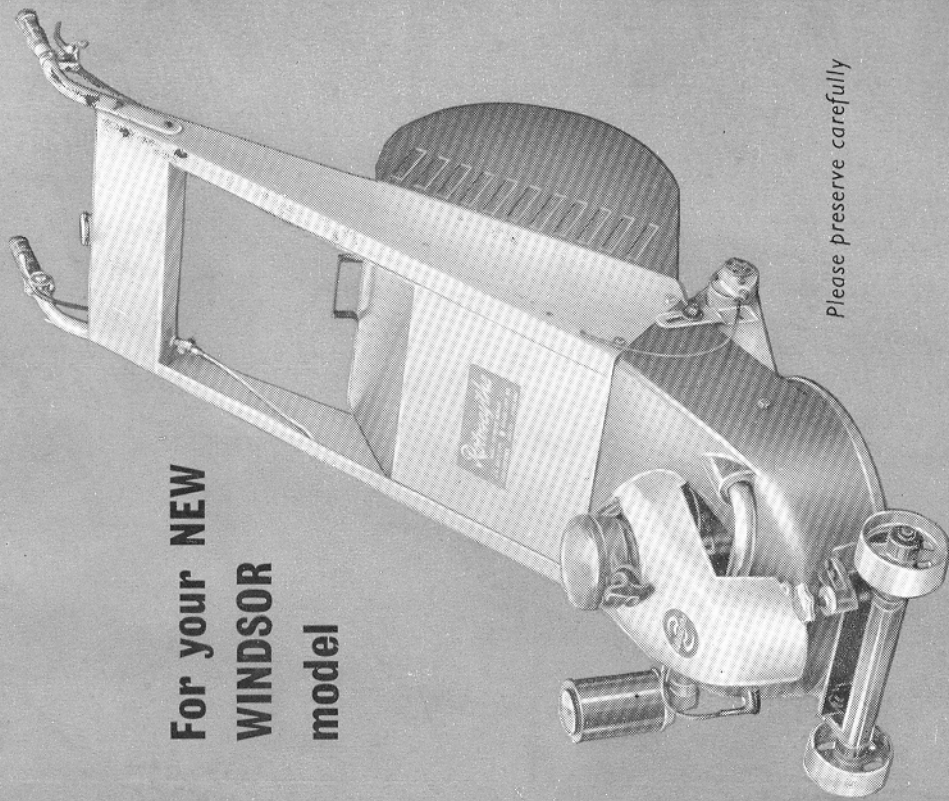


INSTRUCTION BOOK

For your **NEW**
WINDSOR
model



Please preserve carefully



MULTI PURPOSE MOWER

Please enter and quote this number in all correspondence.



Serial No.

Most Important !

Please quote machine number in all correspondence.

Do not use cheap or unbranded oils—those recommended are best. Always use commercial grade petrol. It is highly desirable to pour it through a fine wire gauze when filling the tank.

Take care to add the correct amount of oil to the petrol ; (see page two). Shortage of oil can ruin an engine in a very few minutes.

Pay attention to the notes regarding "Running in," and treat the unit with great care during this period (see page three).

It is an advantage, when stopping the engine, to use up petrol in the carburetter, by switching off the petrol a minute or so beforehand.

Keep the Air Filter clean and free from an accumulation of oil, dust and grass cuttings.

Do not run the engine without the filter, or dust and grit will be drawn into the cylinder, and cause rapid wear.

Do not interfere with carburetter settings without good cause.

Use only Sparking Plugs of the type fitted as standard. All types have been tested thoroughly, and it is not wise to experiment with cheap or unbranded plugs.

Repairs and seasonal maintenance are best carried out by our Approved Service Agents, or at our works. The address of your nearest Service agent can be given on application.

To preserve the efficiency of the machine, it is a wise precaution to make sure that the ground is clear of stones or other obstructions before mowing.

The impeller is carefully balanced at the works. Do not use it in a damaged condition, or with any cutters missing.

INSTRUCTION BOOK for the WINDSOR MODEL ROTOSCYTHE

LAWN AND LONG GRASS CUTTER

THIS ROTOSCYTHE has been designed to fill the need for a light, handy, power lawn mower which is simple to use, and needs little attention. Consideration has been given to the fact that many users may be possessed of little mechanical experience, adjustments have been made as simple as possible, and the points needing periodical attention have been reduced to the minimum.

In common with all other mechanical devices, correct use, care and attention are needed to ensure the best service. Machines should be used for the purpose for which they are designed, and if the points outlined in this booklet receive attention, the machine will maintain its efficiency for a long period.

Particular attention should be paid to the instructions regarding petrol mixture, lubrication, adjustments for height of cut, and cleaning.

We hope that these instructions will be of real use, and that the delay and expense incurred in sending for a Service Agent for minor repairs and adjustments will be obviated.

THE ROTOSCYTHE has been reduced to the limit of mechanical simplicity, and there is little to go wrong, or need adjustment. If this book is studied and the instructions followed carefully no troubles are likely to arise in service other than minor points which can be easily and quickly remedied by the owner. We are anxious to give users all possible assistance and ask them to write to us quoting machine number if they require information or advice.

THE ROTOSCYTHE must be used carefully and correctly to obtain the best results for long periods. It is not intended that the owner should undertake overhauls or extensive repairs, but attention is drawn to the impeller and cutters, lubrication, and adjustment for cut, which are most important.

PREPARATION OF NEW MACHINE FOR USE

For protection during transit, the sparking plug is removed and a cork is inserted in its place. Remove this and replace with the sparking plug. Tighten securely. A spark plug cover and suppressor is provided, and this should be screwed on to the cut end of the spark plug lead and pressed securely on to the sparking plug.

Fuel

The fuel is often referred to as petrol and is a mixture of petrol and oil. The petrol content should be "Commercial" grade.

The oil should be of any of the following grades: Castrol XL, Essolube 30, Mobiloil 30 or Enorgol 30.

Petrol and oil should be mixed in the proportion 20 parts petrol to 1 part oil (i.e. 2 gallons petrol to $\frac{1}{4}$ pint oil). Mix thoroughly before pouring into the tank of the machine.

When refilling the fuel tank, it is as well to shake the can containing the petrol in order to mix it thoroughly.

Insufficient oil will cause undue wear of engine parts. Too much oil gives no benefit and only results in smoky exhaust, fouled plugs, and necessitates more frequent decarbonization.

Higher grade fuels in this type of engine give no benefits and may even give trouble in running.

The "Petrol" system of lubrication gives the following advantages:—

- (1) There is no sump to drain or oil filters to clean.
- (2) All moving parts receive the correct amount of oil according to the throttle opening.
- (3) There is no oil level to check. As long as there is fuel to run the engine, there is oil to lubricate it.

Page two

TO START THE ENGINE FROM COLD

First, make sure that the clutch is disengaged by raising the clutch lever on the left handle until it is retained in the highest position by the ratchet device. Push on the petrol tap, which is to be found under the petrol tank on the right hand side. Set the throttle control on the right handle about a quarter open.

Close the choke by setting the top of the lever away from the engine towards the Air Filter. Wait a few seconds to give the carburettor bowl time to fill with petrol.

Hold the handle of the cord in the right hand, and while steadying the machine with the right foot the engine should start easily. When it is running, open choke on the Carburettor.

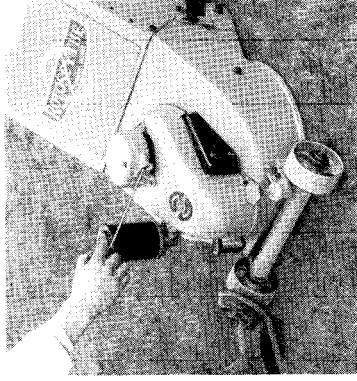


Fig. 1

against the wheel as shown, pull the cord firmly in a horizontal line (Fig. 1). The engine should start easily. When it is running, open choke on the Carburettor. Should the engine stall, repeat the above process, but if the engine does not start after the third or fourth pull, please adopt the following procedure:—With the Choke open (Lever towards the engine), open the throttle wide and pull the engine over with the cord twice. Close the throttle and again use the cord. The engine should then start and continue to run.

When re-starting with the engine warm, the choke should NOT be used.

Running-in

This engine, in common with others, benefits considerably from careful running-in. For the first ten hours, use approximately half throttle opening as a maximum. For the next ten hours do not exceed $\frac{3}{4}$ throttle opening.

Thereafter the engine may be run continuously at heavy loads but avoid "racing" the engine with no load.

After the first twenty hours running, check adjustment of the Contact Breaker points as described on page 8.

You may also like to check nuts and bolts for tightness.

To Stop the Engine

Turn off the fuel tap and allow the engine to run until all the mixture is drained from the carburettor. This will ensure that no oil is left in the float chamber and that the engine will start easily. The engine should NOT usually be stopped other than by this means.

IT IS VITALLY IMPORTANT THAT THE ENGINE BE STOPPED BEFORE CARRYING OUT ANY ADJUSTMENTS OR CLEANING.

Page three

ADJUSTMENTS FOR CUT

A wide range of adjustment for the back and front of the machine is provided and should be used. A single hand wheel is fitted to the front of the machine and it is only necessary to screw down to increase the height of cut, and in the opposite direction to obtain a closer cut. (See Fig. 2.) A locking ring is provided and it should be screwed down hard on to the bracket as there may otherwise be a tendency for the adjustment to vary.

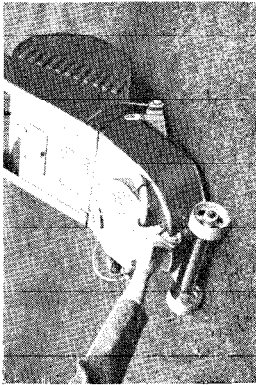


Fig. 2

The rear roller can be adjusted by loosening the nuts which secure the small slotted brackets and setting to the required height. It will be found that a position about half-way down the slots can be kept under most conditions. The roller must be in the lowest position (the main casing in the highest position) for rough grass cutting and may be in the highest for very fine work. The machine should be parallel to the ground with back and front at the same level. A few experimental cuts made initially will enable the best setting to be found. The correct adjustment for each piece of work must be made before commencing as the machine will not cut lawn and long grass with the same settings, and severe damage may result from wrong setting.

Lawn Mowing

Set the rear roller adjustment in the half-way position, or lower if the lawn is in good condition, and then use the front handwheel to set the front to bring machine parallel to the ground. When correctly set, lock the handwheel, by screwing down the locking ring hard on to the bracket. **All stones should be removed from the lawn before starting work and the cutters must not be allowed to strike lumps, roots or other obstructions.**

The throttle should be about one-third open, perhaps slightly more under adverse conditions, but do not run the engine faster than is necessary to obtain a good clean cut. Release the clutch by lowering the left hand lever and at the end of each strip, when turning, and when emptying the Grass Box, disengage the clutch by lifting the clutch lever into the ratchet, close the throttle and let the engine run slowly.

Cutting overgrown or neglected lawns

Higher setting is obviously required for this work, and more power can be obtained by increasing the throttle opening. There is more danger of stones and obstructions being struck when working in long grass, and an inspection of the area should be made before cutting commences.

Where it is only required to keep areas of rough grass under control without obtaining a lawn finish, the use of Side Wheel Equipment is recommended. When these are in use, front adjustment must be set as high as possible and since the machine is now hand propelled, it may be necessary to work over the area by stages instead of straight across as with lawn mowing.

Moss Pegs

These can be fitted in place of the cutters and used to comb out moss from lawn. To obtain the best results set the machine at its highest and gradually lower until the pegs remove the moss but do not rake into the lawn surface.

Hedge Trimming Attachment

A Hedge Trimming Attachment with a flexible drive is available for your machine and the drive is transmitted from the power take off shaft built into the recoil starter.

To fit the Hedge Trimmer remove the two screws in the recoil starter cover and take off the cover plate.

Place the Hedge Trimmer coupling plate in place of the starter cover, ensuring that the squared socket fits over the power take off squared shaft.

Replace the two small securing screws and tighten to ensure the plate does not move during use.

The cutting blades are in operation as soon as the engine is started and care should be taken to see that the cutting head is free of all obstructions before starting the engine.

When not using the Trimming Attachment ensure that the Recoil Starter cover plate is in position.

MAINTENANCE

Cleaning

The machine should be cleaned immediately after use and before loose grass and mud hardens on the surfaces. A scraping tool is supplied, and this should be used to clean the inside of the casing. A damp rag may be used to clean the outside of the machine, but excess moisture should not be allowed to find its way into the magneto and carburettor. Care should be taken to dry off all dampness before storing.

When the growth is wet and muddy, the machine collects mud, worm casts, etc. and these may accumulate inside the casing itself, and build up sufficiently to foul the impeller. If it should be necessary to cut when the grass is in this condition, use the scraper occasionally to keep the casing clean, or an undue load will be placed upon the engine and cutting will be difficult.

It is important to ensure that the petrol tank is less than half full and the petrol tap in the "off" position before turning machine on its side. This will obviate waste of fuel by spilling. It is better to turn machine on to its side with the carburettor downwards.

Impeller and Cutters

When one edge of a cutter is worn it is only necessary to loosen the central screw—a special L-shaped wrench is provided which should be inserted to the full depth of the hole in the screw and turned anti-clockwise to loosen—and turn the cutter so that a new edge is presented. (See Fig. 3.) The screw should be re-tightened to obviate possible loss of a cutter and thus upsetting impeller balance. When a cutter is worn it should be replaced by a new one. The machine will continue to cut until the cutter edge is considerably worn, but for the best results a good edge should always be kept in use. If by accident the impeller becomes damaged, it should be removed and sent to an Approved Service Agent or returned to the works for repair and rebalancing immediately.

To remove the impeller it is necessary only to unscrew the central nut, which has an internal flange arranged to draw the impeller from the shaft. A little pressure will be needed to loosen the nut, which will then run free for several turns before the flange contacts with the face of the extractor plate. The spanner should be reapplied to the nut which should be turned anti-clockwise so as to withdraw the impeller from its tapered shaft. When re-assembling see that the shaft and the taper bore of the impeller are cleaned thoroughly and pull the nut up dead tight. Do not use a hammer when re-tightening.

The correct position of the cutters is flush with the lower edge of the casing.

They should all be level and not project below this setting.

The cutting and collection of the grass depend upon the good condition of these parts and the high speed at which they rotate. **If they become neglected or damaged the life and efficiency of the machine will be impaired and the engine severely damaged.**

Accurate impeller balance is essential and is destroyed if

- The blades are damaged and badly worn.
- A cutter or cutters are missing.
- If cutters are attached with other than the correct screws.

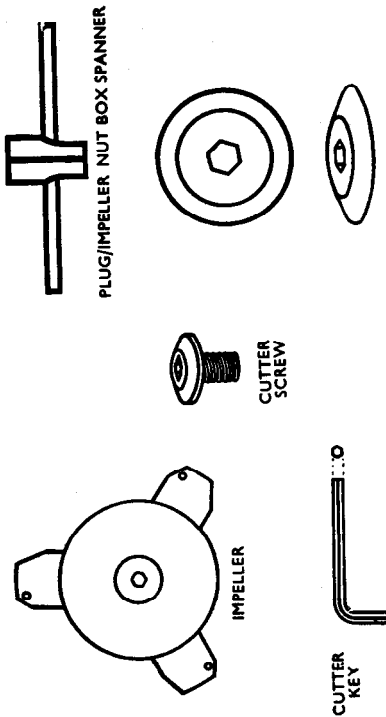


FIG. 3.

Carburetter

This is correctly set at the works and should not normally require attention, other than cleaning of the fuel filter located in the banjo connection at the base of the float chamber.

Jets should not be changed without reference to the Works.

The slow running of the machine is controlled by the throttle stop screw and the pilot jet air bleed screw. The latter should normally be set about $\frac{1}{4}$ turn open. The procedure for making adjustment to the slow running is as follows :

- First check the contact breaker points and the plug for gap and cleanliness, and all joints for air tightness.
- Completely close (screw down hard) pilot jet air bleed screw and then open (unscrew) $\frac{1}{4}$ turn.
- Start engine and allow about 10 minutes running at about $\frac{1}{4}$ throttle opening to allow for warming up.
- Adjust throttle stop screw until the slowest regular running is obtained.
- Adjust pilot air bleed screw (probably unscrewing) until the fastest regular running is obtained.
- Re-adjust throttle stop as in (4).
- Finally re-set pilot air bleed screw.

Do not try to obtain too low a slow running speed. Irregular "lumpy" running indicates too rich a mixture and may result in difficult hot starting. Cure by unscrewing pilot air bleed.

Spitting back through carburetter indicates too weak a mixture and may result in difficult cold starting. Cure by screwing down pilot air bleed.

To clean the carburetter the two screws holding the float chamber should be removed and the float chamber taken off. Clean out any sediment from the bowl taking care not to damage the float. The main jet is to be found in the bottom of the long tube which projects from the body of the carburetter and it should be periodically removed and cleaned by blowing through.

Overseas Users

Carburetters and engines are not sensitive to small changes in atmospheric conditions but if difficulty is experienced in using the engine at heights above 5,000 ft. contact the Works for information regarding carburetter adjustment giving

- Height at which machine is used.
- Average air temperature.
- Symptoms of trouble.

Recoil starter

This unit has been designed to give maximum trouble-free service, but in the event of a failure of any of its components the complete unit should be removed and returned to the Works or an Approved Service Agent.

To remove the unit take out the three screws which fix it to the engine Cowl. Lift off recoil housing and cover. Next remove the circlip and plate and lift out the two toggles and springs. Undo the two screws securing the power take off shaft. The machine may now be used by starting the engine with a cord wound round the alternative pulley now exposed.

Nuts and Bolts

These should be checked after "running-in" and periodically to ensure that they are secure. If neglected severe damage may result.

Sparking Plug

We recommend the use of Champion L10 sparking plugs with the gap set to .018/.020". This should be cleaned periodically to remove excess carbon.

Magneto

This is a flywheel magneto and very little attention is necessary. To expose the magneto remove the Recoil Starter assembly as previously explained. Then remove the Engine Cowl by taking out the 3 nuts and bolts which are located around the base of the cowl. Undo the 3 screws from the alternative pulley and remove the fan and pulley assembly. The flywheel is held on to the crankshaft by a cotter pin and can be removed when the pin is taken out. The contact breaker points should occasionally be checked to see that they are clean and not pitted. If pitted the points should be cleaned with a magneto file. Rotate the shaft until the points are open. The gap should be reset to .014" and adjustment is carried out by slackening the two screws which secure the plate with the fixed contact and sliding the plate to obtain the correct gap. Retighten the screws and recheck the gap to ensure that it did not change when the screws were tightened. Refit the flywheel and cotter pin, making sure that the cotter pin engages properly in the flat of the shaft before the nut is fitted and tightened up. Do not use undue force when fitting the cotter pin or you may crack the casing.

Clutch, Roller and Chain

This unit is packed with "Castrolase" Medium and should not be disturbed.

Decarbonizing

This is best left in the hands of one of our Approved Service Agents, or the unit can be sent direct to us for attention in our Service Workshops. If you wish to do the work yourself, detailed instructions will be forwarded on request. Please quote the Serial Number of your machine.

Engine Overhaul

We do not recommend that the user should attempt to do this himself but the work should be entrusted to an Approved Service Agent or to the factory. In this way many years of useful work can be obtained from your engine.

Storing Engine for Winter

When the engine is stored for the winter, we recommend that the following precautions are taken.

- (1) Clean engine thoroughly giving a final brush over with petrol mixture. The petrol will evaporate and leave a thin protective film of oil. Do this when the engine is cold in a well ventilated area.
- (2) Remove and clean sparking plug.
- (3) Pour about a teaspoonful of oil through the plug hole and rotate engine about a dozen times slowly to distribute oil on all internal surfaces.
- (4) Oil threads of plug lightly and reinsert.
- (5) Drain petrol mixture from tank and carburetter.
- (6) Pour about $\frac{3}{4}$ pint of petrol into the tank and drain from carburetter.
- (7) Store in a dry place.

We do not advise storing petrol mixture over the winter for use in the following spring.

Carry out any adjustments or have the engine overhauled if necessary before storing. A little forethought in this direction can save time later.

ACCESSORIES

These are extra to the standard machine and should be specified when ordering.

Side Wheels

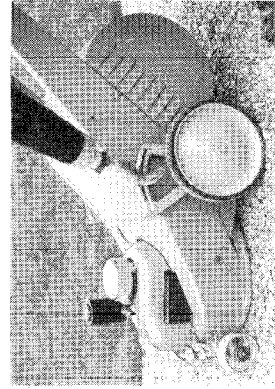


Fig. 4

These are provided with a rapid and simple means of adjustment. (See Fig. 4.) The bracket carrying the wheel is pivoted at its lower end, and there is a long adjusting slot at the top. A wing nut locks the bracket in any desired position. Side wheels should be used to give a high setting for cutting long grass and to make for easy operation on irregular surfaces. They are also invaluable for wheeling the machine silently and easily over drives and pathways.

Spare Parts

Only Genuine ROTOSCYTHE parts should be used, and these are obtainable from our Agents, or direct from the Works. When ordering spare parts, quote the machine number (which is found on the main casing) to ensure supply of correct parts.

Prices of spare parts required can be obtained from the Service Department, Garden and Estate Division, J. E. Shay Limited, Basingstoke, Hampshire.

To avoid opening many small ledger accounts, a pro-forma invoice will be rendered on the receipt of orders for spare parts. On the return of this, accompanied by the appropriate remittance, the goods ordered will be forwarded by return of post.

Alternatively, goods can be forwarded c.o.d. but this will only be done at user's request and will bear c.o.d. charges.

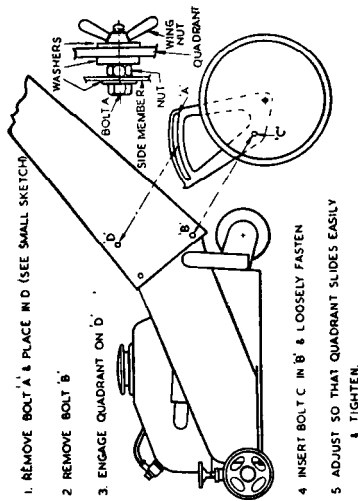


Fig. 5

1. REMOVE BOLT A & PLACE IN D (SEE SMALL SKETCH)
2. REMOVE BOLT B
3. ENGAGE QUADRANT ON D
4. INSERT BOLT C IN B & LOOSELY FASTEN
5. ADJUST SO THAT QUADRANT SLIDES EASILY & TIGHTEN.

Grass Guard (supplied with machine)

It will be found, when cutting long grass, that the grass box fills up very quickly. To save time and labour, it is recommended that a grass guard be fitted. (See Fig. 6.) This can be done in the following manner.

1. Remove grass box.
2. Place lip of grass guard on ledge which normally holds the grass box.
3. Screw in clamp screws through holes in the side member of the machine.

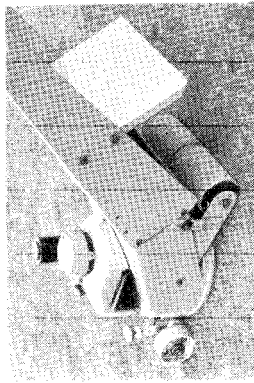


Fig. 6

This will allow the grass to be deposited behind the machine for disposal as later required. The same procedure can be adopted when it is desired to return the grass cuttings to the lawn which, in the absence of other treatment, may be done with advantage, say three or four times a year.

Service

If necessary, we can arrange for the machine to be examined by a competent Agent, on request, and this will be done at a charge to cover expenses.

Seasonal major repairs and overhauls can be competently dealt with by our Approved Service Agents.

We stress the importance of taking care not to place repair work in the hands of those who have not the necessary experience with this class of mechanism. Charges in such cases may be high, and the life and usefulness of the machine can be impaired, whilst delays are usually experienced. The manufacturers or their Approved Agents are best suited to undertake repairs and overhaul work. Charges are reasonable and work is executed as promptly as possible.

A copy of these instructions is issued free of charge with each machine. Further copies can be obtained from these Works at a cost of 2s. 6d. each.

Guarantee

(BRITISH ISLES)

Each machine is guaranteed for twelve months from the date of purchase. Please complete the Certificate of sale for your machine, obtain your Agent's Signature and post it to us immediately. The date of purchase is taken from this Certificate, and if it is not returned to us, the date of despatch from our Works will be used for Guarantee purposes.

“WE UNDERTAKE TO REPAIR OR REPLACE, AT OUR DISCRETION, ANY PART MANUFACTURED BY US WHICH PROVES TO BE DEFECTIVE THROUGH FAULTY MATERIAL OR WORKMANSHIP, PROVIDED SUCH PART IS RETURNED, CARRIAGE PAID, TO THE COMPANY'S WORKS, WITHIN TWELVE MONTHS OF THE DATE OF PURCHASE. NO RESPONSIBILITY WILL BE ACCEPTED FOR CONSEQUENTIAL DAMAGE, PERSONAL INJURY, OR FOR REPAIRS CARRIED OUT AWAY FROM THE WORKS WITHOUT THE WRITTEN CONSENT OF THE COMPANY.”

Our obligations are always willingly recognized but are strictly limited to the repair or replacement of defective parts when returned to us. Returned parts must always be accompanied by a covering letter, or they will be retained temporarily at the owner's risk, and no responsibility can be accepted for them. The guarantee does not cover the overcoming of minor running troubles (unless these are due to defective materials or workmanship), such as engine failure due to simple causes :—oiled up sparking plug, choked petrol supply, etc. These and similar small points are readily located and corrected and if a Service mechanic is called in to remedy such simple troubles, a charge to cover expenses must be met by the owner.

A badly damaged impeller implies misuse and we reserve the right to refuse the benefit of the guarantee in respect of the machine and engine to which it is fitted.

Proprietary parts which are not manufactured or designed by us cannot be repaired or replaced free under our guarantee. This guarantee applies to the first purchaser only and is automatically rendered null and void in the event of any resale or if the machine is let out on hire.

J. E. SHAY LTD.

ROTOSCYTHE WORKS

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