KTM
AUSTRIA

OPERATING MANUAL

HOBBY III

E X P O R T

KTM automatic moped

THIS MODEL WAS IMPORTED INTO UK FROM NOV '93 TO OCT '96 AND SOLD AS THE "AUTOMATIC DE LUXE".

KTM AUSTRIA

MOTOR VEHICLES

This operating manual conforms to the most up-to-date Automatic de Luxe models. The KTM Company makes every endeavour to make sure that vehicle design and construction conform to the current instruction manual. If, however, in the course of further developement there should be such modifications, whether of a technical or a commercial nature, we reserve the right to make such modifications. Furthermore, we do not undertake to correct these operation instructions at the same time.

INTRODUCTION

We are very happy to be able to congratulate you on choosing a KTM moped. We thank you for the trust which you have shown in us by supplying you with the advantages of our many years of experience and the high-quality product supplied to you with your Automatic de Luxe moped.

These operating instructions will enable you to operate your high-quality moped correctly and to give it the best care and maintenance. Please observe all the advice and instructions given as carefully as possible.

To eliminate any faults which may occur we advise you to refer to our fault-finding table. We would also ask you not to have any repairs which may become necessary carried out by non-experts, as far as possible, but to have them carried out by one of our many dealers who have service workshops (unless you are an engineer yourself). Only in these workshops are the special tools available which are generally to some extent necessary, and only there can you find the required expert knowledge.

Now we won't keep you from your first trip with your new KTM moped any longer and wish you every pleasure and satisfaction with this and for all other trips.

KTM Motor Vehicle Manufacturers
Mattighofen
AUSTRIA

CONTENTS

Overall view from left

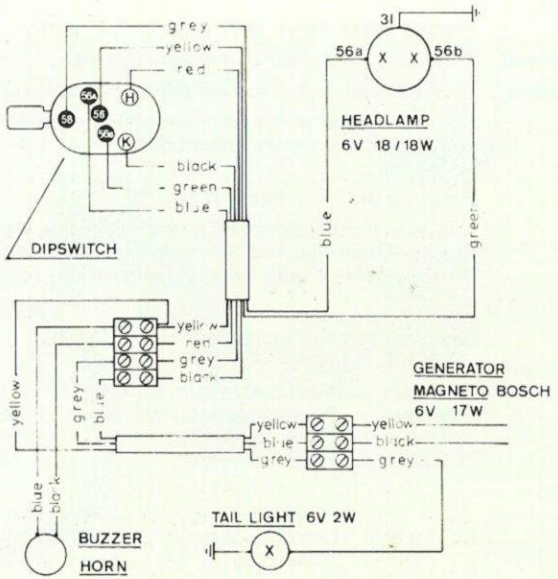
1. Technical Data

Chassis	
Frame	Pressed steel frame with built-in fuel tank
Front wheel suspension	Telescopic fork with 70 mm spring travel
Rear wheel suspension	Pressed steel unit with two telescopic legs, spring travel 50 mm
Wheels	Spoked wheels with chromium-plated steel rims and solid hubs with adjustable tapered bearings
Tyres	21 x 2.25
Tyre pressure	Front 26 psi back 28 psi
Brakes	Mutually independent and easily adjustable internal-expansion brakes 90 mm dia. and 30 cm^2 effective brake surface per wheel. Brakes operated with handbrake lever and cables.
Tank capacity	3.5 l
Gearbox lubrication	Approx. 150 ccm Sachs gear oil or SAE 80

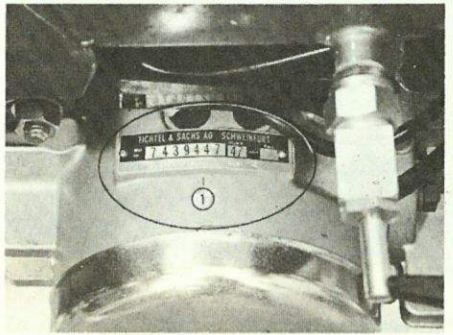
Dimensions and Weights			
Wheelbase	1120 mm	Machine weight, tank full	46 kg
Max. lenth	1700 mm	Permissible total weight	160 kg
Max. width	645 mm	Front wheel load	60 kg
Max. height	1010 mm	Rear wheel load	100 kg

Electrical Equipment			
Generator-magneto Bosch		Ignition setting	2.5 — 3 mm before T.D.C.
Front light	6 V 18 W	Contact spacing	0.35 mm
Tail light	6 V 2 W	Spark plug	Bosch W175 T 1
		Electrode spacing	0.5 mm

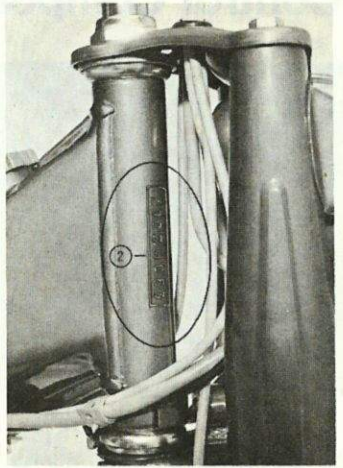
Circuit Diagram KTM Automatic Moped



Positon of Serial Numbers

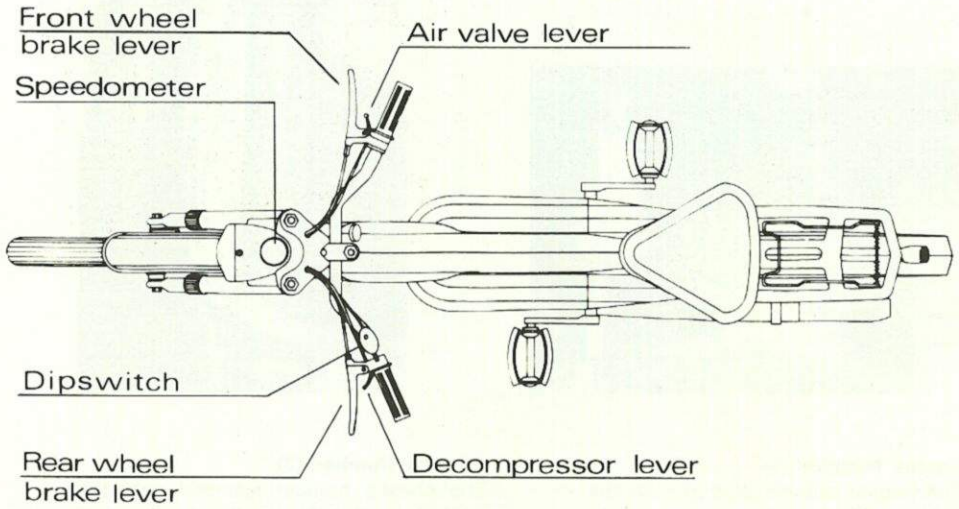


Engine Number (1)
The engine number stamped on the cylinder block must correspond to that given in the vehicle documents.

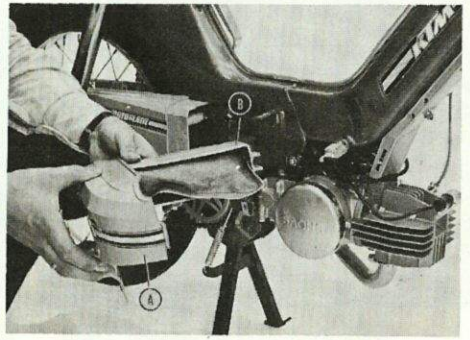


Chassis Number (2)
The chassis number stamped onto the control head tube of the frame must also correspond to that indicated in the vehicle documents.

2. Control Components



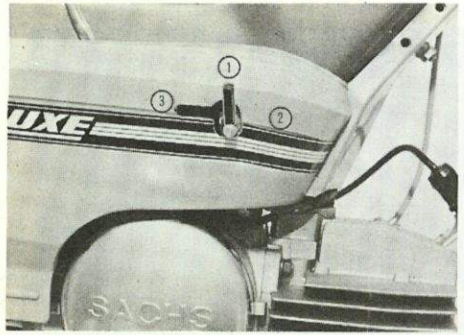
Removal of Engine Housing:



To remove engine housing remove T-screw (1). Using a coin turn locking bolt (2) under slight pressure through 90°. The engine casing can now be removed. (When taking off the right-hand housing make sure that the fuel tap is in position "closed"!)

Under the right-hand housing (A) is the tool kit (B)

Fuel tap

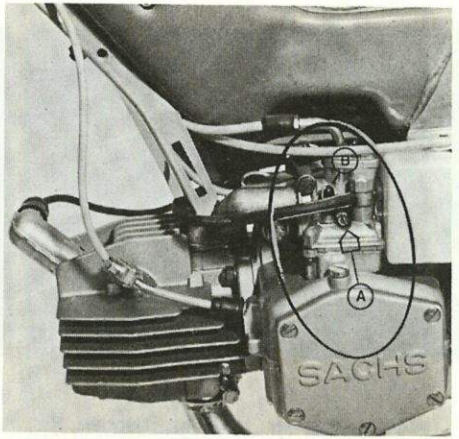


1 Fuel tap open

2 Fuel tap closed

3 Reserve

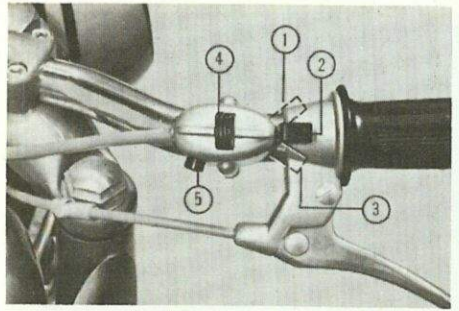
Carburettor



A Idling adjustment screw
(only adjust with warm engine)
Tickler

B (only use when cold-starting)

Dipswitch



Mounted on the left-hand side of the handlebars, the dipswitch has 5 functions:

1 Light off

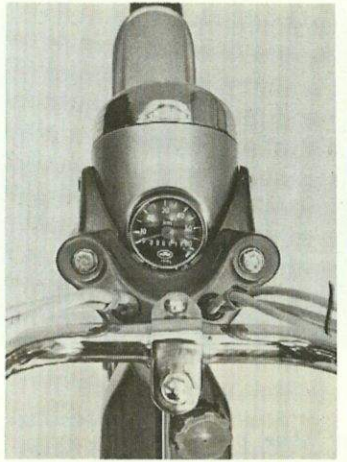
2 Dip light

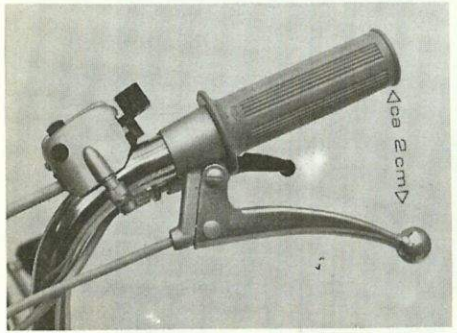
3 Head-light

4 Pushbutton for buzzer horn

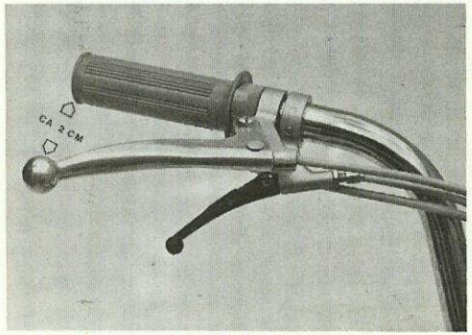
5 Short-circuit button to stop motor

Headlamp speedometer

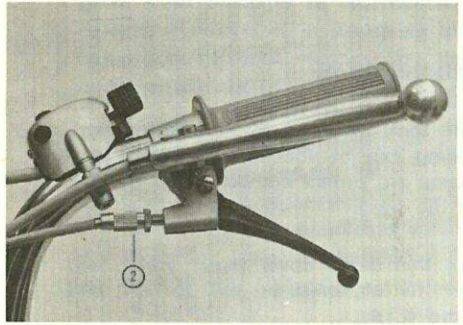


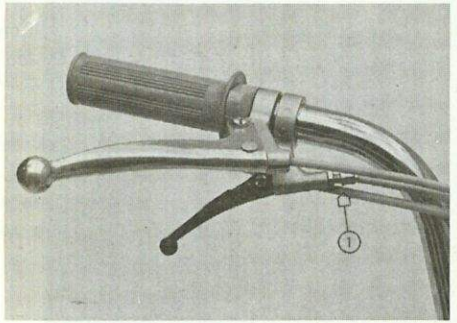


Rear wheel brake lever



Front wheel brake lever



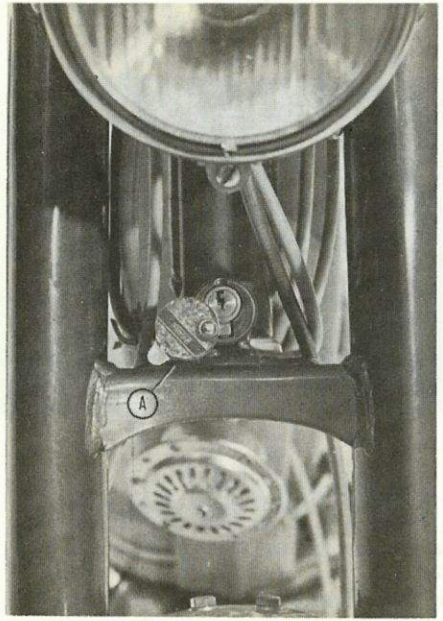


Decompressor lever

The cable for the compression release must have a play of appr. 2 mm at the adjusting screw (2), so that the compression release valve closes for sure.

Air valve lever

The choke in the air filter box should be closed completely when the lever is pulled.
If necessary reset cable at the adjusting screw.



Thief-proof lock

The lock mounted on the bottom fork casing can be locked when the handlebars are turned completely to the left or the right.

For this move cover plate, insert key, turn to left, press in, turn to right and remove key.

NB: Ensure that the key is removed before turning handlebars.

3. Instructions for Initial Operation

Each KTM machine is test-driven after assembly and investigated for any defects. However it is extremely advisable to carry out the following checks before driving your machine for the first time, in case they have not already been carried out by your dealer.

a) Check that vehicle indication number correspond to vehicle papers.
b) Test key supplied for lock.
c) Check for firm seating all screws and nuts, particularly front wheel axle rear wheel axle, handlebar assembly, etc.
d) Check oil level in gearbox.
e) Correct tyre pressures.
f) Check brakes.
g) Fill fuel tank (oil/petrol mixture 1:25, never fill with pure petrol!).
h) Start engine (see driving instructions).
i) With engine running check:

High beam	Buzzer horn (signalling device)
Dip beam	Short-circuit button
Rear light	

4. Driving Instructions

Starting the engine

Open fuel tap. Only use choke when engine is cold and if necessary flood carburettor slightly by pressing the tickler. When engine is warm do not use either choke or tickler.
Start as with a bicycle and when enough impetus has been gained give a short sharp pull to the clutch lever and release it, at the same time open throttle about one third, i. e. turn the throttle twistgrip through one third of its full travel. (Continuous pulling of start lever prevents starting of engine, since the decompressor is always functioning and thus stops the engine.) If the engine has started, you can drive away at once.

Driving

Speed is controlled with the throttle twistgrip. When maximum speed has been reached by completely opening the throttle, turn it back to about three quarters open. This hardly drops the speed but fuel consumption is however considerably reduced. Always reduce speed by closing the throttle, never by pulling the decompression lever.

Driving downhill

On down gradients the engine running without power acts as a brake. Over long distances open throttle from time to time to ensure that engine is adequately lubricated, the lubricant being mixed with the fuel. If necessary the bike can also be slowed down with the brakes.
If in an emergency the machine has to be braked so much that the clutch disengages, the clutch can be engaged again, in order to allow the engine to act as brake once again, only by briefly opening the throttle, and not by allowing the gradient to increase the speed.

Running-in time

However fine, the machined piston and cylinder surfaces of an engine are rougher than those which have moved together for a longer period. Each piston must therefore have time to run in. Therefore the engine should not be pushed to its limit over the first 1000 km.

Braking

Throttle back, brake simultaneously with front and rear wheel brakes. Always brake with "feel".

Stopping and parking

a) Close throttle
b) Brake and, if engine is to be stopped,
c) Pull decompressor
d) Close fuel tap
e) Lock vehicle

5. Maintenance

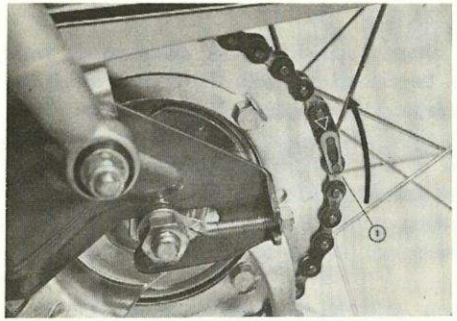
KTM SERVICE

As already stated, not all maintenance work can be carried out with the means which are available to the average private person.
Therefore you should have such work done in one of our authorised KTM workshops. They have special tools and skilled staff using proven working methods which guarantee that your vehicle will always be correctly handled.

When ordering spare parts prompt delivery is only possible if you give the following information:

part name – number
model – colour
type designation
engine and chassis number

1) Chain cleaning and lubrication

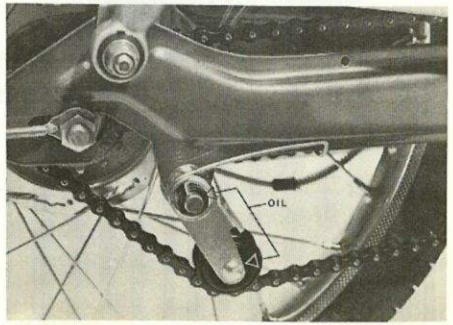


Chain life depends to a great extent on chain maintenance. It must therefore be cleaned and lubricated at correct intervals. For this purpose the chain is best cleaned in petroleum and dipped in hot chain grease. When mounting the cain make sure that the chain lock is in correct position (closed side of lock in direction of movement) and ensure that engine chain tension is correct.

2) Greasing of frame

With grease: Speedometer drive 1–2 shots with grease gun

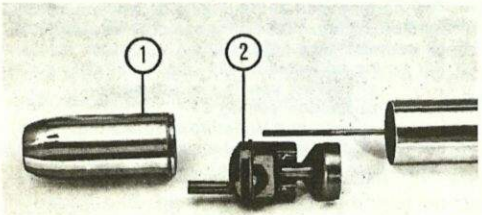
With oil:
a) All brake cable assemblies
b) Slide surfaces of 2 brake levers
c) Brake adjusting screws
d) Thread of engine chain tensioner
e) Roller axle of pedal chain tensioner
f) Stand bearing



3) Decarbonising of engine and exhaust

Decarbonising of engine

To decarbonise the engine, cylinder head and exhaust must be removed. The oil-carbon which is formed in the cylinder head, the piston head and in the exhaust aperture must be removed with a blunt-edged object (screwdriver). Care must be taken in doing this not to scratch the surfaces, since a rough surface favours the deposition of carbon. Before remounting the cylinder head, all carbon deposits must be removed and the sealing surfaces cleaned with a clean cloth. Do not use a sealing agent. The cylinder head screws must be tightened "crosswise".



Cleaning the silencer

After decarbonising the engine the silencer should also be cleaned.
Dismount exhaust pipe and silencer and remove end-cap (1) and insert (2). Remove oil-carbon deposits with a scraper or oil residues with petroleum. The intermediate plate welded into the silencer should also be checked and if necessary cleaned.

Important: The inside of the silencer should not be interfered with, and in particular the insert should not be removed, since this reduces motor power and increases fuel consumption. No increase in power can be achieved in this way. Furthermore any modification of the vehicle is forbidden by law, because it was only officially approved with its original components. If an official check is made it is not only the owner who is liable to penalties but also the person who made the modifications.

4) Spark plug maintenance and appearance

The spark plug is one of the engine components which is subject to the greatest heat stress. During combustion, temperatures of over 2000 °C are produced which suddenly drop when fresh gases flow in. This operation takes place at pressures of about 30 atm up to 5000 times a minute and more. Nonetheless, the spark plugs must not heat up to temperatures much greater than 500 °C, self-cleaning temperature. In order to ensure a perfect combustion process, it is essential to use only spark plugs with the heat value recommended by the engine manufacturer.

For spark plug maintenance it is best to use a brass-wire brush and a contact file. The brush is used to clean the insulator tip and the electrodes of combustion residues. The contact file is drawn between the electrodes and this gives clean sparking points. After electrode spacing has been checked with a 0.4 mm thickness gauge, the spark plug is ready fur use again.

Spark plug inspection from outside the engine is only possible using special means, since as we have already said pressure of up to 30 atm are present in the engine at the moment of ignition and thus it is understandable that a spark plug can appear to function outside the engine whilst when the engine is operating it drops out or fails completely. Reliable checking of spark plugs is only possible in a special test instrument and under pressure.

Plug appearance helps to select the correct plug, but also helps to indicate carburettor setting, driving pattern and engine state.

It is obvious that a few minutes running are not enough to permit an assessment of plug and engine. It is necessary to run the engine for some time at the power expected of it and under the most varied conditions. Only then can a judgment be made.

The plug should have a light-to-reddish brown coloured insulator tip and almost bright electrodes. If this is not the case consult your KTM dealer.

He is always ready to adjust your KTM moped to your personal driving pattern.

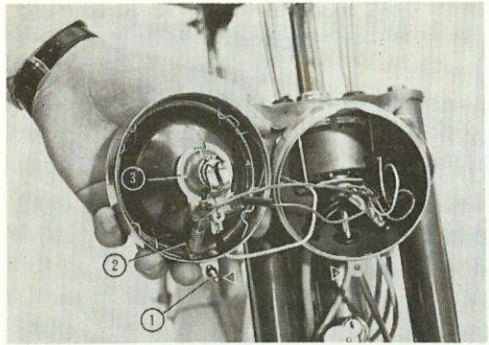
5) Ignition system

The performance of the engine depends on precise ignition timing. Full power can only be guaranteed by expert timing adjustment.
For timing adjustment take into account:

a) contact spacing of interruptor
b) ignition setting
c) pole and armature-core setting.

For more detailed explanaitons see the operating instructions of the engine manufacturer.

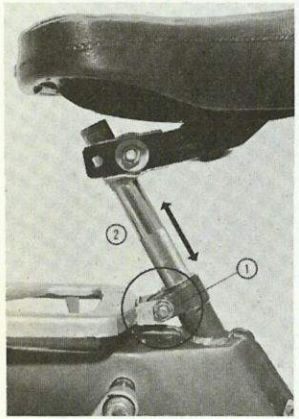
6) Changing bulbs



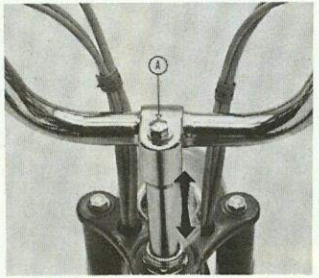
Remove screw (1), take out headlamp insert, detach holding spring (2) and remove bulb-holder (3). Press bulb in slightly, turn to left and draw out. Insert new bulb in opposite order of operations.
Important: Do not hold bulb with wet or oily fingers, since the heat evaporates oil and humidity and this is deposited as a mist on the reflector, greatly reducing light intensity.

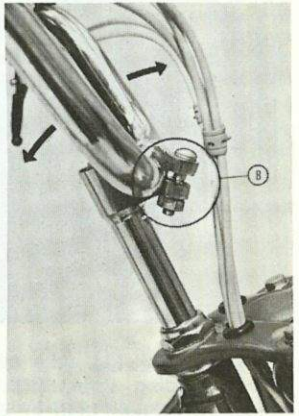
Remove screw (1), remove cover. Turn bulb to left and take out. Insert new bulb in opposite order of operations. Fit cap back on, making sure that seal (2) is in correct position.

7) Adjustment of saddle height and handlebars



After slackening bolt (1) the saddle with tube (2) can be shifted to the required height. Now retighten bolt (1).



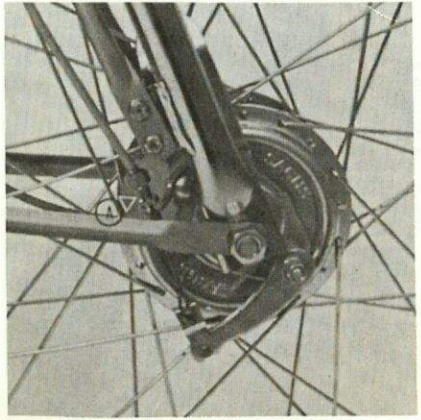


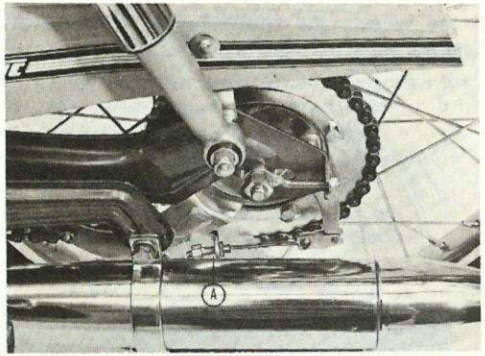
After slackening handlebar spindle (A), adjust handlebar height.
After loosening clamping bolt (B) handlebar inclination can be adjusted.

8) Checking and adjustment of brakes

There should be a play of about 2 cm on the handbrake levers, measured at tip of lever (see page 12).

The brakes are adjusted by screwing out the thrust screw (A).



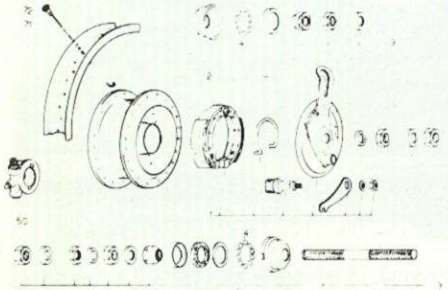


Remedying innefficient braking

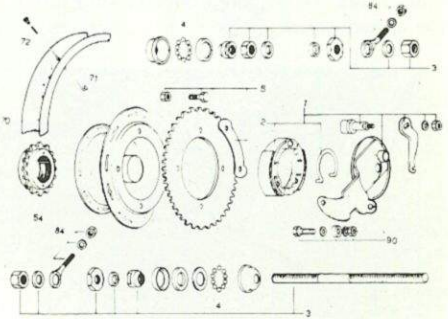
Adjust brake cables, and check condition of brake cables and brake levers. Lubricate bearing points and cables. Replace bent or jammed brake cables. Smeared linings must be replaced, even the slightest smear with oil reduces brake efficiency.

9) Hub bearing

If the wheels still show too much play even after the axle nuts have been tightened, the bearing must be readjusted.



Front wheel hub

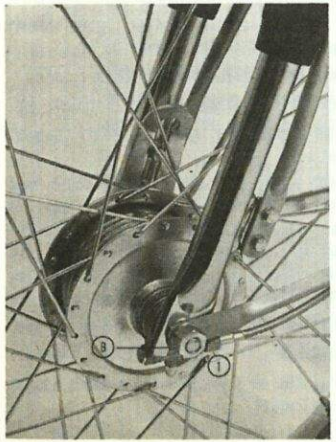


Rear wheel hub

10) Dismounting of wheels

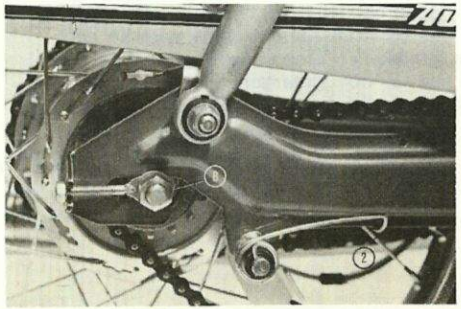
Dismounting front wheel

a) Unscrew speedometer shaft (1)
b) Detach brake cable
c) Unscrew spindle nuts (B)
d) Draw wheel out of fork ends



Dismounting back wheel

a) Detach spring of pedal chain tensioner (2)
b) Loosen spindle nuts (B), making sure that the spindle does not turn, holding it if necessary on the opposite side.
c) Remove chain tensioner left and right
d) Detach rear wheel brake cable
e) Loosen carrier plate holder
f) Draw wheel out of unit frontwards
g) Remove chains



6) Cleaning

The simplest way to clean the machine is to use a lot of water to which a small quantity of a standard washing agent has been added, using a sponge. A strong jet of water must not be used, since this will damage the paint and furthermore there is a risk of water penetrating into the brake, bearings, ignition system and carburettor, with resultant faults. It is also essential not to clean dirty paint with a dry cloth, since this scratches the surface and the paint loses its high polish. It is best to use a buckskin cloth to wipe the washed machine dry. It is advisable to finish by applying a mild paint preservative. The bare parts should be treated from time to time with an acid-free grease. To clean the engine it is best to use a hot detergent solution. Soften encrusted dirt beforehand with petroleum.

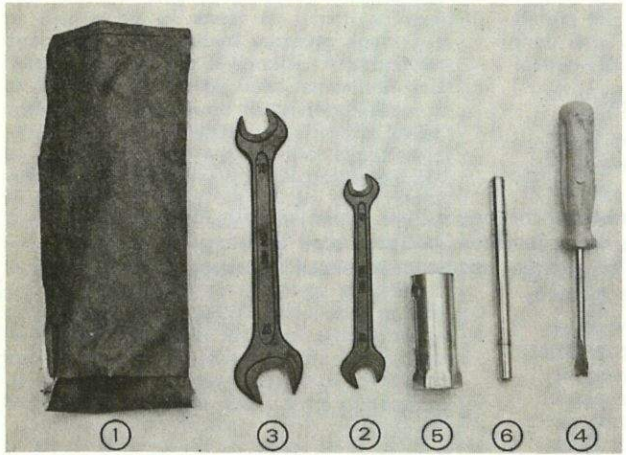
7) Care during long standstill

If you do not wish to use your machine during the winter or for a fairly long period, then it is advisable to follow the following instructions:

1. Run machine until it is thoroughly warm, drain oil from primary drive and gearbox, refill with fresh oil.
2. Clean machine thoroughly of dust and dirt.
3. Grease all bare unpainted part with acid-free grease.
4. Lubricate all lubrication points.
5. Clean chain and smear with thick oil.
6. Treat all painted parts with paint preservative.
7. To avoid rusting of the fuel tank we recommend filling it to the top. If however the room in which the machine is stored is not fire-proof, then the tank must be rinsed out with oil. The fuel tap must in any case be closed.
8. Pump up tyres to recommended pressure.
9. Store machine in dry room on stand.
10. Turn engine every 3 — 4 weeks with fuel tap closed.

8) Starting after long standstill

1. Remove spark plug
2. Turn engine several times
3. Mount spark plug
4. If the vehicle has been stored for longer than 6 months with full fuel tank, there is a risk that the fuel-oil mixture has separated out. In such cases it is absolutely essential to stir the mixture or to shake the moped to mix it again or to change the mixture.
5. Open fuel tap and start engine
6. Check tyre pressure
7. Check brakes. For this carefully operate brakes briefly then more strongly against the engine. After moving a few metres any rust flakes on the brake drum has been rubbed off and the brakes operate efficiently again.



TOOL KIT

1 Tool bag
2 Spanner 8 — 10
3 Spanner 13 — 17
4 Screwdriver
5 Spark plug wrench
6 Pin for spark plug wrench

9) Fault-finding and elimination

If you carry out the maintenance and servicing operations regularly and conscientiously it is very unlikely that faults will occur.

Should however defects creep in here or there, it is important to locate their causes and eliminate them as rapidly as possible.

We should like to emphasise once again that many maintenance and repair operations cannot be carried out by yourself. For these any KTM dealer is at your service, as is our service department.

The following table indicates the faults which occur most frequently, and their elimination.

Fault	Cause	Remedy
Engine does not start	Faulty operation	Open fuel tap, pull choke, tickle carburettor, fill up with mixture.
	Poor ignition spark	Unscrew spark plug, connect ignition cable, hold plug to earth (cylinder head), turn engine, and the plug should produce a powerful spark.
		If there is no spark, detach ignition cable from plug terminal, hold about 0.5 cm away from earth (cylinder head) and turn motor.
		If there is no spark or only a weak spark between ignition cable and earth:
		Consult service station.
		If there is a good spark, clean plug or fit new plug (use recommended heat value).
	Fuel supply interrupted	With cold engine check fuel feed by actuating tickler.
		With engine warm, disconnect fuel line from carburettor, and fuel should flow out freely.
		Clean carburettor (with compressed air).
		Consult service station.
	Short-circuit button jammed	Release button.

Fault	Cause	Remedy
	Short-circuit cable worn or not firmly clamped to switch	Unscrew combination switch and check connection of black cable.
Engine does not start		Disconnect black cable at engine terminal strip and make sure that it does not come into contact with metal parts. Check spark as above. If there is a good spark, follow black cable to switch and repair demaged point or consult service station.
	Vehicle lent over or fallen over with open fuel tap	If the engine is very flooded, close fuel tap, start with full throttle or in second or third gear. When engine runs, open fuel tap.
	With engine warm, choke or tickle operated, engine flooded	As above.
Engine starts, runs briefly and stops.	Fuel supply completely or partially broken	Open fuel tap, disconnect fuel line from carburettor to check whether there is an adequate fuel flow. Clean fuel tap or carburettor.
		Consult service station.
Engine backfires on kick start	Too early ignition	Adjust ignition timing.
		Consult service station.
Engine starts badly in cold state	Incorrect electrode spacing or heat value of spark plug	See technical data "Engine".

Fault	Cause	Remedy
Engine stops or misfires	Inadequate fuel supply Spark plug dirty	Eliminate fault as above. Consult service station.
Engine stops when throttle opened	Nozzle blocked	Clean nozzle and carburettor.
Engine stops unevenly	Defective breaker contacts, or faulty adjustment	Consult service station.
Engine stops unevenly	Carbon deposits on spark plug, bubbles, electrode spacing too large, plug insulator broken, plug terminal defective, ignition cable damaged, earthing defective	Consult service station.
Engine power too low	Carbon deposits in engine, intake filtering defective, incorrect ignition timing, blocked exhaust, incorrect carburettor setting either way, crankcase sealing defective, piston rings jamming or worn.	Decarbonise engine and exhaust. Consult service station.
Engine overheats	Incorrect ignition setting. Carbon deposits on engine and exhaust. Cooling fins very dirty.	Consult service station. Remedy as above. Clean engine thoroughly.

Fault	Cause	Remedy
High fuel consumption	Defective sealing of carburettor or float valve, choke does not open completely, air filter displaced	Consult service station. Clean air filter.
Engine knocks	Too early ignition, fuel not knock-proof.	Consult service station. Use better fuel mixture.
Engine hisses	Spark plug loose, defective sealing of cylinder head	Tighten spark plug or cylinder head. Consult service station.
Engine gradually stops	No fuel, fuel line blocked, main jet displaced, spark plug dirty, water in carburettor	Clean tank, fuel line, carburettor and plugs.
Engine does not stop after pressing of short-circuit button	Short-circuit button defective	Close fuel tap. Consult service station. Repair or replace switch.
Carburettor on fire	Backfiring into carburettor which is set to give a too lean mixture	Close fuel tap, open throttle fully, so that carburettor empties fast, extinguish fire with extinguisher, suffocate flames with cloth, sand or earth. Never use water! Do not lay machine on ground, since otherwise fuel will flow out of tank.

Fault	Cause	Remedy
Inefficient brake action	Brakes wet	Allow brakes to rub carefully, until there is a perceptible increase in braking effect.
	Brakes smeared	Completely dismount brakes. Remove grease (absolutely essential to use a grease-free cleaning agent! e. g. carbon tetrachloride); very smeared jaws are to be replaced. Treat brake drum also with emery cloth and blo clean with compressed air. Find out cause of smearing of brakes and eliminate it.
Headlamp Bilux-bulb does not light	Bilux-bulb burnt out.	Replace lamp.
	Broken connection or loose connection.	Check wires and connections and correct faults.
	Headlamp not earthed to vehicle.	Loosen headlamp fixing bolts and fit tooth-lock washers.

KTM-MOTORFAHRZEUGBAU KG

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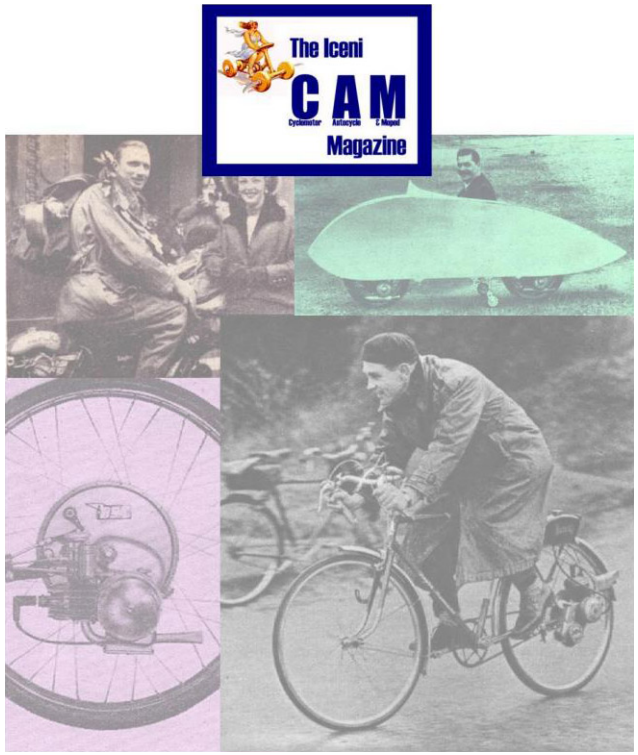

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