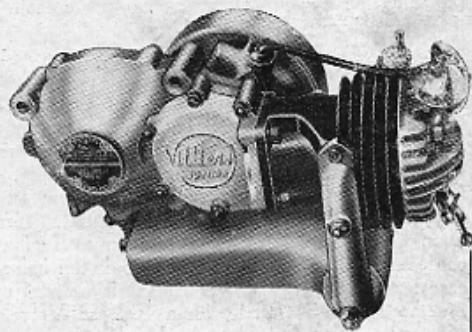


MAINTENANCE
HANDBOOK
& SPARE PARTS
LIST

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

Published
AT
6
D.



Manufactured by:

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

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

Aug. 1/46.

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.

If the Clutch continues to drag despite the above adjustment, use a thinner oil such as Castrol XL.

It may be necessary at some time to remove the Clutch Operating

Rod, which is in several pieces. When re-assembling, these Parts should be inserted in the following order:—1st—long rod, 2nd—ball, 3rd—short rod, 4th—medium rod.

Never coast downhill with the Clutch held out of engagement.

SILENCER.

Should appreciable loss of power become apparent (perhaps after many weeks of running), it may point to the Silencer or Exhaust Pipe being choked with Carbon. It is very important to keep these parts clean internally, and special attention should be paid to this periodically. Remove the Silencer from the Engine and detach the extension Pipe. Some manufacturers fit an additional Silencer on the end of the Extension Pipe, and this should be dismantled.

Carbon should be carefully removed from the whole of the Exhaust system, and it will often be found upon re-assembling, that the Engine has recovered a great deal of power.

FLYWHEEL MAGNETO.

The 3-pole Flywheel Magneto fitted to the "Junior-de-Luxe" Engine should not be removed unless absolutely necessary, and then it is advisable to use a VILLIERS "Hammer-tight" Spanner to undo the Centre Nut. The Centre Nut has a right hand thread, and therefore unscrews in an anti-clockwise direction. After about one turn the nut will be found to tighten—this is when the extracting flange commences to withdraw the Flywheel. The end of the Nut should then be tapped sharply with a wooden mallet, after which the Nut can be unscrewed without difficulty and the Flywheel withdrawn.

To re-fit the Flywheel, screw the Centre Nut in a clockwise direction until just finger tight; then take out the Sparking Plug and rotate the Engine Shaft until the Piston is at the extreme end of its stroke—nearest to the Cylinder Head. This position can be felt with a pencil through the Sparking Plug Hole. Then position the Flywheel by hand with the mark on the rim of the Flywheel, in line with the mark on the edge of the Armature Plate, near the High Tension Terminal. Hold the Flywheel firmly in this position and lock up the Centre Nut with the "Hammer-tight" Spanner.

If the above is carried out correctly, the Magneto will be timed so that the Contact Breaker Points are just opening with the Piston $\frac{1}{4}$ " before top dead centre.

Access to the Contact Breaker Points is obtained by removing the Cover from the Front of the Magneto. This is held in place by three small screws, which must be perfectly tight when replaced.

LIGHTING SET.

A Connection is provided in the Lighting Cable a short distance from the Magneto. Unscrew this when removing Engine from Frame. Do not attempt to remove the Lighting Cable from inside the Magneto. Keep the Rubber Sleeve in position over the Connection; otherwise a short circuit may occur. The correct Bulbs

to use in the VILLIERS "Junior" Lighting Set with the 3-pole Flywheel Magneto are:—

| | | |
|---------------------|-----|-----------------------------|
| Head Lamp Main Bulb | ... | 6 v. 1 amp. Single contact. |
| Pilot Bulb | ... | 4v. .3 amp. Screw-in Cap. |
| Tail Lamp | ... | 4 v. .3 amp. Screw-in Cap. |

CARBURETTER.

This instrument is fitted with a large Gauze Filter and protective dome on the air intake. The Gauze should be cleaned at intervals by dipping in petrol. On no account must the Engine be used without the Gauze and Dome. In this VILLIERS Carburetter, a Taper Needle is attached to the Throttle and provides a correctly adjusted mixture at all throttle openings.

The Carburetter is set at the Works before delivery, but if it is desired to make adjustment at any time, proceed as follows:—

First remove throttle by unscrewing the top ring of the Carburetter.

At the top of the throttle there is a small screw, turning this in a clock-wise direction—which lowers the needle—will give a weaker setting. Turning the screw in an anti-clockwise direction will give a richer setting.

For adjustment give approximately half a turn at a time until the correct setting is found.

If the Float Cup has to be removed at any time for cleaning, etc., do not use too much force in tightening the bottom nut when re-assembling.

Periodically see that the Gauze in the Petrol Connection is free from dirt. This Gauze is fitted to the Bolt which attaches the Petrol Pipe to the Carburetter.

TO DE-CARBONISE ENGINE.

First of all detach the Silencer and Carburetter. The Cylinder Head can then be taken off and carbon carefully removed from the inside of the head. The Cylinder can then be withdrawn after undoing the four holding-down nuts. Carbon should be scraped from the Exhaust Ports and if a ring of carbon has formed at the top of the bore, this should be removed.

When attending to the piston, carbon should be removed from the top and from inside. Scrape away all carbon from the ring grooves, the gudgeon pin hole and the piston skirt, but care must be taken when doing this not to damage the piston itself. If the piston rings are stuck in their grooves they can be freed more easily by heating the piston in boiling water. A broken hack saw blade ground flat at one end is a useful tool to help in removing the rings from their grooves. Clean the piston rings after removing them and handle them with great care as they are easily broken. To remove the gudgeon pin—which is a sliding fit—remove the circlip from one end by means of a pair of thin-nosed pliers.

When removing carbon from the piston and cylinder head, avoid scratching or cutting into the metal.

Before re-fitting the cylinder to the piston, smear a little oil on the piston skirt.

WARNING.—Do not rotate Cylinder when withdrawing from or replacing on the Piston; otherwise the Piston Rings may spring in to one of the ports and damage will result.

A FEW GENERAL HINTS AND TIPS

- (1) Avoid all sharp bends in the Carburetter Control Wires, otherwise the inner cables will not work freely.
- (2) It is wise to filter your petrol mixture through a fine wire gauze before filling your tank.
- (3) Common causes for irregular running are as follows:—
 - (a) A dirty sparking plug.
 - (b) An obstruction in petrol supply pipe or filter.
 - (c) Incorrect timing of the magneto.
 - (d) Contact breaker points pitted and badly adjusted—(remove pitting by polishing with oil stone) and adjust to 1/64" gap.
 - (e) After first 500 miles (running-in period) check gap of magneto points and adjust to 1/64" if necessary.
- (4) A common cause for loss of power is obstruction in the Silencer and/or Tail Pipe. These should be kept clear of carbon, etc.
- (5) The makers really know which is the best type of Sparking Plug to suit each Engine, and it is never advisable to experiment with cheap Plugs.
- (6) Don't use any cheap or unknown fuels; No. 1 quality of any of the well-known Petrols is always safest.
- (7) The Engine number and prefixed letters are stamped on the Crankcase, and should always be quoted when writing to the makers, and when ordering spares.

The following special prices are quoted in connection with the VILLIERS "Junior-de-Luxe" Engine:—

| | s. | d. |
|------------------------------------|----|----|
| Re-Corking Clutch Sprocket | 3 | 6 |
| Re-Corking Clutch Plate | 3 | 6 |
| Re-Centring Clutch Sprocket | 3 | 0 |

We cannot supply Crank-pin, Crank-pin Rivet or Washer separately, and when required, the Crankshaft Assembly with Connecting Rod must be sent to our Service Department for fitting.

The prices for this work being as follows:—

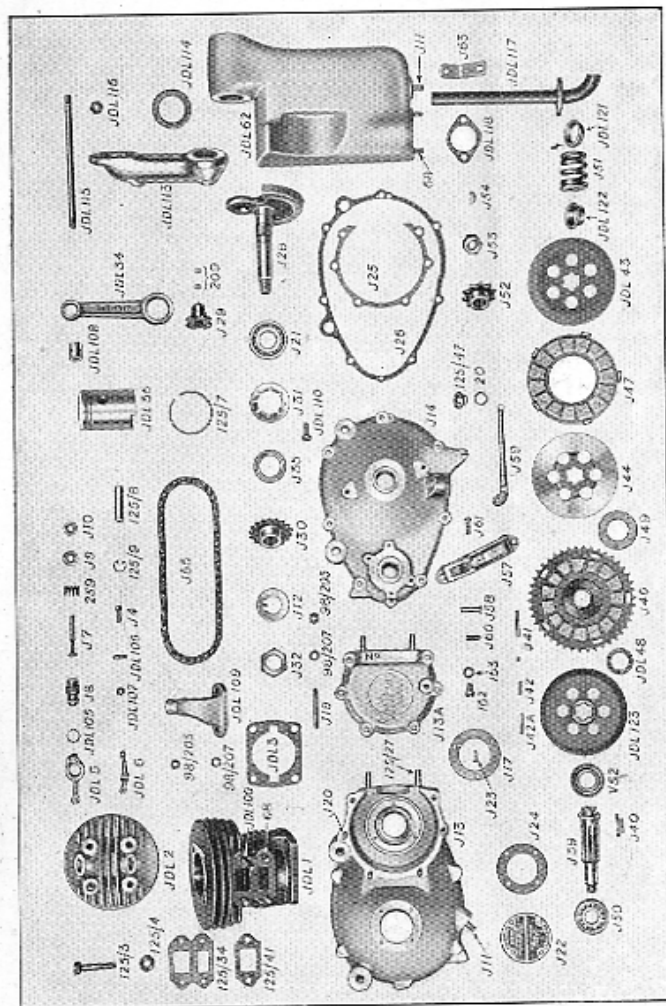
| | | |
|--|----|---|
| Renewing Con. Rod, Crank-pin and Rollers in original Shaft | 23 | 0 |
| Replacing Crankshaft Assembly and allowing for old Assembly, where suitable | 31 | 0 |

SEE PAGE 15 FOR SPECIAL OVERHAUL OFFER.

LIST OF REPLACEMENT PARTS FOR VILLIERS "JUNIOR-DE-LUXE" ENGINE.

| PART NO. | ILLUST. NO. | DESCRIPTION. | PRICE EACH | |
|----------|-------------|---|------------|----|
| | | | S. | D. |
| B 5764 | JDL.1 | Cylinder | 35 | 0 |
| C 5799 | JDL.2 | " Head | 16 | 0 |
| D 5776 | JDL.3 | " Base Washer | 4 | 0 |
| E 5317 | 125/3 | " Head Bolt | 7 | 0 |
| E 5808 | 125/4 | " " Washer | 2 | 0 |
| D 5796 | JDL.109 | Inlet Manifold | 8 | 9 |
| E 3949 | 125/34 | " and Exhaust Washer | 5 | 0 |
| E 3948 | 125/41 | Exhaust Manifold Washer | 4 | 0 |
| E 3314 | JDL.100 | Cylinder Stud, Long | 3 | 0 |
| E 392 | 68 | " " Short | 3 | 0 |
| E 401 | 98/205 | " " Nut | 2 | 0 |
| E 2924 | 98/207 | " " Washer | 2 | 0 |
| D 4938 | JDL.5 | Release Valve Bracket | 2 | 0 |
| D 4939 | JDL.6 | " " Lever | 1 | 6 |
| E 4936 | J.7 | " " " Split Pin $1/8 \times 33/16$ | 1 | 6 |
| E 617 | 259 | " " Stem | 5 | 0 |
| | | " " Spring | 2 | 0 |
| | | " " Stem Split Pin $3/32 \times 9/16$ | 2 | 0 |
| V142 x 5 | J.4 | " " Bracket Screw | 2 | 0 |
| E 5084 | J.8 | " " Body | 2 | 3 |
| E 3318 | JDL.105 | " " " Washer | 2 | 0 |
| E 4997 | J.9 | " " Outer Cover | 4 | 0 |
| E 4998 | J.10 | " " Inner Cover | 4 | 0 |
| E 5810 | JDL.106 | " " Lever Adjusting Screw | 5 | 0 |
| V105 x 2 | JDL.107 | Lock Nut for Adjusting Screw | 2 | 0 |
| C 5774 | JDL.36 | Piston only, with Bushes | 18 | 6 |
| E 1725 | 125/7 | " Ring | 1 | 9 |
| E 3903 | 125/8 | Gudgeon Pin | 2 | 3 |
| E 4047 | 125/9 | " " Circlip | 4 | 0 |
| E 5773 | JDL.34 | Connecting Rod, less Bush | 12 | 6 |
| E 5780 | JDL.108 | Small End Bush | 2 | 0 |
| A 4924 | J.13 | Crankcase Half and Clutch Case (less Bearings) | 35 | 0 |
| C 4920 | J.13A | Outer Crankcase Half | 9 | 0 |
| B 4965 | J.14 | Clutch Cover, with Bush | 29 | 0 |
| E 4015 | J. 14A | Bush only | 2 | 3 |
| E 4999 | J.25 | Crank Case Joint Washer | 4 | 0 |
| D 5002 | J.26 | Clutch Cover " " | 4 | 0 |
| E 5106 | J.19 | Crankcase Stud, Long | 4 | 0 |
| E 5107 | J.20 | " " Short | 3 | 0 |
| E 401 | 98/205 | " " Nut | 2 | 0 |
| E 2924 | 98/207 | " " Washer | 2 | 0 |
| W185E | JDL.110 | Clutch Cover Bolt for top two bosses | 4 | 0 |
| E 5146 | J.15 | Clutch Case Stud, Short | 3 | 0 |
| E 5148 | J.16 | " " Long | 4 | 0 |

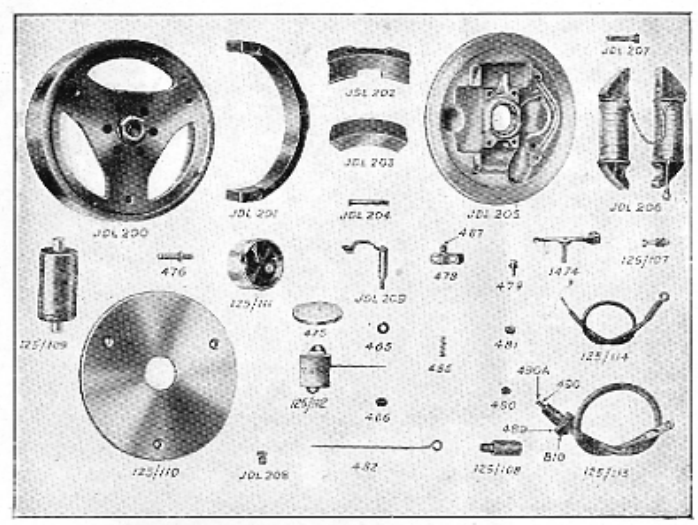
| PART No. | ILLUST. No. | DESCRIPTION. | PRICE EACH | |
|----------|-------------|---|------------|----|
| | | | S. | D. |
| E 401 | 98/205 | Clutch Case Stud Nut ... | ... | 2 |
| E 2924 | 98/207 | " " Washer ... | ... | 2 |
| E 363 | 125/27 | Cylinder Base Stud ... | ... | 3 |
| E 3961 | 125/28 | " " Nut ... | ... | 2 |
| E 1050 | 174 | " " Washer ... | ... | 2 |
| E 5046 | J.17 | Clutch Case Bearing Plate ... | ... | 7 |
| E 5197 | J.23 | " " Screw ... | ... | 2 |
| | J.11 | " " Stud, Silencer Support ... | ... | 5 |
| | 175 | " " Nut ... | ... | 2 |
| E 1962 | 162 | Crank Case Drain Plug ... | ... | 4 |
| E 1905 | 163 | " " Washer ... | ... | 2 |
| E 4104 | 125/47 | Oil Filler Plug ... | ... | 10 |
| V107 x 3 | 20 | " " Washer ... | ... | 2 |
| | | Driving Shaft Assembly, with Connecting Rod ... | 40 | 0 |
| | | Driving Shaft with Crankpin ... | 23 | 0 |
| | | Crankpin Roller, Set of 16 ... | 2 | 6 |
| | J.21 | Ball Bearing, Type EE8 ... | 9 | 3 |
| E 5049 | J.31 | Gland Spring ... | 3 | 0 |
| E 5048 | J.35 | " Bush ... | 5 | 9 |
| E 4931 | J.30 | Engine Sprocket ... | 3 | 3 |
| E 5124 | J.33 | " " Key ... | 4 | 4 |
| E 5278 | J.12 | " " Lock Washer ... | 9 | 3 |
| E 4932 | J.32 | " " Nut ... | 8 | 9 |
| | V.52 | Ball Bearing, Type EE6 ... | 10 | 7 |
| C 4943 | J.39 | Clutch Shaft ... | 2 | 2 |
| E 4944 | J.40 | " Sliding Cotter ... | 4 | 5 |
| E 4945 | J.41 | Clutch Push Rod, Long, Inner ... | 9 | 3 |
| | | 1/8 in. Steel Ball ... | 1 | 2 |
| E 5322 | J.42 | Clutch Push Rod, Short, Centre ... | 1 | 6 |
| E 5325 | J.42A | " " Outer ... | 5 | 3 |
| | V.52 | Ball Bearing, Type EE6 ... | 1 | 2 |
| E 5557 | JDL. 121 | Spring Locating Bush, Short... .. | 1 | 6 |
| E 5558 | J.51 | Clutch Spring ... | 5 | 3 |
| E 5556 | JDL. 122 | Spring Locating Bush, Long ... | 5 | 9 |
| D 4951 | JDL. 43 | Outer Clutch Plate, Boss on Inside ... | 1 | 2 |
| D 5233 | J.47 | Clutch Plate, Corked ... | 5 | 3 |
| | | Set of Corks for Clutch Plate ... | 1 | 3 |
| D 4954 | J.44 | Clutch Plate, Centre ... | 11 | 6 |
| D 5232 | J.46 | " Sprocket, Corked, with Ball Race... .. | 1 | 3 |
| | | Set of Corks for Sprocket ... | 2 | 3 |
| E 4948 | JDL. 48 | Clutch Sprocket Ball Race... .. | 5 | 7 |
| E 4955 | J.49 | " " Side Plate ... | 5 | 3 |
| | | Set of 33 1/8 in. Balls ... | 9 | 3 |
| D 5433 | JDL. 123 | Outer Clutch Plate, Boss on Outside ... | 4 | 6 |
| | J.50 | Ball Bearing, Type LS7 ... | 2 | 2 |
| D 4947 | J.52 | Final Drive Sprocket ... | 5 | 5 |
| E 5001 | J.53 | Set of 5 Rivets, Sprocket Side Plates ... | 3 | 3 |
| E 3931 | J.54 | Final Drive Sprocket Nut ... | 4 | 3 |
| D 6125 | | " " Key ... | ... | 4 |
| | | " " Lockwasher ... | ... | 4 |



| PART No. | ILLUST. No. | DESCRIPTION. | PRICE EACH | |
|-----------|-------------|--|------------|----|
| | | | S. | D. |
| | J.55 | Primary Drive Chain | 11 | 6 |
| D 4926 | J.57 | Clutch Bridge | 4 | 6 |
| E 4934 | J.61 | " " Fixing Screw | | 3 |
| D 4950 | J.59 | " " Operating Lever | 2 | 3 |
| E 4935 | J.58 | Fulcrum Pin | | 3 |
| | | " " Split Pin $\frac{3}{16} \times \frac{7}{16}$ | | 2 |
| E 4949 | J.60 | Clutch Adjusting Screw, with Lock Nut | | 5 |
| E 5725 | J.22 | Clutch Case End Plate | 1 | 2 |
| E 5127 | J.24 | " " Joint Washer | | 2 |
| E 5197 | J.23 | " " Fixing Screw | | 2 |
| B 5771 | JDL.62 | Silencer Body | 23 | 0 |
| D 5800 | JDL.113 | Exhaust Manifold | 8 | 9 |
| E 5803 | JDL.114 | " " Joint Washer | | 3 |
| E 5804 | JDL.115 | Silencer Bolt | | 9 |
| Z1013 x 9 | JDL.116 | " " Nut | | 2 |
| E 5808 | 125/4 | " " Washer | | 2 |
| D 5778 | JDL.117 | Tail Pipe, with Flange | 2 | 3 |
| E 5787 | JDL.118 | " " Joint Washer | | 4 |
| E 392 | 68 | " " Flange Stud | | 3 |
| E 5991 | J.63 | Silencer Support Link | | 5 |
| E 4956 | J.11 | Support Link Stud | | 3 |
| E 364 | 175 | " " " Nut | | 2 |
| D 5671 | — | Clutch Assembling Jig | 21 | 0 |
| | | Clutch Assembly | 46 | 0 |

3-POLE FLYWHEEL MAGNETO.

| | | | | |
|-----------|---------|--|-----|---|
| | | Complete Magneto comprising Flywheel and Armature Plate Assemblies | 120 | 0 |
| | | Flywheel Complete, comprising Flywheel, Cam, Balance Weight, Magneto, Pole Shoe and Screws | 57 | 6 |
| | JDL.200 | Flywheel, with Cam and Centre Nut | 21 | 6 |
| M 1503 | JDL.201 | Flywheel Balance Weight | 5 | 3 |
| M 1504 | JDL.202 | Pole Shoe | 2 | 3 |
| M 1507 | JDL.203 | Magnets, per pair | 17 | 3 |
| 1002 x 9 | JDL.204 | Screw, Pole Shoe | | 3 |
| | | Armature Plate, assembled with Lighting Coils | 69 | 0 |
| | JDL.205 | Armature Plate only | 13 | 0 |
| 1140 x 1 | JDL.207 | Armature Plate Fixing Screw | | 3 |
| M 1634 | 125/109 | Ignition Coil | 20 | 0 |
| M 1229 | 125/110 | Flywheel Cover, Flat | 4 | 0 |
| M 1580 | | " " Domed | 4 | 0 |
| M 1228 | JDL.208 | " " Fixing Screw | | 3 |
| 1012 x 2C | 125/111 | Condenser Box only | 4 | 6 |
| | | " " Assembled with Condenser | 18 | 6 |
| 1053 x 1 | 476 | " " Stud | | 3 |
| 1002 x 15 | 466 | " " Nut | | 2 |
| 1002 x 13 | 465 | " " Washer | | 2 |



| PART No. | ILLUST. No. | DESCRIPTION. | PRICE EACH | |
|-----------|-------------|---|------------|----|
| | | | S. | D. |
| | | Condenser Box, with Condenser and Studs | 9 | 9 |
| M 1750 | 125/112 | Condenser only | 4 | 6 |
| | 1022 x 7 | Point Clamp | | 10 |
| | 1013 x 3 | " " Screw and Washer | | 3 |
| 1013 x 13 | 480 | " " Top Bush | | 3 |
| 1013 x 12 | 481 | " " Bottom Bush | | 3 |
| | 487 | Screwed Point, with Lock Nut | 3 | 0 |
| M 1714 | 1474 | Rocker Arm, with Point and Pad | 4 | 6 |
| 1047 x 3 | 486 | " " Spring | | 3 |
| M 1515 | JDL.206 | Lighting Coils, per pair | 13 | 6 |
| 1113 x 3 | 125/107 | Lighting Terminal Screw, with Nut and Washers | | 7 |
| | 125/114 | Lighting Cable, from Magneto | | 7 |
| 1106 x 14 | 125/108 | Cable Connector, with Sleeve | | 7 |
| | 482 | Low Tension Lead, with Sleeve | | 6 |
| 1148 x 4C | 125/113 | High Tension Lead, complete | 4 | 6 |
| 1124 x 8 | 810 | " " Terminal | 1 | 0 |
| E 869 | 489 | " " Washer | | 3 |
| | 491 | " " Screw | | 2 |
| 1010 x 11 | 490 | " " Spring | | 2 |
| 1046 x 13 | 490A | " " " Pad | | 2 |
| M 1239 | — | Hammer Tight Spanner | 3 | 6 |
| M 1665 | — | Contact Point Spanner | | 5 |
| | | Spark Plug Spanner | 1 | 6 |
| M 1232 | | Rubber Grommet, Lighting Lead | | 2 |



| PART No. | ILLUST. No. | DESCRIPTION. | PRICE EACH | S. | D. |
|----------|-------------|--------------|------------|----|----|
|----------|-------------|--------------|------------|----|----|

LIGHTING SET.

| | | | | | |
|---------|---|----|----|---|--|
| J.701 | Complete Lighting Set with Head Lamp, Tail Lamp, Bulbs and Cables ... | 33 | 5 | | |
| J.702 | Head Lamp complete with Switch and Cables | 27 | 7 | | |
| J.703 | Head Lamp Body Shell with Bracket | 17 | 3 | | |
| J.710 | Front Rim with Green Windows, less Front Glass ... | 5 | 9 | | |
| J.710A | Green Window ... | | | | |
| J.710B | " " Spring Clip ... | | | | |
| J.710C | " " Cover ... | | | | |
| J.711 | Front Glass ... | 1 | 9 | | |
| J.733 | Rubber Washer for Front Glass ... | | 4 | | |
| J.704 | Front Rim Clip ... | | 1 | 2 | |
| J.704A | " " Pivot ... | | | | |
| J.705 | Reflector ... | 5 | 9 | | |
| J.705A | " Retaining Spring (set of 3)... | | 11 | | |
| J.707 | Pilot Bulb Holder ... | | 10 | | |
| J.709 | " 4 v. .3 amp ... | | | | |
| J.706 | Main Bulb Holder with Contacts ... | 2 | 11 | | |
| JDL.708 | " 6 v. 1 amp. ... | | | | |
| J.718 | Dry Battery Insulator ... | | 3 | | |

| PART No. | ILLUST. No. | DESCRIPTION. | PRICE EACH | S. | D. |
|----------|---|--------------|------------|----|----|
| J.728 | Switch, with Contacts ... | 5 | 9 | | |
| J.729 | " Lever with Spindle and Split Fin ... | 2 | 3 | | |
| J.730 | " Spindle Spring ... | | 3 | | |
| J.734 | " " Washer ... | | 2 | | |
| J.731 | " Contact Wiper ... | | 4 | | |
| J.732 | Resistance ... | 2 | 3 | | |
| J.712 | Tail Lamp complete, Fixing Plate and Screws ... | 5 | 9 | | |
| J.721 | Tail Lamp Body ... | 2 | 3 | | |
| J.714 | " " Clip ... | | 5 | | |
| J.713 | " " Fixing Plate ... | | 7 | | |
| J.717 | " " " " Screw with Nut and Washer ... | | 4 | | |
| J.709 | " " Bulb, 4 v. .3 amp. ... | | | | |
| J.722 | " " Holder ... | 1 | 5 | | |
| J.719 | " " Cable Terminal Nut ... | | 3 | | |
| J.715 | " " Fixing Screw and Nut (set of 3) | | 5 | | |
| J.723 | Cable from Magneto to Head Lamp ... | 1 | 2 | | |
| J.724 | " Head Lamp to Tail ... | 2 | 11 | | |
| J.735 | Earth Wire ... | 1 | 5 | | |
| J.736 | " " Terminal ... | | 5 | | |
| J.719 | " " Nut ... | | 3 | | |

CARBURETTER.

| | | | | |
|-----------|------|--------------------------|---|---|
| V 508 | C.1 | Body ... | 9 | 3 |
| V 367 | 1014 | Top Ring ... | 1 | 3 |
| V 368 | 1012 | " Disc ... | 1 | 6 |
| V 365 | 1007 | Throttle ... | 2 | 3 |
| V 369 | 1008 | " Spring ... | | 6 |
| V 514 | 1010 | Taper Needle ... | 1 | 0 |
| V 413 | 1009 | " " Adjuster ... | | 6 |
| V107 x 7 | 1011 | " " Spring ... | | 3 |
| | 1075 | Centre Piece and Jet ... | 4 | 0 |
| V107 x 3 | 20 | " " Washer ... | | 2 |
| V 424 | C.3 | " " Locating Screw ... | | 3 |
| V 172 | M.22 | Bottom Nut ... | 1 | 0 |
| V107 x 4 | 23 | " " Washer ... | | 2 |
| V107 x 1 | 12 | Float ... | 3 | 6 |
| V146 x 6 | 14 | " Cup ... | 3 | 3 |
| V107 x 2 | 13 | " " Washer ... | | 6 |
| V 355 | 16 | Fuel Needle ... | | 9 |
| | M.29 | " Tongue and Pin ... | | 7 |
| V 326 | 1016 | Body Clip ... | 2 | 0 |
| V107 x 16 | 42 | " Screw ... | | 6 |

| PART No. | ILLUST. No. | DESCRIPTION. | PRICE EACH | |
|-----------|-------------|------------------------------------|------------|----|
| | | | S. | D. |
| V 373 | 1017 | Strangler Plate | ... | 9 |
| V 626 | M.14 | " " Screw | ... | 3 |
| V146 x 2 | M.15 | " " Spring Washer | ... | 2 |
| | C.2 | End Cap | 2 | 6 |
| V 299 | 125/123 | Air Intake Gauze | 1 | 6 |
| V 381 | 1071 | Banjo Union | 1 | 9 |
| V 382 | 1072 | " " Bolt | 1 | 0 |
| V 404 | 1074 | " " Filter Gauze | ... | 6 |
| H104 x 8 | C.4 | " " Fibre Washer, Large Hole... .. | ... | 3 |
| V 383 | C.5 | " " " " Small " " | ... | 3 |
| V 207 | C.6 | Tickler | ... | 9 |
| V 211 | C.7 | " " Spring | ... | 9 |
| V111 x 2 | C.8 | " " Split Pin | ... | 9 |
| V234C/CG | 1026 | Control Cable, complete | 4 | 6 |
| | 7 | " " Adjuster and Locknut | ... | 9 |
| V 405 | C.10 | " " Body | 3 | 6 |
| V142 x 7 | C.11 | " " Handlebar Clip | 1 | 6 |
| V142 x 5 | J.4 | " " " " Screw | ... | 2 |
| V 406 | C.12 | " " Lever | 3 | 0 |
| V 387 | C.13 | " " Top Plate | 1 | 3 |
| V 429 | 1080 | " " Body Friction plate | ... | 6 |
| V142 x 11 | 1081 | " " " Spring Washer | ... | 3 |
| V142 x 10 | 1082 | " " " Fibre Washer | ... | 3 |
| V117 x 5 | 45 | " " " Top Screw | ... | 6 |
| | | Control, Complete | 10 | 9 |



THE VILLIERS "JUNIOR" ENGINE

If any part of this Engine, Flywheel, Magneto or Carburetter fails through faulty workmanship or material, it will be replaced free of charge if returned to the Manufacturers carriage paid within three months from date of purchase as indicated hereon.

The Manufacturers' liability does not extend to parts or components not manufactured by them, and they are not liable for the cost of replacing or re-fitting any parts or for any additional or further expenses or charges incurred through any such failure.

The Manufacturers undertake to overhaul this VILLIERS "Junior" Engine including Magneto and Carburetter, decarbonise, and replace any parts which may be worn within twelve months from the date of purchase as indicated hereon at a price NOT EXCEEDING 43/- conditional that the Engine is returned to their works carriage paid.

This offer shall exclude any Engine which has been damaged in an accident or through unreasonable handling or maliciously, and is subject to the bottom portion of this form being completed.

Date of Purchase..... Engine Number.....

This..... Motorised Bicycle fitted with VILLIERS "Junior" Engine
has been sold this..... day of..... 194..... as a new machine by

..... (Here the Motor Cycle
or Cycle Dealer is to give name and address).
Engine No.....
This portion to be completed and forwarded to THE VILLIERS
ENGINEERING CO. LTD., WOLVERHAMPTON, without delay.

Signed,

.....(Dealer).

GUARANTEE

The following guarantee is given with VILLIERS Engines and Accessories, in place of any implied guarantee by statute or otherwise, all such guarantees being in every case excluded. No statement or representation contained in this book shall be construed as enlarging upon or varying this guarantee.

WE GUARANTEE, subject to the conditions mentioned below, that all precautions which are usual and reasonable have been taken by us to secure excellence of materials and workmanship. This guarantee is to extend and be in force for 6 months from the date the Engine or Accessory is despatched by us, and during this period we will replace free of charge any part manufactured by us which may prove defective in workmanship or material.

CONDITIONS OF GUARANTEE.—If any part is claimed to be defective, the part or the Engine must be sent to us carriage paid and accompanied by an intimation by the sender that he desires to have it repaired free of charge under our guarantee. At the same time the number of Engine and full particulars of purchase must be furnished. Failing compliance with the above, no notice will be taken of anything that may arrive, but such articles will lie here at the risk of the sender, and this guarantee or any implied guarantee shall not be enforceable.

As VILLIERS Engines and Accessories are liable to derangement by neglect or misuse, this guarantee does not apply to defects caused by wear and tear, misuse or neglect.

In the case of Engines and Accessories which have been used for "hiring out" purposes, or from which our Trade Mark, name, manufacturing number or any instruction plate has been removed, no guarantee of any kind is given or is to be implied.

VILLIERS Engines and Accessories used for purposes other than Motor Cycles or Motorised Bicycles, are not included in this or any guarantee, unless the purpose for which they are used has been approved and agreed by us in writing to come within the terms of this guarantee.

We do not undertake to bear the cost of the re-fitting or replacement of any part, nor do we accept responsibility for postage, carriage or any other charges in connection with the replacement of any part.

The term "Agent" is used in a complimentary sense only, and those firms or persons whom we style our Agents are not authorised to advertise, incur any debts or transact any business whatsoever on our account other than the sale of goods which they may purchase from us, nor are they authorised to give any warranty or make any representations on our behalf or sell subject to or with any conditions other than those contained in the above guarantee.

The Villiers Engineering Co. Ltd., cannot accept responsibility nor be held in any way liable for damage to or loss of complete Motor Cycles, Engines or any parts thereof through fire or any other cause when in their possession. If complete Motor Cycles are sent for repair or adjustment, they can only be ridden and tested on the road at the owner's risk, and without responsibility on the part of The Villiers Engineering Co. Ltd.