

## HINTS AND TIPS

Driving shafts should only be taken apart by a skilled mechanic. Special tools are required for ensuring alignment when reassembling, and as the makers have these facilities, repairs can be undertaken by them at the lowest cost.

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.

When decarbonizing the engine it is very important that silencers and exhaust pipes are also cleaned out.

Avoid all sharp bends in the carburetter control cables.

## ORDERING REPLACE PARTS

When ordering spare parts, please quote the part number (see *Parts Book*) together with the machine number. The machine number will be found stamped on the oval brass plate on the left-hand side near the top of the engine cowling.

**Always use genuine Allen Parts.**

Should any difficulty arise which is not dealt with in this handbook, please communicate immediately with your local agent or with us direct :—

JOHN ALLEN & SONS (OXFORD) LTD.

COWLEY, OXFORD



SECTION T I

Revised March, 1952

## WORKING INSTRUCTIONS UPKEEP HINTS and SPARE

PARTS LIST for

# THE ALLEN

SELF-PROPELLED

# MOTOR SCYTHE

MODEL "T"

WITH VILLIERS MARK 25c ENGINE

**TWO COPIES OF THIS HANDBOOK  
ARE SENT TO EVERY USER  
PLEASE HAND ONE COPY TO YOUR  
OPERATOR**

**JOHN ALLEN & SONS (OXFORD) LTD.  
COWLEY, OXFORD, ENGLAND**

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# The ALLEN Self-Propelled MOTOR SCYTHER

## General Instructions for Working

Any good grade petrol can be used for the engine, but do not use Benzol or any mixture containing Benzol.

The petrol tank holds  $\frac{3}{4}$  gallon of petrol and oil.

### LUBRICATION OF ENGINE

The engine is lubricated by the petrol-oil system. This is carried out by thoroughly mixing one part of oil to sixteen parts of petrol.

Equivalent to  $\frac{1}{2}$  pint of oil to 1 gallon of petrol.

Use **Double Shell or Castrol XL** oils, which are obtainable at any first-class garage.

In countries where it is impossible to obtain either of the above mentioned oils, use an oil complying to specification **S.A.E. 30**.

**Petrol and oil must be mixed together before filling the tank.** Do not, under any circumstances, put neat petrol into the tank and do not add oil direct to the tank, or blockage of the petrol filter may occur.

**The useful life and good service of your engine depends on you carrying out the above simple instructions.**

### LUBRICATION OF THE MACHINE

This is carried out at one point only. See Fig. 1 on next page.

The machine is dispatched from the Works filled with the correct amount and grade of oil.

To check the oil level in the machine, stand the machine on level ground and remove the oil level plug. If oil comes from this hole, no more oil is necessary and the oil level plug should be replaced, making sure that it is screwed back tightly.

If no oil flows from this hole, remove the filler plug and pour oil in slowly until it flows from the oil level hole, replace both plugs and tighten up.

It is not advisable to check the oil level immediately after the machine has been running as the oil will be frothed up.

Use the same quality oil as for the engine—**Double Shell or Castrol XL**. On no account must grease or very thick oil be used.

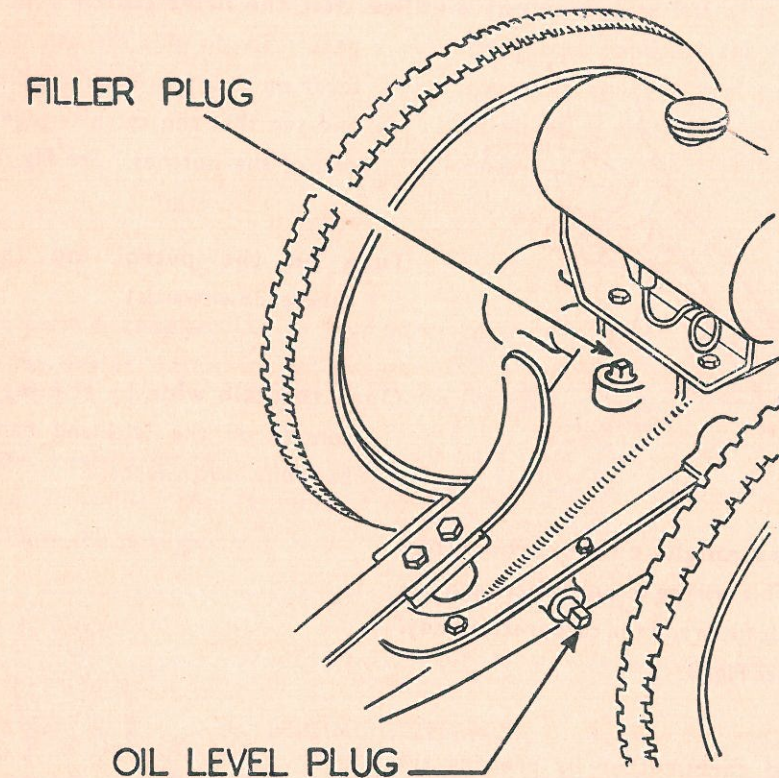


Fig. 1

**Keep the cutting mechanism oiled when not in use** with the oil-can provided in the tool kit. Particular care should be paid to cleaning down and oiling the cutting blade after use, to prevent rusting. The Control Joints on the machine should receive a little oil occasionally. Use same quality oil as for engine.

**Do not oil cutting mechanism while actually working** as oil only collects grit and causes undue wear.

## TO START THE ENGINE

See that the petrol tank is filled with the right mixture of petrol and oil.

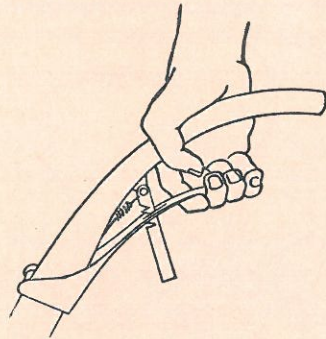


Fig. 2

See that the drive clutch is out of gear. To do this lift the clutch lever on the right-hand handlebar and see that the catch engages in one of the notches. See Fig. 2.

Turn on the petrol tap (point handle downwards).

Open throttle wide by pressing the control on the left-hand handlebar fully downwards.

Close strangler on the carburetter.

This will be found in between the air filter and the carburetter body. See Fig. 3.

Flood carburetter by pressing the tickler button on the carburetter until the petrol flows out. The carburetter will be found in the reverse position on some machines but the strangler flap movement is similar. The flap is closed when in its slot. See Fig. 3.

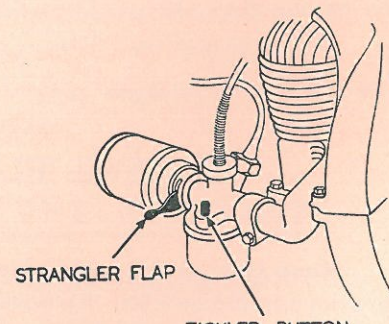


Fig. 3

Wrap the starting cord round the engine pulley in a clockwise direction. See Fig. 4.

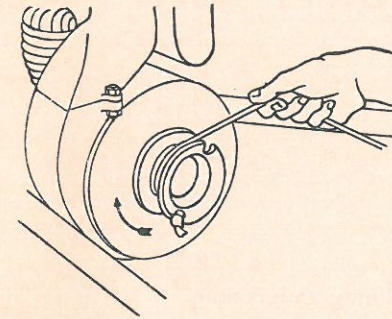


Fig. 4

Spin the engine as fast as possible, using both hands on the starting cord and giving a firm pull and accelerating sharply towards the end.

Open the Strangler flap as soon as the engine warms up.

When restarting a warm engine do not flood the carburetter or close the strangler.

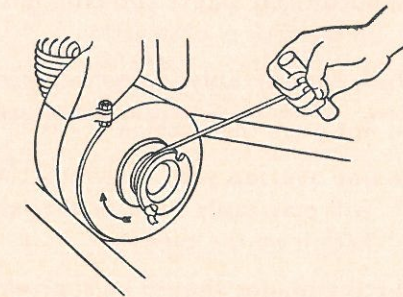


Fig. 5

## ENGINE GOVERNOR

The engine on this machine is fitted with a governor, which cuts out the ignition at an engine speed of approximately 2,400 revolutions per minute, causing the engine to fire intermittently, thus keeping the speed within safe limits. If this happens it is an indication that the throttle is open too much and closing the throttle a little will allow the engine to run steadily.

In order to obtain the best efficiency and to economize in petrol, the throttle should only be opened enough to allow the engine to develop sufficient power for the work being carried out.

## WORKING HINTS

**Start the engine as instructed.**

**Ease the machine forward** and release the clutch catch, allowing the clutch lever to drop down and the clutch to engage. See Fig. 6.

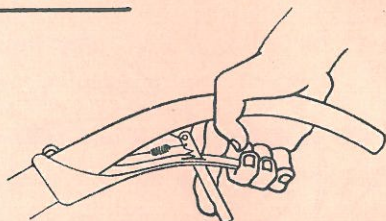


Fig. 6

**Open the throttle** according to the work being undertaken.

**Keep the cutter bar** in light contact with the surface of the ground, the roughest of growths can be tackled with ease this way.

**An automatic safety slip clutch** is fitted in the machine to prevent damage in the case of obstruction.

**Walk comfortably, upright,** in between the handlebars.

**Do not push** the machine, it has ample power.

**Do not overlap your previous cut.** The cut material, no matter how tall, will pass easily beneath the machine, as the special tread tyres take it back from the cutters.

**Cutting blades should be sharpened every four or five working hours.** A keen blade means good work, free from choking and tearing.

**Keep the tyres really hard,** 40 lb. square inch is the correct pressure.

**To stop the machine** a quick downward movement of the handlebars while gripping the clutch lever will help to release the clutch easily.

**To stop the engine** just close the throttle.

**Do not touch** any part of the cutting mechanism when the engine is running.

**Attention** to cleanliness, lubrication, sharpness and correct setting of knives is essential if the best results are to be maintained.

**Bad cutting** is usually due to the following causes :—

Blunt Knife Sections.

Worn and rounded edges of the Finger inserts.

The Knife Bar Pads not pressing sufficiently on the Knife Sections to ensure even contact between them and the steel inserts in the Fingers.

**Operator using the machine correctly.**  
Note the comfortable walking position.

Finger bar in light contact with the ground, leaving a short even stubble.

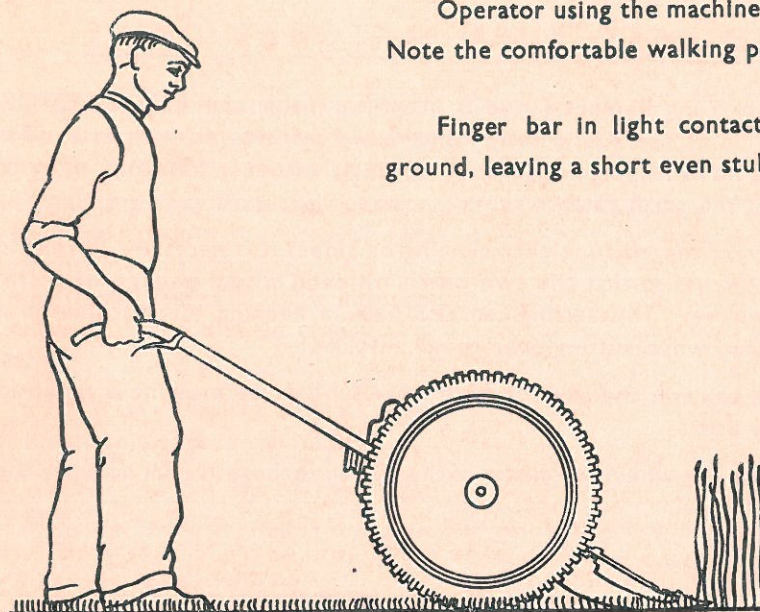


Fig. 7. Correct.

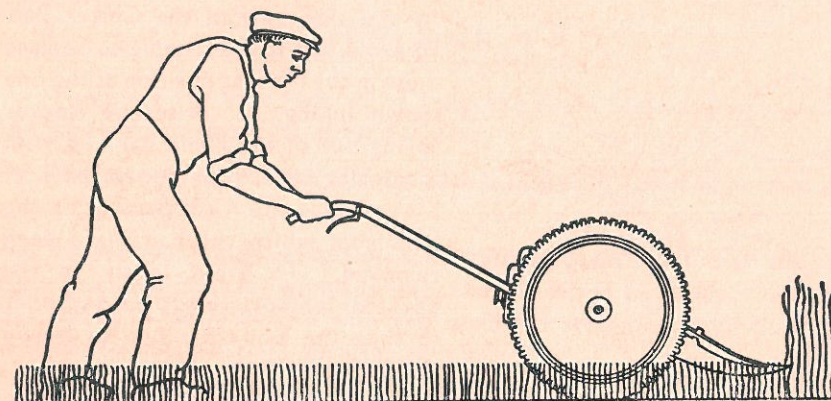


Fig. 8. Incorrect.

Operator attempting to push the machine, making hard work. Handlebars pressed down, thereby raising the finger bar from the ground and leaving a long uneven stubble.

## THE EASY TURN RATCHET DRIVE

The Easy Turn Ratchet Drive is fitted to enable the ALLEN MOTOR SCYTHE to be turned round sharp corners and manœuvred with ease. To obtain this advantage one Ratchet on each wheel is held out of gear by means of the small catch.

To prevent the machine over-running on slopes it is necessary to release these small catches so that the two pawls on each wheel engage with the ratchet centres. This setting can also help in keeping the machine on a straight course when cutting over rough surfaces.

Be sure to reset the pawl on both wheels when the machine is required for ordinary use.

Lubricate the wheels by means of the oil-can through the oil holes on the hub of each wheel.

## TO CHANGE A KNIFE BLADE

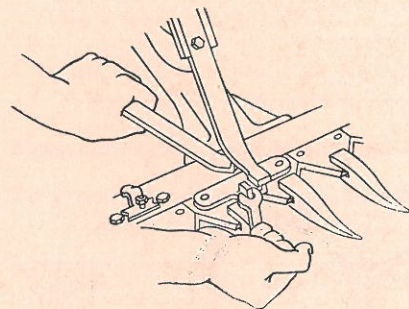


Fig. 9

Remove the two Knife Bar Pads on one side only of the Cutter Bar. To avoid loss it is advisable to replace these in the reverse position as the one shown in Fig. 9. Prise the Rocker Spring out of the Knife Bar Lug with the Spring Lifter provided in the Tool Kit and slide the Knife Bar out on the side from which the pads have been removed. To avoid injury to the operator it is advisable to use a spanner to slide the Knife Bar out, as shown in Fig. 9.

When replacing the Knife Blade, lift the Rocker Spring as above and slide the Blade into position, letting the Rocker Spring drop into the Knife Bar Lug. Refit the Knife Bar Pads in their correct position and tighten up the nuts.

On machines fitted with Offset Cutting Units there is no need to remove any of the Knife Bar Pads.

## TO SHARPEN THE KNIFE SECTIONS

Remove the Knife Blade as Fig. 9. Hold it in a vice by the Knife Bar so that the Knife Sections are laying flat and pointing away from the operator. The Knife Sections can then be filed sharp by means of the special file provided in the Tool Kit. A square carborundum stone may be used if preferred.

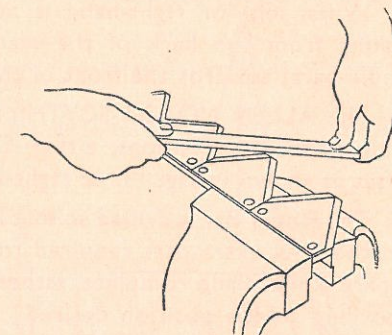


Fig. 10

Make sure that the original angle of the cutting edge is maintained.

When the flat tip of the Knife Section has worn to a point it is an indication that this particular section is worn out and it should be replaced by a new section at once.

Hard spots are sometimes found on Knife Sections; this is only surface scale and can be removed with a rubbing stone. It is false economy to use badly worn blades or fingers. Renew in good time and maintain cutting efficiency.

## KNIFE BAR PADS

These are the four Pads which keep the Knife Sections in contact with the hardened steel inserts of the Fingers.

The correct adjustment of these pads is one of the most important points requiring attention.

To maintain effective cutting it is absolutely essential that they make **light but firm contact with the backs of the Knife Sections**, thus keeping the knives in close contact with the hardened steel inserts of the Fingers, in order to obtain a clean shearing action.

The Pads are steel stampings and the correct method of adjustment is to remove the blade and replace the Pads and tighten up their nuts. Tap the Pads—the two inside ones first—down lightly with a hammer until the blade will just slide in without actually pinching. Check this adjustment frequently to prevent excessive wear on the fingers and to obtain clean cutting.

A little care spent on setting the Pads will be amply repaid by maintained cutting efficiency.

## ALTERNATIVE POSITIONS OF CUTTING UNIT

When left- or right-hand is mentioned, this is always determined by looking from the back of the machine (operator's position between the handle-bars) towards the front of the machine.

The ALLEN MOTOR SCYTHE is so designed that the user has a choice of three cutting positions, either Central as shown in Fig. 12, or left-hand Offset as shown in Fig. 13, or right-hand Offset.

The Finger Bar is drilled so that it can be used in any of the three positions and the only extra part required to change from one position to another is a spare Knife Blade complete, either parts number 422, 449 R.H. or 449 L.H. according to the position desired.

### TO CHANGE FROM CENTRAL CUT TO LEFT-HAND OFFSET

Remove the two right-hand Pads and take out the Knife Blade as described on page 8.

Tap the right-hand outside Pad Bolt out of its hole and fit it in the vacant square hole in the centre of the Finger Bar, see Fig. 12. Replace both Pads, the inside right-hand one in its original position and the outside one in its new position in the centre of the Finger Bar.

Undo the three nuts that hold the Finger Bar to the Gear Case foot, remove the Finger Bar and replace it in a left-hand Offset position so that the three holes in the right-hand end of the Finger Bar mate up with the three holes in the Gear Case foot, replace nuts and tighten up. Slide a left-hand Blade, Part No. 449 L.H., into position, letting the Rocker Spring into the driving Lug.

To change to right-hand Offset follow the above instructions, reading right-hand for left-hand and vice versa and use Knife Blade, Part No. 449 R.H.

### SWATH BOARD

Swath Boards are supplied either right- or left-hand, Part Nos. 698 R.H. or 698 L.H., and are not interchangeable for either hand.

**A Swath Board can only be used with an Offset Blade, a left-hand Swath Board with a left-hand Blade and a right-hand Swath Board with a right-hand Blade.**

To fit a Swath Board remove the outside Pad from the Finger Bar and replace by the Pad fitted to the front of the Swath Board as shown in Fig. 13.

FIXING HOLES  
FOR CONVERTING  
TO L.H. OFFSET

FIXING HOLES  
FOR CONVERTING  
TO R.H. OFFSET

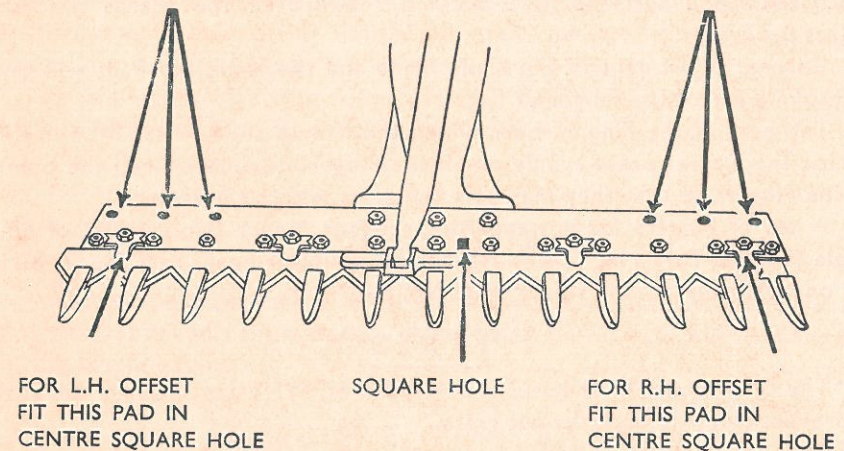


Fig. 12. Central Cut.

**The Swath Board is now attached by means of two bolts, and the outside pad is not disturbed.**

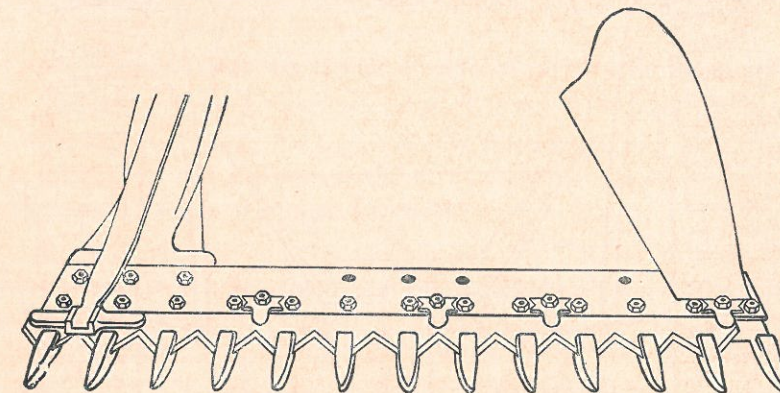


Fig. 13. Left-hand Offset Cut with Swath Board.

**Note.**—Alternative complete Cutter Assemblies are available, namely :—  
2 ft. 0 in. wide for confined places.  
4 ft. 0 in. wide for cultivated crops.  
Fine Cutting : 3 ft. 0 in. wide for close cutting on level ground.