Landmaster 85 Rotovator

Handbook & Instructions

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LANDMASTER 85A (Australian Version)

The version of the Landmaster 85 manufactured for sale in Australia has a different four-stroke engine, and whilst the illustrations in this handbook show the U.K. and general export models, the text and spare parts lists include all relevant information, data and component variations where necessary.

INTRODUCTION

This proved machine, with its reliable four-stroke engine, has ample power for all gardening tasks and can be employed in medium-to-large gardens or on smallholdings, with complete confidence.

A wide range of attachments are available and details will be found in this handbook. All can be fitted, in minutes, without the use of tools so that a great variety of different tasks can be undertaken, in season.

When you have at a later stage, become acquainted with the machine and proved for yourself its versatility and capabilities, you will find that you possess the key to a whole series of power gardening techniques which will constitute, in effect, "mechanised gardening" and give you all of the benefits of improved and easier cultivation.

To get the best work-output and life from the machine, general study of all of the following points is recommended BEFORE ATTEMPTING FIRST TASKS WITH THE LANDMASTER 85.

Maintenance is simple and details in this handbook and in the Engine Manufacturers' Handbook will guide the owneruser. Remember that the time spent on routine attention will be repaid many times over by the performance of an efficient machine.

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ESSENTIAL FEATURES

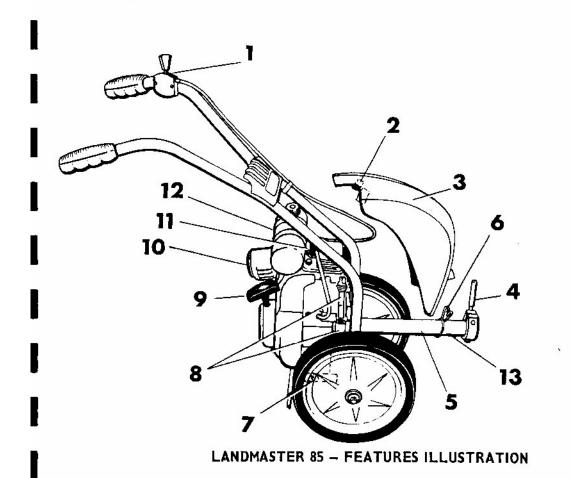
You will see from the illustration (opposite) that the Landmaster 85 is light, compact and easily stored and transported.

Landmaster have built into the machine features derived from a wealth of experience and knowledge gained under widely varied working conditions, at all seasons.

You will note the ease of removal of the stone guard by release of the circlip and spring clips and the readily accessible features of the 3 h.p. engine-petrol tank, oil-sump and recoil starter handle should be identified immediately. Before any attempt is made to fuel and start the engine, do ensure that oil is in the sump and that this shows at a satisfactory level on the dip-stick.

Next you will identify the handlebar throttle lever with its clearly marked settings. The choke control lever is positioned above the air filter. On the Landmaster 85A (Australian Version) the choke lever is to the right of the air filter.

You will find in the various sections of this booklet the recommended sequences of action to "make ready" for any given gardening task. More detailed technical information is to be found in the Engine Manufacturer's data which can be consulted in case of doubt or uncertainty on any particular point.



KEY:

- I. Throttle Lever
- 2. Spring Clips
- 3. Stone Guard
- 4. Clamp Lever
- 5. Engine Drive Tube
- Circlip 6.
- 7. Sump and Drain Plug
- 8. Dipstick and Filler Plug
- 9. Recoil Starter
- 10. Air Filter
- 11. Spark Plug
- Fuel Tank
 Spring Pin

INSTRUCTIONS AND STARTING PROCEDURE

GENERAL

Note that with the exception of the hedge trimmer, all tools and attachments will become instantly driven, once the engine is started - unlike a motor car, there is no clutch to disengage the drive,

PRECAUTIONS

For this reason ENSURE THAT ANY FITTED ATTACHMENT IS SAFELY POSITIONED AND THAT NO HARM CAN COME TO CHILDREN OR PETS WHEN THE MACHINE STARTS TO FUNCTION.

TO STOP THE MACHINE, CUT THE HANDLEBAR THROTTLE-LEVER RIGHT BACK OR, IN EMERGENCY ONLY, REMOVE BLACK SPARK-PLUG CAP.

STARTING PROCEDURE Having selected and fitted the tool or attachment for your task, filled the petrol tank with ordinary, commercial grade petrol and CHECKED THAT THE ENGINE SUMP HAS OIL IN IT (see page 9 for all lubrication details), prepare to start:



Turn petrol cock ON, if fitted.

- 2 Set the choke lever on the engine to CHOKE position.
- 3 Set the handlebar throttle lever about one quarter OPEN, from the rear, stop, position. (Individual engines may start best with slightly more, or less throttle).
- 4 Raise any tool or implement clear of the ground, or other obstruction.
- 5 Grip and pull the recoil starting handle s-l-o-w-l-y, until resistance is felt and then PULL SMARTLY. Repeat, if necessary.
- 6 When the engine fires, RESET the throttle lever to the RUN position. As it warms, RETURN the choke lever to it's original position— this **MUST** be done as soon as un-choked, smooth running can be obtained.

AUSTRALIAN MODEL (85A)

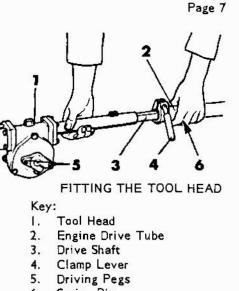
To stop the Engine:- Press the shorting strip against the spark plug until engine stops.

FITTING THE TOOL HEAD

The tool head is used to convey drive from the engine to the rotary cultivating blades, spin weeder and lawn rake attachments.

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

The hand clamp lever is then released and the tool head, complete with drive shaft, is fed into the engine drive tube after depressing the locating spring-pin. Final to-and-fro twisting of tool head will cause the shaft to engage and the spring-pin will locate in the hole provided in the tool head tube.



6. Spring-Pin

Having positioned the tool head, lock the clamp lever on the engine drive-tube to secure the tool head in position.

Details on page 10 explains 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 rake.

All other attachments have their own drive-shafts and tubes, and these are connected to the machine in the same way as the tool head.

The various rotor blades and other attachments are described and illustrated on pages 10 and 11.

GENERAL MAINTENANCE

Engine Manufacturers' data will set out details of engine fuelling, lubrication and maintenance. This work is fundamental to retain full working efficiency and particular care should be taken ON A NEW ENGINE, TO CHANGE THE ENGINE OIL AFTER THE FIRST 2 HOURS OF OPERATION - thereafter drain, and REFILL EVERY 20 WORKING HOURS.

On the Australian version (Landmaster 85A) this time is reduced to EVERY 15 WORKING HOURS.

Waste oil should be retained for use as anti-rust coating of tools etc.

(0.025" on SPARK PLUG: Remove and inspect once a month. Clean and maintain electrode gap at 0.030". Refit tightly and renew at beginning of each season or sooner if necessary. Australian Model 85A).

AIR FILTER: Refer to Engine Manufacturers' instructions for details of removal and cleaning.

WHEELS: The machine wheels are generally nylon bushed but these and ancillary wheels will benefit from removal of any grass, etc. and occasional oiling.

THROTTLE: Once a month, lightly oil the throttle cable and lever.

GENERAL:

It is good practice to clean all external surfaces after use, with a soft brush. Wipe over with an oily rag. 1.

- Leave the drive-tube clamp lever set partially tight during storage. Store in a dry place. Turn engine over periodically when in disuse - pour a teaspoonful of engine oil in 2.
- 3. through the spark-plug hole before prolonged storage.

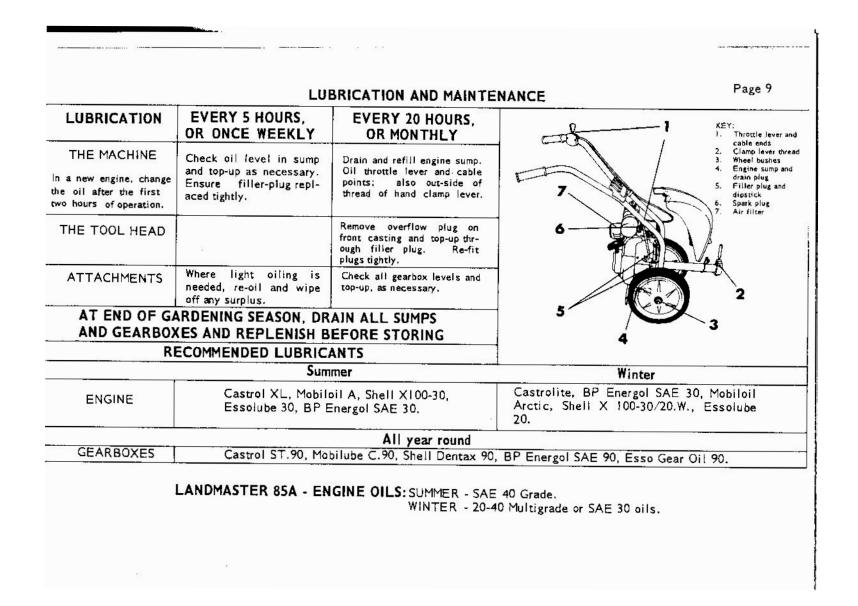
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ATTACHMENT	USE OF ATTACHMENT	RECOMMENDED FITTING TECHNIQUES
SLASHER BL	ADES Used for general tilling of medium soils or final tilth production from loosened, heavy ground.	Slasher and Hoe blades can be assembled in either one or two pair arrangements. These will give combinations of assemble resulting in 12" or 18" width of cut, as shown on left. Special inward facing hoe blades will give a 7" width of cu and a third pair of standard hoe blades will give a 24" width of cut.
	BLADES	The Pick Tine Blades are normally used as one pair only, fo their heavy duty work.
	and soil aeration among plants, for tilth and seed-bed preparations and for digging of light soils.	All Blades are assembled with those stamped "L" to the left and those stamped "R" to the right, with stamp marks out wards 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 b worked.
		When blades are correctly positioned with necessary spacers the appropriate length of tool-clamp bolt is fed through thes and the tool head from the right; with end "tee" seated i blade recesses and all driving pegs engaged, then locked u with hand nut to the left.
24 PICK TINE B	LADES Used for the initial breaking of very hard or dry ground, heavy j soils and virgin land.	The assembled tool-head is then fitted to the machine a explained on page 7. THESE POINTS ARE ALL ESSENTIA FOR CORRECT AND EFFICIENT ROTARY DIGGING OPER ATIONS.
	9	For "reverse digging" (see page 12), the entire assembly it turned upside down and locked with the hand clamp lever, bu no alteration to blades, or other components, is necessar except that the Rotor Hood assembly cannot be used whe reverse digging.

FITTING OF ATTACHMENTS

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ATTACHMENT	USE OF ATTACHMENT	RECOMMENDED FITTING TECHNIQUES
SPIN WE	EDER Invaluable for work between nar- row rows of crops and for herba- ceous borders.	Spin Weeder and Lawn Rake attachments are both fitted by use of the short tool-clamp bolt. IT IS ESSENTIAL THAT THE SMOOTH FACE OF THE TOOL-HEAD CASTING IS TURNED DOWNWARDS with the hand-nut on the top. This will necessitate the turn of the tool head at right-angles to the digging position and re-locking in this position, with the
	E Removes moss and mulch and stimulates fine grass growth.	hand clamp lever. Spacing blocks are fitted on top of the lawn conditioner arms, for use with the Landmaster.
ROTARY N RIDGER AND SINGLE WHEE	Used for the efficient rotary scything of all long grasses in naturalised areas, orchards, etc.	This 16" implement incorporates its own gearbox and is fitted to the Landmaster with the special sprung drive-shaft sup- plied. Height of cut adjustment is provided by front wheel height settings. A stone guard is supplied and a grass collection bag is available.
CONVER		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 axie are removed by extracting the axle retaining split-pin. Pull the axle out and substitute the central wheel arrangement.
HEDGE TRIMMER		RIETORY PRODUCTS AVAILABLE FROM MOST ASTER DEALERS
WITH SPEED INCREA	ASER 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.	A proprietory model of speed-increaser is fitted direct to the Landmaster, 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 the drive is engaged; then locked with the wing-nut clamp. The cutter handle has alternative positions, for ease of use. A typical arrangement is shown here.

ROTARY CULTIVATION TECHNIQUES



Page 12

Having assembled the Slasher, Hoe or Pick Tine blades as recommended in page 10 and fitted the assembled tool head to the machine, as in page 7, 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. Adjustment of engine speed is a matter for judgment in practice but if too fast, an undue amount of soil will be thrown back over the machine. Protective hoods can be fitted to prevent undue scattering of soil but generally, an excess of "throw" of soil will be reduced if a slower engine and rotor speed is chosen.

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, 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. Reverse digging is employed where a final seed-bed finish is required and should only be practised where the soil has been previously loosened.

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.



FAULT FINDING CHART

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FAULT	LOOK FOR	TO REMEDY		
No drive from tool head, or digging blades out of alignment.	Driving blocks revolving freely around tool clamp shaft; or Loose tool clamp nut.	Replace Woodruff keys (see pages 14 and 15); or Check that tool clamp nut is tight.		
Poor starting of engine or uneven running.	Empty fuel tank; or, Dirty or wet spark plug; or, Any damaged leads; or, Water in fuel; or, Oil sump low; or, Clogged air filter.	Repair, clean 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; or, Dry Clamp lever thread.	Wipe off any oil from the tube and socket. Apply spot of oil (only) to clamp thread to facilitate tightening.		
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 "LM85" OR "LM85A" AND STATE SERIAL NUMBER OF YOUR MACHINE, FROM THE NAMEPLATE, ALSO ANY RE-QUIRED PART NUMBER IDENTIFIED FROM THE FOLLOWING PAGES OR ENGINE PARTS DATA. Additional attachments are available for the Horticulturist whose special needs call for implements which would not be of constant value to the private gardener.

Details will be supplied by your Dealer, but you should know that these additional attachments are: STATIC TOOL BAR, EXTENSION HANDLEBAR, 18" and 24" EXTENDED ROTORS, ROTOR HOODS

UNIVERSAL CULTIVATING-TOOL HEAD ASSEMBLY SPARE PARTS LIST

Part No.	Description	Na. off
10	Worm Bearing (Front)	١
11	Gearbox	1
12	Gearbox Cover	1
15	Bush	2
27	Gearbox Gasket	2
28	Cover Gasket	1
37	Rotor Hood Fixing Bracket	į.
87	Worm Washer	<u>.</u>
88	Worm Shaft Assembly	ļ
89	Worm Wheel Washer	2
350	Gearbox Mounting Tube Sub-Assemb	siy L
351	Worm	Ĩ
A49	1/4" S.C.F.S. Spring Washer	3
A100	% S.C.F.S. Spring Washer	8
A2060	1/2" B.S.F. x 1/2" long Set Screw	1
A253	1/2" Fibre Washer	5
A1361	Oil Seal 13P/13708725	2
A1367	Dowel Pin 3/16" dia. x 3/2" long	4
A1368	5/16" B.S.W. × 3/8" long Set Screw	1
A1369	1 Fibre Washer	2
A1375*	Woodruff Key No. 505	23
A1469	1/H B.S.W. x % Bolt	2
A1901	Oil Seal W.13106225. R.4	1

• See pages 6 and 13.

Part No.	Description	No. off
A2061	‰" B.S.W. x %" Set Screw	8
A2163	Glacier DU 08 Thrust Washer	1
F1056	Worm Bearing, rear	L.
F1057	Spacer Washer	1 .
F1060	Drive Shaft (17.60" long)	ł
TOOL CL	AMPING ASSEMBLY-INSET	
31	Driving Block	2
207	Tool Clamp Nut	1
ALOO	1." S.C.F.S. Spring Washer	2
A299	5/ " BSE x 14/" long Bolt	2
ED53	Tool Clamo Spindle (7" & 12" cul	tivating) +
ED193	Tool Clamp Spindle (18" cultivati	ng) i
EDI94	Tool Clamp Spindle (24" cultivati	ng) 1
+ 7º cultiv	ating width is obtained with inwa	

No. off

+ 7" cultivating width is obtained wit blades when a hexagon Nyloc 'T' nut B59 replaces 207 tool clamp nut. 12" width with ordinary slasher or hoe blades This spindle is also used with the Spin Weeder and Lawn Rake. WEET IN A DECENT

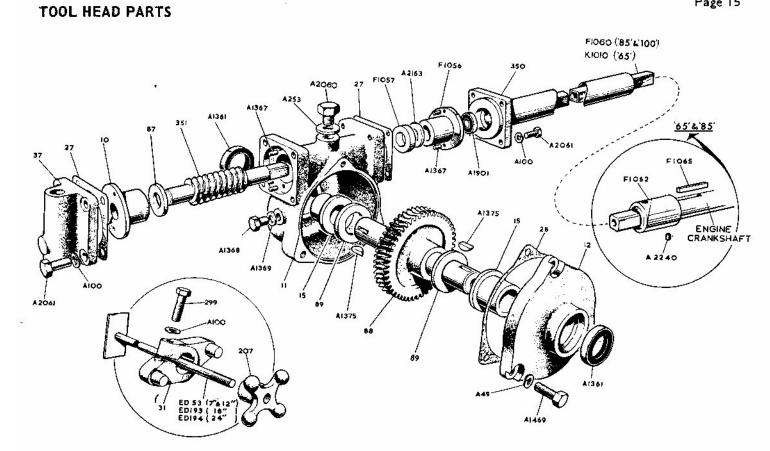
ROUND/SQUA	RE CRANKSHAFT ADAPTC	IK-INSET
nound, see		

A2240	Socket Set Screw	i
F1062	Crankshaft Adaptor	1
F1065	Кеу	1

This assembly is fitted to the Landmaster engine crankshaft and remains permanently to convey drive to square driveshafts.

ALWAYS QUOTE MACHINE SERIAL NUMBER, FROM THE NAMEPLATE, WHEN ORDERING PARTS

ALL SPARE PARTS SHOULD BE OBTAINED FROM YOUR LOCAL DEALER



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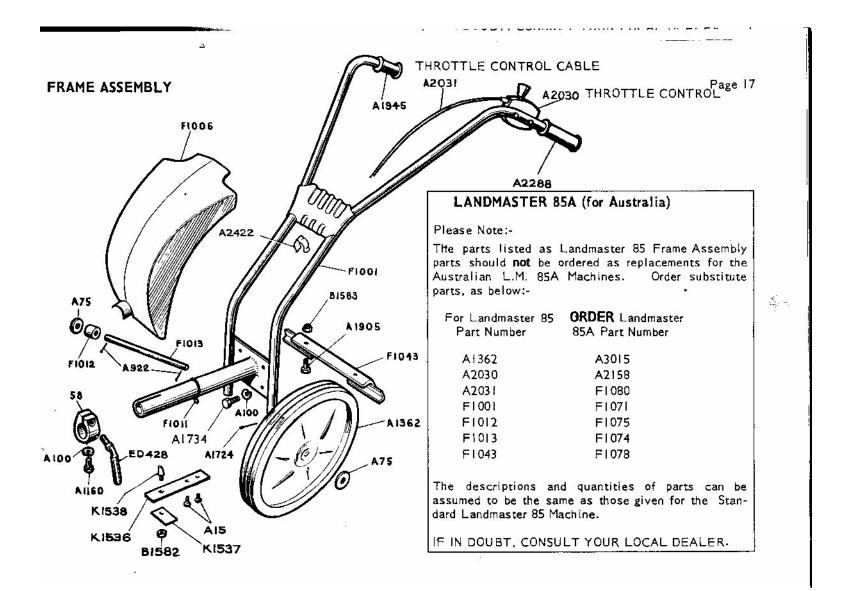
LANDMASTER 85

FRAME ASSEMBLY

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SPARE PARTS LIST

Part No.	Description	No.off per sembly	Part No.	Description	No.o per Assembl
58 A15 A75 A100 ED428 A922 A1160 A1362 A2422 A1724 A1734 A2288 A1906 A2030 A2031	Clamp 2BA x ½ Round head Screw ½" Plain Washer %" S.C.F.S. Spring Washer Locking Lever %2" dia. x 1" long Split Pin %1" B.S.F. x ½" long Set Screw Wheel Cable Clip (Rubber) ½" dia. x 1½" long Split Pin %1" U.N.F. x ¾" long Set Screw Handle Grip %1" U.N.F. x 1½" long Bolt Throttle Control Throttle Control	2 ! !	B1582 B1583 F1001 F1006 F1011 F1012 F1013 F1043 K1538 K1536 K1537	1/4" U.N.F. Nyloc 'T' Nut 1/4" U.N.F. Nyloc 'T' type Nut Main Frame Assembly Stone Guard Spring Clip (Stone Guard) Axle Spacer Axle Wheel Scraper Pin Spring Plate	 1
AL	WAYS QUOTE MACHINE SERIAL	_ NUMBER, F	FROM THE NAME	PLATE, WHEN ORDERING PA	RTS
				I YOUR LOCAL DEALER	



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BLADE ASSEMBLIES - Spare Parts List

Part No.	Description	No. off per	Part No.	Description	No. off per
	SLASHER BLADE ASSEMBLY	Assembly	BLA	DE SPACER ASSEMBLY	Assembly
L1082	Complete Slasher Blade Assembly, L/hand.		ED281	Blade Assembly Spacer	2 or 4
L1083	Complete Slasher Blade Assembly, R/hand.	2	ROTOR H	100D ASSEMBLY (Optional)	
L1080 L1081	Tine, L/hand. Tine, R/hand.	ź	ED289	Rotor Hood Assembly, 7"	L
A1482	$\frac{1}{4}$ " × $\frac{1}{4}$ " long Snap Head Rivet	8	CUB88	Rotor Hood Assembly, 12"	1
GM30	Tool Plate	1	ED291	Rotor Hood Assembly, 18"	ļ
			ED296	Rotor Hood Assembly, 24"	
	PICK TINE ASSEMBLY			mblies are made up to suit	
258	Complete Pick Tine Assembly.	-		ades from the following items:-	1
110	Tine, L/hand.	2	34/76	Rotor Hood Spring Clip	4
111	Tine, R/hand.	2	34/81	Rubber Washer	
AI 376	¼" × ½" long Snap Head Rivet	8	222	Spring Pin	
GM30	Tool Piate		A1055	Bifurcated Rivet, type 6	2
	SPIN WEEDER		ED187	Rear Flap, for 7" Hood	2
1000			ED99	Rear Flap, for 12" Hood	2
78	Complete Spin Weeder.	1	ED183	Rear Flap, for 18" Hood	2
	HOE BLADE ASSEMBLY		ED179	Rear Flap, for 24" Hood	
			ED188	Clamping Plate, for 7" Hood F	Elans 2
256	Complete Hoe Blade Assembly, L/hand.		ED100	Clamping Plate, for 12" Hood I	Flaps 2
257	Complete Hoe Blade Assembly, R/hand.	7	EDI84	Clamping Plate, for 18" Hood	Flaps 2
3	Hoe Blade, R/hand.	2 2	EDI 80	Clamping Plate, for 24" Hood Assembly parts shown are for	r the 12"
4	Hoe Blade, L/hand.	8			indered as
A1376	$\frac{1}{4}$ " × $\frac{1}{2}$ " Snap Head Rivet	0	arrangement.	Culei widuls silouid be o	
GM30	Tool Plate		above.	ATT MUCH ORDERING BART	c .
	ALWAYS QUOTE MACHINE SERIAL NUMBER	, FROM T	HE NAMEPL	ALE, WHEN ORDERING FART	2

AYS QUOTE MACHINE SERIAL NUMBER, FROM THE NAMEPLATE, WHEN ORDERING ALL SPARE PARTS SHOULD BE OBTAINED FROM YOUR LOCAL DEALER

