

Landmaster 100 Gardenmaster 100 Rotavator - Cultivator Manual Instructions

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FOREWORD

Versions of the machine suited to the United Kingdom and to Overseas use are known respectively, as the Gardenmaster 100 and the Landmaster 100. For practical purposes, the operating instructions are the same and, in the following pages, the machine is referred to as the 'Model 100'.

INDEX OF CONTENTS

Page	
3	Introduction to the Model 100
4	Principal features of the machine
5	Illustration of principal features
6	Description of capabilities and safeguards
7	Rules, features and starting procedure
8	Care of the machine
9	Lubrication and adjustments
10	Routine maintenance of attachments
11	The tool head—choice of attachments
12	
13	Selection, use and fitting of attachments
14	Rotary Digging, Hoeing and Weeding techniques
15	Grass Cutting, Lawn Mowing and Conditioning
16	Hedge Trimming, Crop Ridging and Water Pumping
17	Chart of faults and remedies—how to order spares
18	Identification and ordering of Tool Head parts
19	Numbered parts drawings of Tool Head parts
20	Identification and ordering of Frame parts
21	Numbered parts drawings of Frame parts
22	Identification and ordering of Blade Assemblies
23	Parts drawings of Blades, Weeder and Hood—Guarantee

PRINCIPAL FEATURES OF THE MACHINE

The illustration facing this page will aid identification of all principal features and controls.

Light, compact and easily stored, the Model 100 rubber tyred wheels provide for simple hand propulsion between plots. The telescopic handlebars, secured by wing-nut clamps, give working height adjustment and can be dropped so that the machine is easily transported in the boot of an average family car.

The high-mounted four-stroke petrol engine is well positioned, to work clear of surface water and mud. Ample protection from throw of stones and soil, is afforded by the faired stone-guard. Separate data is supplied by the Engine Manufacturer and this should be consulted for engine maintenance and operating information, or for engine spare parts details.

The throttle lever, fitted to the handlebars, is connected to the engine carburettor by a flexible cable.

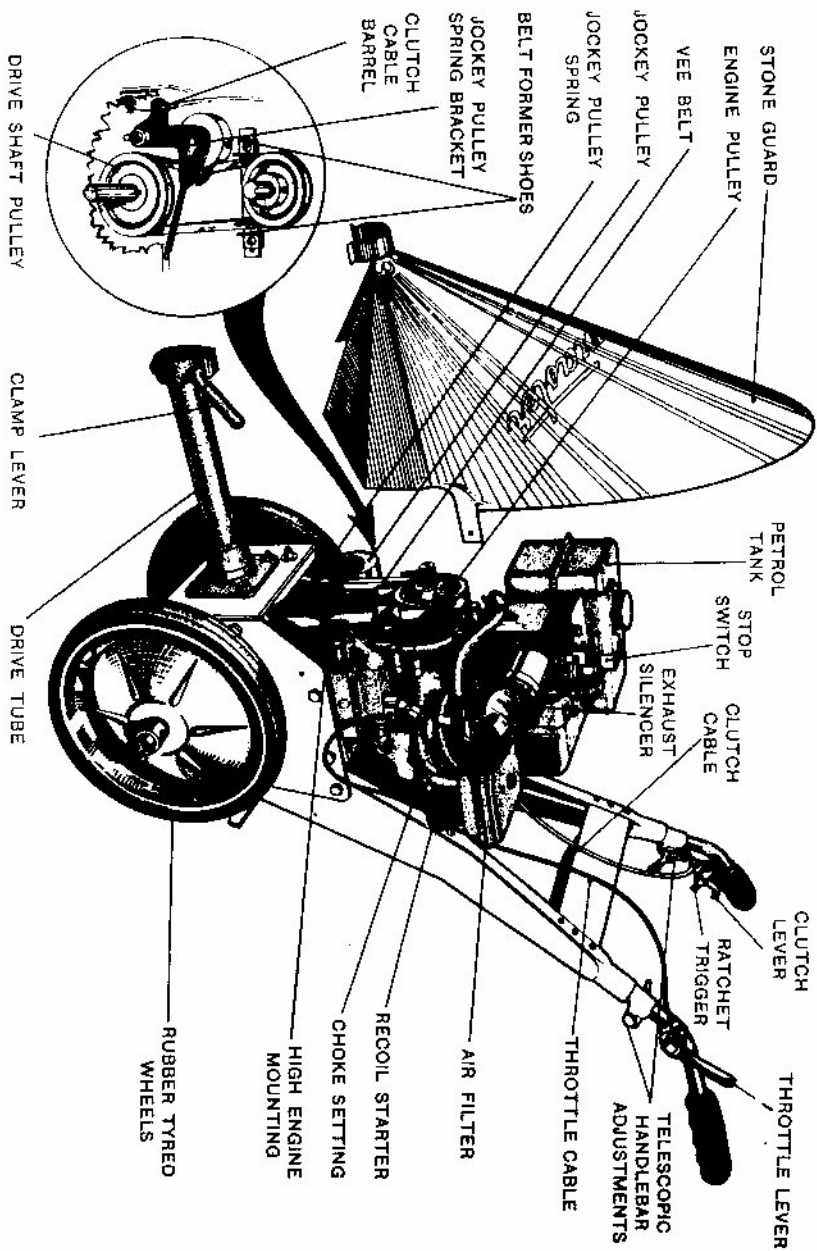
Note that the handlebar clutch-lever has a ratchet-trigger to hold the engine in disengagement from the drive-shaft, for 'off-load' starting. The clutch mechanism conveys drive from the engine pulley, downwards by means of a rubber 'Vee' belt, to the drive-shaft pulley, below. The Vee belt is tensioned by the application of a spring-loaded jockey-pulley, between the engine and drive-shaft pulleys; to convey drive when the clutch lever is released. When the clutch lever is closed, the jockey-pulley ceases to bear on the Vee belt, giving a de-clutched setting. Thus, a **tight Vee belt** gives **power drive** and a **slack Vee belt**, gives de-clutched, **free running** of the engine.

The location of the 5 pint (2.840 litres) capacity petrol tank, exhaust silencer, air filter and other engine ancillaries should be noted. The recoil starter will re-wind automatically, each time it is used.

The inset illustration will give a clear picture of the clutch operation and the clutch cable-barrel should be noted. This is pre-set when the machine is supplied but the rubber Vee belt may stretch in use and a careful watch should be maintained to see that the belt does not slip unduly, when working on load. Adjustment of the cable-barrel in conjunction with the jockey-pulley spring bracket setting will give more or less tensioning as required. About $\frac{1}{8}$ " (0.3 cm.) slack play should be left on the clutch lever when the belt is under full tension. The spring bracket is positioned down, (to the right) to reduce spring tension; or up (to the left), to increase spring tension.

The engine pulley is a little smaller than the drive-shaft pulley to give a slight speed reduction, or gearing-down of the drive. For light hoeing, water pumping, etc., the pulleys can be changed over to give a higher speed drive. This should never be used for heavy work and is normally a task for your dealer to re-set. A technically confident owner can however effect the change-over when the volume of light work to be done merits this.

ILLUSTRATION OF PRINCIPAL FEATURES



DESCRIPTION OF CAPABILITIES AND SAFEGUARDS

The Model 100 is supplied complete with a set of digging tools and with a spin-weeder, so that rotary cultivation work and weed-eradication can be undertaken initially, by the new owner of a machine.

Further work-potential of the machine for other gardening operations is enormous and limited only by the choice of additional attachments. These can be purchased from your Landmaster dealer from season to season, as required, so that your 'powered gardening armoury' can be built up, progressively, until you have a sufficient range of tools to use the machine to the maximum advantage.

It may be that any one gardener has insufficient grass, lawns or hedges, for example, to merit purchase of attachments for a given type of work but, subject only to this, the machine offers powered capacity which will far exceed the capabilities of the weekend gardener's manual work, with conventional hand tools. It should be appreciated at once, that the true value of your machine can only be fully exploited if as many attachments as possible are put to work for you. It is not economic for a Model 100 to stand idle between, say, digging seasons, while all subsequent work continues to be done by laborious, traditional means.

Robust construction by Landmaster has ensured performance which is second-to-none but even an experienced user can strike unseen or unknown hazards. Submerged rock, stone or tree roots may well obstruct the action of rotary-cultivation digging tools; solid obstructions may lie hidden in long grass to check the rotating blade of the grass cutter, etc., but built in protection devices will at all times safeguard the Model 100 against damage.

There is a Woodruff 'half-moon' key fitted to convey power to the driving blocks either side of the tool head and these will shear if a solid obstacle is encountered—a spare key is supplied with the machine. Reference to pages 18 and 19, will show how this key is fitted. It is advisable to have a spare key available at all times.

The elasticity of the rubber Vee belt will give, and will also allow 'slip' on the pulleys, to compensate for temporary overload, from any cause. Many of the attachments have sprung driveshafts which will also absorb shock-loading.

The facility for instantaneous de-clutching and disengagement of drive from work tools, will be an added safeguard for the operator or for children or pets, who may place themselves in danger.

The addition of a rotor hood will effectively cover rotor blade assemblies which will confine the throw of soil with direct 'guard' protection, of the rotating blades.

RULES, FEATURES AND STARTING PROCEDURE

Details for care of the Model 100 are given in pages 8-10. Selection and fitting of the tool-head and attachments is explained in pages 11-13—attachment sheets give further information. To ensure that the change-over from manual labour to powered-gardening is completely satisfactory, always observe these rules:—

1. See that the machine is correctly fuelled, lubricated and maintained by the engine manufacturer's instructions, at all times.
 2. Check, and re-check, that the rotary cultivating blades, or other attachments, are correctly fitted and that the tool-head and attachment gear-box oil levels are maintained.
 3. Commence each type of work with straightforward test runs, to gain confidence and experience with various tasks. Pages 15-17 will guide techniques.
- Basic features have been explained and shown on pages 4 and 5, but other points will be noted:—

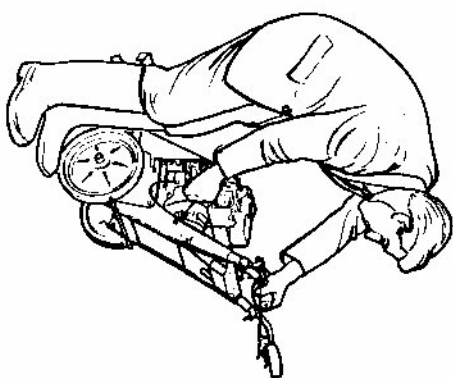
The engine is automatically governed so that it will not 'race' off load.

The machine is suitable for fitting of additional field and workshop attachments, made by other Manufacturers. These can deal with Chain Sowing, Rotary Pruning, Paint-Spraying, Grinding and Polishing, etc.

The technically-minded owner will find that various arrangements for use of either flexible or shaft-drive, can be adopted generally. Enquire to your dealer for advice and guidance if such additional uses are contemplated.

TO START THE MACHINE:—

- | | |
|--|---|
| 1. See that the engine is fuelled and lubricated and fit the desired attachment ready for use. | 4. Pull the starter handle SMARTLY , allow to return slowly . Repeat, if necessary, with choke opened slightly. |
| 2. Set the carburettor choke lever clockwise and the clutch lever so that the ratchet-trigger will hold it, close to the handlebars. | 3. When engine starts, open choke gradually and reset the clutch lever to suit the task ahead. |
| 3. Set the throttle lever about one-quarter open from the rear, slow-running position. | 5. Position the machine ready for work and let the clutch in, slowly, to commence work. |



TO STOP THE ENGINE—CLOSE THE STOP SWITCH TO THE TOP OF THE SPARK PLUG

CARE OF THE MACHINE

An owner with no technical knowledge or ability is advised to have routine servicing carried out by the Landmaster dealer or by a reputable garage. Whilst no mechanical aptitude is needed to use the machine or its attachments, it is important that the following points are noted for attention.

As advised, Engine Manufacturer's data will set out details of engine fuelling, lubrication and maintenance. This work is fundamental to retain full working efficiency and particular care must be taken to **CHANGE THE ENGINE OIL AFTER THE FIRST 5 HOURS RUNNING TIME**—thereafter drain, and **REFILL TO POINT OF OVERFLOWING EVERY 25 WORKING HOURS**.

The engine oil-sump capacity is small (approximately 1 pint—0.569 litres) and will not therefore represent a high oil cost. Waste oil can be used for anti-rust coating of tools, etc.

Access to the engine, clutch assembly and engine ancillaries is aided by removal of the **STONEGUARD** which is retained by a domed screw, at either side.

Maintenance of correct **SPARKING PLUG** electrode gap at 0.025" and of the 'make and break' **POINTS** at 0.020" is important to efficient running, and fuel economy. Replace both plug and points each season, if pitted.

The **AIR FILTER** should be removed and the foam element washed in paraffin or similar solvent, then re-oiled and refitted, once a month.

The **WHEELS** have grease nipples which should be given one or two strokes with a grease gun, weekly.

The **CLUTCH** and **THROTTLE** cables should be lightly oiled at each end, once a Month. If clutch adjustment is necessary, proceed as explained on page 4. Note that the jockey-pulley and bracket pivots do not require lubrication.

IN GENERAL

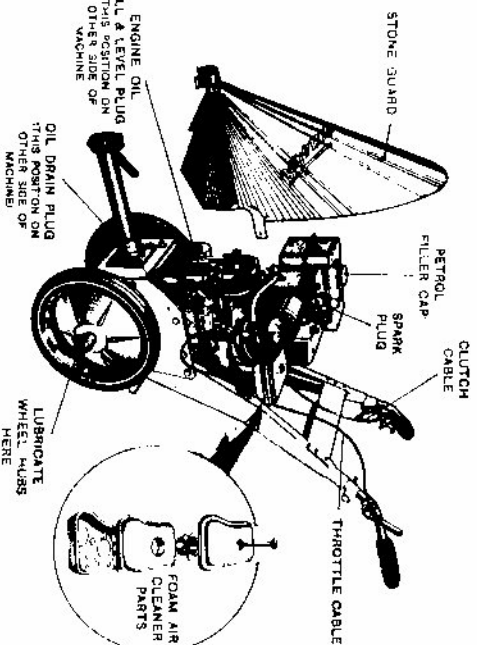
1. It is good practice to clean all external surfaces after use, with a soft brush. Wipe over with an oily rag.
2. Leave the clutch in engagement (lever **away** from the handlebars) and the drive-tube clamp lever set partially tight, for storage.
3. Store in a dry place. Turn engine over periodically when in disuse—pour a teaspoonful of engine oil in through the plug hole, before prolonged storage.

SEE ALSO CHART OF FAULTS AND REMEDIES ON PAGE 17. REMEMBER, MAINTENANCE TIME IS ONLY A FRACTION OF THE TIME GAINED FROM USE OF AN EFFICIENT MACHINE

LUBRICATION AND ADJUSTMENTS

The illustration shows points which require periodic attention—use this table so that nothing is overlooked. —

	EVERY 5 HOURS OR ONCE A WEEK	EVERY 25 HRS OR ONCE A MONTH	END OF SEASON
THE MACHINE	After first 5-hr. change, check engine oil and top up until it overflows	Drain engine oil by removing drain plug. Refill until it overflows	Drain engine oil by removing drain plug. Refill to overflowing
	Grease wheel nipples	Check and adjust spark-plug gap	Check and adjust spark-plug and make and break points. Replace if burned or pitted
	Turn over engine, if stored	Remove, wash and re-oil air filter	Re-oil air filter
		Oil clutch and throttle cables	Oil clutch and throttle cables—check actions and adjust, as necessary
THE TOOL HEAD		Remove filler plug and front level plug. Top up until oil runs from front plug when horizontal. Refit plugs tight	Drain and refill
ATTACHMENTS	Re-oil drive shafts, pulleys, wheel hubs and all incidental parts	Check and top-up gear attachment boxes	Drain and refill attachment gearboxes
	Check frame, etc., bolts and nuts for tightness	Examine blade and knife edges—hone with a carborundum stick to renew	Resharpen any damaged blades, order replacements for any which are badly worn
LUBRICANTS — ALL THE YEAR ROUND			
ENGINE	Castrolite, Mobiloil Arctic, Shell X100-30/20 W., Esso-lube 20, B.P. Energol SAE 30		
TOOL HEAD AND ATTACHMENT GEARBOXES	Castrol ST 90, Shell Dentax 90, Esso Gear Oil 90, B.P. Energol SAE 90		



ROUTINE MAINTENANCE OF ATTACHMENTS

Separate attachment sheets give specific information, for each point of attention necessary.

The basic issue of tool-head, rotary cultivating blades and weeder is not, however, matched with any specially issued instructions. The following general points should be noted :—

1. See that the tool-head is correctly filled with gear oil-(Page 9).
2. Examine the Woodruff keys in the driving blocks either side of the tool head, from time to time. If partially sheared-through, replace-(pages 18 and 19).
3. Keep rotor blades clean and wipe with an oily rag, before storing. Wipe over all cowlings and frame parts, etc., similarly.
4. Do not store the machine with an attachment connected, other than for brief periods. See that the drive-tube clamp-lever on the machine is left partially tightened, to ensure satisfactory grip of attachments.
5. Store related parts of attachments conveniently placed for quick selection and re-use.
6. Do not overlook the oil-holes in sprung drive shafts, pulley-bosses, flexible drive cables, etc.
7. Sharpen grass-cutter knives and rotor-blade cutting edges, as necessary, with a carborundum stick. Note special instructions for Hedge Trimmer blade sharpening, setting and maintenance—use only the special black grease supplied for the hedge trimmer gearbox.
8. Store all attachments in a dry, well aired place. Do not run the machine in a confined space.

THE TOOL HEAD — CHOICE OF ATTACHMENTS

The tool-head is used to convey drive from the Model 100 drive-tube, to the rotary cultivating blades, spin-weeder and lawn conditioner attachments.

A square drive shaft is first slid into the tool-head tube and turned in the hand, until it engages.

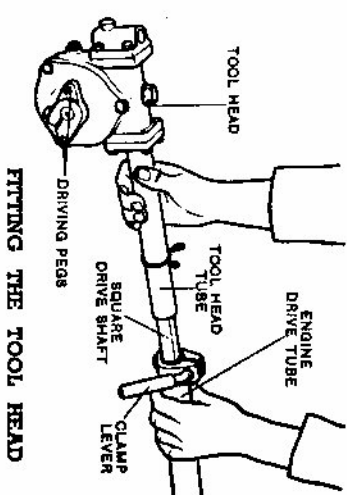
The hand clamp-lever is then undone and the tool head, complete with drive shaft fed into the engine drive tube. Final to-and-fro twisting of the tool-head will cause the shaft to engage so that, if the clutch is engaged, slight turning of the tool-head driving blocks will be discernable.

Having positioned the tool head for horizontal or vertical use, lock the hand clamp-lever on the engine drive-tube, to secure the tool head in position.

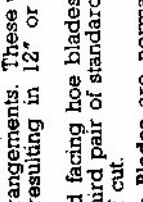
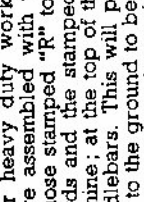
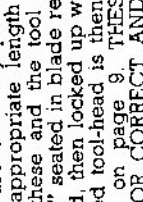
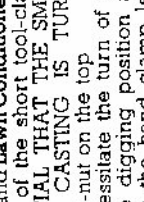

Details on pages 12 and 13 will explain the way in which rotor blades are assembled, either side of the tool head, and the way in which the head is turned on its side, to take the spin weeder or lawn conditioner will also be noted.

All other attachments, shown overleaf, have their own drive-shafts and tubes. These are connected to the machine in just the same way, with a twisting motion to ensure engagement with the engine drive-shaft and via the pulleys and Vee-belt clutch, to the engine itself.

Choice of attachment for any given task will be largely explained by the use stated for each one. Types of rotor blade suited to the ground to be cultivated are also indicated on pages 12 and 13 and reference should be made to the techniques outlined on pages 14, 15 and 16, for guidance, generally.

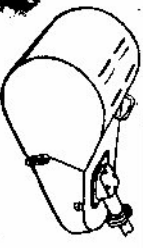
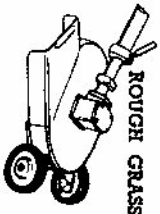
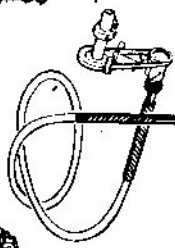

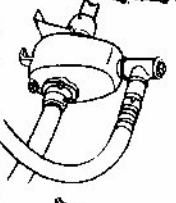


SELECTION, USE AND

ATTACHMENT	USE OF ATTACHMENT	RECOMMENDED FITTING TECHNIQUES
<p>SLASHER BLADES</p>  <p>HOE BLADES</p> 	<p>Used for general tilling of medium soils or final tith production from loosened, heavy ground.</p> <p>Used for general weed clearing and soil aeration among plants, for tith and seed-bed preparations and for digging of light soils.</p>	<p>Slasher and Hoe blades can be assembled in either one or two pair arrangements. These will give combinations of assembly resulting in 12" or 18" width of cut, as shown on left.</p> <p>Special inward facing hoe blades will give a 7" width of cut and a third pair of standard hoe blades will give a 24" width of cut.</p> <p>The Pick Tine Blades are normally used as one pair only, for their heavy duty work.</p> <p>All Blades are assembled with those stamped "L" to the left and those stamped "R" to the right, with stamp marks outwards and the stamped arrows facing away from the machine; at the top of the rotor when viewed from the handlebars. This will present the sharpened cutting edges to the ground to be worked.</p> <p>When blades are correctly positioned with necessary spacers, the appropriate length of tool-clamp bolt is fed through these and the tool head from the right; with end "tee" seated in blade recesses and all driving pegs engaged, then locked up with hand nut to the left. The assembled tool-head is then fitted to the machine as explained on page 9. THESE POINTS ARE ALL ESSENTIAL FOR CORRECT AND EFFICIENT ROTARY DIGGING OPERATIONS.</p> <p>For "reverse digging" (see page 14), the entire assembly is turned upside down and locked with the hand clamp lever, but no alteration to blades, or other components, is necessary.</p>
<p>PICK TINE BLADES</p> 	<p>Used for the initial breaking of very hard or dry ground, heavy soils and virgin land.</p>	<p>Spin Weeder and Lawn Conditioner attachments are both fitted by use of the short tool-clamp bolt.</p> <p>IT IS ESSENTIAL THAT THE SMOOTH FACE OF THE TOOL-HEAD CASTING IS TURNED DOWNWARDS; with the hand-nut on the top.</p> <p>This will necessitate the turn of the tool head at right-angles to the digging position and re-locking in this position, with the hand clamp lever.</p>
<p>SPIN WEEDEE</p>  <p>LAWN CONDITIONER</p> 	<p>Invaluable for work between narrow rows of crops and for herbaceous borders.</p> <p>Removes moss and mulch and stimulates fine grass growth.</p>	<p>Additional Attachments are available for the Horticulturist. Details will be supplied by you</p>

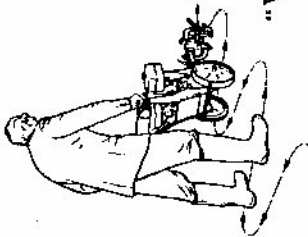
FITTING OF ATTACHMENTS

Page 13.

ATTACHMENT	USE OF ATTACHMENT	RECOMMENDED FITTING TECHNIQUES
 ROTARY LAWNMOWER	<p>Used where a particularly fine and even cut is to be obtained with good "reach" characteristics for irregular edges and corners.</p>	<p>Connect to the Gardemaster using the special spring drive shaft supplied, with the spring end into the driving tube of the machine. Height of cut is readily adjustable and a special good capacity hood is provided.</p>
 ROUGH GRASSCUTTER	<p>Used for the efficient rotary scything of all long grasses in naturalised areas, orchards, etc.</p>	<p>The 14" implement incorporates its own gearbox and is fitted to the Gardemaster with the special spring drive-shaft supplied. The 18" implement contains a friction drive mechanism and is supplied with drive shaft. Both models provide for height of cut by adjustment of front wheel 3-height settings.</p>
 HEDGE TRIMMER WITH SPEED INCREASER	<p>Used with convenient flexible drive to a cutting head, suitable for work on hedges, topiary work, etc. Note the necessity for speed increaser and stand.</p>	<p>The speed-increaser is fitted direct to the Gardemaster, in a vertical position so that the flexible cable can be inserted and screwed home, after first ensuring the inner cable is properly engaged. The other end of the flexible cable is pushed into the cutter socket, also taking care that drive is engaged; then locked with the wing-nut clamp. The cutter handle has alternative positions, for ease of use.</p>
 RIDGER AND SINGLE WHEEL CONVERSION	<p>Used in conjunction with each other for all ridging operations.</p>	<p>The Ridger is fitted to the drive-tube with the special clamp. It is a 'static' implement, always used with a pair of Hoe blades for traction. The regular wheels and axle are removed by extracting the collar-retaining grub-screw from one side, and withdrawal of the axle retaining split-pin—this will be found inside the left hand engine mounting side-plate. Pull the axle out and substitute the central wheel arrangement.</p>
 WATER PUMP	<p>Used for all general pumping duties for watering, irrigation hoses, lawn sprinklers, etc., from any open water source, to hand.</p>	<p>This is fitted to the machine with its own drive shaft and has its own stand.</p>

After and these include the **STATIC TOOL BAR, 24" EXTENDED ROTORS and ROTOR HOOD.**

ROTARY DIGGING, HOEING AND WEEDING TECHNIQUES



"WEAVING"

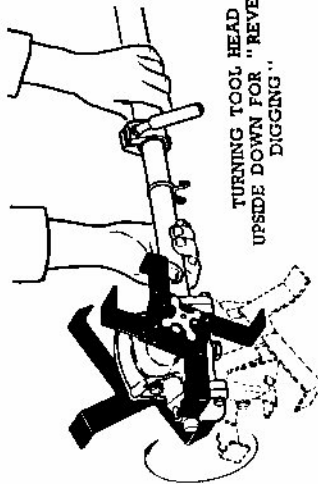
Having assembled the **Slasher, Hoe or Pick** Time blades as recommended in page 12 and fitted the assembled tool head to the machine, as in page 11 position the machine in front of the ground to be dug. You will find that with slight upward lift of the handlebars, the blades will penetrate quite deeply. Retard tendency for the machine to move forward until deep enough, then relax this upward lift. At about 3" depth, you should start to "weave" the cultivator head from side to side, as shown. **DO NOT AT ANY TIME ATTEMPT TO PUSH THE MACHINE FORWARD.** The technique described and illustrated will enable the machine to provide its own traction. This "weaving" technique applies to use of all digging blades, and rate of progress will be determined solely by the nature of the ground worked. At the end of any one digging run, press down on the handlebars and the blades will come clear of the ground. Adjustment of engine speed is a matter for judgement in practice but if too fast an undue amount of soil will be thrown back over the machine. The protective hood when fitted will prevent undue scattering of soil but generally, an excess of "throw" of soil or creation of transverse ridges across the digging run, will be reduced if a slower engine and rotor speed is chosen.

Practice with the machine should result in thorough and efficient digging with **ONLY A RELAXED AND GENTLE HOLD ON THE HANDLEBARS** and no strenuous steering or straining is called for.

When a strip of ground has been dug "forwards" in this way, it will be noted that foot and wheel marks remain on the dug surface. To eliminate these, and also, if required, to break the ground down further, **REVERSE DIGGING** can be used. To do this, **stop the engine**, remove the rotor hood as it cannot be used for this operation, free the hand clamp lever and turn the complete digging assembly upside down; then re-lock the hand lever (see illustration). Upon re-starting, with the same techniques as above, the machine will re-dig literally backwards, leaving an unmarred smooth and even tilth. Backward digging is employed where a final seed-bed finish is required and should only be practised where the soil has been previously loosened.

Note that it is possible to "wheel" the machine along over either dug ground or soft pathways by using a slow throttle setting and digging blade tips to provide traction.

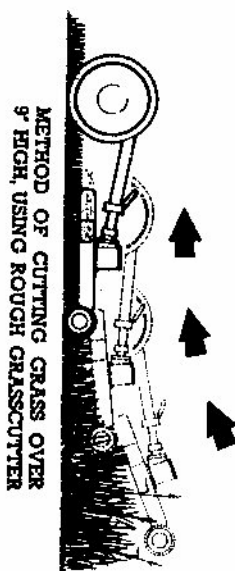
The **Spin Weeder** will prove invaluable for working between rows, close to plant roots. The tool is simply lowered into the ground and a sweeping motion with the handlebars will create an "arc" of tilled soil. Commence at the furthest point to be cultivated and progressive **backward** movement will leave the desired area completely and thoroughly worked.



TURNING TOOL HEAD
UPSIDE DOWN FOR "REVERSE
DIGGING"

GRASS CUTTING, LAWN MOWING AND CONDITIONING

The **Rough Grass Cutter** is set to required height of cut, bearing in mind the unevenness of the ground to be encountered. If tackling virgin "rough" it is a good idea to cut initially at top height setting. Where the grass is not more than 9" high, wheel the machine into it, steadily, watching for stone or other obstructions fouling the perimeter guard—these should be thrown clear, before proceeding. If the grass is longer, after clearing stone or other obstructions, it will be necessary to lower it on to each "strip" within reach and then draw the machine towards you for each part of the area worked (see inset illustration). Note that the blade can be re-fitted the other way up, to give a second sharp cutting edge, before necessity for re-sharpening of the blade arises.



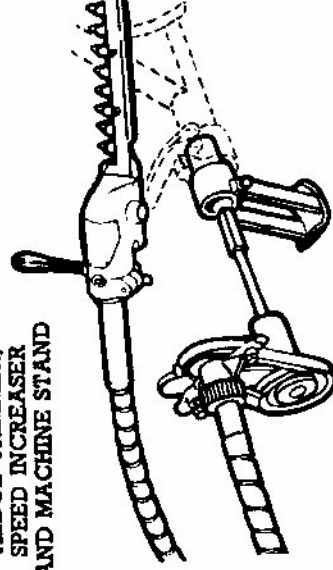
The **Rotary Lawn Mower** with its scything action will do an efficient and even job of work. It should eliminate unsightly "bents" frequently left standing by cylinder mowers. The power drive is to the rotary knives only and the machine is propelled by hand over the lawn surface. This gives the gardener the flexibility of slow or fast progress, depending upon the state of the lawn and obviates risk of overrun, into borders, etc. A grass box is provided.

The **Lawn Conditioner** will effectively remove dead grass, worm casts and mulch from the lawn bed. First mow the lawn as short as possible and collect the cuttings. Use the conditioner with a small throttle opening. Work backwards, employing a side-to-side motion by swinging the conditioner and pivoting the machine about the wheels. Light or heavy conditioning is determined by the degree of upward pressure on the handlebars. The combs are designed to ensure that no damage to the lawn will occur if too much pressure is exerted on the handlebars. When using the conditioner on the edge of the lawn it is necessary to operate with the lawn edge to the right of the machine. This will ensure that tearing of the edge does not take place. Directly after conditioning lightly re-mow the lawn and collect the cuttings. Occasional conditioning of the lawn in Spring and Autumn will also discourage the growth of mosses, clover and trailing weeds.

HEDGE TRIMMING, CROP RIDGING AND WATER PUMPING

The **Hedge Trimmer** and **Speed Increaser** are always used in conjunction with each other. There is provision on the speed increaser to disconnect the drive to the cutting head, for periodic moving or oiling. The cutter blades should be oiled with motor car engine oil every 30 minutes and the cutting head gearbox filled two-thirds full with special grease supplied every 4-5 hours of cutting time. It will be necessary to position the stand on the machine before attaching the speed increaser and hedge trimmer. (See illustration). Work uphill if there is any slope to the ground adjacent to the hedge. Commence cutting from the bottom of the hedge-sides, upwards. Angling of the cutter into the hedge face gives best results and you should always try and remove all that is required with your initial cut, thus obviating re-cutting of the same twigs repeatedly. It will be found that placing of the flexible cable over your shoulder will greatly facilitate work on the top surfaces of hedges or topiary. Note maintenance instructions regarding lubrication, adjustment and sharpening routines (see pages 9 and 10).

HEDGE TRIMMER,
SPEED INCREASER
AND MACHINE STAND



The **Ridger** and **Single Wheel conversion**, as already described, are the ideal combination for all ridging operations, earthing up of potatoes, etc. Depth of furrow and ridge-width are infinitely variable.

The **Water Pump** may require priming with water, initially. This is done by filling through the upper plug hole and it should thereafter re-prime automatically. It is equipped with a suction strainer to restrict the entry of solid matter of more than $\frac{1}{4}$ " (0.6 cm.) diameter.

CHART OF FAULTS AND REMEDIES

FAULT	LOOK FOR	TO REMEDY
No drive from tool head, or digging blades out of alignment.	Driving blocks revolving freely around tool clamp shaft.	Fit your spare Woodruff key (see pages 18 and 19) by removing cultivation tools and driving block (Parts Nos. A1375 and 31)
	Loose tool clamp nut.	Check that tool clamp nut is tight.
	Loose Vee belt pulleys.	Refit — tighten grub screw.
	Vee belt off pulley.	Refit.
	Vee belt stretched.	Adjust clutch cable-barrel.
Poor starting of engine or uneven running.	Empty petrol tank; or, Dirty or wet spark plug; or, Any damaged leads; or, Water in petrol; or, Oil sump low.	Repair or replenish, as necessary.
Digging tools not giving proper traction through ground.	Blades incorrectly assembled or tool clamp not tight.	Re-fit and tighten.
Tools twisting in the engine drive tube.	Oily tool head tube.	Wipe off any oil from the tube and socket.
Misalignment any parts or attachments.	Loose nuts and bolts	Vibration may necessitate periodic tightening of external nuts, etc.
If starter cord breaks.	---	Remove housing, push cord back through hole, knot the end and re-wind cord on to spring pulley. Re-fit cover.

IF IN DOUBT, CONSULT YOUR SUPPLIER FOR ADVICE AND REPLACEMENT PARTS, QUOTING "MODEL 100" AND STATE SERIAL NUMBER OF YOUR MACHINE ALSO ANY REQUIRED PART NUMBER IDENTIFIED FROM THE FOLLOWING PAGES OR ENGINE PARTS DATA.

IDENTIFICATION AND ORDERING OF TOOL HEAD PARTS

SPARE PARTS LIST

Part No.	Description	No. off per Assembly	Part No.	Description	No. off per Assembly
10	Worm Bearing (Front)	...	A1361	Oil Seal 13P/13708725	...
11	Gearbox	A1367	Dowel Pin, $\frac{1}{8}$ " dia. $\times \frac{1}{4}$ " long	...
12	Gearbox Cover	...	A1368	$\frac{1}{8}$ " B.S.W. $\times \frac{1}{4}$ " long Set Screw	...
15	Bush	...	A1369	$\frac{1}{8}$ " Fibre Washer	...
27	Gearbox Gasket	...	A1375*	Woodruff Key No. 60	...
28	Cover Gasket	...	A1901	Oil Seal W.13106225	...
37	Rotary Hoe Cover Fixing Bracket	...	F1056	Worm Bearing (Rear)	...
87	Worm Washer	...	L1077	Drive Shaft	...
88	Worm Shaft Assembly	...	A2163	DU.08 Thrust Washer	...
89	Worm Wheel Washer
350	Gearbox Mounting Tube Assembly

TOOL CLAMPING ASSEMBLY

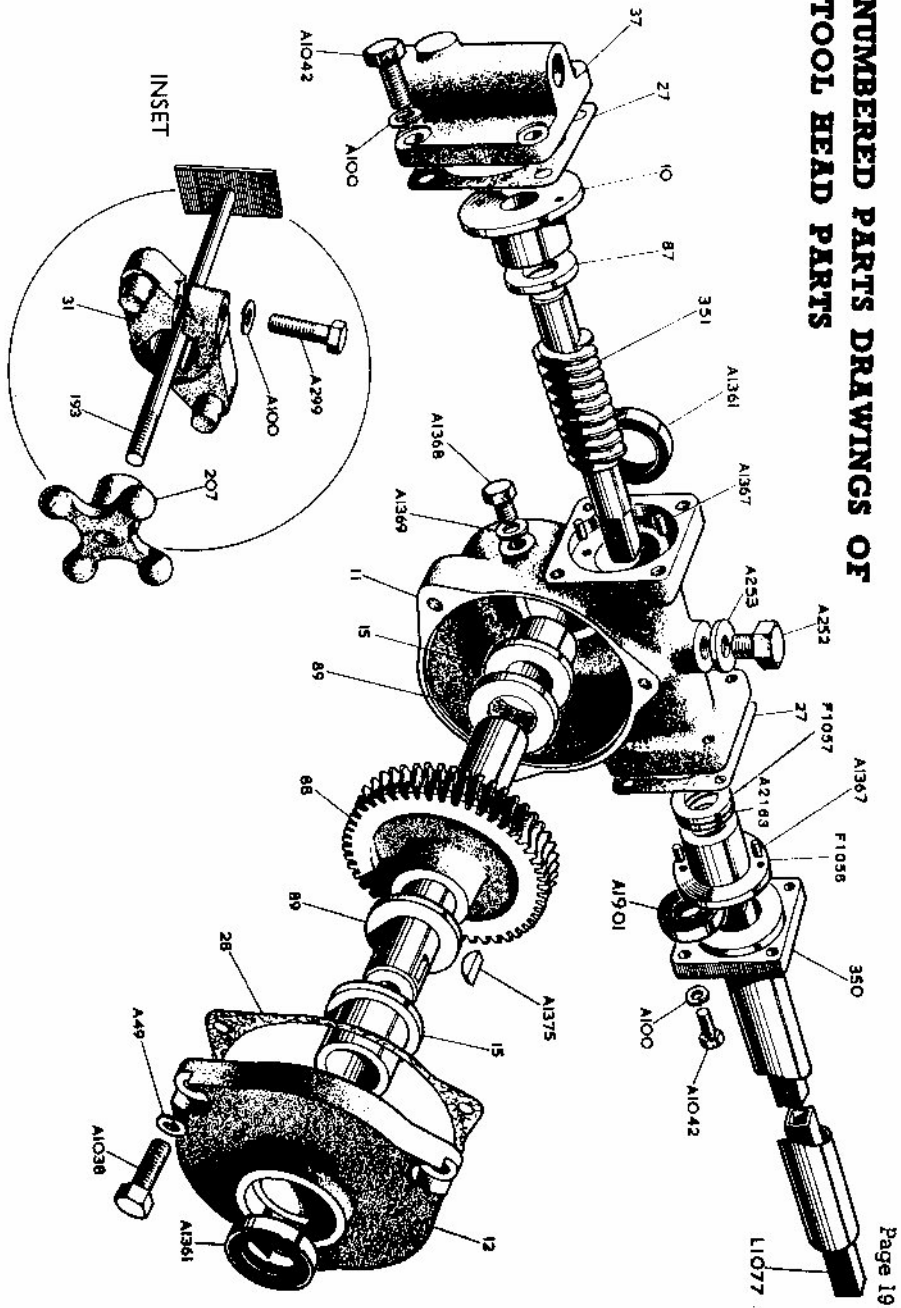
351	Worm	...		INSET	...
A49	$\frac{1}{4}$ " S.C.F.S. Spring Washer	...	31	Driving Block	...
A100	$\frac{1}{8}$ " S.C.F.S. Spring Washer	3	53	Tool Clamp Spindle (12")	...
A252	$\frac{1}{8}$ " B.S.F. $\times \frac{1}{4}$ " long Set Screw	8	193	Tool Clamp Spindle (18")	...
A253	$\frac{1}{8}$ " Fibre Washer	...	207	Tool Clamp Nut	...
A1038	$\frac{1}{8}$ " B.S.W. $\times \frac{1}{4}$ " long Set Screw	...	A100	$\frac{1}{8}$ " S.C.F.S. Spring Washer	...
A1042	$\frac{1}{8}$ " B.S.W. $\times \frac{1}{4}$ " long Set Screw	3	A299	$\frac{1}{8}$ " B.S.F. $\times \frac{1}{4}$ " long Bolt	...
F1057	Spacer	8			...
		1			...

*See page 17

ALWAYS QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

ALL SPARE PARTS SHOULD BE OBTAINED FROM YOUR LOCAL DEALER

NUMBERED PARTS DRAWINGS OF TOOL HEAD PARTS



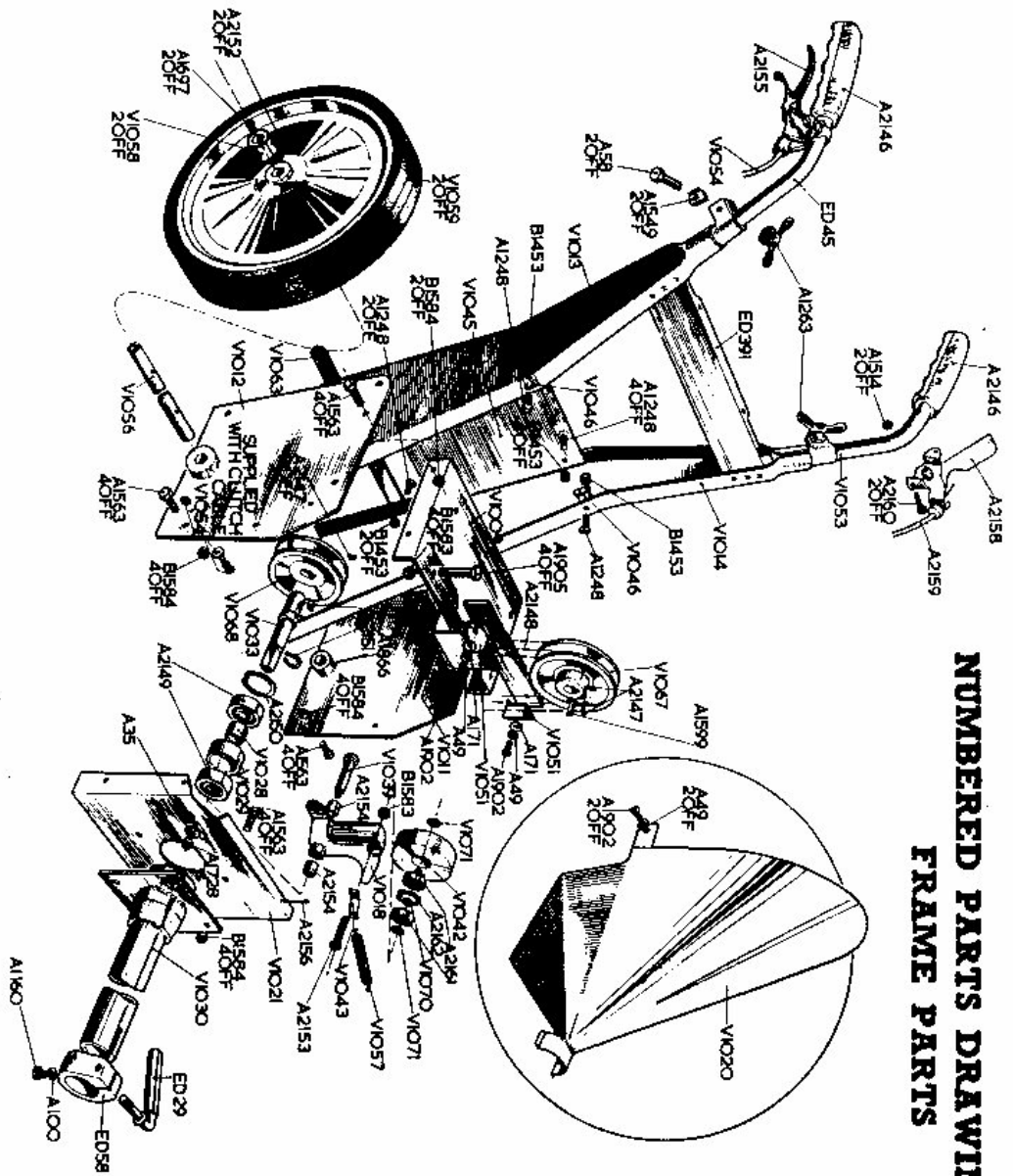
IDENTIFICATION AND ORDERING OF FRAME PARTS

SPARE PARTS LIST

Part No.	Description	No. Off	Part No.	Description	No. Off
ED29	Locking Lever	1	V1068	Implement Pulley	1
A35	$\frac{1}{2}$ " Plain Washer	1	L1078	Drive Shaft	1
ED45	Handlebar Tube Right-hand	1	A1160	$\frac{1}{2}$ " B.S.F. $\times \frac{1}{4}$ " long Set Screw	1
A49	$\frac{1}{2}$ " S.C.F.S. Spring Washer	4	A1248	2 B.A. $\times \frac{1}{4}$ " long Round Hd. Screw	8
ED58	Clamp	1	A1263	$\frac{1}{2}$ " B.S.F. Wing Nut	2
A58	$\frac{1}{2}$ " B.S.F. $\times \frac{1}{4}$ " long Bolt	2	A1375	Woodruff Key, No. 80	1
A100	$\frac{1}{2}$ " S.C.F.S. Spring Washer	1	B1453	2 B.A. Nyloc 'P' Type Nut	8
A171	$\frac{1}{2}$ " Plain Washer	2	A1514	2 B.A. Nyloc 'T' Type Nut	2
ED391	Cross Bar	1	A1549	$\frac{1}{2}$ " Tab Washer	2
V1009	Engine Mounting Plate	1	A1563	$\frac{1}{2}$ " U.N.F. $\times \frac{1}{4}$ " long Bolt	16
V1011	Engine Mounting Side Plate Left-hand	1	B1583	$\frac{1}{2}$ " U.N.F. Nyloc 'T' Type Nut	5
V1012	Engine Mounting Side Plate Right-hand	1	B1584	$\frac{1}{2}$ " U.N.F. Nyloc 'T' Type Nut	16
V1013	Handlebar Assembly Right-hand	1	A1599	$\frac{1}{2}$ " Sq. Parallel Key	1
V1014	Handlebar Assembly Left-hand	1	A1697	Grease Nipple	2
V1018	Jockey Arm	1	A1728	$\frac{1}{2}$ " U.N.F. Nyloc 'P' Type Nut	1
V1020	Stone Guard	1	A1866	$\frac{1}{2}$ " Dia. $\times \frac{1}{4}$ " long Split Pin	1
V1021	Engine Mounting Front Plate	1	A1902	$\frac{1}{2}$ " U.N.C. $\times \frac{1}{4}$ " long Round Hd. Screw	4
V1028	Inner Bearing Spacer	1	A1905	$\frac{1}{2}$ " U.N.F. $\times \frac{1}{4}$ " long Bolt	4
V1029	Outer Bearing Spacer	1	A2146	Hand Grip	2
V1030	Bearing Housing	1	A2147	$\frac{1}{2}$ " U.N.C. $\times \frac{1}{4}$ " long Grub Screw	4
V1033	Pulley Spindle	1	A2148	A30 Vee Belt	1
V1039	Journal Screw	1	A2149	Ball Bearing 1J17 WSR	2
V1042	Jockey Pulley	1	A2150	Internal Circlip	1
V1043	Spring Retaining Bracket	1	A2151	External Circlip	1
V1045	Handlebar Back Plate	1	A2152	$\frac{1}{2}$ " U.N.F. $\times \frac{1}{4}$ " long Grub Screw	1
V1048	Cable Clip	2		(Cup Point)	
V1051	Belt Former	2	A2153	$\frac{1}{2}$ " U.N.F. $\times \frac{1}{4}$ " long Bolt	2
V1052	Fuel Pipe Clip	1	A2154	Clutch Lever	1
V1053	Handlebar Tube Left-hand	1	A2155	Clutch Lever	2
V1054	Clutch Cable	1	A2156	$\frac{1}{2}$ " Dia. $\times \frac{1}{4}$ " long Split Pin	1
V1056	Axle	1	A2157	Engine—Briggs & Stratton Model No. 80302	1
V1057	Tension Spring	1		Throttle Control Lever	1
V1058	Wheel Fixing Boss	2	A2158	Throttle Cable	1
V1059	12" Dia. Wheel	2	A2159	2 B.A. $\times \frac{1}{4}$ " long Bolt	1
V1063	Mud Scraper	1	A2160	Internal Circlip (22mm)	1
V1067	Engine Pulley	1	A2162		

ALWAYS QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

ALL SPARE PARTS SHOULD BE OBTAINED FROM YOUR LOCAL DEALER



NUMBERED PARTS DRAWINGS OF FRAME PARTS

IDENTIFICATION AND ORDERING OF BLADE ASSEMBLIES

Part No.	Description	No. off per Assembly	Part No.	Description	No. off per Assembly
SLASHER BLADE ASSEMBLY					
L1082	Complete Slasher Blade Assembly, L/hand.	2	256	Complete Hoe Blade Assembly, L/hand.	2
L1083	Complete Slasher Blade Assembly, R/hand.	2	257	Complete Hoe Blade Assembly, R/hand.	2
L1080	Time, L/hand.	2	3	Hoe Blade, R/hand.	2
L1081	Time, R/hand.	2	4	Hoe Blade, L/hand.	2
A1482	$\frac{1}{4}$ " \times $\frac{1}{8}$ " long Snap Head Rivet ...	8	A1376	$\frac{1}{4}$ " \times $\frac{1}{8}$ " Snap Head Rivet ...	8
PICK TINE ASSEMBLY					
258	Complete Pick Tine Assembly	2	290	Complete Rotor Hood Assembly (18")	1
110	Time, L/hand.	2	34/76	Rotor Hood Spring Clip	1
111	Time, R/hand.	2	34/81	Rubber Washer	1
A1376	$\frac{1}{4}$ " \times $\frac{1}{8}$ " long Snap Head Rivet	8	99	Rear Flap	2
SPIN WEEDER					
78	Complete Spin Weeder.		100	Clamping Plate	2
			222	Spring Pin	1
			A1055	Bifurcated Rivet	8
ROTOR HOOD ASSEMBLY					

ALWAYS QUOTE MACHINE SERIAL NUMBER WHEN ORDERING PARTS

ALL SPARE PARTS SHOULD BE OBTAINED FROM YOUR LOCAL DEALER

HOE BLADE ASSEMBLY

Labels: LH, 256 L/H, 257 R/H, 3 R/H, A1376

SLASHER BLADE ASSEMBLY

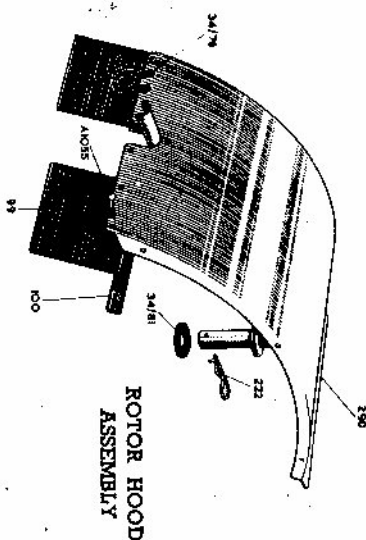
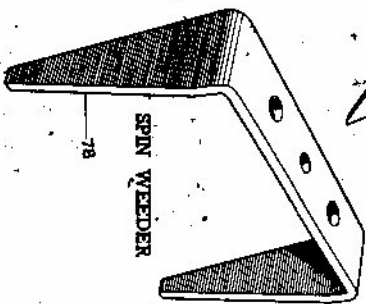
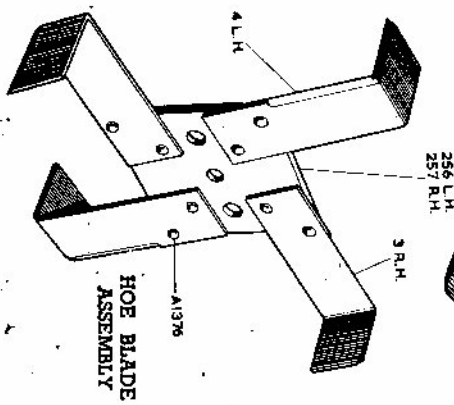
Labels: L1081 R/H, A1782, L1080 L/H, L1082 L/H, L1083 R/H

PICK/TINE ASSEMBLY

Labels: 258, A1376, 210 L/H, 111 R/H

SPIN WEEDEE

Label: 78

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