

INSTRUCTIONS

FOR WORKING

16-inch, 20-inch and 24-inch

RANSOMES'

MOTOR MOWERS.

ENGINE.

1. **The Engines** fitted to these mowers are Sturmev Archer Side Valve type.

16" Motor.	198 c.c.	60 m/m bore	70 m/m stroke
20" Motor.	248 c.c.	60 m/m ,,	88 m/m ,,
24" Motor.	348 c.c.	71 m/m ,,	88 m/m ,,

LUBRICATION.

2. The 16" Motor with 198 c.c. S.V. type engine is fitted with mechanical sight feed oil pump which can be regulated by the knurled knob at rear of pump. Sufficient oil should be given so that a faint blue smoke comes from silencer when machine is working.

The 20" and 24" Motors fitted with the larger engines are fitted with dry sump or circulating oil system. There is no adjustment necessary with this system but care must be taken not to allow oil in oil tank to drop below half full.

To check if the lubricating system is working correctly, remove filler cap from oil tank and see that the return oil is flowing back into the tank.

When starting engine from cold the return oil may not be showing until all oil ducts are full.

The system being checked and no return oil showing, clean filters (A) and (B) feed and return oil pipes (C) and (D).

The engine must not be worked if the oiling system is not working correctly.

After the first 100 hours the lubricating oil should be drained off from tank and a fresh supply given. This should be done at least once a season to ensure keeping good oil in the engine.

ENGINE OILS WE RECOMMEND.**Vacuum Moboil BB.****Wakefield's Castrol XL.****REDUCING GEAR.**

3. Two oil plugs (**E**) are fitted in gear case, one of which is used for obtaining oil level. The other when putting oil in gear should be on top centre or vertical position and oil should be put in till it just drains from lower hole.

If gear is not fitted with double oil plugs, care must be taken not to fill gears above the underside of centre shaft. This can be gauged by turning gear round until oil hole is just below horizontal centre.

REDUCING GEAR BRACKETS.

4. Oil each time machine is used, in lubricators (**F**)

FAN SPINDLE.

5. The lubricator (**G**) should never be allowed to get dry as the fan revolves at high speed and requires constant lubrication.

FREE-WHEEL.

6. A little very thin oil in the spring lid oil cup (**H**) each time machine is used.

If the free-wheel is inclined to stick and make the starting handle revolve, the free-wheel should be washed out with paraffin and then given a little fresh clean oil.

LAND ROLLS AND BEARINGS.

7. Grease land rolls and bearings through nipples (J) and (K). A little grease should be given each day machine is used before commencing work.

CUTTING CYLINDER BEARINGS.

8. Grease cutting cylinder bearings through nipples (L) and (M). A little grease should be given each day machine is used.

FRONT ROLLS.

9. A little oil between the wood rolls every time machine is used at points (N).

ADJUSTMENT TO CLUTCH BAND.

See diagram page (8).

10. Place control lever (O) on handle in the up position, release clamping bolt 5 on spring lever 2, and turn cam spindle 6 as far as possible in a clockwise direction. Then

turn cam spindle back until the gear is just free to revolve
Tighten clamping bolt 5 while cam spindle is held in the
position.

SECOND CLUTCH.

11. This clutch is provided for the purpose of allowing the cutting cylinder to be put out of action, leaving the machine free to move without cutting.

To put the clutch in, turn hand wheel (P) in a clockwise direction until it is screwed up tightly, then lock it in this position with wing nut (Q). (The 16" Models are not fitted with locknuts.)

To de-clutch, unlock nut and turn the hand-wheel in an anti-clockwise direction until it is locked against the stop at the end of spindle.

ADJUSTING THE KNIVES.

12. Each machine is sent away with the cutting cylinders properly set to the bottom blade but it is possible they may be upset during transit to the user. When the machine does not cut perfectly, set the cutting cylinder carefully to the bottom blade, so that the revolving cutters just touch the bottom blade, throughout the whole length and without causing any frictional pressure.

For setting the knives a simple method is used, viz :—
Adjusting screws (**R**) on either side of machine.

To set cutting cylinder closer to bottom blade turn screw in clockwise direction. It is advisable when adjusting to make small adjustment to each screw alternatively.

When correctly set, the knives should revolve freely and at the same time be able to cut a leaf or piece of writing paper held at edge of the bottom blade. This test should be made over the entire width of blade.

If the cutting cylinder is set hard on to the bottom blade no cleaner cut is obtained, but extra work and undue wear is put on to the machine.

TO ALTER THE HEIGHT OF CUT.

13. To heighten cut, turn hand wheels (**S**) in clockwise direction.

Indicator plates will be found just beneath hand wheel and both sides should be adjusted equally to ensure an even cut.

CAUTION.

The machine should never be used with the bottom blade pressing on the lawn. If it does the spiral cutters are liable to be damaged by the bottom blade being sprung upwards, the machine will also work heavily and the turf be badly marked.

To see if the machine is set correctly, drop machine on handle rest, place a straight edge across the land and front rolls, the bottom blade should then be well clear of straight edge.

If the grassbox is to be used a slightly higher setting should be made to allow for the weight of the grassbox.

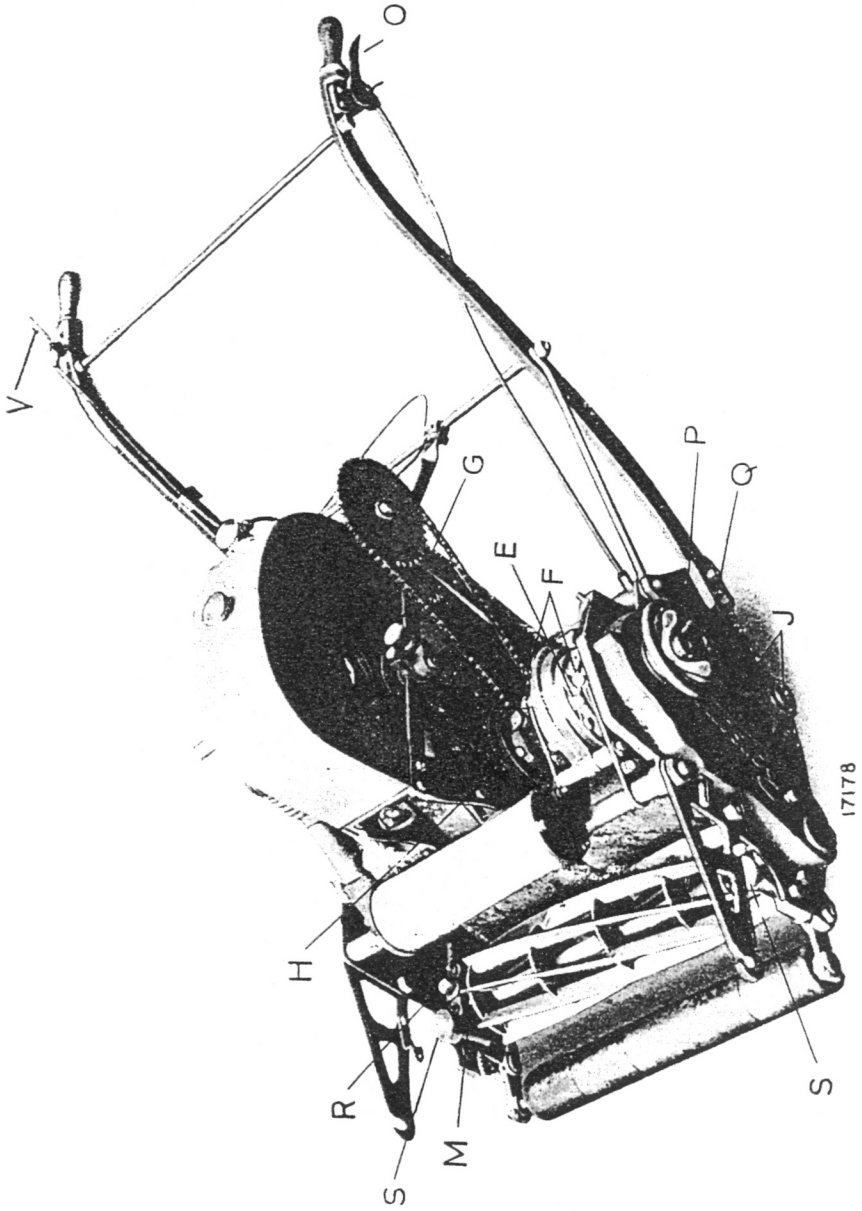
CARBURETTORS.

14. The carburettor fitted is the concentric float chamber type with a single lever control. On the underside of the throttle slide is a round peg stop to form a bye-pass for starting and slow-running.

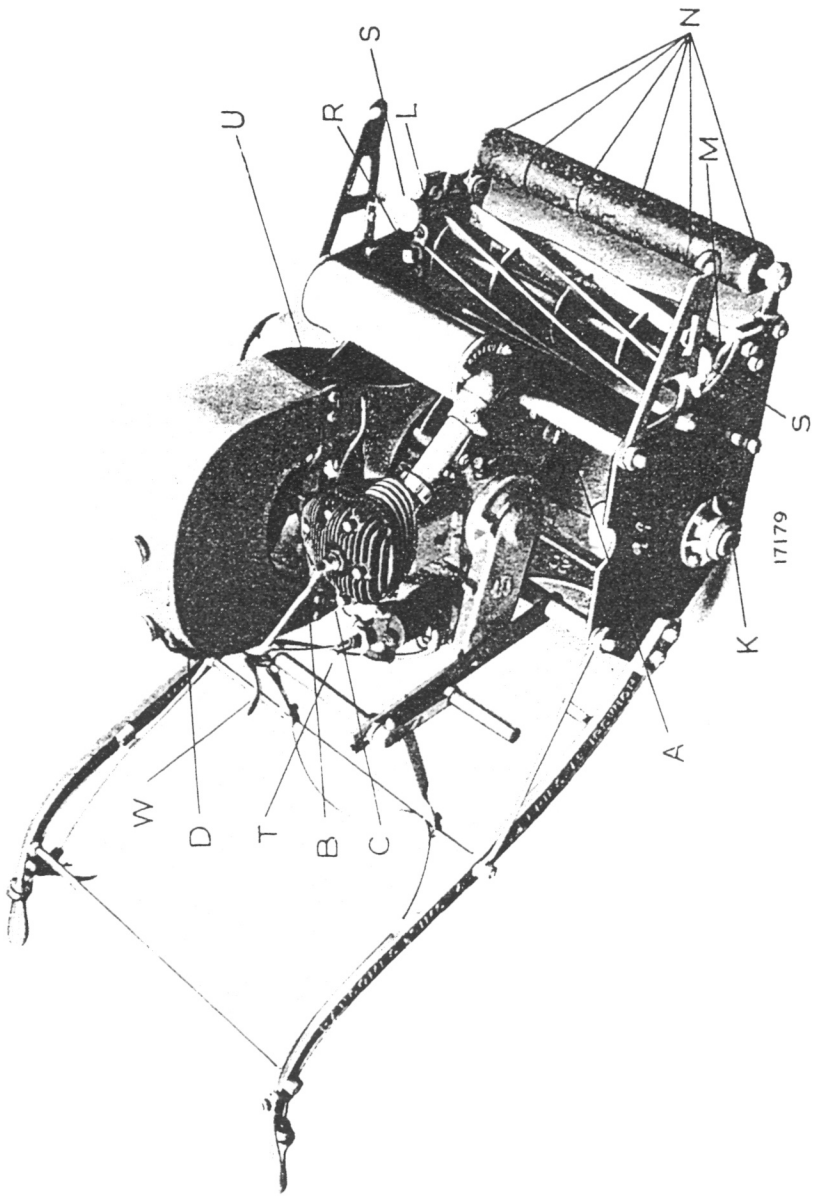
If, after the general stiffness of engine is run off, it is found that the bye-pass is too large, this stop can be filed away slightly to give the desired slow running.

A strangler is fitted to this carburettor and is operated by small knob (T). This should only be used for starting and as soon as the engine is running the knob should be lifted to its full extent and turned into safety notch.

Running the engine with the knob down or strangled is very detrimental to the cylinder as the rich mixture washes the oil off cylinder walls.



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MAGNETO.

15. The timing lever is operated by a cam which gives starting and running positions. The positions are indicated on the cam pedestal by :—

Retard—starting position.

Advance—running position.

TO START ENGINE.

16. See that the main clutch is not engaged and that the engine turns freely. Set timing cam to retard position, pull out petrol cock (U), push strangler knob on carburettor down.

Set control lever (V) in the closed position.

Depress the compression release lever (W) and turn starting handle sharply. Release lever (W) and continue turning until engine starts.

According to atmospheric conditions, it may be necessary to open the throttle a little beyond the bye-pass setting to get engine to start. It should be remembered that the engine will be difficult to start if the throttle is open too wide.

When engine is started, lift strangler knob, put cam to advance position and regulate carburettor control lever (V) to suit desired speed of engine.

TO OPERATE MACHINE.

17. Engage cutting cylinder clutch (P)

Speed engine up slightly.

Release main clutch lever (O) and gradually drop until clutch engages and machine is in motion. To do this the trigger lever must be kept tight up against the clutch lever.

An easy way to operate the clutch is to work the trigger with the left forefinger and the clutch lever with the remaining three fingers,

The machine can be stopped and started by raising or dropping clutch lever.

Drop the clutch in gently so as to avoid putting unnecessary shock on the machine.

When starting the machine especially in the middle of a thick crop it is advisable to put slight pressure on the handles. This relieves the machine from a sudden shock caused by the cutting cylinders coming into contact with the thick grass from a stationary position. But, better still, pull the machine backward, say 2 feet before starting.

If it is desired to do a lot of cutting without collecting grass, balance weights can be obtained to counteract the loss of weight of the grass box.

ENGINE ADJUSTMENTS.

18. If, at any time it is found that the engine will not start, or that it is not running correctly, the following points should be looked into :—
- (a) Take out sparking plug, clean thoroughly and see that the points are 1-64" apart. To test the plug, lay it on top of the cylinder, and then turn engine. It should be easily noticed if the spark is regular and good.
 - (b) Make sure that the carburettor floods properly, and that the jets are perfectly clean. Popping back in carburettor is usually a sign of blocked jets, pipe or filter.
 - (c) Take cap off magneto and see that the platinum points open and close correctly, also that they are perfectly clean. The points should open 1-64".
 - (d) Check inlet and exhaust valve clearance which should be .005 inch. Also see that the valves are free to close quickly, over oiling will some-

times cause the stems to become sticky and make the valves sluggish in action.

To overcome this take valve out and clean stem.

THINGS TO BE NOTED.

19. (a) Always turn the petrol off when finished cutting,
- (b) Occasionally go over the machine to see that screws and nuts are tight.
- (c) Keep machine clean and well-lubricated. It will repay you in maintenance costs ; and give better results at work.
- (d) Don't take take your magneto to pieces. If magneto has to be removed, be sure and replace it so that magneto is in the same relationship to engine, else the timing will be upset.
- (e) Don't tamper with the jets in the carburettor.
- (f) Don't try to cut your lawn shorter than the condition of the surface warrants.
- (g) Don't forget to keep plenty of oil in the oil tank.
- (h) Do not run your fan belt too slack, else slipping will take place.

- (j) On 16" Models if machine is to be left standing for several days, it is advisable to turn oil off by screwing up knurled knob on oil pump. This prevents any likelihood of engine getting flooded with oil.

NOTE.—When ordering replacements or spare parts, please quote the Registered number of the machine which will be found on small brass plate on the right hand side frame.

