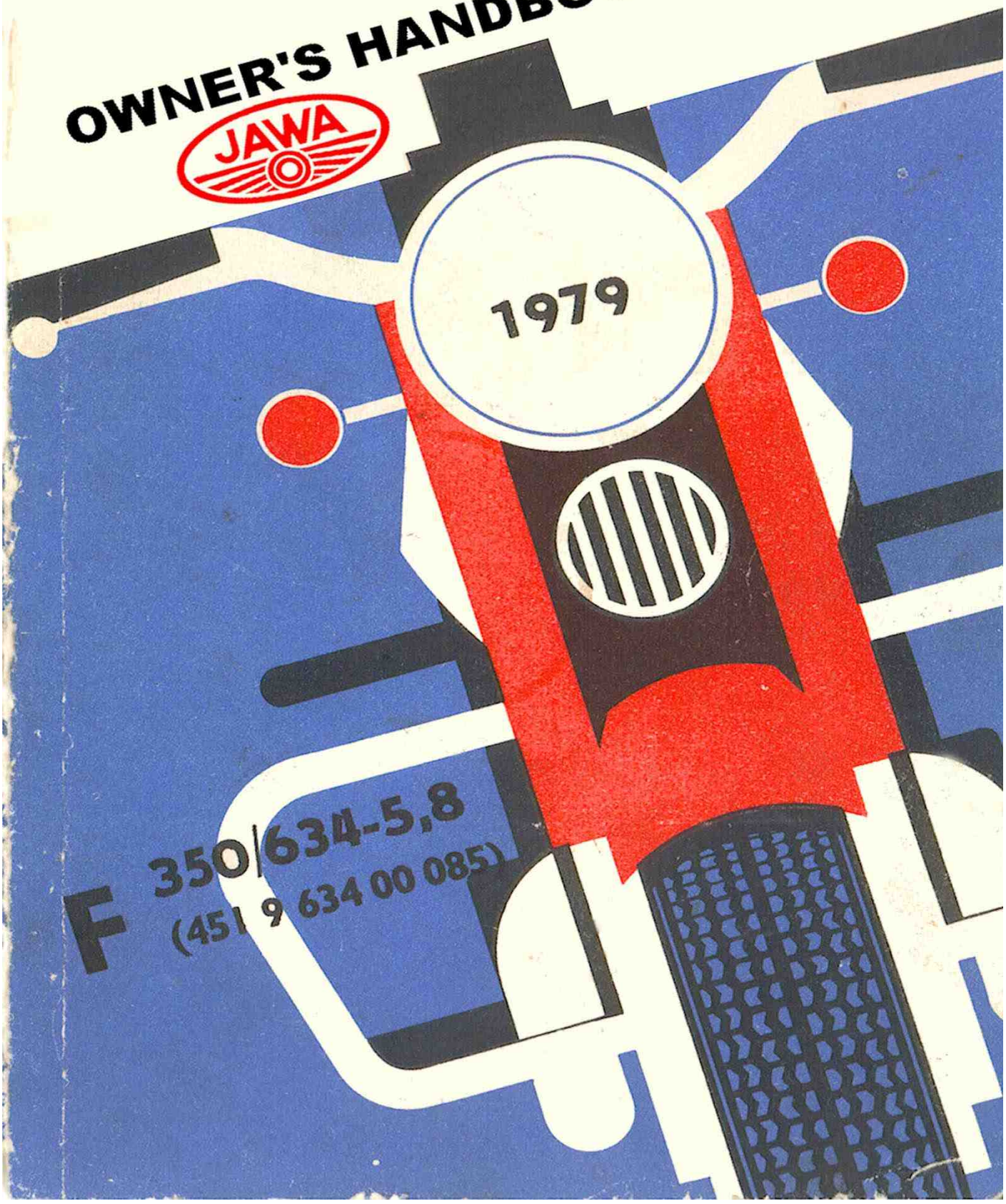
OWNER'S HANDBOOK

JAWA

1979



F 350/634-5,8

(451 9 634 00 085)

MOTOR CYCLE

350 –634-5,8

OWNER'S HANDBOOK

Manufacturer: JAWA, n. p., Tynec n/Sazavou
Exporters: MOTOKOV - Praha

1979 Edition
(451 9 634 00 083)

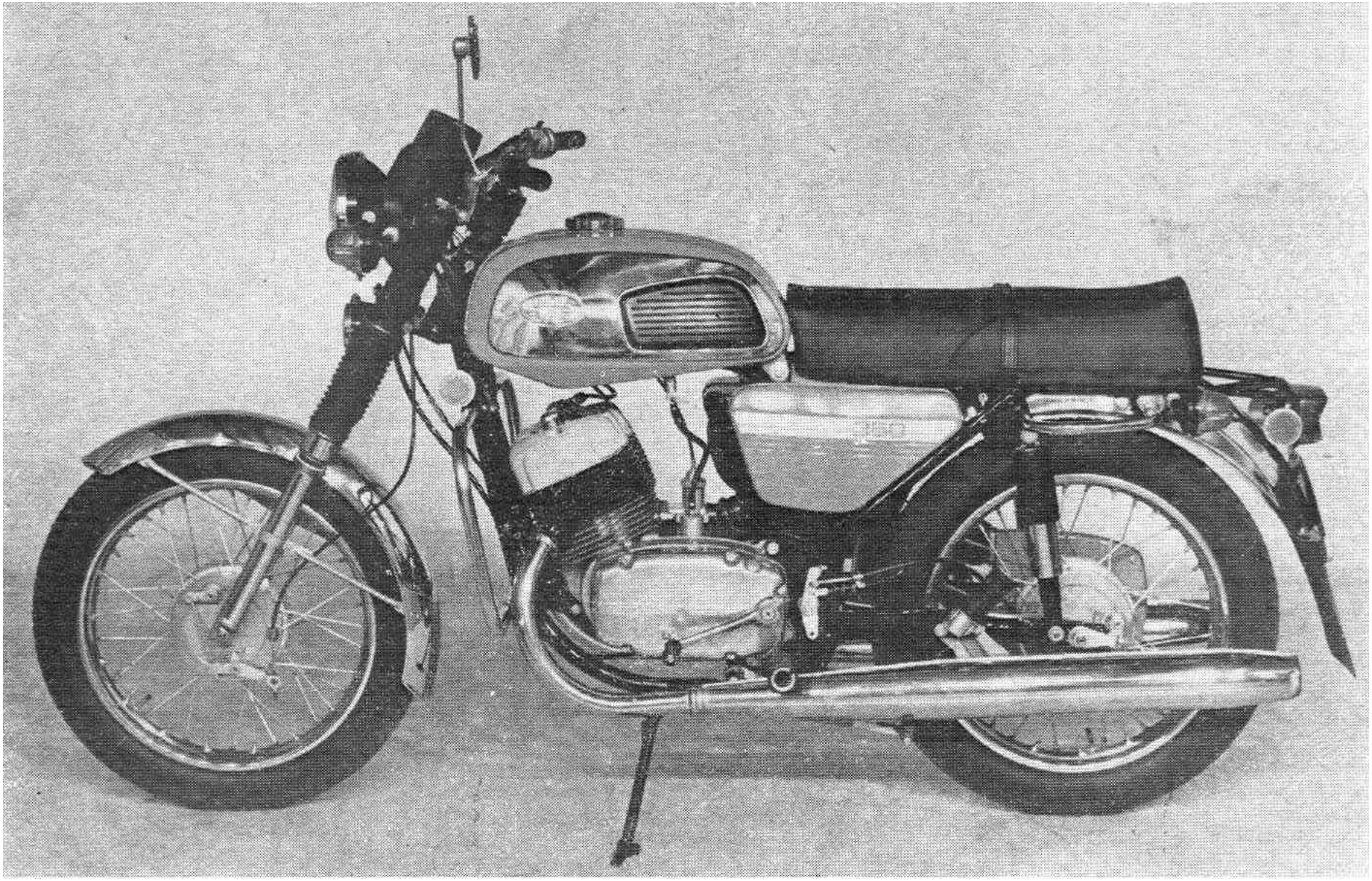
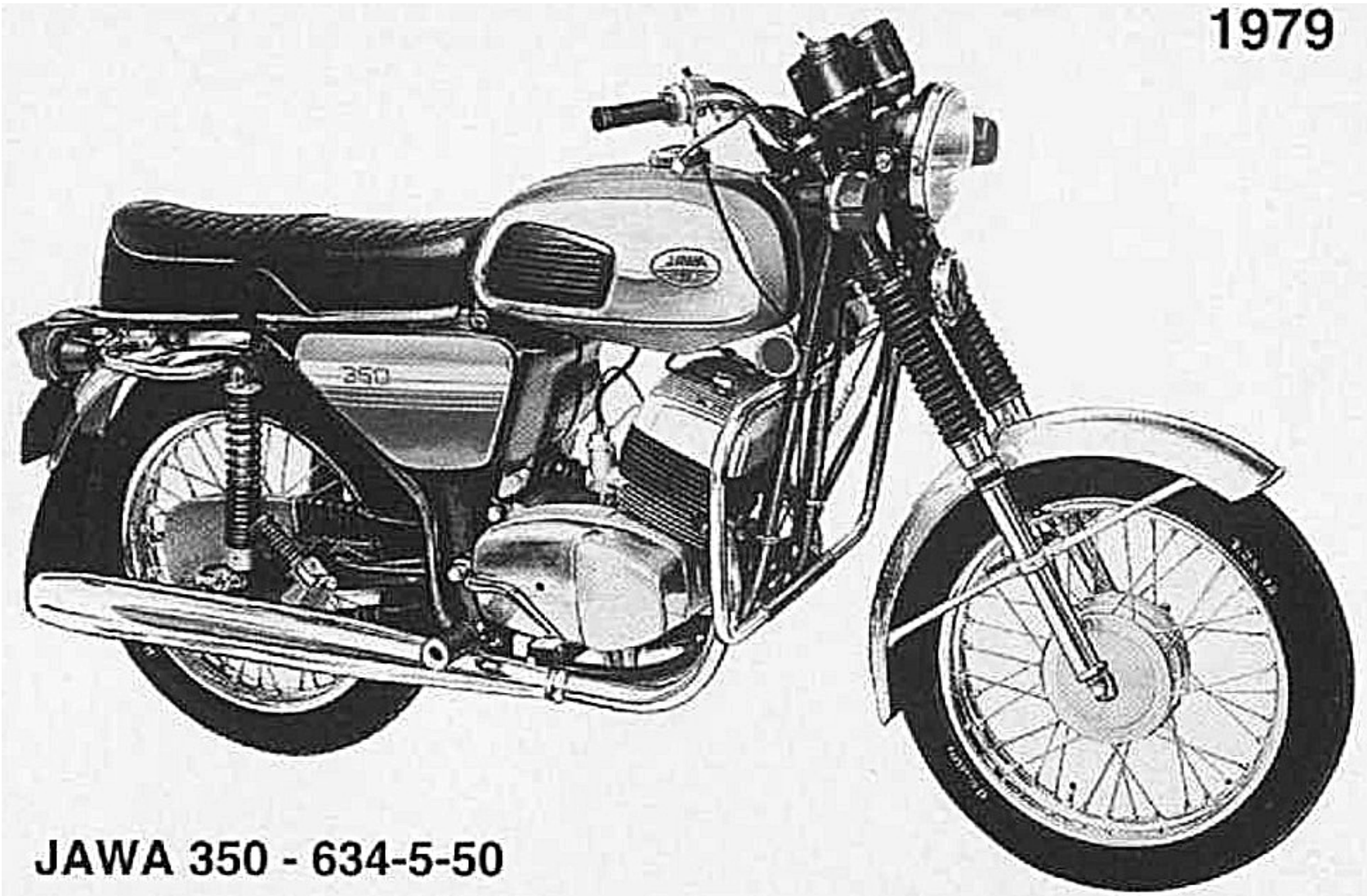


Fig. 1 - Motorcycle JAWA 350/634-5,8

1979



JAWA 350 - 634-5-50

Dear friend,

We highly value the trust you have shown in our make by choosing one of our machines and welcome you into the large world family of JAWA motorcycle enthusiasts which already includes many hundreds of thousands of members and which continues to grow from year to year.

Due to their reliability and modest maintenance requirements, the JAWA motorcycles have won great popularity among the motorcycling public and fame in international trials and dirt-track races. Wide-scope research and development, a long-standing tradition in the manufacture of motorcycles, and wide experience gained in the designing and building of successful sports machines enable us to offer you a product of peak work standard.

We advise you to get well acquainted with the contents of this manual. It will provide you with a good knowledge of your motor cycle, its component parts, and their functions. Adhere strictly to our instructions especially those concerning machine maintenance. Your care will be rewarded by trouble free and safe riding.

We wish you many pleasant miles and happy motoring with your JAWA motorcycle.

C O N T E N T S

I. DESCRIPTION AND TECHNICAL SPECIFICATIONS OF MOTOR CYCLE

II. MAINTENANCE

III. DISMANTLING AND ASSEMBLING JOBS REQUIRING NO SPECIAL TOOLS

I. TECHNICAL DESCIPTION OF JAWA 350 TYPE 634-5,8 MOTORCYCLE

1. TECHNICAL DATA

Engine	air-cooled two stroke
Number of cylinders	2
Bore	58 mm
Stroke	65 mm
Swept volume	343.47 c.c.
Compression ratio	9.2 : 1
Ignition	dynamo-battery system
Maximum engine output	17.7 kW – 87 $.s^{(-1)}$ (28 h.p. SAE/5250 r.p.m.)
Maximum torque	32.4 N . m—75 . $s^{(-1)}$ (3.3 kgm/4500 r.p.m.)
Fuel consumption at 80 km/hr.	4.2 ltrs/100km Basic fuel consumption according To Czechoslovak Standard
Fuel tank filling capacity	16 ltrs (including 2.5 ltr fuel reserve)
Peak speed with driver	
sitting upright	125 km/hr.
bent low	135 km/hr.
Maximum climbing ability in 1st gear With rider only	70%
Motor cycle dimensions:	
length	2,080 mm
height	1,065 mm
width	710 mm
Weights:	
Dead weight	156 kg (160kg)*
Curb weight	168 kg (173 kg)*
Payload	180 kg
Maximum loads:	
front wheel spindle load	111 kg (114kg)*
rear wheel spindle load	234 kg (239 kg)*

* for motorcycle with fall protection frames

Primary transmission		
Primary chain	2 x 9.525 x 4.77	66 links – fully enclosed
Secondary transmission		
Secondary chain	1 x 12.7 x 7.75	128 links incl. end link
Gear ratios:		47/29; 1 : 1.62
Primary		52/18; 1 : 2.89
1st-speed gear	19/12 x 24/12	1 : 3.16
2nd-speed gear	19/12 x 19/16	1 : 1.88
3rd-speed gear	19/12 x 16/19	1 : 1.33
4th-speed gear	direct 1 : 1	
Overall ratios		
1st-speed gear		1 : 14.82
2nd-speed gear		1 : 8.8
3rd-speed gear		1 : 6.24
4th-speed gear		1 : 4.68
Overall kickstarter ratio		1 : 2.77
Speedometer drive ratio		5/12 teeth
Shoe brakes		die. 160 mm/35 mm
Suspension:		
Front fork stroke		150 mm
Rear suspension stroke		90 mm
Carburettor		model 2926 SBDb
Wheel – rim dimensions		
Front		2.15 B x 18”
Rear		2.15 B x 18”
Size of tyres		
Front		3.25 x 18”
Rear		3.50 x 18”

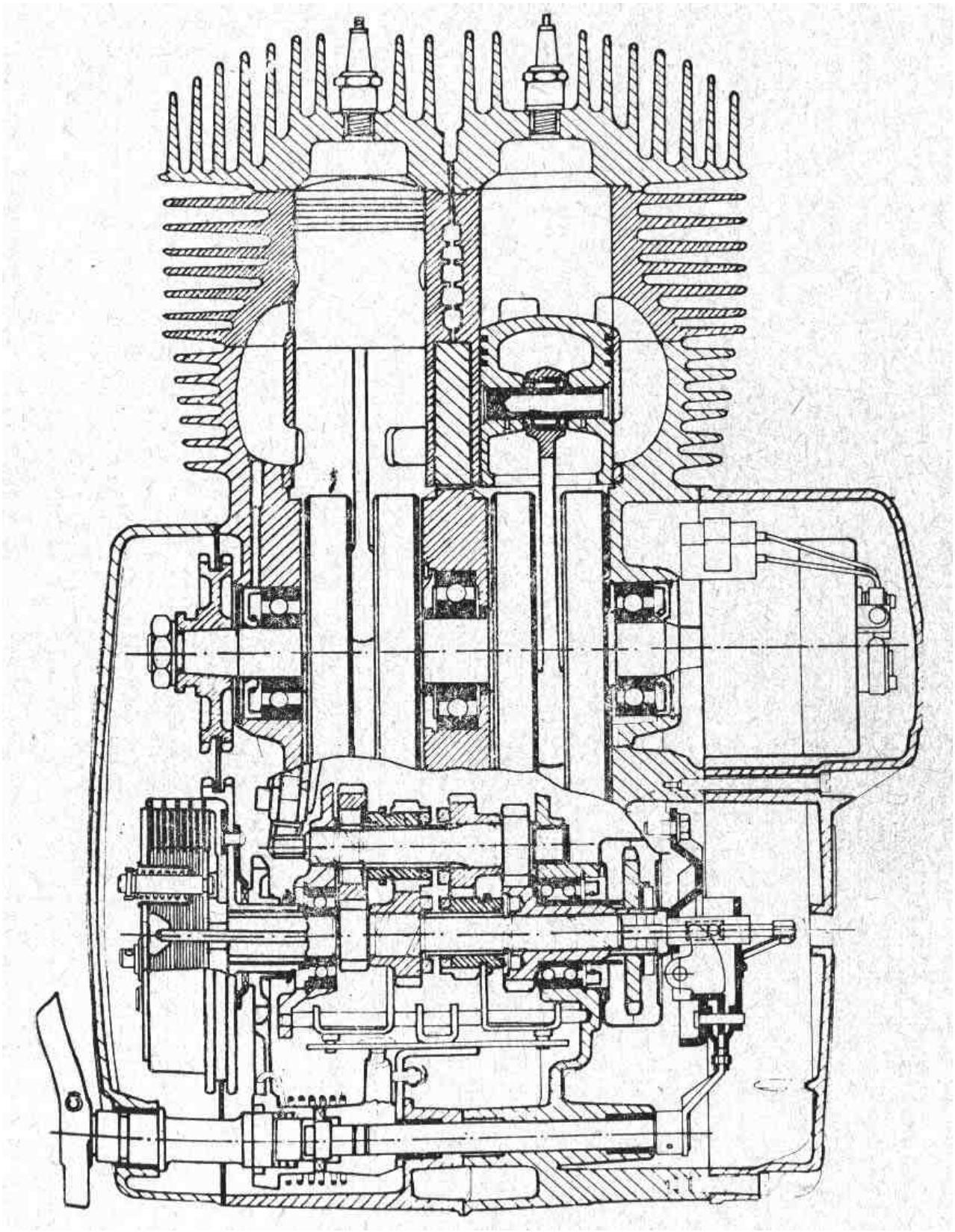


Fig. 2 – Sectional view of engine

2. DESCRIPTION OF THE MOTOR CYCLE

The JAWA motorcycles are single-track motor vehicles used for the transport of one or two persons and luggage up to a total load of 180 kg. They are designed for driving on motor roads and well-conditioned subsidiary roads.

A sidecar of an approved type VELOREX 562 can be attached to the motor cycles with the aid of attachment parts supplied with the sidecar with the instructions of their manufacturers.

Motive power is supplied by an air cooled, efficient twin cylinder two-stroke combustion engine with inverted scavenging.

The engine (Fig. 2) is of monoblock design, the light alloy crankcase housing the clutch and the gearbox. The cylinder barrels are of grey cast iron, the cylinder heads of light alloy. The pistons of light alloy are sealed in the cylinder liners by means of three piston rings. The steel gudgeon pins are supported on needles embedded in the connecting rod and secured in the pistons by wire clips. The connecting rods are steel fordings provided with bushings. The crankshaft consists of flywheels and crankpins pressed together. It is lubricated with oil mixed with the fuel in a ratio of 1;33 (3%).

The multiplate clutch with steel plates and plates with a burning resistant facing in a oil bath. It is controlled by the clutch lever on the left-hand handebar and with semi-automatic clutch disengagement.

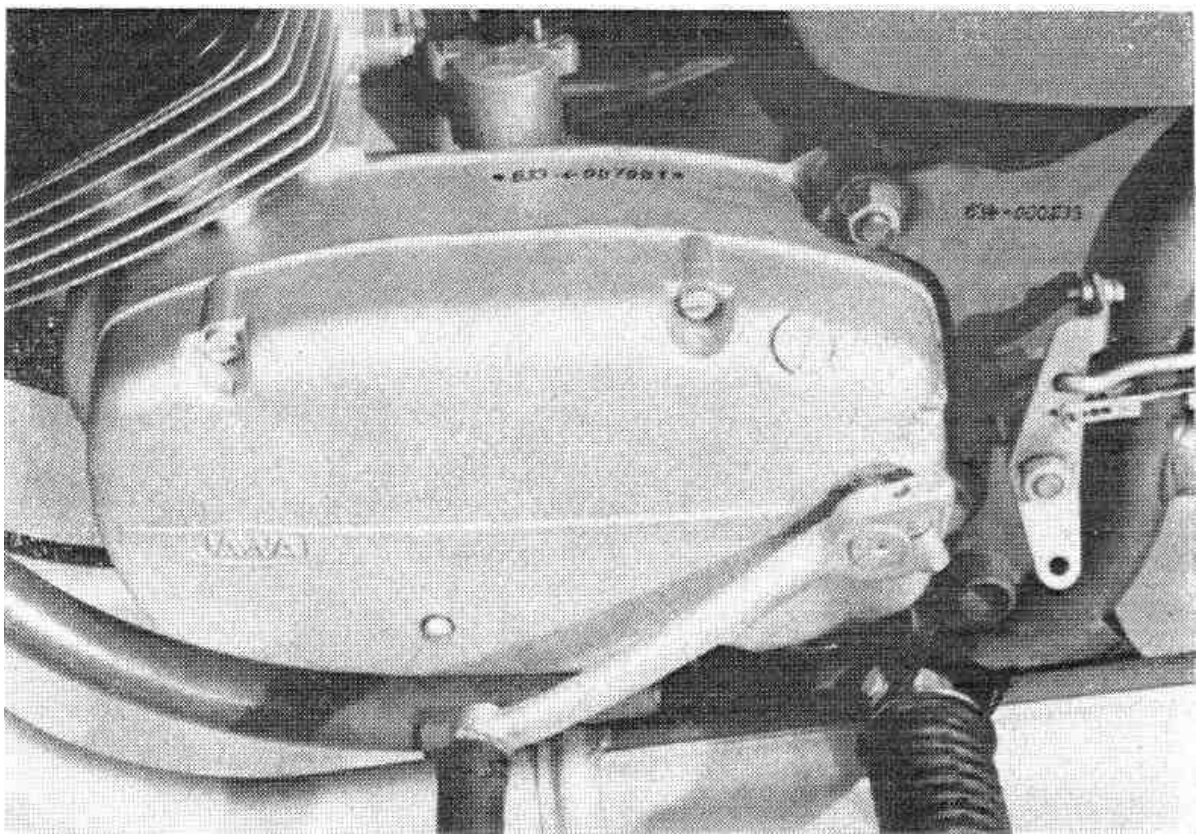


Fig. 3 – Location of engine and frame identification numbers

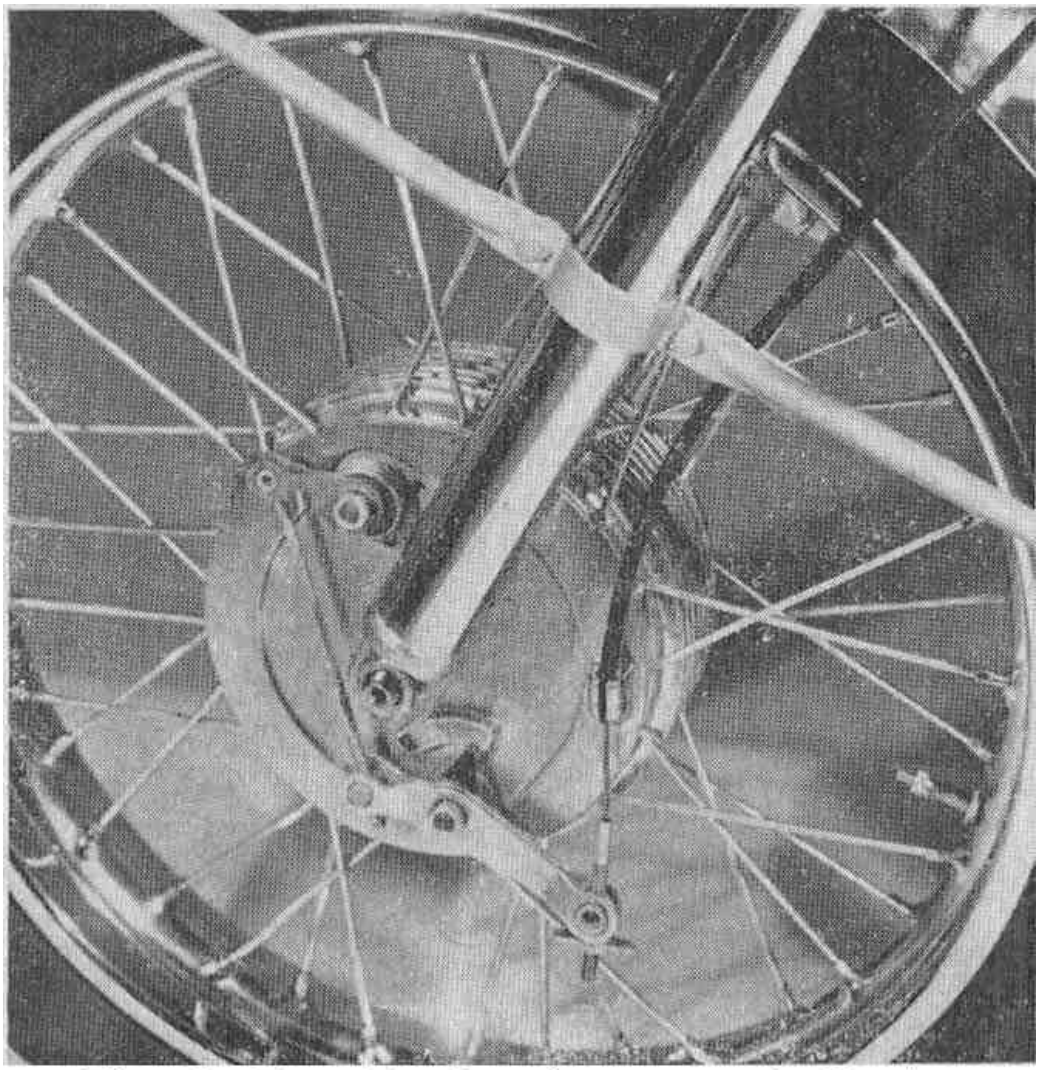


Fig. 4 - Front brake-shoe wear indicator

The four-speed gearbox has sliding gears. The foot-operated gear shift lever is on the left-hand side of the engine. The engine is kickstarted by using the gear shift lever.

Chains are used for the primary and secondary transmission. The primary chain is covered by the left-hand engine cover and runs in an oil bath. The secondary chain, protected by a chaincase, is permanently lubricated with grease.

The engine Serial Number is stamped on the left-hand side of the crankcase. (Fig. 3)

The frame Serial Number is stamped on the left-hand rear attachment of the engine. (Fig.3)

The tubular frame, double and enclosed, has a swinging rear fork.

The fuel tank is a sheet steel stamping. It has a filler cap of 60 mm diameter and a cock which ensures a fuel reserve to last for 30 to 50 km (depending on the driving technique).

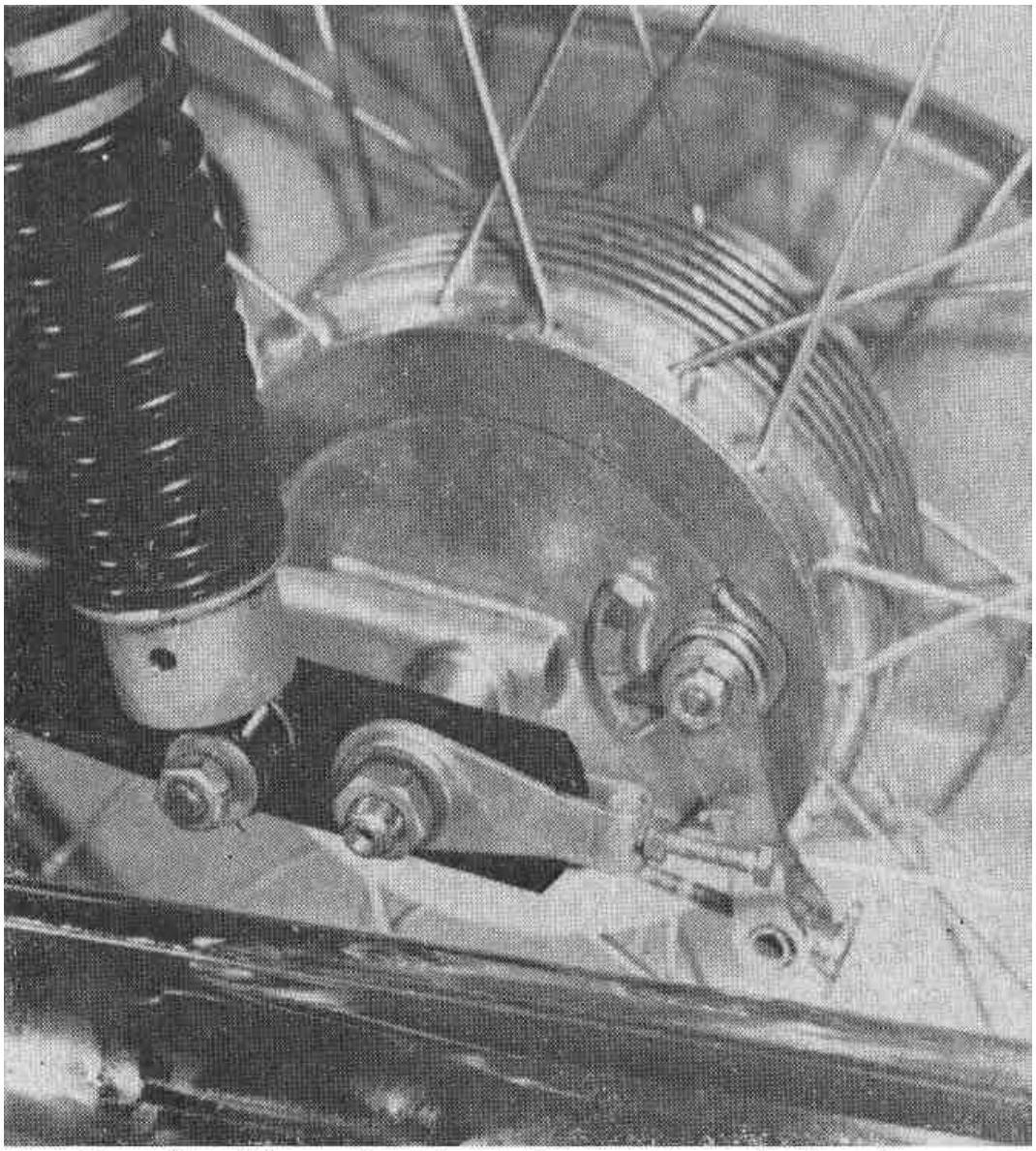


Fig. 5 - Rear brake-shoe wear indicator

The spoke wheels running in ball bearings are easy to detach, their spindles being of the push-out type. The connection of the rear wheel with the rear chain wheel incorporates a rubber drive torque damper. The rear wheel can be removed with disconnecting the chain.

The brakes are mechanical with dia. 160 x 35 mm shoes. The pedal of the foot operated rear brake is on the right-hand side of the machine. The front brake is controlled by the brake lever on the right-hand handelbar. Front and rear brake-shoe lining wear indicators. (Fig. 4, 5)

The dual seat is designed to provide comfort. Together with the rear suspension it offers a superior riding both to the driver and the passenger. The lockable seat is removable. It covers the tool kit box, the storage battery, the voltage regulator, and the tyre inflator. The side covers of the box can be removed after lifting away the seat.

The footrests are of the sports type.

The handlebars are also of the sports type and their inclination is adjustable.

The front wheel suspension is by the telescopic fork containing steal coil springs and oil shock absorbers with a stroke of 150 mm. The suspension elements are enclosed.

The rear wheel suspension comprises two suspension units with oil shock absorbers.

The rear swinging fork mounting is wide to ensure good road holding of the machine, especially on wet and slippery roadways. It is supported on self-lubricating metal and plastic bearing and requires no lubrication. Its removal does not involve disconnection of the chain.

Side-fall protection frames, varnished or chromium plated, are also available as optional extrac.

Theft-proofing of the machine

A special locking mechanism is provided on the left-hand side of the frame head. For locking the machine, turn the handlebars to the right (as far as they will go). Insert the key into the lock and turn it to the right while pushing the lock into the frame head. Then turn the key to the left and withdraw it from the lock. In this way, the steering is safely locked. To unlock it, proceed in the reverse manner while easing the lock out of the frame head.

Important!

The JAWA National Corporation does not supple or manufacture spare keys for the lock of the seat and the steering lock. Therefore, take good care of the spare set of keys and, if you lose one key, have a duplicate made according to the pattern of the spare key.

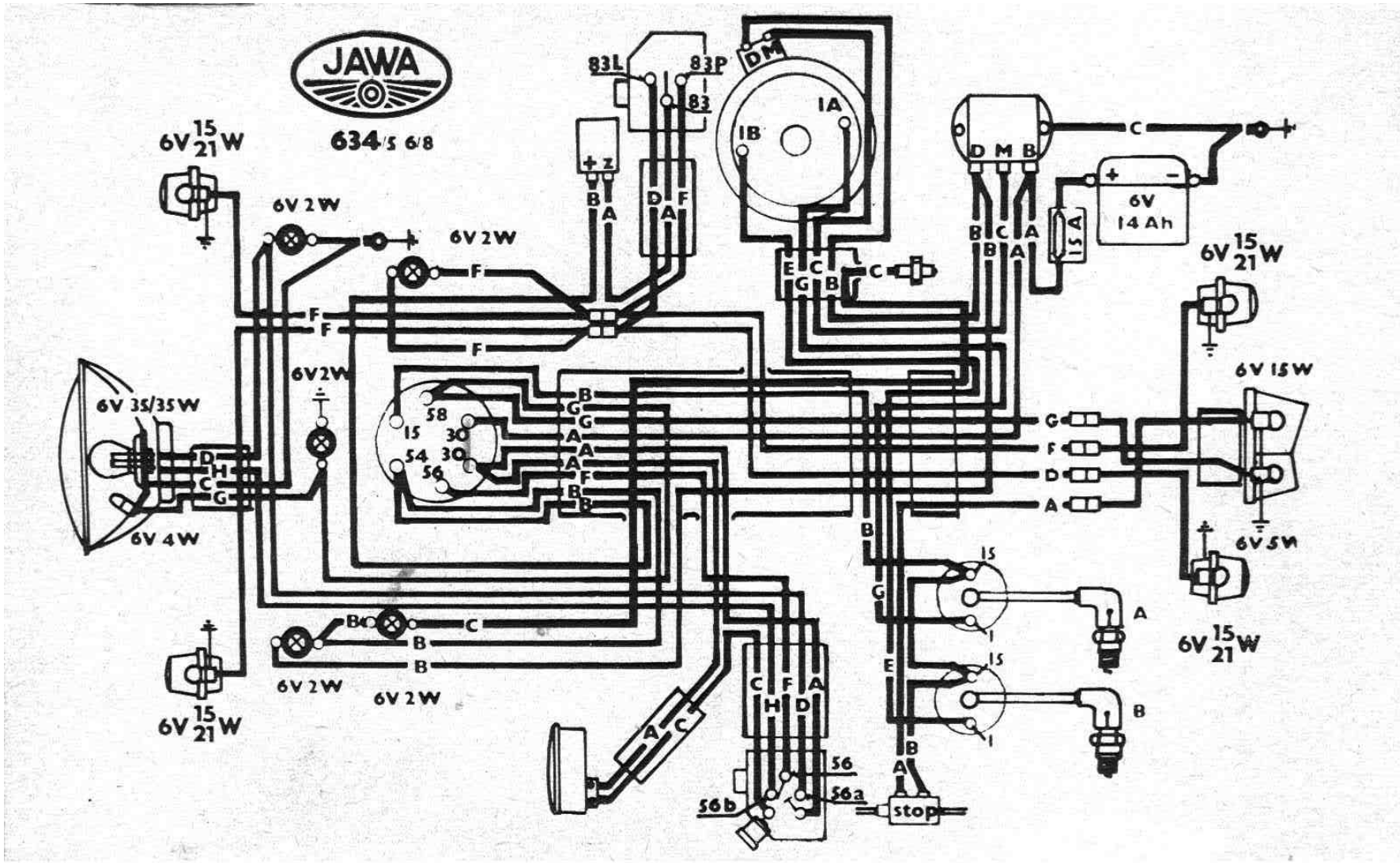


Fig. 6 - Diagram of electrical installations

A - red B - blue C - white D - yellow E - brown F - green G - black H - grey

3. DESCRIPTION OF ELECTRICAL EQUIPMENT (Fig. 6)

Cable colours:

A – Red	C – White	E – Brown	G – Black
B – Blue	D – Yellow	F – Green	H – Grey

The ignition is of the dynamo battery system. The rating of the six-pole dynamo or JAWA make is 75 W and 6 V.

The dynamo-stator or yoke is fixed by two screws to the crankcase. It carries the contact breakers, carbon brushes and capacitors.

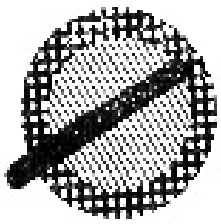
The dynamo rotor is fitted on the crankshaft and secured with a screw together with the cam, actuating the contact breakers.

A self-contained voltage regulator with an automatic switch is attached under the seat on the right-hand side of the tool kit box. Any unprofessional handling of the instrument is forbidden. The factory and the manufacturer of voltage regulators do not accept claims of dynamos and voltage regulators which have been tampered with. If an adjustment is necessary, have it carried out at an authorized repair shop equipped with the instruments required.

The 6 v/14 Ah battery with lead plates and electrolyte is arranged under the seat and **connected to the frame (earthed) by its negative pole.** A case with a 15 A fuse is fastened near the battery. The battery is vented by means of a hose lead out under the machine.

The "PAL" switch box is built in a separate bracket fastened to the upper front fork lug. It distributes the current supplied by the dynamo or storage battery to the electrical apparatus. In front of the switch box there are four 6 V/2 W telltale lamps. The left-hand red lamp starts glowing after switching on the ignition and goes out as soon as the dynamo starts supplying current to the storage battery. The right-hand blue lamp glows when the high beam is switched on. The green telltale lamp flashes in synchronization with the flashing direction indicators. The yellow telltale lamp indicates the engagement of the neutral between the 1st - and 2nd –speed gears. The ignition key can be withdrawn in any position.

POSITION OF IGNITION KEY IN SWITCH BOX

Key position	Key half-way in	Key pushed fully home
	horn and headlamp flasher switched on	switched on ignition and direction indicators (in the case of a defect or after removal of the battery shift into 2nd gear and push start the machine, -- the fuse must be removed) horn, headlamp flasher and stop light switched on.
	switched off ignition and direction indicators switched on parking tail-light horn and headlamp flasher switch	switched on ignition and direction indicators parking and tail-light horn, headlamp flasher and stop light switched on
	switched-off ignition and direction indicators switched-on high beam, parking light, tail-light, horn and headlamp flasher switch	switched on ignition and direction indicators high beam, parking and tail-light horn, headlamp flasher and stop light switched on.

The dipswitch on the left handlebar switches over the high beam and dipped beam. It incorporates the horn and headlamp flasher button.

The direction indicator switch, installed on the right-hand handlebar, has three positions

The stop-switch is common to both the front and the rear brake. It is affixed on the left-hand ignition coil below the fuel tank, and actuated by a separate bowden cable attached to the front brake lever and the relay lever of the brake pedal on the left-hand side of the machine.

The wiring of the machine consists of cables. Cable ends are provided with connector terminals or soldered. The cables are of various colour for identification purposes.

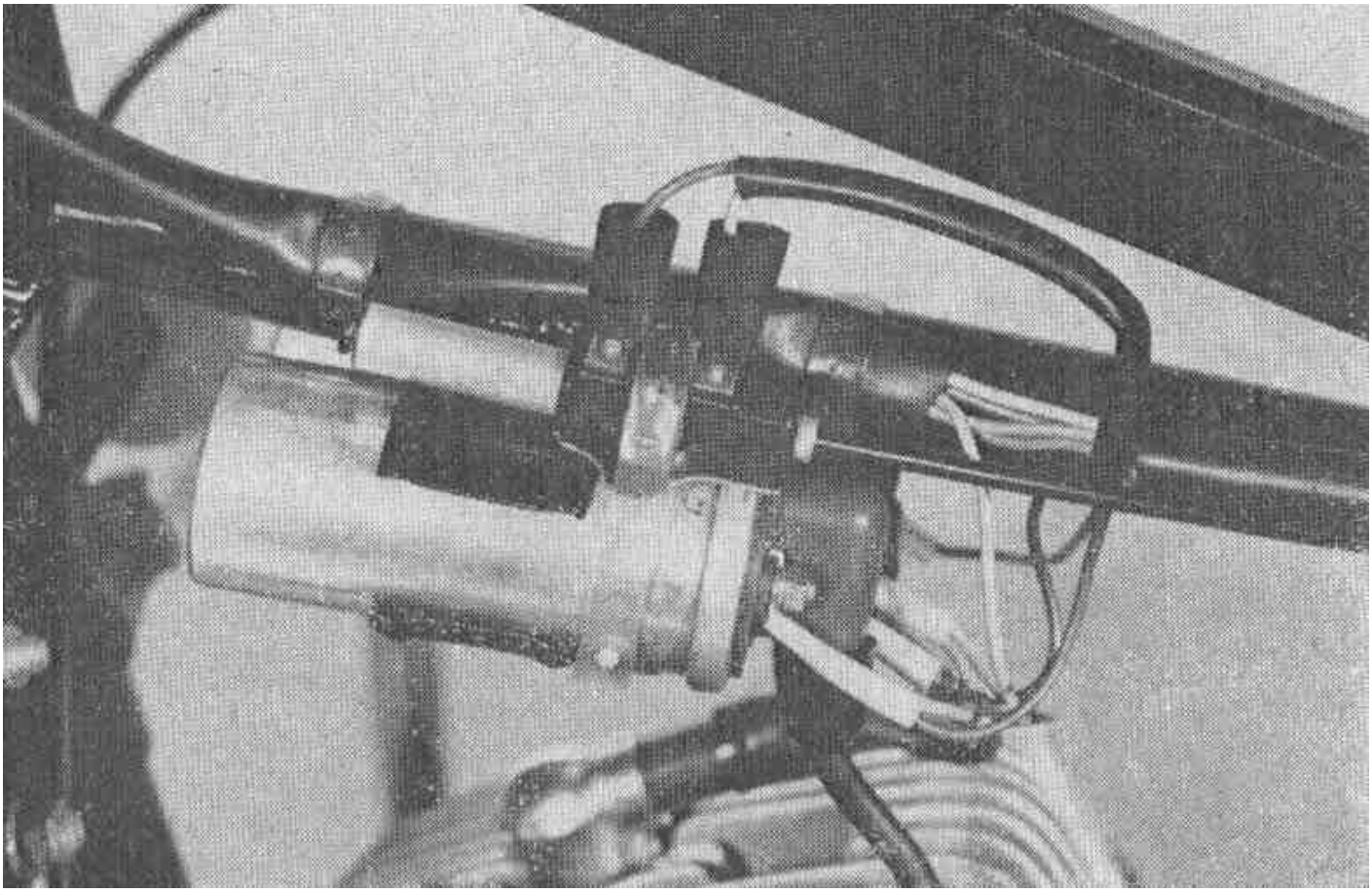


Fig. 7 – Location of stop-switch

ELECTRICAL ACCESSORIES

In the headlamp there is a 6V/35W twin-filament bulb and a 6V/4W parking bulb

The rating of the tail-light bulb is 6V/5W, of the stop-light 6V/15W.

The rating of the direction indicator bulbs is 6V/15W or 6V/21W.

Telltale lamps are rated for 6V/2W.

The horn is sounded by pressing the push button on the dipswitch on the handlebars.

Sparking plugs: for the 350cc machines, PAL 14-8 (or 14-9) without interference suppressing cable terminals of ignition coils are mounted.

During the running-in period and when driving in winter, PAL 14-7 sparking plugs can be used.

4. LIST OF TOOLS

Tyre inflator complete…….. 1
Combination spanner No. 32 …… 1
Feeler gauge ……..1
Double screwdriver ……...1
Screwdriver, 3mm ……1
Tommy ……..1
Lever with hook spanner 19 ……..1
Spanner 5.5 x 7 …… 1
Spanner 8 x 10 …….. 1
Spanner 13 x 17 …… 1
Box spanner No.10 …….. 1
Box spanner No.13 ……. 1
Box spanner No.14 ……. 1
Box spanner No.17 ……. 1
Box spanner No.19 ……. 1
Hook spanner No.19 …… 1
Tyre lever …… 1
Duster ……... 1
Tool Kit …… 1
Rubber strap ……. 1

5. HANDLING INSTRUCTIONS

A. RUNNING-IN A NEW MACHINE

After having purchased a new machine, the customer is advised to check the equipment stowed in the left-hand box and in the compartment under the seat for completeness and to compare the engine and frame numbers with the supplied documents. To unlock the seat, insert the key into the lock on the left-hand side, turn the key to the right, and then ease open the key with the lock. Swing up the seat to the right and push it clear of the catches. Then make sure that the gearbox is filled with oil. The oil level in the gearbox is indicated by the inspection hole closed with an M 6 screw plug. For oil topping up, see Chapter II, "Lubrication." Make sure that the plastic blinding plugs have been removed from the cap nuts of the front fork legs before setting out for the first ride. Otherwise there is a risk of damaging the packings of slider nuts. The oil filling in the shock absorbers can be checked by pushing down successively the front and the rear part of the motorcycle as far as possible and releasing it quickly. The return movement must be damped by the shock absorbers without an impact. The must be repeated several times since, naturally, with the engine stationary, the oil has accumulated in the reservoir and must be now sucked into the shock absorber proper. If it is possible, drive the machine over a short stretch of road with an uneven surface and make sure that the front fork and the rear suspension do swing loosely and that the recoil is smooth and bounceless. A long engine life requires careful running in. Correct run in mating surfaces of all the moving parts prevent local overheating of the friction surfaces and their possible damage. The basic condition for a good running-in is the avoidance of overloading the engine and strict observance of the speed limits as indicated in the following table and pertinent instructions:

a) Before covering 1,500 km, do not exceed the following lowest and highest speeds in the individual gears:

1st-speed (low) gear ……	0 – 13 m.p.h.
2nd-speed gear ……	13 – 25 m.p.h.
3rd-speed gear ……	25 – 35 m.p.h.
4th-speed gear ……	35 – 47 m.p.h.

In this period, use petrol with octane number 87 – 92 mixed with an oil ration of 1 to 25 (4%).

b) From 1,500 km (900 mi.) to 2,500 km (1,500 mi.) increase the speed gradually to the highest values indicated in the table.

c) Having run-in the machine, do not exceed the following lowest and highest speeds as indicated for the individual gears:

1st-speed gear …….. 0 – 20 m.p.h.
2nd-speed gear ……. 10 – 38 m.p.h.
3rd-speed gear ……. 15 – 53 m.p.h.
4th-speed gear ……. 25 - m.p.h.

The sustained "motorway" speed is 105 km/hr.

For a run-in machine, use petrol with the octane number 86 – 93 mixed with oil in the 1 to 33 ratio (3%).

d) After the first 500 km (320 mi.) and then 3,000 km (1,800 mi.) check all screws, bolts, and nuts for slackness and tighten them, if necessary. Pay special attention to the fastening bolts of the engine. The fastening lugs on the frame are apt to break (crack) when riding on a machine with slackened engine bolts.

e) After having travelled the first 500 km (300 mi.) change the oil in the gearbox. The second oil change should take place after having travelled the first 3,000 km (1,800 mi.). For subsequent oil changes, see Chapter II "Lubrication."

Caution!

The specified highest permissible speeds are by no means to be understood as sustained or cruising speeds. Use them, therefore, especially at the beginning, for short distances only. When driving on motorways, it is recommended to close and open the throttle from time to time. During the running-in period, the carburettor is set for a slightly richer mixture. Therefore, it is necessary to adjust the throttle needle position and the pilot air screw in accordance with the table in Chapter II, Art. 8 "Carburettor", after the machine has been run in.

JAWA motorcycles have very efficient air intake and exhaust silencers which lower the machine noise level to a value complying with the pertinent traffic code regulations. This results, quite naturally, in a relatively higher audibility of all the mechanical noises which were formerly drowned by the noise of the air intake and the exhaust. This fact must be borne in mind when judging the mechanical noises which cannot be entirely supressed with air-cooled, combustion engines. Besides these mechanical noises, the source of which is usually the movement of the piston in the cylinder (its reversal in the TDC) there is the noise of the fuel combustion in the cylinder which cannot be likewise entirely suppressed but only reduced to a certain degree. Since these are only minor mechanical noises, for the objective measuring of which there are no reliable instruments available, it is up to an experienced motor mechanic to determine their source and intensity. Such noises are entirely harmless and cannot be considered as a defect of the engine. They are simply an inevitable phenomenon of fuel combustion in engines with higher specific outputs and more efficient damping of the air intake and exhaust

efficient damping of the air intake and exhaust noise. Their intensity depends on the degree of choking of the exhaust silencers and the air-intake micromesh filter, which must, therefore, be kept in a clean condition.

In this connection, we wish to draw attention to the fact than no intervention in the air intake and exhaust silencers is permitted. Although it may result in an apparent reduction of the mechanical noises, the overall noise of the machine increases, its value exceeds the limits specified by the traffic regulations, and the driver is liable to be penalized.

B. BEFORE STARTING

First of all, make sure that there is fuel in the fuel tank. To remove the filler cap, turn it anticlockwise. Keep the breather hole in the filler cap unobstructed. The motor cycle runs on fuel consisting of petrol mixed with oil of the Mobil TT, Shell 2T Two

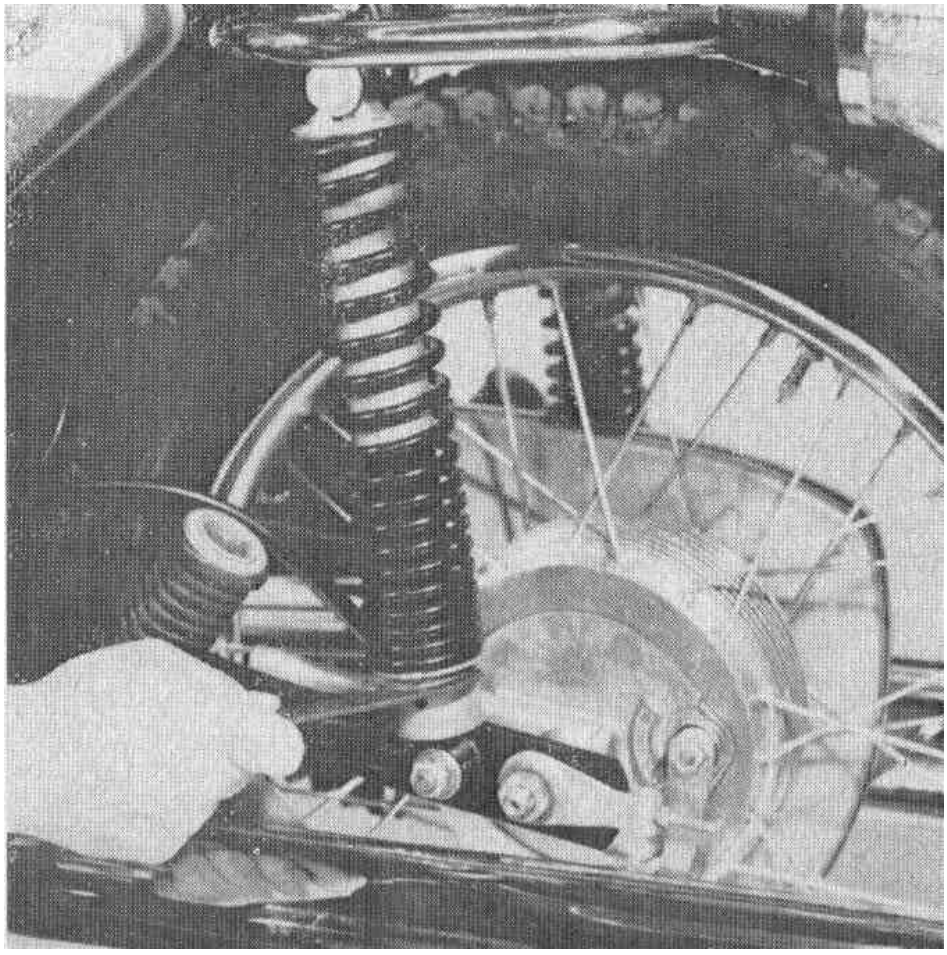


Fig. 8 - - Rear Suspension Adjustment

Stroke, B.P. Two Stroke, or Control Two Stroke brands in a ratio of 1 to 33 (3%) (after running-in). It is important to stir the mixture thoroughly. The fuel tank is fitted with a lever type fuel cock which ensures a fuel for about 50 km (30m.) (depending on the condition of the road and the travelling speed). Check the tyre pressure which should be 1.25 kgf/cm2 front 1.5 kgf/cm2 rear. When driving with a pillion rider, increase the rear tyre pressure to 1.9 kgf/cm2. When driving with a fully loaded machine, with a sidecar, the rear tyre must be inflated to 2.7 kgf/cm2.

REAR SUSPENSION ADJUSTMENT (Fig. 8)

We wish to draw the attention of the motor cycle user to the fact that three types of rear suspension with oil dampers are used alternatively on our machines. The hardness of springs of these three types of suspension can be adjusted to suit the expected terrain conditions and the loading of the machine.

The first basic type (Fig. 42A) with two adjusting positions is adjusted in the factory for normal riding conditions. To increase the hardness of the suspension remove the suspension from the frame, put the lower suspension cover between the jaws of a vice, compress slightly the spring cover, and withdraw the cotter (split spring retainer). Now compress the spring cover some more and fit the cotter into the upper slot.

Motor cycles adapted for attaching a sidecar have the harder suspension adjusted in the factory.

The second, prepared type (Fig. 42B) will be a modification of the first type. The hardness of this suspension (spring preloading) can be adjusted without removing

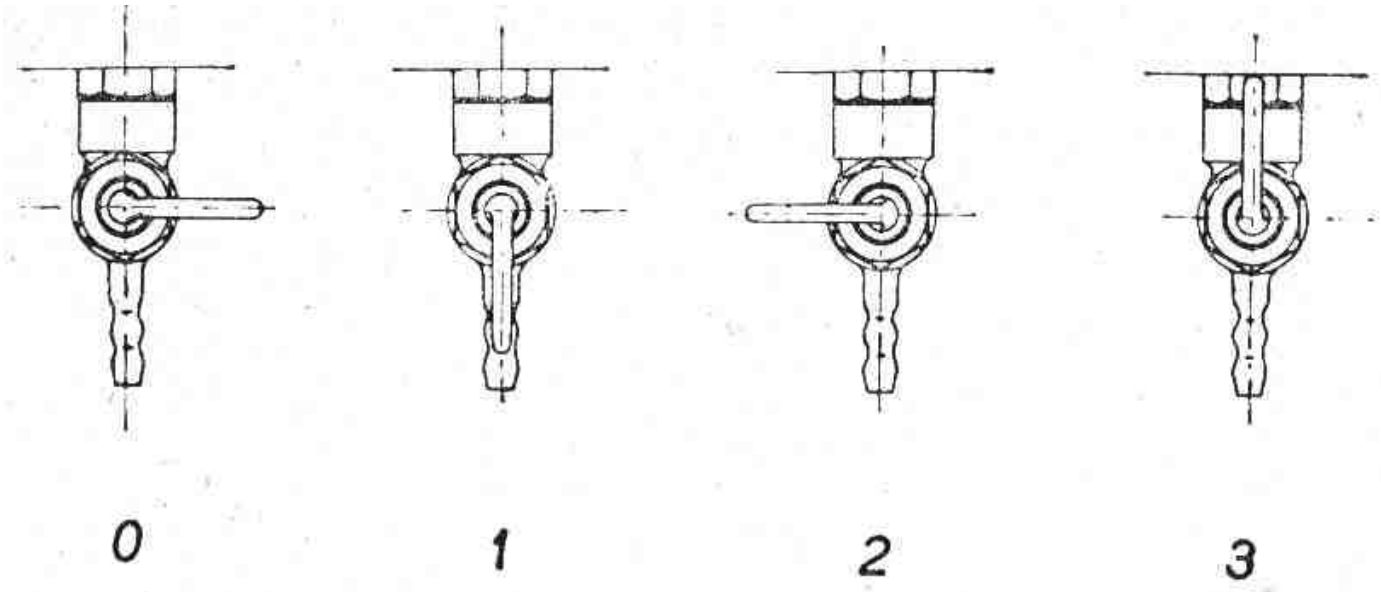


Fig. 9 – Positions of fuel cock lever

0 – fuel supply shut off
1 – main fuel supply on
2 – fuel supply shut off
3 – reserve fuel supply on

suspension from the frame. It has four adjusting positions that will be obtained by simply rotating the claws of the adjusting ring under the lower spring cover with the aid of the hook spanner fitted on the tyre lever and included in the motor cycle equipment. Be sure to adjust both suspension units in the same position.

The third, adjustable suspension type with different springs has been taken over from CZ motor cycles (Fig. 42C). When fitted on JAWA machines, it has three adjusting positions obtainable as in the case of the second suspension type.

C. STARTING

If the motor cycle has not been used for a prolonged period or after parking in frosty weather, the clutch plates are liable to stick. In such a case, proceed in the following way before starting the engine; Shift into low gear and roll the machine forwards and backwards with the clutch released. After the read whell offers no further resistance (the clutch plates are unstuck), change into neutral between the low and second-speed gear.

a) Open the fuel cock (the lever points downwards) and flood the carburettor by depressing the tickler pin.

b) With a slight pressure of the foot on the tread face of the gear shif lever hub, push the lever toward the engine and turn it at the same time to the starting position. Then depress the lever about three times to suck the required mixture into the engine.

c) Insert the ignition key into the switch box in the position “0” and push it home. If the storage battery is in good working order, the red and yellow telltale lamps will start glowing. As soon as the engine fires, release the starting/gear shift lever which return automatically to its horizontal position. (If necessary, the engine can be started with the speedgear engaged with holding the clutch lever on the handlebars depressed). Let the engine warm up at low r.p.m., high revolutions being harmful to a cold engine.

Note:

Do not flood a warm engine as this would lead to its overflooding. If this should happened, shut off the fuel supply and kick down the starting/gear shift lever several times with the ignition on and a fully opened throttle. Sometimes it may be necessary to screw out and clean the sparking plugs. If the engine tends to stall due to overflooding incline it to the left for a bit to lower the lever of the fuel in the carburettor.

D. DRIVING

a) Depress the clutch lever with your left hand, and depress the gear lever (pushing down). Then slowly release the clutch lever with opening the throttle gradually. Pull away immediately, never stand with the gear engaged and the clutch released for a proloned period. This applies also when wasiting on crossings. A prolonged slipping of the clutch leads to over heating and premature wear of the clutch plates.

After having attained a speed of 15 km/hr (10 m.), declutch, close the throttle, and shift into the second gear by lifting the gear shift lever. Change up into the following gears in the same manner. For changing down, depressing the gear shift lever with the toe of the shoe with declutching.

Remember, that there is the neutral position between the 1st and 2nd, and the 2nd and 3rd- speed gear. The neutral between the 1st- and 2nd-speed gear is indicated by the yellow telltale lamp on the instrument paned. This lamp does not glow when the neutral between the 3rd- and 4th-speed gear is engaged. Both the neutals are engaged by shifting the gear shift lever halfway of its usual travel.

b) When slowing down to a stop, change down successively to the neutral between the 1st- and 2nd-speed gear, and then apply both the rear and the front brake till the machine stops. Apply the front brake carefully and only when driving in a straight direction to prevent skidding of the front wheel.

After having finished the drive, close the fuel cock, withdraw the ignition key and lock the steering to prevent other persons from using your machine.

5. WHAT SHOULD BE AVOIDED

Never leave the motor cycle standing with the ignition switched on as this would result in discharging of the battery and, eventually, to serious damage of the ignition coil.

The engine is badly affected by running at high r.p.m. with the machine at a standstill since it not cooled as when driving. Do not keep the clutch disengaged for a prolonged period as this would result in premature wear of the clutch plate lining.

Never let the clutch slip to assist the engine when driving uphill but change down in good time. Do not drive an unnecessarily long period in low gear. When driving downhill with the engine stopped, (which is altogether a bad practice) restart it by using the kickstarter lever to avoid damage to the gearbox. It is very important to change up and down in time in accordance with the driving conditions. Driving at low r.p.m. with a jerking engine or overloading of the engine is harmful to its parts.

6. DATA ON PEAK SPEED VALUES

The peak speed as specified in this manual is the top limit of the maximum speed attainable by the motor cycle under optimum conditions. The actual speed of the machine can be determined only by using a stop watch to measure the speed on straight stretch of a road while driving in both directions to eliminate the effect of the wind and the deviations of the stretch from the horizontal plane.

Apart from the engine output, the decisive factors are the riding position and the clothing of the driver, the condition of the entire machine, the tyre inflation, and the weather. If all these conditions are favourable, a well run-in and conscientiously maintained motor cycle attains 125 km/hr (78 Miles) with the driver sitting upright and 135 km/hr (84 Miles) with the driver bent low over the fuel tank.

II. MAINTENANCE

1. MAINTENANCE SCHEDULE

(jobs to be done in a specialized shop are marked "*")

New Machine	(unless a guarantee inspection has taken place) Removing transport blinding plugs from front fork leg nuts Check the machine equipment for completeness Check the oil level in the gearbox Check the charged condition of the storage battery Check the lights Check the direction indicators Check the horn Check the adjustment of the stop-light switch Check the adjustment of the brakes Check the tyre pressure Check the nuts of the wheel spindles for slackness (lock the nuts of the front wheel with a cotter pin) Check and tighten, if necessary, all screws and bolts Check on proper tightening of exhaust pipe nuts at cylinders
Before every ride	Check the fuel level in the fuel tank Check the lights Check the direction indicators Horn and headlamp flasher check Stop-switch operation check up Check the adjustment of the brakes Check the type pressures
After every 1,000 km	Check the electrolyte level in the storage battery Check and, if necessary, adjust the chain tension Check the clutch for correct adjustment Lubricate the pins of the front brake and clutch lever Check the oil level in the gearbox
After every 2,500 km	Inspect and clean the intake silencer micromesh filter (at a shorter interval when driving in dust-laden environments) Lubricate the pins of the contact breaker arms Lubricate the felt on the contact breaker cam Check for slackness the engine bolts, wheel spindle nuts, etc. Check tools for completeness and condition

After every 5,000 km	Checking and topping up of the lubricant, if necessary Clean and lubricate the bowden cables of the front brake and Clutch, foot-operated brake, twistgrip, the brake cams and the Pins of the stand, and clean the exhaust pipe cores.
After the first:	
500 km	Change the gearbox oil Check and tighten the wheel spindles and the sprocket, engine Fastening bolts, nuts of the fork and wings Check the contact breaker point gap and clean the contact points Check the ignition advance Screw out the sparking plugs and clean their electrodes Check the cluthc adjustment Check the chain tension Tightening of nuts fastening exhaust pipes to cylinders Tightening of cylinder head bolt nuts
1,000 km	*Change of the oil in the front fork shock absorbers *Check the steering head for tightening
2,500 km	Adjust the carburettor after the running-in period *Check the wheel wire spokes for correct tension Check the track of the wheels for alignment Change the gearbox oil Check the ignition advance and the contact breaker point gap
5,000 km	*Change the oil in the front fork shock absorbers Top up the lubricant in the chaincase Clean the sparking plugs electrodes and check their gap
10,000 km	Change the gearbox oil *Change the oil in the rear suspension Adjust the contact breaker point gap and the ignition advance Inspect the brake shoe lining Check the length of the dynamo carbon brushes *Check and adjust the steering head *Remove carbon deposits from the cylinder head, the piston crown, the exhaust ports, and exhaust pipes *Check the piston rings for wear and replace them, if necessary Inspect the rear tyre tread (change the tyre if the treaded Pattern is worn down to 1 mm) *Lubricate the wheel bearing and the bearing of the sprockets

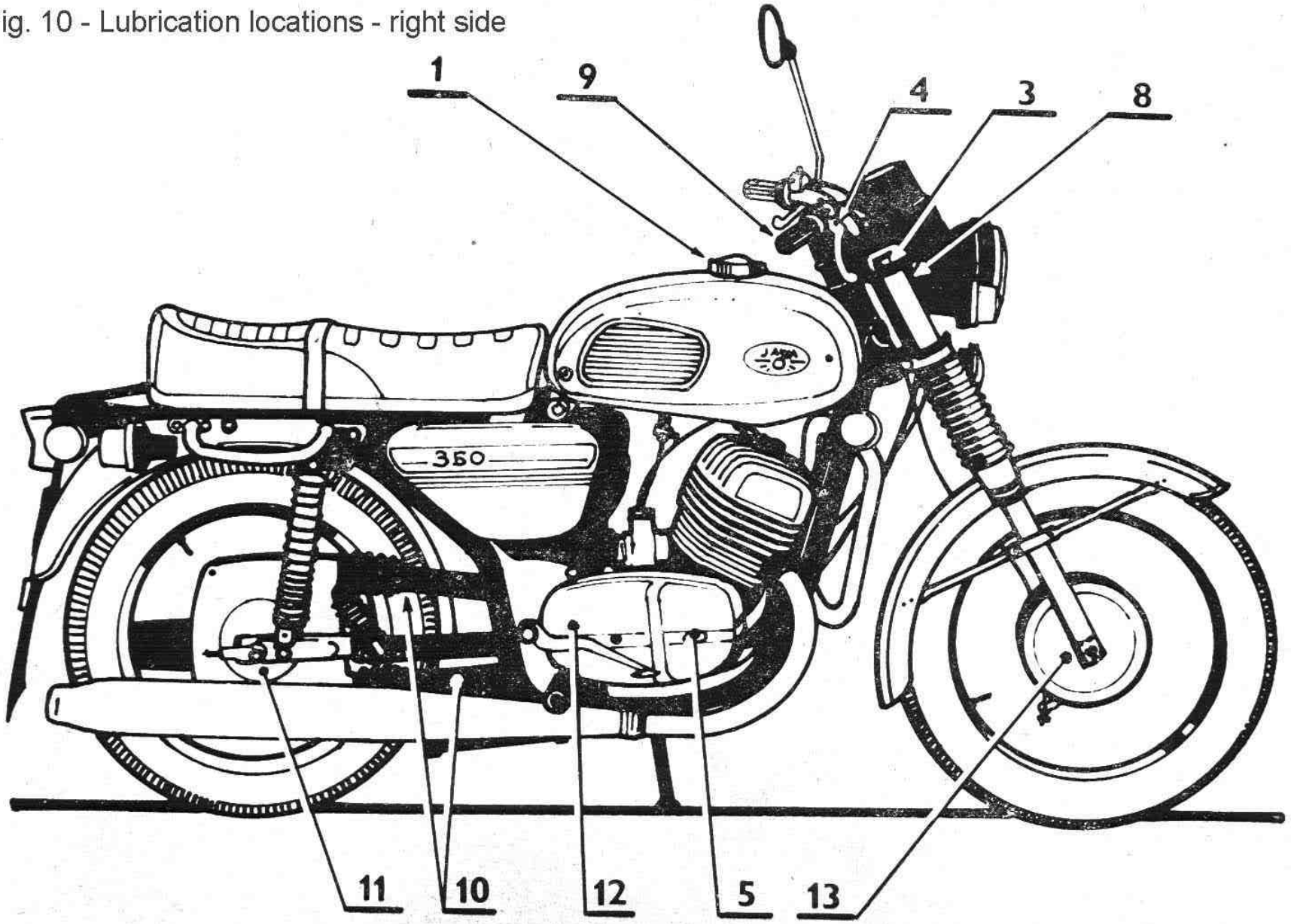
****

15,000 km	Change the oil in the front fork shock absorbers Replace the intake silencer micromesh filter Replace the secondary chain and change the lubricant in the chaincase Replace the sparking plugs *Lubricate the steering head bearings Inspect the front tyre tread (if the tread pattern is worn down to 1 mm, change the tyre)
20,000 km	Change the gearbox oil Inspect and replace the clutch plates, if necessary *Check the dynamo, the voltage regulator, the condensators, adjust the contact breaker point gap and the ignition advance *Inspect the piston rings and replace them, if worn
25,000 km	*Check the rebound of the rear suspension, change the oil, and replace worn parts *Replace the primary chain
30,000 km	Change the gearbox oil Replace the storage battery (after 3 years) *Ascertain the condition of the connecting rod bearing *Inspect and replace the cups in the steering head, if necessary *Replace the sealing rings of the crankshaft and the secondary chain wheel (after 3 years) *Check the cylinder for wear and rebore, if necessary Inspect and replace the exhaust silencer cores, if necessary Replace the intake silencer micromesh filter Replace the sparking plugs, the ignition cables and cable shoes *Inspection and replacement, if necessary, of the front fork bush, oil change

2. LUBRICATION (Fig. 10 and 11)

The engine is lubricated automatically with the oil mixed to petrol in the ratio of 1 to 33 after running-in. The recommended oil brands are Mobil TT, Shell 2T Two stroke oil or Castrol Two stroke.

Fig. 10 - Lubrication locations - right side



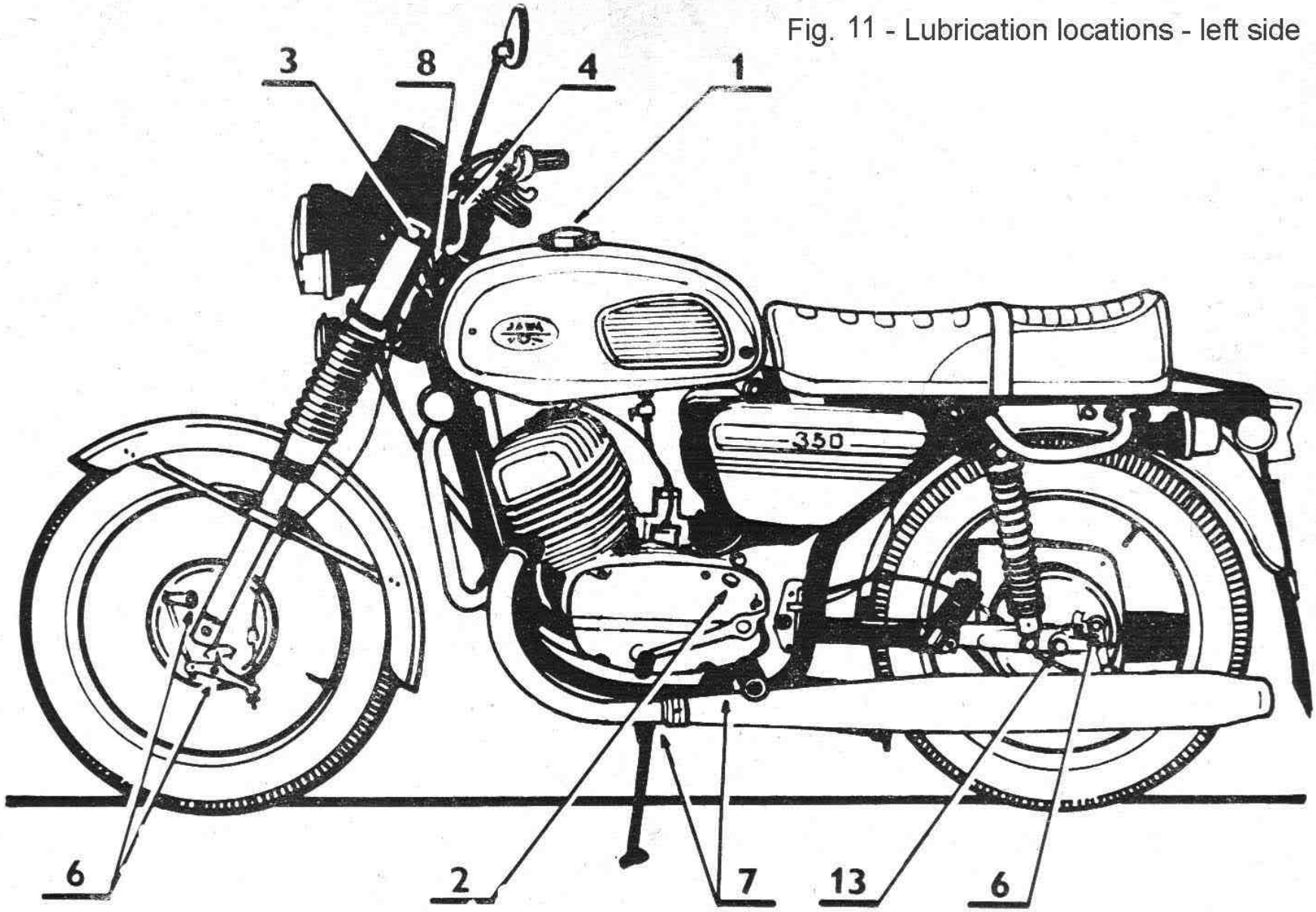


Fig. 11 - Lubrication locations - left side

Gearbox: Change the oil in the gearbox once a year after running-in, preferably at the end of the motorcycling season, or after every 10,000 km. The same oil brand can be used in summer and in winter. The filling is 1.2 litre. Drain the used (old) oil by unscrewing the drain plug on the bottom left-hand side of the crankcase. (Fig.12)

Before filling in fresh oil, clean the gearbox by flushing it in the following way: screw in the drain plug and pour flushing oild through the filler hole to fill three fourths of the gearbox. Let the engine run at low r.p.m. for 5 to 10 minutes (travel a short distance or leave the engine propped up on its stand). Shift through the individual gears and then drain the oil in a clean container. It can be reused after settling down. Never flush the gearbox with kerosene or diesel oil as their residues are bound to deteriorate the fresh gearbox oil. The correct oil level is ascertained by the hole for the check plug (Fig. 13). Unscrew this plug from time to time to check the oil level and top up the oil, if necessary.

The clutch and the primary chain run in an oil bath (oil from the gearbox) and require no special lubrication.

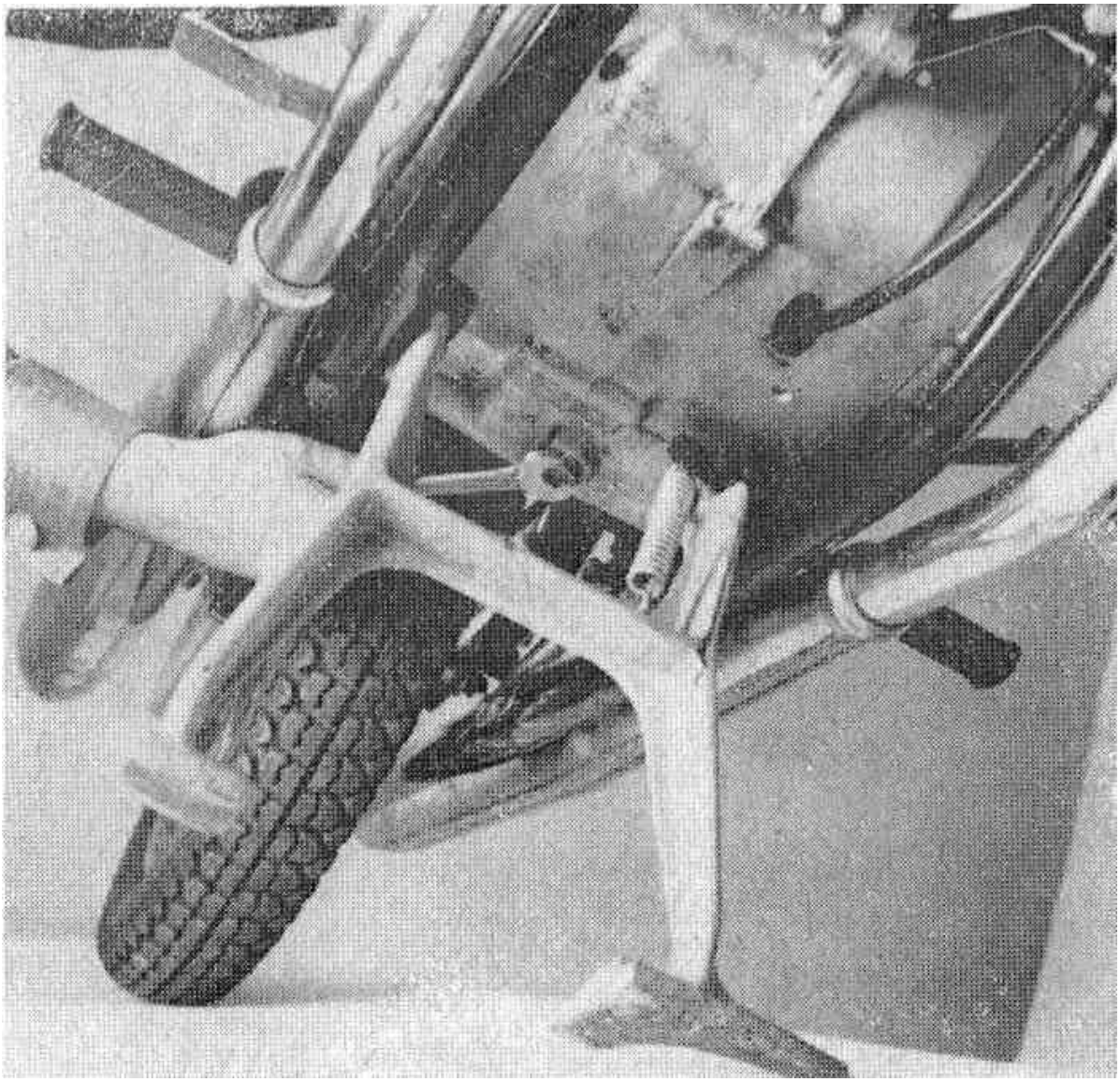


Fig. 12 – Draining of oil from the gearbox

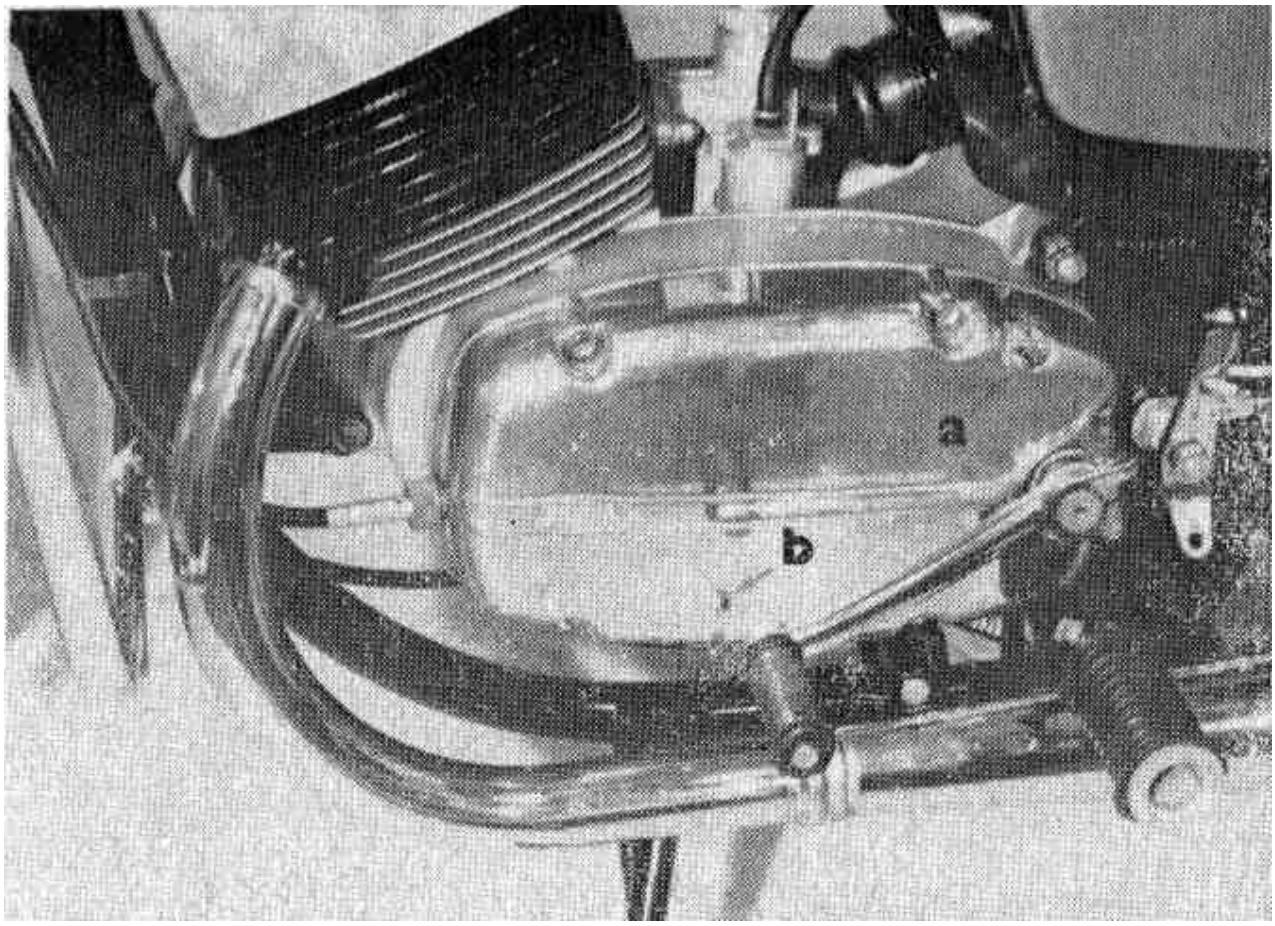


Fig. 13 - - a) filler hole, b) check plug

Front fork shock absorber. After having travelled the first 1,000 to 1,500 kilometres (600 – 1000 m.) change the damper oil in the front fork legs. Proceed as follows:

Remove the front wheel put a vessel under the front fork leg to take the drained oil, and remove the screw (5) from the bottom part of the slider which fastens the shock absorbed end to the slider bottom. To facilitate further operations, have ready an auxiliary screw M 6x80 (actually the centre fastening bolt of the right-hand crankcase cover) and fit it in the place of the original screw (5).

Move the screw repeatedly up and down to ensure complete draining of the oil from the fork leg. Then remove the auxiliary screw and repeat the same operations with the other fork leg. Then screw in the original screws (5) into their respective threaded holes.

Screw off the nuts (1) and pour about 100 c.c of pure petrol into each leg of the front fork. Push the sliders down into the fork leg tube several times and then drain the petrol in the same was as when draining the oil (using the same auxiliary screw). Let the inside of the fork legs dry thoroughly and close the sliders proceeding the following way:

Fit the auxiliary screw again into the thread in the end piece (13), push down the slider part way and, while pulling, turn the auxiliary screw until the set pin of the end piece slips home into the recess of the inner part of the slider. Hold down the slider

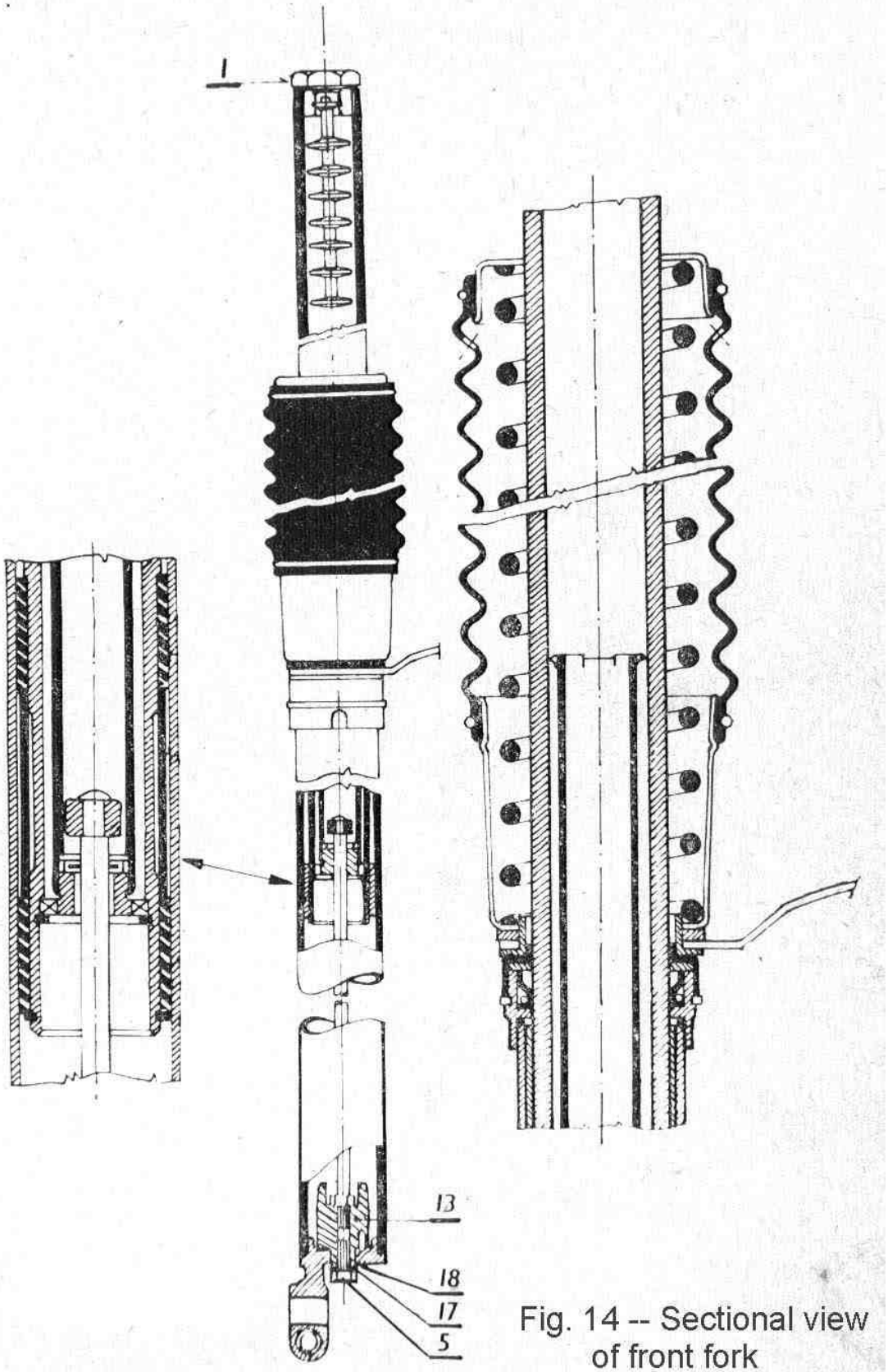


Fig. 14 -- Sectional view of front fork

(to prevent the pin from slipping out of the recess), remove the auxiliary screw, and replace it with the original screw after inserting the washer (17) and the sealing ring (18). It is adviseable to use always a new sealing ring. Repeat the same procedure with the other fork leg. Then fill each fork leg with a mixture of 100 cc of damper oil and 40 cc or SAE 30-50 engine oil.

For the subsequent changes of oil, see the maintenance schedule!

LUBRICATION CHART

After Every	Lubricant point	Number of lubr. points	Lubricant
	1 In petrol 1 : 33 (3%) ratio	1	Mobil TT, Shell 2T ****
1,000 km	**4** Pins of front brake and clutch levers	2	Mobil-ube GX 90 *
	2 Gearbox (top-up)	1	Mobil-ube GX 90 *
2,500 km	**5** Pines of contact breaker arms	--	Mobil-ube GX 90 *
	5 Contact breaker felt	--	Mobilgrease MP **
5,000 km	**6** Brake cams	2	Mobil-ube GX 90 *
	7 Stand pins	3	Mobil-ube GX 90 *
	8 Bowden cables	4	Mobil-ube GX 90 *
	9 Twistgrip	1	Mobilgrease No.2 ***
	10 Secondary chain (enclosed)	1	Mobilgrease No.2 *** + 3% colloidal graphite
10,000 km	**13** Wheel bearings	2	Mobilgrease MP **
	11 Bearing of rear sprocket	1	Mobilegrease MP **
	12 Cam and the lever of the automatic clutch	2	Mobilgrease MP **
	3 As necessary Front telescopic fork	2	Mixture of damper oil with engine oil
	2 Once a year Gearbox change	1	Mobil-ube GX 90 *

* -- Shell Spirax 90 EP, B.P. Gear Oil 90 EP, Castrol Hypay SAE 90
** -- Shell Alvania 2, B.P. LS-2, Castrolease LH 2
*** -- Mytilus Grease A (Shell), B.P. Energrease FG 1
**** -- Shell 2T Two stroke oil, B.P. Two stroke, Castrol Two stroke

The rear dampers have a high damping effect and do not require topping up of oil. However, it is recommended to change the oil after every 10,000 to 15,000 kilometres (6,000 – 9,500 miles). For the oil change, cleaning and repairs of the dampers, rely on a specialized service station or repair shop.

Wheels. Lubricate the wheel bearings after having covered about 10,000 km (6,000 miles) with bearing grease after removal of the dust cups. Dismantle and lubricate also the bearing of the rear sprocket (see Chapter III, Art. 3 – Removal of rear sprocket).

The rear swinging fork has a self-lubricating mounting. Its parts should be lubricated after its occasional disassembly.

The primary (duplex) chain is fully covered by the crankcase cover and runs in an oil bath. It requires no maintenance and should be replaced only it worn. Have it done in a specialized repair shop equipped with the proper tools.

The secondary chain does not require any maintenance on motor cycles fitted with a chaincase. It is sufficient to make sure, after every 5,000 kilometres, that the rubber chain sleeves and the chain are well lubricated. If necessary, lubricate the rubber sleeves with special chain grease or with a pin lubricant mixed with 3% of colloidal graphite. If dirt has penetrated into the chaincase (broke rubber sleeve and the like), replace the defective parts, clean the chaincase and the rubber sleeves, remove the chain, clean it thoroughly and lubricate before refitting. Fill the rubber sleeves with fresh grease (about 70 cc in each sleeve).

Dynamo. After about 2,500 kilometres (1,500 miles), remove the crankcase right-hand cover and lubricate the pins of the contact breaker arms (rocker) with a few drops of oil. (For more efficient lubrication it is advisable to remove the rocker from the pin.) Saturate the cam felt wiper with gearing grease of a few drops of oil. Lubricate sparingly to prevent any surplus lubricant from getting between the contract breaker points.

Bowden cables. Lubricate bowden cables of the clutch, the front and rear brakes, the throttle, and the stop-switch after every 3,000 to 5,000 kilometres, preferably after having removed them from the machine. Drip oil into the cable hose (bowden tubing) till it starts flowing out at the other end. Assist the flow of the oil by pushing and pulling the cable in and out.

Twistgrip lubrication. Twistgrips designed with plastic moving parts do not require any lubrication. Nevertheless, it is recommended to remove the twistgrip after about 8,000 to 10,000 kilometres (5,000 to 6,000 miles), to clean the moving parts and to coat them sparingly with oil.

3. CLEANING

The smooth contours of the JAWA motor cycles facilitate cleaning. Use only water or a car shampoo for washing the machine. Dirt should be removed from the engine with tetrachlorethane or kerosene. When using inflammable preparations or substances for cleaning metal (not paint coated) parts, proceed with extra caution. When washing the machine, take care that the water does not get into the carburettor, the headlamp and the brakes. Dry the chrome-plated and point-coated machine parts with a rag and polish them with a flannel duster. A polishing paste can also be used for the varnished parts. To remove mater from the cooling fins of the cylinder, start the engine. Its warmth will cause the water to evaporate.

In frost weather, do not take a ride immediately after washing the machine but leave it in a warm place until the bowden cables are dry. After starting, first check the function of the brakes. Dry wet brake drums by driving a short distance with the brakes on.

Note: Petrol, kerosene and oil are harmful to tyres, rubber grips on the handelbars, foot-rests, knee-rests, the seat, the tail lamp, etc. Therefore, protect these parts from contact with these liquids!

4. TYRES (Fig. 15, 16, 17)

The performance of the tyres depends on the correct air pressure in the inner tube with respect to the load carried. Running on underinflated tyres results in breaking of the cord fibres in the tyre walls, overinflation impairs the correct function of the suspension and the wheels are susceptible to skidding.

The correct pressure in the front tyre is 1.25 kgf/cm2, of the rear is 1.5 kgf/cm2. When riding with a pillion rider, the rear tyre must be inflated to a pressure of 1.9 kgf/cm2. When using the full payload of the machine or driving with a sidecar the rear tyre pressure must be 2.7 kgf/cm2. Check the tyre pressures with a tyre gauge. Oil, petrol, and strong sunshine are harmful to the tyres. Inspect the tyres occasionally and remove gravel, glass, and other objects stuck in the treated pattern. Check the tyre valves for leakage by removing the valve cap and moistening the valve. If an air bubble appears, the valve is leaky. In such a case, tighten the valve core (using the valve cap provided with a slot). If the favle continues to leak, screw out the valve care and replace it with a new one. It is advisable to carry one or two valve cores as spares.

Before starting for a ride, make sure that the caps of both valves are properly tightened so tha air cannot escape suddenly if the valve become defective during the trip.

A punctered tube has be to patched. For this purpose, remove the tyre from the rim in the following way: screw out the valve core, let the air escape, and free the tyre

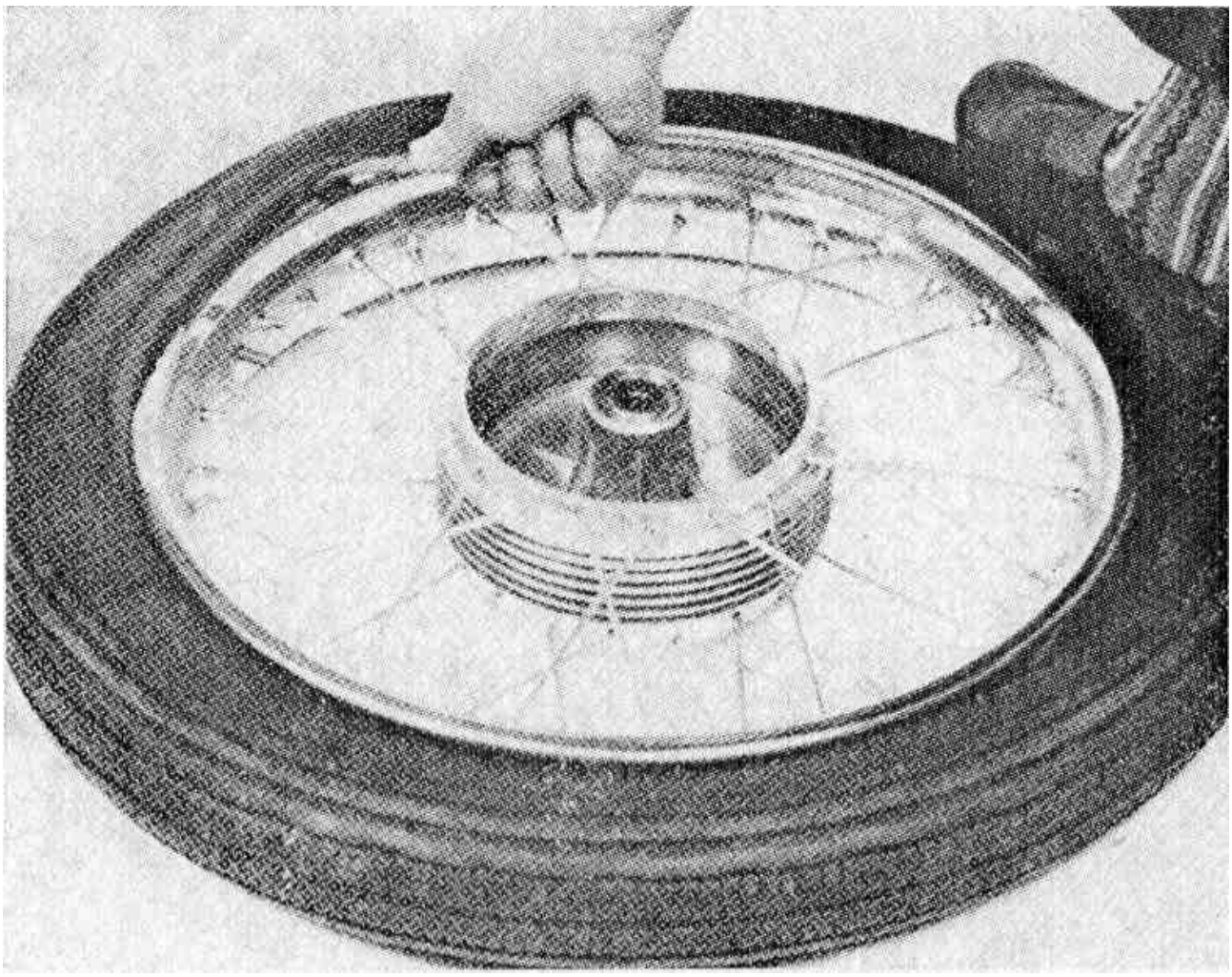


Fig. 15 – Dismounting of tyre

along the entire circumference of the rim. Screw off the nut fastening the valve to the rim and push the valve into the rim. When placing the wheel on the ground make sure that no foreign matter can get into the bearings. Press the tyre bead into the rim base opposite to the valve and slip the tyre bead over the rim edge next to the valve using the tyre levers. Be careful not to nip the air tube between the tyre bead and the rim.

After slipping the tyre casing over the rim edge along its entire circumference, take out the air tube. Screw the core into the valve, inflate the air tube and locate the puncture, preferably by submerging the air tube into water. Mark the damaged spot (for example with a pencil), wipe the air tube dry and repair it by patching. It is best to weld on the patch, since its simple sticking on is not adequate in view of the tyre temperature rise during driving. Inspect the tyre thoroughly in case the nail (or another object which has punctured the air tube) is still sticking in the tyre. Have the tyre repaired in a retreading shop. Such a shop will also repair minor damage of the tyre caused by a sharp stone or broken glass.

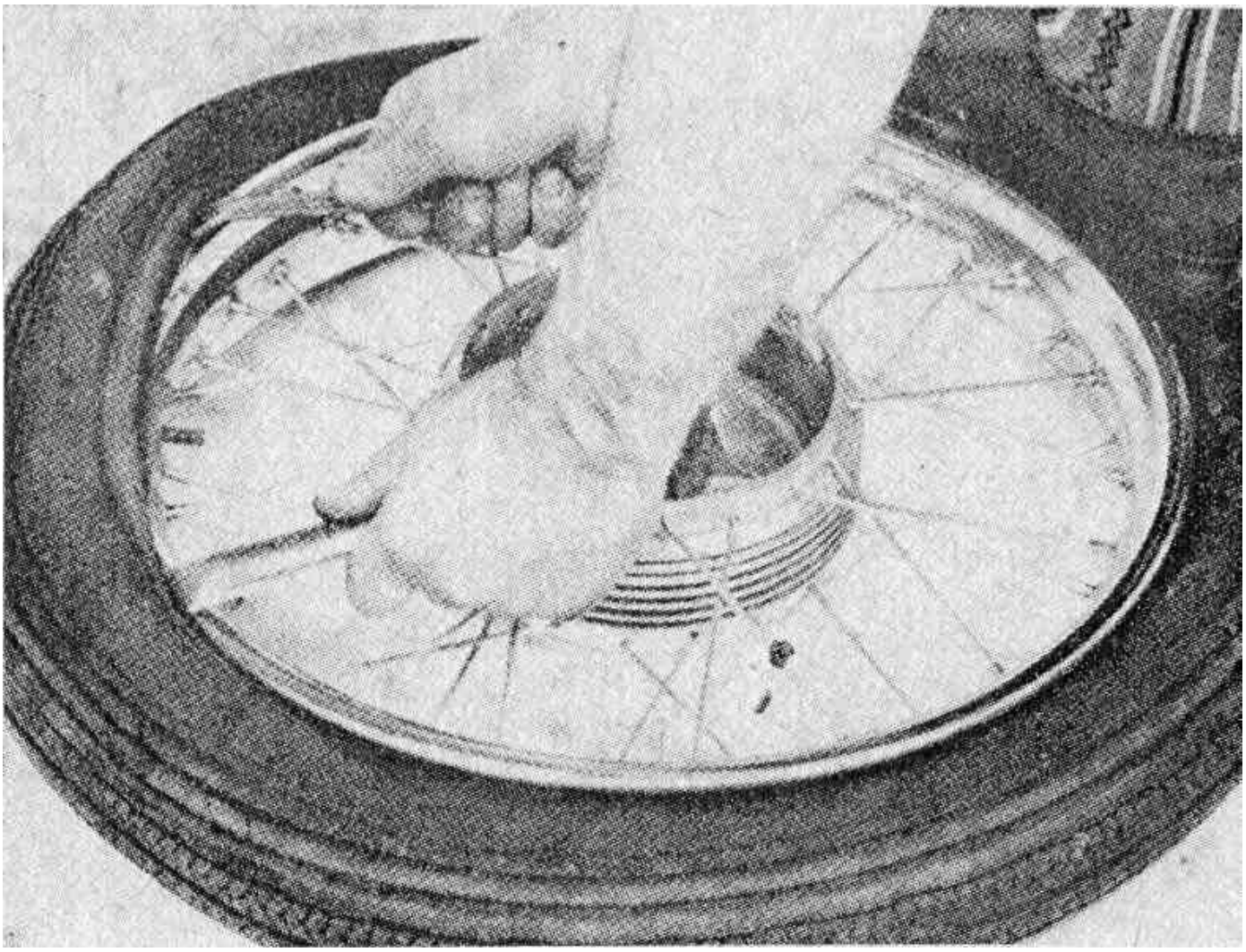


Fig. 16

Fitting of tyre

Inflate the tube partially, insert it into the tyre casing one bead of which has remained in the rim, thread the valve through the hole in the rim and secure it in position with the nut (do not tighten the nut for the time being).

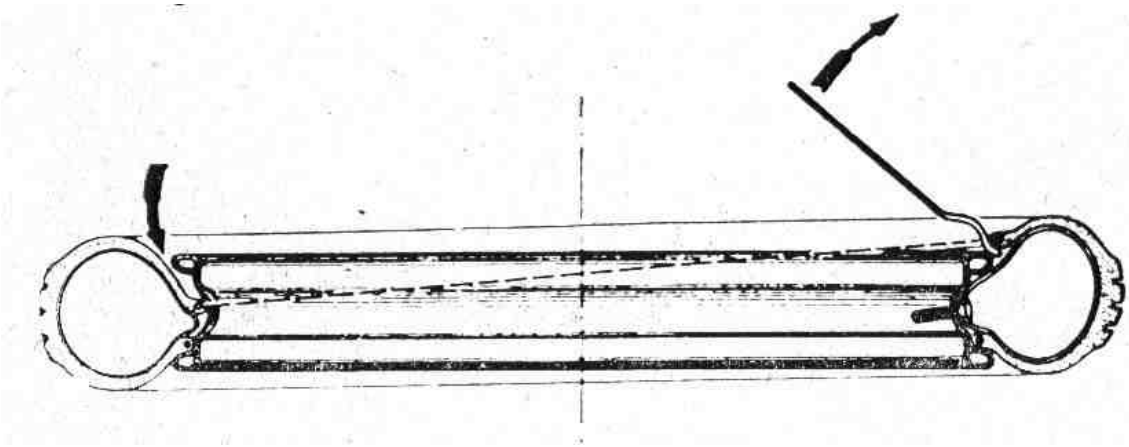


Fig. 17 – Sectional view of rim and tyre – tyre fitting

Starting opposite the valve, slip the tyre bead over the rim edge inside the rim, hold it down in the rim base, and, using the tyre levers, proceed to slip over the tyre bead on both sides alternately till one arrives at the valve. Be certain not to damage the air tube by nipping and take care that foreign matter (sand) does not get inside the tyre. Check the tyre for correct embedding in the rim, i.e. for a run-out. For this purposed, the tyres are provided with a centering protrusion in the forms of a strip running along the tyre walls, the distance of which from the rim must be equal along its entire circumference. The red dot on new tyres marks the lightest point which must be located next to the valve.

When mounting the tyre on the wheel, the arrow indicating the direction of rotation (as well as the red dot indicating the location of the inner tube valve) must be on the side opposite to the brake drum.

Remember, that the front wheel is balanced by means of a weight and that it must be rebalanced after the tyre has been changed.

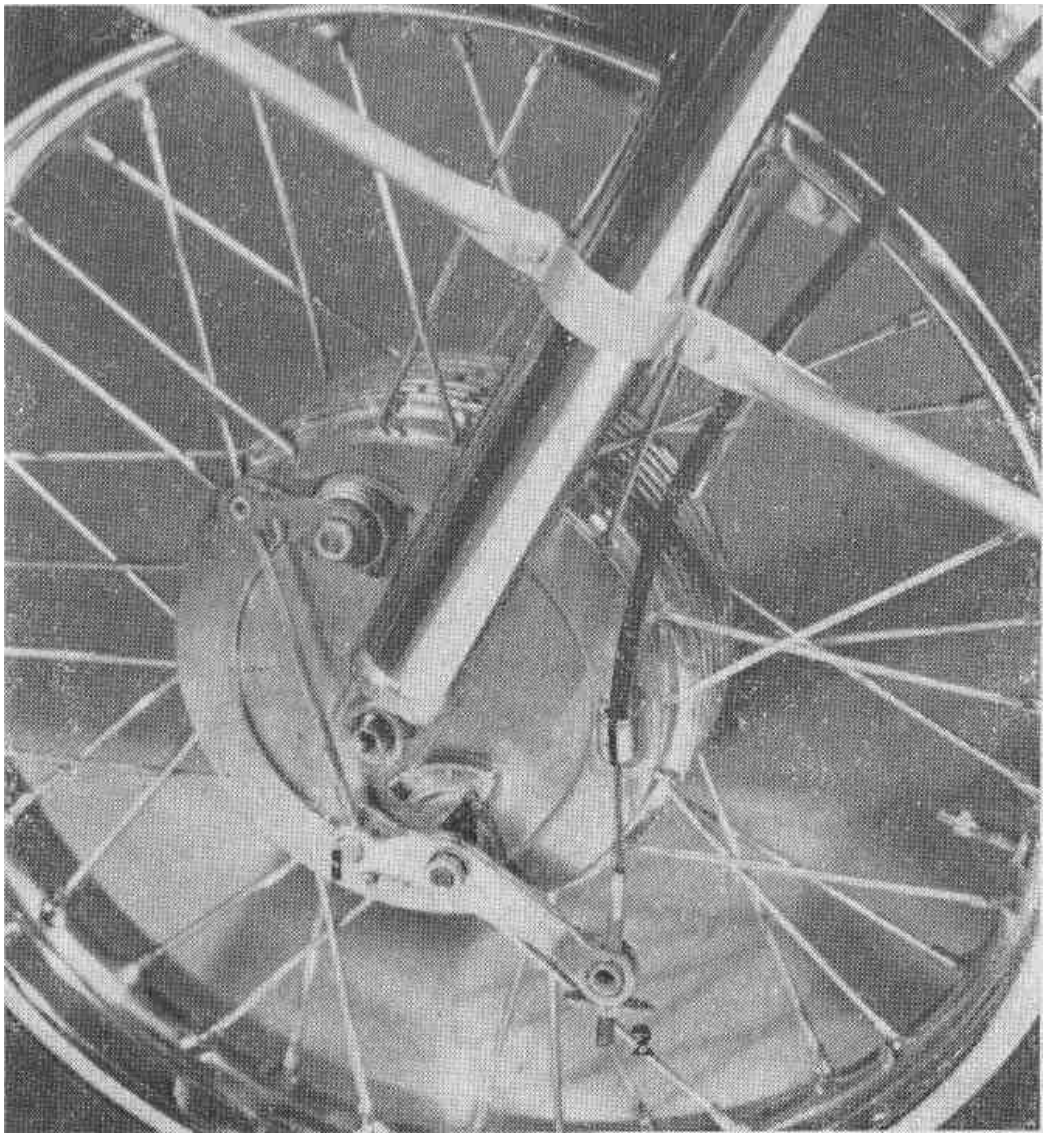


Fig. 18 – Adjustment of the front double-cam brake

5. ADJUSTMENT OF BRAKES (Fig. 18)

The motor cycle brakes require an occasional adjustment when a prolonged travel of the brake lever and brake pedal calls this fact to your attention. It is due to the gradual wear of the brake shoe lining.

Front brake adjustment:

a) First, loosen sufficiently the nut M 6 (1) of the connecting link.
b) Keep tightening the winged nut till the brake shoe starts braking the wheel. Then back off the nut by one turn.
c) Tighten the nut (1) till brake shoes gripping is felt when turning the wheel. Now back off the nut by one to one and a half turn.
d) Finally adjust the free travel of the front brake lever by rotating the respective winged nub in the required direction.

Rear brake adjustment:

For adjusting the travel of the rear brake pedal use only the wing nut.

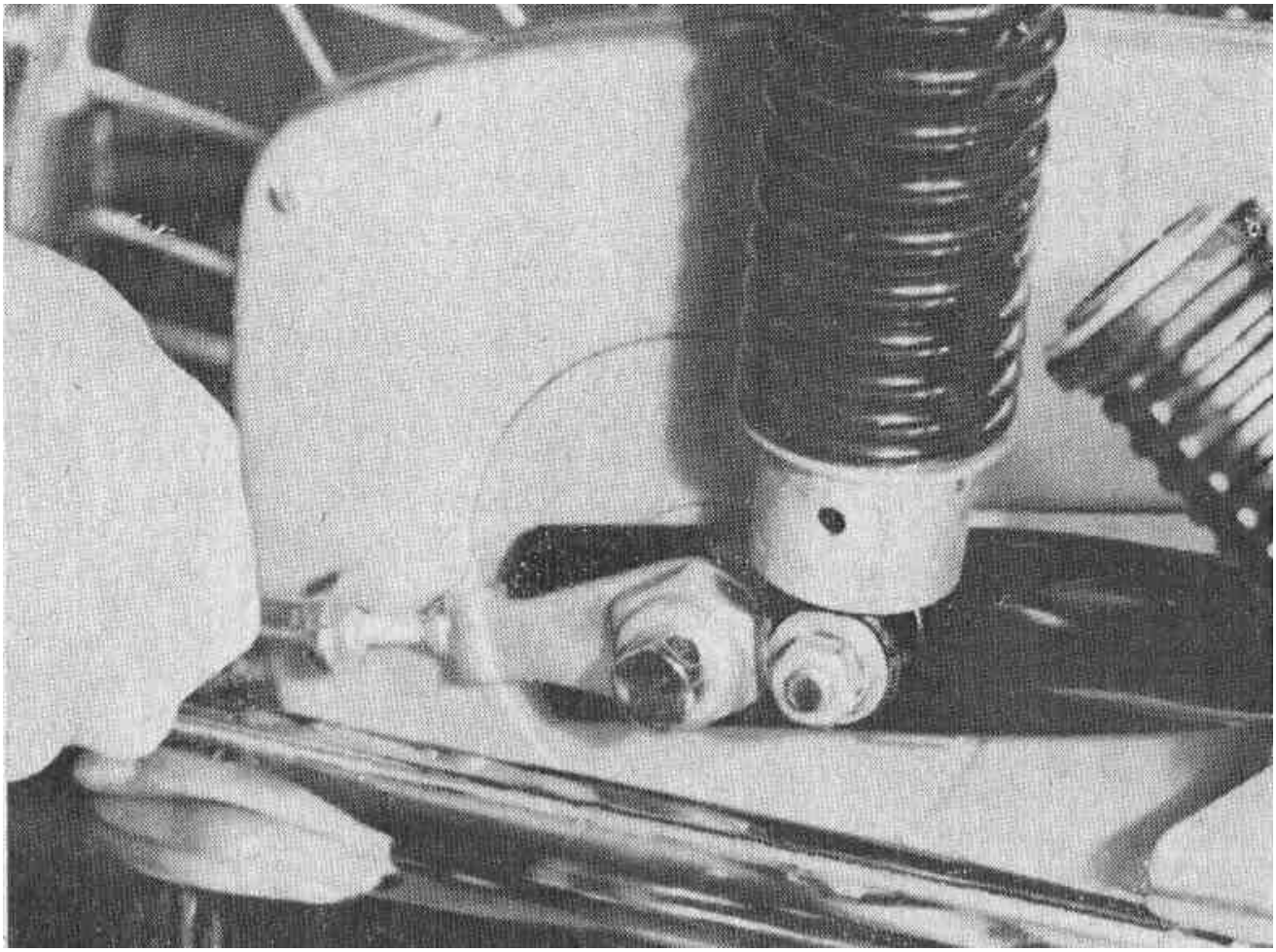


Fig. 19

Caution!

Correct adjustment of the front double-cam brake is very important to prevent burning of one of the brake shoes.

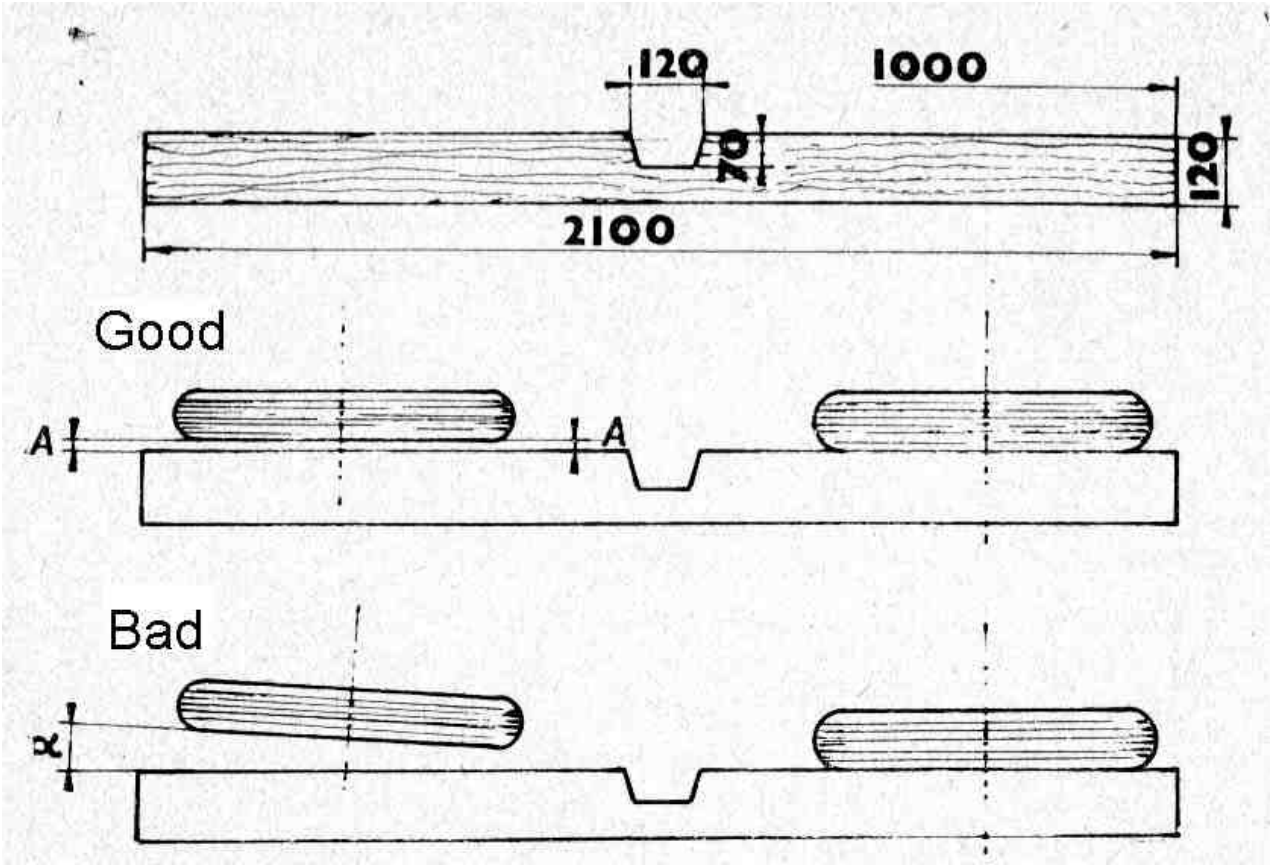


Fig. 20 – Measuring of line-up plane of wheels

6. CHAIN TENSIONING (Fig. 19)

The maintenance of the chain and a correct adjustment of its tension are decisive for its life and function. The most important is its sufficient slack in every position of the swinging fork. This means that whatever the position of the swinging fork, the chain must never be completely tensioned. For the adjustment of a correct chain slack proceed as follows:

a) With the motor cycle supported on its stand, loosen the nut of the rear wheel spindle (on the left-hand side of the machine) and the nut and the chain wheel sleeve nut (one the right-hand side). Then loosen the Nut M 6 of the chain tensioners on both sides of the rear swinging fork.
b) Take up the slack of the chain by tightening gradually both tensioner screws by the same value (for example, half a turn) (see Fig. 19).
c) The chain must have a sag of a least 3 cm when lifting the top rubber sleeve with the finger tip. This sag ensures that a full tensioning of the chain cannot take place at the downward stroke of the swinging fork of the loaded machine, which could result in shortening of the life of the chain or damage to the bearing of the sprocket in the gearbox.

d) When adjusting the chain slack make sure that both wheels are aligned, i.e., that the rear wheel follows the track of the front wheel. For measuring the line-up plane of the wheels, use a suitably adapted lath (see Fig. 20)
   An incorrect wheel alignment affects adversely the riding properties of the motor cycle.
e) After having adjusted the chain slack and aligned the wheels, first tighten both the lock nuts of the chain tensioner, the chain wheel sleeve nut, and the wheel spindle.

Then check again the chain tension to make sure that the recommended sag has not been disturbed and adjust the rear brake.

7. CLUTCH AND ITS ADJUSTMENT (Fig. 21)

To adjust semi-automatic declutching

If the clutch has a tendency to slip, the automatic declutching can be adjusted by rotating the adjusting screw (8) in the hole of the right-hand crankcase cover anticlockwise through 1/6 or 2/6 of a turn. It is recommended to adjust it more accurately occasionally together with the manual clutch disengaging mechanism in the following way:

a) Remove the right-hand crankcase cover (depress the brake pedal to facilitate the removal;

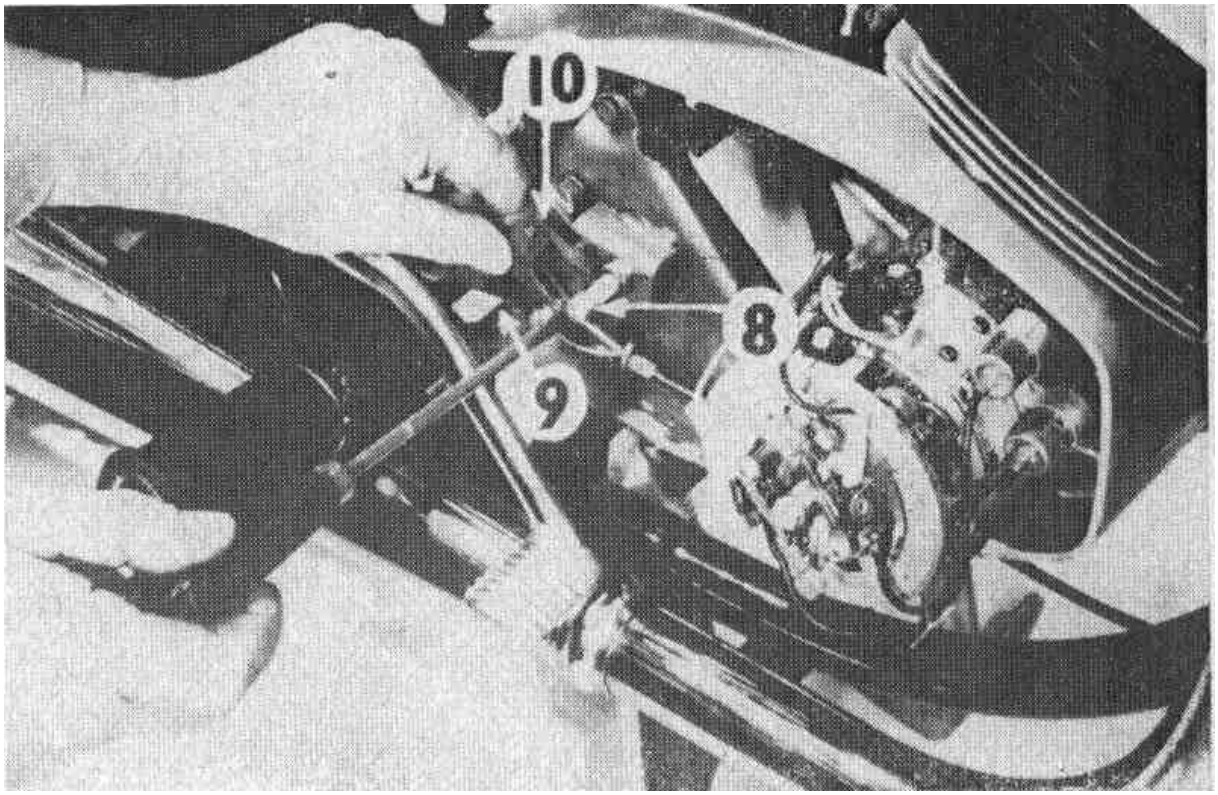


Fig. 21 – Clutch adjustment

b) Screw down slightly the clutch cable adjusting screw (on bowden cable under the frame head) to shorten the cable and to release the clutch lever;
c) Clean the cam (9) of the automatic clutch release lever (10) with pertol or kerosene;
d) Hold the clutch release lever (10) with the fingers of your left hand and swing the lever toward the cam and back;
e) If you ascertain a play, rotate the adjusting screw of the automatic clutch disengagement (8) clockwise till the gap between the clutch release lever (10) and the cam (9) is about 0.1 to 0.3 mm (the lever can be slightly moved away from the cam by applying a light pressure only);
f) Now rotate the clutch cable adjusting screw as necessary to adjust the manual clutch disengagement – the clutch lever on the handlebars must have a dea travel of about 2 mm;
g) Smear the cam (9) and the lever (10) of the automatic clutch disengagement slightly with grease.

8. CARBURETTOR (Fig. 22)

The carburettor is set in the factory for running-in and it is necessary to reset it according to the following Table after having covered 2,000 to 2,500 kilometres. Remove the throttle valve, detach the throttle cable and reset the spring clip of the throttle needle into the specified notch. Adjust the pilot air screw by screwing it home into the carburettor body and then backing it off by the required value.

The most important parts of the carburettor which affect the fuel-air mixture supplied to the engine are:

a) **the main jet (6)** controlling the mixture ratio with the fully opened throttle. It is accessible after removal of the carburettor and screwing out of the bottom screw plug (7). If the main jet is clogged, the engine does not fire, or fires but stalls and lacks power.
b) **the throttle needle (2**). Its position affects the mixture with the throttle opened halfway. It is installed in the throttle valve with its cone protruding into the carburettor throat and clears gradually the passage of the fuel into the Venturi tube. The needle can be vertically reset in the throttle valve by changing the position of the spring clip in the notches. If the spring clip is in the lower notches of the needle, the mixture is rich, if it is in the higher notches, the mixture is lean.
c) **the idling jet (3)** and the position of the pilot air screw (4) affect the mixture ratio when the engine is idling or when the throttle is slightly opened. The pilot air screw controls the bore (inside diameter) of the air port through which air passes when the engine is idling. To enrich the mixture, tighten the screw and vice versa.
d) **The throttle valve,** controlled by the cable fitted to the twistgrip, opens or shuts off the supply of the mixture to the engine.

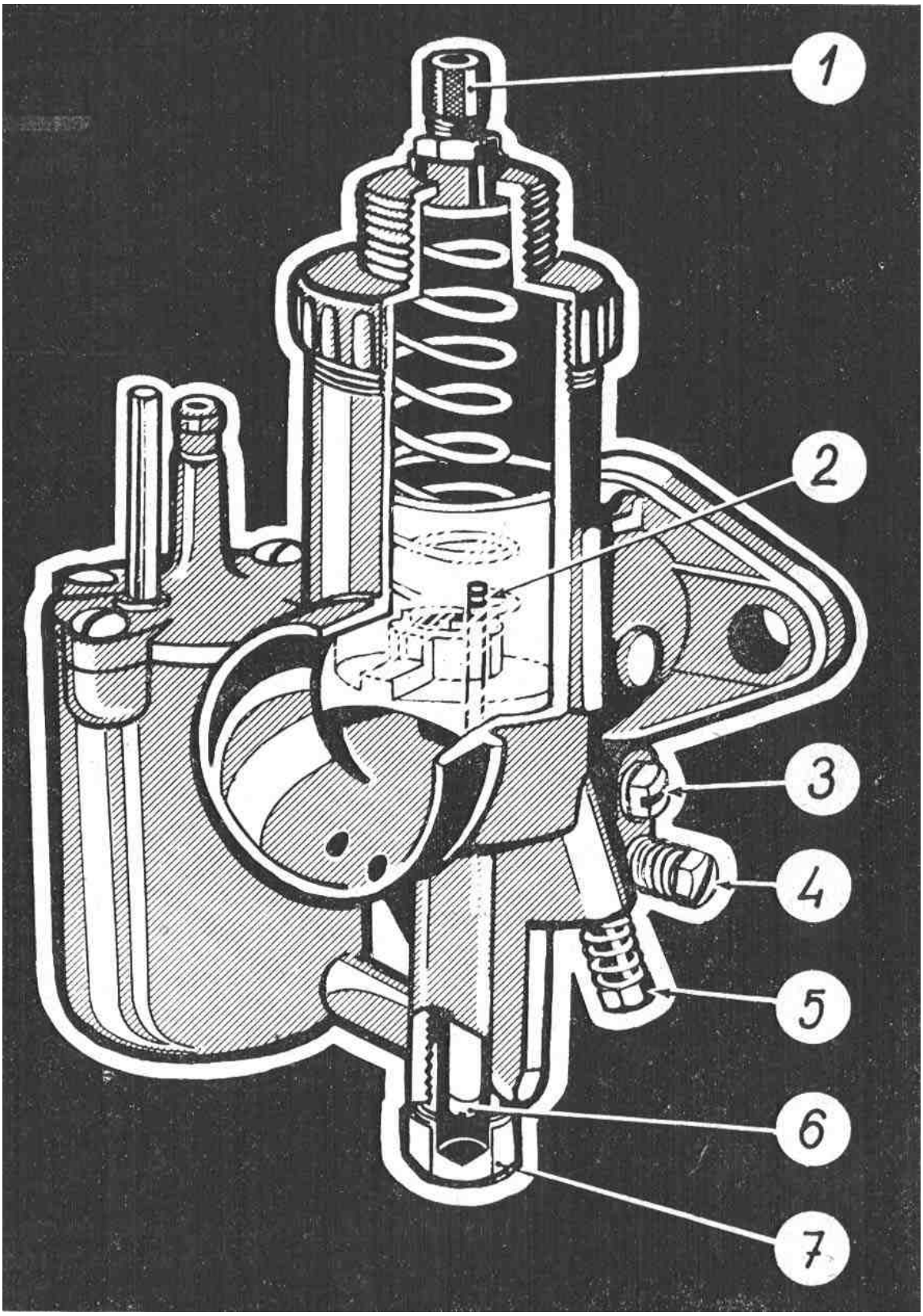


Fig. 22 – Sectional view of carburettor

CARBURETTOR SETTING

Motor Cycle type	Carbur-ettor model		Main jet	Idling jet	Needle position	Pilot air screw
634-5,8 350 cc	2926 SBDb	for running-in	115	55	4th notch from top	backed off by ½ turn
		after running-in	115	55	3rd notch from top	backed off by 0.5 – 1.5 turn

It is recommended not to tamper with the carburettor in any way, with the exception of its washing in petrol and setting in accordance with the Table. Deviations from the basic setting are permissible only if authorized by the motor cycle distributors or a repair shop with respect to the condition of the machine, the climate, and the quality of the fuel available.

Adjust the idle run of the engine (the engine runs at low r.p.m. with the throttle fully closed) by means of the throttle valve stop screw (5) which determines the position of the throttle valve. First slacken the bowden cable by screwing home the adjusting screw (1) on the throttle chamber lid. Then take up the excessive play of the bowden cable by backing off the adjusting screw till a play of about 1.5 to 2 mm is obtained. Then tighten the lock nut of the adjusting screw. Dismantle the carburettor for cleaning and swill its parts in pure petrol. Replace all worn or damaged parts. Blow through the ports and passages of the idling system. Never use a piece of wire or hard tools for cleaning the jet as this may damage its fine bore and result in a change of the through flow entailing a change of the operating values.

Caution!

Check occasionally the drain hole for clogging, connecting the crankcase compartment under the carburettor with the compartment under the crankcase right-hand cover, and clean it, if necessary. Fuel which overflows from the carburettor during its flooding must have a free passage for flowing out.

9. AIR CLEANER (MICROMESH FILTER) (Fig. 23, 24)

It is installed in the intake silencer on the right-hand side of the machine. To remove it, proceed in the following was: Remove the seat and the right-hand side cover. Remove the two bolts of the intake silencer body side cover, lift away the cover and take out the micromesh filter element.

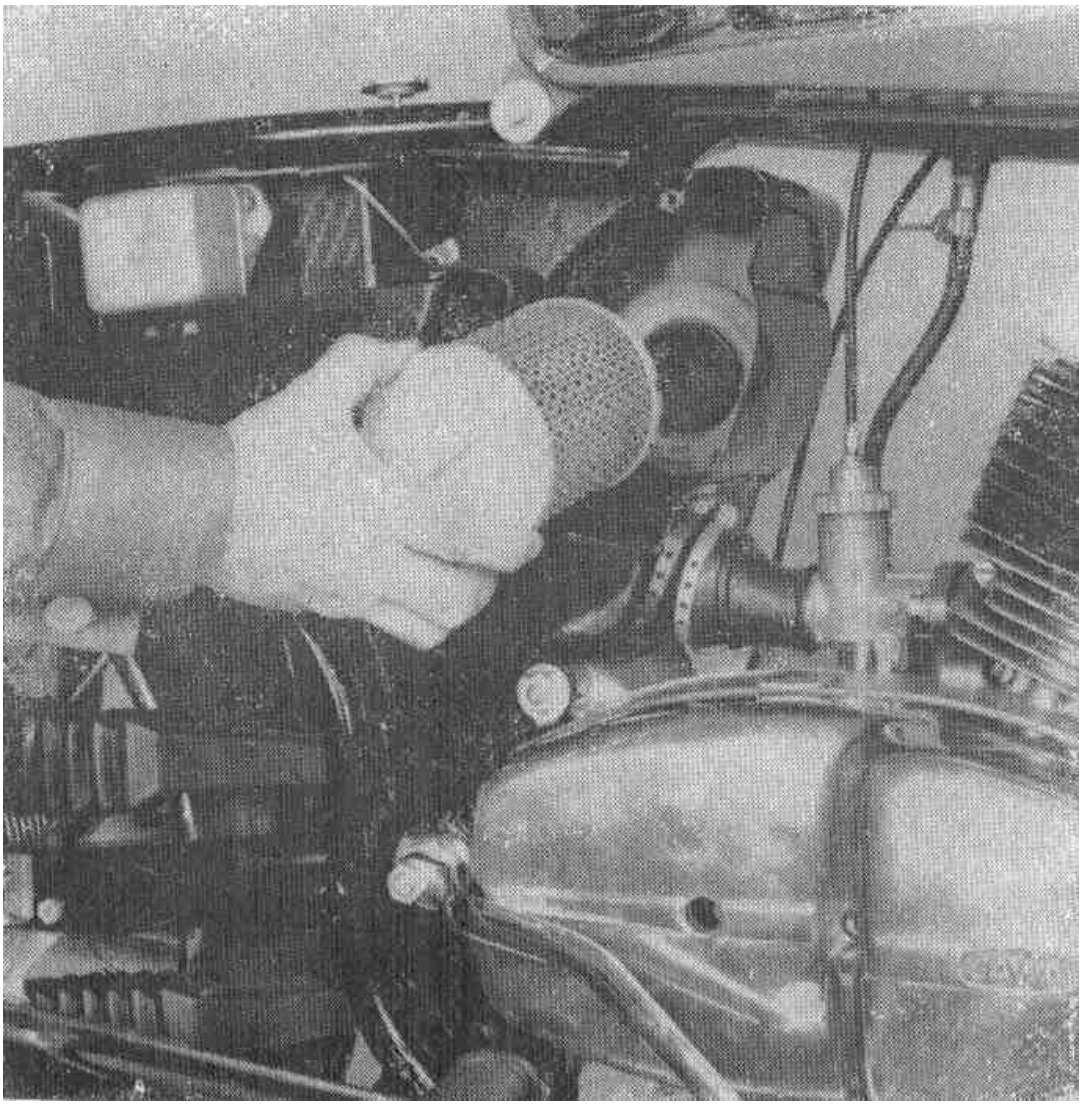


Fig. 23 – Removal of intake silencer body

Clean the micromesh filter after every 2,500 kilometres (1,550 miles) by knocking out or, preferably, blowing out the trapped dirt. When blowing out the dirt by compressed air, proceed from the centre of filter element. **It is not permitted to wash the micromesh filter or moisten it with oil and the like.** Before reinstalling the clean element, make sure that its face is not damaged and that it bears properly against the inside bearing area.

Replace the micromesh filter after having travelled 10,000 to 15,000 kilometres (6,000 to 9,500 miles), according to the riding conditions. When driving in dust-laden envionments, clean the micromesh filter and the inside of the intake silencer body at shorter intervals.

Important! A clogged micromesh filter is the cause of high fuel consumption, backfiring, and a substantial loss of power.

When reinstalling the cover on machines with a noise of 84 decibels, do not remove the limiting insert at the point of air intake.

Remove the seat and the fuel tank and lift away the plastic sealing cover preventing the ingress of dirt into the compartment under the seat.

Using a tubular spanner (10), remove the bolt fastening the intake silencer body to the frame, tilt the body forward, and disengage it carefully from the frame.

When refitting the intake silencer body, do not omit to fit the rubber connecting sleeve to the carburtettor throat and the sealing cover under the seat.

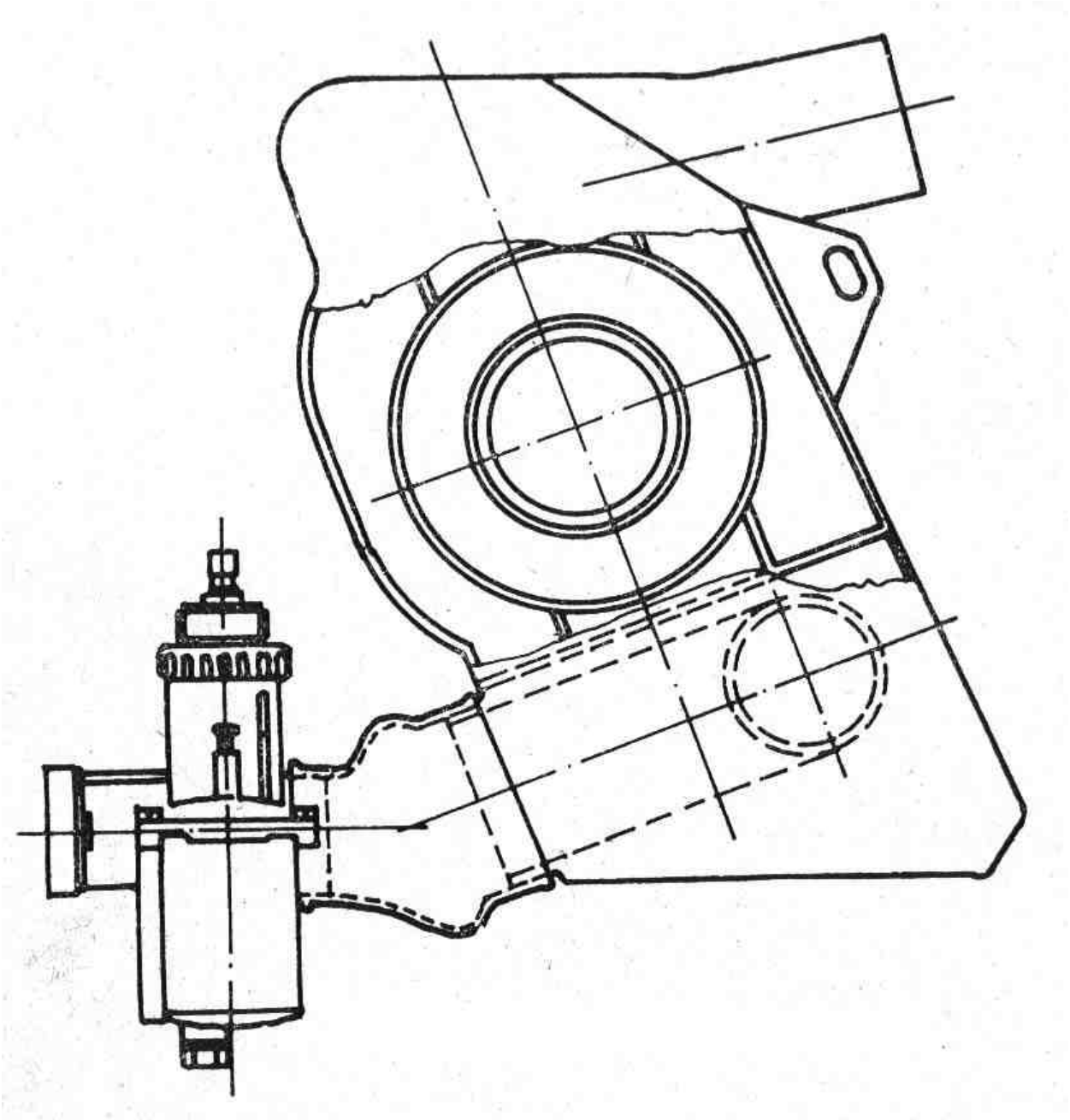


Fig. 24 – Sectional view of intake silencer

10. MAINTENANCE OF ELECTRICAL EQUIPMENT

Inspect the cables occasionally and replace those with a damaged insulation.

From time to time, clean the sparking plug, scrape off carefully the carbon deposits, and, if necessary, adjust the electrode gap to 0.6 – 0.7 mm (on PAL sparking plugs) by bending the electrode on the sparking plug body. It is advisable to replace the sparking pug with a new one after having covered 15,000 kilometres (9,500 miles).

The fuse is in a bakelite case in the compartment under the seat. As its replacement, use only a 15 ampere fuse (see Fig. 25).

Stop-switch. To adjust the stop-switch common to both the front and the rear brake proceeds as follows:

1) Remove the cotter pin fastening the forked end piece of the bowden cable to the rear brake relay lever.
2) By displacing the forked end piece find the position, in which the stop-switch closes at the beginning of depressing the front brake lever or the brake pedal and in which it can be relied upon to return to its switched-off (open) condition.
3) Secure the forked end piece in the adjusted position by reinstalling the cotter pin.

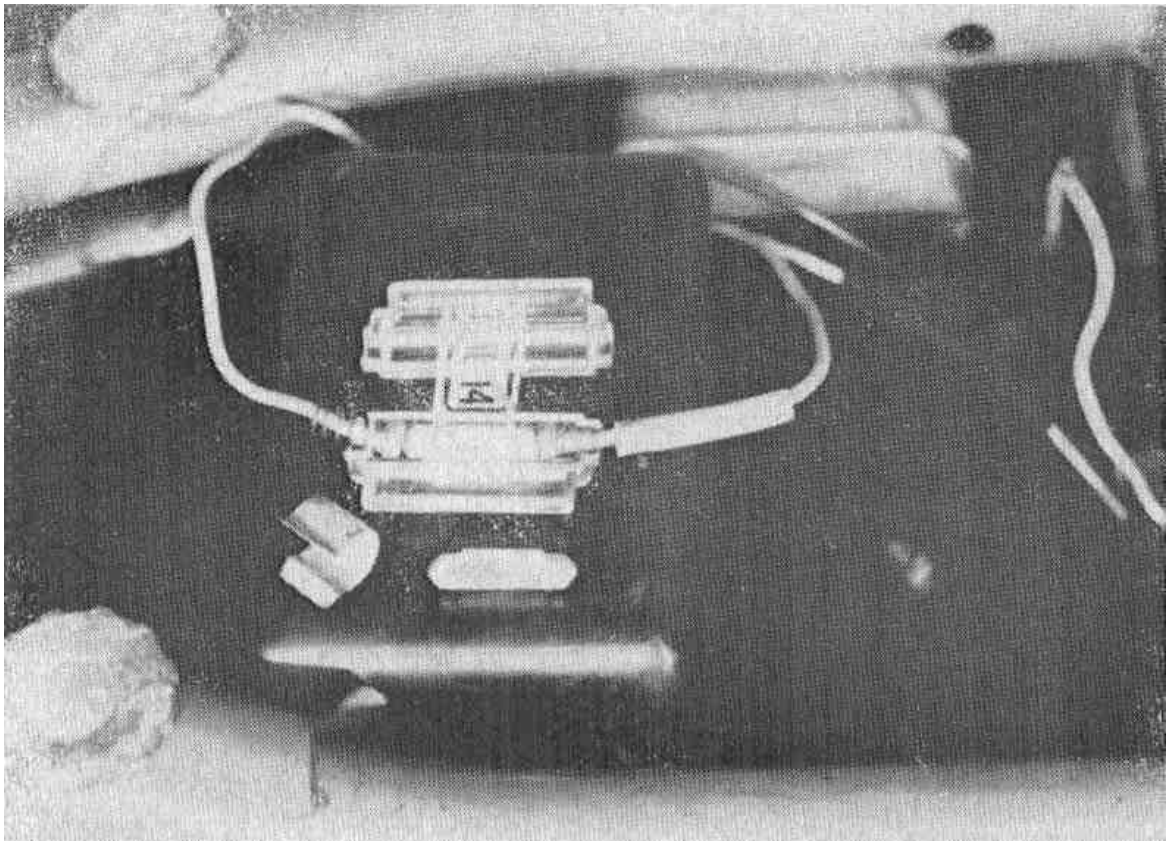


Fig. 25 – Replacement of fuse

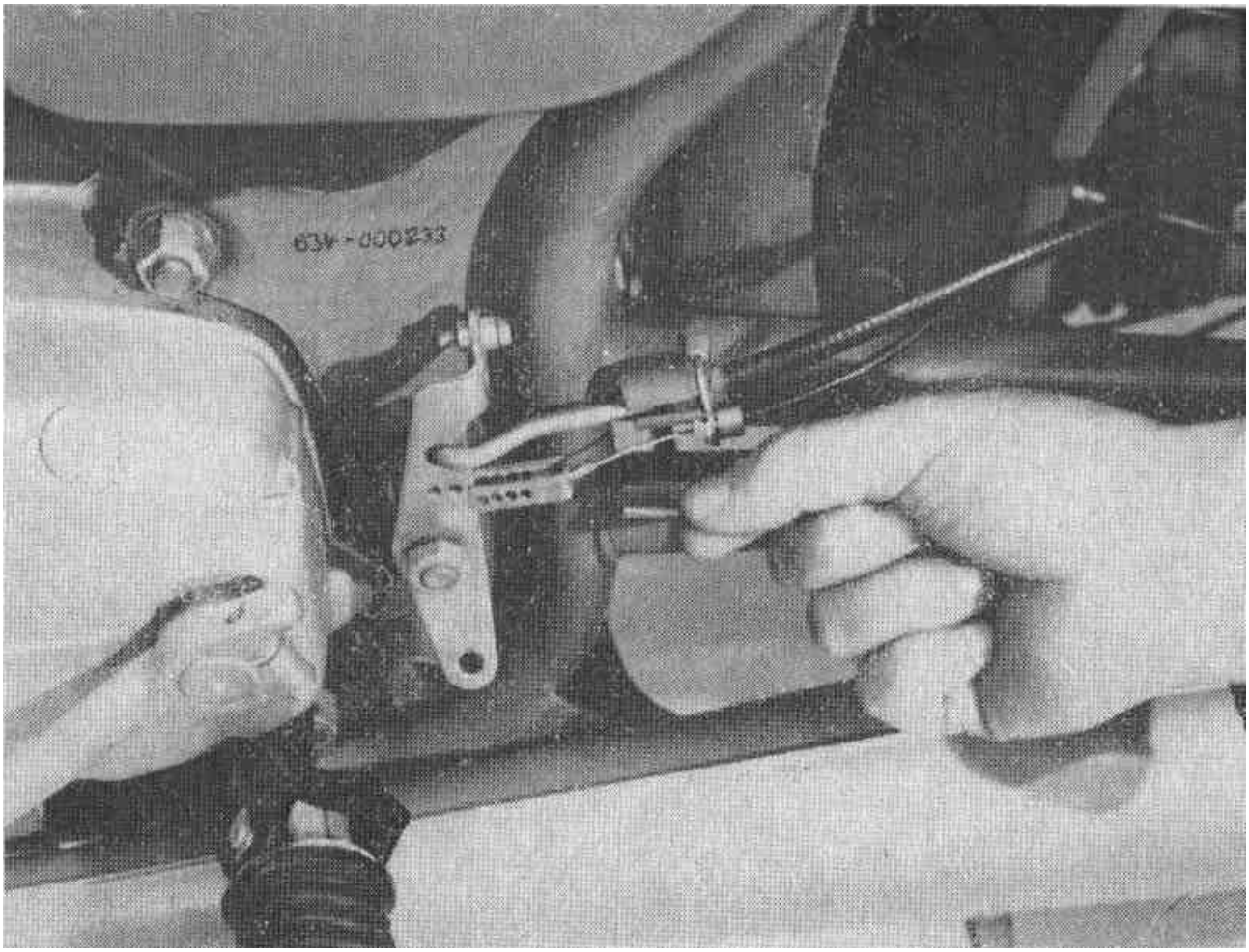


Fig. 26 – Stop-switch replacement

Headlamp adjustment. Adjust the correct distance at which the dipped beam has to light the roadway by moving the entire headlamp up or down after having slackened both side screws holding the headlamp in position. The dipped beam must be light a stretch of about 25 metres with the driver riding alone.

The circuit breaker of flashing direction indicators – is mounted on the back side of the head light housing.

Advance adjustment. A correct ignition advance adjustment is rather a difficult job without special measuring aids, and therefore, it is advisable to have it carried out in a specialized repair shop. You can adjust the advance with a lesser accuracy yourself if you adhere to the following instructions.

First of all, check the fastening bolts of the dynamo stator for correct tightening. Invariable, first adjust the advance of the right-hand cylinder using the top contact breaker, and then of the left-hand cylinder, using the bottom contact breaker.

a) Screw out the sparking plugs and insert a millimetre scale into the hole for the right-hand plug. If you have no such scale, use a suitable rod and take care that it does not slip into the cylinder when the piston is in its BDC (Fig. 27). Rotate the crankshaft using a spanner No. 10 fitted to the head of the dynamo rotor fastening

Bolt to find the piston TDC. Draw an index line on the rod marking this position. Take out the rod and draw another line at the specified distance (see point c) above the first index line.

b) With the piston in its TDC check the contact points for contamination and, if necessary, smooth their contact faces with a fine file so that they mate perfectly when the contacts are closed. In this position, measure the gap between the contact breaker points with the feeler gauge (see Fig. 28) included in the tool kit. The thinner blade of the feeler gauge (0.3 mm) must be a slide-fit, the thicker blade (0.4 mm) must not pass between the points. If this is not the case, adjust the gap after releasing the fixed contact. Retighten the contact (screw) after adjustment.

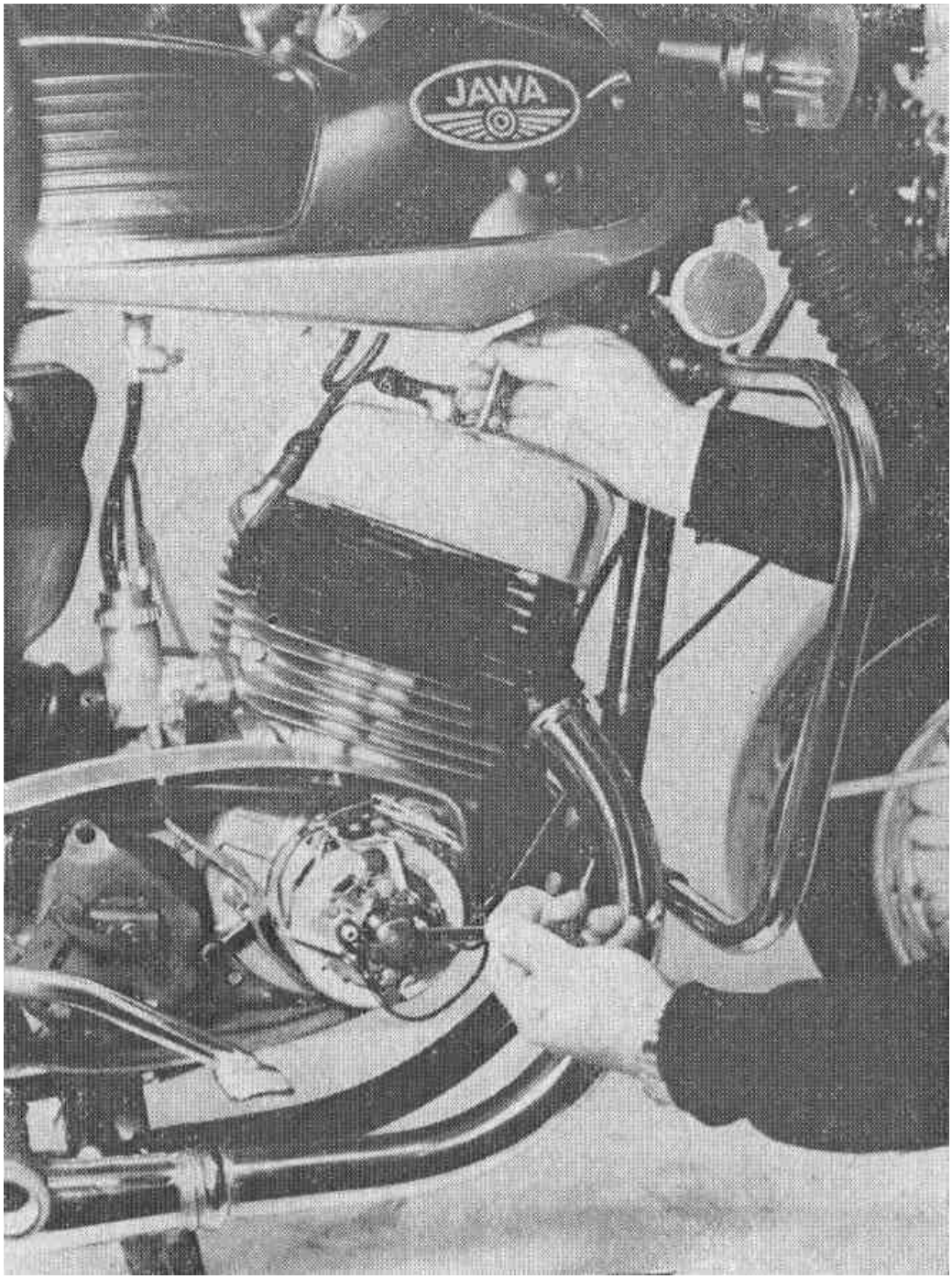


Fig. 27 – Advance adjustment

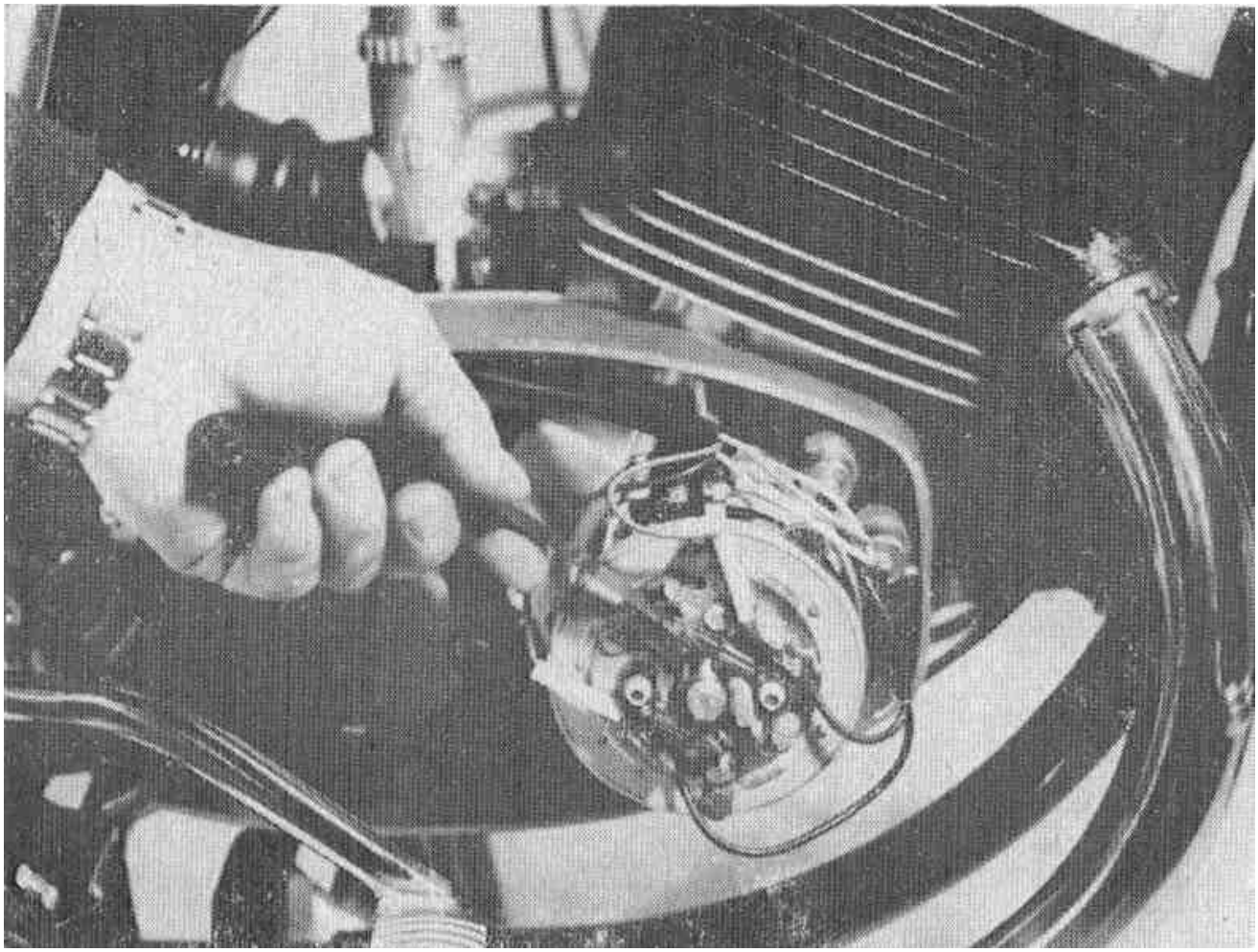


Fig. 28 – Measuring of contact breaker point gap

c) Ascertain, whether the piston is still in its TDC and lower the piston by the specified advance value, i.e., 2.7 to 3.2 mm, by rotating the crankshaft anticlockwise (in opposite direction).
d) In this new position, check again the contact breaker point gap. Its maximum clearance may be 0.05 mm. For measuring, use a thin steel foil or a cigarette paper which must just pass between the contact points.
e) If the clearance between the contact points is smaller or larger, release the two screws fastening the contact breaker back plate (A) to the stator, and rotate the plate clockwise (to decrease the clearance) or anticlockwise (to increase the clearance) till the distance of 0.05 mm is obtained. Then retighten the screws.
f) Repeat this procedure to adjust the advance of the other (left-hand) cylinder with the only difference that it is not the contact breaker back plate which is to be turned, but only the plate of the bottom contact breaker (B).

Dynamo maintenance. After the first 500 to 1,000 kilometres (320 – 625 miles) check and adjust, if necessary, the contact breaker point gap and the ignition advance (see the paragraph "Advance adjustment"). After 10,000 kilometres (6,000 miles), check the carbon brushes for wear. If they are less than 8 mm long, replace them.

Remove the brush spring retainer carefully so as not to break off the bakelite protrusion of the brush holder. Dirty brushes cannot move in the guides. Remove them and clean them with petrol. Do not use a file on the friction surfaces of the brushes. Be sure to fit them back in their original position. Clean the collector with a rag dipped in petrol. Rely on a specialized repair shop for major repairs of the dynamo.

Note:

The procedure of the advance adjustment can also be reversed. With the piston in its TDC, insert a cigarette paper between the contact points opened to the specified gap of 0.3 to 0.4 mm. Now rotate the crankshaft anticlockwise till the contacts close, and then rotate it slowly and carefully clockwise till the cigarette paper can be just slid out from between the contact points. At the moment the contact breaker points start opening (0.05 mm clearance), mark the respective position of the piston on the rod. Then continue to rotate the crankshaft clockwise till the piston attains its TDC position, and mark again this position on the rod. The distance between the index lines on the rod should equal the specified ignition advance. If the advance is larger or smaller, proceed as per the paragraph e).

When adjusting the advance using the former or the latter method, start invariably with the right-hand cylinder.

A correctly set advance can be disturbed only by a change of the contact breaker point gap during the operation of the machine and it is therefore sufficient to check this gap with the feeler gauge from time to time. A new setting is required only after the replacement of the rocker or fixed contacts or after a slackening or removal of the dynamo.

STORAGE BATTERY (Fig. 29)

The servicing of the storage battery is basically very simple but very important for its correct function and long service life. Therefore, adhere strictly to the following basic rules:

It is not permitted to use the commercial, so called industrial sulphuric acid but only a chemically pure acid or a commercial brand of electrolyte for lead batteries, diluted with distilled water to a specific density of 1.26 (or 1.23) in the tropics. Non-compliance with this requirement results in an excessive formation of gases, boiling of the electrolyte, and shortening of the battery service life.
The electrolyte should not reach higher than to the first cross partition above the battery plates (see Fig. 29). If the electrolyte level is higher, it will send the evolving vapours and gases into the overflow hose and clear of the vehicle, but only under the condition that the overflow hose is correct connected.

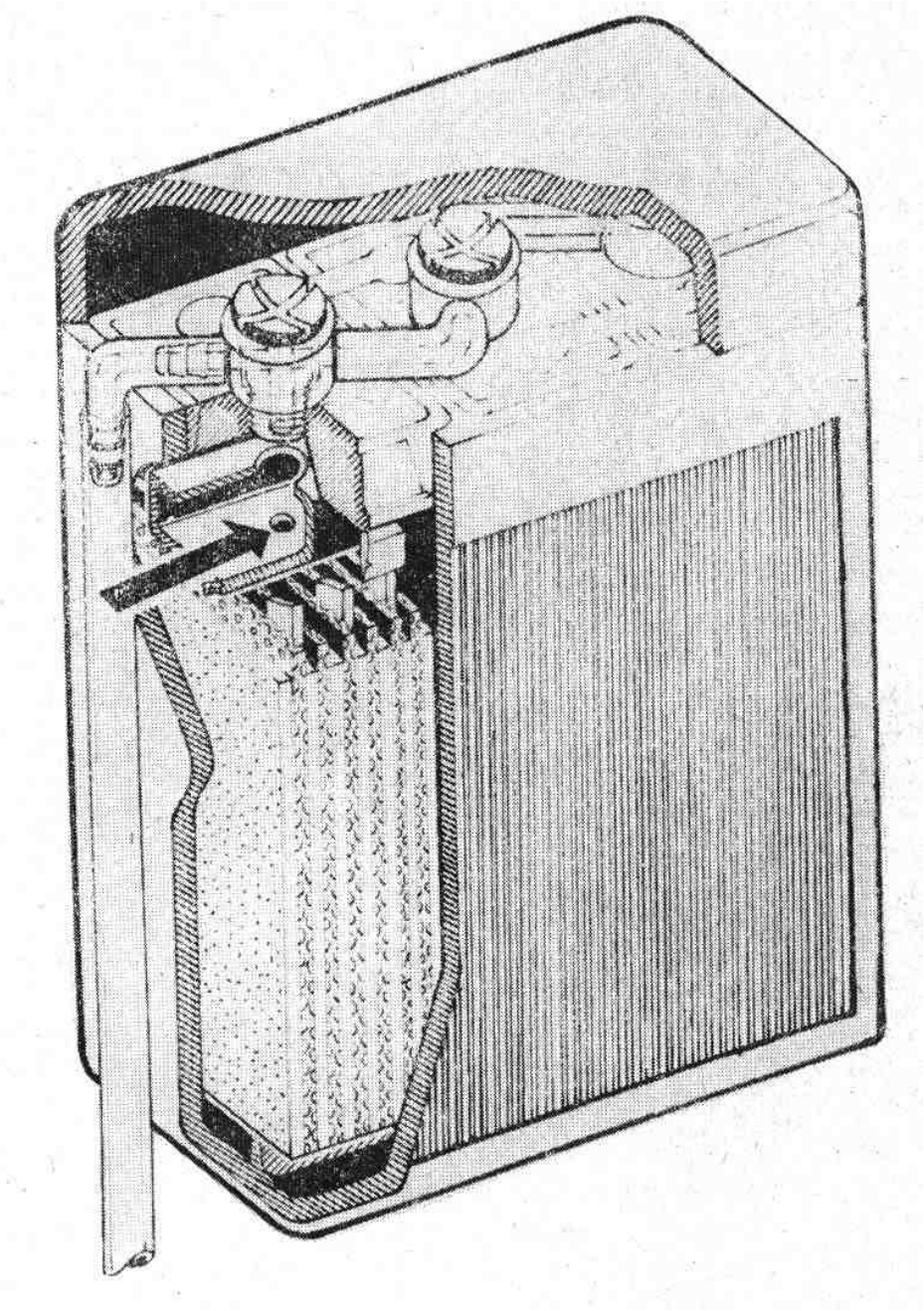


Fig. 29 – Sectional view of storage battery

However, there still persists the danger of the chromium plated parts being damaged by the spilled over electrolyte. Take care that the overflow hose is not damaged or clogged and that its end is positioned so that the escaping electrolyte vapours cannot damage any parts of the machine. A defective degassing mechanism entails a destruction of machine parts which come into contact with the electrolyte or its vapours.

Putting a new storage battery into service

1. Unscrew the plugs and remove the degassing mechanism from the storage battery. Fill the three battery cells with chemically pure sulphuric acid (never of an industrial brand) diluted with distilled water to obtain a specific of 1.26 (1.23 in tropical regions) and take care not to surpass the level of the first cross partition above the plates (see Fig. 29).

2. Leave the battery undisturbed for three to four hours, and top up the electrolyte to the level specified in point 1.

3. Connect the battery to a d.c. current source with a voltage of about 8 V (connect the battery positive pole to the positive pole of the current source).

4. Charge the battery with a current of 0.8 A for about 50 hours till the battery voltage (with the charging source switched on) attain 7.8 to 8.1 V (i.e. 2.63 to 2.7 per each cell) and does not change for another 2 hours of charging. Having completed the charging, adjust the electrolyte density to 1.26 and its correct level by adding distilled water.

5. Attach the degassing mechanism to the battery, tighten the plugs thoroughly, wipe the battery clean, and **remove** the blanking plug on the respective side of the degassing mechanism. Install the battery into the machine and connect its **negative pole to the machine frame.** Slip the overflow hose on to the degassing tube from which the blanking plug has been removed. Make sure that the other degassing tube is properly plugged with the blanking plug.

6. **The battery must not be left filled but uncharged for more than 10 hours** as this would result in a destruction of the plates.

7. The specific density of a fully charged battery must be 1.26, i.e., 30 Be'. The density of the electrolyte and its frost resistance vary in dependence on the charged condition of the battery in the following way:

Charged condition	Density	Freezing point
Fully charged	1.26	- 50 C
Discharged by ¼	1.24	- 40 C
Discharged by ½	1.21	- 30 C
Discharged by ¾	1.18	- 20 C
Fully discharged	1.14	- 10 C

The function and service life of the storage battery depend fully on the observance of these basic rules.

Battery maintenance

1. Keep the battery and its terminals clean and dry. Coat lightly the connecting screws and cable lugs with grease to protect them against the detrimental effects of the sulphuric acid.

2. Check the electrolyte level at least once in a fortnight (or every 1,000 km). If necessary, add distilled water to obtain the specified level (see Fig. 29).

3. The voltage of each cell and the electrolyte density are decisive factors when checking the charge condition of the battery.

4. A storage battery set out of operation (for example in winter) must be fully charged every two months as it is liable to self-discharging resulting in chemical destruction. When installing the battery on the machine, never omit to connect its negative pole to the machine frame. An incorrect connection is bound to result in damage to the voltage regulator and even the dynamo.

12. DECARBONIZING

Remove the screw M 5 fastening the exhaust silencer core in the exhaust pipe jacket (Fig. 20).

Prepare a fixture of a length of 5 to 6 mm diameter steel wire according to Fig. 30, slip it into central passage of the core so that it engages into one of the holes in the wall of the core; and pull or shake the core out. Remove the carbon deposits by burning them in an open flame or the flame of a gas welder. Clean the core by knocking off the burnt deposits or use a wire brush. Before refitting the clean cores, it is advisable to place the machine on an inclined surface so that the exhaust silencer ends point downwards, and start the engine. At high engine speed, carbon deposits remaining in the exhausts silencer jacket will be removed. After every 5,000 to 10,000 kilometres, it is advisable to remove carbon deposits from the cylinder heads and pistons (see Chapter III, Art. 7, 8, and 9). A too thick layer of the burnt fuel residues (carbon deposits) reduce the engine output. Scrape off the carbon deposits carefully from the piston, the cylinder head, and the exhaust ports. Take care not to damage the bore of the cylinders. At the same time remover carbon deposits from the piston ring grooves (using preferably an old broken piston ring). When scraping clean the pistons, use a clean rage for sealing off the crankcase. Check the piston ring joints correct clearance in the groves (not exceeding 0.8 mm) before reassembly. If this clearance is larger, fit new piston rings.

The piston rings must be fitted in their original grooves and in the same position as before removal. (Their bright bottom sealing face must be turned downwards.) Before assembling the decarbonized parts, wash them in pure petrol. It is advisable to renew the gaskets under the cylinders and cylinder heads.

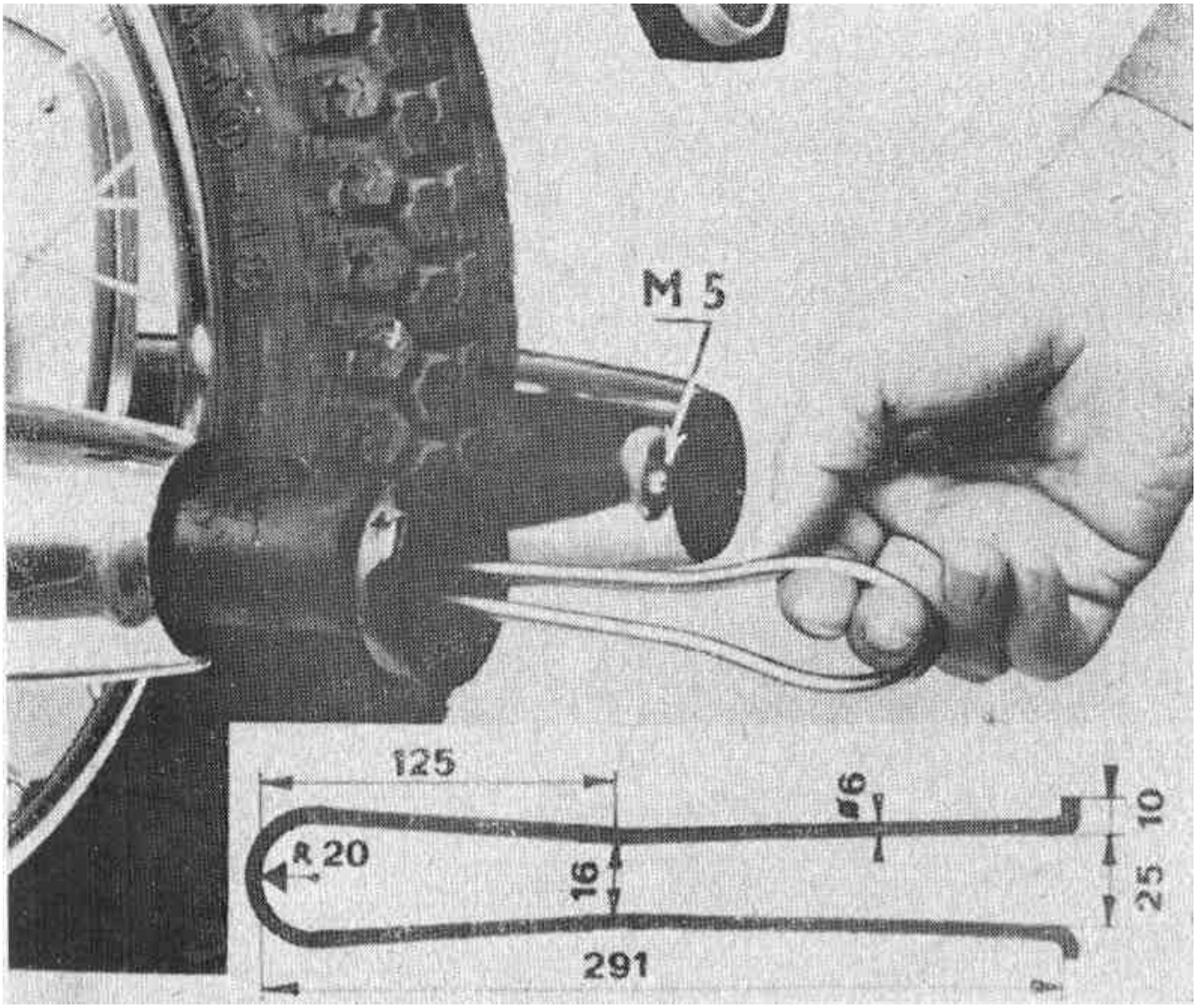


Fig. 30 – Removal of exhaust silencer core

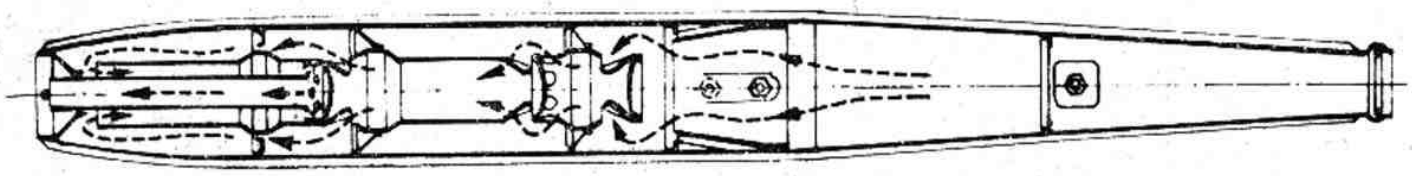


Fig. 31 – Sectional view of exhaust silencer

13. STABILING OF MOTOR CYCLE IN WINTER

1. If you intend to use the motor cycle at irregular intervals in winter, stable it in a dry and, if possible, heated garage. Put the motor cycle in the garage with a well-heated engine so as to prevent condensation of water vapour on the interior parts of the engine and their corrosion.

2. If you do not intend to use the motor cycle for a prolonged period, take the following measures:
    a) Clean the machine. When washing it, take care that water does not get into the intake silencer and air cleaner. When hosing it down, avoid spraying water into the exhaust silencers or direct into the carburettor from which it could get into the crankcase due to untightness of the connection between the carburettor and the intake silencer.
    b) After the machine is dried, start the engine, warm it up to its operating temperature, and remove the connection from the carburettor throat. Fill an oil can piston syringe with about 1/8 litre preserving oil, suitable for the preservation of ball bearing and the like. You can also use engine oil of the Shell 2T, Mobil TT, or Castrol Two stroke brand. With the engine running at slightly raised r.p.m. inject small doses of the oil into the carburettor throat. The raised r.p.m. will prevent the sparking plugs from oiling. A heavy exhaust emission signals a well lubricated and preserved engine. After having injected the last does, shut off the fuel supply, switch off the ignition and tighten the carburettor throat connection.
    c) Coat the varnished parts of the machine with a suitable preserving preparation (preserving oils, greases, varnishes, etc.).
    d) Take out the storage battery and store it separately in a dry and warm room. Check it periodically and charge and service it as described in the Article “Battery maintenance.”

Important!

After the machine has been stable and prepared for the winter in the manner described in paragraph 1. or 2., do not interfere with the engine in any way, especially do not start it for a short period as this would result in water vapour settling on the inside of the engine and rusting of the crankshaft bearings.

III. DISMANTILING AND ASSEMBLING JOBS REQUIRING NO SPECIAL TOOLS

1. FRONT WHEEL REMOVAL

Detach the bowden cable from the brake cam lever. Remove the cotter pin, screw off the wheel spindle nut, and lift away the spring washer. Loosen the clamping bolt on the right-hand slider end, push out the spindle and remove the wheel.

Before refitting the wheel, clean the spindle and coat it sparingly with grease. After threading it into the wheel, screw down the wheel spindle nut. Push down the front fork several times and then tighten the right-hand slider and with the bolt (Fig. 32). Following the instructions, attach the bowden cable and adjust the hand brake.

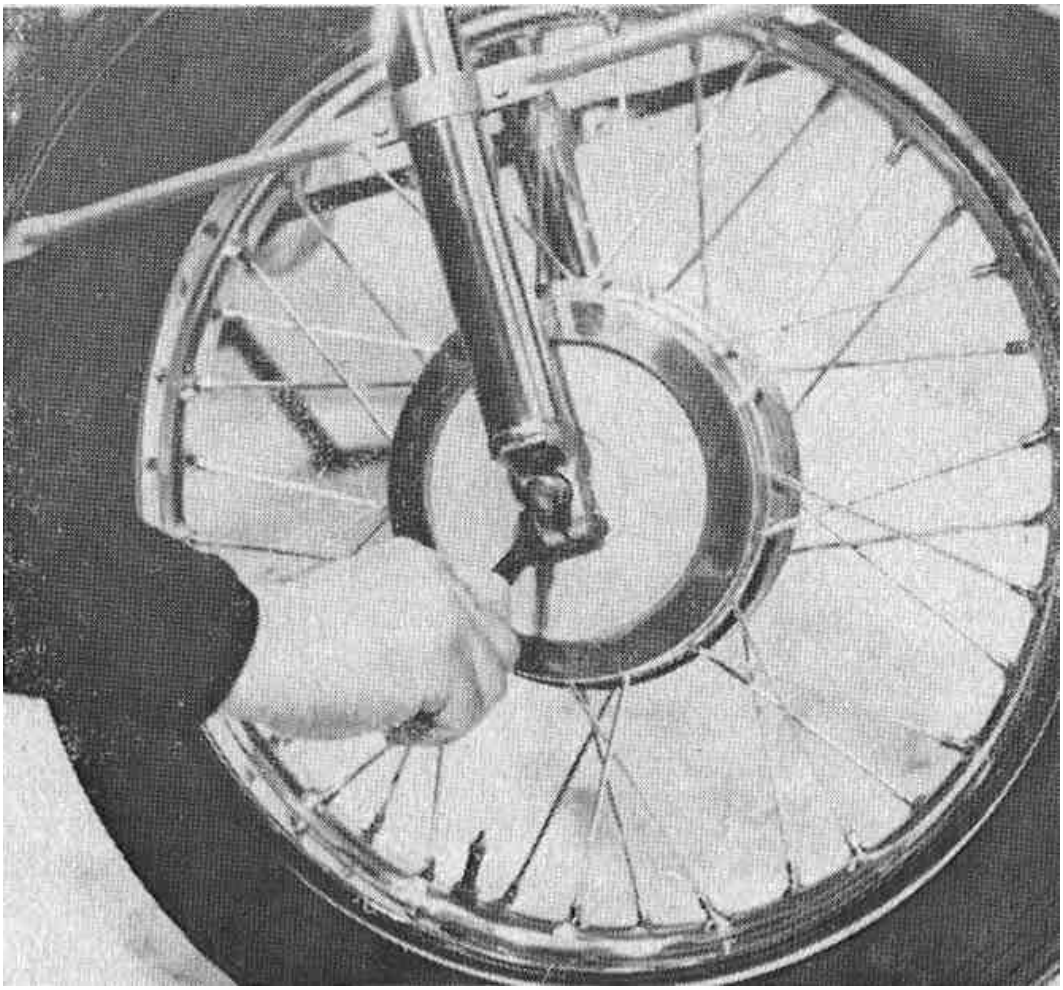


Fig. 32 – Front wheel removal

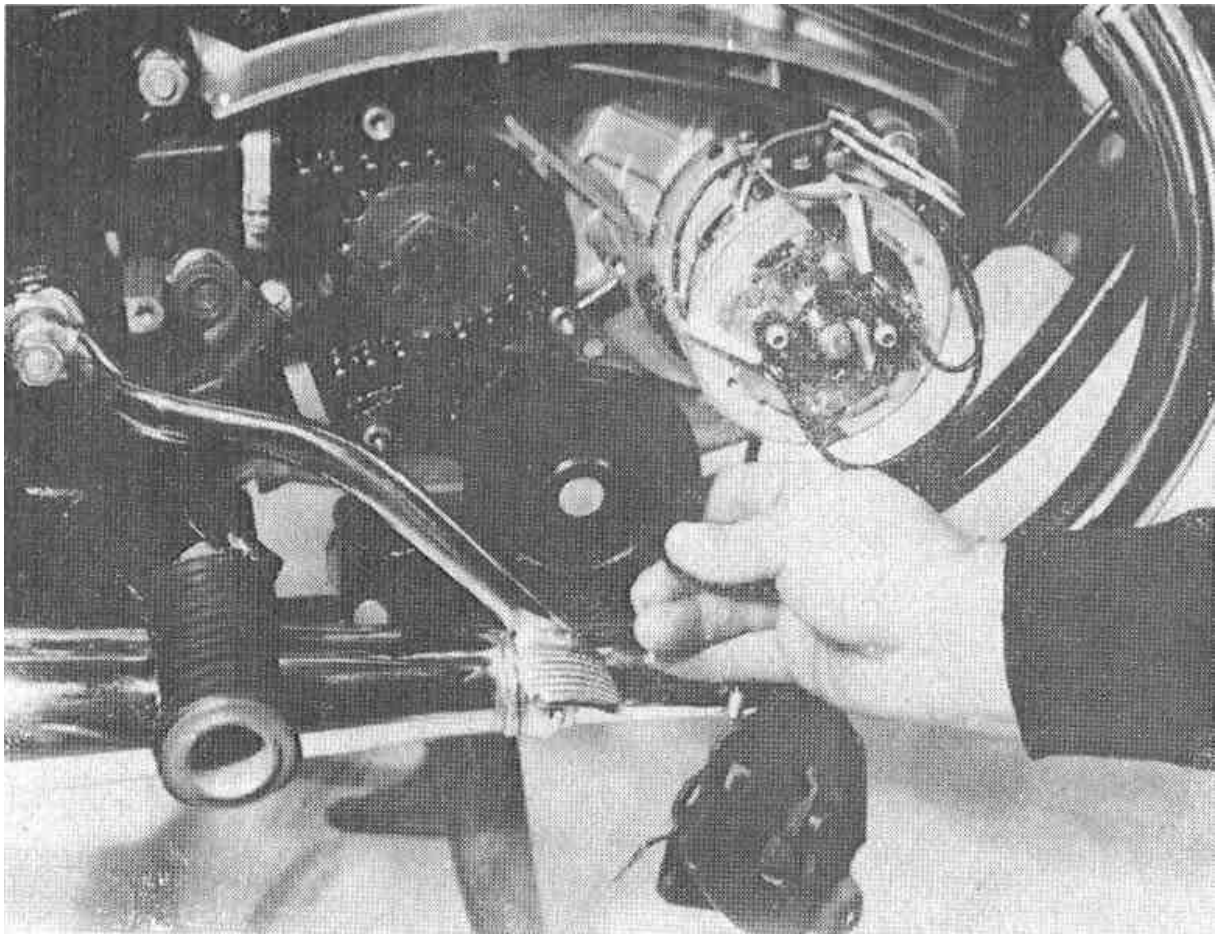


Fig. 33 – Removal of chaincase front part

2. REAR WHEEL REMOVAL

Unscrew the wing nut of the rear brake bowden cable and the wheel spindle nut, lift away the spring washer, and push out the spindle in the right-hand direction. On the left-hand side of the machine, remove the catch of the brake reaction, the spacer, and push out the wheel from the carrier. Tilt the machine to the right and remove the wheel. Do not omit to clean the wheel spindle and to coat it sparingly with grease. Check the chain slack adjustment, tighten the nuts of the sprocket and the wheel spindle, and the complete the reassembly by connecting and adjusting the rear brake.

3. REMOVAL OF SECONDARY CHAINCASE AND CHAIN WHEEL

a) Remove the rear wheel and the right-hand crankcase cover. Remove the bracket of the clutch release mechanism and leave it suspended on the clutch cable. Remove the screws of the front clamps of the rubber sleeves and lift away the front part of the chaincase next to the gearbox (see Fig. 33).
b) Rotate the carrier of the chain wheel till the chain end link appears in the vicinity of the secondary sprocket, and disconnect the end link.

c) Using the 32 mm spanner, unscrew the nut of the rear chain wheel and lift away the entire chaincase rear half including the rubber sleeves and chain.
d) Remove the screws of the rear clamps and pull the rubber sleeves off the two-part chaincase. After having unscrewed the two M 5 nuts, separate both halves of the chaincase and lift away the chain wheel with the chain. Clean thoroughly the chain and the chaincase parts (Fig. 33 and 34).

4. INSTALLATION OF SECONDARY CHAIN

a) Insert the chain wheel into the out half of the rear chaincase and slip the chain over the chain wheel, put on the inner half of the chaincase and both the two halves together with M 5 bolts.

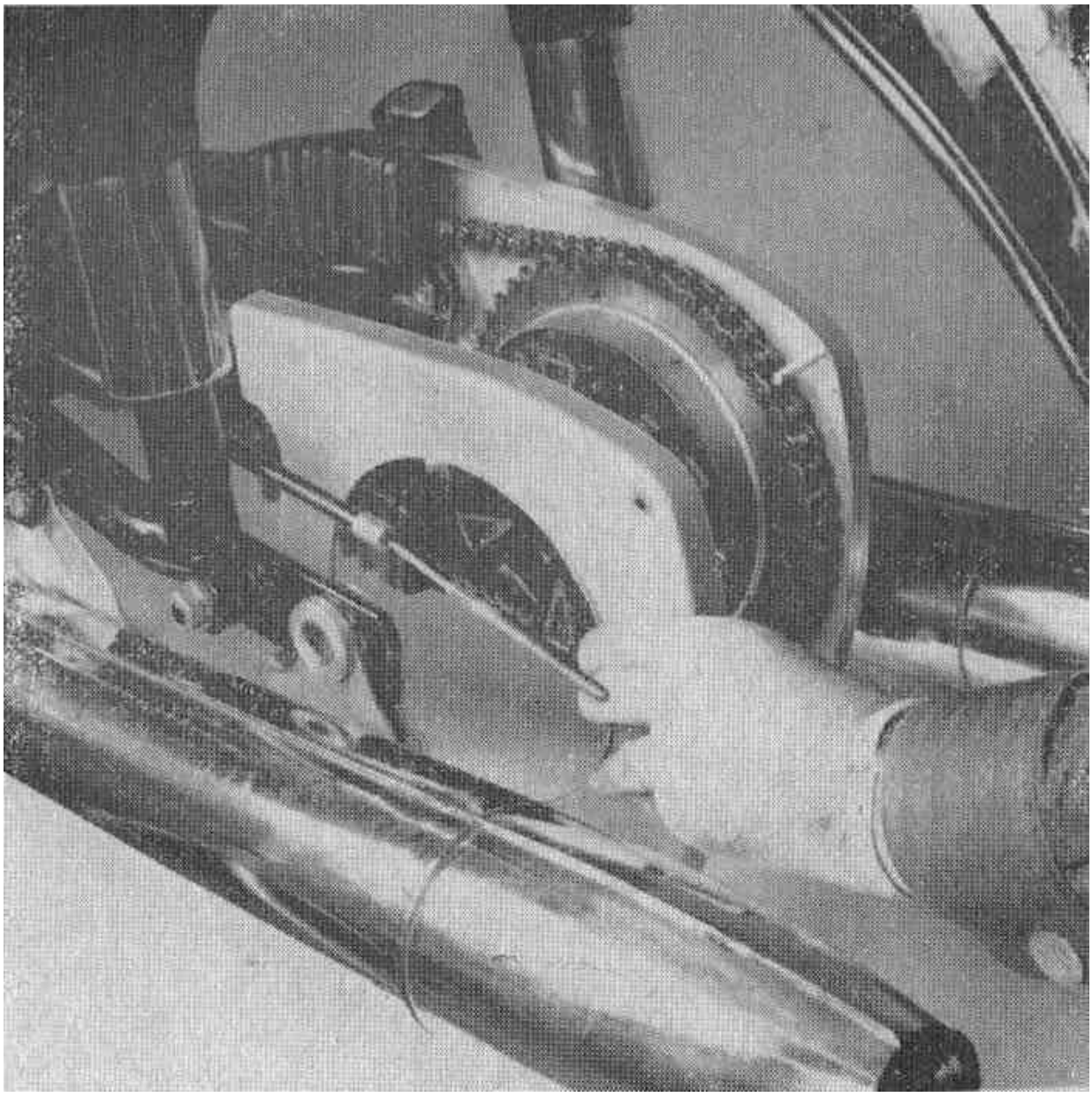


Fig. 34 – Removal of chaincase and chain

b) Use a length of thick wire with a hooked end to pull the chain through both rubber sleeves and slip the ends of the sleeves over the mounting of the two-part rear chaincase securing them with the clamps.

c) Place the top end of the chain with the end link over the secondary sprocket next to the gearbox. Fit the chain tensioner on the leg of the rear swinging fork while slipping the chain wheel hub into position. Screw the 32 mm nut down on to the chain wheel hub. Slacken the chain tensioner so that the chain can be easily connected in its bottom part next to the secondary sprocket.

Caution!
The cut-out in the spring clip of the chain end link must always point in the direction of the chain movement.

d) Before closing the cover of the secondary sprocket, lubricate the chain thoroughly with grease and pack the rubber sleeves with grease (about 70 cc into each sleeve). After having fitted the cover, slip on the ends of both rubber sleeves and secure them with clamps. Reinstall the bracket of the clutch release mechanism and check the clutch for correct adjustment (see Clutch Adjustment).

e) Install the rear wheel and take up the chain slack as per Art. "Chain tensioning." Then adjust the rear brake and the stop-light switch, if necessary.

Replacement, removal and refitting of secondary chain without dismantling of chaincase.

The described procedure is applicable when replacing the chain with a new or reconditioned spare chain of the same length.

a) Loosen the rear spindle nut and the nut of the rear wheel. Slacken the chain tensioners and move the rear wheel forward as far as it will go.

b) Remove the screw of the rear top clamp of the rubber sleeve and pull the sleeve off the mounting of the rear chaincase.

c) Rotate the rear wheel till the chain end link appears in the place of the removed sleeve. To prevent the left-hand end of the chain from falling into the chaincase after the disconnection of the end link, insert a thin screwdriver or rod beforehand between the chain rollers near the end link. Depress the rubber sleeve (bottom) and secure the right-hand end of the chain in the same manner (Fig. 35).

d) Separate the end link and use it to connect the end of the spare guide chain or the new chain to the left-hand end of the original chain.

e) Remove the screwdriver or rod securing the left-hand end of the original chain, lift the rear wheel and by pulling the right-hand chain and let the new chain roll in to position on both the secondary sprocket and the chain wheel. Proceed carefully not to scratch the varnished or chromium plated parts.

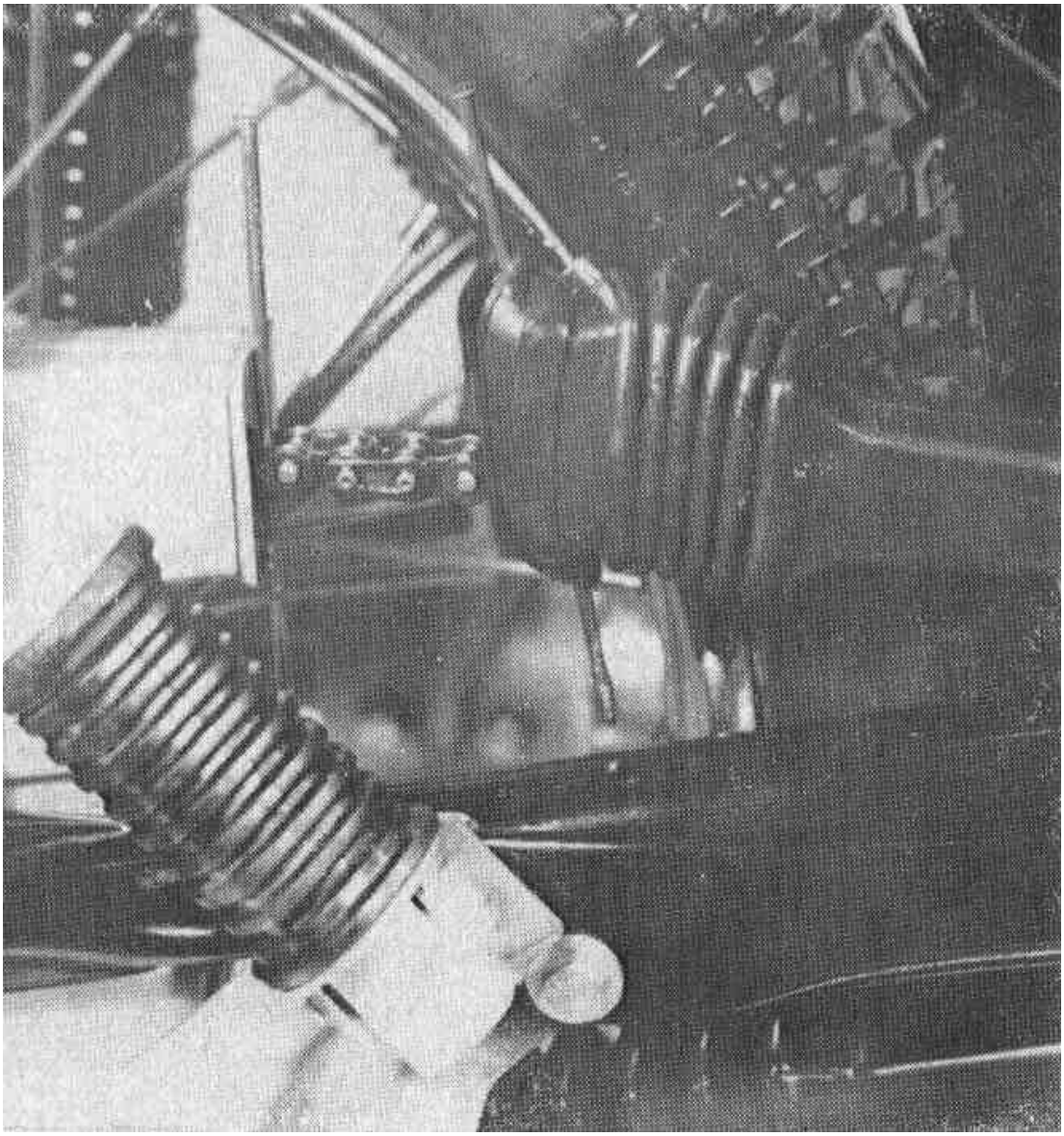


Fig. 35 – Replacement of secondary chain

Before disconnecting again the end link, secure both ends of the installed chain in the manner as per point c), and disconnect and remove the original chain. Having thus replace the chain with a new one, lock it using the new link, and proceed as per point f). If you have removed the chain only to clean it, reinstall it after the maintenance procedure in the manner described using the guide chain.

Caution! The cut-out of the spring clip of the end link must always point in the direction of the chain movement.

f) Slip the end of the top rubber sleeve over the mounting and secure the sleeve with the clamp. Take up the chin slack in the manner described in the Article "Chain tensioning."

g) Adjust the road brake and the stop-light switch, if necessary.

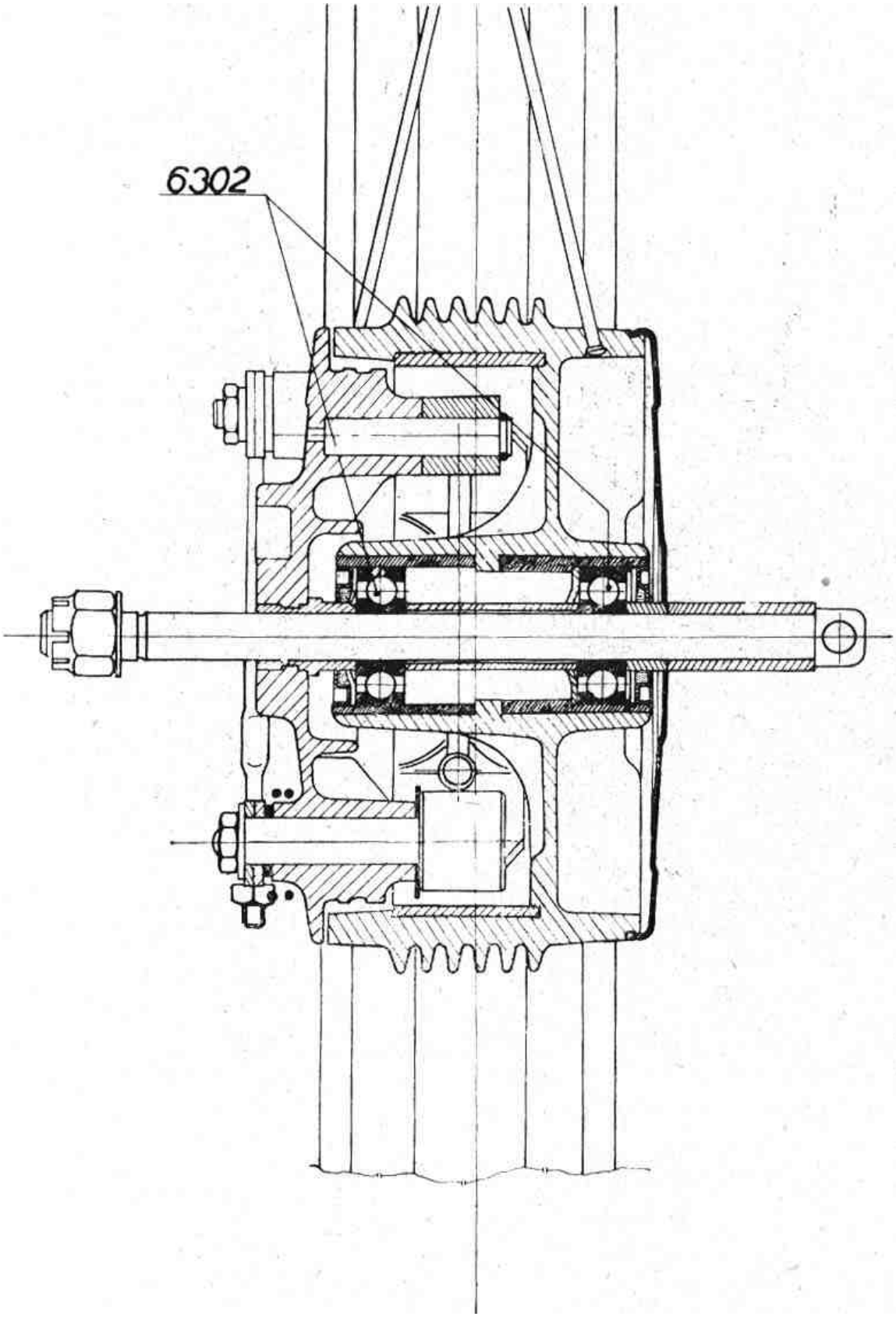


Fig. 36 – Sectional view of front wheel

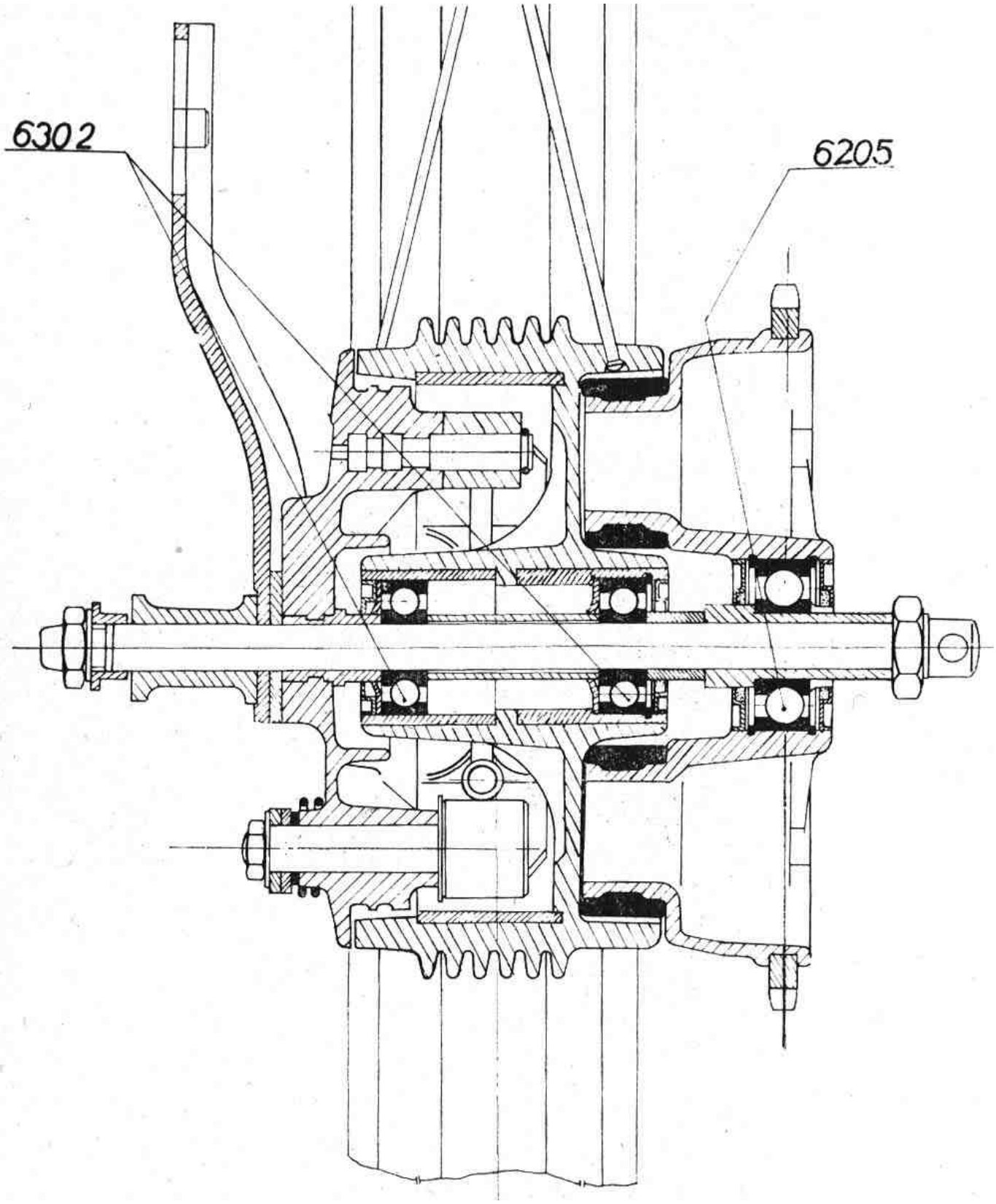


Fig. 37 – Sectional view of rear wheel

5. REPLACEMENT OF CHAIN WHEEL BEARING (Fig. 37)

After having removed the rear wheel, screw off the chain wheel nut using the 32 mm spanner. Lift away the chain wheel and the chaincase from the swinging for leg. Remove the clamps from the rear ends of the rubber sleeves and screw out the two M 5 bolts to separate both halves of the chaincase. Lift away the chain wheel without disconnecting the chain. Press or tap our carefully the spacer bush and remove the spacer, the dust cup and the bearing retaining ring from the right-hand side of the chain wheel. Using a tube, drive out the bearing from the right-hand side of the carrier. Now, drive in the new bearing with the aid of a pipe of a diameter equaling approximately the diameter of the outer bearing race. Never drive in the bearing applying the tube to the inner race as this would result in damage to the bearing. Before installing the dust cups, lubricate the bearing with the recommended grease.

6. REPLACEMENT OF WHEEL BALL BEARINGS
(Fig. 36, 37)

Lift away the brake backing plate with the shoe brakes and remove carefully the dust cups from both sides of the wheel hub. After having removed the right-hand drum cover plate (of the front wheel), withdraw the bearing retainer and, proceeding from the opposite side, drive in the other bearing with an auxiliary tube till the released bearing drops out. Take out the space tube and the pressed bearing shim. Using the auxiliary tube, drive out the remaining bearing in the direction of the other side of the hub.

When reassembling the bearings, proceed as follows:

First insert the pressed shim from the side of the hub with the bearing secured in position by the retainer so that its dished side is turned inside the hub. Use the auxiliary tube to drive in the new bearing (applying in to the bearing outer race) till it bears against the shim, and secure it with the shim. Insert the space tube from the other side of the brake drum so that it rests against the centre of the pressed shim and drive in the other bearing. The bearings and, to a certain degree also the hub, must be packed with grease – Castrolease LH2, Shell Alvania 2, or Mobilgrease MP.

7. REMOVAL OF CYLINDER HEADS AND BARRELS

Before proceeding to cylinder head removal, first lift away the seat, the fuel tank (see Art. 16), detach the sparking plug cables, and, finally, the exhaust pipes swinging them away so that they cannot get in the way. Screw off the nuts fastening the cylinder heads and lift away the cylinder heads in succession. Actuate the kickstarter lever to bring

the piston in to its BDC position and remove the cylinder barrels carefully so that no foreign matter gets into the engine and so as not to damage the gasket common for both cylinder barrels. Cover the opening of the crankcase. The cylinder heads and barrels should be removed only when removing carbon deposits, replacing the piston rings or the gaskets.

8. REPLACEMENT OF PISTON RINGS (Fig. 38)

Important!

In this motor cycle model, the gudgeon pin is not supported in a bronze bush but in a needle roller bearing. Therefore, it is not advisable to handle the pistons if special tools are not available as there is a risk of some of the needle rollers falling into the engine and causing a breakdown likely to result in a road accident. To prevent this happening, have the job done in a specialized repair shop.

Replace the piston rings if the clearance of their joints is in excess of 0.8 mm. The clearance (or piston ring gap) can be ascertained by inserting a removed piston ring into the cylinder barrel top part (about 20 mm below its top edge) and measuring the distance of the ring ends. When replacing the rings, insert new rings successively in the cylinders to check their gap, which should be between 0.2 and 0.3 mm. If there is a slight clearance, adjust it to the recommended value by filing the faces of the rings.

9. ASSEMBLY OF COMPLETE CYLINDERS

Cleanliness of the individual parts is essential when assembling the cylinders. Inspect the gasket under the cylinder barrels and then fit the piston rings in their grooves. Coat with oil the piston right surfaces and the cylinder bores. Locate the piston ring joints in their correct position and install both cylinders proceeding with great care, preferably with somebody observing the correct position of the piston ring joints. Move the pistons to their TDC position and wipe the forced-out surplus oil with a clean rag. Inspect the cylinder head gaskets and replace them, if necessary. Stick the new gaskets with lubricating grease to the contact areas of the cylinder heads to prevent them from falling off during assembly. When installing the cylinder heads, make sure that their mating surfaces fit correctly on to the cylinder barrels. First, tighten lightly and successively all the three nuts of the cylinder head and then tighten fast first front, then the rear, and finally, the side nut. If you have as torque spanner, tighten the nuts with a torque of 2.5 to 3 kgm proceeding in the manner described.

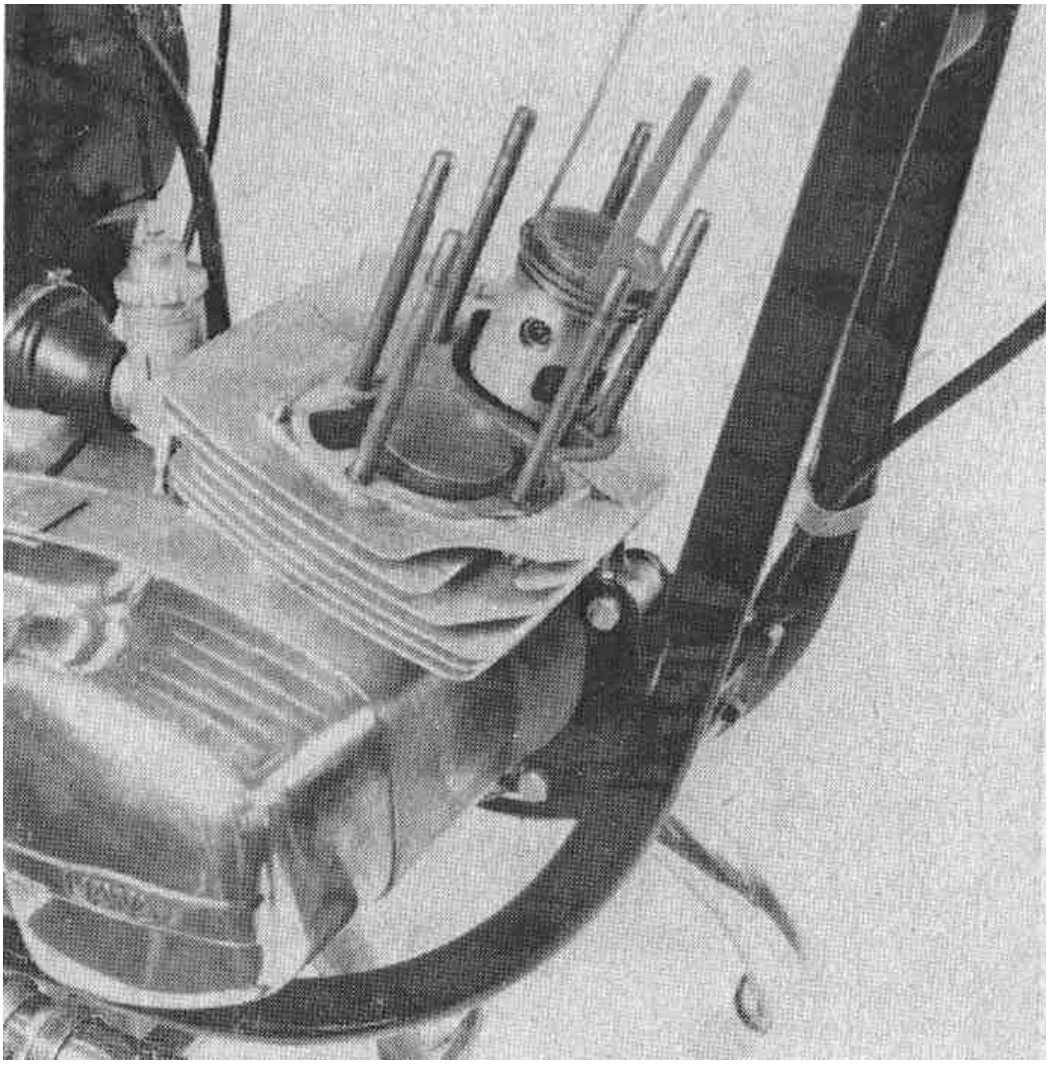


Fig. 38 – Replacement of piston rings

10. CARBURETTOR REMOVAL

a) Detach the fuel supply hose from the tank.

b) Unscrew the nut of the throttle chamber and lift away the throttle valve with the bowden cable and the needle.

c) Detach the rubber connection (sleeve) connecting the carburettor with the intake silencer body.

d) Using a spanner N. 13, screw off the nuts fastening the flange and push out the carburettor rearwards.

e) Reverse the procedure when reinstalling the carburettor. Replace the gasket under the carburettor, if damaged (the smooth running of the engine depends on the perfect sealing of the air intake). Facilitate the fitting of the throttle valve by centering the needle with a finger inserted into the Venturi tube opening.

Caution!

To avoid a distortion of the flange or breaking of the bakelite interface liner, do not use excessive force when tightening the nuts fastening the carburettor to the crankcase. Before assembling the carburettor and the interface liner, it is advisable to check the mating surface of the flange and interface liner for perfect flatness and level off their unevennesses, if any. For grinding, use fine abrasive paper placed on glass, etc.

11. REPLACEMENT OF CLUTCH PLATES (Fig. 39)

The clutch plates are accessible after draining the gearbox oil and removal of the left-hand crankcase cover with the engine placed on its right side. It is not absolutely necessary to drain the oil from the gearbox, but the storage battery must be removed without fail. Use an open-ended 10 mm spanner to compress the individual springs with the spring retainer, and then remove the pins, retainer and springs (see Fig. 39). The clutch has five lined plates, four metal plates and one metal thrust plate. If the lining is worn, the plates must be replaced with new one coated with oil prior to assembly. After every replacement of the clutch plates, adjust the clutch as per Art. "Clutch adjustment."

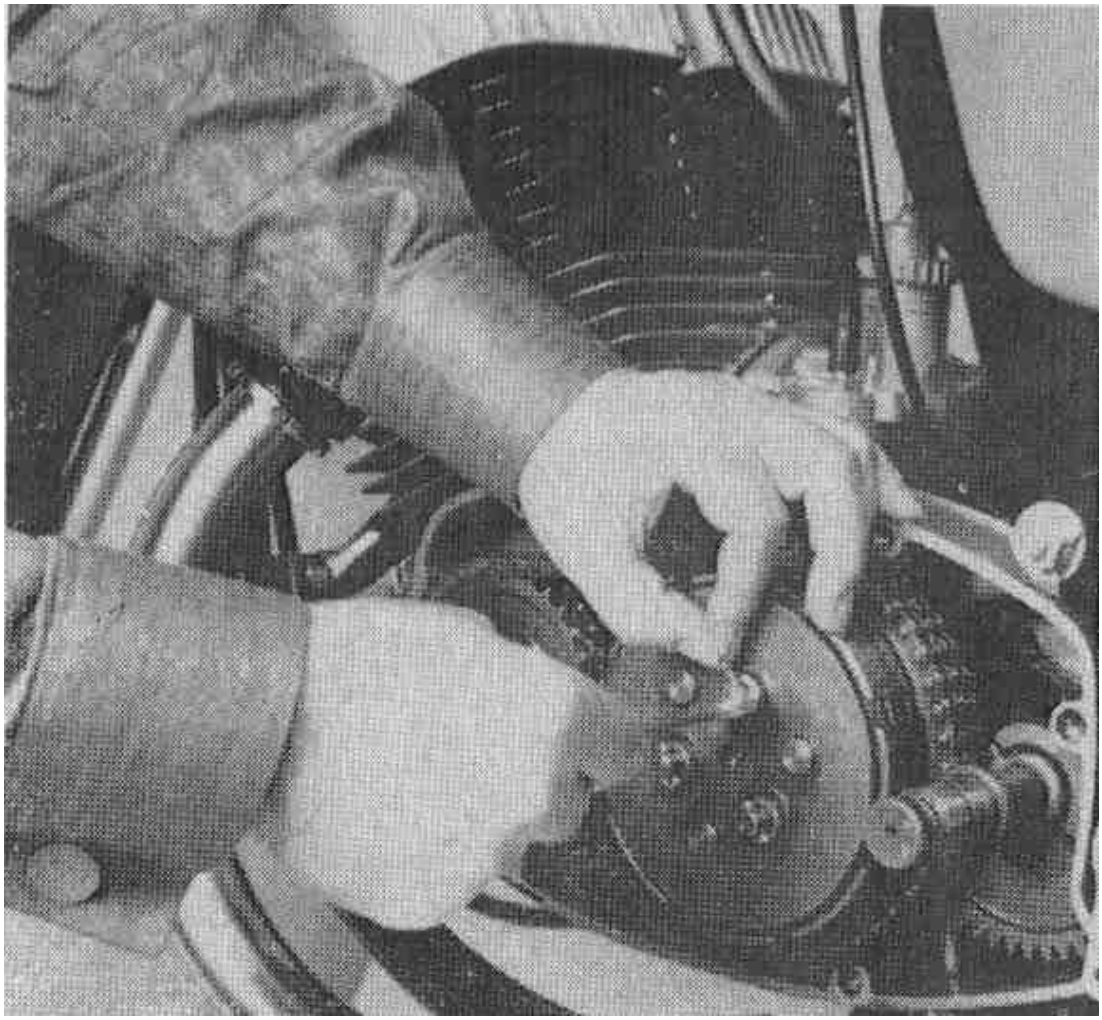


Fig. 39 – Removal of clutch plates

12. SPEEDOMETER REMOVAL

First screw off the speedometer drive holddown nut from the speedometer lower part thus releasing the bottom of the speedometer casing, then lift away the casing. Slide out the illumination lamp holder including the lead from the speedometer and/or disconnect the connector connection. Using a 22 mm spanner, screw off the nut fastening the speedometer to the bracket and remove the speedometer with its plastic casing. Finally slide out the speedometer proper of its casing.

13. REMOVAL OF TWISTGRIP AND HANDLEBARS

Removal of the twistgrip. When replacing the throttle bowden cable, remove the M 6 grab screw from the boss of the twistgrip body, rotate the twistgrip as far as necessary, and pull out the cable nipple from the hole in the boss. After lifting away the cable, pull off the twistgrip and clean and lubricate its moving parts. If removal of the twistgrip body (or a change of its basic position) is required, release the three set screws holding down the twistgrip body to the handlebar.

Removal of the handlebar. First remove the respective brackets of the instruments and of the switch box, detach the clutch and front brake cables, the sockets fastening the light and direction-indicator switches to the handlebar, and finally detach the throttle cable from the twistgrip or remove the complete twistgrip including the bowden cable.

14. REMOVAL OF LOCK FROM HEAD AND SEAT (Fig. 40)

If it is necessary to replace the lock, pull it out from its bed after taking out its securing wire clip. Unlock the lock before removing it.

15. BATTERY REMOVAL

Lift away the seat, disconnect the fuse, the battery earthing cable, and the air-vent (degassing) hose. Now the battery can be taken out.

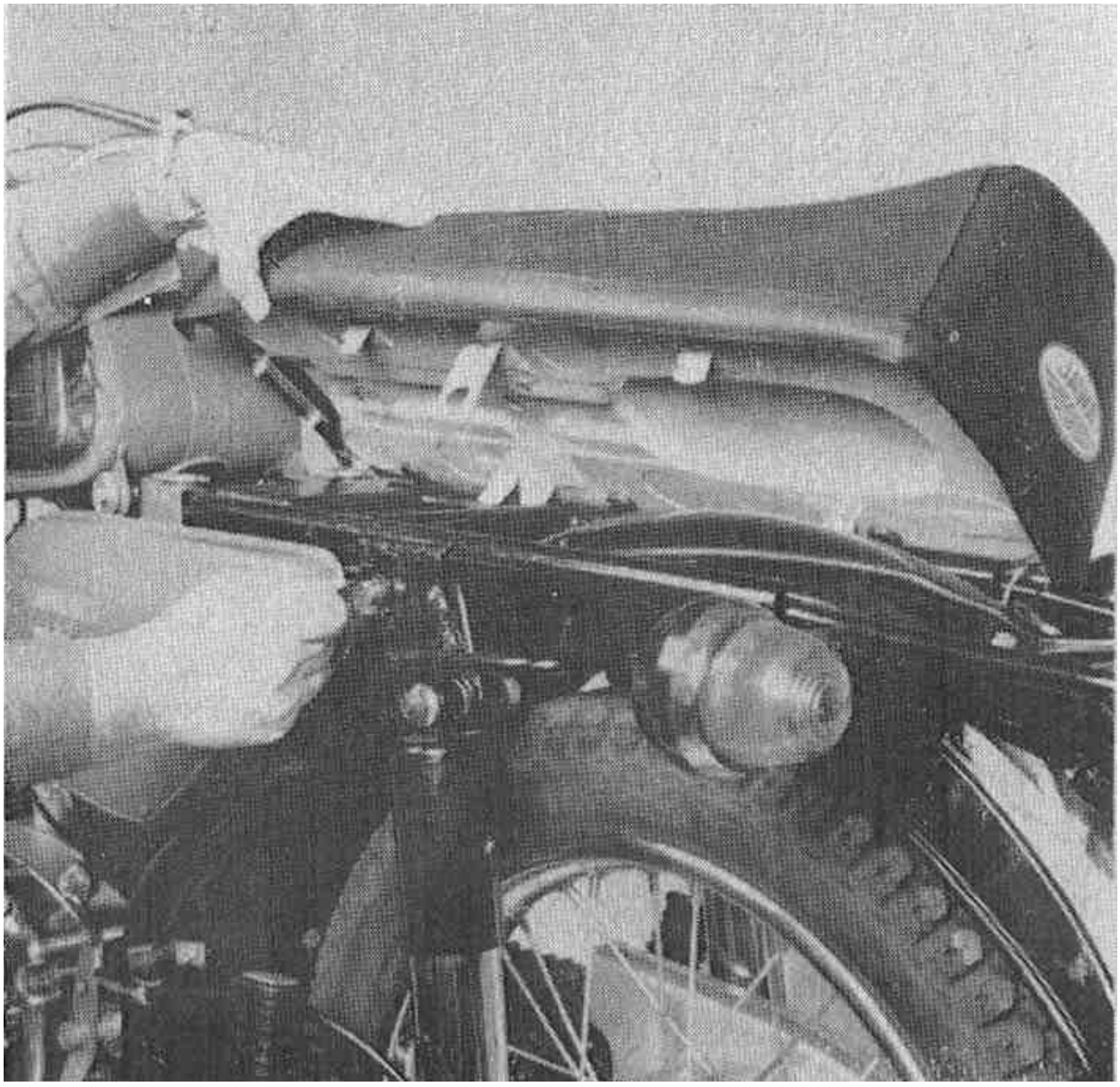


Fig. 40 – Removal of seat and lock

16. FUEL TANK REMOVAL

Turn off the fuel cock and detach the fuel hose. After lifting away the seat, loosen both M 6 bolts of the fuel tank rear silentblock using a socket spanner No. 10, and then lift away the silentblock by pulling the heads on the bolts with pliers. Use a bent wire for pulling out the springs of the fuel tank from fastening.

When refitting the fuel tank make sure that its rear part, resting on silentblocks, is precisely in the centre of the frame.

Avoid damaging the silentblocks by too forceful tightening of their tightening bolts.

17. REMOVAL OF LEFT-HAND AND RIGHT-HAND ENGINE COVER

The right-hand cover has to be removed when adjusting the clutch release mechanism or the ignition. Remove the two bolts fastening the cover and lift away the cover carefully. Before refitting it, clean the mating surfaces. Tighten the fastening bolts uniformly so that the front part of the cover bears correctly against the crankcase.

Remove the left-hand cover before handling the clutch or the primary chain, replacing the springs of the kickstarter quadrant, or replacing the speedometer drive next to the engine.

1. For a simple checking of the clutch without an oil change, remove the cover with the engine placed on its right side and the storage battery removed.

2. Loosen and turn away the left-hand foot-rest.

3. Turn the kickstarter lever into its starting position, remove the tightening bolt M 7, and withdraw the lever from the splined shaft.

4. Remove the five bolts of the cover.

5. Lift away the cover (be careful of the gasket).

When refitting the left-hand cover, do not omit to check the mating surfaces of the cover and the crankcase for cleanness and the paper gasket for damage. Tighten the bolts crosswise and with special care to prevent a leakage of oil.

18. REMOVAL OF ENGINE FROM FRAME

To facilitate removal of the engine from the frame, it is advisable to unscrew the oil drain plug which is likely to present an obstruction. Drain the oil into a clean vessel. After lifting away the seat, disconnect the fuse next to the battery and detach the cable from the sparking plugs. Detach the fuel hose from the fuel tank, lift away the fuel tank, unscrew the lid of the carburettor and take out the bowden cable with the throttle valve. Remove the hollow bolts of the exhaust pipes and swing away the pipes to get them out of the way. Then remove the bolt M 8 fastening the front part of the left-hand exhaust silencer and only loosen the two bolts M 8 of the left-hand exhaust silencer bracket. This is to facilitate the removal of the foot-rests clamping bolt which is also the clamping bolt of the engine. Remove the lock screw of the speedometer drive next to the engine and push out the drive. Remove the right-hand engine (crankcase) cover and disconnect the electric cables from the dynamo. Detach the bowden cable from the clutch release mechanism and unscrew its bracket from the engine. After having released the front clamps of the chain rubber sleeves, remove the outer guard of the secondary sprocket and unlock the sprocket nut. Unscrew the

nut using a 32 mm box spanner. With the slackened secondary chain, push out the secondary sprocket with the chain and the inner guard from its mounting. Do not uncouple the chain!

Remove the bolts fastening the engine to the frame. Then, standing on the left-hand side of the machine, grip the right-hand cylinder at the exhaust port with your left hand, and the kickstarter lever with your right hand. Lift the front part of the engine as high as possible and push its rear part out of its mounting towards the left-hand side of the frame. Proceed carefully so as not to scratch the varnish.

After having installed the engine back into the frame, tighten first the rear engine bolts, then the front fastening bolts, and finally, the oil drain plug. Fill the gearbox with oil, adjust the clutch, and take up the slack of the secondary chain.

19. STEERING HEAD REMOVAL

(As special spanners are required, have the job done in a repair shop.)

First remove the respective brackets of the instruments and of the switch box to gain access to the parts fastening the steering head.

Remove the front wheel. Use a 32 mm spanner for unscrewing carefully the top plugs (cap nuts) of the fork legs. Unlock the lock washer of the top nut of the steering column and screw off the nut with a 41 mm box spanner. Detach the earthing cables fastened to the bolt of the handlebars brace. By tapping the bottom part of the top brace, release this brace from the cones of the fork and place it carefully on the fuel tank covered with a rag together with the handlebars, cables, and bowden cables. You can remove the fuel tank beforehand, if you prefer. Slip the front brake bowden cable from its guide on the bottom brace. Disconnect the cables from the horn and detach the speedometer drive from the engine. Use the special box spanner with two dog pins, included in the tool kit, to unscrew the bottom nut of the steering head column while holding the fork so as to prevent the bearing balls from falling out. Pull the complete fork out of the head of the frame including the horn and the wing. Leave the headlamp, the top fork leg tubes, and the direction indicators suspended on the cables.

If it is necessary to replace the bearing caps, drive them out using a rod of suitable length. When reassembling the steering head, pack the caps with the recommended grease and make sure that each of the top and bottom bearings have 19 balls of ¼" (6.35 mm) diameter.

Note:

Tighten the bottom nut of the steering head column and then back it off till the fork moves freely, but without any clearance in the bearing. Finally adjust the hand brake according to the instructions in Art. 5. If the fuel tank has been removed, refit it as per Art. 16.

20. FRONT FORK LEG REMOVAL

For this job it is recommended to make a simple fixture, with the aid of which the fork leg can be easily slipped out of the upper and lower front fork lugs and refitted into them. To make this fixture, weld a tube with a drip (Fig. 41) to the spare cap nut of the fork leg, or have the fork legs removed in a specialized repair shop equipped with the necessary tools and fixtures. To remover one of the fork legs (for instance when replacing the rubber boot, the spring, the nut with its packing, the slider, the bushes, the shock absorber, etc.) proceed in the following manner:

First remove the front wheel and then remove two bolts and nuts fastening the inner yoke of the wing strut to the fork slider on the side of the fork leg that you intend to remover. Screw off the upper cap nut and in its place screw down the described fixture.

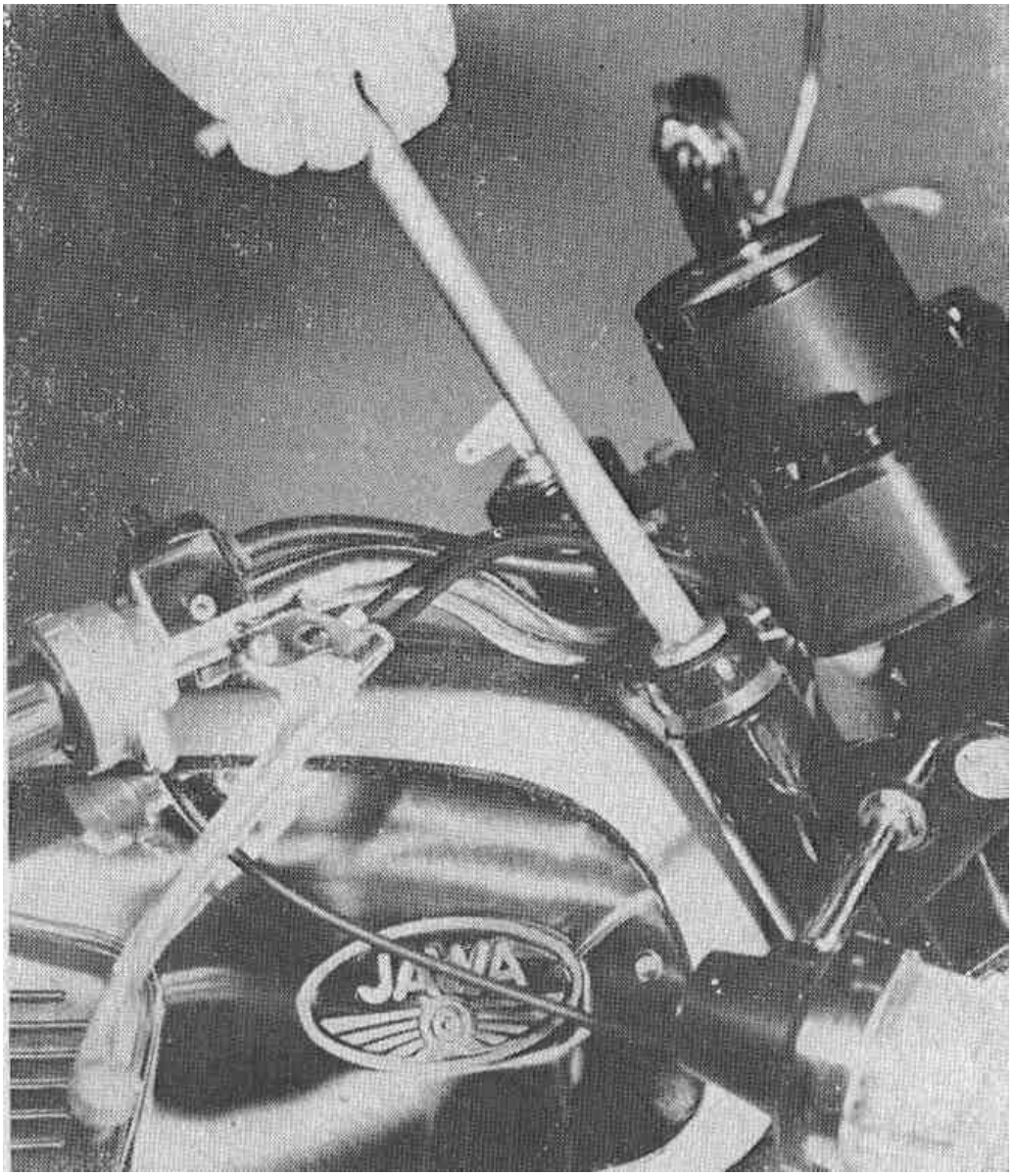


Fig. 41 – Disassembly of fork leg with aid of a special spanner

Loosen the nut of the lower fork lug clamping bolt and tap the fixture carefully to drive out the fork leg (in the downward direction). Bend slightly the wing strut so that it is not in the way of the slider nut with its packing. Headlamp brackets, the headlamp and the front direction indicators remain in position.

When removing both fork legs, take care not to damage the wing that will become detached in the process and can be put aside. After having driven out the fork leg it is easy to withdraw the complete springing element and so replace the dust boot, etc.

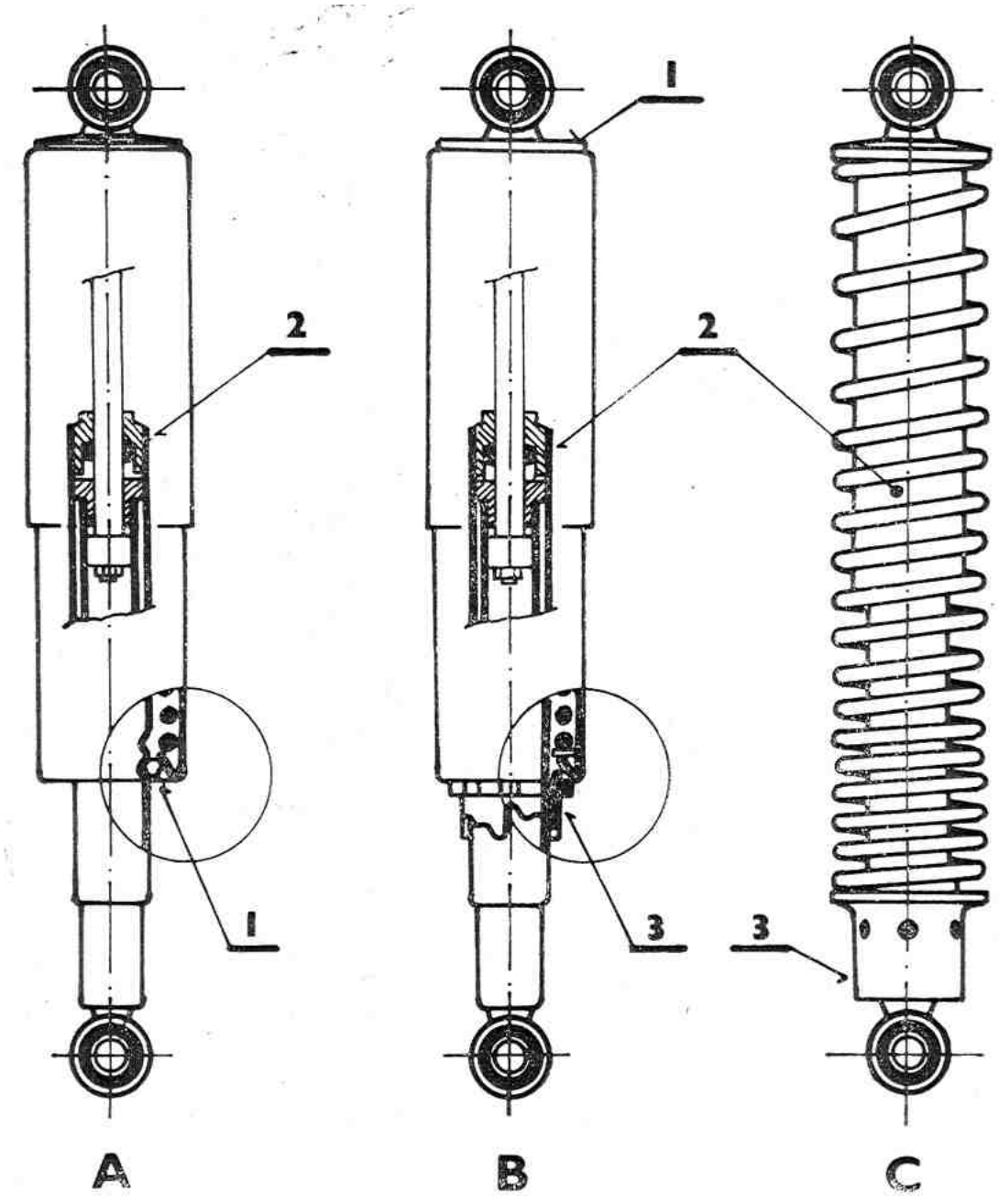


Fig. 42 – Sectional view of rear suspension damper

Any other jobs as the replacement of nuts with packings, or the replacement of shock absorbers should be done by skilled mechanics in a repair shop equipped with fixtures required for the removal of bushes, circlip pliers, etc.

21. REAR SUSPENSION (Fig. 42)

Three types of rear suspension are used on our machines. (Oil changes and repairs should be carried out in a specialized repair shop.)

A. Rear suspension, the hardness of which (preloading of springs) is adjustable after its removal from the machine.

B. Rear suspension with four-position hardness adjusting direct on the machine. The springs are enclosed by covers.

C. Rear suspension with four-position hardness adjusting with springs uncovered, used on CZ 350 motor cycles. Only three of the adjusting positions can be used on JAWA 350-634 motor cycles.

1. When changing the oil or replacing the piston cup of the type "1" suspension, remove the suspension from the machine and dismantle it partly after having placed it between the open jaws of a vice, compress the spring, and remove the split retainer (1). Lift away the bottom and top cover with the spring from the damper body. Clamp the bottom lug of the damper body in a vice, remove the plug (2) using the 22 mm spanner, nd take the piston rod with its accessories out of the damper body. If the piston rod sticks in the working cylinder, tap the cylinder with a soft object to release it from its guide.

Filling in of oil and assembly

Insert the working cylinder into the suspension damper body and fill it with 47 cc of damper oil. Carefully install the piston rod with the piston, then screw in and tighten the plug (2). Pull and push the piston rod link several times to check the function of the damper. If the piston rod offers resistance when pulled downwards, loosen the plug (2) and pull the push repeatedly the piston rod to expel the air or the surplus oil from the damper body. Then retighten the plug. For the described operations, the bottom lug of the suspension damper must be clamped in a vice. Before fitting the covers, coat the springs with a thin film of grease. When fitting the split retainer (1), be sure to place it with its bevelled edge towards the cover. Check all the silentblocks for faultless condition.

2. To dismantle partly the type "2" suspension, remove it from the frame of the machine and first reset the hardness adjusting sleeve into its basic position, i.e., the position for the smallest preload of the spring. Then clamp the lower lug of the suspension damper (shock absorber) into a vice, depress slightly the upper spring cover (by about 4 mm), and lift away the cotter (two-part spring retainer) (1) and the upper cover. Then proceed according to instructions in paragraph 1.

3. To dismantle partly the type “3” suspension, remove it from the machine frame and first reset the hardness adjusting sleeve into its basic position, i.e., the position for the smallest preload of the spring. Open the vice and place the sleeve with its lower part between the jaws. Now press down the sleeve by about 5 mm and rotate the lower lug of the suspension damper clockwise. In this way the sleeve will get released from the bayonet lock, and after releasing the spring, the sleeve can be lifted away. To gain access to the suspension damper plug remove the spring and push the plastic piston over to its lower position. When filling the suspension damper with oil proceed as in the case of the basic suspension type but remember that the capacity of one damper is 75 cc of damper oil.

Reverse the dismantling procedure for reassembly. When reinstalling the spring make sure this its upper suspending coil bears against the surface of the collar of the inner piston cover. Before reinstalling the adjusting sleeve, smear its sliding parts sparingly with grease. To secure the lower lug of the suspension damper in position by the bayonet lock it is first necessary to compress the spring by about 26 to 30 mm and then to rotate the lower lug anticlockwise.

Oil Refills

The procedure of oil refilling is the same for all three rear suspension types, but it must be born in mind the filling capacity of the type “1” and “2” is 47 cc and of the type “3” 75 cc of damper oil.

To fill in the oil, put the working cylinder into the damper body and then pour in the recommended amount of damper oil.

22. REMOVAL OF REAR SWINGING FORK WITHOUT UNCOUPLING SECONDARY CHAIN

Remove the rear wheel and then remove the chain wheel from the swinging fork, leaving it suspended on the chain together with the guard. Detach and withdraw the rear suspension damper from the lower lugs after having backed off the nuts of the upper lugs by about 4 turns. Remove the rear brake cable. Screw off the nut M 10 on the left-hand end of the brake pedal shaft and use a soft mallet to drive out the shaft together with the brake pedal in the right-hand direction. Unlock and screw off one of the nuts of the swinging fork, slip the shaft out of its bearing, and lift away the swinging fork. Slip off the dust cups and take out the removable metal-plastic bushes.

Caution!

To prevent reversing of the swinging fork position on reassembly, make sure that the pin of the brake reaction stop is on the left-hand side of the machine and that the end of the fork is lifted above the exhaust silencers before fitting it into its bearing. Moreover, take care that the protective cups and sealing rings do not drop out.

23. REMOVAL OF DIRECTION INDICATORS

Remove the screw M 6 fastening the earthing cable and the cable with the cable sling to the upper front fork lug. Loosen the rear fuel tank bolts, lift away the spring from the front retainer, and swing off the fuel tank. Disconnect the connectors of the respective direction indicator leads from the connector terminal strip. Slip the holder of the direction indicator telltale lamp out of its clamp on the instrument panel and disconnect the respective connectors. Screw off the nut holding down the direction indicator to the headlamp bracket (19 mm spanner) and lift away the complete direction indicator with its cables. Remember to install the direction indicators always so the arrow on the covers (glass) points upward.

24. REPLACEMENT OF THE HEADLAMP SHELL

To avoid an accidental short-circuit, it is recommended first to remove the fuse located under the seat. Then lift away the reflector including the bezel. Disconnect the lead from the connectors at the base of the lamps and push out the grommet with the lead pressing it from inside the headlamp shell. Remove two side screws fastening the headlamp shell to the brackets and lift away the shell. On refitting do not omit the insert friction washers between the headlamp shell and the brackets.

25. SWITCH BOX REMOVAL

Screw off the two M 8 nuts of the handlebar clamp bolts and remove the bolts. Then the bracket of the switch box will be released and the terminals will become accessible for checking the lead connections. The switch box can be removed from its bracket after screwing off the switch box upper nut.

26. INSTRUMENT PANEL REMOVAL

Remove the battery fuse. Slip the holders of the telltale lamps and speedometer illuminating lamp out of their repsective clamps. Disconnect the speedometer drive by screwing off the knurled union nut. Remove two rear screws fastening the handlebar yokes, screw off two nuts of the front bolts from the lower part, remove the bolts, lift the handlebar yokes together the handlebars, and lift away the instrument panel together with the speedometer.

27. STOP SWITCH REPLACEMENT

Remove the saddle and swing up the fuel tank. Put a suitable support under it to hold it in the lifted position or remove the fuel tank. Disconnect the front brake cable from the lever on the brake backing plate and withdraw the cable end piece from the brake hand lever. Lift away the lever after having removed its hold-down screw. Detach the stop-switch bowden cable from the lever. Disconnect the stop-switch conductors and loosen the strip holding the switch on the ignition coil. Remove the cotter pin of the rear brtake relay lever. Now the bowden cable and the stop-switch are released and ready to be replaced with new parts. Reverse the described procedure to reinstall the stop-switch and its associated parts, and complete the reassembly by adjust the switch.

Notice!

Following the policy of continual improvement of our products, re reserve the right to effect minor changes in their design irrespective of the illustrations and descriptions contain in this manual.
Disassembly and assembly of the engine, requiring not only special tools but also skill and experience, are not described in this manual. It is advisable to have any major repair carried out in a specialized JAWA repair shop.

JAWA National Corporation
Tynec nad Sazavou

IV. TABLE OF DEFECTS AND THEIR REMOVAL

Symptoms		Defect	Removal
Emgine runs unevenly	Engine knocks	Overheated engine	Let engine cool down and do not drive at high r.p.m.
		Sparking plug electrodes glow, incorrect sparking plug ..	Replace sparking plug
		Excessive carbon deposits in cylinder head	Lift away cylinder head and remove carbon deposits
		Excessive advance	Adjust advance by rotating the contact breaker base plate
Engine misfires	Correct spark	Clogged exhaust silencer	Detach exhaust silencer dismantle and clean it
		Water or oil in carburettor	Clean carburettor
		Poor fuel supply	Open the fuel cock (fuel reserve), top up fuel, inspect fuel supply line and filler cap breather hole
		Occasional short-circuit between sparking plug cyble and cylinder	Wrap insulating tape around the cable or replace cable
		Lean mixture	Adjust carburettor
		Incorrect petrol/oil mixture	Stir thoroughly the fuel before filling it into the fuel tank
	Irregular spark	Unsuitable sparking plug	Replace sparking plug
		Oiled sparking plug	Unscrew and clean the sparking plug
		Excessive spark gap	Adjust electrodes by bending to a 0.6—0.7 mm gap

Symptoms		Defect	Removal
		Fouled contact breaker points	Wipe them clean with a rag dipped in petrol or use a fine file, if necessary
		Incorrectly adjust contact breaker point gap	Adjust to 0.3 mm
		Occasional short-circuit of sparking plug cable	Wrap insulating tape around the cable, or replace sparking plug terminal
		Faulty interference suppressing resistor in cable pothead	Replace cable pothead or connect temporarily the cable direct with the sparking plug outlet
Engine will not fire or has stopped Carburettor cannot be flooded Correct compression Regular spark	Faultless carburettor	Overheated engine	Let engine cool down and drive in low r.p.m. only
		Poor lubrication	Mix petrol with oil well and in 1 to 33 (3%) ratio
		Bowden cable to throttle valve broken	Replace bowden cable
		Air leakage between carburettor and crankcase	Replace gasket
	Faulty carburettor	Damaged gasket under dynamo	Remove and clean the jet
		Punctured float	Solder or replace the float
		Float stuck	fielease the float
		Throttle valve needle does not seal properly	Repair or replace damaged needle
		Needle dropped out of the throttle valve	Suspend needle properly and lock in position
Engine runs unevenly	At intervals	Obstructed fuel line	Remove and clean fuel line
		Poor venting of the fuel tank	See whether the holes in the inner part of the filler cap

Symptoms		Defect	Removal
Engine lacks power		Incorrectly set ignition advance	Adjust contact breaker point gap
		Incorrectly set carburettor (incorrect mixture)	Adjust idling speed, throttle valve needle position, and clean air cleaner
		Clogged exhaust silencers	Remove exhaust silencer cores and remove carbon deposits
Engine runs unevenly Engine lacks	At intervals	Worn cylinder bore and piston	Cylinder rebore, new piston and piston rings, checkin of piston, gudgeon pin, etc. for wear (in a specialized repair shop)
		Engine sucks in false air (leaky joint of crankcase halves or carburettor throat)	Separate crankcase halves, clean mating surfaces, apply sealing compound, and tighten well together
			Replace carburettor throat gasket
		Faulty ignition coil	Replace ignition coil
		Faulty capacitor	Replace capacitor
	Perma-nently	Partially damaged gasket under the dynamo	Replace gasket
		Obstructed fuel supply line or air cleaner	Clean fuel line or air cleaner
		Are sufficiently large and whether the venting hole in the outer part of the cap is not choked with dirt.	Inadequate venting of the fuel tank. Examine the venting holes in the inside and outside part of the filler cap
		Throttle bowden cable grabs	Lubricate bowden cable or replace it
		Faulty sparking plug	Replace sparking plug
		Excessive carbon deposits in cylinder, cylinder head, exhaust ports, and exhaust silencers	Remove cylinder head, cylinder, exhaust silencers and free them of carbon deposits
		Clogged micromesh filter	Clean or replace filter element

Symptoms		Defect	Removal
Engine will not fire or has stopped Carburettor cannot be No spark	Spark at cable end	Oiled sparking plug Damaged sparking plug insulation Short-circuit between sparking plug electrodes Excessive electrode gap	Unscrew and clean sparking plug Clean sparking plug or replace Adjust electrode gap to 0.6—0.7 mm and clean the electrodes Adjust electrode gap to 0.6—0.7 mm
	Red tell-tale lamp does not glow	Ignition key not inserted into switch box Blown fuse at the battery	Insert ignition key and turn to respective position Replace the fuse
Engine will not start or has stopped Carburretor cannot be flooded	No spare at cable end Red charging tell-tale lamp glows	Fouled contact breaker points Faulty contact breaker points Sparking plug cable broken or slackened Damaged cable insulation Faulty interference suppression resistor in cable pothead Faulty capacitor Water in contact breaker Faulty ignition coil	Clean contact breaker points with a rag dipped in petrol Replace contact breaker points Replace the cable or join its broken ends and wrap insulating tape around the splicing Wrap insulating tape around the cable and replace the cable at the first opportunity Replace cable pothead or connect temporarily the cable with sparking plug outlet Replace capacitor Blow out and wipe off water and let the contact breaker to dry Replace ignition coil

Symptoms		Defect	Removal
	Regular spark Engine lacks compression	Stuck piston rings Insufficiently tightened cylinder head or sparking plug Defective cylinder head gasket	Remove, clean, and refit them Tighten cylinder head or sparking plug thoroughly Replace cylinder head gasket
One of the direction indicators does not light up		Faulty lymp Disconected connector	Replace lamp Reconnect it
Direction indicators of one side of the machine do not light up		Broken cable	Wrap with insulating tape or replace
		Slackened cable in ticker Faulty earthing	Connect properly the cable in ticker Remove varnish from mounting holes of rear direction indicators preventing correct earthing connection to frame
Direction indicators do not light up		Defective ticker relay Disconnected or broken relay-to-switch feed cable Interrupted switch box — relay connection	Replace it with a new one Reconnect, repair, or replace the cable with a new one Check on the connection, clean the connectors and/or repair or replace the cable
Direction indicator does not flash but glows continually		Defective ticker relay	Replace the relay with a new one

LIST OF ILLUSTRATIONS

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