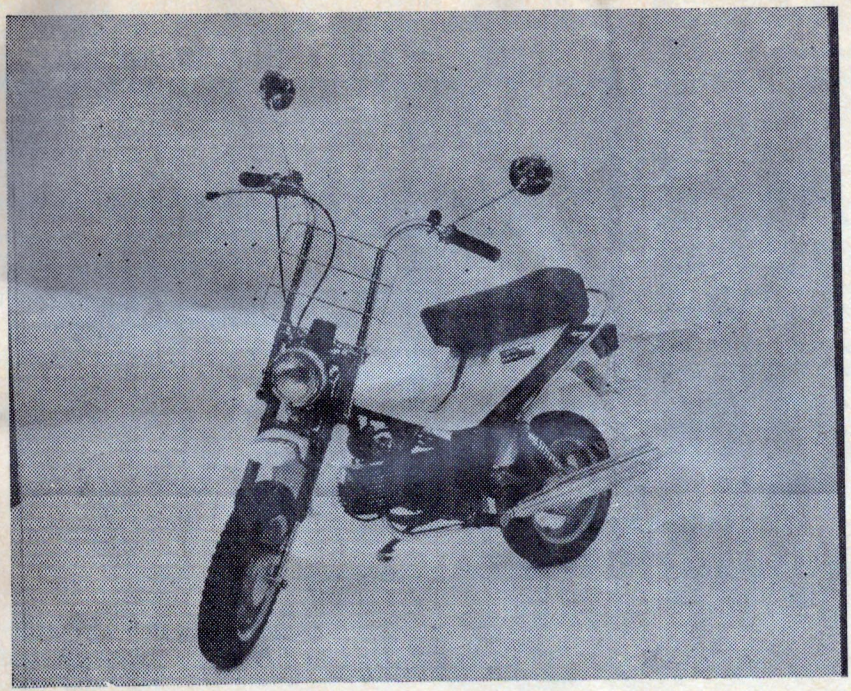

MINI-MOKICK PM3-2.134 AND ITS MODIFICATIONS

OPERATION MANUAL

PM3-2.134-00.00.000 РЭ

1989

1. FOR THE ATTENTION OF CUSTOMERS AND DEALERS

When buying a mini-mokick, please, verify in the presence of the dealer that engine and serial numbers on mokick tally with those on the certificate of receipt.

Mokick's serial number is stamped on its headstock plate, engine number — on the front part of the right hand half of the crankcase.

Check the mokick's delivery set inventory according to Paragraph 4 of this manual.

2. GENERAL

Mini-mokick PM3-2.134 and its modifications are intended for jaunts and business trips over roads with different types of surface.

The mini-mokick is designed to carry one person and up to 15 kg baggage on the carrier.

PM3-2.134	Mini-mokick with engine M225 (as made in CSSR)
PM3-2.134L	Mini-mokick with engine M225 (as made in CSSR) in de luxe trim.

Before starting to use the mini-mokick (further in the text referred to as «mokick»), study the operation manual. It contains the necessary information which will ensure proper maintenance of the mokick and is intended for riders acquainted with mokick's general design, working principles and the necessary riding skills.

For yours own safety's sake you should be familliar with Highway Code and traffic signs.

Due to constant development some assemblies and accessories may slightly differ from those described in this manual.

3. SPECIFICATIONS

3.1. Overall dimensions

Length, mm, max.	1550
Width, mm, max.	740
Height, mm, max.	1260
Wheelbase, mm, max.	1000
Mass (dry), kg, max.	52
Max. designed speed, kph	40
Road clearance, mm, min.	120
Fuel tank capacity, l, min.	5
Reference fuel consumption 1/100 km, max.	1,9
Max. load, kg	100

3.2. Engine

Model	M225 (CSSR-made)
Type	two stroke, air cooled
Number of cylinders	1
Cylinder displacement, cc	49,8
Effective power rating	kW (H.P.) 1,58 (2,1)

Carburettor	JIKOV 2912 DC
Engine starting	by kickstarter
Engine killing	by ignition switch
Engine lubrication	by petroil
Gear box lubricant	multipurpose oil M-6_3/10B (DB-AC3$_n$-10B) in winter: M-$8B_1$ STD. 10541-78
Petroil	premix of petrol AN 93 (ostane rating) STD.2084-77 with oil M-6_3/10B (DB-AC3$_n$-10B) or oil M12T$_n$ at the ratio 33:1 for a run in engine and 25:1 for the running-in period.

3.3. Transmission

Clutch	mechanical, centrifugal, with automatic engagement
Number of gears in gearbox	2, with automatic gearchange
Final drive	roller chain Пр-12,7-1820-1 STD. 13568-75
Gear ratios:	
Primary gear	3,5:1
First gear	1,78:1
Second gear	1:1
Quantity of oil in gearbox,	0,08

3.4. Chassis

Frame	tubular, welded
Front fork	telescopic, undamped
Handlebars	folding type
Rear wheel suspension	swing arm, with undamped coil spring shock absorbers
Wheels	stamped steel, disc type
Tyres	3.00-10 mod. K-121
Brakes	internal expanding, drum type

3.5. Electrical equipment

Headlight	25.3711
Taillight	20.3716 with brake light and licence plate light
Taillight lamp	A6-5
Brake light lamp	A6-10-1
Headlight lamp	A6-15+15
High beam indication lamp	A6-2
Light switch with horn button	П25-А
Brake light switch	ВК854Б
Thyristor ignition unit	210 66 000
Transformer	62 121
Ignition switch	П 201
Reflectors	15.3731-01
Horn	14.3721-10
Speedometer with odometer	СП 101

3.6. Basic adjustment and maintenance data

Sparking plug electrode gap, mm	0,4—0,6
Front brake control lever free play, measured at end of lever, mm	5—10
Rear chain up and down whip, measured with 10±2 N force, mm	5—15
Foot brake pedal free play, mm	20—40
Inflation pressures, mPa (kg/cm²)	$0{,}15_{-0{,}02}$ ($1{,}5_{-0{,}2}$)

4. DELIVERY SET

Code	Designation	Quantity
PM3-2.134	Mini-mokick	1
	4.1. Spare parts	
C-ПР-12,7-1820-1 STD. 13568-75	Chain master link	1
	4.2. Tool kit	
P1.39.01.105-1	T-bar	1
PM3-2.116.39.01.011	Tyre lever	1
P7.39.00.002	Combination wrench	1
PM3-2.112-39.01.005	Socket wrench 22×20,8	1
P1.39.01.106-1	Socket wrench 13×17	1
PM3-2.116-39.01.008	Socket wrench 10×14	1
PM3-2.116-39.01.012	Special wrench	1
PM3-2.134-39.01.002	Socket wrench 8×10	1
P3.39.01.001	Nipple wrench	1
7810-0308 STD.17199-71	Screwdriver	1
7810-0982 STD.17199-71	Screwdriver	1

Code	Designation	Quantity
	4.3. Accessories	
APM STD. 5170-73	Tyre repair kit	1
2.01.000.00	Tyre pump	1
PM3-2.116.82.03.000	Rear view mirror	1 or 2
PM3-2.112.39.01.023	Kit bag	1
	4.4. Assembly units removed for packing	
443.221.425.762	Sparking plug H7P	1
371.511.341.000	Suppressor cap	1
M8×60.48.019 STD.7802-81	Bolt	2
PM3-2.126-34.02.030	Nut	2
PM3-2.134-28.01.028	Cover, frame tube	1
	Antitheft device	1
	4.5. Operational documentation	
PM3-2.134-00.00.000	P3 Operation manuel	1

5. SAFETY PRECAUTIONS

Prior to each trip check and if required, make the necessary adjustments to brakes.

Clean engine exterior always in good time. Oil and petrol on the crankcase may cause fire.

Do not let the engine overheat. Running with an overheated engine may cause an accident. Emergency braking can be tolerated only in extraordinary conditions, it may result in a skid. Never start the engine with the right hand side engine cover not secured!

When refuelling, do not allow for petrol splashes, do not strike matches, do not smoke, do not wach your hands with petrol.

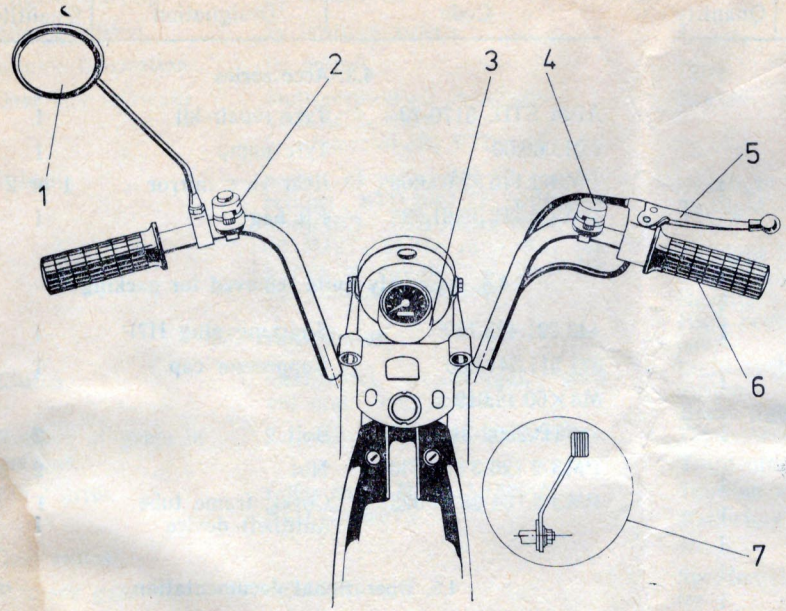

Fig. 1: Controls and instruments

1 — rear view mirror; 2 — light switch with horn button; 3 — speedometer; 4 — ignition switch; 5 — front brake control lever; 6 — throttle control twist-grip; 7 — rear brake lever.

6.1. Controls and instruments (Fig. 1)

Light switch with horn button 2 is used for switching on the main or dimmed beams, licence plate light and sounding the horn.

Speedometer 3 is designed to indicate speed and distance covered.

Ignition switch 4 will kill the engine if its lever is set to extreme right or left position. Before starting the engine ensure that the switch is in its central position.

The front brake control lever 5 actuates the front wheel brake shoes. The front wheel brake should be applied simultaneously with rear wheel foot brake.

Throttle control twist-grip 6 is designed to control the amount of fuel-air mixture fed to the engine. Turning the twist-grip inward opens the throttle, turning it outward closes the throttle, while the engine speed increases or decreases accordingly.

The rear wheel brake control lever 7 is located near the right footrest. When depressed, the lever actuates the rear wheel brake shoes, while the brake light gets switched on.

6.2. Engine

The mokick is equipped with a single cylinder, two stroke engine M225 (CSSR-made).

The engine's left hand side view is shown on Fig. 2. Partial engine stripdown can be accomplished with the engine in the frame.

Cylinder removal:

— disconnect the sparking plug lead, exhaust header,

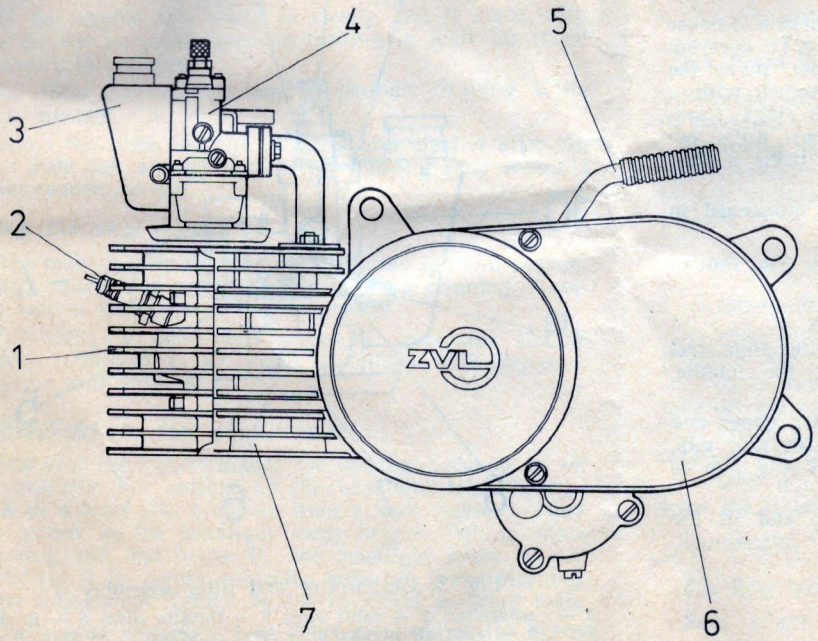

Fig. 2.: Engine (left-hand side view)

1 — cylinder head; 2 — sparking plug; 3 — filter; 4 — carburettor; 5 — kick-starter crank; 6 — engine crankcase; 7 — cylinder.

— unscrew 4 bolts (M6) to free the cylinder head take off the bolts and washers,

— remove the cylinder head,

— disconnect the carburettor,

— put the piston in bottom dead centre (BDC), take off the cylinder and gasket.

To avoid the ingress of dirt into the crankcase opening, close it with a piece of clean cloth.

Decarbonization.

Presence of carbon on piston assembly parts will cause engine power loss and excessive overheating. To decarbonize remove the cylinder head and cylinder, move the piston to TDC, cover up the crankcase mouth with a piece of clean cloth and remove the piston rings. Carefully scrape off carbon from the exhaust port walls, cylinder head, piston crown and ring grooves using a plastic or aluminium scraper.

Wipe over the scraped areas with cloth moistened in kerosene.

Piston ring replacement:

— remove the cylinder head and cylinder,

— remove rings from the piston using three thin steel strips inserted under the rings (one in the middle, two — under the ring ends),

— insert the removed ring in the cylinder upper end (approximately 10 mm deep) and measure the ring gap. Renew if the gap exceeds 0,8 mm. Specified ring gap — 0,2 mm.

— scrape out carbon from ring grooves and fit the rings, using the three steel strips.

Oil change procedure:

— remove filler and drain plugs,

— allow the oil to drain off,

— replace drain plug and pour in 40 cc of oil and replace filler plug, let the engine run on stand for 3—5 minutes (or have a short ride),

— allow the used oil to drain off, remove inspection plug and refill with about 80 cc of oil (oil level should register with the inspection hole), replace plugs.

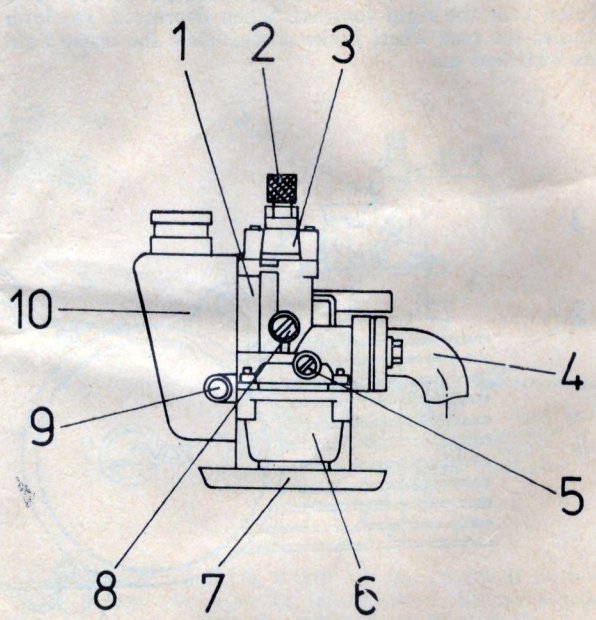

Fig. 3: Carburettor and filter assembly

1 — carburettor; 2 — cable stop; 3 — throttle slide; 4 — intake tube; 5 — pilot air screw; 6 — float chamber; 7 — tray; 8 — throttle stop; 9 — choke; 10 — filter.

Fuel system.

The petcock has three positions: O — open, P — reserve, 3 —closed. Carburettor (Fig. 3) maintenance includes periodic washing and cleaning of parts and orifices from sludge and gum deposits. The washed parts should be air blasted.

Never wash carburettor with acetone or other solvents, or use wire or other metal objects for cleaning jets and calibrated orifices.

If the engine idle speed is steady, but it stalls with the throttle snapped open, by turning in pilot air screw 5, enrich the mixture.

Air filter maintenance requires periodic cleaning of its filter element.

Wash the filter element in petrol and blast it after the first 2000 km, and subsequently — during each seasonal maintenance session.

6.3. Electrical system.

The mokick is fitted with an electronic ignition system, which, apart from periodic sparking plug cleaning, requires neither maintenance nor servicing.

Electricity is generated by an AC generator (20 W power rating at 6 V) whick functions with thyristor ignition unit (Fig. 4).

Headlight and horn adjustments:

For best light performance the headlight should be set up properly. For setting up the headlight take the mokick to a level site 8 metres from a wall (screen). Mark the screen at the headlight focus height. Put an other marking 150 mm below it. The headlight beam is properly set if its centre coincides with the lower marking. After adjustment tighten up the headlight securing bolts.

Horn pitch adjustment is made by turning the screw on its front cover plate.

Taillight is fitted with a licence plate light bulb and a brake light bulb, which is lighted up by the rear brake lever activated brake light switch. Brake light should go on within the 20 mm travel of the rear brake lever. Adjustment of brake light switching-on point is effected by shifting previously unslackened brake light switch to the left or to the right. Having achieved the desired switching-on point, fasten the switch securely. The switch rod will get clogged with dirt in service, clean it periodically.

Check condition of lead terminals regularly.

6.4. Front fork.

Steering stem bearing adjustment is done with bearings in situation.

By doing up nut 15 (Fig. 5) attain the position with no perceptible play in the bearings, while the fork can be turned without binding. After adjustment tighten up locknut 17.

Front fork strip down procedure:

— remove the front wheel (Paragraph 6.6),

— undo the handnuts and turn each handlebar around its pivot bolt,

— undo locknut 17, two bolts 19, take off washer 16, take off top yoke 18,

— lift in turn each fork slider 5 and 6, release cup 1, take out pin 20, then remove fork sliders 5 and 6,

— with nut 15 removed, take out the steering stem from the headstock.

Reassemble in reverse order.

6.5. Rear wheel suspension.

Rear wheel suspension consists of a swinging arm rear fork and two shock absorbers.

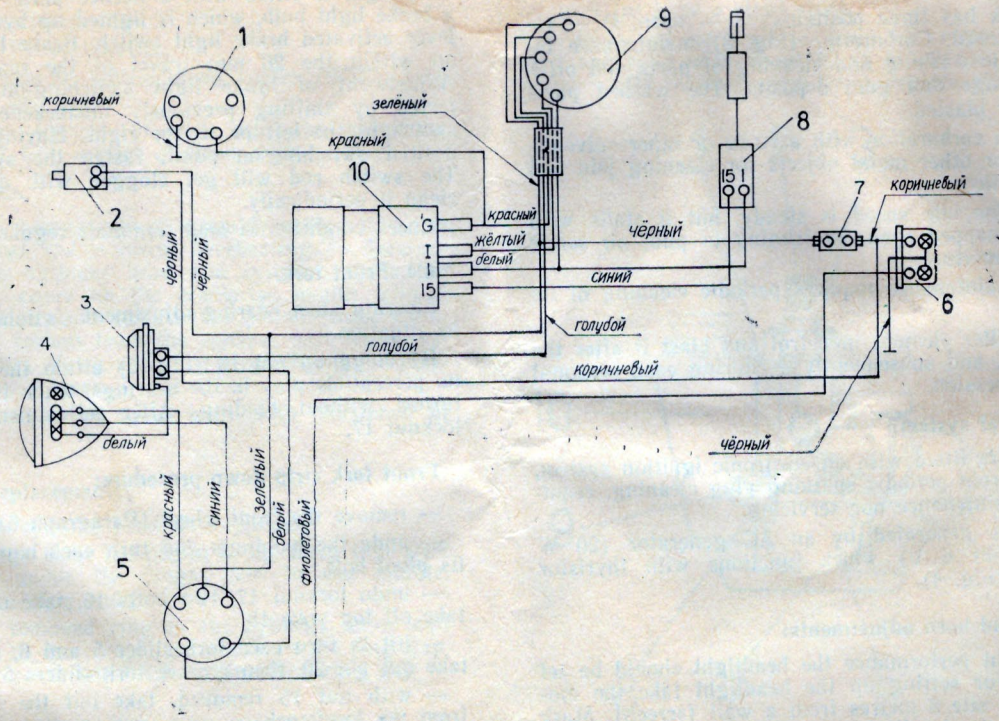

Fig. 4: Wiring diagram

1 — switch П201; 2 — brake light switch; 3 — horn; 4 — headlight; 5 — switch П25-А; 6 — taillight; 7 — switch ВК 854 b; 8 — transformer; 9 — generator; 10 — thyristor ignition unit.

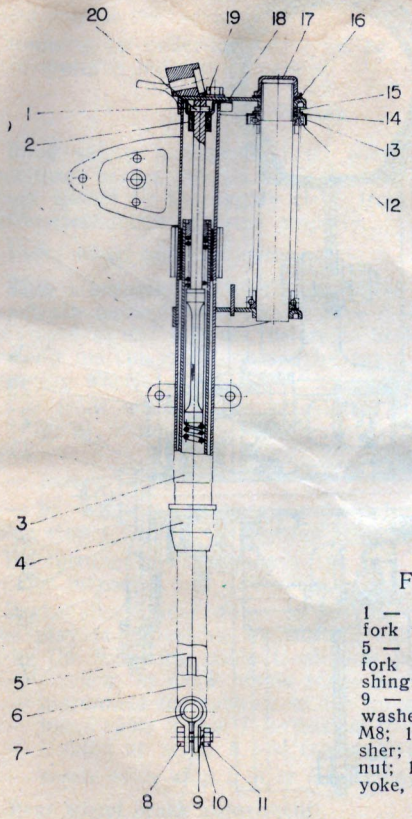

Fig. 5: Front fork

1 — cup; 2 — buffer; 3 — fork upper leg; 4 — gaiter; 5 — fork slider, right; 6 — fork slider, left; 7 — bushing; 8, 19 — bolt M8×25; 9 — washer 8.01.019; 10 — washer 8.65.Г.05; 11 — nut M8; 12 — bearing; 13 — washer; 14, 16 — washer; 15 — nut; 17 — locknut; 18 — top yoke, complete, 20 — pin.

A rear wheel shock absorber is shown in (Fig. 6).

6.6. Wheels.

Front wheel removal and fitting procedure:

— put the mokick on side stand and disconnect the

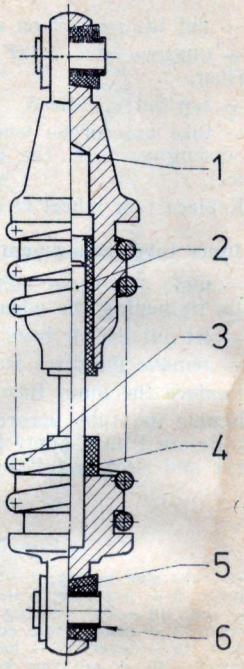

Fig. 6:
Rear shock absorber

1 — body; 2 — eye with rod; 3 — spring; 4 — insert; 5 — buffer; 6 — thrust bushing.

front brake and speedometre cables from the brake backing plate,

— remove the spindle nut, tap out the spindle and remove the wheel.

Replace wheel in reverse order.

Rear wheel removal and fitting procedure:

— put the mokick on side stand,

— unscrew nut 5 (Fig. 7) and remove the spring washer,

— tap out spindle 6,

— take out torque lever 3, shift the wheel to the left to disengage from the driven sprocket and remove the wheel.

Replace rear wheel in reverse order.

Inner tube replacement:

— undo the three hub fastening bolts and the three bolts tightening the wheel discs,

— let out the air from the inner tube,

— remove the discs from the tyre.

Replace the inner tube.

Repair the tube according to instructions in the tyre kit. Before fitting apply talcum to the inside of the outer cover and slightly inflate the inner tube.

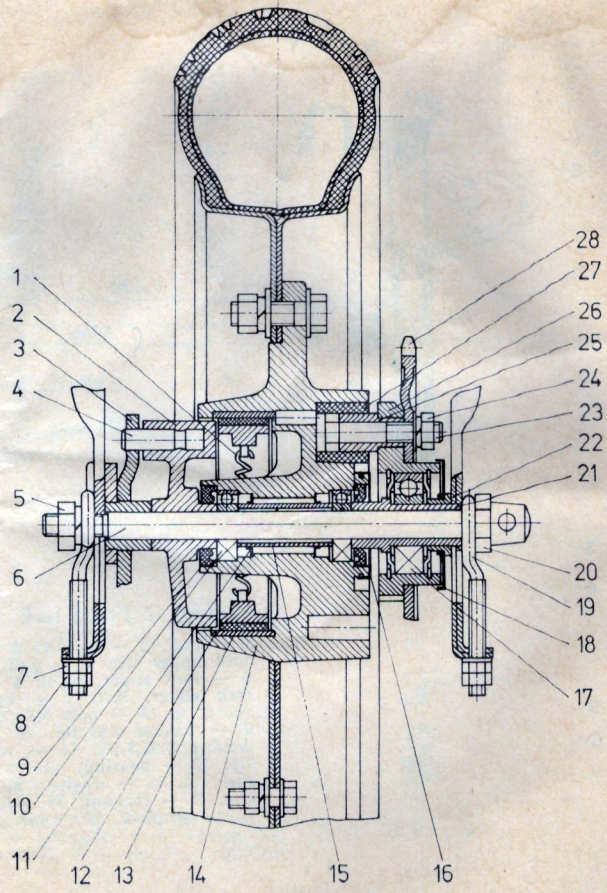

Fig. 7: Rear wheel

1 — brake shoe spring; 2 — brake backing plate; 3 — lever; 4 — spindle; 5 — nut M10; 6 — spindle; 7 — nut M6; 8 — nut M6; 9 — seal; 10 — ball bearing 101; 11 — washer; 12 — brake drum sleeve; 13 — brake shoe; complete; 14 — rear wheel hub; 15 — spacer; 16 — cover; 17 — ball bearing 203; 18 — hub with cover, complete; 19 — adjuster bolt; 20 — special nut; 21 — inner bushing; 22 — rear fork; 23 — bolt M8×40; 24 — nut M8; 25 — drum; 26 — hub; 27 — cusion drive rubber insert; 28 — driven sprocket.

Ensure that inner tube nipple is positioned on the left hand side of the mokick.

Running on under-inflated tyres or exceeding the tyre load limits is not reccommended.

6.7. Brakes.

Road safety is dependent on sound brake condition, therefore brakes should be checked carefully. Brake shoes should be thoroughly clean from oil and dirt, the brake mechanism adjusted properly.

Front wheel brake adjustment:

With a properly adjusted front wheel brake the handle-bar brake control lever should have 5—10 mm free play, measured at end of lever, before to brake will apply. The braking instant is determined by rapid deceleration of a spinning wheel.

For front wheel brake adjustment use cable adjuster 1 (Fig. 8), mounted on the brake cable, proceed as follows:

— loosen nut 2,

— by holding regulating nut 3, turn in (turn out) cable stop 1 and fix its position with locknut 2.

By turning in cable stop 1 the free play of the lever will be increased and vice versa.

Brake shoes wear down in service. If adjustment of free play is impossible by turning cable stop 1, adjust it by the following cable tensioning procedure:

— slacken the cable nipple screw 8,
— disconnect the cable from the lever,
— move cable nipple 7 further up the cable,
— tighten up screw 8 and replace cable,
— screw cable stop 1 in or out as necessary.

Rear wheel brake adjustment:

With a properly adjusted rear wheel brake the free play of the brake actuating lever should be 20 to 40 mm

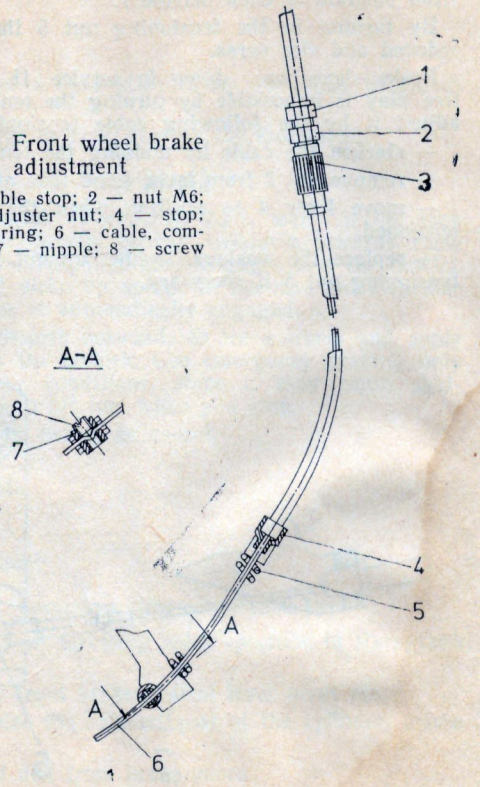

Fig. 8: Front wheel brake adjustment

1 — cable stop; 2 — nut M6; 3 — adjuster nut; 4 — stop; 5 — spring; 6 — cable, complete; 7 — nipple; 8 — screw M5×8.

before the brake will apply. The braking instant is determined by rapid deceleration of a spinning wheel.

Adjust by turning the tensioning nut 5 (Fig. 9) at a fixed position of cable ferrule 7.

By turning in the tensioning nut 5 the free play is reduced and vice versa.

Brake shoes wear down in service. If adjustment of free play is impossible by turning the tensioning nut 5, adjust it by the following cable tensioning procedure:

— slacken the cable by undoing the tensioning nut 5,

— remove nut 2 from lever 4 and take off the washers,

— move lever 4 to position when the cable is well tensioned,

— replace the washers, tighten up nut 2, turn in the tensioning nut 5 if necessary.

6.8. Chain transmission.

Chain adjustment is effected by 10±2 N force, applied midway between sprockets. Adjust for a 5 to 15 mm chain whip by the following procedure:

— slacken rear wheel nuts 5 and 20 (Fig. 7),

— loosen nuts 8 and by turning adjuster nuts 7 on each side, adjust for proper chain tension,

— tighten up nuts 8 and rear wheel nuts 5 and 20.

Take care to have the rear wheel aligned in the same track as the front one, use adjuster nuts 7 to attain correct tracking.

If chain has streched beyond adjustment described above, it should be shortened by two links, but not more, since a shorter chain will wear the sprockets at a fast rate.

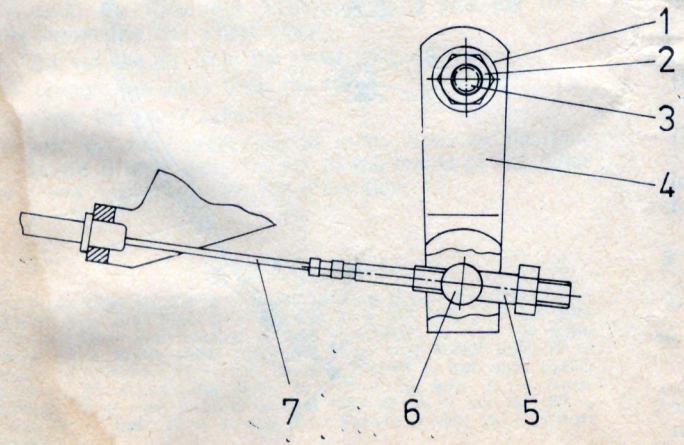

Fig. 9: Rear wheel brake adjustment

1 — washer 6.01.019; 2 — nut M6; 3 — cam; 4 — lever; 5 — tensioning nut; 6 — nipple; 7 — rear brake cable.

To remove chain:

— using a screwdriver, undo and remove the master link spring clip,

— remove master link and pull out the chain.

Reassemble in reverse order, ensuring that the closed end of spring clip faces the direction of forward rotation.

7. OPERATING INSTRUKTIONS

7.1. Running-in.

Running-in is effected during the first 1000 km when the working parts bed in properly and all threaded a. o. joints settle down.

During running-in observe the following:

— the fuel premix ratio should be 25:1,

— take off only with a throughly warmed up engine, do not use high revs during warming up,

— do not exceed 30 kph,

— avoid engine labour over «difficult roads».

7.2. Engine starting procedure:

— open the petcock,

— in case of a cold start close the choke to enrich the mixture,

— holding the mokick, depress the kickstarter.

7.3. Riding.

Start the engine (Paragraph 7.2.), warm it up, then by turning the throttle control twistgrip inwards raise the engine revs. The first gear engages and the mokick moves off and picks up speed. If the revs raise further the second gear is automatically engaged.

Turn the twistgrip outwards to the extreme and apply brakes to stop the mokick. Use emergency braking only in extraordinary conditions, since it may cause skidding. Always tum off fuel when you stop.

Accelerate well before an ascent.

8. MAINTENANCE AND SERVICING

8.1. Servicing after the first 500 km:

1) Check that the cylinder head, exhaust pipe, carburettor, generator rotor and stator, case cover, silencer, swining arm, front fork, wheel, engine and handlebar fasteners are torqued down securely.

2) Change oil in gearbox.

3) Wash fuel petcock strainer.

4) Wash carburettor.

5) Check and adjust, if necessary

— sparking plug electrode gap,

— brakes,

— chain tension.

8.2. Servicing after everx 1500 km:

1) Carry out all servicing work specified in Paragraph 8.1.

2) Lubricate front brake control lever pivot pin.

3) Decarbonize the exhaust port of the cylinder, piston and silencer.

4) Clean off dirt from brake shoes.

5) Wash the chain in kerosene and boil it in graphite grease (see Paragraph 8.5.).

8.3. Seasonal servicing:

1) Lubricate front brake and throttle control cables and speedometer cable.

2) Lubricate wheel bearings, steering stem bearings and driven sprocket bearing.

3) Lubricate front fork sliders.

4) Flush out petrol tank.

5) Clean filter element.

8.4. Cleaning.

Clean the mokick just after an outing. The engine should be cleaned with a hair brush moistened in kerosene. Painted and chromium-plated parts should be washed with water and wiped off with dry soft cloth.

Do not scrape off dried on mud and do not use soda or solvents for washing the machine.

8.5. Lubrication.

Lubricate mokick assemblies regularly, according to Paragraphs 8.1.—8.4. Wheel bearings, steering stem and driven sprocket bearing are grease-filled during assembly and are service ready upon leaving the works.

For greasing use solid oil «C» STD, 4366-76.

The old grease should be removed and parts washed in kerosene.

Operating cable covers should be lubricated with a few drops of oil. Rocking of levers will ensure better penetration of oil into the covers.

Wash chain in kerosene and immerse for 10—15 min into grease (95% solid oil and 5% graphite) at 60°—70°C.

After treatment take the chain out and wipe clean with a piece of cloth.

All assemblies can be lubricated by grease «LITOL-24» STD. 21150—75.

9. STORAGE

Prepare the mokick for a long-term storage as follows:

1) Give it a thorough wash.

2) Drain fuel from petrol tank and carburettor, flush petrol tank with oil.

3) Wipe acidless petroleum jelly over chromium-plated parts.

4) Pour 20—30 g oil through the plug hole into the cylinder and crank the engine over several times.

5) Put the mokick on stand.

If the mokick is to be stored indoors with t° above 5°C, reduce tyre pressure to 0,8 kg/cm².

10. CERTIFICATE OF RECEIPT

Mini-mokick PM3-2.134, serial number _____ engine number _____, is recognized fit for service.

Date of manufacture and slushing _____.

Seal

Slushing good for:

2(S) storage conditions — 24 months.

4 (J2) storage conditions — 12 months.

Signatures of responsible recipients.