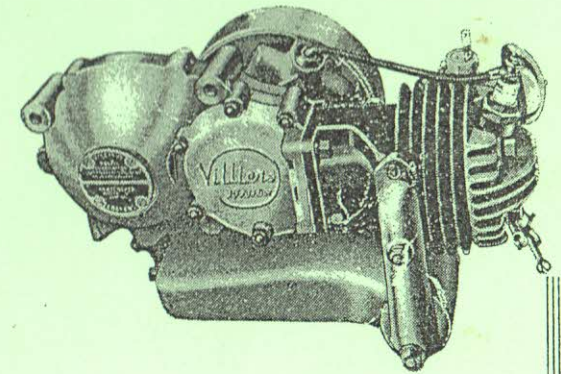


MAINTENANCE
HANDBOOK
& SPARE PARTS
LIST

for
The **VILLIERS**
"Junior-de-luxe" Engine
For Motorised Bicycles



Published
AT
4^d.

Manufactured by:

THE VILLIERS ENGINEERING Co., Ltd.,
WOLVERHAMPTON, ENGLAND.

Telephone No.
21666 (3 lines)

Telegrams: "VILLIERS
WOLVERHAMPTON"

Code: BENTLEYS

(PRINTED IN ENGLAND.)
W.B.Ltd.

Aug. 1/46.

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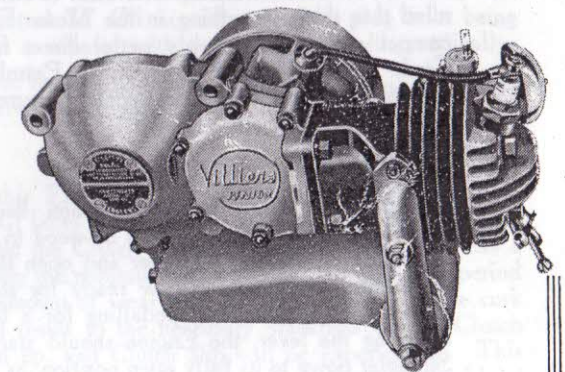
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THE

Villiers "Junior-de-luxe" Engine

50 m/m bore × 50 m/m stroke = 98 c.c.

RUNNING INSTRUCTIONS

LUBRICATION.

The VILLIERS "Junior-de-Luxe" Engine is designed to run on "Petrol"—a mixture of half-pint Patent Castrol XL Lubricating Oil with each gallon of Petrol. It is of the greatest importance that this mixture should be made in this correct ratio of 1—16, and it must be well shaken in a tin to ensure thorough mixing before being poured into the Fuel Tank of the Machine.

NOTE.—The Ministry of Mines (Petroleum Department) have ruled that there is nothing in the Motor Fuel Rationing Order to compel a dealer to supply petrol direct from the Pump into the Tank. He may therefore mix the Petrol and Oil in a tin first, providing the mixture is immediately poured into the Tank at the time the coupons are tendered.

STARTING.

WHEN COLD—turn petrol on, then flood the Carburetter by depressing the Tickler; there is no need to allow any petrol to run to waste. Close the Strangler and open the Throttle Lever about one-third; the Engine is now ready for starting. First of all lift Clutch Lever, then after pedalling for a few yards and gradually releasing the lever, the Engine should start. Gradually push the Strangler down to its fully open position, as Engine warms. In very cold weather it may not be possible to do this immediately, in which case leave partly closed until Engine is warmed up.

As the Engine is fitted with a Release Valve, another method of starting can be used. As before, turn Petrol on and flood Carburetter, then open the Throttle about one-third. Lift the Release Valve Lever and wheel the machine forward, then on releasing the lever the Engine should fire. Immediately lift the Clutch Lever and the machine is ready for riding away by gradually letting in the Clutch.

WHEN HOT—do not flood Carburetter and see Strangler is in "open" position.

STOPPING THE ENGINE.

If the Engine is stopped by turning off the petrol tap, allowing the Carburetter to empty itself instead of closing the Throttle, an easier re-start will be made if the machine has to stand for a number of days.

RUNNING-IN.

This Engine is capable of running at nearly full power even when new. Until the rider is thoroughly at home with his Machine, however, he will probably be running at a slow speed and with a small throttle opening. Under these conditions carbon is formed more rapidly on the skirt of the Piston.

These conditions gradually disappear as the rider gains confidence and a wider throttle opening is used, but the carbon already formed can cause a piston seizure. To prevent this it is advisable say after 350 to 500 miles to remove the Cylinder and examine the Piston, removing carefully any carbon on the Piston sides, and then re-assembling.

If by maintaining a higher road speed and opening the throttle more the Engine is given more work to do during the running-in period, the formation of carbon will be greatly reduced.

CLUTCH CASE.

This should be inspected periodically for oil level. Remove Filler Plug on Magneto side just underneath the Drive Sprocket, and insert as much Castrol 'D' Oil as will enter, the plug hole being so placed as to act as a level with the machine standing vertically.

This should only be necessary about every 2,000 miles. Make sure the oil level is correct before starting engine for the first time.

CLUTCH.

The Clutch on this Engine is a Two-plate Cork inserted type, running in oil. All faces and corks are ground when manufactured, with the result that the Clutch is very smooth in action, and has a long life, demanding the minimum of attention. After a long period of use, a certain amount of wear is likely to take place on the cork faces, which will result in the necessary slackness of the Clutch Cable being taken up, and Clutch slip will be experienced. This is adjusted by means of the small screw and lock nut at the Hand Lever end of the Cable. The adjustment should be made so that there is $\frac{1}{16}$ " slack movement on the Cable itself before lifting the Lever.

If the Clutch drags and will not free itself properly, the Screw in the Operating Lever on the Clutch Casing must be adjusted.

Release Lock Nut and unscrew the adjusting screw with screw-driver by turning anti-clockwise until the Operating Lever has approximately $\frac{1}{16}$ " of free movement at its bottom end; then tighten lock nut, whilst you hold the Centre Screw firm with the screw-driver.

