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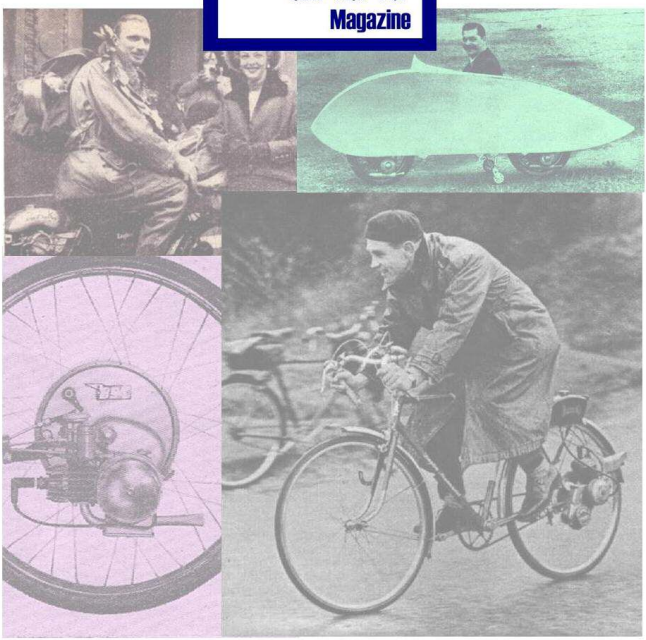

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THE GYS

MOTAMITE

INSTRUCTION MANUAL

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The "G.Y.S." ★ CYCLE UNIT

Introduction . . .

The "G.Y.S." Cycle Unit has been designed to give motorised cycling at the lowest possible price. It is the first all British Cycle Unit on the market. It can be attached to all makes of standard bicycles, both ladies' and gentlemen's, in approximately 15 minutes, with the minimum of alteration. The only modification being the removal of portion of the mudguard in front of the forks, and the existing lamp bracket.

The complete Unit is mounted on two Duralumin Tubes which are attached to the handlebars by two clips at the top, and at the bottom slide on two phosphor bronze lugs, which are fastened to the front wheel spindle by extension nuts supplied with each Unit. The advantage of this method of attachment is that the cycle and rider are insulated from vibration and road shocks.

The Unit is so balanced that it does not affect the steering in any way, and the extra weight on the front wheel improves the road holding of the cycle.

The drive is by carborundum roller on the front tyre and the Engine Unit can be raised off the tyre by a single knob, if the rider does not wish to use the engine.

There is a single control lever on the right hand side of the handlebar which works both the decompressor and throttle, making for great ease of control. The only other control is a carburetter choke for starting.

INSTRUCTIONS FOR FITTING

Before attempting to fit Unit it is advisable to see that the bicycle is in a road-worthy condition, particular attention being paid to the head bearing, front wheel bearing and brakes.

1. Cut front mudguard off, leaving 2in. to 2¼in. in front of forks.
   Note: It may be necessary to cut off front lamp bracket; this can be decided at operation 4.
2. Remove hub nuts and fit extension nuts to front wheel spindle, replacing mudguard stays on the inside of these nuts.
3. Fit bottom tube brackets, tube carrying bearing inwards, to extension pieces, using original nuts to bolt in position; leave slack.
4. Slide engine unit tubes on to bottom tube brackets and lean back against handlebars. Fit handlebar brackets and clamp in position, allowing ¼in. clearance between bottom of tube and shoulder of bottom tube bracket to allow fork to flex. Tighten up nuts.
5. Make sure that the shocker lugs are not tight on R.H. tube, slide complete engine up or down tubes until the bottom of engine pivot bar is level with the top of the front tyre. When the engine is pressed downwards, so that the driving roller is pressed into the tyre ¼in., the engine should lean back slightly. Tighten the four clips on the back plate.
6. Engage the shocker knob in the off position, i.e., when the bar is at the top of the shocker plate, slide complete shocker assembly up or down tube until the driving roller is clear of the tyre, approx. ⅛in. Bolt up shocker plate lugs on tube.
7. Adjust shocker to correct tension. The shocker knob should be screwed up tight and then screwed back 3 or 4 turns. If the silencer tail pipe is pulled forwards and backwards it should be possible to raise and lower the engine easily and at the same time feel that the shocker washers are acting as a damper.
8. Check that the Unit is not touching the cycle except at the four suspension points. Although the Unit may appear to be clear when the cycle is stationary, it is possible for

6. Remove outer end cap.
7. Unscrew the five cheese-headed screws from main end cap when crankcase and cylinder can be withdrawn.
8. The decompressor valve is removed by withdrawing the split pin through the lower hole in decompressor body.

TO REASSEMBLE.

1. Taking main end plate and crankshaft, replace carborundum wheel and bolt up with paper washers between the driving discs. When tightening nut hold crankshaft in vice by web.
2. Replace piston and connecting rod in cylinder, making sure that the deflector on the piston crown is on the transfer port side of the cylinder. A thin tin clamp bent to fit round the piston will simplify entering the rings in the liner. The rings are pegged to prevent them from turning.
3. Assemble crankcase on main end plate and screw up tightly.
4. Replace roller housing. **IMPORTANT:** It is essential to support the crankshaft during this operation, which can be done as follows:—Place centre punch in vice and rest crankshaft centre on this while tapping roller housing ball race into position with length of tube resting on inner ring of race. Bolt up flange, with shock absorber anchor plate on bottom bolts.
5. Fit outside end cap.
6. Assemble decompressor valve in cylinder head.
7. Fit cylinder head, tightening up the bolts diagonally a few turns at a time.
8. Assemble magneto.

CARBURETTER. The only trouble likely to occur with this component is a choked jet. This is situated underneath the carburetter, and on removing the hexagon cap, the jet can be removed for cleaning, with a screwdriver. A petrol filter is fitted in the tap in the bottom of the petrol tank and in the carburetter body.

MAGNETO. The "Bantamag" specification FW-1048Z, designed for engines up to 100 c.c. is a 4⅛in. dia. flywheel magneto featuring high spark output for easy starting, permanent retention of magnetism and the elimination of frequent adjustment. It is the ultimate in simplicity, consisting of a rotor and a stator plate assembly.

The flywheel is a magnetic unit which concentrates a powerful magnetic charge within a small space and volume. By virtue of its ability to retain indefinitely this high magnetic concentration, this unit is able to provide the magneto with its extraordinary high spark output throughout its entire life. The stator plate assembly contains the coil and core, condenser and breaker mechanism, all easily accessible for servicing.

This magneto fulfils the needs of the small engine, providing unprecendented slow or high speed performance and requiring little or no attention over long periods of service.

SERVICE INSTRUCTIONS

Checking Magneto for Spark.

It is recommended that if there is an indication of the magneto causing trouble, a test be made before attempting to repair.

If the engine refuses to start, the magneto can be checked by holding the H.T. lead ⅛in. away from a point on the frame of the engine. When the engine is cranked over in its usual way, a properly performing magneto should jump this gap.

If the engine misses at high speed, first check the spark plug. With the plug in good condition and properly adjusted the magneto should fire a spark without missing while the the H.T. lead is held 1/16th in. away from the spark plug terminal.

The only adjustable part on the "Bantamag" is the breaker plate which provides adjustment for the breaker points.

Removal of Flywheel from Engine.

Remove the hexagon nut (left hand thread) which holds the flywheel in position. If there is no flywheel puller available the flywheel can be withdrawn by grasping the flywheel firmly and while attempting to pull it off, tap the end of the crankshaft with a mallet. Be careful during this operation not to bend or damage the shaft.

Adjustment of Breaker Points.

The only adjustable part on the magneto is the breaker plate which provides adjustment for the breaker points. To adjust these points turn the engine over until the contacts are visible through the hole in the flywheel marked "set points .018in. here."

If points need adjusting loosen the screw which locks the breaker plate and move the latter, to give the .018in. point setting, by turning the eccentric-headed screw. Then lock the plate securely again by tightening the breaker plate screw. The breaker plate moves about the axis of the breaker arm stud and thus assures proper alignment of contact surface.

The breaker point setting should only be adjusted in the manner described and **at no time should the breaker arm be filed to provide adjustment.**

The moving contact is integral with the breaker arm. If the contact points need replacement it is recommended that both the fixed and movable points be replaced at the same time.

The breaker arm bearing is packed with cam lubricant at the time of assembly and should not need any other lubrication. A small amount of this lubricant is also packed on the breaker arm shoe and wipes off on the cam surface, providing permanent lubrication between these rubbing surfaces.

Removal of Condenser.

To remove the condenser, disconnect the breaker connection strip and the primary connection from the live end of the condenser and remove the two screws holding the condenser clamp.

If there should be a complete absence of spark and the magneto appears to be in order otherwise, check that the flywheel has not moved on the shaft. Remove the securing nut and see that the keyways in the shaft and flywheel are in line. In fitting a new woodruff key see that there is clearance between the top of the key and the bottom of the keyway in the fly-

wheel. Also make sure that the H.T. lead is making contact in the holder on the top of the magneto.

The gap on the sparking plug should be set to .020in.

ENGINE MAINTENANCE

After considerable mileage, the engine may show signs of losing power and start four-stroking at slow speeds. This is caused by carbon deposits restricting the exhaust port and the tail pipe entrance at the bottom of the silencer. After removal of the silencer, the engine should be revolved until the piston is at the bottom dead centre when the carbon can be scraped from the edges of the exhaust port with a blunt knife. The tail pipe can be removed from the silencer by slacking off its securing bolt, and also cleaned before finally assembling the complete component.

INSTRUCTIONS FOR REMOVING ENGINE FROM BACK PLATE

1. Remove carburetter from engine.
2. Disconnect decompressor control cable by removing circlip, to allow cable to be slid sideways through slot in decompressor body. Remove brass pad.
3. Remove silencer.
4. Unscrew the pin in the fork end of the shock absorber arm and unhook spring.
5. Remove split pin from engine bearer and tap out engine pivot pin with short length of brass rod.

TO STRIP ENGINE.

1. Remove flywheel (left hand thread) also woodruff key.
2. Slide cam off end of shaft.
3. Remove magneto back plate by unscrewing the two cheese-headed screw.
4. Remove cylinder head.
5. Unscrew the four bolts holding the roller housing to the crankcase end plate. Grip the magneto end of shaft in soft jaws of vice and unscrew the nut holding the carborundum roller (left hand thread). Screw this along the shaft and it will withdraw the roller housing.

the Unit to foul the cycle while running, when the tubes flex, causing vibration. Also see that the bend in the R.H. tube does not touch the pivot bar lug at the back of the magneto; if it does, turn tube bend outwards, after slackening bolts.

9. The tubes can then be cut off flush with the handlebar bracket and the two plugs supplied placed in the ends of the tubes.

10. Clamp throttle control on handlebar. It is found most convenient on the right hand side.

The **LUBRICATION** is by Petroil mixture which lubricates all internal parts of the engine. The correct mixture being 16 to 1, i.e., 1 gallon Petrol to ½ pint Oil; the oil recommended is Castrol XL. The petrol and oil should be well mixed in a separate container, **before putting into tank.** If mixed in the tank the oil will sink to the bottom and, being thicker than petrol, will not pass through the jet in the carburetter, and cause difficult starting.

There is only one lubricator on the engine unit, this being situated at the magneto end of the roller housing. This lubricates the ball race on the outer end of the crankshaft, and only requires two or three drops of cycle oil every 300 miles. The engine pivot pin runs on self-lubricating bushes and requires no attention.

DRIVING INSTRUCTIONS

Make sure that the engine is in the driving position. To start the machine, turn on the petrol and close the choke; flood the carburetter if the engine is cold. Push the handlebar control to the right as far as it will go. When the bicycle has attained a reasonable speed by pedalling, move the control lever over to the left, when the engine will start. As soon as the engine has warmed up, the choke should be opened (if left shut erratic running will result). Do not let the engine labour either by running too slowly or ascending hills without helping with the pedals. In ascending hills it is always advisable to pedal early and not let the engine revolutions drop.

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