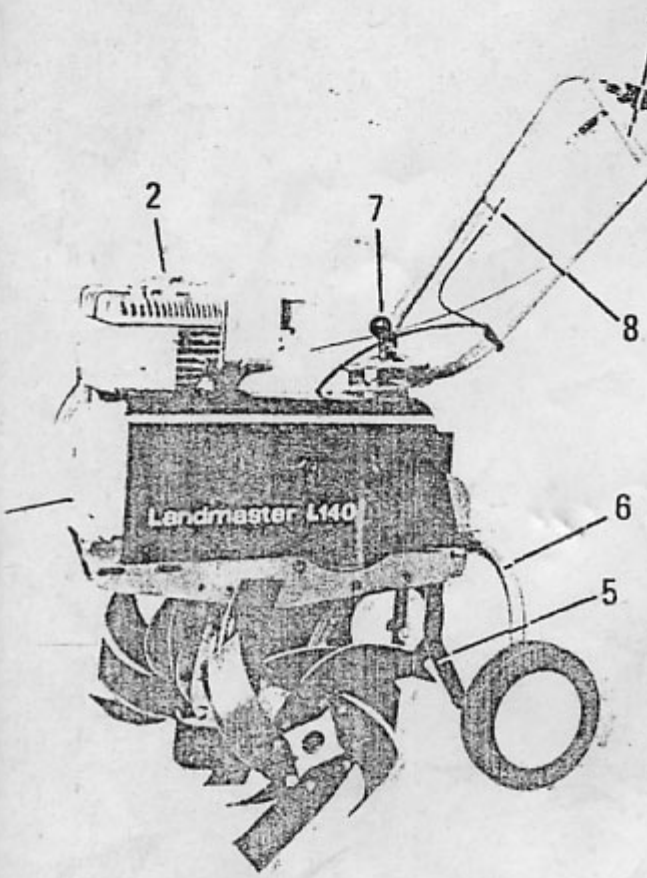
Landmaster L140 Rotovator Manual

Landmaster Operating Instructions

L140 ROTARY CULTIVATOR 15650

IMPORTANT STUDY THIS BOOK AND THE ENGINE MAKERS' LITERATURE AND ATTEND TO PRELIMINARY SERVICING OF THE ENGINE AND MACHINE BEFORE USING FOR THE FIRST TIME.

NOTE: The terms Left Hand (L.H.) and Right Hand (R.H.) used in this handbook are as viewed from the Operator's position.



KEY

1. Engine oil level plug
2. Shorting tab
3. Throttle control
4. Clutch lever
5. Rear strake
6. Wheel support selector
7. Handlebar selector
8. Clutch cable adjustment

CONTENTS

MAIN FEATURES

This pedestrian controlled light tractor allows three distinct forms of powered operation:

1. Powered rotary cultivation, with drive direct to the rotor.
2. Powered traction by wheels on the rotor shaft for rotary grass cutting or trailer work.
3. Power take-off to some attachments either with or without traction.

The main engine features should be identified and located from the engine makers literature supplied with each machine. A new owner should familiarise himself with such points as: air filter, fuel tank fuel cock, carburettor, starter, engine stop, oil sump, filler plug, spark plug etc.

Power is transmitted, via a 'vee' belt, from the engine to a large diameter pulley atop the totally enclosed chain case. This oil filled chain-case incorporates fixed reduction sprockets and heavy duty drive chains.

The drive may be engaged or disengaged by means of a clutch lever conveniently located on the handlebars:-

Operation of the clutch lever controls a jockey (idler) pulley which tensions or releases the 'vee' belt to give either a tightly tensioned (driving) belt or a slack (de-clutched) slipping belt. The clutch lever has a springloaded plunger device to facilitate 'Hold' in the engaged position for long runs.

The engine has a built-in speed governor so that a speed once set at the throttle lever should be automatically maintained whether the engine is 'ON' load or 'OFF' load.

The handlebars can be set to any comfortable working height by adjusting and securing the centre column in the most suitable position. The centre lever allows the handlebars to be swung sideways and locked to left or right of the machine's centre-line, thus permitting the operator to tread clear of the tillage path. For storage purposes the handlebars can be removed by unscrewing the selector lever knob, disengaging the lever and lifting the handlebars clear.

A shorting tab adjacent to the engine spark plug is used to stop the engine. When a trailer attachment is used on home market machines, an additional cut-out switch must also be fitted on the handlebars, close to the operator.

A hitch point at the rear of the machine is used for attaching various ancillaries as well as the support-frame which carries, two transport/stabilising wheels and a depth skid for cultivation purposes.

Many built-in safety features have been incorporated, such as belt guards, stopping devices etc. and in these and other respects the machine complies fully with current U.K. Agricultural Safety Regulations.

GUARANTEE: No statement of representation in this handbook, as a guide to the owner or user, shall be construed as enlarging or varying the Terms of Guarantee which are as stated on the Guarantee Card, issued with the machines.
The Guarantee Terms are applicable only to the first owner/user. Use for Hire or Contract Work will render the Guarantee void.

STARTING AND OPERATING

Before starting engine and commencing work, make it a regular habit to:-

A Check fuel level.
B Check engine sump oil level (see Engine Manual).
C Check chain-case oil level (see Maintenance).
D Fit belt guards to machine and, where applicable, to ancillaries.

Precautions. Never run the engine in a closed unventilated area----exhaust gases are poisonous.
Do not fill the tank whilst the engine is running and avoid spilling fuel on a hot engine.
Never fit ancillaries or try to make any adjustments whilst the engine is running.
Keep hands, feet and loose clothing clear of all rotating parts.

To Start

1 Carry out pre-starting checks (see above), and fit the required ancillary.
2 Ensure shorting tab is clear of spark plug. If fitted, turn cut-out switch ON.
3 Open fuel tank tap. Ensure clutch lever is released.
4 Move choke lever (on carburettor) to full CHOKE position. When re-starting a warm engine, choke may not be necessary.
5 Move throttle lever about one-quarter open.
6 Pull recoil starter SMARTLY (not quite to its full extent) and return SLOWLY.
7 When engine fires, return the choke lever and re-set the throttle lever to idling revs.

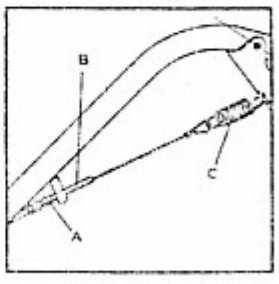
To Stop. Flip the shorting tab against the spark plug, or if fitted, use the handlebar mounted cut-off switch.

NOTE: When the machine is not in use, always release the clutch lever to relieve belt tension.

To set in Motion. Having started the engine, gently squeeze the clutch lever at the same time opening the throttle lever to a higher speed setting. The setting to suit the particular ancillary and work conditions will be found from experience, but the revs should not be so low that the engine 'labours', nor too high that control and manoeuvrability are lost and work finish impaired. Generally, however, half throttle will suit most purposes.

If a long run is intended, press in the spring plunger through the hole in the clutch lever to 'hold' the lever in the engaged position. To halt the machine, squeeze the clutch lever slightly to disengage the spring plunger then release the lever completely. Re-set the throttle lever to idling when the engine is not under load.

CLUTCH AND BELT DRIVE: During the initial short 'bedding-in' period, a new vee belt may stretch slightly and 'slip' in the engine pulley groove-thereby failing to transmit full tractive power from the engine. To adjust the clutch setting: Release the clutch lever and start the engine. Slacken off lock nut A and screw-in the cable barrel B until the rotors or wheels just start to rotate, then unscrew two turns and tighten the locknut.
A further check is that the cable spring C should stretch when the clutch lever is applied.



GENERAL MAINTENANCE: After each use, thoroughly clean all parts of dirt and vegetation paying particular attention to wheels and rotor axles and the engine cooling fins and blower housing. Wipe over all surfaces with an oily rag.

Make frequent and regular spanner-checks on all nuts and bolts, especially those fixing the engine, frame, handlebars and ancillary blades.

Periodically oil the clutch and throttle inner cables, the wheel bearings, the handlebar and jockey pulley pivots. Oil the felt washers each side of the jockey pulley and wipe off excess oil to prevent contact with the vee belt.

Inspect the vee belt for wear or damage and renew as necessary----use only the special premium grade belts from Landmaster.

MAINTENANCE AND LUBRICATION

Refer to the Engine Makers literature for full details of servicing times, procedures and recommended fuels and lubricants.

Before using four-stroke engines, always check that the engine sump oil lever is correct....if necessary, top up with the correct grade of oil.

Ensure that the engine air filter is cleaned and serviced regularly. In very dry and dusty conditions it may be necessary to clean the filter more frequently than that specified. Never run an engine without an air filter, with an incorrectly fitted filter or with a badly ingrained element.

CHAIN-CASE: Approximate capacity 1¾pints (1 litre). Use Shell X100-30, Energol SAE.30 or other brands of SAE. 30 grade oil. The combined Filler/Level Plug is located near the top of the chain-case on the right hand side. To establish the correct level of oil, tip the machine forwards until the engine rests on the ground. Remove the plug (a press fit) and when the oil overflows from the plug hole, thechain-case is full. Refit the plug securely, with the split pin positioned top vertical. Check oil level frequently and renew after the first 50 hours running time; thereafter at each season's end. Save waste oil (also from engine) for use as a rust preventive on ancillaries etc.

WINTER STORAGE: Follow the engine makers instructions for storing the engine. Clean and lubricate all parts, attend to any servicing points and cover and store in a dry place. It is good practice to have a regular examination or overhaul carried out by your Landmaster Service Agent. This is by way of an 'insurance' against future mechanical trouble, and is best done during the winter months ready for the forthcoming growing season.

BLADE SELECTION

SLASHER BLADES -
an all-purpose blade, also ideal for heavier soils and virgin ground.

CURVED BLADES -
used for normal cultivation and deeper digging requirements in average soils.

HOE BLADES -
used for hoeing of weeds, general light-duty soil aeration and shallow digging.

RIDGING ROTORS -
used for producing wide flat bottom ridges.

There are four different types of rotary cultivation blades available and these are made up into assemblies with left and right-hand blades bolted to two common hubs. The different blades are designed for particular functions and varying soil conditions. Your supplier will gladly make recommendations to suit your particular requirements.

Width of cut is varied by using either two double bladed assemblies giving 24" nominal or two single bladed assemblies giving 12" nominal. All assemblies are held onto the rotor by spring pins.

ROTARY CULTIVATION

For all Rotary Cultivation work it is necessary to attach the Wheel Support Frame and Depth Strake to the rear hitch point. When deep digging or row crop work requires a narrow width of cultivation, the wheel frame can be inverted by removing the location pin, place the frame into its required position and replace the pin. To alter the strake height remove the location pin, pull the wheel support frame away from the strake, select the strake height by engaging the cut outs in the required position, then replace wheel frame and location pin.

FIELD TECHNIQUES

The Forward speed and depth of cultivation is controlled by the depth of the rear strake in the ground and this in turn is controlled by lifting or pressing down the handlebars. Generally, the deeper the skid----the slower the forward speed, the deeper the cut and the finer the tilth---- and vice versa.

Set the depth strake to a nominal position, start the engine and let the clutch in slowly----at the same time opening the throttle. Press down slightly on the handlebars until the required depth is reached and thereafter use only sufficient pressure to keep the rotors at that depth. If necessary, adjust the strake up or down and reset the handlebars to a comfortable working position. The handlebars may be offset left or right to allow the operator to tread clear of the tillage path.

At the end of a row, close the throttle slightly and lift the handlebars to raise the skid out of the ground: the rotors will then "climb" out of their furrow for the headland turn. In exceptionally heavy or hard conditions it may be necessary to make more than one pass, preferably at right angles to the previous to reach the required depth.

TRACTION WHEELS

Tractor wheels are available for use with various ancillaries - grass cutter, ridger, trailer etc. See below for details.

300 x 6" Pneumatic. Having a deep Vee patterned tread for grip in soft ground. It is used for trailer work, static ridger, and seed drill applications.

8" Solid. This wheel is for use with the Rotary Grass Cutter attachment only.

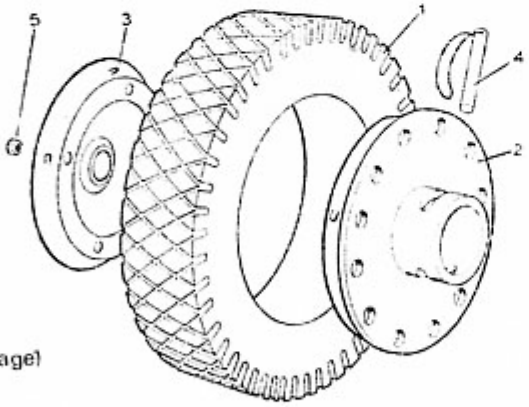
TYPICAL PERFORMANCES

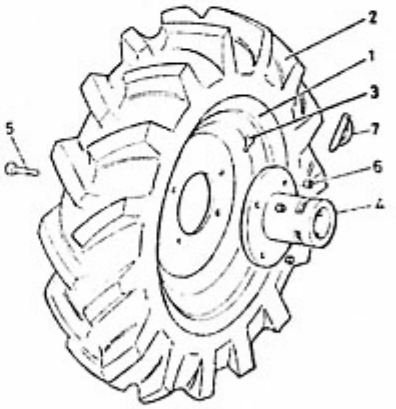
ENGINE R.P.M.	WHEELS	TRACTION M.P.H.	SPEEDS K.P.H.
3600	8" dia 3.00 x 6	3.13 4.7	5.0. 7.5
lower engine R.P.M. settings will yield proportionately.			

All wheels are fixed to the chain-case axle with standard rotor pins through special wheel hubs. These hubs have elongated slots for the pins and provide a limited 'differential' action for easier steering of the machine.

All pneumatic tyres should be maintained at 10 lb. per sq. in. (.703 kilos/sq.mm.). When wheels are correctly arranged inner-tube valves should be 'inboard', i.e. towards the chain-case, and the tread 'Vees' should point forwards in the direction of rotation.

This wheel is used with the 19" rotary grass cutting attachment available as an optional extra, a very useful and effective grass cutter, self-propelled- with a wide range of cutting heights. (Illustrated on back page)





8" DIA. TRACTION WHEELS

Item No.	Spares No.	Description	Qty.
1	A2804	8" x 1¾" Rubber Tyre	1
2	ML1048	Wheel Mounting Assembly	1
3	ML1750	Wheel Rim	1
4	ML1031	Rotor Pin	1
5	A2053	¼" UNF Nyloc Nuts	4
	ML1038	Wheel & Hub Assembly Complete	1 pr.

3·00 x 6 TRACTION WHEELS

	ML1106	R/H Wheel and Hub Ass'y complete	1
	ML1107	L/H Wheel and Hub Ass'y complete	1
	ML1108	R/H Wheel complete	1
	ML1109	L/H Wheel complete	1
1	A2960	3·00 x 6 Rim	2
2	A2958	3·00 x 6 Tyre	2
3	A2959	3·00 x 6 Tube	2
4	ML1083	Wheel Hub	2
5	A1756	5/16" UNF x ¾" Bolt	8
6	A1728	5/16" UNF Nyloc 'T' Nuts	8
7	ML1031	Rotor Pins	2

WHEN ORDERING SPARES, STATE SPARES No., DESCRIPTION, QUANTITY REQUIRED AND MODEL SERIAL No.

OBTAIN ALL SPARE PARTS FROM YOUR LOCAL DEALER

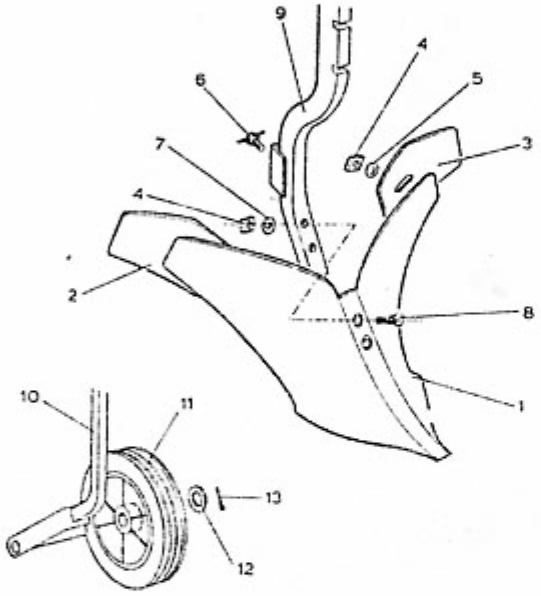
THE STATIC RIDGER

The static ridger is a draft implement drawn behind the machine. It is a simple 'Y' blade fixed to a vertical stem which is mounted in the machine's rear frame in place of the rear depth skid. Initial depth setting is determined by the position of the stem in the frame but a depth control wheel behind the blade is adjusted to ensure consistent performance.

The static ridger is adjustable for width with side wings which can be set from 12" (30.5 cm.) to 20" (50.8 cm). This attachment produces furrows which are generally deeper and narrower than those made by ridging rotors.

Note that the wheel support frame is used to locate the ridger and is fitted inverted to the machine's rear hitch point and secured with the location pin.

A rotor set-up (preferably HOE blades) should be fitted to give both forward traction and preliminary soil tillage. Alternatively, 300 x 6 tractionwheels may be used in place of the rotor unit

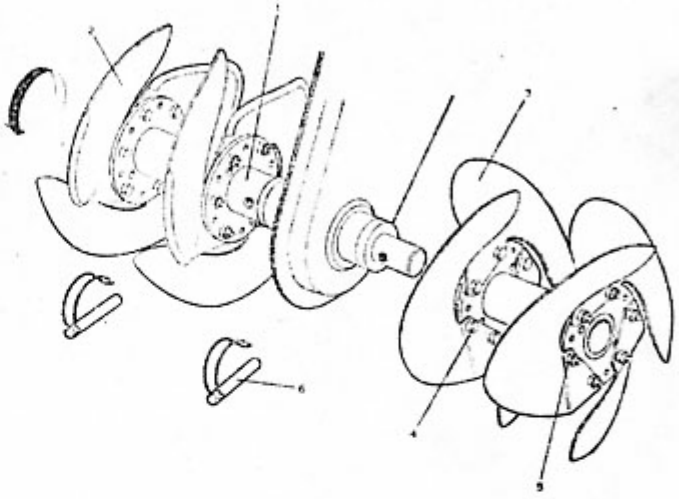


Item No.	Spares No.	Description	Qty.
1	A2142	Ridger Blade	1
2	A2143	R.H. Wing	1
3	A1632	L.H. Wing	1
4	A1449	3/8" BSW Square Nut	4
5	A170	3/8" Plain washer	2
6	M588	Wing Bolt	1
7	A9	3/8" S.C.F.S Spring Washer	2
8	A1574	3/8" B.S.W. x 1¼" O.D.C.S.S. Bolt	2
9	15674	Ridger Stem	1
10	M835	Depth Control Stem	1
11	A3141	Wheel	1
12	A75	½" Plain Washer	1
13	A922	3/32" x 1" Split Pin	1

RIDGING ROTORS

The ridging rotors are specially shaped cultivating blades fitted to standard rotor hubs. Their action is to provide forward traction to the machine with simultaneous working of the surface soil outwards from the centre of the rig to either side of the tillage path. This 'screw' action produces wider, shallower furrows than those obtained with the static ridger.

The machine's rear support frame complete with stabilising wheels and depth skid are required for this type of ridging.



Item No.	Spares No.	Description	Qty.
1	15637	Hub	2
2	M824	R.H. Ridging Blade	6
3	M823	L.H. Ridging Blade	6
4	M613	Blade Bolt	24
5	B1583	5/16" UNF Nyloc 'T' Nut	24
6	ML1031	Rotor Pin	2

The following complete assemblies are available ready for use.

Slasher blade assembly
R.H. 15648
L.H. 15647 24" width - ML5001 12" width

Curved blade assembly
R.H. 15690
L.H. 15691 24" width - ML 5004 12" width.

Hoe blade assembly
R.H. 15692
L.H. 15693 24" width - ML5007 12" width.

Ridging Rotor assembley
R.H. 15694
L.H. 15695 24" width
R.H. ML 1100
L.H. ML 1098 12" width

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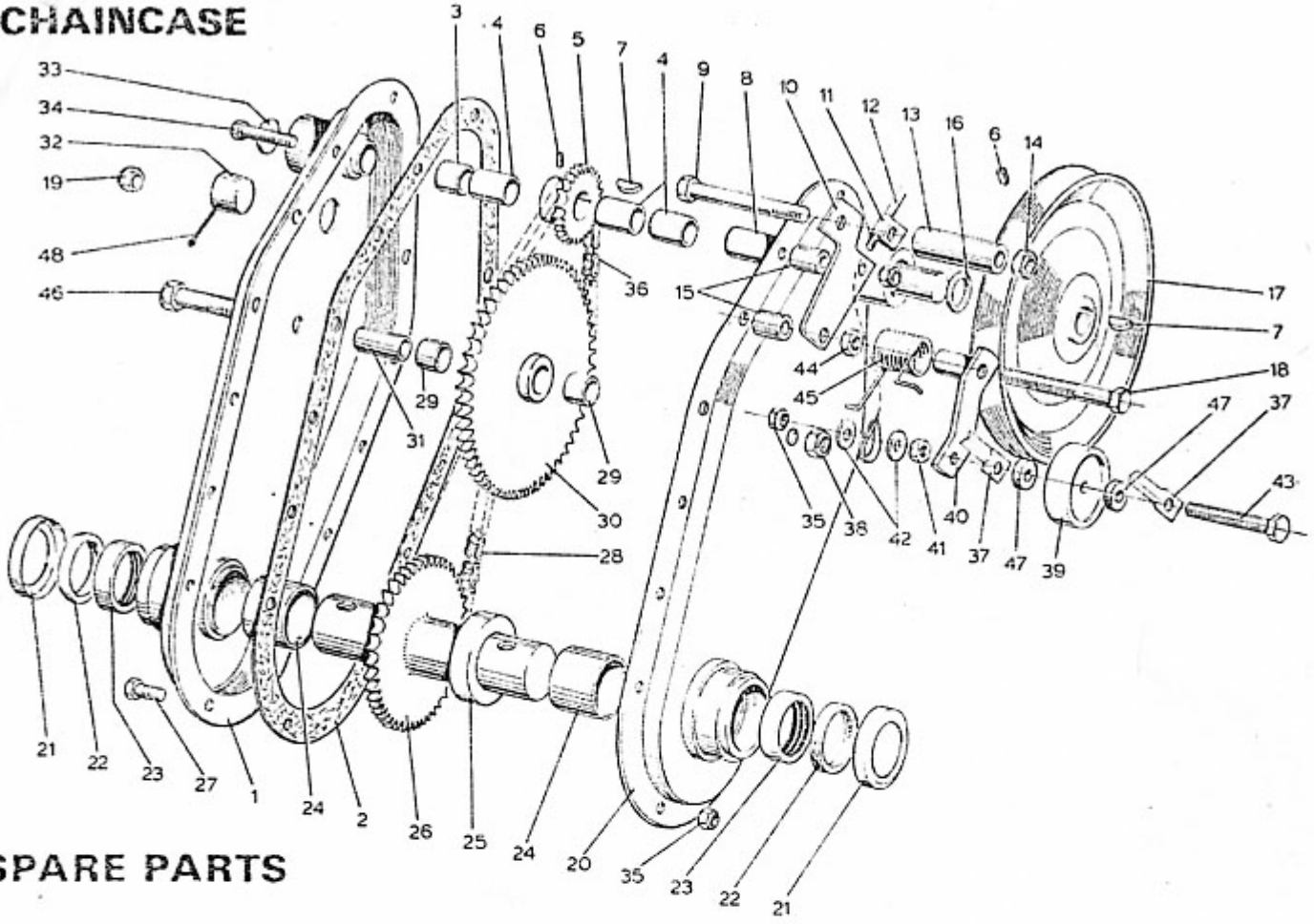
CHAINCASE



SPARE PARTS

Item No.	Spares No.	Description	Qty.
	15646	Chaincase Unit Comprising	
1	ML1002	R.H. Chaincase	1
2	ML1502	Gasket	1
3	A2937	Glacier Bush 2004 WB 1008	1
4	A2936	Glacier Bush 2007 WB 1014	3
5	ML1004	Input Sprocket	1
6	A2152	¼" UNF x ¼" Grub Screw K.C. Point	2
7	A1375	Woodruff Key No.505	2
8	ML1506	Input Shaft	1
9	A2777	3/8" UNF x 3½" Bolt	1
10	ML1562	Belt Cover Bracket	1
11	ML1554	Clutch Cable Clip	1
12	15597	Clutch Cable	1
13	ML1521	Belt Cover Spacer	1
14	A2115	3/8" UNF Plain Nut	1
15	15640	Bracket Spacer	2
16	A2782	Ina Bearing Seal - GSC10	1
17	15639	Chaincase Pulley	1
18	15603	5/16" UNF x 3½" Bolt - Special	1
19	B1583	5/16" UNF Nyloc 'T' Nut	1
20	ML1001	L.H. Chaincase	1
21	ML1540	Axle Bearing Cap	2
22	ML1539	Felt Seal	2
23	A2781	Oil Seal Superfect 760	2
24	A2928	Needle Bearing - INA SC2106	2
25	ML1505	Sprocket Spacer	1
26	ML1014	Rotor Axle Assembly	1
27	A1560	¼" UNF x ½" Bolt	8
28	A2768	Chain ½" Pitch - 46 Pitches	1
29	A2779	Needle Bearings	2
30	ML1005	Intermediate Sprocket	1
31	A2780	Bearing Inner Race	1
32	ML1544	Oil Filler Plug	1
33	A2769	Core Plug	1
34	A1753	¼" UNF x 2" Bolt	1
35	B1582	¼" UNF Nyloc 'T' Nut *	10
36	A2767	Chain 3/8" Pitch - 56 Pitches	1
37	G5140	Jockey Guide Plates	2
38	A1728	5/16" UNF Nyloc 'P' Nut	1
39	ML1020	Jockey Pulley	1
40	ML1007	Jockey Pulley Arm	1
41	A1695	¼" UNF Locknut	1
42	A171	¼" Plain Washer	2
43	A2942	¼" UNF x 2" Bolt	1
44	A2056	5/16" UNF Plain Nut	1
45	ML1524	Jockey Torsion Spring	1
46	A2211	5/16" UNF x 2" Bolt	1
47	ML1546	Felt Washer	2
48	A1051	Split Pin 3.32" x ½"	1

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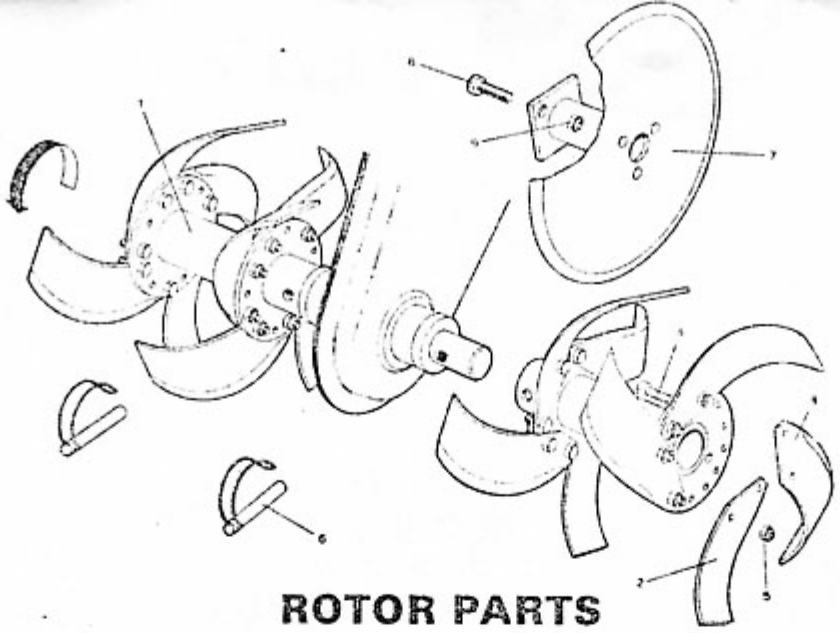


ROTOR PARTS

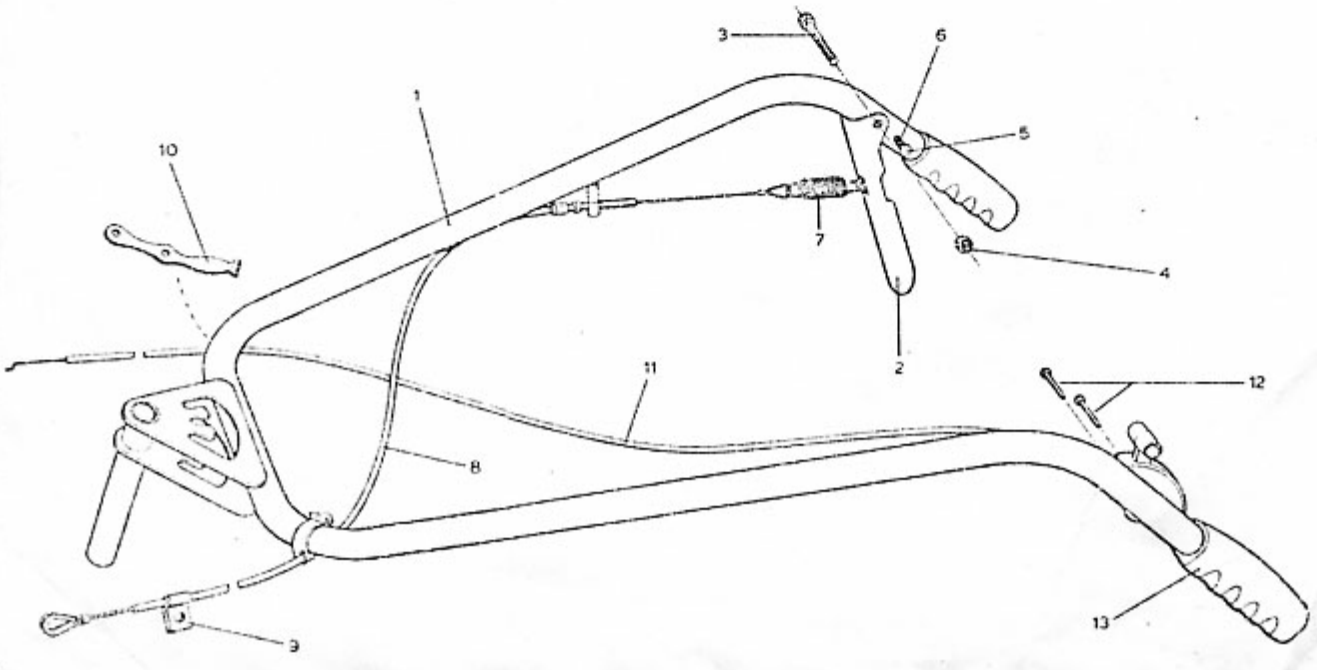
Item	Spares	Description	Qty.
1	15637	Hub	2
2	M860	Slasher Blade (L.H.)	8
3	M861	Slasher Blade (R.H.)	8
4	M604	Blade Bolt	32
5	B1583	5/16" UNF Nyloc Nut	32
6	ML1031	Rotor Pin	2

Rotor End Discs Optional Extra

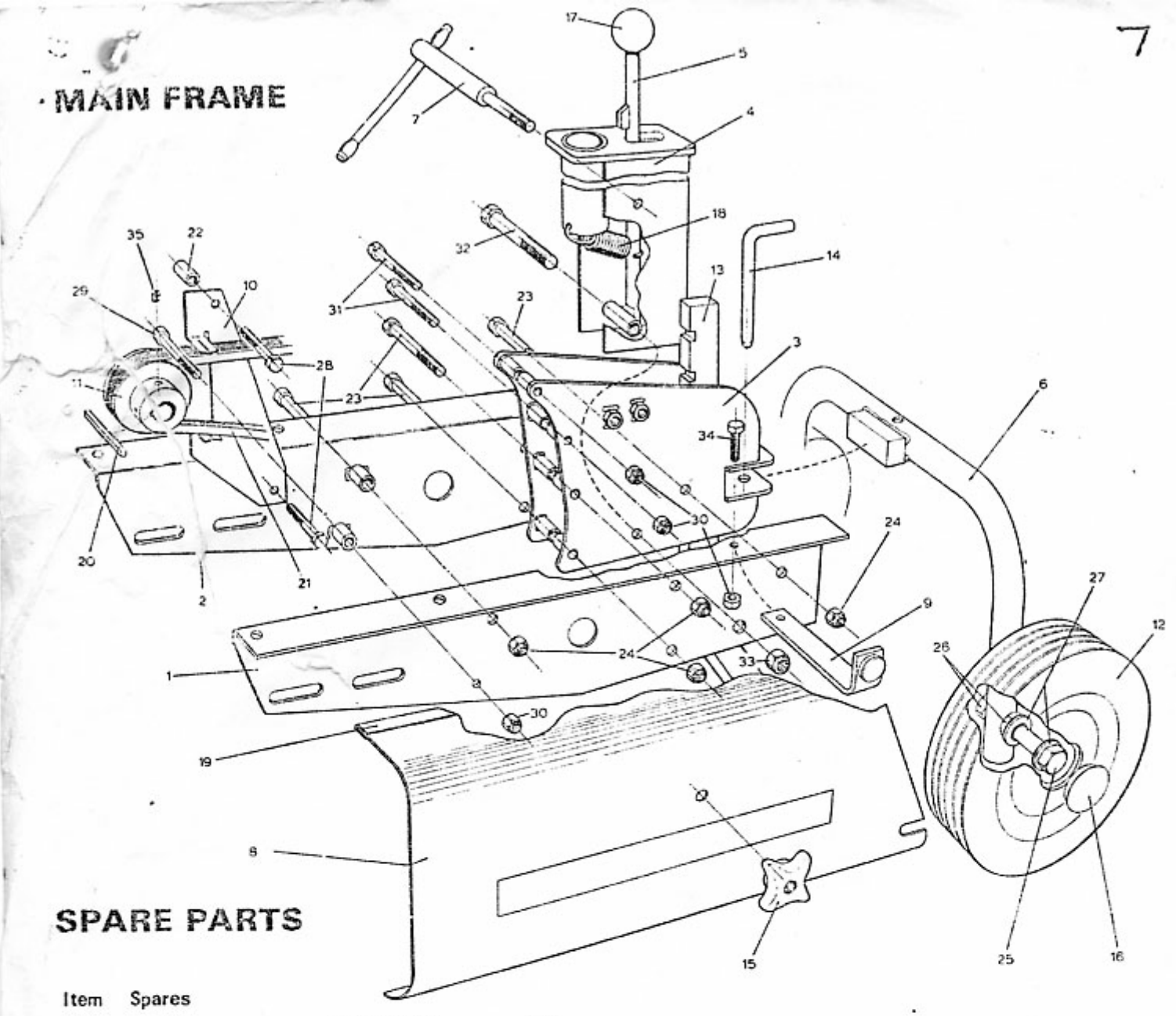
7	ML1068	Rotor End Discs	2
8	ML1684	Special Bolt	4
9	B1584	3/8" UNF Nyloc 'T' Nut	4

HANDLEBARS

Item No.	Spares No.	Description	Qty.
1	15614	Handlebar Assembly	1
2	15596	Clutch Lever	1
3	A3370	¼" UNF x 1⅝ Bolt	1
4	B1582	¼" UNF Nyloc 'T' Nut	1
5	A2841	¼" dia x 1¾" Flat Hd Rivet	1
6	ML1636	Compression Spring	1
7	ML1560	Tension Spring	1
8	15597	Clutch Cable	1
9	ML1554	Clip	1
10	A2422	Cable Tie	2
11	A3103	Throttle Lever and Cable	1
12	A3265	No.10 x 1" Pan Hd. Pozidriv screws	2
13	A3303	Handlebar Grip	2



MAIN FRAME



SPARE PARTS

Item No.	Spares No.	Description	Qty.
1	15634	Side Support (L.H.)	1
2	15635	Side Support (R.H.)	1
3	15630	Side and Hitch Plates	1
4	15623	Pivot tube	1
5	15608	Selector Rod	1
6	15612	Wheel Frame	1
7	15611	Clamp Pin	1
8	15598	Belt Cover	1
9	15636	Support Bracket	1
10	15602	Belt Guide	1
11	ML1504	Engine Pulley	1
12	A3188	Wheel	2
13	15587	Strake	1
14	15588	Location Pin	1
15	A1585	Plastic Nut	1
16	A3327	Plastic Hubcap	2
17	G1033	Knob	1
18	ML1560	Spring	1
19	A3382	Edge Trim	1
20	A1758	3/16" square x 1¾" key	1
21	A2765	Drive Belt	1
22	15649	Spacer	2
23	A3381	5/16" UNF. 2¼" Bolt	4
24	B1583	5/16" UNF. Nyloc 'T' Nut	4
25	M1775	½" UNF. Special Bolt	2
26	A1740	½" UNF. Plain Nut	4
27	A2792	½" Washer (16 swg.)	4
28	15601	¼" UNC x 1¾" Bolt	2
29	A3380	¼" UNF x 2¼" Bolt	1
30	B1582	¼" UNF Nyloc T Nut	4
31	A1753	¼" UNF x 2" Bolt	2
32	A2539	3/8" UNF x 2¼" Bolt	1
33	B1584	3/8" UNF Nyloc 'T' Nut	1
34	13526	¼" UNF x ¾" Bolt	1
35	A2152	¼" UNF Grub Screw	2

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