.

Warning !

The exhaust silencer and pipe may become very hot!
Exhaust fumes may still be emitted even after the ignition has been turned off.
Always park the motocycle so that pedestrians and children cannot come into contact with these fumes.

GB

Refuelling

STOP **Warning !**

When handling with fuel - danger of fire and explosion.
Never refuel in closed rooms!

Recommended fuel:
Non-leaded regular petrol with an octane rating of 91 (ROZ) or higher.

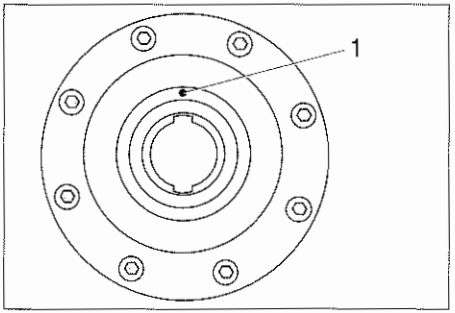
STOP **Warning !**

Do not overfill the fuel tank. Make sure that no fuel is spilled onto the hot engine.
After refuelling screw the tank cap on tightly.

Fuel tank capacity

Full capacity:	*18 l (3,96 Imp gal, 4,76 US gal)*
Reserve tank:	*3 l (0,66 Imp gal, 0,79 US gal)*

Only fill up to the upper surface of the larger hole of the filler cap.
The fuel is corrosive to the paintwork and plastic parts. Wipe the spilt petrol away immediately.



The out-let (1) for overflowing gasoline or water always has to be clear.

Operating instructions for winter

If you wish to drive your motorcycle in winter as well and you live in a country with a moderate or colder climate, please observe the following instructions:

- *Before winter starts, protect the chromium-plated metal parts with an anticorrosive agent recommended by your MuZ dealer.*
- *Apply this anticorrosive agent to the motorcycle as specified in the maintenance schedule.*
- *Before the winter treat all locks on the motorcycle with the usual lock lubricant.*
- *At the end of winter remove all protective measures.*
- *The standard tire equipment is not suitable for driving on snow or ice.*

General remarks

Attention !

If you do not possess the necessary tools or knowledge for repairs or maintenance you are advised to see your authorized MuZ dealer!

Improper repairs and maintenance work may lead to loss of warranty claims.

Regular maintenance work, adjustments and lubrication carried out at by an authorized MuZ dealer will guarantee your safety and the operational efficiency of your motorcycle for many years.

All maintenance work should be carried out at regular intervals.

The mileages specified in the maintenance schedule are standard. They may be influenced by the following factors:

- *How you drive*
- *Weather conditions*
- *Ground conditions*
- *Geographic location*

Warning !

Do not make any of your own adjustments to the vehicle such as changes to the engine or chassis parts. You put yourself and others at risk.

Depending on the strength of the abovementioned factors, shorter intervals may also be necessary.

The instructions in this chapter provide you with information on how to perform small maintenance tasks and help in the event of a break down.

The on-board tool kit supplied can be used not just in the case of a break down but also for carrying out of some maintenance work as specified in the maintenance schedule.
During the guarantee period all vehicle work should be carried out by the work shop crew.

For all maintenance and care work, fire and safety regulations should be observed!

Environment !

Please observe environment and fire protection regulations when using fuel and lubricants.
Dispose of the used oil according to the legal regulations.

Only use the fuel and lubricants recommended by us!

Top up lubricants or brake fluid only with the original-mixing could have adverse effects or cause damage.

Let the workshop determine the cause of low levels of fuel, lubricants and brake fluid - there could be a leak!

GB

Maintenance schedule

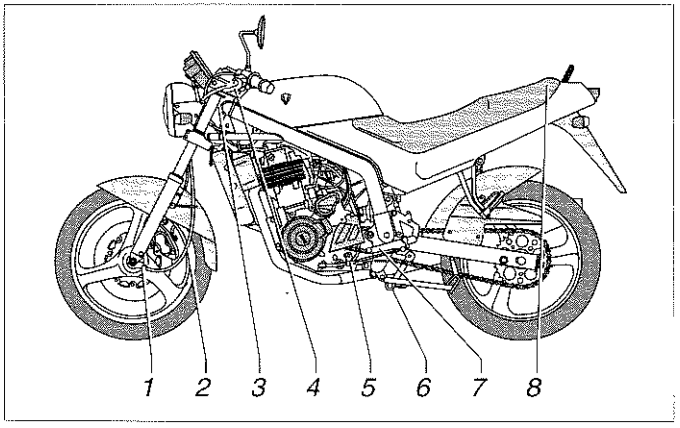
Engine and gearbox	bevore driving	after 1st 1.000 km	every 6.000 km	every 12.000 km	every 2 years	W=workshop S=compliance with values and data
Check clutch play		●	●			S
Check valve clearance, adjust if necessary		●	●			W/S
Check cooling system: filling amount/density/ anti-freezing compound		●	●		replace	W
Oil change, clean coarse filter		●	●			
Oil filter change (replace), clean coarse filter		●	●			
Check oil level/fill up (see page 29)	always after 1.000 km					
Tighten exhaust pipe attachment on cylinder 7 Nm (0,7mkg, 5,1 ft lb)		●				W
Check engine mountings				●		
Clean carburetter/clean carburetter filter		●	●			W
Check carburetter adjustments		●		●		W/S
Measure exhaust fume values	yearly					W/S

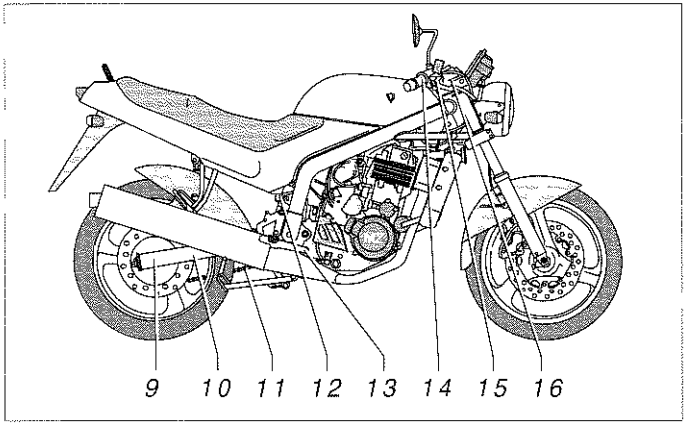
Electrical installations	before driving	after 1st 1.000 km	every 6.000 km	every 12.000 km	every 2 years	W=workshop S=compliance with values and data
Check light and signals	●					W/S
Spark plugs: check condition/clean and replace if necessary		●	●			S
Check electrolyte level in battery	every 6 weeks					S

Chassis	before driving	after 1st 1.000 km	every 6.000 km	every 12.000 km	every 2 years	W=workshop S=compliance with values and data
Check braking efficiency	●		●	●		S
Check brake fluid	●					S
Change brake fluid					●	W
Check brake linings of disc brakes	every 2.000 km					S
Check shock absorbers			●	● *		W *
Telescopic fork			●	● *		W*
Check tyre pressure	●					S
Clean fuel filter in fuel cock (see page 30)		●	●			
Clean air filter	every 6.000 km (depending on use, more often)					
Replace air filters	every 12.000 km (depending on use, more often)					
Empty the drip tubes of the air filter			●			
Check all bolts and screws		●		●		W/S
Check chain slack and alignment	every 500 km (depending on use, more often)					W
Clean and lubricate chain	every 500 km (depending on use, more often)					
Lubricate hand lever and throttle twist grip	every 12.000 km (more often if necessary)					
Check and lubricate the bowden cables				●		
Lubricate speedometer drive				●		
Clean bearings and lubricate				●		W
Check switch for side stand		●	●			

* For REPLICA maintenance over 18.000 km only done in authorized garage

GB





Part to be lubricated		Lubricant to be used
1	Speedometer drive assembly on the front wheel	Roller bearing grease
2	Speedometer drive	Oil
3	Steering bearing	Roller bearing grease
4	Clutch lever	Oil
5	Ball joint of gear selector	Roller bearing grease

Part to be lubricated		Lubricant to be used
6	Side stand	Roller bearing grease
7	Gear lever	Roller bearing grease
8	Seat lock	Roller bearing grease
9	Wheel bearing	Roller bearing grease
10	Rear suspension steering joint	Assembly grease

Part to be lubricated		Lubricant to be used
11	Chain	Chain spray
12	Adjusting sleeve for spring shock absorber	Roller bearing grease
13	Brake pedal	Roller bearing grease
14	Throttle twist grip	Roller bearing grease
15	Hand brake lever	Roller bearing grease /oil
16	Bowden cables	Oil

Oil level check

The engine has a dry sump lubrication system.
By means of a feed pump, the oil is supplied to the parts of the engine and transmission to be lubricated.
After the parts have been lubricated, a suction pump pumps the oil back into the oil tank.

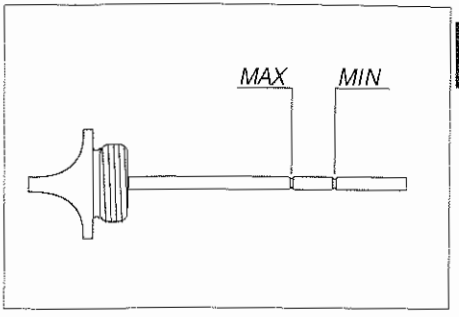
Warning !

Danger of fire!
If the engine is hot the oil cap should not be removed.
Wait until the engine has cooled down to approximately 60°C/140°F.

Checking the oil level:

- *After every 1.000 km the oil level should be check whilst the engine is warm.*
- ***Warm the motorcycle up for approx. 5 minutes and then run it in neutral for at least 30 seconds, before turning it off.***
- *Stand the vehicle in an upright position on level ground on the main side stand. The front wheel must touch the ground.*
- *Unscrew the oil dip stick (situated under the seat or back of pillion seat) from the oil tank and wipe it off.*
- *Reinsert the oil dip stick and then check the oil level.*
- *Screw in the oil dip stick until it stops and read the oil level after screwing the stick out again.*
- ***The oil level must be maintained between the MIN and MAX points. If required, fill up the oil, but never overfill!***

*If the oil level is at **MIN**, only about 250 cm^3 (0,25 l) can be added.*



Attention !

Never run the engine with insufficient oil!

Changing the oil

If possible have the oil and oil filter changed (basically necessary when the limit for an oil change is up) at an authorized MuZ workshop. The workshop meets the requirements for the environmentally safe disposal of the used oil and offers an expert service! Changing the oil is a part of the maintenance schedule.

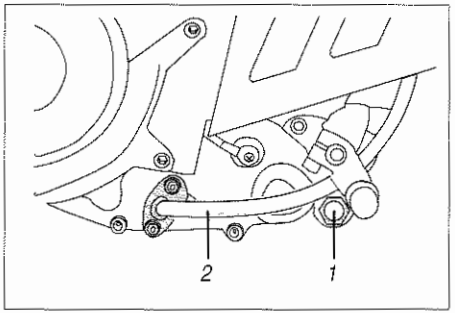
The following points should be observed:

- *Warm the engine (oil) up or change the oil after having driven the motorcycle.*
- *Stand the motorcycle up in an upright position on the side stand.*
- *Carefully open the oil tank cap to allow air in.*

Warning !

Danger of fire!
Never remove the oil tank cap if the engine has been running for a very long time. Wait until the engine has cooled down to a temperature of approximately 60°C/140°F.

- *Place an oil collecting basin underneath the engine*
- *Remove the oil drain plug (1) - be careful with the rubber seal whilst doing this!*



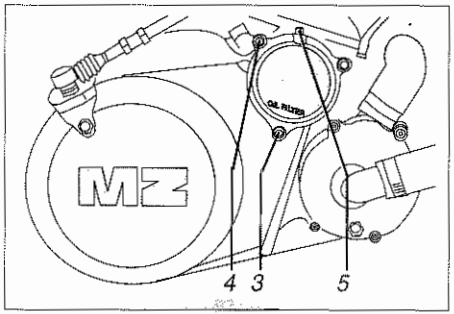
- *Loosen the oil pipe (2) (2 screws)*
  Attention! *The o-ring seal comes undone easily!*
- *Let the oil completely drain out of the pipe and oil drain plug.*

Environment !

Oil should not be poured into the sewage system or onto the ground. The used oil must be disposed of correctly.

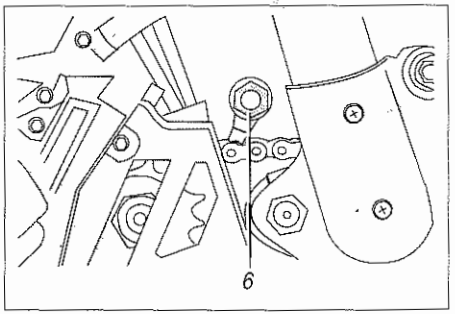
Attention !

Damaged seals and sealing rings are to be renewed before re-assembly.



Additional instructions for changing the oil filter:

- *Loosen the oil filter drain plug (3) and turn five times (oil drains inside). Remove the oil filter lid - unscrew 3 screws (3) and (4) completely.*
  Attention*: The screws must be replaced in the same position as they are of different measurements!*
- *Remove the oil filter and replace it. Attention: The o-ring seal of the screw comes undone easily!*
- *Soak the new filter in oil, insert it and screw the lid on tightly - be careful with the o-ring seal!*



- *Unscrew the coarse oil filter (6) putting coubter-pressure on the hexagon of the oil screen case.*
  Clean the wire screen and install the screw (6) again.
- *Tighten the oil drain plug screw (1) securely.*
- *Insert the oil duct (2) (if necessary replace the toothed washers and the o-ring).*
- *Pour 2 litres of oil into the oil tank and close the cap.*
- *Let the engine* ***warm up for at least 5 minutes****.*
- *Let the engine run in neutral for 30 seconds. At the same time ventilate the oil filter by loosening the (5) screw and then tighten it again.*
- *Turn the engine off*
- *Add 0,55 litres of oil*
- *Check the oil level (page 29)*

Attention !

After changing the oil, check for leaks!

Oil capacity

Oil change without filter change:	*2,45 l*
	(2,16 Imp qt, 2,57 US qt)
Oil change with filter change:	*2,55 l*
	(2,24 Imp qt, 2,68 US qt)
Total oil capacity:	*2,85 l*
	(2,51 Imp qt, 2,99 US qt)

Attention !

Torques for all bolts should be observed!

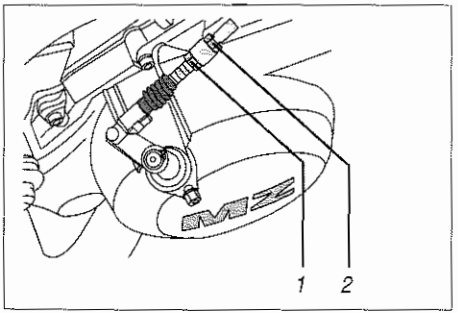
The kind of oil to be used depends largely on the outside temperature:

If the outside temperature does not sink below 5°C/40°F: Use SAE 20W40 SE engine oil!

If the outside temperature does not rise above 15°C/40°F: Use SAE 10W30 SE engine oil!

	Torques
Oil drain plug (1)	*30 Nm (3,0 mkg, 22 ft lb)*
Oil pipe screws (2)	*12 Nm (1,2 mkg, 9 ft lb)*
Oil filter drain plug (3)	*10 Nm (1,0 mkg, 7,2 ft lb)*
Filter cover screws (4)	*10 Nm (1,0 mkg, 7,2 ft lb)*
Oil filter vent screw (5)	*5 Nm (0.5 mkg, 3,6 ft lb)*
Coarse filter screw (6)	*30 Nm (3,0 mkg, 22 ft lb)*

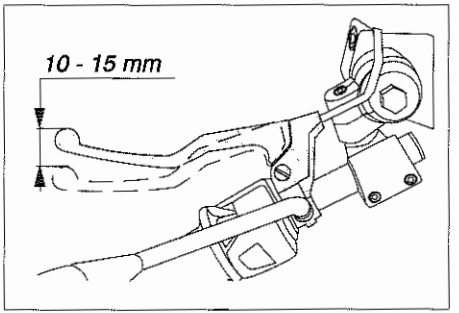
Clutch



The clutch free play can be adjusted on the engine.

Adjustment:

- *Loosen the lock nut (1) or (2)*
- *Adjust with the adjusting screw (2) or (1)*
- *Screw the lock nut on tightly (1) or (2)*



The free play on the end of the lever should be between 10 and 15 mm (4-6 in).

If free play is no longer possible by following the above instructions, the clutch mechanism should be inspected by a MuZ dealer!

Brakes

Attention !

Check the level of brake fluid before every ride!
Air in the brake system reduces the braking efficiency and is dangerous for you and others!

Please note that new brake linings have to be worn in on the first 200 km in order to develop an optimal braking effect.
If there is not enough brake fluid, air may get into the brake system and impair it.
The bleeding of the brakes should be carried out by an authorized dealer for your own safety.

Checking the level of brake fluid of the front brake SKORPION TOUR/SPORT:
The brake fluid container is situated next to the hand brake lever.

In a horizontal brake fluid container the level of brake fluid should not sink below the middle of the display window!

Examination of the brake fluid level of the front wheel brake SKORPION REPLICA:
The brake fluid tank is on the left side next to the hand brake lever on the top fork bridge.

*The brake fluid level has to be visible between the marks **MAX** and **MIN** when the brake fluid tank is in a levelled position!*

Checking the level of brake fluid of the rear brakes:
The brake fluid container is located under the seat.

*The brake fluid level must be between the **MIN** and **MAX** marks!*

Attention !

Do not mix brake fluids!
This may be damaging to the braking effect or result in a chemical reaction!
This can cause chemical reactions and thus have a damaging impact on the braking effect!

Note:
Use only high quality brake fluid (DOT 4) as low quality products are corrosive to the rubber seals..

Brake fluid is poisonous!
Avoid contact with skin!
Keep brake fluid in the original container away from children.

As result of much downhill driving and frequent braking, old brake fluid has a tendency to form steam bubbles, thus reducing the braking efficiency and vehicle safety.

For your own safety, adjustments to the brakes should be carried out at a MuZ workshop!

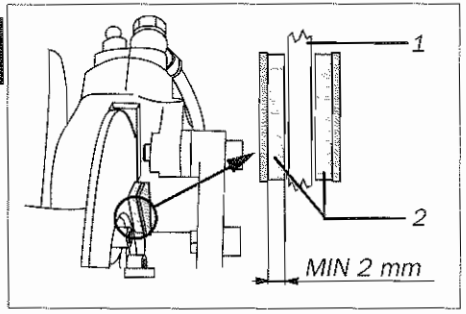
If there is a loss of brake fluid, see an authorized dealer for assistance and have any leaks repaired there. The motorcycle is no longer safe if there is a leak in the brake system.

Brake fluid is corrosive to paint and plastic components. Wipe spilled brake fluid off immediately.

Have the brake fluid and rubber seals replaced at a MuZ workshop every 2 years.

All modifications to the brakes should be made by a MuZ dealer.

The brake hoses should be replaced every 4 years by the MuZ workshop.



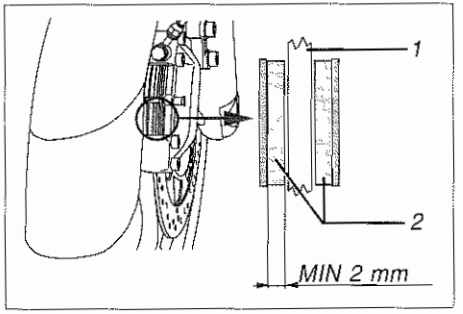
Brake calliper on the rear wheel

Checking the brake pads:

- *brake disc (1)*
- *brake lining (2)*

The thickness of the brake linings at the front and back should never be less than 2,0 mm (0,07 in) otherwise the brake discs could become damaged!

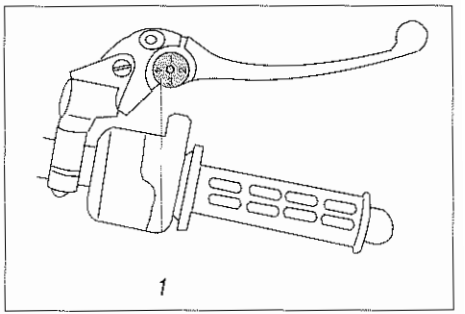
The replacement of the brake callipers should be done at a MuZ workshop.



Brake calliper on the front wheel

Checking the brake disks:
The minimum brake disc thickness is impressed on the brake disc.

Renewal of the brake disc has to be done in a MuZ garage.



Hand-brake lever SKORPION REPLICA

The hand-brake lever can be adjusted on the adjustment button (1) to four different stages according to the size of the hand.

Fuel supply

Warning !

Do not smoke when refuelling - danger of fire and explosion!

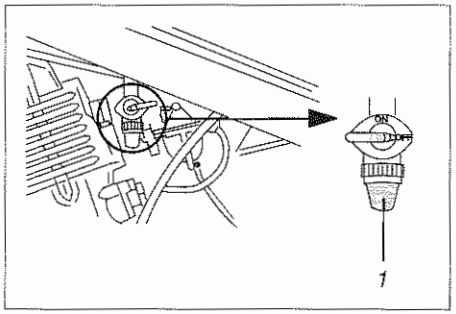
Maintenance work on the fuel supply is required if there are any problems with the following engine components:

Tank:
If the tank is dirty it must be rinsed out. This work is best done at a MuZ workshop.

Fuel cock:

- *Close the fuel cock*
- *Unscrew the filter cap (1)*
- *Remove the filter surface, clean and reinsert*
- *Replace the cap (1)*

The fuel cock also has a filter in the tank. To clean this the tank must be emptied and the fuel cock removed.



Carburetter:
The cleaning of the carburetter, especially the jets and fine filters should only be done at a MuZ workshop.
For this purpose the carburetter must be dismantled!

The carburetter is best inspected by the manufacturer or the staff at a MuZ workshop.
Any change of the adjustments may have a negative effect on the following:

- *Engine output*
- *Petrol consumption*
- *Exhaust fume emission*
- *Environment*

Attention !

The fine screen in the carburetter prevents dirt from entering and contaminating the jet system.
Engine problems (such as the engine stalling at high speed) may be caused by dirt in this filter!

Petrol hose and connections:

- *Tighten the hose clamp*
- *If required, replace with original hose from an authorized MuZ dealer.*

GB

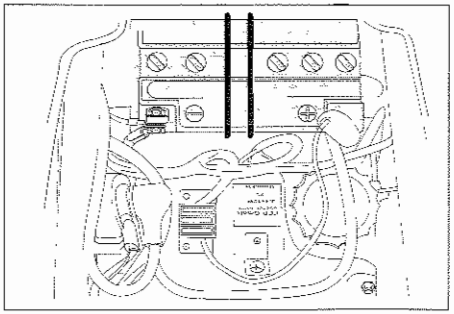
STOP

Warning !

Battery fluid is highly corrosive and should not come into contact with eyes, skin or clothing.
Acid splashes must be thoroughly rinsed off with water and should condition worsen, a physician must be called.

The battery is located under the seat.

- *Keep the battery attachments clean and always preserved with battery grease.*
- *Check the electrolyte level regulary. The level must be maintained between the two marks (two lines on the battery case).*
- *Only fill with distilled water!*
- *The battery should always be kept charged.*



If the motorcycle is not driven for over 6 weeks, the following steps are to be undertaken:

- *Remove the battery and store in a dark place where temperature is between 5°C/40°F and 20°C/68°F.*
- ***When removing the battery first disconnect the negative lead** and then the positive.*
- ***When reinstalling, first connect the positive lead** and then the negative.*

STOP

Warning !

Keep battery away from children!

Attention !

Recharge when in the bike:
Turn off the ignition.
Make sure the charging cables have the right polarity.
Make sure the area where you are recharging is well-ventilated.

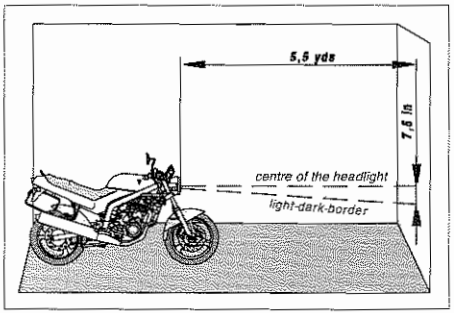
- *Before driving the motorcycle again, check that the battery is charged, and if necessary, recharge.*

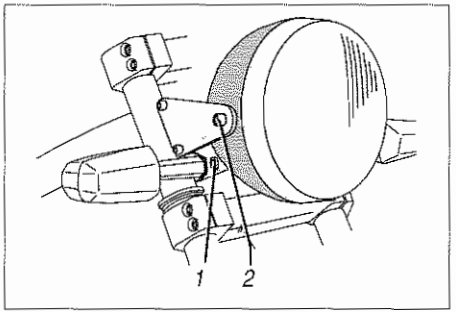
STOP

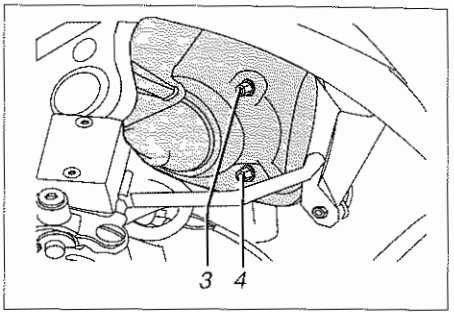
Warning !

Oxyhydrogen (electrolyte gas) is emitted during charging!
Make sure there is adequate ventilation in the area where you are charging the battery!
No smoking and no bright lights!
Avoid making sparks!

Headlight adjustments







Have the headlights adjusted at a MuZ workshop once a year.

Attention !

Always drive with properly adjusted headlights!
If your headlights are too bright you endanger yourself and others!

Attention:
Light adjustments differ with load.

Temporary adjustments to your headlights may be made as follows:

- *Load the motorcycle according to the intended usage and stand it up 5 m (5,5 yds) from a horizontal wall (not on the side stand).*
- *The distance from the centre of the headlight to the ground should be measured. Then mark a point on the opposite wall at exactly the same height.*
- *Properly adjusted headlights must show the light-dark-border of the luminous cone 190 mm (7,5 in) below the marked centre of the headlights.*

Adjustment of SKORPION TOUR model
Adjustment: Loosen screws (2) and stopper bolt (1) on both sides and tilt the headlight casing.
Tighten the screws (2) and stopper bolt (1) again.

Adjustment of SKORPION SPORT and REPLICA model

- *right headlight: headlight*
- *left headlight: dipped headlight*

The upper adjusting screws (3) are for side adjustments.
The lower adjusting screws (4) are for vertical adjustments.

Tyres

GB

Before driving always check the tyre pressure when they are cold (tyre temperature = outside temperature).
The tyre pressure should have the values as listed in the table:

SKORPION TOUR/SPORT		
load	*≤ 120 kg*	*max. 280 kg*
front	*190 kPa 1,9 bar 28 psi*	*190 kPa 1,9 bar 28 psi*
rear	*240 kPa 2,4 bar 35 psi*	*290 kPa 2,9 bar 42 psi*

SKORPION REPLICA		
load	*≤ 114 kg*	*max. 166 kg*
front	*200 kPa 2,0 bar 29 psi*	*200 kPa 2,0 bar 29 psi*
rear	*230 kPa 2,3 bar 33 psi*	*250 kPa 2,5 bar 36 psi*

Attention !

Always drive with tyres that have the proper pressure!

Warning !

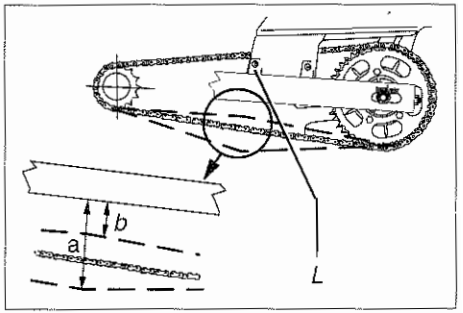
Worn tyres reduce the motorcycle's stability and may lead to accidents. Have worn tyres replaced!

Observe the legal tread depth!

Warning !

Use only the tyres approved for your motorcycle !

Driving chain



The driving chain is the most important transmission component of your motorcycle!

Chain care

Keep the chain clean and oiled! Regular care may be done with o-ring chain spray. Use of high-pressure cleaners is not recommended!

Checking the chain tension

Attention !

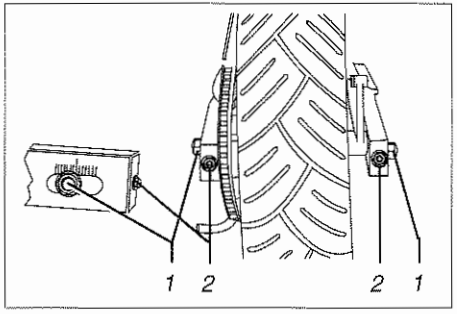
Incorrect chain tension overcharges the engine and other important components. Therefore, keep the chain tension within the set limits (30-40 mm).

Stand the motorcycle up on the side stand when checking the chain slack: Spin the rear wheel several times and measure the chain tension at different positions, in order to establish where is the tightest.
The correct measurement should be taken on the tightest part of the chain.

Making adjustments to the chain

- *Loosen axle bolts (1) on both sides*
- *Tighten chain: Twist the bolts (2) on both sides to the right*
- *Loosen chain: Twist bolts (2) on both sides to the left*

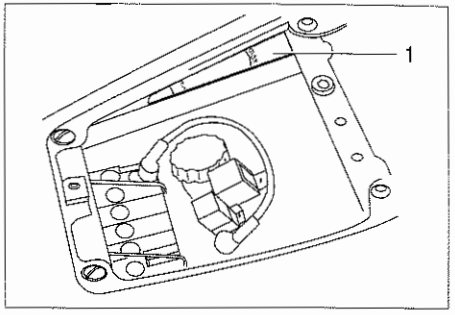
Attention!
Turn the bolts (2) on both sides the same amount so that the axle remains aligned. For the alignment, use the markings on the axle bolts on both sides.



- *Tighten axle nuts (1) on both sides.*
- *Once the adjustments have been made check the wheel track and correct if necessary.*

	Torques
Axle nuts (1)	*110 Nm (11,0 mkg, 79 ft lb)*

Coolant



Check:
The level of coolant should be checked after the first 1.000 km, and then every 6.000 km as specified in the maintenance schedule.

- *Remove the bench and/or the rear seat/tail unit*
- *The compensation tank with **MIN** and **MAX** will be seen*

The fluid should:

- *On a warm engine be between the **MIN** and **MAX** markings.*
- *On a cold engine it should not sink below the **MIN** point.*

Cleaning

Attention !

Insufficient coolant may result in engine damage!
The coolant level must be maintained between the two marks.
Have the Muz workshop staff repair leaks immediately.

Refill coolant:
Stop the engine and let it cool down. Before opening of the radiator cap close the hose of the compensating tank. Take off the lid of the compensating tank under the left side covering.

Warning !

Do not open the radiator cap when the engine is hot - danger of scalding!
The cooling system is under pressure!

If the recommanded coolant is not available, water can be used temporarily. However, the recommanded coolant has to be refilled as soon as possible.

Frequent and thorough cleaning not only improves the appearance of your motorcycle but also improves its overall operating performance. The life expectancy of many of the engine components is also increased.

- *Seal the end pipe of the exhaust to prevent water entering.*
  Make sure the spark plugs and all filling caps are securely closed.
- *To remove dirt use detergents which do not attack the paint or other surface layers. Pay attention to the description of the detergent manufacturer.*
- *Rinse dirt and detergent off with water. When doing this do not apply more water pressure than is necessary.*

Attention!
Too much water pressure may damage certain engine components.
Avoid spraying high pressure water in the following areas:

- *Carburetter and intake area*
- *Wheel hub*
- *Instruments*
- *Ignition switch*
- *Driving chain*
- *Under the fuel tank*
- *Exhaust port*
- *Main brake cylinder*
- *Handlebar switches*
- *Space under seats (ignition box)*
- *Tires*

- *Wash all surfaces with warm water and a mild cleaning agent.*
- *Immediately after washing, rinse motorcycle off with clean water and wipe all surfaces dry.*

Environment !

Guarantee the disposal of the waste water according to the regulations.

- *Dry the chain and lubricate it straight away to prevent rust formation.*
- *Clean the seat with a vinyl upholstery cleaner to keep the cover soft and shiny.*
- *Car wax can be applied to the painted and chromium-plated parts (except exhaust) of the motorcycle. Compound cleaning agents should be avoided.*
- *Start the engine and go for a short test drive.*

Attention !

Right after washing the braking efficiency may be impaired. Anticipate longer stopping distances.

Storage

Extended storage (60 days or more) requires that you take several precautionary measures to prevent any damage during this period.
After the motorcycle has been thoroughly cleaned, prepare the motorcycle for storage as follows:

- *Empty the fuel tank, the fuel line and the float housing of the carburetter.*
- *Remove the spark plugs, pour some engine oil SAE 10W30 or SAE 20W40 into the cylinder, then replace the spark plugs. Turn the engine over a few times (ground the ignition cable) in order to distribute the oil to the cylinder walls.*

Attention !

If the starter is only used to rotate the crankshaft, the spark plug cable has to be removed and grounded so that there are no sparks.

- *Remove the driving chain and clean it thoroughly in cleaning gasoline and grease it.*
- *Oil all bowden cables.*
- *Put the motorcycle on its stands so that both wheels are off the ground.*
- *Place a plastic bag over the exhaust port to prevent moisture entering.*
- *If the motorcycle is to be stored in a climate where the air is damp and salty, all exposed metal surfaces must be protected with a thin oil coating. Oil should not be applied to the rubber parts or the seat.*
- *Remove the battery, recharge it and store in a dry place. It must be recharged once a month. Battery cannot be stored at either very high temperatures or very low ones (over 30°C or below 0°C).*

Attention!
All necessary repairs should be made before storage of the motorcycle.

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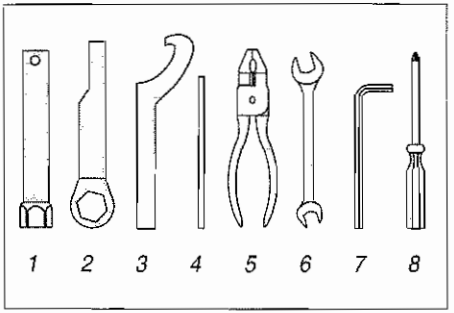
On-board tool kit



On-board tool kit consists of the following:

*(1) sparking plug spanner**
(2) ring spanner, 2 pieces
(3) hook spanner
hook spanner 170 mm long,
2 pieces for REPLICA
(4) peg ⌀ 7,5 mm for plug spanner
(5) multi-purpose pliers
(6) spanner 13x16
(7) hexagon size 8 inbus spanner
(8) exchangeable screwdriver

** attacheding to the ring spanner (2) or the hook spanner (3) ensures better lever action.*

Changing the tyres

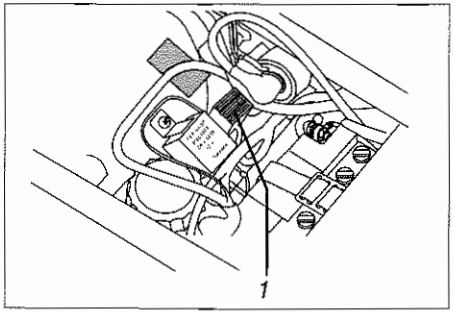
This can only be done at an authorized workshop, because the tubeless tyres must be fitted by machine and then balanced.

Changing spark plugs

In order to change the spark plugs please follow the following steps:

- *Switch off the ignition*
- *Remove spark plug caps*
- *Unscrew spark plugs using a plug spanner with a rubber insert*
- *Clean the spark plug if necessary, check the spark gap (0,8 to 0,9 mm, 0,031 to 0,035 in)*
- *Clean the plug gasket before reinserting*
- *Screw the spark plug in with a plug spanner*
- *Reinstall spark plug caps*

Fuse replacement



(1) fuse

The fuse box is located under the seat (of the TOUR model) or under the driver's seat (of the SPORT/REPLICA model).

Specified fuses	
Main fuse:	light-blue blade-type fuse 15 A
Cooling fan fuse:	brown blade-type fuse 7,5 A
Indicator fuse:	violet blade-type fuse 3 A

If a fuse blows, turn off the ignition and insert a new one with the correct amperage.

Attention !

Never use a fuse with a higher rating than that specified.
The temporary use of other aids may result in serious damage to the electrical system.

If the new fuse blows please see your authorized MuZ dealer.

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Attention !

Change the light bulbs according to the technical information supplied.
Do not touch the lights with bare hands but with a soft towel.

SKORPION TOUR headlights:

- *Loosen the screw under the headlight*
- *Loosen the headlight from its casing using a screw driver*
- *Remove the plug-in socket from the light*
- *Change the bulb*
- *Install in reverse order of removal*

SKORPION SPORT/REPLICA headlights

- *Remove the rubber cap on the back of the headlight*
- *Pull the socket out of the headlight*
- *Change the bulb*
- *Install in reverse order of removal*

Rear lights

- *Remove the rear lights case by loosening the screws*
- *Change the bulb*
- *Fix the rear light casing back on*

Indicators:

- *Remove the screw from the back of the indicator casing*
- *Remove the indicator casing*
- *Change the bulb*
- *Install in reverse order of removal*

Changing light bulbs on the instrument panel:

- *Remove the plastic cover using a screw driver*
  Attention!
  Avoid damaging the paintwork.
- *Dismantle the speedometer spindle*
- *Remove out the three hexagonal nuts*
- *Remove the instrument panel*
- *Remove the respective socket (do not pull on cable)*
- *Change the light bulb*
- *Install in reverse order of removal*

Troubleshooting

Although all MuZ motorcycles are subject to strict inspection at the factory before dispatch and are made ready for driving according to the regulations, some problems may still arise during operation. Problems with the fuel system, compression or with the ignition system might impair the starting efficiency and cause a deterioration in performance.

The troubleshooting guide shows a process that ensures a simple operation inspection.

If repairs on your motorcycle are necessary, please refer to an authorized dealer. The qualified mechanics at a MuZ workshop have the necessary tools, training and experience to be able to service your motorcycle. Only genuine MuZ spare parts are to be used for repairs.

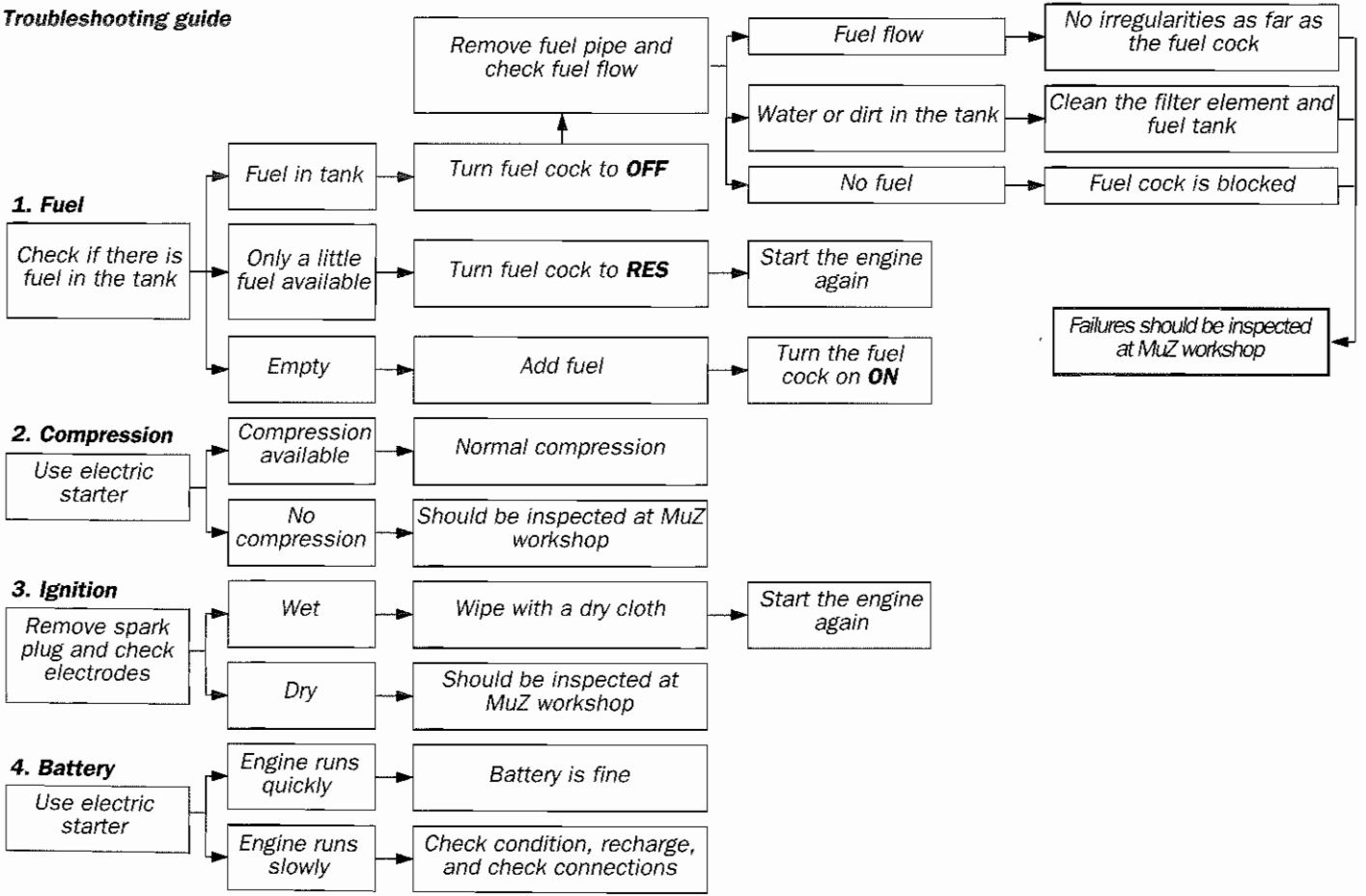
Attention !

There is a high voltage danger involved with the ignition working. Therefore, the ignition should always be turned off.

Attention !

Work on the fuel system involves risk of fire and explosion.
No smoking and no open flames or sparks.

Troubleshooting guide



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Measurements and weights

SKORPION	TOUR		SPORT		REPLICA	
MEASUREMENTS						
Overall length	2145 mm (84,4 in)		2145 mm (84,4 in)		2140 mm (84,2 in)	
Overall width with/without mirror	915/805 mm (36,0/31,7 in)		750/745 mm (29,5/29,3 in)		750/700 mm (29,5/27,6 in)	
Width of handlebars	approx.805 mm (31,7 in) (adjustable)		approx. 745 mm (29,3 in) (adjustable)		680 mm (26,8 in)	
Overall height with/without mirror	1210/1080 mm (47,6/42,4 in)		1240/1140 mm (48,8/44,9 in)		1220/1130 mm (48,0/44,5 in)	
No load on seat	approx. 770 mm (30,3 in) (dependent on load adjustment of the central spring feet)					
Wheel base	1420 mm (55,9 in)					
Caster	107 mm (4,2 in)					
Steering angle	63,5°					
Steering angle left/right	each 34°		each 28°			
Turning circle	6,20 m (244,1 in)		6,80 m (267,7 in)			
WEIGHTS		axle load front/back		axle load front/back		axle load front/back
Dry weight/ready to drive	189 kg (416 lb)	88/101 kg (194/222 lb)	189 kg (416 lb)	88/101 kg (194/222 lb)	181 kg (398 lb)	89/92 kg (196/202 lb)
Total weight permitted	400 kg (880 lb)	120/280 kg (264/616 lb)	380 kg (836 lb)	120/260 kg (264/572 lb)	280 kg (616 lb)	114/166 kg (251/365 lb)

Engine

SKORPION	TOUR	SPORT	REPLICA
Typ	MuZ 660 - YAMAHA 4 NN (35 kW)		
Method of operation	4 stroke ignition engines, water-cooled, SOHC, 5 valves, chain driven upper camshift, 1 counter balancer		
Number of cylinders/arrangement	$1/16^{o}$ tilted forward		
Bore x Hub	100,0 x 84,0 mm		
Cubic capacity	660 cm^3		
Maximum output rpm	35 kW (48 hp)/ 6250 rpm 25 kW (34 hp)/ 5750 rpm (with reduction kit)		36 kW (49 hp)/ 6500 rpm
Highest torque rpm	56 Nm / 5250 rpm 47 Nm / 4500 rpm (with reduction kit)		58 Nm / 5500 rpm
Compression ratio	9,2 ± 0,4 : 1		
Lubrication	dry sump circulation system lubrication		
Clutch	wet multi-plate clutch		
Air filter/manufacturer	paper-dry filter D 900/FILTRAK		

Carburettor

SKORPION	TOUR		SPORT		REPLICA	
Type of carburettor/name/manufacturer	4NN00 (35 kW)/TEIKEI				4NN01/TEIKEI	
	Primary bore	Secondary bore	Primary bore	Secondary bore	Primary bore	Secondary bore
Main jet	130	165	130	165	130	165
Main air jet	Ø 1,0	Ø 1,0	Ø 1,0	Ø 1,0	Ø 1,0	Ø 1,0
Needle	5D96-3/5	5X7C-3/5	5D96-3/5	5X7C-3/5	5D96-3/5	5X7C-3/5
Needle jet	V00	Ø 2,7	V00	Ø 2,7	V00	Ø 2,7
Idling jet	48	–	48	–	48	
Idling air jet	Ø 0,6	–	Ø 0,6	–	Ø 0,6	
Bypass	Ø 1,0	–	Ø 1,0	–	Ø 1,0	
Idle air adjusting screw	2 and 1/2 turns out	–	2 and 1/2 turns out	–	2 and 1/2 turns out	
Valve seating size	Ø 2,5	–	Ø 2,5	–	Ø 2,5	
Starter jet	76					
Idle air exhaust	Ø 0,8					
Fuel level	6,0 – 8,0 mm (0,24 - 0,31 in) to float chamber interface					
Float height	25 – 27 mm (0,98 - 1,06 in)					

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SKORPION	TOUR	SPORT	REPLICA
Number of gears	5		
Idling speed indicator	in pilot lamp display		
Type of transmission	spur pinion-change (wheel) gear with dog-type lock shift		
Operating system	left foot controls		
Primary step-down gear system	gear		
Secondary step-down system	110 links chain drive with o-ring chain 5/8" x1/4, continuous		
RATIO			
Primary ratio	71/34 (2,088)		
Secondary ratio	39/15 (2,600)		
			Total ratio
1. Gear	31/12 (2,583)		14,026
2. Gear	27/17 (1,588)		8,623
3. Gear	24/20 (1,200)		6,511
4. Gear	21/22 (0,955)		5,183
5. Gear	19/24 (0,792)		4,298

Chassis

SKORPION	TOUR	SPORT	REPLICA
Type of frame construction	Tubular frames with screwed engine mounting and rear frame		
Front suspension	Telescopic fork with 140 mm (5,51 in) spring travel, hydraulically damped, inner compression springs	Teleskopic fork with 120 mm (4,72 in) hydraulically damped spring travel, inner compression springs	Upside-down telescopic fork with 120 mm (4,72 in) spring travel sliding tube ∅ 40 mm, hydraulic dampened, inboard pressure spring compression 8 steps rebound minimum of 20
Rear suspension	Central levered gas spring shock absorber, progressive, spring travel at wheel 30 mm (5,12 in), 4 adjustments		Long swinging fork with hydraulic dampened single suspension strut over lever system, progressive spring travel on the wheel 130 mm (5,12 in), rebound adjustable 11 times, spring preload adjustable
Front tyres from origi. equipment Flank name	110/70 ZR 17 PIRELLI 110/70 ZR 17 MTR 01	110/70 ZR17 METZELER 110/70 ZR 17 ME Z1 Racing Front tubeless	120/60 ZR 17 METZELER 120/60 ZR 17 ME Z1 Front tubeless
Alternative tyres* (all tubeless) -TL-	110/70 ZR 17 MTR 01 Corsa (PIRELLI) 110/70 ZR 17 ME Z1 Front (METZELER) 110/70 ZR 17 ME Z1 Racing (METZELER) 110/70 VR 17 Sportmax (DUNLOP) 110/70 -1754H Exedra G 547 (BRIDGESTONE)	110/70 ZR 17 MTR 01 Corsa (PIRELLI) 110/70 VR 17 Sportmax (DUNLOP) 110/70 R 17 Battlax BT80F (BRIDGESTONE) 110/70VR 17 F006 RR (YOKOHAMA)	120/60 ZR 17 MTR 01 120/60 ZR 17 Sportmax II (DUNLOP) 120/60 ZR 17 TX 11 (MICHELIN) 120/60 ZR 17 Battlax BT 50F „G" (BRIDGESTONE)
Back tyres from orig. equipment Flank name	150/60 ZR 17 PIRELLI 150/60 ZR 17 MTR 02	150/60 ZR 17 METZELER 150/60 ZR17 ME Z1 Racing tubeless	160/60 ZR 17 METZELER 160/60 ZR17 ME Z1 tubeless
Alternative tyres* (all tubeless) -TL-	150/60 ZR17 MTR02 Corsa (PIRELLI) 150/60 ME Z1 (METZELER) 150/60 ZR 17 ME Z1 Racing (METZELER) 150/160 ZR 17Sportmax radial (DUNLOP) 140/70 -17 66H Exedra G 548 (BRIDGESTONE)	150/60 ZR17 MTR02Corsa (PIRELLI) 150/60 ZR17 Sportmax (DUNLOP) 150/60 R 17 66HBattlax BT80R (BRIDGESTONE) 150/60 VR 17 R006 RR (YOKOHAMA)	160/60 ZR 17 MTR 02 (PIRELLI) 160/60 ZR 17 Sportmax II (DUNLOP) 160/60 ZR 17 TX 23 (MICHELIN) 160/60 ZR 17 Battlax BT 50R „J" (BRIDGESTONE)

* The tyres at the front and back should always be from the same manufacturer!

SKORPION	TOUR	SPORT	REPLICA
Tyre pressure (excess pressure) at the front (load of 1 or 2 people, each weighing 165 lbs)	190 kPa (1,9 bar)		200 kPa (2,0 bar)
Tyre pressure (excess pressure) at the back (load of 1 or 2 people, each weighing 165 lbs)	240 kPa (2,4 bar)		230 kPa (2,3 bar)
Tyre pressure (excess pressure) at the back (at max. permitted axle load)	290 kPa (2,9 bar)		250 kPa (2,5 bar)
Type of wheels/manufacturer	light alloy-cast wheels Grimeca - Italy		light alloy-cast wheels marchesini - Italy
Rim size (front) Rim marking	17 x 3.00 on cast spoke outside: Grimeca E - 17 x 3.00 DOT - D		17 x 3.50 on rim flange: marchesini - Italy on cast spoke: m mt 3.50 x 17 DOT - E
Rim size (rear) Rim marking	17 x 4.00 on cast spoke outside: Grimeca E - 17 x 4.00 DOT - D		17 x 5.00 on rim flange: marchesini - Italy on cast spoke: m mt 5.00 x 17 DOT - E
BRAKES			
Front brake type/manufacturer Operation	single disc brake with 4 pistons, fixed callipers/Grimeca operate with right hand		two-rotor disc brake/brembo/Braking 4-piston-fixed calliper with the right hand
Rear brake type/manufacturer Operation	single disc brake with 2 pistons, fixed callipers/Grimeca operate with right foot		single-rotor disc brake/Grimeca 2-piston-fixed calliper with the right foot

Electrical installations

SKORPION	TOUR	SPORT	REPLICA
Nominal voltage	12V		
Ignition	contact-free condensator ignition, electronic with ignition control		
Ignition time	before the upper dead center 12 ± 5° /1300 rpm to 38° /6500 rpm		
Spark plug	NGK DPR 8 EA - 9 NGK DPR 9 EA - 9 NGK DPR 9 EV - 9		
Spark plug air gap	0,8 - 0,9 mm (0,031 - 0,035 in)		
Generator	alternating current - flywheel magnet 14V 24,5A by 5000 rpm		
Battery	lead collector 12V/9Ah		
BULBS			
Headlights	H4 12V - 60/55W	H3 12V/55W - PK 22s (headlight) H1 12V/55W - P 14,5s (dipped lights)	
Parking lights	12V/4W - BA9s (T8/4) *	wedge-based bulb 12V / 5W; W2,1 x 9,5d	
Indicators	12V - 10W - R19/10		
Combined stop, tail and license plate light	12V - 21/5W - P25 - 2		
Speedometer and rev counter	12V/2W - W2 x 4,6d 12V/2W - W2,1 x 9,5d		
FUSES			
Main fuses	blade-type fuse 15A		
Indicator	blade-type fuse 3A		
Cooling fan	blade-type fuse 7,5A		

* Parking lights England variant: 12V/3,4W - BA9s (T8/4)

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SKORPION	TOUR	SPORT	REPLICA
FILLING AMOUNTS			
Fuel tank Amount of reserve	unleaded regular petrol 18l (3,96 Imp gal, 5,52 US gal) 3l (0,66 Imp gal, 0,79 US gal)		
Engine oil Oil change without filter Oil change with filter change Total amount of oil	engine oil SAE 20W40 Typ SE (if outside temperatures are not below 15°C/60°F) engine oil SAE 10W30 Typ SE (if outside temperatures do not rise above 15°C/60°F) 2,6l (2,3 Imp qt, 2,7 US qt) 2,7l (2,4 Imp qt, 2,9 US qt) 3,0l (2,6 Imp qt, 3,2 US qt)		
Coolant	1520 cm^3 (0,33 Imp gal, 0,40 US gal)		
Telescopic fork per member Recommandation: BP Autram ATF	300 ml (220 mm*) fork oil SAE 10	350 ml (220 mm*) fork oil SAE 10	Maintenance and repairing only by Whitepower-agents
DRIVING PERFORMANCE			
Max. speed	160 km/h, 140 km/h with 25 kW	175 km/h, 145 km/h with 25 kW	185 km/h
Fuel consumption	4,8 - 5,0l/100km **		

* Measured from the upper edge to the fluid level.

** Third-mixture of the consumptions at 60km/h, 90km/h, town traffic

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