OPERATING INSTRUCTIONS

AND

BODDY'S (Asp ultural) LTD Agricultura

SPARE PARTS engineers, LIST FOR THE ORFOLK VILLIERS TWO STROKE

ENGINE MARK 25A

PRICES SUBJECT TO ALTERATION

MAY, 1949

Price 6d.

The Villiers Engineering Co. Ltd. WOLVERHAMPTON, England

ESTABLISHED 1898

Telegrams: "VILLIERS" WOLYERHAMPTON Telephone: 21666-7-8 WOLVERHAMPTON 20851 SERVICE DEPT.

KEEP THIS BOOK SAFELY FOR REFERENCE

OPERATING INSTRUCTIONS
FOR THE

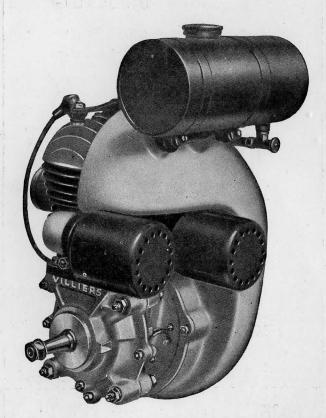
VILLIERS ENGINE

TWO MARK 25A STROKE

Bore : 63 mm.

Stroke: 80 mm.

Capacity: 249 cc.



BEFORE STARTING THIS ENGINE FOR THE FIRST TIME READ OPERATING INSTRUCTIONS CAREFULLY

THE VILLIERS MARK 25A ENGINE

OPERATING INSTRUCTIONS

1. FIXING

The engine should be securely fixed and stand reasonably upright, otherwise lubrication and carburation will be adversely affected.

2. BEFORE STARTING.

This engine is lubricated by petroil, which is a mixture of oil and petrol in the proportion of half a pint of lubricating oil to one gallon of petrol. The useful life and amount of good service the engine will give, depends almost entirely upon the way it is lubricated, especially during the early stages of its life.

PATENT CASTROL XL OIL, obtainable at most garages, has been found to give good results, and as it is advisable always to use one particular brand of oil and not to change from one to another, Villiers owners are advised to adopt this brand regularly.

The Villiers engine is as reliable as engineering skill can make it, and the only constant attention which the owner is asked to give it, is to ensure that the correct oil is thoroughly mixed with the petrol before putting into fuel tank.

An oil measure is fitted to the tank filler cap, the required number of measures being stated on the cap.

3. TO START — WHEN COLD.

After putting petroil mixture in tank turn petroil on by pulling tap knob. Turn bar of needle adjusting rod (Illustration 10, page 14) anti-clockwise as far as it will go, to raise needle in jet.

Press tickler at side of carburetter body until petroil is seen to drip. There is no need to allow petroil to run to waste.

Open carburetter control lever about one third of its full opening.

1

Wind starting rope around pulley on flywheel magneto in a clockwise direction, with one end in the pulley notch, the other end being gripped in, but not round the hand.

Then give a brisk pull to rotate the engine, pulling the rope clear of the starting pulley.

After engine has started, turn needle bar clockwise (to lower needle in jet) as far as possible consistent with good running, it should not then be necessary to alter setting until again starting from cold.

4. TO START — WHEN HOT.

The same procedure as for cold starting should be adopted, except that it should not be necessary to raise needle bar or to flood by pressing tickler.

FAILURE TO START.

If the engine will not start after a reasonable number of trial's, ascertain whether this is due to lack of compression, faulty fuel supply, or faulty ignition.

COMPRESSION should be felt when the engine is rotated at normal starting speeds with throttle partly open.

FUEL SUPPLY.

Depress tickler at side of carburetter body. If fuel is reaching float chamber it will spurt out of vent at top of tickler.

IGNITION SYSTEM.

Unscrew sparking plug from cylinder head and place it with ignition cable attached, on a metal portion of the engine. When the engine is rotated a spark should be visible at the plug points, if the plug and ignition system are in order. If there is no spark, try a new plug or alternatively check whether a spark occurs at the end of the ignition cable when this is held about one-eighth inch away from a clean metal part of the engine.

After these preliminary tests it will be clear where a more detailed examination may be required.

5. RUNNING IN.

Whilst the engine is new, it is advisable to add a little extra oil to the petrol and also to set the carburetter needle adjustment a little on the "rich" side rather than too weak.

DECARBONISING.

Decarbonising the Villiers Two-Stroke Engine is quite straightforward, because of the simplicity of this type of unit, the following points, however, are worth special attention.

When removing and replacing the cylinder, care should be taken not to twist it round the piston—it should be pulled off or pushed on straight so that the rings cannot catch in any of the ports and break.

All carbon should be removed from inside the piston head, as well as from the top of the piston and from the cylinder head. The ports in the cylinder—particularly the exhaust port, should receive careful attention, and should be kept clean, but on no account must the size or shape of these ports be altered by filing.

Piston ring grooves must be kept free from carbon in order to leave the rings quite free. Piston rings should be bright round their surface which makes contact with the cylinder bore. Should wear cause the joint gap to exceed 1/32 in. when in the cylinder, the piston ring should be replaced.

Carbon will form on the gudgeon pin at either side of the small end bush, and this should be carefully removed, otherwise difficulty will be experienced in removing the pin from the piston. The small end bush and the piston bosses should be kept quite free from carbon.

No washer or gasket is used between the cylinder barrel and head on Villiers engines with detachable cylinder heads. A perfect gastight joint is made by screwing down the cylinder head bolts tightly, and by giving it a final tighten when the engine has cooled down after its first run. It is not necessary to put any jointing compound or shellac between the cylinder and head.

It is of the utmost importance that silencers and exhaust pipes are kept quite clean internally, and that a heavy deposit of carbon is not allowed to accumulate. This would cause back pressure and loss of power.

It is important that air leaks should be avoided.

The connection between carburetter and induction pipe must be absolutely airtight, and after dismantling an engine, new washers should always be fitted at the induction pipe joint, and cylinder base joint, if the original ones have been disturbed.

2. SPARKING PLUG.

The type recommended is the Lodge HLS, 18 mm.

Clean and reset the points .025 in. gap after each 100 hours operation.

Adjustment of the gap should be done by moving the points attached to the outer body of the plug. Never bend the centre pin. Keep the outside of the plug insulation free from water and dirt. When screwing the plug in the cylinder head, should any undue stiffness be experienced, do not use force but examine the thread for any particles of grit or carbon which may be present. These must be removed, otherwise the threads in the cylinder head may be damaged. It is a good plan to smear a little graphite grease on the plug threads before replacing.

3. PETROIL FILTER.

Two filter gauzes are provided, one being fixed to the tap in fuel tank, the other just inside the carburetter body inlet. These filters should be examined occasionally and cleaned by dipping in petrol.

4. AIR FILTER.

This must be removed every 100 hours, or more frequently under very dusty conditions, and washed in petrol, then dip in *thin oil*, and allow surplus to drain off before refitting. Oil bath filters should be dismantled and the old oil drained away, the filter should then be washed and re-filled with oil to level indicated on container.

5. CONTACT BREAKER.

The contact breaker points should be checked occasionally to see that they are clean, that the gap when fully opened is between .012 in. and .016 in., and that they open and close properly. To obtain access to points, first remove cowl front (Illustration 42, page 12), then the fan (Illustration 34), after which the condenser box cover (Illustration 8) can be taken off.

The magneto spanner supplied has a feeler gauge attached, which should be used to check the point gap.

6. MAGNETO TIMING.

The magneto is timed so that the contact points commence to open when the piston is $\frac{3}{8}$ in. before top dead centre, but this figure varies to suit working conditions. We will give correct timing upon receipt of particulars. When the engine is built and timing set at required amount of advance, the flywheel is rotated until piston is at top of stroke. Two marks are then punched directly opposite one another, one mark being on the outside face of one of the fan blades, the other

being on the outer rim face of the cowl bottom portion. To rough check timing rotate flywheel to bring piston to top and if the marks are found to be opposite the timing can be said to be reasonably correct.

7. FLYWHEEL REMOVAL.

The cam operating the contact breaker is rivetted to the flywheel which is driven by a taper on the crankshaft, and if alteration to magneto timing is necessary, the flywheel must be released, by unscrewing the centre nut with the box spanner provided in the tool kit. This nut has a right-hand thread and is imprisoned in the flywheel and it should be unscrewed until the flywheel is just free to revolve on the crankshaft. With the piston in its correct position, the flywheel should then be moved round until the points commence to open, then tighten up the nut firmly and re-check timing. This nut must be tightened up hard by hitting with a hammer on the end of the tommy bar.

The taper of shaft and cam must be clean and dry; if any oil is present on the surfaces it will be impossible to secure an effective drive.

8. COOLING SYSTEM.

It is most important that the complete cowling and fan should be in position when the engine is running. On some engines a maximum speed governor is fitted to the top portion of cowling, should this be removed, it is essential that the opening in cowl should be closed by fitting a Cover Plate (Illustration 40, page 10) to prevent loss of cooling draught.

9. CARBURETTER.

This is the "Villiers" Type 5/0, having a single control lever to throttle, an independent adjustment of the taper needle is provided to give a very rich mixture at times when it is required, such as starting a cold engine (see par. 3—Operating Instructions).

There should not be any sharp bends in control cable, otherwise the inner cable will not work freely.

TO DISMANTLE.

First detach carburetter from engine after releasing clip screw. Unscrew the top ring, then pull out the throttle taking care not to damage taper needle, turn carburetter upside down, unscrew bottom nut, remove fibre washer, float cup and fibre washer.

To gain access to the fuel needle it is necessary to remove centre-

piece, but before this can be done, the compensating tube must be unscrewed from head of centrepiece (Illustration 16, page 14), and limit jet (Illustration 25) removed; after removal of centrepiece, the fuel needle lever (Illustration 27) will swing on one side to allow fuel needle to be lifted out.

TO CHANGE THE TAPER NEEDLE.

After withdrawing throttle from body unscrew slotted screw in bottom end of throttle, the needle (Illustration 22, page 14) with spring will then pull out. When replacing taper needle take care that the spring is in position. The small end coil being immediately under head.

TO ASSEMBLE.

See that every part is clean. Place centrepiece in position with fibre washer under head, screw in compensating tube after making sure that fuel needle and lever are in position, then fit retainer (Illustration 28) to compensating tube.

Now place float on centrepiece and replace limit jet in side of centrepiece, using very little force. Place large fibre washer on cup seating, then cup and small fibre washer, finally fitting bottom nut taking care not to use too much force.

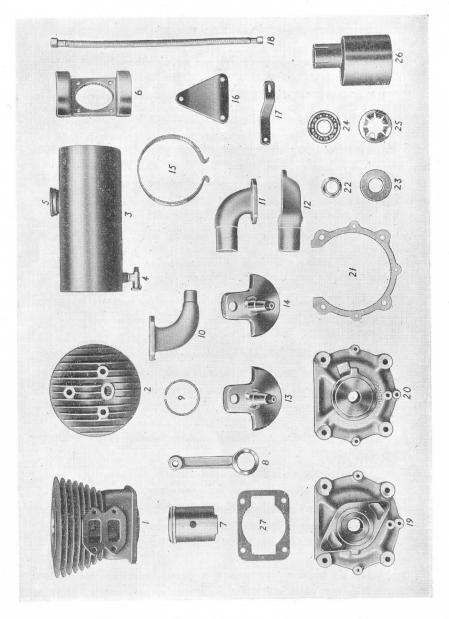
When refitting carburetter on inlet pipe, push right home to avoid air leaks.



HINTS AND TIPS

- 1. Always thoroughly mix the oil and petrol before putting in tank.
- 2. It is wise to filter your petroil mixture through a fine wire gauze when putting in tank.
- 3. Do not flood carburetter before starting when the engine is warm.
- 4. Stop engine by turning off fuel tap if engine is not to be used for several days.
- 5. Do not experiment with cheap sparking plugs, use type recommended.
- Always quote engine number when ordering spares or asking for advice. The number with prefix letters and/or numbers is stamped on crankcase below cylinder base, at rear of engine.
- 7. Driving shafts should only be taken apart by a skilled mechanic. special tools are required for ensuring alignment when re-assembling and as the makers have these facilities, repairs can be undertaken by them at the lowest cost.
- 8. It is important that air leaks should be avoided at the following points:
 - (a) Between inlet pipe and cylinder.
 - (b) Between inlet pipe and carburetter.
 - (c) Between cylinder base and crankcase.
 - (d) Between the two halves of crankcase.
 - (e) Between cylinder and cylinder head.
- 9. When decarbonising the engine it is very important that silencers and exhaust pipes are also cleaned out.
- 10. Avoid all sharp bends in the carburetter control cables.

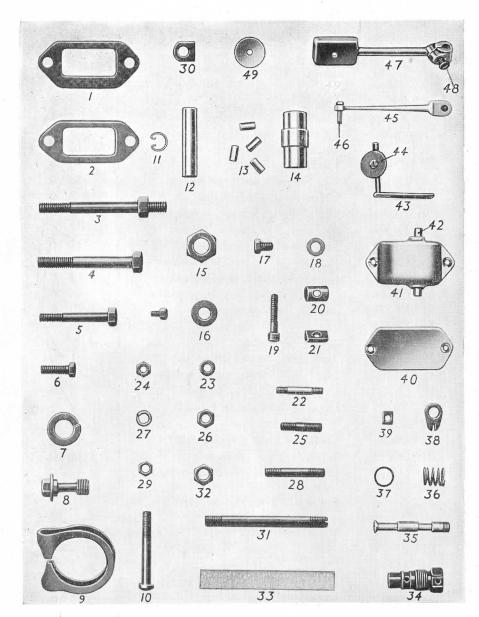
VILLIERS 249c.c. ENGINE, Mk. 25A



Always quote Engine No. when ordering spares.

| Illus. No. | | Description | No. per Engine | Pri | ce ea | ch d. | |
|---------------|----------|---------------------------------------|-------------------|-----|-------|----------|--|
| 1 | B3710 | Cylinder, less Studs | 1 | 4 | 3 | 0 | |
| 2 | C5944 | Cylinder Head, no Boss for R. Valve | 1 | 2 | 10 | 0 | |
| _ | B3707 | " " with " " " | 1. | 2 | 10 | 0 | |
| 3 | C5946 | Tank, less fittings, half gallon - | 10 | 1 | 1 | 0 | |
| 3 | C4184 | " " one gallon - | 1 | 1 | 1 | 0 | |
| 4 | 468 | Petrol Tap | 1 | | 3 | 6 | |
| | V107 × 4 | Petrol Tap Joint Washer | .1 | | | 2 | |
| 5 | P426 | Filler Cap, with Oil Measure | 1 | | 5 | 0 | |
| 6 | C6275 | Tank Bracket | 1 | | 10 | 0 | |
| 7 | C5128 | Piston only, S.A.C. | 1 | 1 | 10 | 0 | |
| 8 | D5135 | Con Rod with small end Bush | .1 - | | 18 | 0 | |
| 9 | E3714 | Piston Ring, standard size | 2 | | 2 | 6 | |
| 9 | E3843 | " " 15 thous. oversize - | 2 | | 2 | 6 | |
| 9 | E4591 | ,, 30 thous. oversize | 2 | | 2 | 6 | |
| 10 | C5753 | Inlet Manifold, fitted magneto side | . 1 | | 12 | 6 | |
| _ | C6611 | for Air Governor - | 1 | | 15 | 0 | |
| 11 | C3748 | Exhaust Manifold, fitted drive side - | . 1 | | 12 | 6 | |
| 12 | C6434 | " " " magneto side | 1' | | 12 | 6 | |
| 13 | D6276 | Driving Shaft, magneto side | 1 | 1 | 10 | 0 | |
| 14 | D6233 | " " drive side | 1 | 1 | 10 | 0 | |
| | C7390 | ,, Assembly | 1, 1 | 4 | 9 | 0 | |
| 15 | D6282 | Tank Strap, for half gallon tank - | 2 | | 1 | 6 | |
| 15 | D6687 | " ,, for one gallon tank - | 2 | | 1 | 6 | |
| 16 | D6286 | Cylinder Head Strap, standard - | 1 | | 2 | 6 | |
| 17 | E5754 | Ditto for Cylinder Head B3707 | - 1 | | 2 | 0 | |
| 18 | V516D | Flexible Petrol Pipe | 1 | | 9 | 0 | |
| 19 | D6298 | Crankcase Half, magneto side - | 1 | 2 | 14 | 0 | |
| 20 | D6799 | ,, ,, drive side | 1 | 2 | 14 | 0 | |
| 21 | D2810 | Crankcase Joint Washer, 6-thous. | | | | - | |
| | | thick | 1 | | | 5 | |
| 21 | D6088 | Crankcase Joint Washer, 10-thous. | 1 | | | 5 | |
| 00 | FICOOF | thick | 2 | | 3 | 0 | |
| 22 | E6235 | Drive Shaft Gland Bush | | |) | 4 | |
| 23 | E5071 | " ,, Sealing Washer | 2 | 2 | 1 | | |
| 24 | 3305 | " Ball Bearing | 2 | 2 | 1 | 0 | |
| 25 | E4531 | " " Gland Spring | 2 | | | 10 | |
| 26 | C6317 | Silencer, standard | 2 | | 15 | 0 | |
| 27 | E3719 | Cylinder Base Washer | 1 | | | 10 | |
| | | | | | | | |

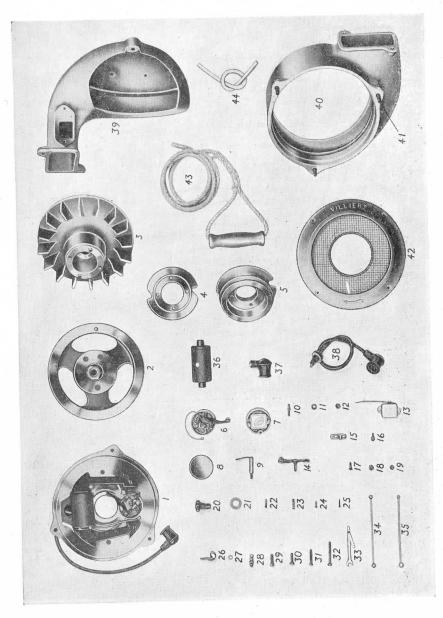
VILLIERS 249c.c. ENGINE, Mk. 25A



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| Illus. | Part | | No. per Price each |
|--------|------------------|---|---|
| No. | | Description | Engine \pounds s. d. |
| - 1 | E3717 | Exhaust Manifold Washer | 2 8 |
| 2 | E3718 | Inlet Manifold Washer | 1 5 |
| 3 | E5755 | Cylinder Head Bolt | 2 1 0 |
| 4 | E.2442 | Cymaci riodd Doll | 1 10 |
| 5 | E6714 | Exhaust Manifold Bolt, right hand | 1 6 |
| 6 | FG151 | Inlet Manifold Screws | 2 4 |
| 7 | E424 | Washer, Pulley Screw and Drive Shaft - | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| 8 | E6753 | Fan Fixing Screw | 1 1 3 |
| 9 | D1676 | Exhaust Pipe Clip | |
| 10 | E435 | Bolt for Clip | 2 6 |
| 11 | E4047 | Circlip, Gudgeon Pin | 2 4 |
| 12 | E4049 | Gudgeon Pin | 1 5 0 |
| 13 | E.375 | Con Rod Roller, steel, set of 14 | 1 5 0 14 3 0 1 7 6 |
| 14 | E7440 | Crankpin | |
| _ | E5593 | Crankpin Plug | 2 3 |
| 15 | E422 | Driving Shaft Nut, gin | 1 5 |
| 16 | E1898 | Washer, Cylinder Head Bolt, %in. | 4 2 |
| 17 | E1962 | Crankcase Drain Screw | 2 3 1 5 4 2 2 3 2 2 2 3 |
| 18 | E1905 | ,, ,, ,, Washer | 2 2 |
| 19 | E781 | Screw, Tank Strap | 2 3 |
| 20 | EG532 | Trunnion, Tank Strap, tapped hole | 2 6 |
| 21 | EM276 | ,, ,, ,, plain ,, | 2 9 |
| 22 | E3392 | Crankcase and Cowl Joint Stud | 5 3 |
| 23 | E2924 | Plain Washer for Stud, 1/4 in. dia | 13 2 |
| 24 | E401 | Nut for Stud, 1/4 in. dia | 13 2 |
| 25 | E363 | Stud for Cylinder Base, Manifolds, 5in. | 11 3 |
| 26 | E.364 | Nut for Stud, 5 in | 14 2 |
| 27 | E1050 | Spring Washer for Stud, 5 in | 14 2 |
| 28 | EG283 | Stud, Armature Plate Fixing | 2 4 |
| 29 | E3961 | Nut for Stud | 2 2 |
| 30 | E6237 | Lockwasher for Stud | 2 2 |
| 31 | E1482 | Engine Fixing Stud, 3/8 in | 4 5 |
| 32 | E834 | 3/8 in. Nut for Stud | 10 2 |
| 33 | | | 2 3 |
| | E5856 | Tell I ad for Talik (half garlon) | 1 3 0 |
| 34 | E3064 | Release Valve Body | 1 1 9 |
| 35 | E1280 | ,, ,, Dtcm | 1 5 |
| 36 | E1163 | ,, ,, Spring | 1 2 |
| 37 | E3318 | ,, ,, Joint Washer | 1 3 |
| 38 | E1276 | ,, ,, Stem Nut | |
| 39 | E1545 | ,, ,, Clamp | 1 2 |
| _ | E6737 | ,, ,, ,, Screw | 1 2 |
| 40 | E6688 | Cowl Cover Plate | 1 1 0 |
| 41 | D6590 | Governor Bracket | 1 4 0 |
| 42 | E6618 | ,, Pivot Pin | 1 7 |
| 43 | E6614 | ,, Throttle Lever and Spindle - | 1 1 9 |
| 44 | E6615 | ,, ,, Plate | 1 9 |
| _ | EM362 | ,, ,, ,, Screw | 2 2 |
| 45 | E6613 | ,, Lever | 1 3 6 |
| 46 | E6784 | ,, ,, Screw | 1 3 |
| 47 | E6787 | Governor Vane | 1 4 0 |
| 48 | EG527 | Clamp Screw | 4 3 |
| | 1002×15 | ,, ,, Nut | i 2 |
| | 1002×13 | Nut, Governor Lever Screw | 1 2 |
| 49 | E6788 | Weight, Governor Vane | 1 6 |
| 17 | 20700 | Trought, Coroller , and | |

VILLIERS 249c.c. ENGINE, Mk. 25A.



Always quote Engine No. when ordering Spares.

| Illus. No. | | Description | No. per Engine | Price each £ s. d. | |
|--|--|--|--|---|---|
| | | Armature Plate Assemby Flywheel Assembly Fan Starting Pulley Flange Ditto with Belt Pulley Dowel Pin for Pulley and Fan Contact Breaker Assembly Rocker Box with Condenser ,,, Cover ,,, Post and Clip ,,,, Stud ,,,, Nut ,,,, Nut ,,,,, Washer Condenser Rocker Arm with Pad and Point Rocker Box Clamp Adjustable Point, with Locknut Clamp Screw ,,, Bush, top , ,, Bush, top | | # s. d. 3 10 0 2 14 6 1 8 0 15 6 3 18 6 9 9 4 4 4 6 4 6 10 3 0 | 0 |
| 20 21 22 | 1013 × 12 1124 × 8 E869 1010 × 11 | High Tension Terminal Felt Washer | 1 1 1 | 10 |) |
| 23 24 25 26 27 | 1047 × 3 1046 × 13 491 M1662 1113 × 5 | Rocker Arm Spring | 1 1 1 1 3 | 10 | 1 |
| 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 | 1113 × 3 E4934 E4659 1124 × 9 1030 × 8 M1665 482 459 M4 1148 × 4 B6612 B6230 E5294 C5970 D5941 E6342 M1546 | L.T. Terminal Screw for Cutout Screw for Starting Pulley Cowl Front Fixing Screw Cheek Screw, short ", ", long Point Spanner with Gauge L.T. Lead, Coil to Condenser Box Ditto Coil to Terminal High Tension Coil Waterproof Plug Cover High Tension Lead, complete Cowling, top portion ", bottom portion Stud for bottom portion Cowl Front with Gauze Starting Rope with Handle Felt Liner for Cowling Box Spanner, Flywheel Nut | 1 2 4 2 2 2 2 1 1 1 1 1 1 1 2 1 | 1 5 (1 3 4 6 1 7 (2 7 (8 3 3 | 733225690360033356 |

VILLIERS FLYWHEEL MAGNETO

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

The condeneser box is made in a new light alloy, the rocker arm being pivotted 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:—

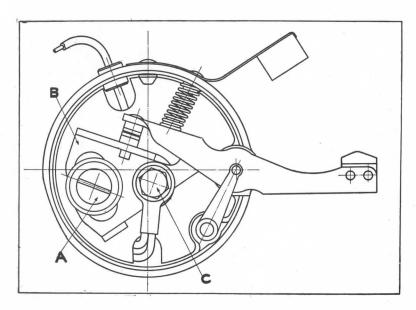
Turn flywheel until rocker pad is on top of cam profile of flywheel boss.

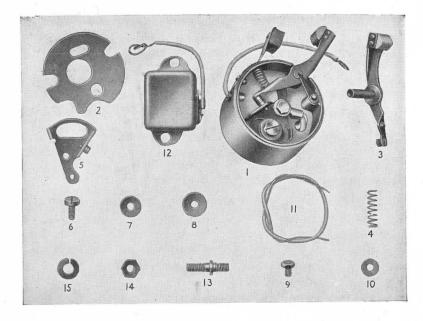
Release the screw "A," see illustration.

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.

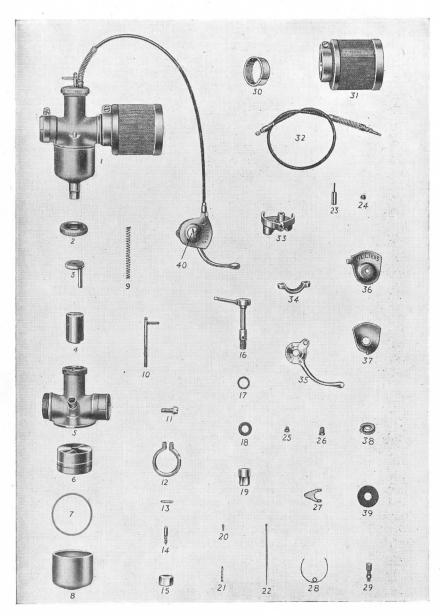




| Illus. No. | Part No. | Description | No. per Price ed Engine £ s. | |
|---------------|------------------|--|---------------------------------|-------------|
| .1 | M1834 | Complete Assembly as Illustration | 1 18 | 6 |
| | M2011 | Condenser Box only, with Rocker Clip, Insulating Bushes and Oil | | |
| | | Pad | 1 5 | 0 |
| | M2012 | Ditto, but including Condenser. | | |
| | | Fixing Studs, Nuts and L.T. Lead | 1 11 | 0 |
| 2 | M1803 | Insulating Pad | 1 | 3 |
| 3 | M1632 | Rocker with Point and Pad | 1 4 | 6 |
| 4 | 1047×3 | Rocker Spring | 1 | 3 |
| 5 | M1873 | Bracket with Tungsten Point and | | |
| | | Pivot Pin | 1 2 | 3 |
| 6 | M1801 | Lock Screw, Point Bracket | 1 | 4 |
| 7 | M1802 | Brass Washer for Screw | 1 | 2 |
| 8 | M1805 | Insulating Washer for Screw - | 1 | 2 2 |
| 9 | 1006×3 | L.T. Lead Connection Screw - | 1 | 2 |
| 10 | 1113×5 | 4BA Washer for Screw | . 1 | 1 |
| 11 | 482 | L.T. Lead with Sleeve | 1 | 6 |
| 12 | M1750 | Condenser only | 1 4 | 6 |
| 13 | 1053×1 | Condenser Fixing Stud | 2 | 3 |
| 14 | 1002×15 | Condenser Fixing Stud Nut | 2 | 3 2 2 |
| 15 | 1002×13 | Condenser Fixing Stud Washer - | 2 | 2 |
| | | | | |

Always quote Engine No. when ordering Spares.

VILLIERS 249c.c. ENGINE, Mk. 25A.



Always quote Engine No. when ordering Spares.

| Illus. Part | | | No. per Price each | |
|-----------------------------|-------------------------------------|----|--------------------|---|
| No. No. | Description | | Engine £ s. d. | |
| 1 5/0 | Carburetter, complete | | 1 3 10 0 |) |
| $2 V108 \times 7$ | Top Ring | - | 1 2 0 | |
| 3 V108 × 8 | Top Disc with Guide Peg | - | | |
| 4 V136—11 5 V517D | Throttle Body with Fuel Needle Bush | ~ | 1 5 0 | |
| 5 V517D 6 V463 | Float | _ | 1 5 0 | |
| $7 \text{ V125} \times 8$ | Cup Joint Washer | _ | 1 6 | |
| 8 V151 × 3 | Cup | _ | 1 5 0 | |
| 9 V107×8 | Throttle Spring | - | 1 6 | |
| 10 V136 × 12 | Needle Control Rod, with Bar | - | 1 2 3 | |
| 11 V107×16 | Screw, Carburetter Body Clip | - | 3 6 | |
| 12 V113×14 | Body Clip | ~ | 1 2 0 | - |
| 13 V355E | Fuel Needle | - | 1 9 | |
| 14 — | Tickler, complete | - | 1 9 | |
| $15 \text{ V}105 \times 8$ | Union Nut, Petrol Pipe - | ~ | | ó |
| - V105 × 9 | " Nipple, Petrol Pipe - | - | | 6 |
| 16 V434D | Centre Piece, with Jet | - | 1 5 (| |
| V436E | " Compensating Tube | - | 1 6 | |
| $17 \text{ V} 107 \times 3$ | " " Washer | - | 1 2 | 2 |
| $18 \text{ V} 107 \times 4$ | Bottom Nut Washer | - | 1 2 | 2 |
| 19 $V105 \times 7$ | Bottom Nut | ~ | 1 1 (| |
| 20 V375E | Drive Screw, Fuel Needle Lever | - | | 2 |
| $21 V107 \times 7$ | Spring Taper Needle | ~ | | 3 |
| 22 V137 × 10 | Taper Needle, No. 5 | ~ | | 9 |
| 23 V136 × 3 | Damper | ~ | | 0 |
| 24 V136 × 15 | Damper Plug | ~ | | 5 |
| 25 V464E | Limit Jet, Centre Piece - | - | | 5 |
| 26 V275 | Filter | - | | 6 |
| 27 V257E | Fuel Needle Lever | - | | 9 |
| 28 V545E | Comp. Tube Retainer | ~ | 1 2 | 2 |
| 29 V105×1 | Cable Adjuster and Nut - | - | 1 9 | 9 |
| 30 V518 | Adaptor, Air Filter | ~ | 1 2 3 | 3 |
| 31 V496E | Air Filter | ~ | 1 11 6 | 6 |
| 32 — | Control Cable complete - | ~ | 1 6 9 | 9 |
| 33 V117×1 | Control Body, 7/8 in. Clip - | | 1 3 6 | 6 |
| 34 V117×3 | " " Half Clip - | ٠, | 1 1 9 | 9 |
| 35 V544 | ,, Lever | | 1 3 (| 0 |
| 36 V117×4 | " Top Cover | - | 1 1 3 | 3 |
| 37 V117×6 | " Friction Plate | - | 1 6 | 6 |
| 38 V117×8 | " Spring Washer - | | | |
| 39 V117×7 | " Fibre | | 2 | 2 |
| 40 V117×5 | " Cover Screw | _ | | 6 |
| | ,, | | | |

GUARANTEE

Y/E give the following guarantee with VILLIERS Engines and Accessories in place of any implied guarantee by statute or otherwise, all such guarantees being in all cases excluded. No statement or representation contained in this catalogue shall be construed as enlarging or varying this guarantee. In the case of engines and accessories which have been used for "hiring out" purposes, or from which our trade mark, name, or manufacturing number has been removed, no guarantee of any kind is given or is to be implied.

In the case of engines and accessories used for industrial and stationary purposes, this guarantee shall not apply unless the application of the engine has been agreed and approved in writing by us.

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, but this guarantee is to extend and to be in force for six months only from the date the engines or accessories are despatched by us, and the damages for which we make ourselves responsible under this guarantee are limited to the replacement of a part manufactured by us which may have proved defective.

We do not undertake to refit or bear the cost of replacement or refitting such new part. We guarantee, subject to the conditions mentioned below, to make good at any time within six months any defects in these respects. 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 and neglect.

CONDITIONS OF GUARANTEE.

If a defective part should be found in our engines or accessories, it must be sent to us carriage paid and accompanied by an intimation from the sender that he desires to have it repaired free of charge, under our guarantee, and he must also furnish us at the same time with the number of the engine, and full particulars of purchase. 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.

THE TERM "AGENT" is used in a complimentary sense only, and those firms 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 guarantee becomes void if any parts not made or supplied by the VILLIERS ENGINEERING COMPANY, LTD., are fitted to a VILLIERS engine. To safeguard his own interests, the owner should always insist upon genuine VILLIERS parts.

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.

IMPORTANT.

1.—When sending parts for replacement, repair, or as pattern, the name and address of the sender should always be securely attached, and full instructions explaining what is required should be sent separately by post. In no circumstances should instructions be enclosed with the parts. as they are liable to be lost or damaged in unpacking.

2.—If an engine is sent for repair, it should be well packed in a strong box. Cardboard or a sack is insufficient, and engines so packed are liable to get seriously damaged in transit. Packing cases are not returnable unless specially asked for by the owner at the time of sending to us.

3.—All goods must be consigned to us carriage paid, addressed to "Service Dept." Goods returned by rail are consigned carriage paid.

4.—In correspondence, always quote the engine number and prefixed letter(s) stamped on the crankcase below the cylinder base.

5.—As we are not manufacturers of complete motor cycles or other machines, only the engine should be sent to us. If machines are forwarded, extra expense will be charged for dismantling the engine from the frame and refitting same.

6.—We prefer to bench test every repaired engine before returning it to its owner. It is, therefore, always advisable to send the engine

complete with its magneto, sparking plug and carburetter.

7.—When forwarding a flywheel magneto for overhaul, send the armature plate and the flywheel complete. These parts should in no circumstances be separated, as certain magnetic flux is lost thereby.

8.—Always quote the magneto number and letter(s) (if any) which is stamped on the face of the flywheel, when corresponding about your

flywheel magneto.

9.—Old or worn-out parts sent as patterns, which we consider obsolete, are not returned unless specially asked for by the owner at the time of sending them to us.

10.—Any engines or parts sent to our Works for repair not paid for within six months from the date of our estimate, will be offered for sale by us elsewhere to defray expenses.

TERMS OF BUSINESS.

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.

We are always prepared to send goods by C.O.D. method when requested.