



3100 MULTI DRUM MOWER 3.10m (10'3")

**Operating and
Maintenance
Instructions**

INTRODUCTION

The Reese 3100 Mower is a trailed machine designed with simplicity, versatility and robustness as the initial criteria. To achieve this, complex gears, castings and moving parts have been avoided or controlled to an absolute minimum.

A simple hydraulic circuit is utilised to change between operating and transport configuration. By change over of a simple valve, the cutting height can be readily adjusted in steps up to 150 mm (6") and to 300 mm (12") for transport.

Wheel arm springs ensure that wheel contact with the ground is maintained in rough conditions. An optional widrow mover is available so that only one windrow is formed behind the mower.

3100 MOWER

technical specifications

CUTTING WIDTH	3.1 metres (10'3")
NUMBER OF ROTORS	4
NUMBER OF DOUBLE EDGE BLADES	12
POWER REQUIREMENT (at 540 revs)	from 70 HP
ROTOR RPM	1800
TRACTOR LINKAGE	Trailed
HEIGHT ADJUSTMENT	25-300mm (1"-12")
TYRES	185 x 14
WEIGHT	1090kg (2450lbs)
MIN. HYDRAULIC PRESSURE REQUIRED	900psi
STONE GUARDS	Standard
TRANSPORT WIDTH	3.5 metres (11'6")

SERVICING

REFER TO LUBRICATION POINT CHART

DANGER

ROTATING PARTS

This machine is PTO driven. Ensure that machine has stopped and PTO is secured to prevent inadvertent engagement before making adjustments or carrying out maintenance.

CAUTION

All hydraulically elevated equipment must be supported or lowered to the ground when servicing to prevent accidental lowering which may result in personal injury.

PRIOR TO INITIAL USE:

1. Grease all points:

1 st Drawbar Pivot	2 pts
2 nd Drawbar Pivot	2pts
Pulley Fold Back Pivot	2 pts
PTO Shafts (2)	9 pts
Intermediate Shaft Housing	1 pt
Vee Pulleys Bearing Housing	1 pt
Hydraulic Cylinders (3) Linkage eyes	3 pts
Wheel Arm Pivots (2 per wheel)	4 pts
2. Grease
 - (a) Sliding areas on drawbar
 - (b) Sliding areas on wheel arms & pulley fold back pivot
 - (c) All adjustment and locking pins
 - (d) P.T.O. shaft sliding member (after checking PTO shaft length - see "Setting Up" instructions).
3. Apply a few drops of oil to all bolts and threaded adjusters.
4. Check tyre inflation - 40 PSI

DAILY

1. Grease

Intermediate Shaft Housing	1 pt
Vee Pulley Bearing Housing	1 pt
Wheel Arm Pivots (2 per wheel)	4 pts
2. Check blades for wear and reverse, sharpen or replace as necessary.

3. Check belts for tension - see maintenance.
4. Check for early signs of drum bearing wear by simply lifting the edge of each drum and observing any movement.

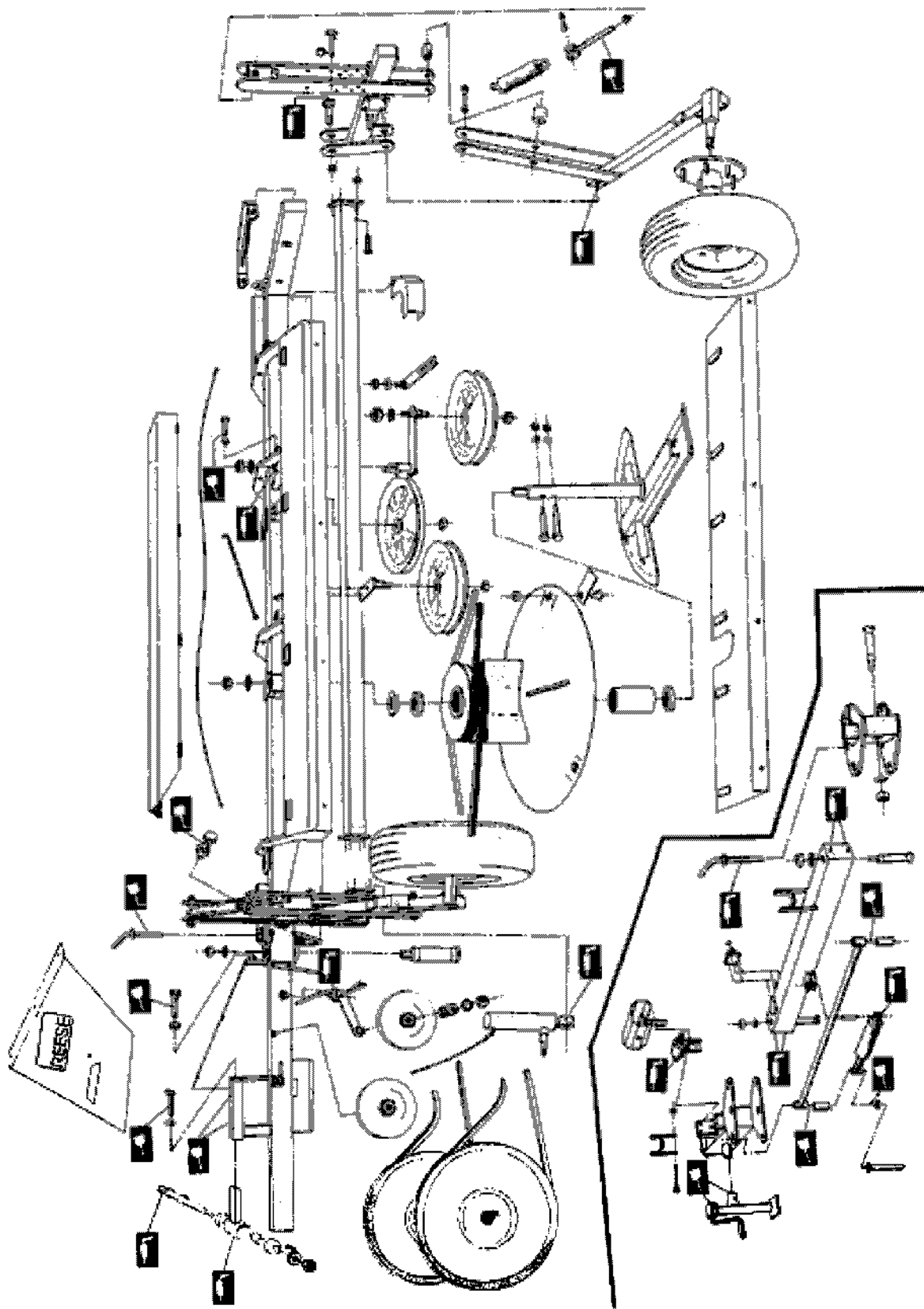
WEEKLY

1. Perform all operations listed in "Prior to Initial Use" servicing.
2. Check all nuts and adjustments for tightness, paying particular attention to the 1" UNF nut attaching the main vee pulleys.

Mower pivot nuts should be as tight as practical but still allow the machine to be moved into transport/operating position.

ANNUALLY

1. Perform all operations listed in "Prior to Initial Use" servicing.
2. Check all rotating components for smooth and free rotation.
3. Check nuts and adjustments for tightness.
4. Check vee belts for obvious damage or wear.
5. Grease the rear belt adjustment crank pivot boss. 1 pt
6. Grease secondary drive belt adjustment crank pivot bosses (2) (under main cover) 2 pts
7. Check wheel bearings for side movement, adjust and regrease if necessary.



REESE 3100 MULTI DRUM MOWER

ASSEMBLY AND SETTING UP INSTRUCTIONS

CAUTION

HYDRAULIC OPERATION

Personal injury may be caused - ensure the area close to this machine is clear of people and obstacles before setting into operation.

CAUTION

TRANSPORT

This machine is 3.5 m (11'6") wide and will project beyond the tractor width. Ensure drawbar lock pin is in position and diverter valve lever is in "straight ahead" position.

ASSEMBLY

This machine has been pre-tested and partially dis-assembled for crating.

When assembling refer to the applicable instructions and diagrams in this manual. Take special note:

1. The heavier wheel spring must be fitted to the wheel arm furthest from the tractor.
2. The large nut (item 9) securing the main drive pulleys must be tight.
3. The large nuts on the drawbar and main drive pulley frame pivot pins (items 15) must not be fully tightened.
4. Lubrication on all bolts, pins and shafts will ensure a longer life and easier disassembly at a future date.

NB: In NZ machine may be supplied fully assembled.

SETTING UP

1. Set the diverter valve lever to the "straight ahead" position (normal position when mowing).
2. Operate the tractor hydraulic lever and the machine will lift up to 300 mm (12") to enable height adjustment pins to be positioned where required.

TRANSPORT TO WORKING POSITION

- (a) Lift the mower and insert height adjustment pins so when lowered, the drum skids are clear of the ground.

- (b) Remove the large drawbar position pin.
- (c) Position the diverter valve lever so it is at an angle to the line of the drawbar.
- (d) Operate the tractor hydraulics control and the machine will move to the mowing position.
- (e) Replace the drawbar position pin and set the diverter valve lever to the straight ahead position.

WORKING TO TRANSPORT POSITION

Reverse the above.

IMPORTANT

To achieve optimum results it is necessary that these instructions are complied with.

Setting up should be carried out on level ground with mower attached to the tractor drawbar. Tractor must be in the straight ahead position and the mower in operating configuration.

1. Check the short PTO shaft for correct length. On level ground in the straight ahead position the shaft must have between 180 - 200 mm (7 - 8") movement before becoming fully compressed.

THIS IS MOST IMPORTANT.

2. Raise the mower with tractor hydraulics and fit cutting height adjustment pins in the second hole from lowest setting. Lower the mower onto these pins. (Suspension springs should not be supporting the mower above these stops).
3. Measure the height of the front and rear end of a drum skid from the ground. This should be the same.

IF ADJUSTMENT IS REQUIRED:

Raise the mower and place a block of wood or similar approx. 150 mm (6") high under the front end of the inner drum skid.

Lower the machine to relieve pressure and allow the tilt adjustment screw to be

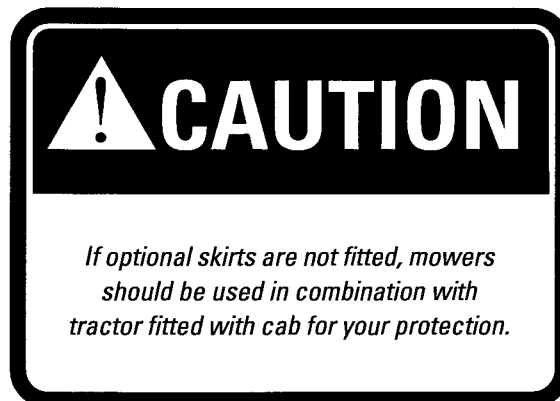
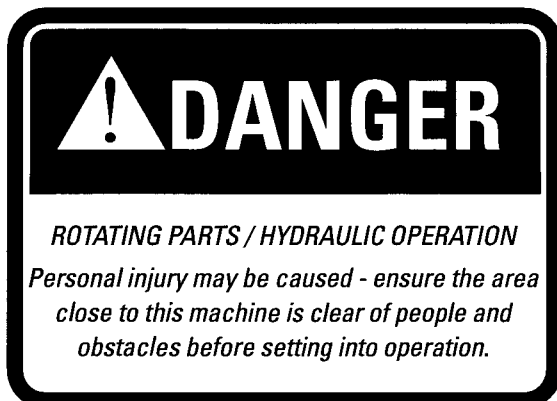
adjusted. Repeat the procedure as necessary until the drum skids are parallel to the ground.

Check suspension weight. Straddle each mower wheel in turn and lift by the spring adjustment pin. Each side should even and require a lifting force of approximately 30 kg (66 lb).

Adjust as necessary.

NB: This adjustment will not be possible with the mower drawbar supported by the drawbar jack. Drawbar must be supported at the tongue and under-drum-skids clear of the ground. Machine drawbar must be in mowing configuration.

OPERATION



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1. Ensure the machine has been serviced and set up as per the instructions.
2. Hydraulically move the machine to working position, replace the drawbar position pin and reset the diverter valve lever to straight ahead.
3. Raise the machine and reposition the height adjustment pins to give the desired cutting height.
4. Swing the vee pulley frame to the operating position and rotate the vee pulleys by hand for 1/2 turn in the normal operating direction. Visually note that the belts are

not twisted or mis-aligned with the idler pulley and each pair of drums counter rotate to feed the crop rearwards in two windrows.

5. Fit the PTO shafts with the overrun device at the main vee pulley end.
6. Lift the mower sufficiently to clear the cutting blades from the dense crop. Engage the PTO gradually and accelerate to 540 RPM.

Note: It is important to maintain a minimum of 540 PTO RPM at all times when mowing. Below this will give a ragged cut and consume additional power.

7. Mow around the field in a clockwise direction at a speed which is comfortable to operate. Use the tractor hand throttle to maintain constant revs.

The mower may be lifted while mowing to clear very uneven ground or to avoid obstacles. On pugged or irregular ground the spring suspension will be seen operating thus reducing vibration through the mower and maintaining maximum wheel contact with the ground.

8. Avoid very sharp cornering as this places additional strain on the PTO shaft and the tractor tyre may foul the mower drawbar. Very sharp cornering also causes the outer

end of the mower to go backwards into the windrow which in some heavily matted crops can cause wrapping around the drum.

9. The cleanest cut will always be when cutting closets to the ground. Use sharp blades for a clean cut - interchange blades between drums to use both edges or sharpen regularly with a grinder.
10. Check and adjust belts if necessary after initial stretch - Approximately 2 hours.
11. Check all bolts and nuts for tightness after the initial bedding in period. In particular, the 1" UNF nuts securing the main drive pulley and drum spindles - at the end of the first days work is an ideal time.

MAINTENANCE

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 **DANGER**

ROTATING PARTS

Personal injury may be caused - ensure the area close to this machine is clear of people and obstacles before setting into operation.

 **CAUTION**

TRANSPORT

This machine is 3.5 m (11'6") wide and will project beyond the tractor width. Ensure drawbar lock pin is in position and diverter valve lever is in "straight ahead" position.

Storage is the key factor in the maintenance requirements of all machinery.

It is recommended that this machine:

1. Be stored under cover. (To reduce storage area, the drawbar can be folded across the front of the mower simply by disconnecting the rear end of the two drawbar link arm rods).
2. Be cleared of grass and dirt which will accelerate corrosion.
3. Have rubber based components (tyres and belts) protected from strong sunlight.

 **CAUTION**

HYDRAULIC OPERATION

Personal injury may be caused - ensure the area close to this machine is clear of people and obstacles before setting into operation.

The Reese Mower is of simple construction and maintenance is in accordance with general engineering practices. The following hints are offered:

1. FITTING A SET OF VEE BELTS

Remove the front and rear bottom panels by undoing the securing set screws. Lift the mower so the under-drum skids clear the ground.

PRIMARY DRIVE

- Place the short belt (C4220 - P No. 250) under the No. 1 drum (nearest the tractor) and fit into the lower vee pulley. Slide the surplus belt out through the belt opening.
- Pull the belt out straight behind the tractor, remove twists and establish which side to pull to give clockwise rotor rotation. This side goes direct to the bottom of the forward main vee pulley.
- With the pulley frame folded into transport position and the main vee pulley housing adjustment released, feed the belt around the main vee pulley and down under the forward idler.
- Move the pulley frame into operating position, turn the main vee pulleys by hand to ensure the drum rotates clockwise and belts are not fouling on any parts of the machine.
- Follow the procedure above for the long belt (C5720 - P No. 251) and No. 2 drum noting the following differences:

- Rotation will be anti-clockwise
- The side of the belt which goes direct to the rear main vee pulley will pass between two fingers on the underside of the belt adjustment crank.
- The belt adjustment will need to be released.

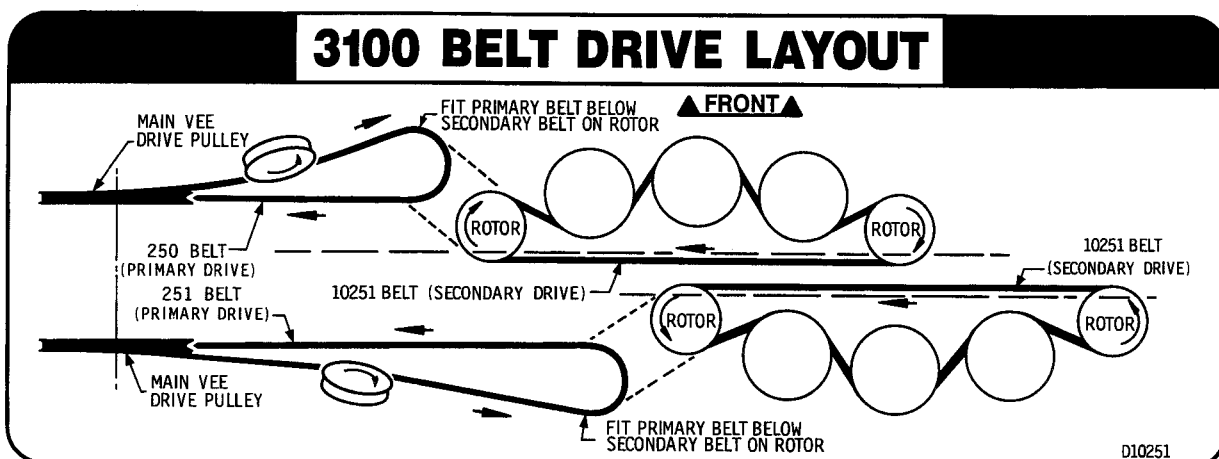
SECONDARY DRIVE

The secondary drive to No. 3 and 4 drums is through independent belts (C162 - P No. 10251) from the drum upper vee pulley of No. 1 and 2 drums respectively.

- Remove the primary belts sufficiently to enable the secondary belts to be fitted to drum upper vee pulley.
- Place the vee belt under No. 1 and 3 drums and fit to the upper drum vee pulley.
- Locate the surplus belt behind the two flat idler pulleys and in front of the vee idler. The idler adjustment screw will need to be released to enable the belt to be fitted.
- Repeat the above process for the rear belt (drums 2 and 4). The outer drum guard will need to be removed to enable this belt to be fitted.

Tighten belt adjuster lock nuts and crank pivot nut.

Refit the front and rear bottom panel ensuring the securing clips locate on the retention loops. Rear panel must be fitted first then the front panels beneath the rear one to ensure an unimpeded path for the mown crop.



2. BELT TENSION ADJUSTMENT

Belts should be operated as loosely as practical but sufficiently tight to avoid excessive belt flap and slippage.

PRIMARY DRIVE

Adjust belts in the following order:

- (a) Short vee belt closest the tractor to the inner drum by belt tensioner screw which determines the position of the main vee pulley housing.
- (b) Long vee belt to the outer drum by belt tensioner screw which controls the position of the belt adjustment crank.

Note: Adjustment of the short belt affects the tension of the long belt. It may be necessary to slacken the long belt.

SECONDARY DRIVE

Front and rear belts are completely independent and adjustment of one does not affect the other. Belt tension is adjusted by the treaded adjuster rod acting on the adjustment crank of one of the flat idler pulleys. Additional adjustment can be gained by unbolting the fixed flat idler pulley mount and re-securing it in the two holes provided nearer the vee idler.

MAINTENANCE

3. REPLACEMENT OF DRUM BEARINGS

- (a) Remove the front and rear bottom panels and the top cover.
- (b) Lift the machine and securely support both ends. (A clearance of 600 mm (24") is required beneath the machine.)
- (c) Slacken the vee belts/belts and pull them clear of the drum vee pulley of the drum to be removed. (The outer drum pulley belt guard will have to be removed if removing the outer drum.)
- (d) Remove the 1" UNF nyloc spindle nut and thick washer.
- (e) Remove the 3¹/₂" x 1/2" UNF spindle bolts.
- (f) Drive the drum spindle down through the spindle clevis plates using a piece of tube as a thread protector. The drum and spindle will drop clear of the machine body.
- (g) Support the drum in 2 or 3 places approximately 500 mm (20") above the ground (on 20 L (5 gal) cans as suggestion).
- (h) Drive the spindle through the drum using the thread protector as above.

- (i) Remove the bearings from the drum tube by using a suitable drift 500 mm (20") of 25 mm (1") rod.
- (j) Fit new bearings after ascertaining that the bearing surfaces and spacer tube are undamaged.
- (k) Reassemble the machine in the reverse order.

Note Carefully: Ensure the drum skid is fitted the correct way i.e. with the stone guards to the front edge of the drum. Tighten the 1" spindle nut (using a 750 mm (30") extension tube on the wrench) before tightening the two spindle lock bolts.

Hint: If at any time two adjacent drums are removed, refit them in opposite position. Drums will each rotate in opposite directions and double their life.

BALANCE

Drums have been balanced and drum repair which involves welding must be done with care to preserve this situation. An unbalanced drum will create vibration and may damage the mower.

The plate accommodating the blade attachment bolt is a high tensile abrasion resistant steel and should be welded with high tensile mig wire or low hydrogen rods.

MOWING HINTS

1. RAGGED WINDROW

- (a) Ensure PTO revs are at 540 RPM.
- (b) Check belt tension - belts may be slipping.

2. ROUGH STUBBLE

- (a) Ensure PTO revs are at least 540 RPM.
- (b) Blunt or bent blades.
- (c) Check mower level. Blades at rear of machine should be higher above the ground than those at the front. See "Setting up instructions".

3. CUT UNEVEN - SCALLOPED

- (a) Mower is tilted too far forward. See "Setting up instructions".
- (b) Suspension springs set "too tight" allowing the mower to bounce - See "Setting up instructions".

4. UNCUT STALKS

May be evident when cutting high. (Topping, especially late season in tough crops).

- (a) Ensure blades are sharp.
- (b) PTO RPM at least 540 (up to 600 RPM is OK).
- (c) Mower slewing across behind the tractor - see para. 5.

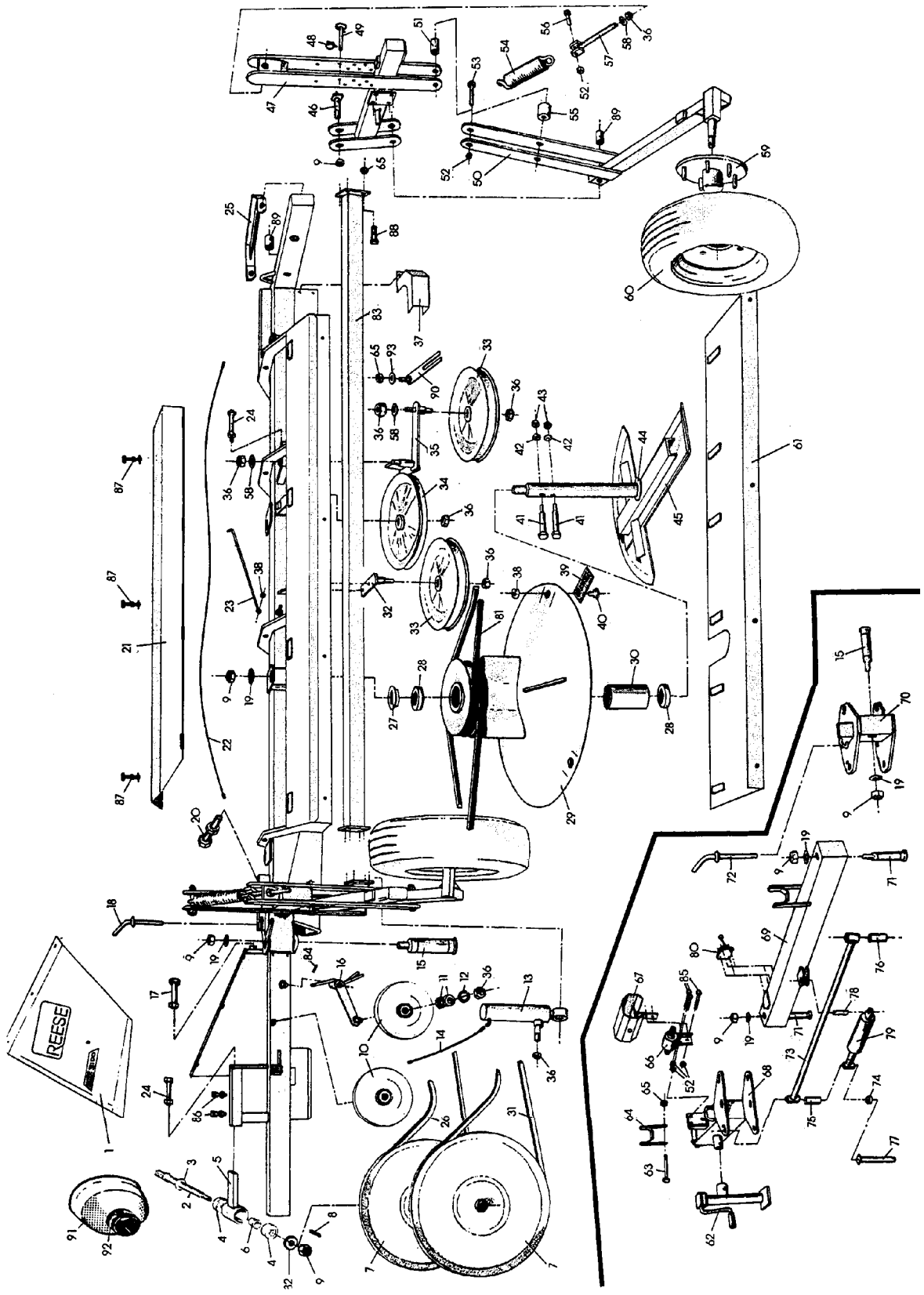
5. MOWER SLEWING ACROSS BEHIND TRACTOR

This machine is held offset from the tractor purely by ground contact of the tyres. This problem will occur if:

- (a) The forward speed is too fast for the density of crop being cut.
- (b) PTO RPM is below 540.
- (c) Belt tension is incorrect and slippage occurs. (This will usually show up as discolouration of the drum vee pulley due to frictional heat).
- (d) Blades are blunt or in poor condition.
- (e) Cutting very low and drum skids dragging on the ground.

6. CROP WRAPPING AROUND DRUMS

- (a) Maintain PTO RPM especially when cornering.
- (b) Avoid sharp cornering especially in matted crop.



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ITEM NO	PART NO	DESCRIPTION	ITEM NO	PART NO	DESCRIPTION	ITEM NO	PART NO	DESCRIPTION
1	10212	Idler cover - Pre 1991	40	42A	UFO blade bolt (round head)	70	10203A	Drawbar section 2 bare - 1991 on
2	10212A	Idler cover 1991 on	41	14	Bolt 3 1/2" x 1/2" UNF *HT*	10204	10204	Drawbar section 3 bare
3	621	Input shaft 320 lg x 35 mm dia	42	40	Flat washer *	10207	10207	Pivot bolt 50 mm x 181 mm long
4	9207	Nilos ring 6307 ZAV	43	14A	Nyloc nut 1/2" UNF	10211	10211	Drawbar positioning pin
5	9205	Input shaft bearing 6307 Z	44	52	Bottom spindle washer	10210	10210	Drawbar link arm - pre 1991
6	323	Input housing 115 mm c/w bearings & spacer	45	10237A	Skid spindle assy 3100	10210A	10210A	Drawbar link arm - 1991 on
7	325	Tube - 90 mm OD	46	10265R-A	Pivot pin - wheel arm	10238	10238	Link arm spacer 15 mm lg
8	226	Input bearing spacer tube 66 lg x 48 mm OD	47	10265R	RH intermediate wheel arm	10239	10239	Link arm spacer 63 mm lg
9	10226	Vee pulley 660 mm dia - Pre 1991		10265L-A	RH intermediate wheel arm - 1996 on	76	10240	Link arm spacer 108 mm lg
10	127	Vee pulley 710 mm dia - 1991 on	48	10265L	LH intermediate wheel arm	77	10228	Link arm pin
11	8	Input shaft key 3/8" x 5/16" SQ	49	9286	LH intermediate wheel arm - 1996 on	78	10229	Hydraulic ram pin
12	130	Nyloc nut 1" UNF	50	10277	Linch pin 1/4" AGI	79	10209	Hydraulic ram - drawbar positioning
13	31	Pulley - idler c/w bearings & circlip	51	10264R	Wheel height adjustment pin	80	10225	Hydraulic diverter valve - complete
14	32	Bearing 6304 2RS	52	10264L	RH wheel arm assy	81	10251	Vee belt C 162 Special Second drive (2)
15	H0003	50 mm internal circlip	53	10265-09	LH wheel arm assy	82	9208	Nilos ring 10ZAV
16	10248	Hydraulic hose 650 mm lg x 1/4" M/F	54	16A	Spacer - intermediate arm (small)	83	10276	Rear stabiliser bar
17	7A	Hydraulic hose 650 mm lg x 1/4" M/F	55	10266-01	Nyloc nut M16	10276A	10276A	Rear stabiliser bar - 1997 on
18	10248	Pivot pin 50 mm x 131 mm long	56	8606	Bolt M16 x 100 lg	9251	9251	Tension pin M6 x 40 mm lg
19	105A	Idler crank - primary frame 3100 pre 1991	57	10267R	RH tension spring 10.5 mm dia	16	16	Bolt M16 x 50 mm lg *HT*
20	10205	Idler crank - primary frame 3100 1991 on	58	10267L	LH tension spring 9 mm dia	18A	18A	Belt tension set screw M12 c/w nut
21	10213A	Belt tensioner M20 & nut x 120 mm lg	59	10264-03	Spacer - wheel pivot arm (large)	9331	9331	Rubber handle bonnet latch
22	H8001	Transport pin - primary frame	60	8603	Bolt M16 x 55 mm lg	9330	9330	Bonnet latch set complete (1)
23	10260	Washer 25 mm dia x 10 mm thick	61	10275	Tension spring adjuster	8510	8510	Bolt M12 x 35 mm lg *HT*
24	5A	Mower tilt adjuster M24 & nut	62	9071	Flat washer M20 x 45 od	10222	10222	Bronze bush
25	10255	Mower frame cover (Pre 1994)	63	10266-02	Wheel hub	90	10274	Adjust slice - flat idler crank
26	250	Drum frame cover (1994 on)	64	10266-03	Axle spindle - bare	W23	W23	Input shaft guard
27	38	Hydraulic hose 2760 mm lg x 1/4" M/F	65	10266-04	Hub Cap	9340	9340	Hose clip
28	35	Main cover stay	66	10266-05	Wheel stud			
29	10234	Belt tensioner M20 & nut x 160 mm lg		10288	Wheel nut			
30	10236	Fold up safety bar		10285	Tyre 185 x 14			
31	251	Vee belt C4220 - special construction		10287	Wheel rim only 14"			
32	10249	Drum bearing top spacer		10271	Bottom panel assy - rear			
33	10230	Drum bearing 6210 2RS (C3)		10272	Bottom panel assy - front			
34	10231	Drum c/w bearings & spacer tube			Replaced by P.No's 10272L & 10272R			
35	31	Drum bearing spacer tube			Jack stand/less mount			
36	9172	Vee belt C5720 - special construction			Jack stand swivel mount (weld on)			
37	10254	Bolt on idler arm			Bolt M12 x 140 mm lg			
38	43A	Pulley - vee idler - c/w bearings			Fold down driveshaft rest			
39	141	Bearing 6304 2RS			Nyloc nut M12			
		50 mm internal circlip			intermediate drivehead assy fully assembled with input shaft			
		RH flat idler crank (shown)			intermediate drivehead housing - bare			
		LH flat idler crank			intermediate shaft			
		Nyloc nut M20			intermediate drivehead bearing 6208Z			
		Outer pulley belt guard			Circlip J 80			
		Nyloc nut M10			intermediate drivehead safety cover			
		141 UFO cutting blade			Drawbar section 1 bare			
					Drawbar section 2 bare - pre 1991			

PARTS NOT SHOWN

Item	Description
10270	Decal set 3100 mower
10272L	Front bottom cover LH lg replaces P. No 10272
10272R	Front bottom cover RH sm replaces P. No 10272
10289	Topping skirt for 3100
10290	3100 windrow mower
7990	Foam seal strip (per metre)
9321	Grease nipple M10 90
H3002	Hydraulic hose 2.10 mx 1/4" M/F
H3101	Hydraulic coupling std tractor O/R
H3102	Hydraulic hose adapter 1/4" to tractor O/R
H3103	Hydraulic hose fitting 1/4" M/F straight
H3104	Hydraulic hose fitting 1/4" M/F 90° M/M
H3107	Hydraulic hose fitting 90° 1/4" M/F
W245	PTO shaft 2400 series QR yoke each end 875 mm lg star profile tube
W243	PTO shaft 2400 series c/w freewheel device lemon tube 1850 mm lg