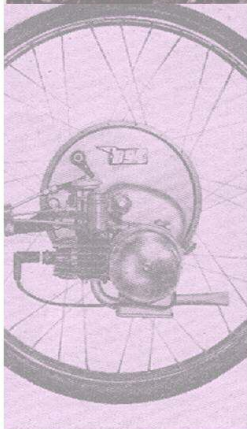


IceniCAM Information Service



**Instructions on
Maintenance of
The Cyc-Auto.**



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7100

Instructions on Maintenance of the Cyc-Auto.

TO REMOVE THE ENGINE. The removal of the engine is a very simple matter. We suggest that the following procedure should be carefully carried out, and that an empty box should be kept handy and the pieces carefully put into the box when taken from the machine to prevent loss. Each part should be carefully cleaned before re-assembling takes place.

(1)—Press down the top of the decompressor and remove the cable from the small peg.

(2)—Unscrew the petrol pipe at the carburettor end, having first of all made sure that the petrol is turned off. If float chamber cover tends to turn with the petrol pipe union nut, it must be held by a second spanner, otherwise the petrol pipe will be twisted and may damage the joint.

(3)—Loosen the carburettor clamp screw and pull the carburettor from the carburettor stub. By pulling the strangler rod up to its fullest extent the carburettor can be left hanging from the down tube out of the way.

(4)—The pedalling chain should next be removed and care should be exercised not to strain the connecting link spring. When replacing it the blind end of the link must face the direction of the chain travel when pedalling.

(5)—Insert through the hole at the right hand side of the aluminium expansion chamber, the second smallest sized box spanner supplied with the tools i.e., $\frac{1}{4}$ in. BSF, and loosen the pinching bolt at the front end of the bottom bracket.

(6)—The clutch cable wire should be disconnected at the clutch operating lever under the engine, the lock nut on the adjusting nipple slackened and the adjuster unscrewed to disconnect the cable from the engine.

(7)—Loosen off the top ends of the tubular silencer supports. This leaves only one item, i.e., the engine supporting bolt which passes through the lug on the down tube.

The engine is now ready for removal from the frame and should be prized forward a matter of an inch to extract the clutch housing from the front end of the bottom bracket.

RE-ASSEMBLING. These operations should be reversed and when entering the engine to the frame, the flywheel should be rocked in order that the clutch driving shaft will mesh with the slot on the front end of the worm shaft. Do not use force and avoid using a hammer.

DECARBONISING. Having removed the engine from the frame, the cast aluminium expansion chamber should be taken from the engine without removing the two tubular silencers. It is often found that a certain amount of condensation leaves a small quantity of water in the body of the tubular silencers. This is quite normal but it is better to leave the silencer standing vertically, resting on the small outlet pipes. The four nuts securing the cylinder can now be slackened off and the cylinder itself drawn off from the piston, to prevent the

possibility of suction holding the piston to the cylinder. The cylinder can be more easily removed if the sparking plug has been previously taken out. Great care must be exercised to prevent any damage to the skirt of the piston fouling the connecting rod or the top of the crank case, and as soon as the cylinder has been removed a piece of cloth should be wrapped round the connecting rod to prevent the possibility of any foreign matter falling into the crank case.

All traces of carbon should be scraped from the cylinder head and the exhaust port and also from the top of the piston.

It is essential that the cylinder joint washer should be in a good condition and if at all damaged, replaced with a new one.

PISTON. When it is required to take the piston from the connecting rod, it will be found most advantageous to use a small pair of round nosed plyers which can be inserted into the circlips. The brass discs must then be removed, the small hole in the disc on the front end of the gudgeon pin hole allows the entry of a piece of stout wire such as a spoke to push out the back disc. The gudgeon pin can then be pushed through the piston far enough to allow it to clear the connecting rod. By leaving partly in the piston there will be no mistake made when re-assembling, as it is always better to put the gudgeon pin back in its original position. The "T" shaped expansion split on the side of the piston must always be on the same side of the cylinder as the release valve, that is the left-hand side when looking towards the front.

Any traces of carbon should be removed from the lubricating holes in the gudgeon pin bosses. Three pieces of tin about 3/8in. wide, slipped behind the piston rings prevents breakage when these are being extracted. Carbon should carefully be scraped from the piston ring lands with a blunt instrument so as not to increase the size of the lands by

scraping away any of the aluminium which is comparatively soft.

CLUTCH. This is the dry plate type and can be simply dismantled when the clutch housing has been taken from the back of the engine. Two nuts must be put back on two opposite studs to prevent the crankcase joint being damaged. The clutch sleeve is prevented from unscrewing by a tongue being pressed into the clutch driven member. Here it must be borne in mind that the member itself has a left-handed thread and therefore should be unscrewed clockwise.

The plates are now free for inspection or cleaning and these must be re-assembled in their original sequence. If it is necessary to remove the clutch spring, the grub screw in the hexagon driving nut must first of all be unscrewed and the nut itself slackened back about $\frac{1}{4}$ in. The sleeve should then be levered off by means of two levers or by a special wheel puller

When the movement of the driving plate is stopped by the hexagon drive nut, the nut can then be unscrewed a little bit further. The reason the nut should not be taken off completely is because spring has a tendency to throw the clutch driving flange upwards with considerable force as it becomes freed from its key in the end of the crankshaft.

It is scarcely necessary to point out that the clutch withdrawal yoke is simply lifted out complete with its bearings. It will be noticed however, that the fulcrum pin holes and the clutch bronze ring are not drilled exactly in the centre and the thickest portion of the ring must take the thrust on the sleeve when being re-assembled.

MAGNETO. The only adjustment which is necessary to the magneto is the adjustment of the points and owing to the individualistic design, it is seldom the points require adjustment.

The removal of the magneto itself is a simple matter and only requires unscrewing of the nut in the centre of the fly-wheel. The triangular plate acts as a wheel puller. The nut should be unscrewed until it is dead tight and then given a hard punch with a hard wood block and a fairly heavy hammer, after which continue to unscrew. This exposes the magneto rocker arm adjusting plate screw. The engine should be turned round in its correct direction until the rocker arm has been opened by the cam. The clearance of the points at this position should be 20 thousandths of an inch. If it is at any time necessary to advance or re-time the ignition, accommodation is made for this through the elongated slots which hold the stator plate to the front half of the crankcase. If the stator plate has to be disconnected from the engine at any time, the cam first of all must be carefully prized off from the crank shaft by means of two screw drivers or suitable levers. When re-assembling, take great care that the flywheel enters on to the key in the crankshaft while screwing up the fly-wheel nut.

CARBURETTOR. Type: 259-0018. Main Jet: 55.
Needle : 107. Throttle: No. 3.

The proportion of petrol and air can be varied by altering the position of the tapered needle, that is to richen the mixture the adjusting washer should be moved to a lower position on the needle, and vice versa to weaken.

Several points should be carefully watched when cleaning the carburettor, which should be done periodically, and to do so it is most convenient to remove it completely from the engine.

The split pin which holds the end of the strangler pull rod, on account of its smallness is awkward to remove and it is, therefore simpler to unscrew the wire gauze and shutter pin,

The carburettor can then be held quite satisfactorily in a vice by the hexogan plug nut on the bottom of the jet chamber. The flat chamber cover should be removed and the float chamber carefully cleaned out with a rag which is entirely free from fluff. The float guide hole should also be carefully cleaned by means of a small piece of wire or a flattened match stick. It is not necessary to remove the jets for cleaning but the jet chamber plug should be cleaned. When re-fitting to the engine, make sure the cork joining washer is fitted between the carburettor and the carburettor stub.

The final point is to make sure that before the carburettor body clip screw is tightened, the carburettor should be perfectly vertical.

ADJUSTING WASHER. This can, at any time, be moved into new position on the needle without any special tools. The top end of the throttle cable next to the throttle lever on the handlebar should be pulled forward to relieve the nipple and allow extra length on the inner cable. The knarled cap on the jet chamber should then be unscrewed and if the throttle slide spring is compressed, the tapered needle can be easily extracted.

It will be noticed there are two slots on the throttle slide, one to accomodate the cable inner wire, and when assembling, this should face the front of the carburettor, the plain slot being entered carefully on to the guide screw. Small plug screw. It is not at any time necessary to remove this plug as it was used solely during the manufacture of the carburettor for drilling purposes.

A fine guaze strainer is fitted to the inlet side of the Petrol tap, and it is advisable to clean this say every 1,000 miles. Disconnect the petrol pipe and unscrew the tap from the tank and clean the strainer by rinsing in clean petrol.

The cork plunger in the Petrol tap can be adjusted for wear; loosen lock nut in centre of circular knob and screw outwards the centre screw, re lock nut.

BOTTOM BRACKET. The function of the bottom bracket is primarily to change the direction of the drive from the engine which is parallel to the frame through a right-angle to the power chain sprocket, and also to reduce the ratio between the engine and the final drive at the rear wheel. This is done through a hardened steel worm shaft and phosphor bronze worm wheel. The worm shaft is mounted in two replaceable phosphor bronze bushes, the front bush being pressed into the thrust race housing. A ball thrust bearing is fitted to the back end of the worm shaft to eliminate wear and friction caused through the thrust on the shaft itself.

The worm wheel is pressed on to the centre on which are carried the two worm wheel centre cones and the bearings are carried by balls in the worm wheel centre cups. These cups are fitted with shims 5thou. in. thick which can be removed when wear takes place. When such adjustment is necessary the lock plate should be removed, the cup screwed outwards not more than 1/8in. and a shim extracted, the cup again screwed up dead tight and re-locked.

Lubrication to all points of the bottom bracket is automatic and it is only necessary to maintain the oil level up to the notch shown on the dipstick. The bottom bracket should be washed out with thin spindle oil every 1,500 to 2,000 miles. About an egg-cupful of bicycle oil should be added to the bottom bracket through the dipstick hole, and with the Cyc-Auto on the stand run the engine for a couple of minutes. The lowest bolt which secures the bottom bracket cover should be removed and the Cyc-Auto laid well over to the left side to drain out the flushing oil. The bottom bracket can then be replenished with the correct lubricant.

The worm shaft can at any time be removed by taking out the two screws at the thrust race housing cap and the worm wheel and centre can easily be taken from the bottom bracket by removal of the cover. In this case the power chain and left-hand crank should first of all be dismantled and after the three cover bolts have been taken out, the Cyc-Auto should be laid down on the left hand side and the cover dislodged by means of a screw driver. If a piece of paper is laid under the bottom bracket, the balls will drop clear and prevent any possibility of lodging between the worm shaft and the bottom bracket casting. On Cyc-Autos which are fitted with loose balls, there should be 20 per side. When re-assembling the type fitted with a "Star" ball cage, care must be taken that the "Star" marked on the cage faces the worm wheel itself.

FINALLY. Keep your Cyc-Auto clean, make sure all bolts and nuts are tight. In wet weather, bright parts will be protected against rust by smearing with oil, which will also prevent mud from sticking and is easier removed when cleaning. Furniture or Car polish greatly prolongs the new lustre of enamelled parts. Control Cables work freely and rust will not form inside if the exposed ends of the inner cables are kept free from grit and lubricated.

ERRATA.

Bottom Bracket.—Should read: "The front bush being pressed into the bottom bracket casting and the rear bush which is pressed into the thrust race housing."

