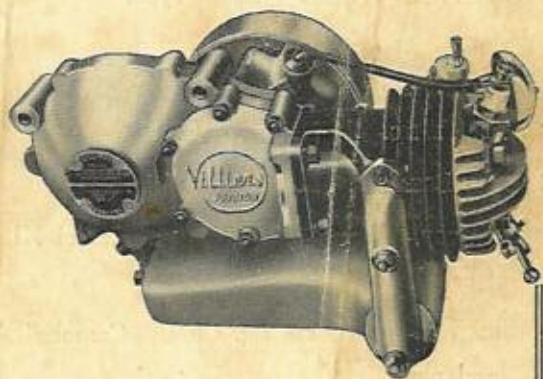


MAINTENANCE
HANDBOOK
& SPARE PARTS
LIST *for*

The *Villiers*

“Junior-de-luxe” Engine

For Auto-Cycles



Published
AT
1/-

Manufactured by:

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

Telephone No.
21666 (3 lines)
20851 SERVICE DEPT.

Telegrams: “VILLIERS
WOLVERHAMPTON”

Code: BENTLEYS

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

OCT./52.

Due to increased costs of materials all Prices in this List are advanced by
30% as from 10th December, 1951, until further notice.

GENERAL DATA.

MODEL.—Junior de Luxe.

BORE.—50 M.M.

STROKE.—50 M.M.

CAPACITY.—98 C.C.

RATIO, ENGINE TO CLUTCH.—2.47 : 1.

FINAL DRIVE SPROCKET.—10 teeth, $\frac{1}{2}$ inch pitch, for Coventry Chain
No. 112045.

SPARKING PLUG.—Lodge CB3, point gap .018 ins. to .025 ins.

CARBURETTER.—Villiers "Junior" Type.

„ Jet size, J7.

„ Taper Needle, 2%.

IGNITION TIMING.— $\frac{1}{4}$ in. before T.D.C.

CONTACT BREAKER.—Point gap .015 in.

LUBRICATION.—Engine, $\frac{1}{2}$ pint Patent Castrol XL Oil to each gallon
of petrol, thoroughly mixed.

LUBRICATION.—Chaincase and Clutch—Castrol "D" gear oil, filled to
level plug.

LIGHTING SET.—Headlamp Bulb 6v., 1a., 19mm., S.B.C. Tail and
Parking Bulbs, 4v., .3 a., M.E.S. Parking Battery—Ever-Ready
No. 1289.

The



“Junior-de-luxe” Engine

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.

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 $\frac{1}{8}$ " 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 turn the adjusting screw with screw-driver by turning clockwise until the Operating Lever has approximately $\frac{1}{8}$ " 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.

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. Use a Lodge Type CB3.
- (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-bore Cylinder and fit oversize Piston ...	34	6
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 are as follows :—

Renewing Con. Rod, Crank-pin and Rollers in original Shaft	23	0
Replacing Crankshaft Assembly and allowing for old Assembly, where suitable	27	6

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

PART No.	ILLUST.		DESCRIPTION	PRICE EACH	
	No.			S.	D.
B 5764	JDL.1	Cylinder	... ..	35	0
C 5799	JDL.2	" Head	... ..	16	0
D 5776	JDL.3	" Base Washer	... ..		4
E 5317	125/3	" Head Bolt	... ..		7
E 5808	125/4	" " Washer	... ..		2
D 5796	JDL.109	Inlet Manifold	... ..	8	9
E 3949	125/34	" and Exhaust Washer	... ..		5
E 3948	125/41	Exhaust Manifold Washer	... ..		4
E 3314	JDL.100	Cylinder Stud, Long	... ..		3
E 392	68	" " Short	... ..		3
E 401	98/205	" " Nut	... ..		2
E 2924	98/207	" " Washer	... ..		2
D 4938	JDL.5	Release Valve Bracket	... ..	2	0
D 4939	JDL.6	" " Lever	... ..	1	6
	—	" " " Split Pin $1/8 \times 13/16$	... ..		2
E 4936	J.7	" " Stem	... ..	1	6
E 617	259	" " Spring	... ..		5
	—	" " Stem Split Pin $3/32 \times 9/16$	... ..		2
V142 x 5	J.4	" " Bracket Screw	... ..		2
E 5084	J.8	" " Body	... ..	2	3
E 3318	JDL.105	" " " Washer	... ..		2
E 4997	J.9	" " Outer Cover	... ..		4
E 4998	J.10	" " Inner Cover	... ..		4
E 5810	JDL.106	" " Lever Adjusting Screw	... ..		5
V105 x 2	JDL.107	Lock Nut for Adjusting Screw	... ..		2
C 5774	JDL.36	Piston only, standard size, with Bushes	... ..	18	6
D 5937		" " 15 thous. oversize	... ..	18	6
D 5938		" " 30 thous. oversize	... ..	18	6
E 1725	125/7	" Ring, standard size	... ..	1	9
E 4480		" " 15 thous. oversize	... ..	1	9
E 4582		" " 30 thous. oversize	... ..	1	9
E 3903	125/8	Gudgeon Pin	... ..	2	3
E 4047	125/9	" " Circlip	... ..		4
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
D 5002	J.26	Clutch Cover	... ..		4
E 5106	J.19	Crankcase Stud, Long	... ..		4
E 5107	J.20	" " Short	... ..		3
E 401	98/205	" " Nut	... ..		2
E 2924	98/207	" " Washer	... ..		2
W185E	JDL.110	Clutch Cover Bolt for top two bosses	... ..		4
E 5146	J.15	Clutch Case Stud, Short	... ..		3
E 5148	J.16	" " Long	... ..		4

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
E 4956	J.11	" Stud, Silencer Support		5
E 364	175	" " " Nut		2
E 1962	162	Crank Case Drain Plug		4
E 1905	163	" " " Washer		2
E 4104	125/47	Oil Filler Plug	10	2
V107 x 3	20	" " Washer		2
D 7345		Driving Shaft Assembly, with Connecting Rod	40	0
	J.21	Ball Bearing, Type EE8		*
E 5049	J.31	Gland Spring		9
E 5048	J.35	" Bush	3	0
E 4931	J.30	Engine Sprocket	5	9
E 5124	J.33	" " Key		3
E 5278	J.12	" " Lock Washer		4
E 4932	J.32	" " Nut		4
	V.52	Ball Bearing, Type EE6		*
C 4943	J.39	Clutch Shaft	8	9
E 4944	J.40	" Sliding Cotter	10	
E 4945	J.41	Clutch Push Rod, Long, Inner		7
		$\frac{3}{8}$ in. Steel Ball		2
E 5322	J.42	Clutch Push Rod, Short, Centre	1/6 set	4
E 5325	J.42A	" " Outer		5
	V.52	Ball Bearing, Type EE6		*
E 5557	JDL.121	Spring Locating Bush, Short... ..	1	2
E 5558	J.51	Clutch Spring	1	2
E 5556	JDL.122	Spring Locating Bush, Long	1	6
D 4951	JDL.43	Outer Clutch Plate, Boss on Inside	5	3
D 5233	J.47	Clutch Plate, Corked	5	9
E4960/E5220	—	Set of Corks for Clutch Plate	1	2
D 4954	J.44	Clutch Plate, Centre	5	3
D 5232	J.46	" Sprocket, Corked, with Ball Race... ..	11	6
	—	Set of Corks for Sprocket	1	3
E 4948	JDL.48	Clutch Sprocket Ball Race... ..	2	3
E 4955	J.49	" " Side Plate		5
	—	Set of 33 $\frac{1}{8}$ in. Balls		7
D 5433	JDL.123	Outer Clutch Plate, Boss on Outside	5	3
	J.50	Ball Bearing, Type LS7		*
D 4947	J.52	Final Drive Sprocket	4	6
E 5001		Set of 5 Rivets, Sprocket Side Plates		2
E 3931	J.53	Final Drive Sprocket Nut		5
E 5581	J.54	" " Key		3
D 6125	—	" " Lockwasher		4

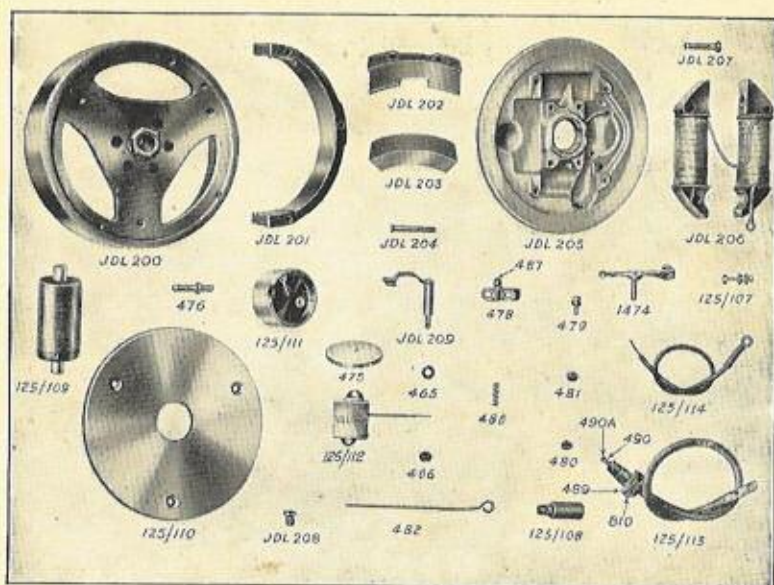
* *Manufacturer's current price.*

PART No.	ILLUST. No.	DESCRIPTION.	PRICE EACH	
			S.	D.
	J.55	Primary Drive Chain, 54 pitches		
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 $1\frac{1}{16} \times \frac{7}{16}$		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
E 5871		Silencer Plug		4

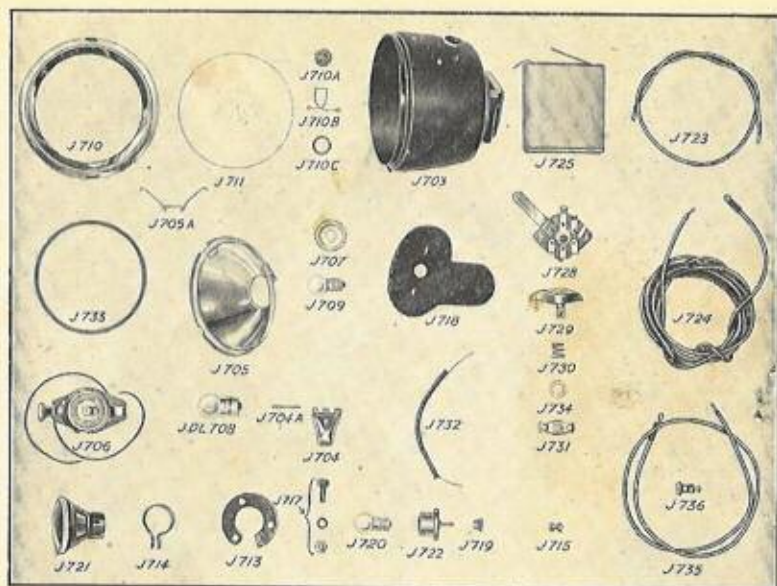
3-POLE FLYWHEEL MAGNETO.

		Complete Magneto comprising Flywheel and Armature Plate Assemblies	120	0
		Flywheel Complete, comprising Flywheel, Cam. Balance Weight, Magnets, Pole Shoe and Screws	57	6
M 1503	JDL.201	Flywheel Balance Weight		
M 1504	JDL.202	Pole Shoe		
M 1507	JDL.203	Magnets, per pair		
			} Not supplied as Spares	
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

* *Manufacturer's current price.*



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 × 7	478	Point Clamp	10	
1013 × 3	479	" " Screw and Washer	3	
1013 × 13	480	" " Top Bush	3	
1013 × 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 × 3	486	" " Spring	3	
M 1515	JDL.206	Lighting Coils, per pair	13	6
1113 × 3	125/107	Lighting Terminal Screw, with Nut and Washers	7	
	125/114	Lighting Cable, from Magneto	7	
1106 × 14	125/108	Cable Connector, with Sleeve	7	
	482	Low Tension Lead, with Sleeve	6	
1148 × 4C	125/113	High Tension Lead, complete	4	6
1124 × 8	610	" " Terminal	1	0
E 869	489	" " " Washer	3	
	491	" " Screw	2	
1010 × 11	490	" " Spring	2	
1046 × 13	490A	" " " Pad	2	
M 1239	—	Hammer Tight Spanner	3	6
M 1665	—	Contact Point Spanner	5	
D 5979		Spark Plug Spanner	1	6
M 1232		Rubber Grommet, Lighting Lead	2	



PART No.	ILLUST. No.	DESCRIPTION.	PRICE EACH S. D.
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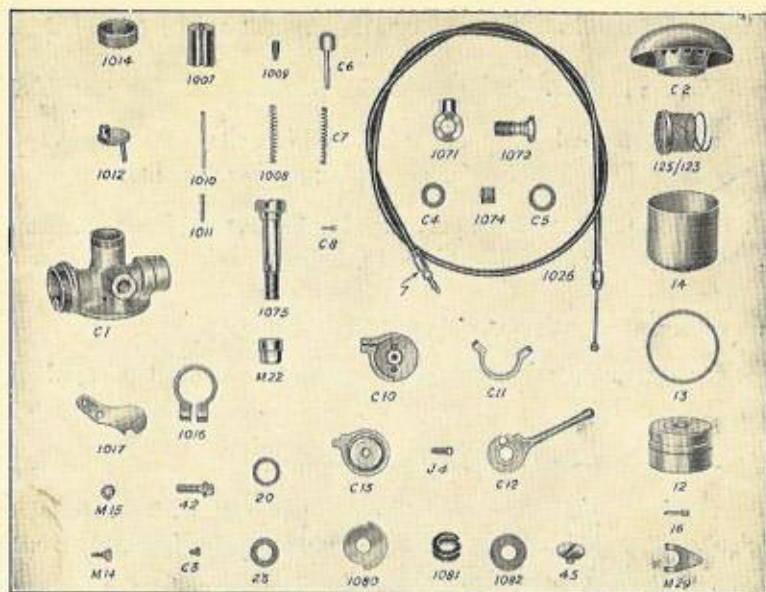
LIGHTING SET.

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

PART No.	ILLUST. No.	DESCRIPTION.	PRICE	
			EACH	S. D.
J.728		Switch, with Contacts		
J.729		" Lever with Spindle and Split Pin ...		
J.730		" Spindle Spring		
J.734		" " Washer		
J.731		" Contact Wiper		
J.732		Resistance		
J.712		Tail Lamp complete, Fixing Plate and Screws		
J.721		Tail Lamp Body		
J.714		" " " Clip		
J.713		" " Fixing Plate		
J.717		" " " " Screw with Nut and Washer		
J.709		" " Bulb, 4 v. .3 amp.		
J.722		" " Holder		
J.719		" " Cable Terminal Nut		
J.715		" " Fixing Screw and Nut (set of 3)		
J.723		Cable from Magneto to Head Lamp ...		
J.724		" " Head Lamp to Tail		
J.735		Earth Wire		
J.736		" " Terminal		
J.719		" " Nut		
J.725		Battery, Ever-Ready No. 1289		

CARBURETTER.

		"Junior de Luxe" Carburetter complete ...	41	3
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, 2%	1	0
V 413	1009	" " Adjuster		6
V107 x 7	1011	" " Spring		3
V 408	1075	Centre Piece and Jet, J7	4	0
V107 x 3	20	" " Washer		2
V 424	C.3	" " Locating Screw		3
V 581	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
V 257	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	
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	} V596	
V 369	C.7	" Spring		9
V111 x 2	C.8	" Split Pin		
V234B/CG	1026	Control Cable, complete	4	0
V105 x 1/2	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
V 636E		End Cap Set Screw		2

VILLIERS FLYWHEEL MAGNETO

We are now fitting a new and improved condenser box assembly.

The condenser box is made in an aluminium alloy, the rocker arm being pivoted in a graphited bronze bearing, ensuring long life.

It is now not necessary to use a spanner for contact point adjustment, a small screwdriver being the only tool necessary.

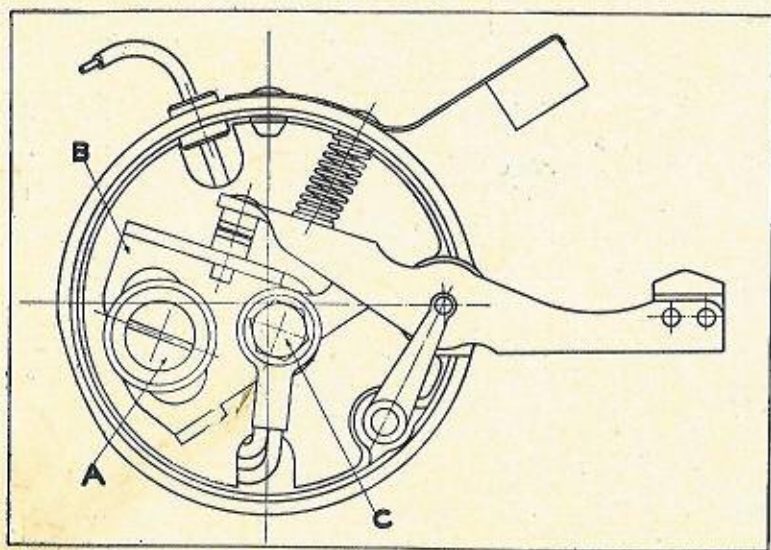
TO ADJUST THE POINT GAP PROCEED AS FOLLOWS :—

Turn flywheel until rocker pad is on top of cam profile of flywheel boss.

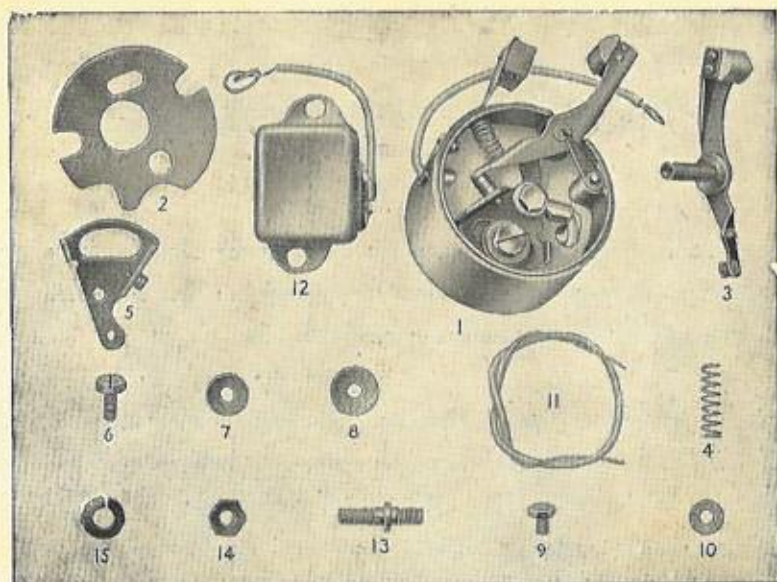
Release the screw "A," see illustration.

Position bracket "B" with .015 in. feeler gauge between contact points, tighten screw, taking care not to use too much force. It is not necessary to disturb screw "C" when adjusting the point gap.

To keep the felt pad moist, give a drop of oil occasionally.



The complete condenser box assembly is interchangeable with the type previously fitted, but when ordering, the number of the engine for which it is required should be stated.



SPARE PARTS LIST.

Illust No.	Part No.	Description of Part	No. Off	Price Each
1	M.1864	Complete Assembly as Illustration :—	1	18 6
	M.1872	For 3 Pole Magnetos - - -	-	-
	M.1884	Condenser Box only, with Rocker Clip, Insulating Bushes and Oil Pad - - -	1	5 0
	M.1884	Id'to, but including Condenser, Fixing Studs, Nuts and L.T. Lead - - -	1	11 0
2	M.1803	Insulating Pad - - -	1	3
3	M.1714	Rocker with Point and Pad :—	1	4 6
4	1047 × 3	For 3 Pole Magnetos - - -	1	3
5	M.1873	Rocker Spring - - -	1	3
	M.1873	Bracket with Tungsten Point and Pivot Pin - - -	1	2 3
6	M.1801	Lock Screw, Point Bracket - - -	1	4
7	M.1802	Brass Washer for Screw - - -	1	2
8	M.1805	Insulating Washer for Screw - - -	1	2
9	1006 × 3	L.T. Lead connection Screw - - -	1	2
10	1113 × 5	L.T. Lead with Sleeve - - -	1	1
11	482	Condenser only - - -	1	6
12	M.1750	Condenser only - - -	1	4 6
13	1053 × 1	Condenser Fixing Stud - - -	2	3
14	1002 × 15	Condenser Fixing Stud Nut - - -	2	2
15	1002 × 13	Condenser Fixing Stud Washer - - -	2	2

Always quote Engine No. when ordering Spares.

SERVICE ENGINE EXCHANGE SCHEME.

To facilitate quicker service and to avoid the necessity for a machine to be off the road for a long period, we have now been able to commence an Engine Exchange Scheme.

If the original engine, complete with magneto and carburetter, is returned to us, we will supply in exchange a fully reconditioned unit at a cost of £13 10s. 0d., packing and carriage extra. The reconditioned units are equal to new and our usual 6 months guarantee applicable to new engines also applies to these units.

Unless you have a Ledger Account with us, your remittance should be posted immediately the original engine is despatched to our Repair Department, and delivery of the replacement unit will be made within seven days of receipt of the original engine.

For the present time, owing to the limited number of service engines available, operation of the Scheme is restricted to engines requiring a complete overhaul, the cost of the replacement units being based upon the assumption that this will be necessary. Normal repairs are, of course, still being executed in the usual way.

ESTIMATES.

If required, we are always prepared to give an estimate before proceeding with any repair. This entails a certain amount of labour in dismantling to ascertain what new parts will be required, and therefore, in the case of any estimate not being accepted for special reasons, a small charge is made for our mechanic's time in taking down the parts for report.

Estimates must be treated as approximate only. We reserve the right to include additional parts should these be found, on further examination or on bench test, to be necessary, to make the repair satisfactory.

We do not undertake to fit to engines sent to us for overhaul, any parts specified by the customer when we consider that other parts are necessary to make an efficient repair. In such cases, we are prepared to supply the customers' requirements in spares, but we do not undertake to fit them.

TERMS OF BUSINESS.

PAYMENT.—Cash with order or cash against *pro-forma* invoice if you do not have a ledger account with us. We do not supply any goods on the C.O.D. system.

Repairs and spares must always be treated on a cash basis. Ledger accounts will be opened for items of £5 (five pounds) and upwards for approved accounts.

An extra amount must always be included in remittances to cover the cost of postage or carriage and packing on spare parts. This is 5% extra up to £5 value. Minimum extra is 6d. Stamps cannot be accepted for items over 1/- (one shilling) in value.

When making remittances by telegraph money order, the name and address of the sender must be included in the space provided on the Post Office Requisition Form for a private message from remitter to payee. Unless this is done, the Post Office does not give this information upon the telegram.

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. We prefer owners to send the engine only.