



RIDERS HANDBOOK

FOR

MOPED MODEL 421

LAYFORD (AUTOMOTIVE) LIMITED

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MAINTENANCE INSTRUCTIONS

FOR THE

CAZENAVE MOPED

The CAZENAVE Moped is a fine machine, robust in the extreme and capable of a very fine performance. Made of the finest materials to very accurate limits by the latest and most up-to-date production processes, it needs little in the way of attention and maintenance. All the same, though, if trouble — and inevitably expense — is to be avoided, the advice given in the following must be followed, especially as regards lubrication.

DESCRIPTION

1. Frame.

Large-diameter, single tube frame, of great strength, and electrically welded or brazed throughout. This frame is not only very strong and free from distortion, but at the same time is flexible enough to provide easy and pleasant riding, and will stand up excellently to severe every-day use.

The strong and well-sprung telescopic forks add to the comfort of the machine.

The rider's clothes are protected from all risk of soiling by the ample metal fairings surrounding the engine, and by placing the fuel tank behind the saddle tube.

2. Engine.

The two-stroke petrol engine, air-cooled, with a capacity of 48 c.c. has a bore of 40 millimetres and a piston stroke of 38 millimetres, ignition and lighting being supplied by an alternator. The clutch is entirely automatic, operating by the inertia of flyweights, under the action of centrifugal force. A dog clutch on the driven pulley allows the machine to be used as an ordinary pedal cycle in the event of breakdown, or for very short journeys, for which it is not worth while starting the engine. The cylinder is made of special cast iron and is not fitted with a liner. The light alloy piston has two rings to prevent them from rotating in their grooves. The connecting rod assembly is fully balanced to prevent any vibration from the engine, and has a needle bearing big end, so that wear is practically nil.

A belt drive from the engine to a pulley on the countershaft gives a reduction-gear effect, while the countershaft drives the rear wheel by a very strong chain.

There are only two engine controls, and these are mounted on the handlebars. They are a twist-grip throttle control and a decompressor. In addition, the two brake levers are welded on to the handlebars.

The carburettor is a Gurtner with an automatic choke.

RIDING THE MACHINE

1. Make sure there is sufficient petrol (petrol and oil mixture) in the tank.

2. In cold weather close the choke by moving the shutter in the opening in the engine fairing.

3. Open the decompressor.

4. Pedal the machine a few yards, then release the decompressor and open the throttle to about half-speed, when the engine should start. After about half a minute the choke can be closed by fully opening the throttle. The speed of the machine can then be regulated solely by the twist-grip throttle control.

Important Warning. — To avoid over-heating, never let the engine run at full speed when the machine is on the stand.

5. As far as possible, do not use the decompressor for slowing down, as this leads to a risk of the explosion gases damaging the decompressor valve seating.

Never exceed 22 miles an hour on the level while running in the engine, and assist the engine on hills by pedalling. Use a 10 : 1 mixture of petrol and oil during the running-in period. Ask for S.A.E. 40 oil; do **not** use premium quality petrol.

During the same period it is also advisable not to let the engine run too slowly, as doing so causes it to wear; the engine should be run fairly briskly, but not raced.

LUBRICATION

FRAME. — Exactly the same as for a pedal cycle. It is limited to the following:

1. Lubricate the chain as soon as it shows signs of becoming dry; also wash it in paraffin twice a year.
2. Clean and lubricate the hubs once a year.
3. Lubricate the pedalling gear twice a year and take up play, if necessary.
4. Put a few drops of oil on all joints occasionally.

Lastly — clean the machine as often as possible.

ENGINE

1. **Cylinder, piston and connecting rod.**

The engine is lubricated by oil mist from the oil mixed with the petrol. To ensure a proper mixture, it is therefore best to mix the oil and petrol in a separate container that can be well shaken so as to obtain a perfectly homogeneous mixture. Use S.A.E. 40 oil for this mixture, with a 10: 1 mixture during running in, and a 20: 1 mixture afterwards.

2. **Primary (engine) pulley.** — Give a few drops of oil to the needle bearings of the automatic clutch every 3500 miles.

3. **Secondary (countershaft) pulley.** — Lubricate by using a grease gun placed at the end of the pedal spindle.

4. **Flywheel magneto.** — The felt pad of the contact-breaker cam is impregnated with special H.M.P. grease sufficiently for running about 600 miles. After covering that distance the felt should be re-impregnated with the same grease.

ENGINE MAINTENANCE

Clean very frequently, tighten all nuts periodically and check compression by turning the engine by hand by revolving the back wheel.

Make sure there are no leaks in the decompressor, check the sparking plug gap (.012" - 0.18"), and check that the contact-breaker platinum points are open .008" - .010".

DECARBONISING

Every 900 miles or so the rider will notice that his moped is losing power: it will then have to be decarbonised. This consists of removing the carbon deposits that have formed.

- (a) On the piston crown.
- (b) In the cylinder head.
- (c) In the transfer ports.
- (d) In the exhaust pipe and silencer.

THE GURTNER D. 12 CARBURETTOR

This carburettor has a constant-level float chamber, a main jet, a throttle chamber to control the fuel supply, an air intake filter and a slow-running screw, this latter screw being readily accessible from outside and giving perfect slow-running or idling of the engine — a feature much appreciated by riders on engines provided with a progressive clutch drive. The adjustment is very sensitive and the screw should only be altered with very great care. The initial setting is made by the manufacturers.

This carburettor is provided with a device that automatically allows changing over from the starting to the normal running position (automatic choke).

N.B. — It is imperative to close the throttle completely before the automatic choke control is re-set.

CARBURETTOR MAINTENANCE

Clean the float chamber periodically. To do so, disconnect the petrol pipe, unscrew the cap screw, turn the holder and lift off the cap, remove the float, run some petrol into the float chamber and rinse out.

Also clean the petrol inlet filter and air cleaner, and blow through the jet.

POSSIBLE TROUBLES

CARBURETTOR FLOODING

1. If the carburettor floods and the plug sparks regularly bad starting may be due to any of the following:
 - (a) Cold weather may cause the oil to thicken and gum up the engine.
 - (b) The automatic choke not closed.
 - (c) Throttle control not properly set.
 - (d) Throttle cable is jammed and fails to return to slow-running position.
 - (e) Air leaking in through the carburettor attach flange.
 - (f) Poor compression.
 - (g) Contact-breaker platinum points out of adjustment.
 - (h) Plug points gap too wide.
 - (i) Float punctured or needle jamming.
 - (j) Jet or filter blocked.
 - (k) Engine drawing in too rich a mixture.
 - (l) Speed too low to start.

2. If the plug does not spark.

- (a) Plug sooted up, or faulty.
- (b) Plug wire disconnected or damp.
- (c) Contact breaker platinum points dirty, worn out or out of adjustment.
- (d) Contact-breaker sticking.
- (e) Flywheel pole pieces demagnetised.
- (f) Condenser broken down (Shorting inside).
- (g) Ignition coil defective.

IF THE CARBURETTOR DOES NOT FLOOD

- (a) Tank empty.
- (b) Petroil tap closed.
- (c) Air hole in tank cap blocked.
- (d) Petroil pipe blocked.
- (e) Dirt in the float chamber filter.
- (f) Needle stuck.
- (g) Dirt in the petroil tap filter.

IF THE ENGINE MISFIRES

1. Plug sparking regularly.

- (a) Too much petroil (float chamber flooding).
- (b) Water in the petroil.

- (c) Not enough petrol (jet obstructed).
- (d) Float punctured.
- (e) Needle jammed.
- (f) Ignition not in order (not timed correctly).
- (g) Extraneous matter in the petrol.
- (h) Defective condenser.
- (i) Defective petrol inlet.

2. Plug sparking irregularly.

- (a) Plug dirty or defective.
- (b) Contact breaker platinum points dirty, worn or out of adjustment.
- (c) Contact breaker sticking.
- (d) Plug points not properly set.
- (e) Sparking plug insulation leaking.
- (f) Bare plug wire shorting.
- (g) Broken contact breaker empty.
- (h) Defective condenser.

**BLOW-BACK INTO CARBURETTOR
OR EXPLOSION IN EXHAUST PIPE**

1. Clear blue exhaust fumes.

- (a) Too much air, mixture too weak.
- (b) Jet too small (plug points white).
- (c) Air leaks at carburettor joints, cylinder base, oil seal crankcase.

2. Black exhaust fumes.

- (a) Too rich petrol mixture.
- (b) Jet too large (plug points black).
- (c) Carburettor flooding.
- (d) Needle stuck.
- (e) Float punctured.

**IF THE ENGINE FAILS TO RUN PROPERLY
THE ENGINE KNOCKS, OR IS NOISY**

1. Metallic noises.

- (a) Piston slap.
- (b) Too much air.
- (c) Engine carboned up.
- (d) Little end bearing slack.

2. Pinking.

- (a) Ignition too advanced.
- (b) Pre-ignition.

3. Dull noises.

- (a) Too much petrol (jet too large).

4. **Dry noise.**

Play in piston ring grooves.

5. **Heavy knocking.**

Connecting rod wear. Big end failure, main bearing failure.

IF THE ENGINE LOSES POWER

1. **Altogether.**

- (a) Poor compression.
- (b) Piston rings broken, worn or stuck.
- (c) Cylinder or piston worn.
- (d) Joints leaking (Crankcase).
- (e) Random air leaks.
- (f) Exhaust pipe and silencer obstructed.
- (g) Pre-ignition.
- (h) Defective plug.
- (i) Engine overheating.
- (j) Defective carburation.

2. **Intermittently.**

- (a) Insufficient petrol supply.
- (b) Air vent hole in tank cap blocked.

**IF THE ENGINE STOPS
NO SPARK AT THE PLUG**

1. **No spark at the H.T. terminal.**

- (a) Contact breaker spring broken.
- (b) Contact breaker platinum points dirty or out of adjustment.
- (c) Brushes dirty or broken.
- (d) Condenser broken down.
- (e) Wire bare and shorting.
- (f) Damp in magneto flywheel.
- (g) Defective ignition coil.

2. **Spark at the H.T. terminal.**

- (a) Bad contact.
- (b) Defective plug.

IF THE PLUG SPARKS

1. **When the engine has compression**

- (a) Carburettor controls not properly set.
- (b) Momentary piston seizure.
- (c) Incandescent plug.
- (d) Random air leaks, jet or petrol pipe blocked.
- (e) Float chamber flooding.

2. **When the engine has no compression.**

- (a) Piston or rings broken.
- (b) Plug leaking, cylinder head loose.

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