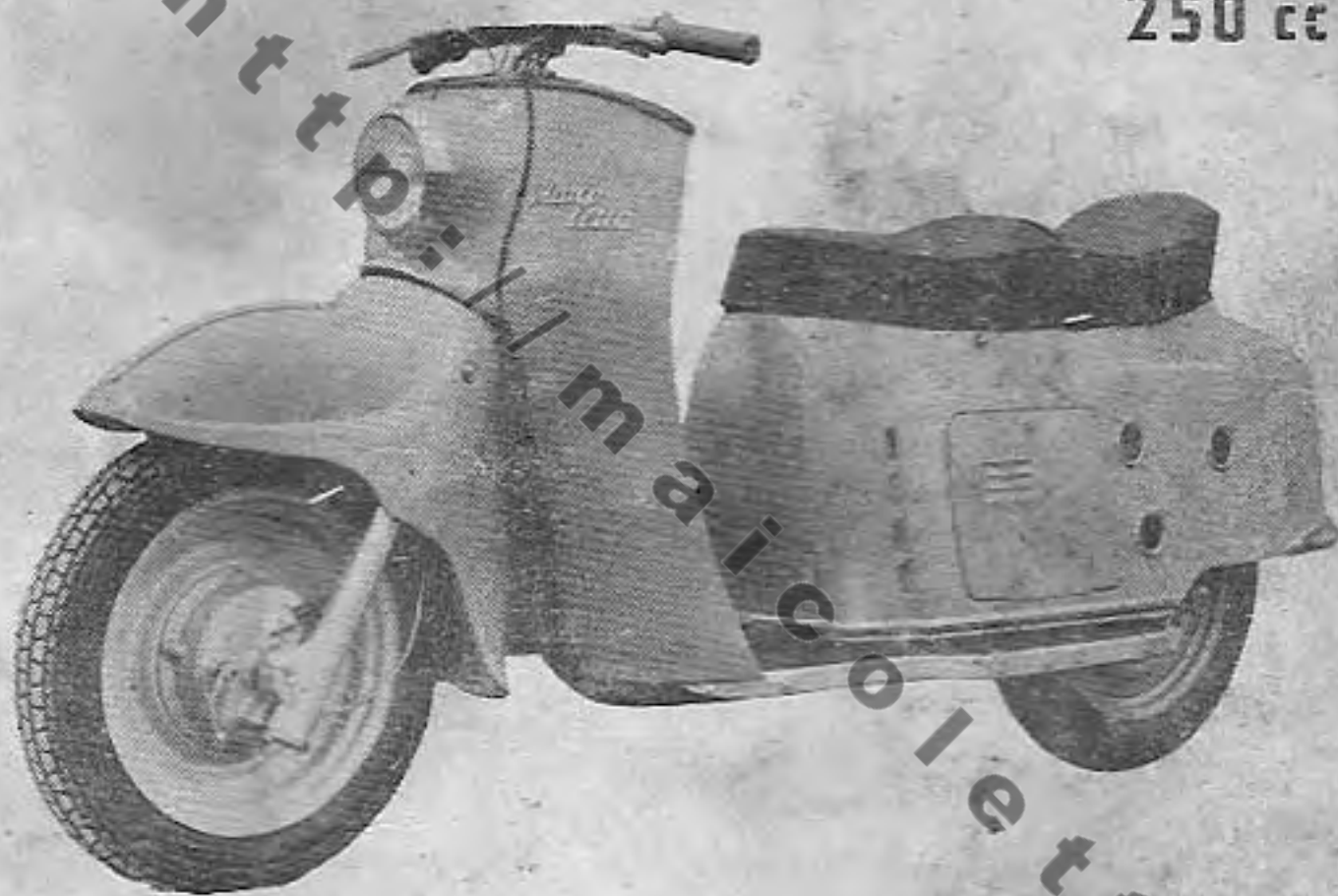


Instruction Book for the "MAICOLETTA"

250 cc



MAICO-FAHRZEUGFABRIK G.M.B.H. HERRENBERG

Dear Maico Rider!

“Even the best is only just good enough for a Maico owner” was the motto we at Maico adopted when we started to build our new scooter. And when you have covered the first few miles on your “Maicoletta” we are sure that you will agree emphatically that this scooter is really one of the “best”.

The powerful, robust, and extremely unassuming 250-cc Maico engine not only gives this modern vehicle an exceptional acceleration, which is very important in traffic and when overtaking, but also results in the “Maicoletta” being a vehicle that is very suitable for long distance touring.

Anyone who is used to the fast and lively performance of a motor cycle will soon be at home with this scooter. It has superb road-holding qualities. Great care has been taken to provide the greatest possible degree of protection against dirt and weather. The special features of this modern scooter include speed, manoeuvrability, and ease of handling.

We assume that you know how to ride a motor cycle, and that you already have a driving licence. Even so, we advise you in your own interests to read this book through quietly and carefully before taking your "Maicoletta" out on the road, and to follow the instructions given. This applies particularly to the running-in instructions. The treatment a vehicle receives during the course of the first few miles very largely determines the behaviour and subsequent performance of the engine. Your "Maicoletta" will repay regular attention and a careful but lively driving technique by reliability and constant readiness and by a high performance. We hope that you will derive nothing but pleasure from your "Maicoletta".

MAICO-FAHRZEUGFABRIK G.M.B.H. HERRENBERG

LIST OF CONTENTS

Introduction	2/3	Care and Maintenance	
List of Contents	4/5	Cleaning the machine	25
Personal Details	6	Care of the carburetor	26
Technical Data	7/11	Cleaning the jets	26
Frame and Engine Numbers	12	Starting device	26
Controls	12/13	Adjusting idling mixture	27
Riding Hints		Description of carburetor parts	28
Check before each trip	14	Changing position of needle in throttle slide	28/30
Starting the engine	15	Air filter and how to clean it	30/31
Riding	16	Care and adjustment of chain	31/32
Changing gear	16/19	Flywheel magneto, dynamo, and starter	33/34
Coming to a stop and stopping engine	20	Starting engine without battery	34
Running in	20/21	Care of spark plugs	35
Important notes on riding methods	21/22	Bridging of spark-plug elec- trodes	36
Important instructions	23/24	Care of the battery	36/37

Wiring diagram for the Maicoletta	38
Fan	39
Clutch and its adjustment	39 41
Gearbox	41 42
Steering	42
Clock	42
Care of the tires	43
Hubs	43 44
Brakes and their adjustment	44 45
Fuel tap	46
Lighting system	47
Removal of rear panelling	47 48
Exhaust system	49 50
Throttle twistgrip	50
Telescopic forks	50 52
Removal of telescopic forks	52 53
Removal of ignition switch	53
Maico Service	54 55
Maintenance and Lubrication chart	56 57

Tracing Faults

Faults on the Maicoletta and their remedy	58
Engine fails to start	58
Engine runs unevenly	59
Engine four-strokes	59
Engine back-fires through carbur.	59 60
Engine runs too hot and piston seizes	60
Engine pulls badly or performance falls off	60
Fuel consumption too high	60
Clutch slips	61
Dynamo fails to charge	61
Engine pinks	61
Warning lamp lights up, but there is no spark at plug	61
Warning lamp lights up, but starter does not operate	62
Warranty conditions	63 64

MAICOLETTA 250

PERSONAL DETAILS

Frame No. _____

Engine No. _____

Registered on: _____

with: _____

Registration No. _____

Insured with: _____

Type of Insurance: _____

Policy No. _____

Owner of vehicle: _____

Telephone No. _____

Address: _____

Driving licence issued by: _____

Class: _____

Dealer's address: _____

Note! A replacement key for the glove locker can be supplied only if the key number is quoted. Therefore please at once make a note of

the Key Number: _____

TECHNICAL DATA and description of the individual components:

Type of engine:	Two-stroke, loop scavenging
Continuous output:	14.0 h.p. at 5100 r.p.m.
Maximum output:	14.0 h.p. at 5100 r.p.m.
No. of cylinders:	1, inclined
Bore:	67 mm
Stroke:	70 mm
Capacity:	247 cc
Compression ratio:	7.6:1
Carburetor:	Bing 1/26/43 Inclined Jet 26 mm dia. carburetor with starting device.
Air filter:	Inlet-air silencer with wet air filter.
Main jet:	110
Pilot jet:	40
Needle jet:	1508
Needle position:	II
Air adjusting screw:	1 turn open
Starter jet:	70
Needle:	No. 3

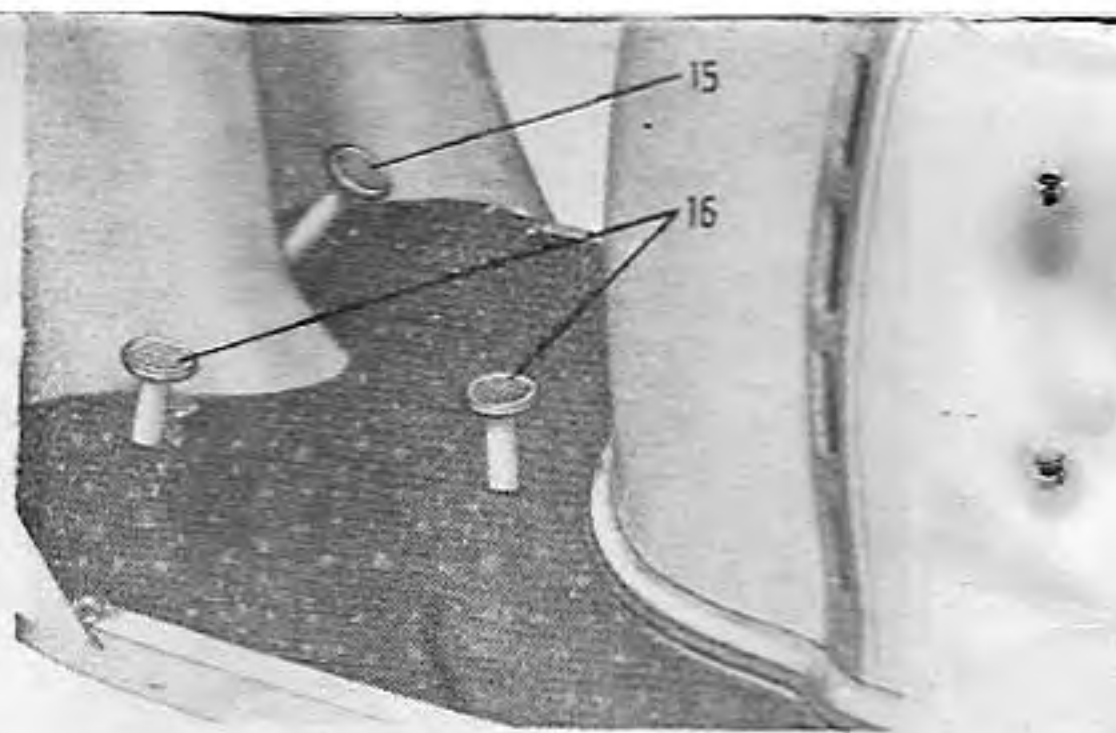
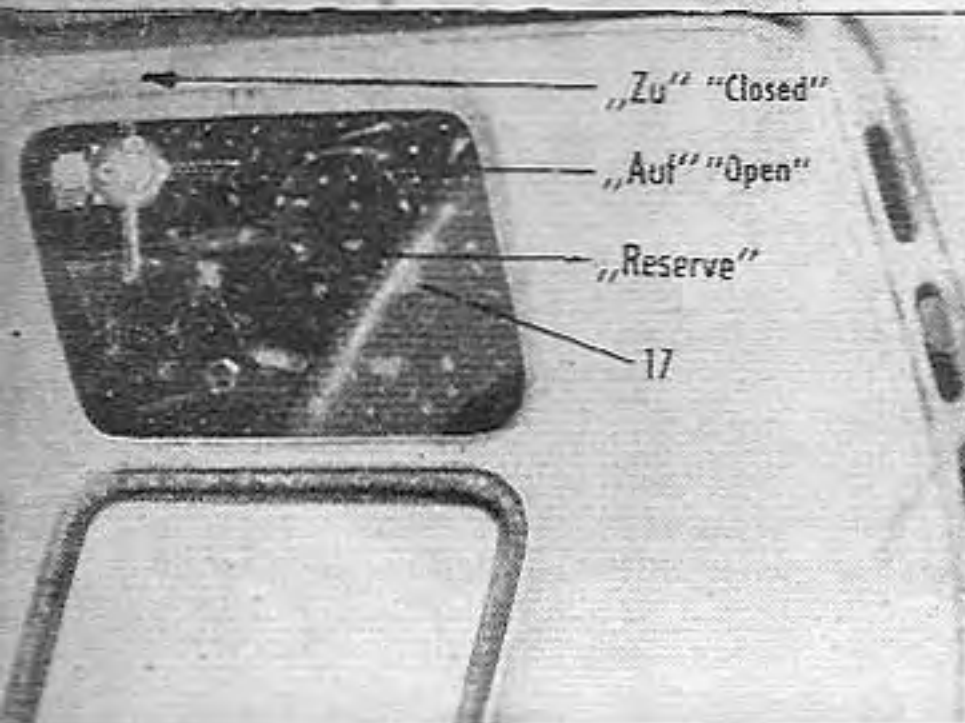
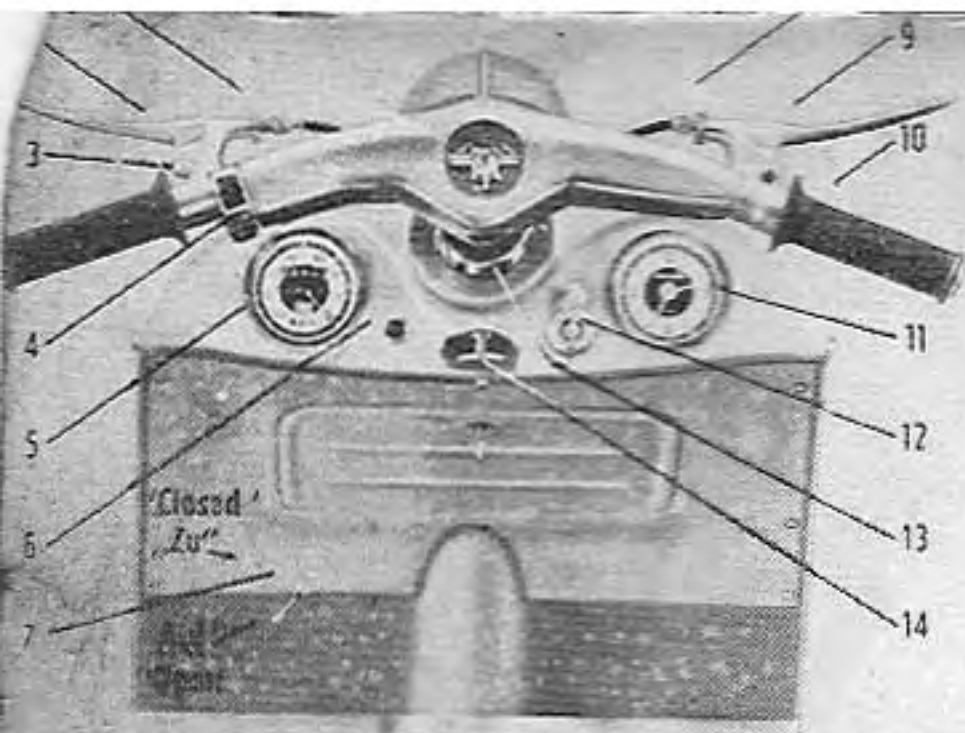
Throttle slide:	No. 3
Float-chamber lid:	additional 2-mm dia hole
Piston play:	0.05 mm
Ignition and lighting generator:	Bosch Flywheel 6-volt ignition and lighting generator and starter.
Battery:	Bosch BA/SA 6/11/2 6-volt 11 amp.hr starter battery (K 20)
Horn:	6-volt electric horn
Spark plug:	Heat range 240. Thread M 14×1.25
Lighting:	Headlamp with 35/35-watt double-filament bulb and 1.5-watt parking light
Ignition timing:	3.2 to 3.0 mm (0.128–0.120 in) before T.D.C.
Starter:	Bosch 6-volt electric pendulum-type starter.
Lubrication:	Engine: 25:1 mixture of branded petrol and oil (20:1 while running in). Gearbox: Runs in oil bath. Use SAE 50–40 engine oil in summer, SAE 30–20 in winter. Capacity about 1 litre (2 pints).
Clutch:	Multi-disc clutch. Discs run in oil bath.
Gear-change mechanism:	Foot-operated. Four-speed.
Cooling:	By means of fan built integral with dynamo.

Reduction ratios

Engine-gearbox:	2.1:1 (40:19 teeth)
Gearbox:	Bottom: 3.3:1 2nd gear 1.9:1 3rd gear 1.34:1 Top gear: 1:1 (direct drive)
Gearbox – rear wheel:	
Solo:	2.25:1 (16:36 teeth)
with Sidecar:	2.715:1 (14:38 teeth)
Tires:	3.25–3.50 × 14 on well-base rims.
Tire pressures:	
Solo machine:	front 1.4 atm (20 lb sq in), rear 1.8–2.0 atm (25–28 lb sq in)
with pillion passenger:	front 1.5 atm (21 lb sq in), rear 2.25 atm (32 lb/sq in)
with sidecar:	front 1.8 atm (25 lb sq in), rear 2.3–2.4 atm (33–34 lb sq in)
Frame:	Welded central tubular frame.
Front springing:	Hydraulically-damped telescopic forks.
Rear springing:	Pivoted rear forks with large soft springs and enclosed hydraulic shock absorbers. Mounted in Silentblocs and requiring no maintenance.
Saddle:	A long, comfortable dual seat accommodating two persons.
Rear light and number plate illumination:	6-volt 3-watt festoon bulb, 31 mm (1.18 in) long.

Stop light:	6-volt 15-watt festoon bulb, 44 mm (1.73 in) long.
Speedometer and clock illumination:	6-volt, 0.6 watt.
Warning light on instrument panel:	6-volt, 1.5 watt.
Hubs:	Light-alloy full-width hubs with centrifugally cast brake drums, and five bolts for holding disc wheels. Front brake drum 160 mm (6.3 in) dia. Rear brake drum 127 mm (5.0 in) dia. Width of brake shoes 30 mm (1.18 in). Front brake operated by means of hand lever. Rear wheel with knock-out spindle and rubber block coupling. Rear brake operated by means of foot pedal.
Handlebars:	Smooth, polished handlebars made of forged light alloy. Fitted with short-stroke throttle twistgrip, clutch and brake levers, horn, and dipper switch. Steering damper.
Silencer:	Can be dismantled, and is therefore easy to clean.
Fuel tank:	Capacity about 12 litres ($2\frac{3}{4}$ gallons), of which about 4 litres (1 gallon) is in reserve.
Fuel tap:	3-way tap with two built-in filters.

Fuel consumption:	About 2.6 litres 100 km (108 m.p.g.) at a constant speed of 60 km/hr (37 1/2 m.p.h.).
Bodywork:	Made of pressed sheet steel. Extremely resistant to torsion.
Primary chain:	Sheet roller chain 3/8 x 3/8" - 54 links.
Rear chain:	Roller chain 1/2 x 5/16" - 96 links.
Maximum length:	2060 mm (6 ft 9 in)
Maximum width:	630 mm (2 ft 1 in)
Maximum height:	1000 mm (3 ft 3 in)
Weight:	140 kg (309 lb)
Maximum total weight (Solo):	320 kg (705 lb)
Maximum total weight (with sidecar):	435 kg (959 lb)
Maximum speed (Solo):	about 105 km/hr (65 1/4 m.p.h.)
Maximum speed (with sidecar occupied):	about 90 km/hr (56 m.p.h.)
Equipment:	Speedometer, directly illuminated, with built-in mileage counter and gear indicator. Illuminated clock with 8-day movement. Comprehensive tool kit with tool roll and tire pump.



Frame and Engine Numbers

The frame number will be found on the main frame member, directly behind the front mudguard, on the right-hand side. The tire pump is attached to the left-hand side of the main frame member.

The engine number is stamped into the right-hand half of the crankcase, and will be seen at the front on the right when the seat is opened. The name plate is riveted on inside the glove locker.

Controls

- 1 Bowden cable adjuster for clutch
- 2 Clutch lever
- 3 Dipper switch
- 4 Horn push button
- 5 Speedometer with mileage counter and gear indicator
- 6 Ignition warning light
- 7 Control for starting device
- 8 Bowden cable adjuster for front brake
- 9 Hand lever for front brake
- 10 Throttle twistgrip
- 11 Clock with 8-day movement
- 12 Ignition key, also serves as switch for headlamp and parking light, and operates electric starter.
- 13 Steering damper
- 14 Steering-head lock
- 15 Foot pedal for rear brake
- 16 Foot-change pedals
- 17 Fuel tap.

RIDING HINTS

Before each trip check:

That the tank is full:

Use a branded petrol mixed with a branded engine oil in the proportion of 25:1 (20:1 while running in). Use SAE 40-50 oil.

That the oil level in the gearbox is correct:

Check the oil level by removing the left-hand cover plate.

That the tire pressure is correct:

Front 1.5 atm (21 lb sq in), rear 2.25 atm (32 lb sq in) for solo work. See page 43 for further details.

That the wheel nuts

on the rear wheel are properly tightened up and that the front axle is securely held.

That the battery

is fully charged, and that it is properly connected up and firmly secured in place.

That the brakes

are properly adjusted. Try the front and rear brakes separately and adjust in good time.

That the steering is in good condition:

Unlock the steering-head lock. Keep the key for the glove locker in a safe place.

* **Starting the engine:**

Engage neutral gear, open the fuel tap, and slightly open the throttle twistgrip.

if the engine is cold: First open the starting device control (under the glove locker; turn until it points to the rear), and then push in the ignition key until it clicks home (the red ignition warning light on the instrument panel should come on). Then briefly press the ignition key in still further to operate the starter. As soon as the engine starts, release the ignition key (the red warning light should go out) and close the throttle twistgrip. As soon as the engine runs quietly and evenly, close the starting device control (turn the lever until it points towards the front, see page 12).

If the engine is warm: Do not open the starting device control. Merely depress the ignition key until the engine starts, and then close the throttle twistgrip.

If the engine is flooded owing to the control for the starting device having been left open for an excessive period, or for some other reason, the petrol tap should be closed, the throttle opened to its **fullest extent**, and the starter operated for a short time to turn the engine over, and ventilate it. If the engine still will not start after this has been done, remove the spark plug and inspect it; also check the spark.

Note! Use the starter only if the lights are switched off, and even for not more than **10 seconds at a time**. If the engine fails to start the first time, pause for 15 seconds before using the starter again.

Riding

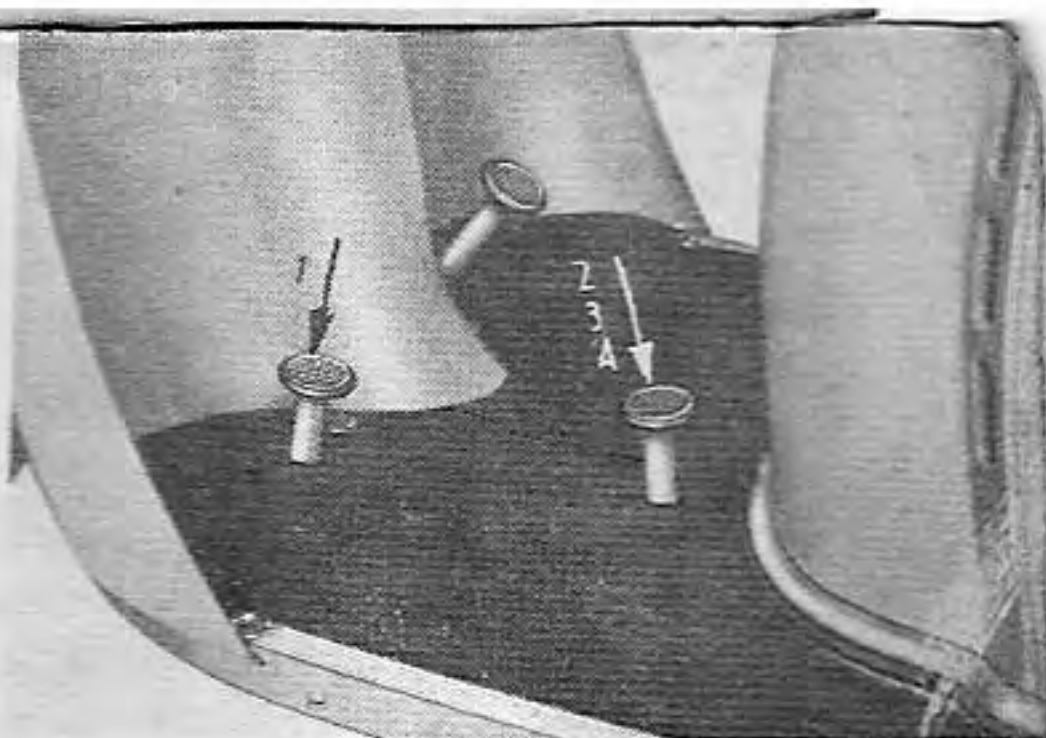
In general: never allow the engine to labour, but always keep it running at a fairly high speed.

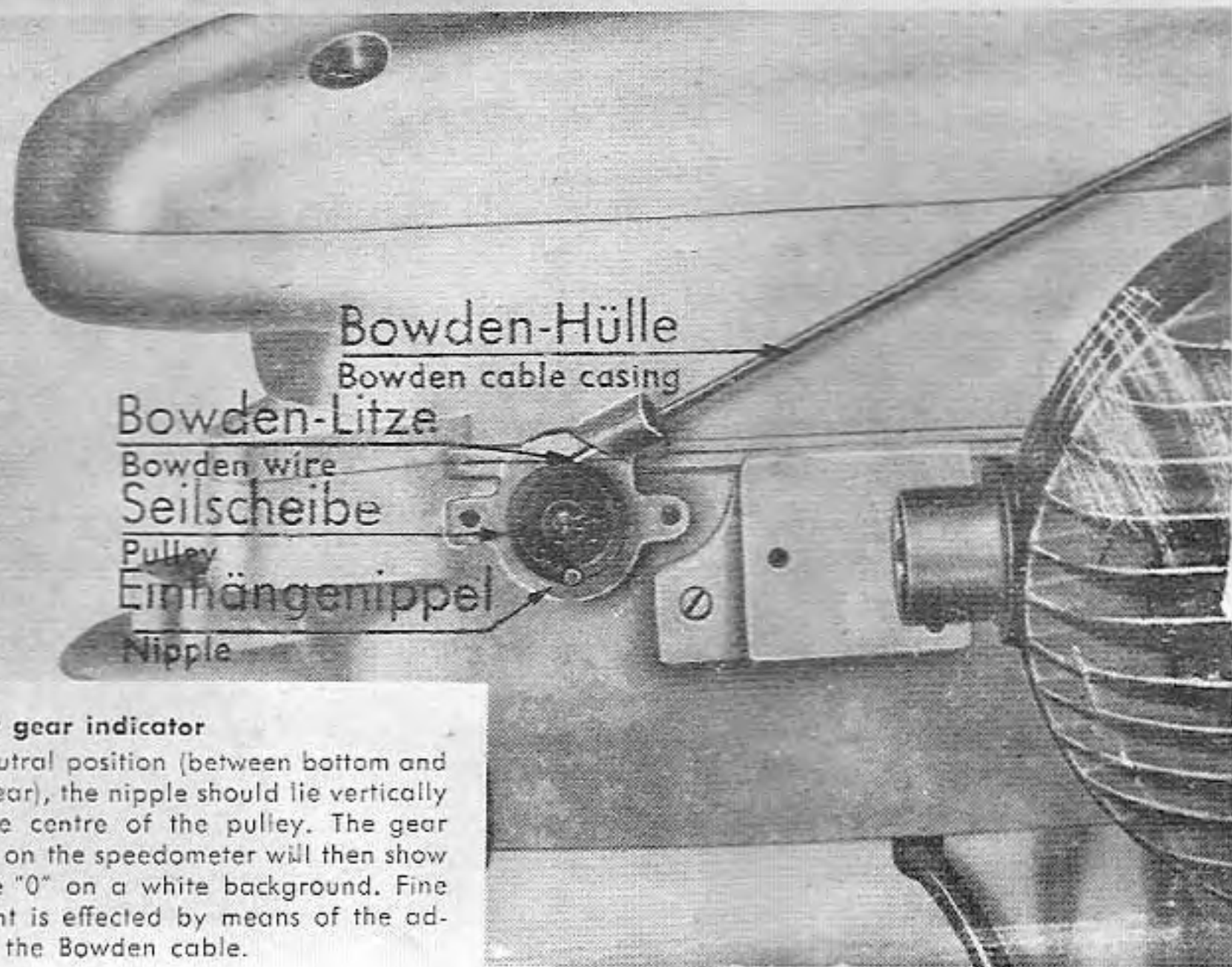
When the engine is running: Pull the clutch lever (left-hand side of handlebars) right up to the handlebars (i. e. declutch), engage bottom gear (see below), and slowly release the clutch lever, opening the throttle at the same time. **Note:** Don't suddenly release the clutch lever when the machine starts to move. Do not open throttle too wide so that the engine races. Release the clutch lever completely only when the machine is moving evenly, and then open the throttle to accelerate. When the engine is running at high speed, change up to next gear. To do this, throttle down (turn the right-hand twistgrip forwards), declutch by pulling the clutch lever, operate the foot-change pedal, and release the clutch lever at the same time opening the throttle. The same procedure is followed when changing up into third and top gear. **Remember:** Allowing your engine to warm up properly and running it at high speeds will prolong its life.

Changing gear

The four gears are engaged by operating the foot-change pedals with the toe and heel of the left foot; these pedals control an automatic gear-change mechanism which runs in an oil bath. The gear that is engaged at any time, including neutral, is readily determined by referring to the figures appearing in the window in the speedometer.

(see p. 19). The engine should always be started with neutral gear lying between bottom and second gear engaged, when the 0 (zero) is visible on the speedometer. Take care to change gear only when the clutch lever is pulled right home. Bottom gear is engaged by pushing down the front gear-change pedal. Pushing down the rear pedal will cause second, third and top gears to be engaged in succession. Pushing down the front pedal will always cause the next lower gear, i. e. third, second, or bottom, to be engaged. Changing down at too high speed will cause retardation forces to be set up which are capable of destroying any gearbox, no matter how strong it is. Always, therefore, reduce speed before changing down (braking if necessary). Never force the pedal into place, but always change gear gently. When engaging bottom gear before moving off, it may happen that the dogs on the gear wheels are not properly lined up. A good rider moves his machine a little to and fro when engaging gear prior to moving off to give the dogs a chance to engage properly. Always take the foot off the gear-change pedals after changing gear; the pedals will automatically return to the central position. Neutral is engaged from second gear





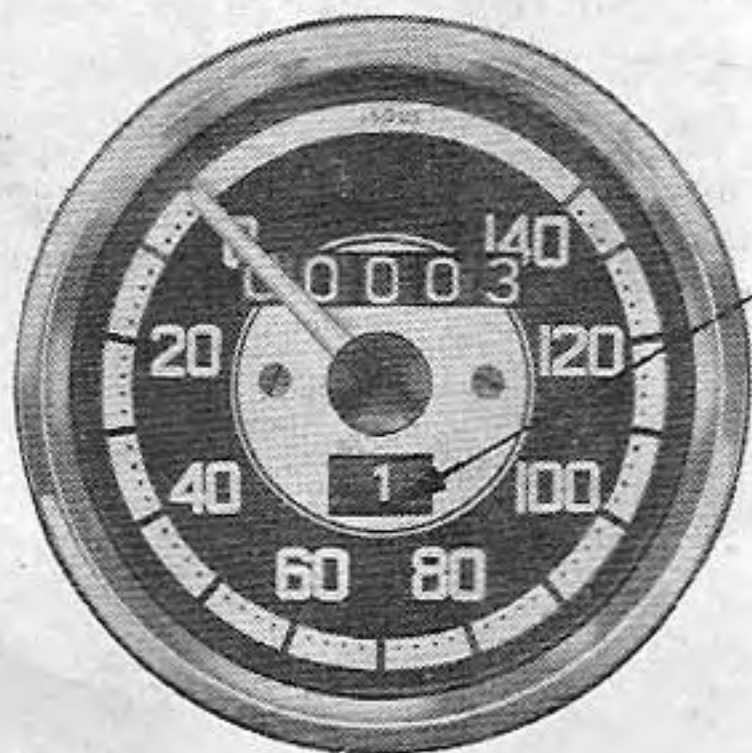
Bowden-Hülle
Bowden cable casing
Bowden-Litze
Bowden wire
Seilscheibe
Pulley
Einhängenippel
Nipple

Drive for gear indicator

In the neutral position (between bottom and second gear), the nipple should lie vertically below the centre of the pulley. The gear indicator on the speedometer will then show the figure "0" on a white background. Fine adjustment is effected by means of the adjuster on the Bowden cable.

by pushing the front pedal down half way, or from bottom gear by pushing the rear pedal down half way; in both cases a slight click will be felt as the correct position is obtained, and the gear indicator will register neutral.

The maximum speeds in the various gears are marked on the speedometer dial. It is possible to exceed these speeds by up to 10% with the Maicoletta 250, without endangering the engine in any way.



Bottom gear red
Neutral white
Second gear blue
Third gear yellow
Top gear green

Coming to a stop and stopping engine

Close the throttle and, when the machine has slowed down sufficiently, declutch and apply the brakes gently. Engage neutral gear. (The figure 0 must appear in the window of the gear indicator). Close the fuel tap and stop the engine by withdrawing the ignition key. (The handle of the fuel tap must point upwards).

When you have covered the first few miles you should thoroughly practice the use of the brakes. So far as possible use the front brake, and not just the rear brake. Get used to reacting quickly in an emergency. Learn how to brake properly and quickly before you start seeing how fast you can ride. We are serious about this, in the interests of yourself and your relatives. The same applies of course to any other vehicle.

Running in

The running-in period for the Maicoletta extends over the first 2000 km (1200 miles), and it has a vital effect on the life and reliability of the machine. In your own interests, therefore, observe the following notes and instructions.

For the first 500 km (300 miles) do not open the throttle more than half way; if possible ride without a pillion passenger; make certain the engine does not overheat. Ride neither too quickly **nor too slowly**. Carbon deposits, which act as an insulation against excessive heat, must be formed on the piston crown and in the exhaust passages before you open the throttle to its full extent. All bearings and seals, and

even parts of the carburetor, require a running-in period to enable them to bed down properly. **Running-in is largely a matter of instinct.**

Non-expert riders (i. e. people who are not engine experts) should take the following running-in speeds as a guide:

Mileage	Bottom gear	2nd gear	3rd gear	Top gear
0-1000 km (0-600 miles)	0-20 km/hr (0-12½ m.p.h.)	15-35 km/hr (10-20 m.p.h.)	30-50 km/hr (18-32 m.p.h.)	45-65 km/hr (17-40 m.p.h.)
1000-2000 km (600-1200 miles)	0-25 (0-15 m.p.h.)	15-40 (10-25 m.p.h.)	35-55 (20-35 m.p.h.)	50-75 (30-45 m.p.h.)

Don't just keep running at the highest permissible speed, but vary the speed frequently. **Keep opening and closing the throttle**, and keep the engine running as evenly as possible. The speed can slowly be increased. After 2000 km (1200 miles) have been covered, full speed can be used occasionally for short periods. **Never descend hills with the petrol tap closed**, since the engine will then not receive any lubricating oil, and this may lead to damage.

Important Notes on Riding Methods

Riding methods exert a major influence on the running costs and the life of your vehicle. With any vehicle it will be found that running at an excessive speed costs

money, and there is little to be gained by it. An even, but lively, method of driving will achieve the same average speed as one in which the speed is constantly being varied, but results in a considerably lower fuel consumption and tire wear, and is kinder to the machine in general. Driving a new machine too fast can lead to overheating and piston seizure. No claim can be made under the warranty in such a case, since neither the design nor the materials used are at fault. Running with the engine cold and turning at low speeds will reduce the life of the machine and increase the running costs. Even after running-in has been completed, do not keep the throttle fully open when running on a level road, but use about $\frac{3}{4}$ throttle. It will be found that the speed is nearly as high, while the fuel consumption is considerably reduced. On gradients do not keep the twistgrip fully open, but close it slightly; the engine will then pull better. Always change down in good time. You will not save any fuel by running at too slow a speed in the higher gears, allowing the engine to labour and finally to overheat. It is a mistake to try to get up every hill in top gear. The engine must be kept supplied with air to keep it cool, and to do this it must be kept running at an adequate speed. Don't whip the throttle open unnecessarily. This will not increase the engine speed, but instead will subject the transmission to heavy stresses and will increase the fuel consumption considerably. Never ride with the clutch lever pulled, slipping the clutch in order to keep the engine revving. Use your brakes as little as possible. Closing the throttle in good time will save wear

of the tires and brake linings, and also save fuel. Violent braking is justified only in cases of danger. Brake especially carefully and gently on wet or icy roads. Use your hand brake more than your foot brake. **Brake before you get to a corner, not while going round it!**

Special notes on handling the engine

You are certain to want to prevent any unnecessary wear of your new MAICO engine. You should therefore bear the following in mind: In general two-stroke engines are lubricated by means of the petroil mixture used as a fuel. In the MAICO engine, the crankshaft main bearings are lubricated by means of oil circulated from the gear-box. The big-end roller bearing, the gudgeon-pin bush, and the cylinder bore obtain the necessary oil from the petroil mixture. The petrol should vaporise out of the mixture in the crankcase, and leave the lubricating oil behind. The lubrication will be better therefore the more intensively the petrol is vaporised in the crankcase.

You should, therefore, under all circumstances avoid running your engine under-cooled. Never (particularly in cold weather) let the engine warm up **too slowly** after it has been started (it should take about 15–30 seconds). Low-quality fuels containing paraffin or Diesel fuel have an adverse effect on the engine:

1. Additions of this type to the fuel reduce the octane number and cause the engine to knock, with high peak pressures and excessive temperatures.
2. Fuels of this type contain constituents which are slow to vaporise, and which wash the oil out of the bearings and from the cylinder bore, thereby making these items more liable to corrosive attack.
3. Fuels having a high sulphur content also lead to the formation of sulphuric acid and of a very hard carbon deposit, which causes considerable wear.

We have discovered that mixtures of petrol and benzole have no ill effects on our MAICO engines, and in fact they have proved very successful.

CARE AND MAINTENANCE

Cleaning the vehicle

Never wipe off dirt and dust with a dry rag, since this will quickly destroy the highly-polished finish of the enamelled surfaces.

The best method of cleaning:

If possible hose the machine down to remove the worst of the dirt from the engine and frame. It is then advisable to clean the engine using a washing petrol and a brush. Do not wash the battery with petrol. Finally wash down with a brush or sponge and a lot of water, dry with a sponge, and then finally dry and polish with a soft rag or a chamois leather. When hosing down the underneath of the frame or when directing the jet of water through the inspection covers on the side of the machine, take care that water is not sprayed directly on to the dynamo, the air filter, or the brakes. Any water which penetrates into the brake drums will disperse only gradually during subsequent running and braking. Extra care should therefore be used for the first few miles after the machine has been washed. If possible remove all traces of water with compressed air after washing down, and then treat the machine with a special oil (spray-mist). A number of suitable preparations for the care of the enamelled parts are available commercially.

Care of the carburetor

Dirt and condensed water in the fuel will prevent the proper operation of the carburetor; as a result it is necessary to clean it from time to time. All work on the carburetor must be carried out with great care. Particular care must be taken not to damage the jets, the threads, or the washers, and also to ensure that the carburetor is always attached vertically. Use only **brass** washers and gaskets.

Cleaning the jets

The jets may be cleaned only by blowing through them or by using a bristle. On no account use a needle or a piece of wire! The jets are made of a soft material, and are accurately calibrated. They will be useless if they are damaged. Keep the threads on the jet block clean, and do not grease them.

Starting device

The starting device fitted to the carburetor makes the engine easier to start. The starting device should be brought into operation by turning the control lever fitted under the glove locker only when the **engine is cold. As soon as the engine runs smoothly, the starting device must be cut out.**

Adjusting the idling mixture (see pp. 28/29)

The idling mixture should be adjusted when the engine is thoroughly warmed up to its normal operating temperature, and with the throttle twistgrip fully closed. The engine should run evenly at a low speed. The idling speed is adjusted by altering the amount of mixture admitted when the twistgrip is closed. This is achieved by means of the inclined throttle-slide stop screw. Turning this screw clockwise increases the amount of mixture admitted, and hence the engine speed, while turning it anti-clockwise reduces the engine speed. Don't forget to tighten up the lock-nut after making the adjustment. The composition of the idling mixture is adjusted by means of the pilot air screw. The further this is screwed in the richer the mixture that will be obtained, while screwing it out weakens the mixture. The effect of the pilot air screw is felt over the entire range from idling to full power.

1. Screw the pilot air screw right up with the aid of a screwdriver.
2. Then unscrew the pilot air screw 1 turn (anti-clockwise). This is the normal idling position corresponding to the size 40 pilot jet fitted as standard. Turning the pilot air screw slightly one way or the other from this position will effect the alteration in the composition of the idling mixture described above.

The Carburetor Parts

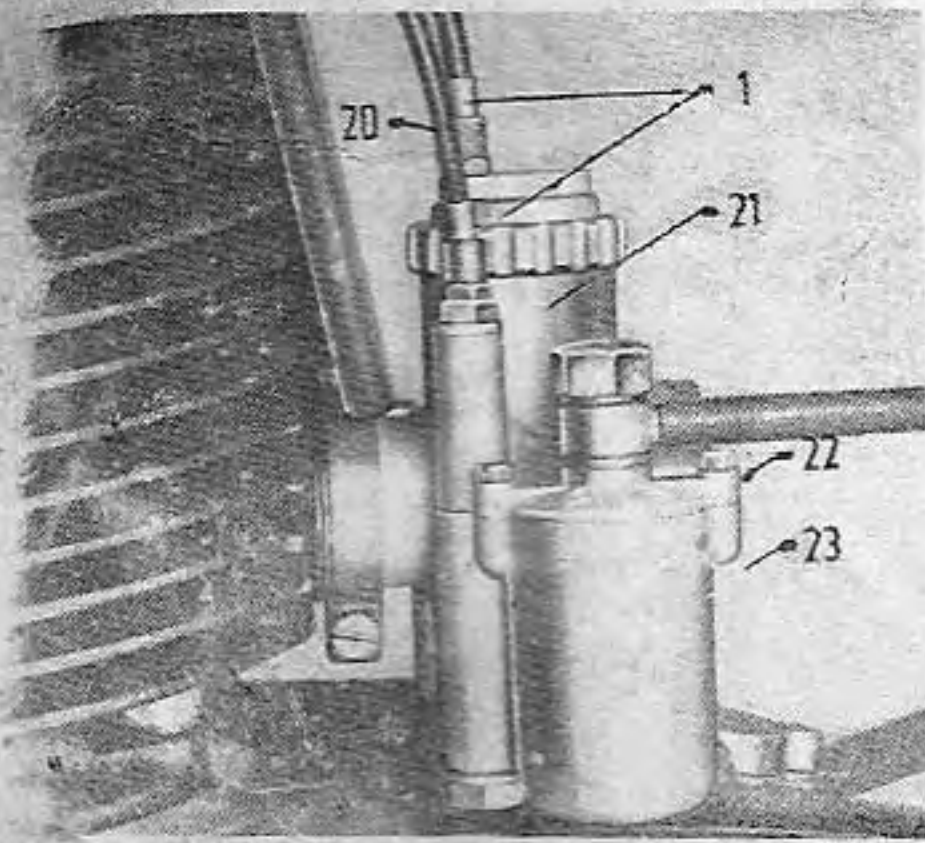
- | | | |
|------------------------------|-------------------------|-------------------------|
| 1. Bowden cable adjuster | 10. Pilot jet | 19. Jet block |
| 2. Lock nut | 11. Washer | 20. Starter slide cable |
| 3. Cap | 12. Jet plug | 21. Starter slide |
| 4. Knurled ring securing cap | 13. Spring clip | 22. Float chamber lid |
| 5. Throttle slide spring | 14. Throttle slide | 23. Float chamber |
| 6. Carburetor casing | 15. Main jet | 24. Float needle |
| 7. Pinch bolt | 16. Compression spring | 25. Float |
| 8. Needle | 17. Pilot air screw | 26. Starter jet |
| 9. Needle jet | 18. Throttle slide stop | 27. Jet plug |

Altering the position of the needle on the throttle slide

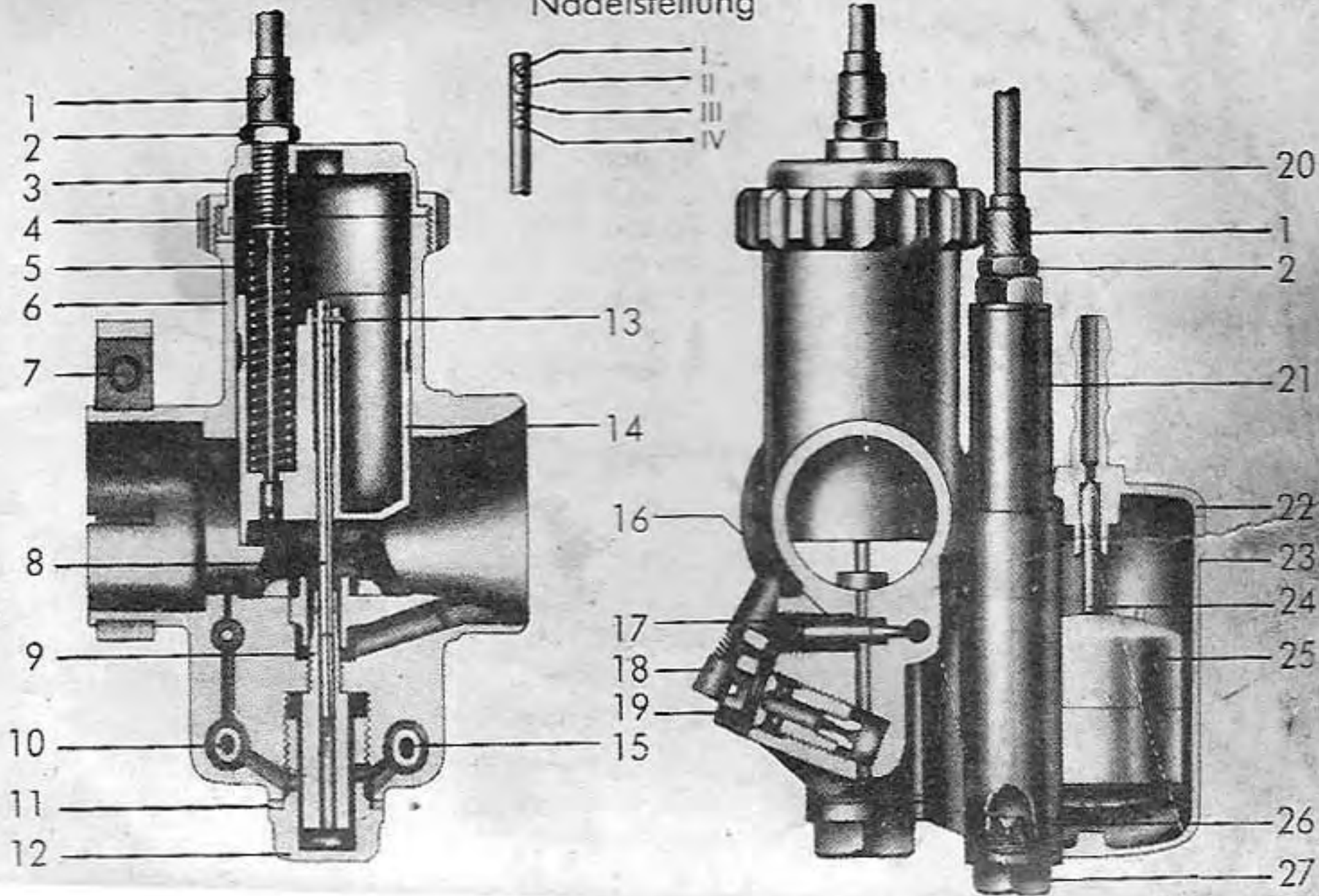
If it becomes necessary to adjust the fuel mixture so that it is richer or weaker when the throttle is $\frac{1}{4}$ to $\frac{3}{4}$ open (see p. 61), this can be achieved by raising or lowering the needle.

To do this:

1. Unscrew the knurled ring holding the cap in place.



Needle positions
Nadelstellung



2. Withdraw the throttle slide, the knurled ring, the cap, and the Bowden cable upwards clear of the carburetor body.
3. Pull out the wire spring clip (13).
4. Move the needle up (richer mixture) or down (weaker mixture) by one hole, and replace the spring clip to secure it to the throttle slide.
5. Replace the throttle slide and screw up the ring which holds the cap in place.

Altering the position of the needle affects the adjustment of the carburetor over a range extending from **above** the idling position to **below** the full throttle position.

The air filter and how to clean it

The air drawn in to the engine is cleaned as it passes through the air filter, the dust being deposited on the oily elements. The condition of the air filter will affect both the life of the engine and the fuel consumption. A blocked filter will cause the fuel consumption to rise and will result in the engine running unevenly. A dry filter will not collect the dust, so that this penetrates through into the engine where it acts like an abrasive, wearing away all the moving parts. The air filter should be cleaned about every 500–1000 km (300–600 miles) depending on the state of the roads. The best way is to remove the inlet air silencer complete with filter, and to dip the filter portion in a can containing petrol and to swill it to and fro.

Then shake off the petrol, and wet the filter with a thick engine oil. Allow all the surplus oil to drip off.

Care and adjustment of the chains

1. **Primary chain:** The primary chain (from the crankshaft to the clutch) runs in an oilbath formed by the gearbox, so that it requires no maintenance.
2. **Rear chain:** Every rear chain will stretch to some extent with use. The chain must be adjusted so that it is neither too tight nor too slack. When the chain tension is properly adjusted, it should be possible to move the chain up and down by 15 or 20 mm ($\frac{1}{2}$ to $\frac{3}{4}$ in) without any difficulty. (Check this by removing the inspection cover; the rear wheel should be unloaded). Make quite certain that the chain does not rub on the chaincase, and always adjust in good time to prevent this. To close the inspection opening, oil the cover, and place the lower part of the groove into position; then press against the projecting edges until the whole lip springs into place. The rear chain (from the gearbox to the rear wheel) should be taken off and thoroughly cleaned and greased. **This should be done regularly every 3000 km (1800 miles).**

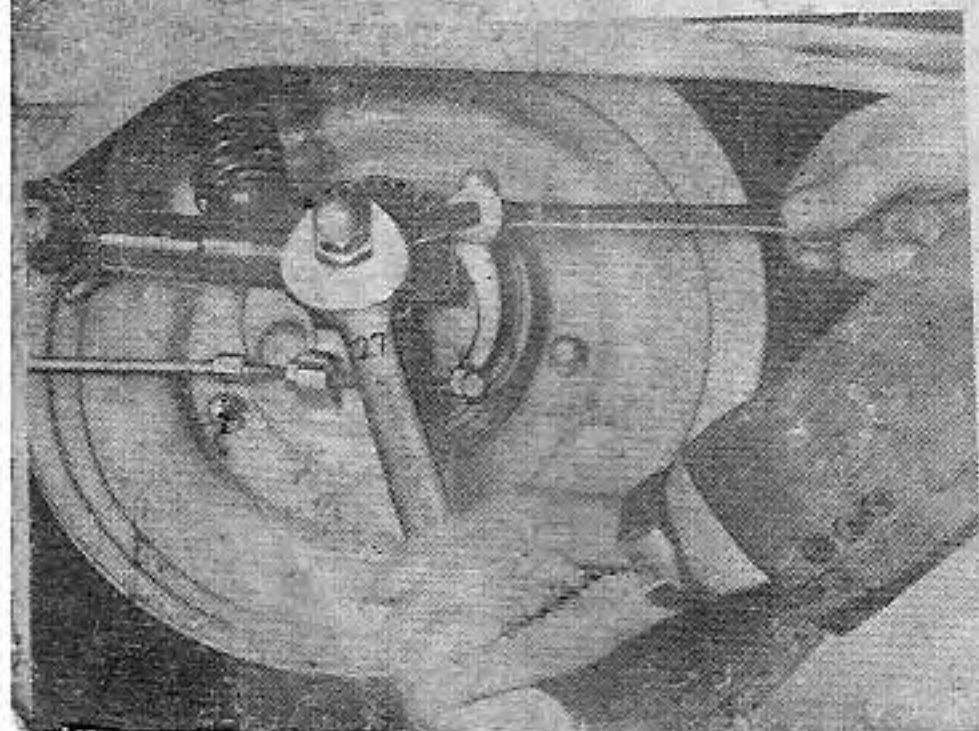
All traces of old oil and grease should be cleaned off using a stiff brush and washing petrol; keep the chain moving so that the pins and the interior of the rollers are cleaned.

When dry, the chain should be immersed in chain grease that has been warmed to make it thinner. Again move the chain to and fro so that the grease penetrates to the interior of the chain. When the grease has cooled down slightly, take the chain out and let the surplus grease drip off. At the same time as the chain is thoroughly cleaned in this way, the chain sprockets and chain case should be cleaned.

Adjusting the chain

1. Loosen the cap nut on the axle pin (22 mm across flats). 2. Loosen both axle nuts (27 mm across flats). 3. Use a 14-mm spanner to move the eccentric discs on both

sides of the hub to the same extent. The graduations on these eccentric discs are arranged so that moving the discs by one graduation will move the axle through the same distance on both the left-hand and right-hand sides. When the chain tension has been adjusted, carefully tighten all bolts and nuts, and check that there is the required amount of slack in the chain. To do this remove the inspection cover on the chaincase.



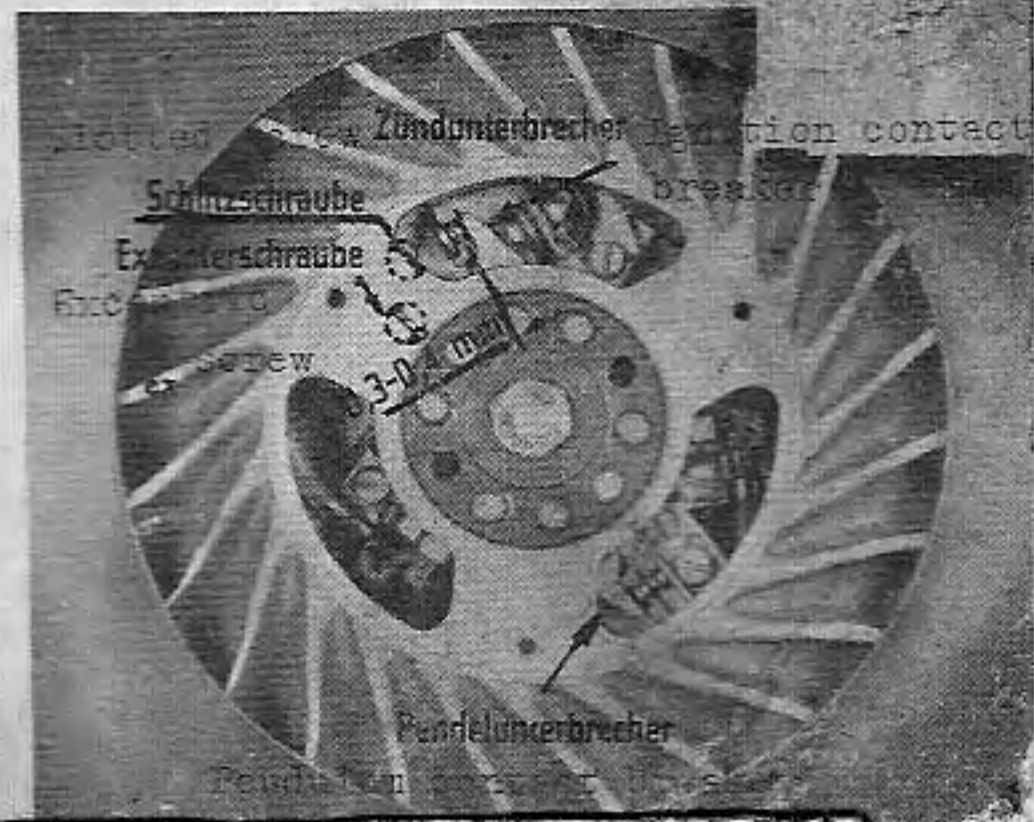
Flywheel ignition-lighting generator and pendulum-type starter

The 60/90-watt ignition and lighting generator with the starter and the fan is fitted on the right-hand side of the engine under the fan cover.

This installation:

1. Starts the engine.
2. Supplies a low-voltage current for the lights, the horn, and for charging the battery, and
3. Supplies a high-tension current for ignition purposes.

All work on this system must be carried out with great care and by a person possessing expert knowledge. It is most strongly recommended that this work be entrusted to a Bosch Service Station, or to some other recognised specialist. Ignition should take place 3.2 to 3.0 mm (0.128 to 0.120 in) before T.D.C., and the ignition is timed to give this value at the factory. It is only necessary to inspect the **contact breaker** points about every 3000 km (1800 miles). To do



this the rear panelling and the round cover plate secured to the fan wheel by means of three slotted screws must be removed. The gap between the points when they are fully open should be 0.3 to 0.4 mm (0.012 to 0.016 in) (see illustration, p. 33). The points themselves should have a smooth level surface; if necessary they can be carefully touched up by means of a magneto file.

Any wear can be corrected for by loosening the slotted screw immediately to the left of the contact breaker points, and adjusting the gap by means of the eccentric screw situated 10 mm ($\frac{3}{8}$ in) below it. It is most strongly advised not to make any adjustments to the pendulum contact breaker (see p. 33), since even a small error in the settings of this component may cause difficulties when starting.

Starting the scooter without a battery

If the battery is faulty or is badly discharged, the starter will not work, and so it will not be possible to start the engine in the normal manner.

The only way of starting the engine in this case is by means of a push start. This will prove easier if the earth lead is disconnected from the negative terminal of the battery. After starting re-connect this lead in order that the battery shall be charged up by the dynamo.

Care of the spark plug

While running-in and for normal use, a plug with a heat range of 240 should be used. If the engine is harder worked (i. e. for mountain touring, carrying a pillion passenger, etc.) it may prove advisable to change to a plug with a heat range of 260. Every 2000 to 3000 km (1200 to 1800 miles) remove and clean the spark plug, and check the gap. The spark plug should be replaced about every 10,000 km (6,000 miles). The electrode gap should be 0.6 to 0.7 mm (0.024 to 0.028 in). The central electrode of the spark plug will turn away in course of time, and the correct gap can then be regained by bending the outer electrode. The best way of cleaning the spark plug is by means of sandblasting equipment or with a wire brush; it is only necessary to remove any metallic powder, soot, or carbon deposits. The spark plug must always be firmly screwed in place. Do not forget the sealing washer between the plug and the cylinder head. The colour of the spark plug insulation forms a useful guide to the combustion conditions in the engine. When the right spark plug is being used, and combustion conditions are correct, the insulation should be coffee-coloured. If the electrodes show evidence of melting, the spark plug runs too hot (use a spark plug with the next higher heat range). If the plug is badly sooted up or oily, it is a sign that it runs too cold in service (use a spark plug with the next lower heat range, but never go below 175). These variations in the appearance of the

spark plug are largely due to variations in driving methods and to the carburetor adjustment (see pp. 27-30).

Low-quality fuels make the work of the spark plug very difficult, and have an adverse effect on its life. Always therefore use a pure branded petrol and a good oil.

Bridging of spark-plug electrodes

It may happen that during the course of a trip the ignition fails completely or partially although the ignition system appears to be in good order and there is sufficient fuel available.

Removing the spark plug will then usually disclose that a foreign body has become lodged between the electrodes and is short-circuiting the plug. This situation can develop to the stage where it is necessary to stop every few miles to remove the bridging material so that the plug may work properly.

No make of plug is proof against this trouble.

Remedy: 1. Carefully clean the air filter and then well damp with oil.

2. Adjust the electrode gap so that it is 0.6 to 0.7 mm (0.024 to 0.028 in), and check this frequently.

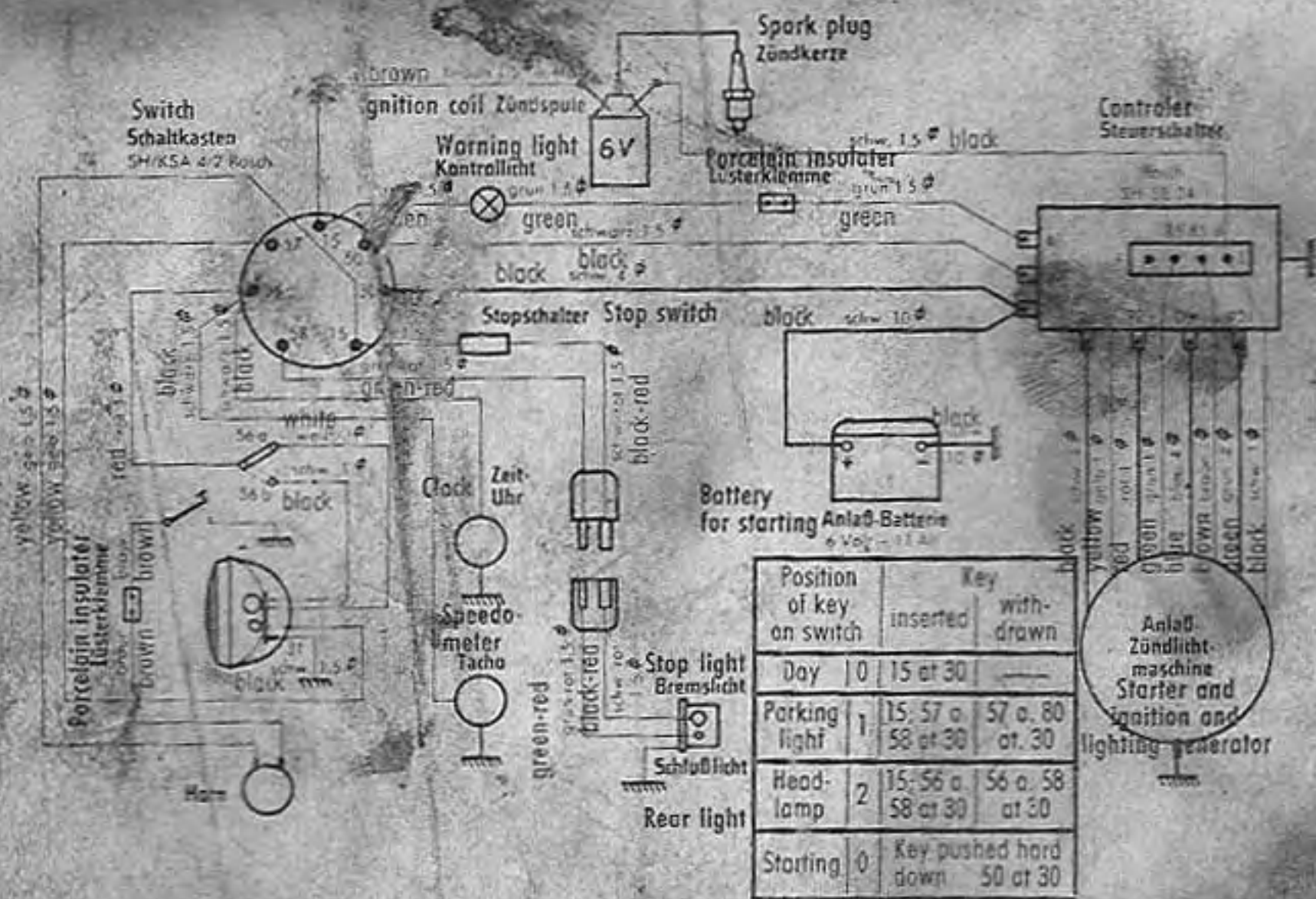
3. Clean the plug or fit a new plug.

Care of the battery

The battery should be checked regularly (about every four weeks) and carefully looked after. It must be filled with acid only to the level of the black line (on the battery casing). If liquid is lost by evaporation, use only distilled water for topping up. Tap water contains lime, and will cause damage! Acid should be added only if some of the original amount has been spilled. Finally check the density of the acid (specific gravity should be 1.285) and correct as necessary. The battery terminals should be cleaned with a clean cloth, or, if they are badly corroded with a brush and water, but never with paraffin or petrol. The terminals and the ends of the leads should be treated with a terminal grease or with vaseline. If the vehicle is laid up, the battery should be removed and placed in the care of a good electrical workshop. The workshop should charge the battery up about every four weeks. Any lead-acid battery will lose its charge if allowed to stand, and it does this at a rate of about 2 volts every four weeks. If a battery does become discharged it will deteriorate very rapidly, so always make sure that your battery is fully charged.

If the vehicle is to be laid on its side for any length of time (for carrying out repairs, etc.) it is most advisable first to remove the battery, so that no acid may spill and damage the enamel and the frame members.

When charging the battery follow the charging instructions engraved in the battery lid.



Position of key on switch	Key	
	inserted	with-drawn
Day	0 15 at 30	
Parking light	1 15, 57 a 58 at 30	57 a. 80 at 30
Head-lamp	2 15, 56 a 58 at 30	56 a. 58 at 30
Starting	0 Key pushed hard down	50 at 30

Anlaß-Zündlichtmaschine Starter and ignition and lighting generator

Wiring diagram of the electrical installation on the MAICOLETTA

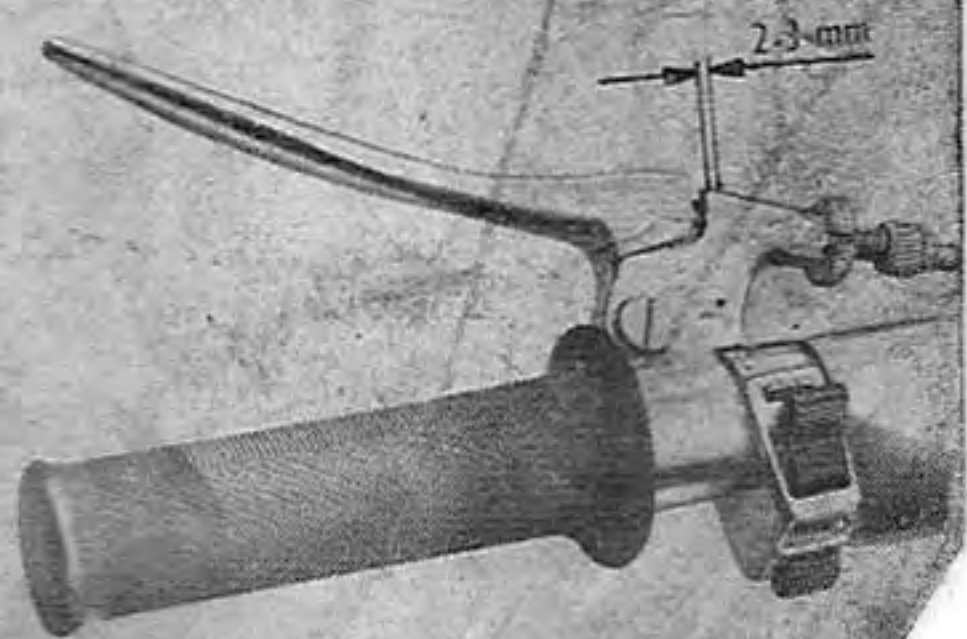
The fan

The output and the life of the engine are to a very large extent dependent on adequate cooling. In the case of the Maicoletta this is achieved in a very simple and reliable manner by means of the fan that forms part of the dynamo. Since the cooling effect is largely dependent on the speed of the fan, it is advisable always to keep the engine revving freely, i. e. not to ride too slowly in the higher gears, but to change down in good time. The fan requires no special care or maintenance.

The clutch and its adjustment

The multi-disc plate clutch runs in a common oil bath with the gearbox, the primary chain, and the chain sprocket on the crankshaft, which ensures that it engages smoothly and that its wear is reduced to a minimum. The clutch is operated by means of the clutch lever on the handlebars. When the hand lever is pulled up against the handlebars the clutch must be fully disengaged.

It is inevitable with any clutch that the friction linings will wear down in course of time. It is therefore essential that there should always be





a certain amount of play in the clutch cable. This play should amount to 2–3 mm (0.08–0.02 in) measured at the clutch operating lever on the gearbox (see illustration), and the wear of the clutch lining tends always to reduce it. (Make certain that the clutch cable is always free to move in its casing).

It is essential that the clutch cable be adjusted from time to time. This is normally effected by means of the adjuster at the handlebars (see illustration, p. 12). When all the adjustment

available at this point has been taken up, the clutch operating lever (left-hand side of gearbox) can be moved back one notch on the serrated clutch spindle. If the friction linings are so badly worn that no further relief can be obtained by these two methods, it is possible to readjust the clutch itself inside the engine block. To do this it is necessary to remove the crankcase cover plate. This should be entrusted only to a reputable motor-cycle repairer. A properly lubricated clutch operating cable plays a large part in ensuring that the clutch is easy to operate. The cable should therefore be lubricated regularly. The best way of doing this is by turning the

adjuster on the handlebars so that the slit is uppermost, and then pouring a thin oil or a mixture of oil and petrol in the proportions of 1:1 through the casing.

The gearbox

The gearbox is built in unit with the engine; it is a four-speed box with a neutral gear. The gear pinions are shifted by means of an automatic gear selector mechanism and a pair of gear selector forks operated by the foot-change pedals. The gearbox is connected to the crankshaft through the clutch and the primary chain; it has a capacity of about 1 litre (2 pints) of engine oil. It is strongly recommended that only branded oils be used in the gearbox, preferably an SAE 40-50 engine oil in the summer, and SAE 30 oil in the winter (SAE 20 under conditions of extreme cold). Change the oil for the first time after covering 500 km (300 miles). Thereafter it is advisable to check the oil level in the gearbox at least every 500-1000 km (300-600 miles), and after laying the machine on its side, to remove the oil drain plug (see illustration p. 40) and to clean the magnetic insert attached to it. Change the oil at the intervals quoted in the Lubrication Chart (p. 56); this should always be done when the machine is warm in order to ensure that all the old oil is drained off. To drain off the gearbox oil, remove the oil drain plug (see illustration p. 40). The fresh oil is added through the opening (behind the inspection cover on the left-hand side of the crankcase). The

oil should be filled up level with the bottom of the filling opening, and should not be allowed to fall more than 10 mm ($\frac{3}{8}$ in) below the bottom of the inspection opening (when the machine is upright).

Steering

The steering must be neither too tight nor too slack; if it is badly adjusted it will have an adverse effect on the riding qualities. When the steering is properly adjusted the forks must turn absolutely freely. Any play must be taken up at once by adjusting the top steering-head bearing. After every 10,000 km (6,000 miles) the balls in the two steering-head bearings should be cleaned and repacked with fresh high-pressure grease. (Have this work carried out by a motor-cycle repairer).

The clock

This is fitted on the right-hand side of the instrument panel, and is directly illuminated by means of a 6-volt 0.6-watt bulb when the headlamp is switched on. The large knurled ring (for winding up the 8-day movement) and the small knurled knob (for setting the hands) which lies inside the knurled ring are reached by opening the glove locker.

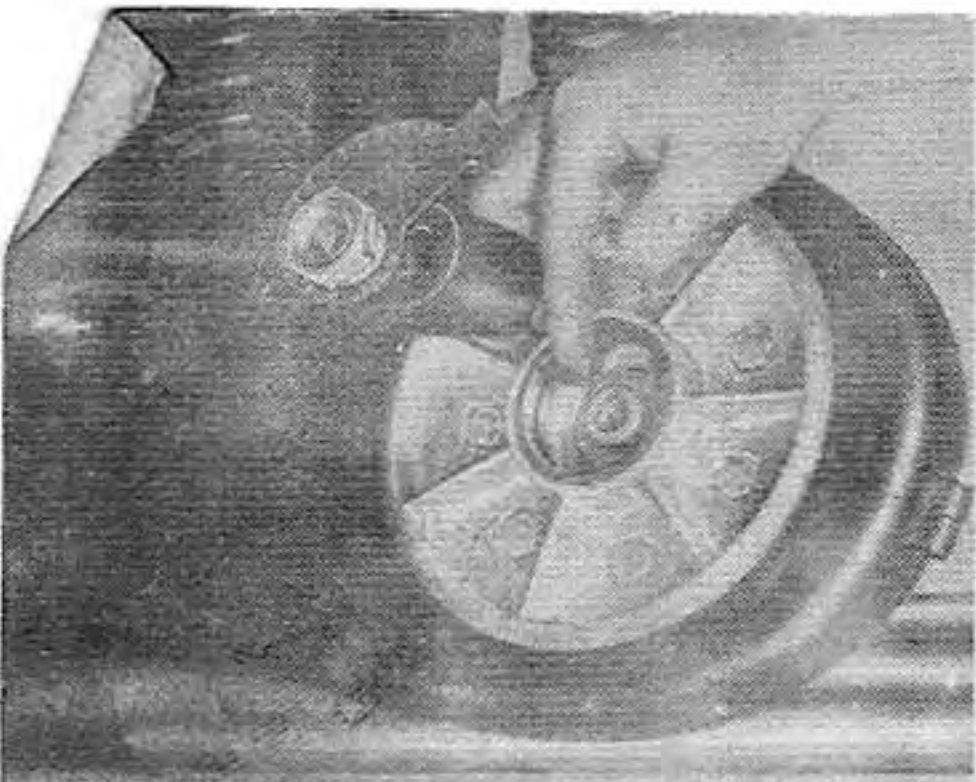
Care of the tires

Check the tire pressure before starting any long trip, and also regularly once a week. If the tires are under-inflated, more power will be required from the engine, the tires will become prematurely worn, and the valve may pull out of the tube.

Not only the pressure but also proper care and riding methods have a great influence on the life of the tires. Racing starts, violent acceleration, sudden braking, and high speeds will all cause rapid wear of the tires. Avoid overloading your scooter, and protect the tires from the sun as far as possible. The full heat of the sun will make the tires brittle, while oil, grease, and petrol all have a destructive effect on the rubber.

The hubs

The light-alloy full-width hubs are provided with large cooling surfaces; their ball bearings are packed in hot-bearing grease. As a result they require no lubrication for a long period. Every 3000 to 4000 km (1800 to 2400 miles) the hubs should, however, be inspected, and the plastic bush in the rear hub should be greased (see illustration, p. 44); the worm and worm-wheel on the front hub for the speedometer drive should be cleaned and greased at the same time. Grooves are machined in the cam spindles; these are accessible when the cam levers and the rubber washers have



been removed, and should be given a few drops of oil from time to time (about every 1000 to 2000 km (600 to 1200 miles)). When the rear wheel is fitted in the machine can be rocked to and fro a few degrees relative to the brake drum. This is not due to any fault in the hubs, but results from the unavoidable play between the driving members and the rubber buffers, and to the elasticity of the rubber. To assist in fitting the rear wheel notches are machined on the outer edge of the driving drum, level with the driving ribs. On assembly these notches must

be lined up with the gaps between the rubber buffers on the other section of the shock absorber. When dismantling the front hub take care not to damage the ends of the axle when clamping it in the vice. Use light-alloy clamps, or hold the end of the axle in a fork.

Brakes and their adjustment

Both brakes should be tested before starting off on every trip. If the brake linings have

become worn in the course of time, it will be necessary to adjust the brakes. It is in your own interests to pay special attention to this point.

Both the brake cam levers should have a little play, i. e. it should be possible to move them slightly without the brakes starting to take effect.

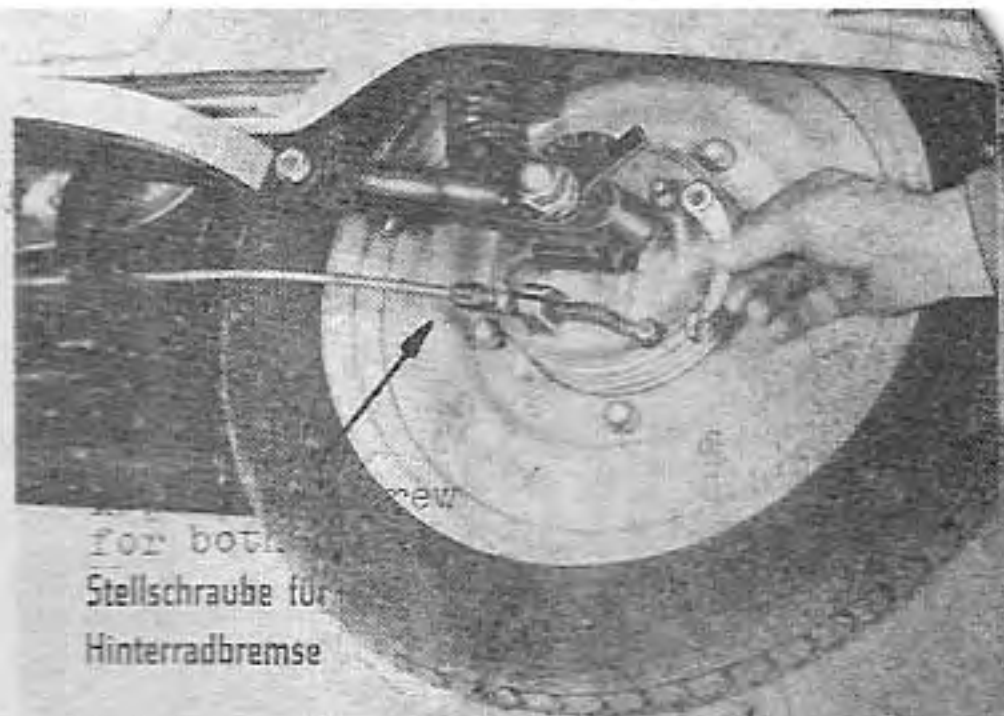
On the other hand it is essential that it should not be possible to move the controls to their fullest extent without obtaining sufficient braking effect.

The foot brake is adjusted by turning the Bowden cable adjuster mounted on the brake back plate. The hand brake (front brake) is adjusted

by means of the adjuster on the handlebars. If insufficient adjustment is available by this means, the brake cam lever on the hub concerned should be turned back one serration on the cam spindle and firmly secured. Fine adjustment can then be carried out by means of the cable adjusters. The foot brake pedal must always move freely. Force some grease into the grease nipple about every 3000 km (1800 miles).

Fuel tap

Two fine gauze filters are fitted inside the fuel tap. These prevent any particles of



for both
Stellschraube für
Hinterradbremse

dirt that might enter the tank from penetrating into the float chamber of the carburetor. These filters must therefore be thoroughly cleaned at least every 3000 km (1800 miles) by washing them in clean petrol. The tube for ventilating the tank must also be washed through with petrol every 3000 km (1800 miles) and oiled. This tube must not be shortened.

Note: The adapter on the fuel tap is fitted with both a right-hand and a left-hand thread; don't forget to replace the washer.

The three positions of the tap are:

1. The handle points upwards: The tap is closed. The letter "Z" points to the rear towards the tank.
2. The handle points forwards: Tap is normally open.
3. The handle points downwards: The tap permits fuel to be drawn from the reserve supply. The letter "R" points to the rear towards the tank.
The reserve supply of fuel comprises about 4 litres (1 gallon).

Note: Never ride with too little fuel in the tank, since otherwise the engine might receive too little fuel, and hence stop, when ascending a steep gradient.

Lighting system

The headlamp has a large reflector 130 mm (5 in) in diameter, and contains a 6-volt 35/35-watt double-filament bulb and a 6-volt 1.5-watt parking light bulb. The speedometer and the clock are each directly illuminated by means of a 6-volt 0.6-watt bulb when the headlamp is switched on.

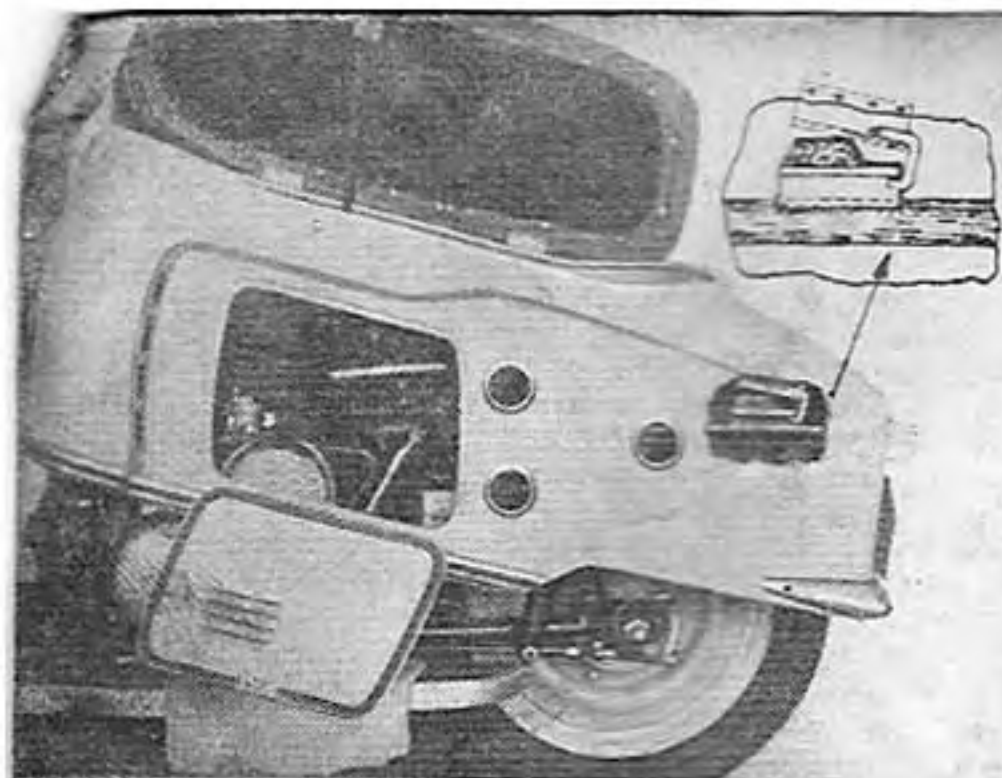
The rear light, which also contains the stop light and the reflector, is fitted with a 6-volt 3-watt festoon bulb 31 mm in length for the rear light and for illuminating the number plate, and with a 6-volt 15-watt festoon bulb (44 mm long) for the stop light.

Start the engine before switching on the lights.

Many of the accidents in which motor vehicles are involved at night, some of which occur at places which would never be considered dangerous, have been found to be due to the driver being dazzled by oncoming traffic. In order to reduce this danger as far as possible, regulations have been published which govern the adjustment of headlamps. Always make certain that your headlamps are properly adjusted; otherwise you may run into difficulties with the police, and even be the cause of an accident.

Removing the rear panelling

In order to carry out any work on the engine, the dynamo, the carburetor, or the rear springing, it is first necessary to remove the rear panelling.



This is done in the following simple manner:

1. Open the seat.
2. Unplug the lead running to the rear light (the plug is about 10 cm (4 in) in front of the catch for the seat on the body).
3. Unscrew the long M 8 hexagon bolt in front of the cylinder.
4. Swing the bracket and this bolt clear to the left.
5. Open the left-hand door in the panelling (use the ignition key to open this door; a piece of cleaning rag should be laid under it to avoid damaging the paintwork).
6. Lift the front of the body, and move it slightly to the left in order to clear the intake air silencer and its rubber ring. Then push the body to the rear to clear the two brackets attached to the back of the frame (see illustration).
7. Lift the whole of the rear panelling, complete with seat, clear of the frame.

Exhaust system

With two-stroke engines there is no way of preventing deposits being formed in the course of time in the combustion chamber and in the internal passages in the engine. These have an adverse effect on the engine performance, and must therefore be removed. The exhaust system is tuned to the engine. Any alteration (removal of baffles), while it will increase the exhaust noise (which is forbidden), will only lead to a reduction in engine power and an increase in fuel consumption. Do not, therefore, make any alterations to the exhaust system (it will only get you into trouble with the police!) but, at the same time, don't forget to clean it regularly. If any alterations are made to the exhaust system, the warranty immediately becomes invalid.

If, after the vehicle has been in use for some considerable period, a marked reduction in performance is observed, it will usually be found that there are carbon deposits on the edges of the exhaust ports and in the holes in the silencer baffles. If the exhaust pipe and silencer are removed from the cylinder, and the piston is placed on bottom dead centre, the carbon can be removed from the exhaust port with the aid of a scraper or screwdriver and can be blown out of the cylinder by turning the engine over with the starter.

The best way of cleaning the exhaust pipe and the silencer is by burning the carbon out. The most satisfactory tool for this job is an acetylene welding burner supplied with an excess of oxygen.

Throttle twistgrip

The throttle twistgrip should be greased about every 10,000 km (6,000 miles). To do this push the rubber cover back from the lower end of the twistgrip, and unscrew the slotted screw visible when the twistgrip is closed. It will then be found easy to remove the twistgrip. The slider surface under the twistgrip should then be cleaned and well greased. Then replace the twistgrip and secure by means of the screw.

Telescopic forks

In order to make sure that the MAICOLETTA has the same superb riding qualities as have all MAICO motor cycles, telescopic forks have been fitted; **especially in the case of small wheels** these forks ensure that variations in the castor action are reduced to a minimum, which is a vital factor in ensuring good riding and steering properties. These forks have been specially designed to conform to the general absence of maintenance which is such a feature of the fully-enclosed vehicle. The long guide members for the telescopic tubes are made of drop-forged light-alloy, and are provided with double seals to prevent any dirt or dust entering. The forks are filled with about 50 cc (2 oz) of oil, which ensures that they are properly lubricated and provides good damping of road shocks.

Double-lip oil seals ensure that no oil is lost from the forks.

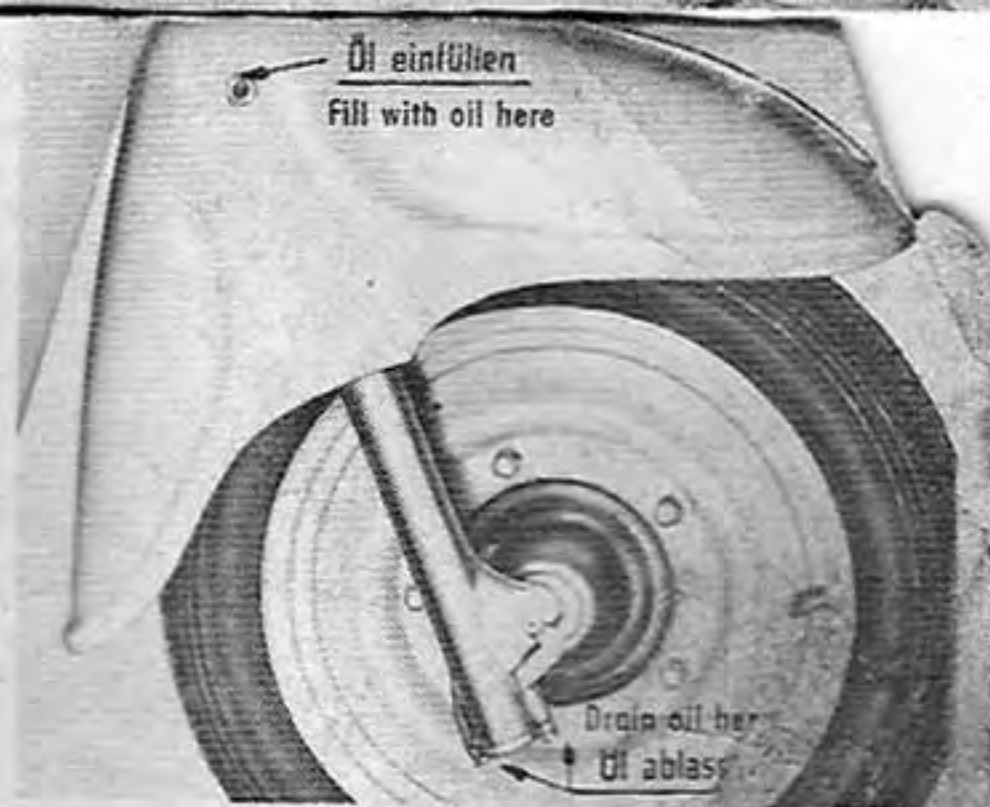
Variable-rate springs ensure that there is a gentle progressive springing, while buffers are provided which protect the rider against violent shocks even if the springing system is overloaded.

The only maintenance required by these forks is for the oil in both fork tubes to be changed. This should be done for the first time after covering 500 km (300 miles) and again at 3000 km (1800 miles), and thereafter every 3000 km (1800 miles). (See Maintenance and Lubrication Chart on pages 56-57).

This is done in the following manner:

a) **To drain oil:** Support the scooter on its central stand, and unscrew the four hexagon-head bolts (two on each fork tube). Push the front wheel, together with both fork tubes, upwards about 30-50 mm (1½-2 in), and support it in this position.

Make quite certain that all the oil is drained from both tubes.



Then replace the rubber ring in each fork tube, and remove the support for the front wheel. Replace the four M6 bolts with their lock washers, and tighten them up evenly.

b) **Filling with fresh oil:** Lean the vehicle over so that it rests on the left-hand or right-hand foot-rest. Unscrew the oil filler plug (slotted screw – see illustration, p. 51), and insert 50 cc (about 2 oz) of SAE 10 engine oil in each fork tube. Move fork tube up and down while filling with oil. **Use only good quality branded oils.**

Removal of telescopic forks

The telescopic forks and the front mudguard can be easily be taken off the machine without it being necessary first to remove any pieces of panelling or the headlamp. This is done in the following manner:

1. Disconnect the Bowden cable for the front brake from the brake back plate and from the cam lever.
2. Completely unscrew the M6 bolt (10 mm across flats) that holds the speedometer shaft from the brake back plate, and pull out the speedometer shaft.
3. Unscrew the M10 socket-head bolt from the handlebar shaft, and take the handlebars, complete with Bowden cables, off the head tube.

4. Unscrew the steering-damper handle, and remove it from the head tube together with the two cup springs and the cover plate.
5. Unscrew the two hexagon nuts (36 mm across flats) that are now visible, and take these, and all four steering-damper discs, off the head tube.
Knock the 6-mm dia clamping sleeve into the head tube by means of a punch. It is now possible to pull the forks complete with mudguard and head tube downwards clear of the bearings.
Replace the forks in the reverse order.

Removing the ignition switch

The ignition and lighting switch has been designed so that it can easily be taken off in order to provide easy access to its terminals.

This is done in the following way:

1. Open the glove locker. Push the switch up against the instrument panel and twist it.
2. Lift the cover off the switch.
3. Twist the switch back into its original position and withdraw it downwards clear of the instrument panel.
4. Pull the lead and connection for the clock away downwards and sideways. When replacing the switch do not forget the spring.

MAICO Service

A book of Service Vouchers is supplied with each Maico vehicle. This provides for regular inspection and lubrication to be carried out over a distance of 30,000 km (18,000 miles). In your own interests we advise you to have the various inspections carried out at the specified intervals. At the same time you will be able to make certain that the maintenance work required is being carried out as it falls due.

The first two Service Vouchers provide for free servicing by our Service Agents after 500 and 1000 km (300 and 600 miles). The inspection after 3000 km (1800 miles) have been covered is carried out at a special low price. In each case any lubricants, washing petrol, fuel, or any spare parts such as washers, bolts, etc., that are used will be the subject of an additional charge.

If for any reason you find it impossible to have the work carried out at the specified time by a MAICO dealer, you should at least try to carry out the lubrication of the various parts yourself. The well-organised and wide-spread MAICO Dealer organisation is always ready to advise and assist our customers in every possible way.

The MAICO Service sign illustrated marks the presence of one of the more than 2000 MAICO Dealers, who will be pleased to help you with his expert knowledge at any time. These workshops also dispose of skilled mechanics, large stocks of spare parts, and all the special tools and equipment necessary to ensure that all work is properly and efficiently performed.



Maintenance and Lubrication Chart

(Supplementary to the Service Vouchers)

	every 300 miles	every 600 miles	At mileage														
			300	600	1200	1800	2400	3600	5400	7200	9000	10800	12600	14400	16200	18000	
1. Check gearbox oil level. Clean magnetic insert	X			X		X											
2. Drain gearbox oil, flush, and fill with fresh oil. Capacity about 1 litre (2 pints). Clean magnetic insert			X		X		X	X	X	X	X	X	X	X	X	X	X
3. Drain oil from telescopic forks, and fill with fresh oil			X			X		X	X	X	X	X	X	X	X	X	X
4. Check clutch. Adjust play to 2-3 mm (0.08-0.12 in)			X	X		X		X	X	X	X	X	X	X	X	X	X
5. Check ignition and spark plug			X	X		X		X	X	X	X	X	X	X	X	X	X
6. Lubricate contact-breaker pad				X		X		X	X	X	X	X	X	X	X	X	X
7. Decarbonise exhaust system and check piston rings						X			X		X		X		X		
8. Check gear-change mechanism and adjust as necessary			X	X		X		X	X	X	X	X	X	X	X	X	X
9. Clean carburetor, fuel tap, and fuel pipes			X	X		X		X	X	X	X	X	X	X	X	X	X
10. Clean and oil air filter		X	X	X		X		X	X	X	X	X	X	X	X	X	X
11. Check battery voltage and acid level. Grease terminals			X	X		X		X	X	X	X	X	X	X	X	X	X
12. Check brakes and adjust as necessary			X	X				X		X		X		X		X	
13. Check speedometer drive and brake linings						X			X		X		X		X		

	every 300 miles	every 600 miles	At mileage													
			300	600	1200	1800	2400	3600	5400	7200	9000	10800	12600	14400	16200	18000
14. Check wheel bearings and grease if necessary						X			X	X	X	X	X	X	X	
15. Check and tighten wheel mountings			X	X		X		X	X	X	X	X	X	X	X	X
16. Clean and grease rear chain; check tension			X	X		X		X	X	X	X	X	X	X	X	X
17. Check tire pressures	X		X	X		X		X	X	X	X	X	X	X	X	X
18. Check steering and adjust as necessary			X	X		X		X	X	X	X	X	X	X	X	X
19. Lubricate Bowden cables		X		X		X		X	X	X	X	X	X	X	X	X
20. Check petrol tank mountings				X		X		X	X	X	X	X	X	X	X	X
21. Grease machine			X	X		X		X	X	X	X	X	X	X	X	X
22. Tighten up all nuts and bolts			X	X		X		X	X	X	X	X	X	X	X	X
23. Lubricate plastic bush in rear hub				X		X		X	X	X	X	X	X	X	X	X
24. Oil brake cam spindles, controls on handlebars, and hinges for central stand		X		X		X		X	X	X	X	X	X	X	X	X
25. Wash out and oil tube for venting petrol tank						X		X	X	X	X	X	X	X	X	X

Faults on the MAICOLETTA and their remedy

If our instructions are carefully complied with and the service tasks specified are carried out at the times stated, it is most unlikely that any faults will develop in the machine. Should any trouble be experienced, however, it will frequently be found that it is due to some minor cause. If you look for the fault systematically and quietly, you will usually find it in a very short space of time, and will often be able to put matters right yourself.

To help you to cure minor faults we give the following hints:

Engine Faults

The engine fails to start.

Fuel tap closed; insufficient fuel in the tank; ventilation tube from fan to tank blocked; fuel pipe blocked; dirty carburetor or water in carburetor; jet blocked; faulty battery lead; H. T. lead faulty or loose. Spark plug sooted up, oiled up or damaged; electrodes bridged; wrong electrode gap; battery discharged; starting device not operated; engine flooded.

Engine runs unevenly or stalls frequently

Engine receives too little fuel: Fuel all used up or fuel pipe blocked. Carburetor or jets dirty. Ventilation tube from fan to fuel tank blocked.

Engine receives too much fuel: Carburetor floods; faulty float needle; pressure in tank too high.

Spark plug loose; dirty spark plug; defective spark plug insulation; spark plug electrodes bridged; incorrect electrode gap. H. T. lead loose or damaged; contact-breaker points oiled up or dirty; contact breaker sticking; incorrect gap at points; air filter blocked.

Engine four-strokes

Float needle sticks in carburetor; float faulty (leaks); float needle valve seating worn; needle jet worn; pressure in fuel tank too high; dirty filter. Spark plug sooted up or oiled up (or heat range too high). Carbon deposits in exhaust ports or silencer; contact-breaker points worn or dirty; gap at points incorrect; contact breaker sticking.

Engine backfires through carburetor

Slight bridging of spark-plug electrodes. Spark plug has too low a heat range;

contact breaker operates incorrectly; incorrect gap at contact-breaker points; engine receives too little fuel.

Engine runs too hot and piston seizes

Carburetor settings too weak; fuel mixture contains too little oil; oil used unsuitable; oil not properly mixed with fuel.

Ignition timing incorrect; exhaust ports and exhaust system blocked; piston rings sticking; fan or air guide vanes faulty.

Engine pulls badly or performance falls off

Engine not yet run in; dirty air filter; fuel pipe or carburetor dirty; carburetor settings incorrect; unsuitable spark plug (hot-point ignition); ignition faults (contact breaker, condenser, ignition coil); ignition timing incorrect; leaks at cylinder head or at the carburetor inlet stub due to damaged gaskets or loose bolts; exhaust pipe (port on cylinder) or silencer blocked with carbon.

Fuel consumption too high

Unsuitable riding methods; fuel lost owing to leaks at tank or carburetor; incorrect carburetor settings; damaged cylinder-head gasket; brakes binding.

Clutch slips

Incorrect clutch adjustment; clutch worn (engine races when throttle is opened (see pp. 39/40).

Dynamo fails to charge (warning lamp alight when engine is running)

Faults in leads or contacts; commutator brushes sticking or failing to make contact; commutator oiled up or dirty.

Engine pinks

Ignition timing incorrect; unsuitable fuel; carbon deposits on piston, cylinder head, exhaust port, or silencer. If it occurs at full load, main jet may be too small. *

If it occurs when throttle is $\frac{1}{4}$ to $\frac{3}{4}$ open, the jet needle may be mounted too low.

Warning lamp lights up, but there is no spark at plug

First check whether there is a spark when the lead is removed from the plug and the engine is turned over by the starter. (Place a suitable pin, nail, or piece of wire into the terminal on the lead, and hold it about 4 mm ($\frac{1}{8}$ in) from an earthed part of the engine. The spark should jump this gap when the engine is turned over by means of the starter).

If there is no spark:

The contact breaker does not open or sticks; the contact-breaker points are too badly pitted; there is a bad contact or a short circuit at the terminals. Faulty lead, ignition coil, or condenser. Stray currents owing to dampness in the ignition circuit.

Warning lamp lights up, but starter does not work

Bad contact at terminals; short circuit in leads; dirty or bent contacts in switch; faulty controller; battery discharged; starter contact-breaker sticking or dirty contacts; starter contact breaker out of adjustment.

Warranty conditions

The Maico GmbH. guarantees new vehicles for a period of six months after they are first registered, or until they have covered 6000 km (3,600 miles), whichever occurs first; the guarantee applies only to the first owner. The warranty will have effect only if the parts alleged to be defective are at once returned carriage paid, and, if in the opinion of MAICO they have become damaged or unusable owing to defective materials or workmanship. The new standard terms of warranty shall otherwise apply.

No claim can be made to have the warranty altered, amended, or cancelled as specified in para. 326 of the German Federal Law, or for compensation for direct or indirect loss or injury. The parts alleged to be defective must be sent in with all transport costs prepaid, and must be accompanied by a Warranty Claim; they must be provided with a label stating the full name and address of the sender. Parts replaced free of cost become the property of MAICO. For parts not manufactured by the Company, such as tires, ignition equipment, starter, lighting equipment, instruments, chains, bodywork, etc., the warranty is restricted to the transfer to the customer of any rights to compensation in respect of defective goods which are granted by the actual manufacturer.

The warranty becomes invalid if repairs, alterations, or the replacement of individual components are effected other than by MAICO or a recognised MAICO Dealer, or if other than genuine MAICO spare parts are employed. The warranty also becomes invalid if the customer makes or has made any alterations to the exhaust system or to the air inlet system;

Defects which are due to fair wear and tear or to misuse, are not covered by the warranty. No warranty is given in respect of special models or used machines.

All claims under the warranty and the return of any parts alleged to be defective must be effected through the appropriate dealer, and must be accompanied by a Warranty Claim.

The seat of jurisdiction for both parties is the Amtsgericht at Tübingen.