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MANUAL & PART LIST

MGW SERIES

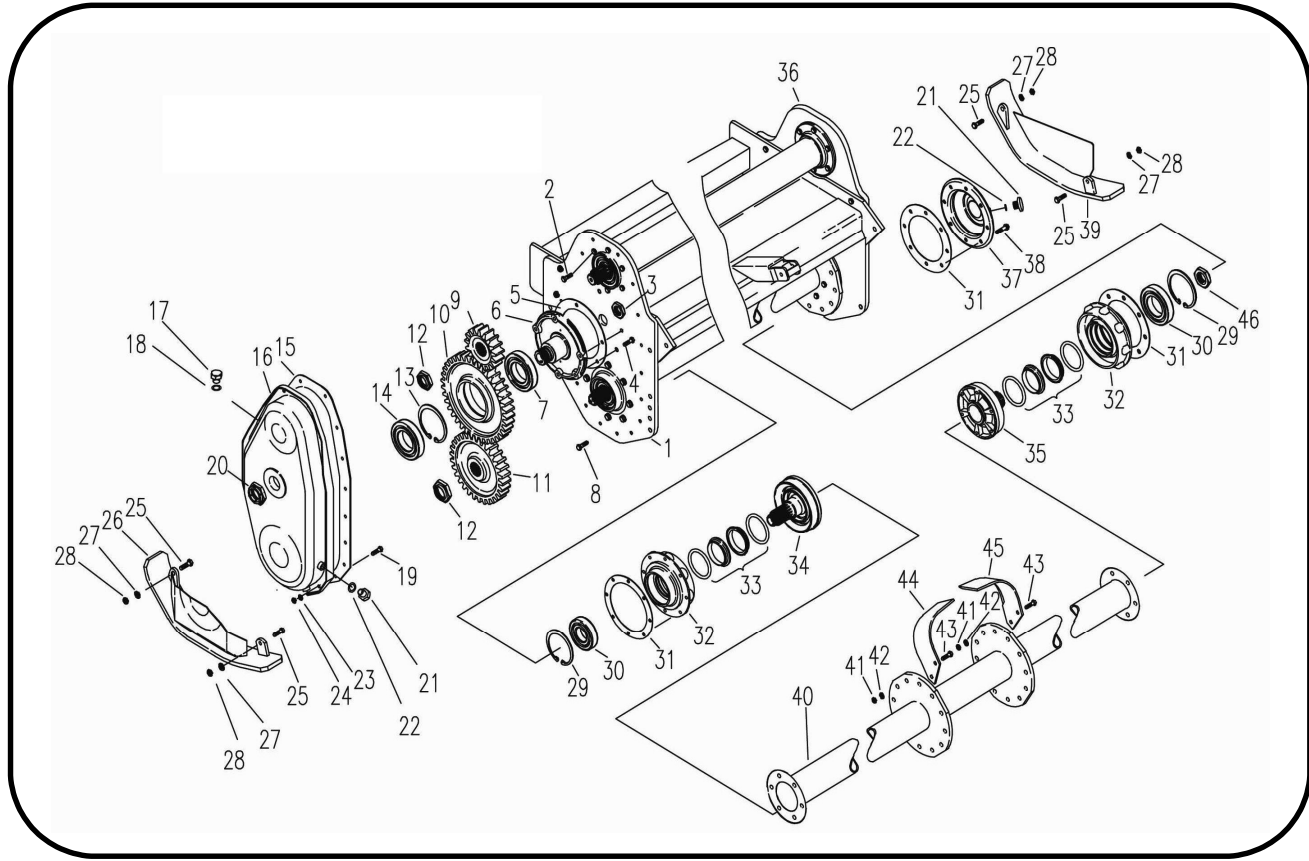


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◆ **MGW PART LIST (Side Plate & Rotor Shaft Group)** ◆



No.	Part No.	Part Name	Spec.
1	WR106 – 320	Side Plate(LH)	
2	WR106 – 353	Bolt	M12*1.25*35
3	WR106 – 374	Hard lock Nut	M35*1.5
4	WR106 – 353	Bolt	M12*1.25*30
5	WR106 – 371	Packing	1T
6	WR106 – 316	Idle Gear Shaft	
7	WR106 – 352	Ball Bearing	#6213
8	WR106 – 353	Bolt	M12*1.25*30
9	WR106 – 301	Gear	17T(m7.0)
10	WR106 – 315	Idle Gear	38T(m7.0)
11	WR106 – 317	Gear	30T(m7.0)
12	WR106 – 374	Hard lock Nut	M50*1.5
13	WR106 – 356	Snap Ring	C100
14	WR106 – 352	Ball Bearing	#6213
15	WR106 – 371	Packing	2.0t
16	WR106 – 306	Gear Case Group	3.2t
17	WR106 – 373	Plug Bolt	
18	WR106 – 361	Seal Washer	
19	WR106 – 353	Bolt	M12*1.25*25
20	WR106 – 374	Hard lock Nut	M45*1.5
21	WR106 – 373	Plug Bolt	
22	WR106 – 361	Seal Washer	
23	WR106 – 359	Spring Washer	M12*1.25

No.	Part No.	Part Name	Spec.
24	WR106 – 350	Nut	M12*1.25
25	WR106 – 353	Bolt	M12*1.25*60
26	WR106 – 312	Skid Group(LH)	
27	WR106 – 359	Spring Washer	d12
28	WR106 – 350	Nut	M12*1.25
29	WR106 – 356	Snap Ring	C100
30	WR106 – 352	Ball Bearing	#6309
31	WR106 – 371	Packing	1T
32	WR106 – ³⁰⁹ / ₃₁₀	Bearing Case	
33	WR106 – 302	Group Seal	870S070SJ
34	WR106 – 305	Rotor Drive Shaft(LH)	
35	WR106 – 304	Rotor Drive Shaft(RH)	
36	WR106 – 319	Side Plate(RH)	
37	WR106 – 308	Bearing Case Cover	
38	WR106 – 353	Bolt	M12*1.25*30
39	WR106 – 311	Skid Group(RH)	
40	WR106 – 504	Rotor Shaft Group	
41	WR106 – 550	Nut	M14
42	WR106 – 559	Spring Washer	M14
43	WR106 – 553	Bolt	M14*1.5
44	WR106 – 501	Blade(RH)	
45	WR106 – 502	Blade(LH)	
46	WR106 – 374	Hard lock Nut	M45*1.5

5. Always use the seat provided on the tractor with safety belt when working and ensure the tractor has a ROPS certified safety frame or cab.
6. Monitor the tractor gauges and listen to the engine and Rotavator for unusual noises, if in doubt stop the tractor and check both the Tractor and Rotavator.
7. If there is a need to get off the tractor, stop the engine, apply the brake and ensure the Rotavator is on the ground. On hilly terrain, also engage the lowest gear in the gearbox after stopping the engine. (there have been cases where, in steep terrain, the handbrake was not enough to hold the tractor)

Driving on the road

1. When driving on the road, ensure that the PTO is stopped before raising the Rotavator to maximum height.
2. Adjust the transport speed to the conditions and gradient of the road and allow for the fact that the weight of the Rotavator in the raised position, and will lighten the front of the tractor. This is particularly important when driving on steep road.
3. When traveling on the road at night, ensure that the width of the Rotavator is within the legal limits for your country. Check if all head lights, tail lights and the rear work lights are on. In some countries, a revolving orange beacon is also required when traveling on the road.

Maintenance after each use

1. After finishing work, wash the Rotavator and check the oil and the transmission. Grease any points fitted with a grease nipple, and where possible. Store the machine under cover.
2. Ensure that the machine is stable when removed from the tractor, and is standing at a height which makes putting it back on the tractor easy. To ensure that playing children are not harmed by any movement of the Rotavator, use props to stabilize any instability of the machine.
3. For long term storage, fully service and check the machine before placing it under cover. (Long exposure to adverse weather can shorten the working life of some components in the machine)

◆ SAFETY & INSTRUCTIONAL DECALS ◆

ATTENTION! BE ALERT! YOUR SAFETY IS INVOLVED!
Replace Immediately If Damaged!



Follow all safety rules and safety decal information.



Blade contact or thrown objects can cause serious injury or death.

Keep bystanders away.



Do not put your hands under or into rotavator when engine is running.



Do not put your feet under or into rotavator and keep safe distance.



Do not work under the machine without blocking prevents equipment.



Be extremely careful handling various parts of the machine. They are heavy and hands, fingers could be crushed or pinched between tractor and implement

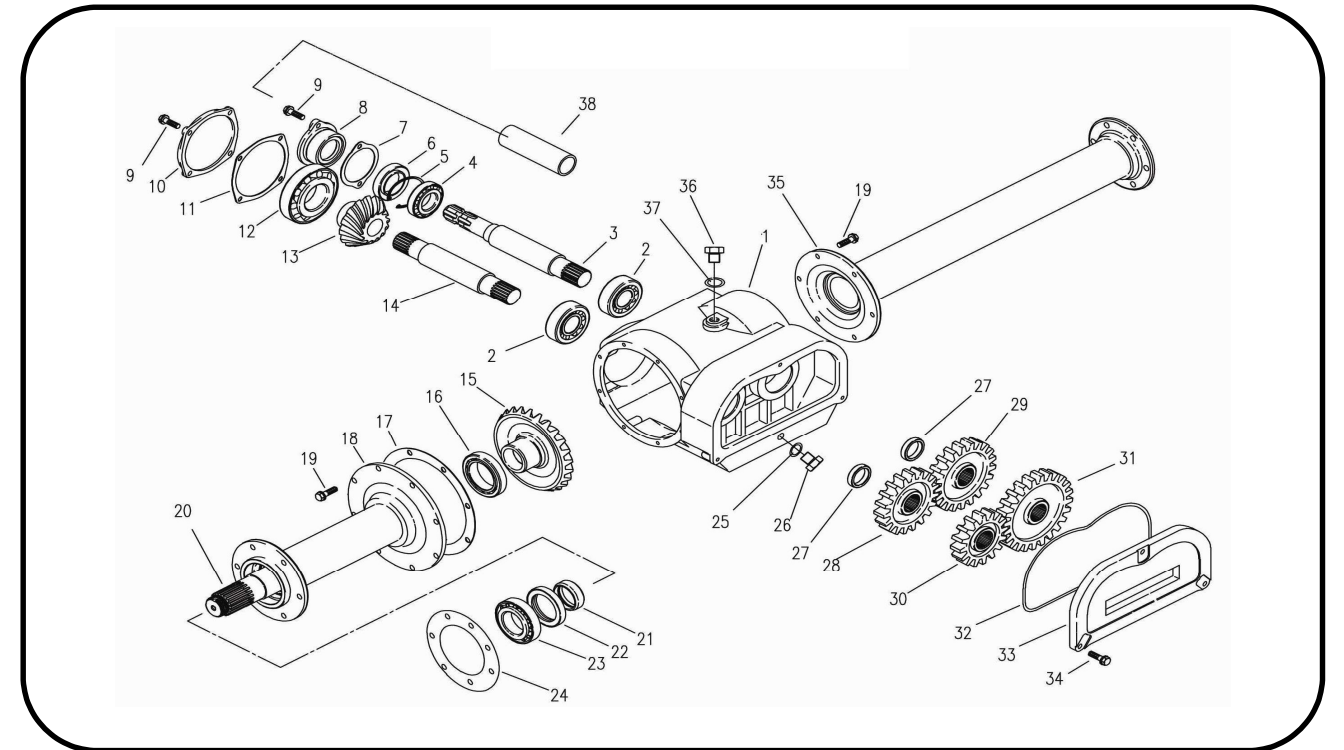


Keep away from rotating parts while in operation.



Do not ride or stay on implement while in operation or when it is being moved.

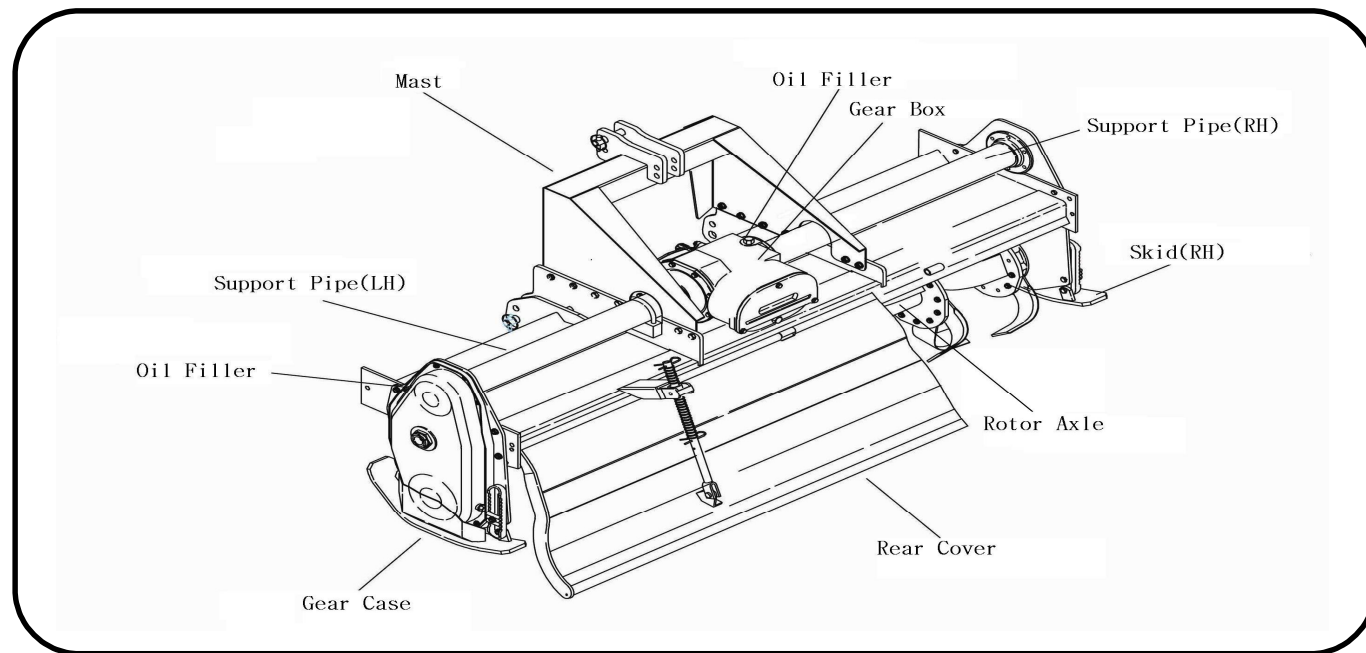
◆ MGW PART LIST (Gear Box Group) ◆



No.	Part No.	Part Name	Spec.
1	WR106 - 102	Gear Box	
2	WR106 - 170	Taper roller Bearing	#32308J
3	WR106 - 112	Input Shaft	d48
4	WR106 - 170	Taper roller Bearing	#32210J
5	WR106 - 156	Snap Ring	C80
6	WR106 - 163	Oil Seal	TC35508
7	WR106 - 171	Packing	0.5T
8	WR106 - 114	Input Shaft Cover	
9	WR106 - 153	Bolt	M10*1.25*40
10	WR106 - 109	Bevel Pinion Cover	
11	WR106 - 171	Packing	0.5T
12	WR106 - 170	Taper roller Bearing	#30312-A
13	WR106 - 117	Pinion	14T(m7.5)
14	WR106 - 118	Pinion Shaft	d48
15	WR106 - 107	Bevel Gear	26T(m7.5)
16	WR106 - 170	Taper roller Bearing	#32013XJP6X
17	WR106 - 171	Packing	0.5T
18	WR106 - 202	Support Pipe(LH)	
19	WR106 - 153	Bolt	M10*1.25*30
20	WR106 - 101	Drive Shaft	D50*()

No.	Part No.	Part Name	Spec.
21	WR106 - 169	Collar	D65*d55
22	WR106 - 163	Oil Seal	TC659013
23	WR106 - 170	Taper roller Bearing	#32211J
24	WR106 - 171	Packing	M35*1.5
25	WR106 - 161	Seal Washer	
26	WR106 - 173	Plug Bolt	
27	WR106 - 177	Spacer	D50.8*5.3T*8
28	WR106 - 110	Change Gear	16T(m6.0)
29	WR106 - 110	Change Gear	19T(m6.0)
30	WR106 - 110	Change Gear	21T(m6.0)
31	WR106 - 110	Change Gear	24T(m6.0)
32	WR106 - 162	O-Ring	D270*5.7
33	WR106 - 104	Gear box Rear Cover	
34	WR106 - 153	Bolt	M10*1.25*40
35	WR106 - 201	Support Pipe(RH)	
36	WR106 - 173	Plug Bolt	
37	WR106 - 161	Seal Washer	
38	WR106 - 113	Input Shaft Rubber Cover	

◆ THE STRUCTURE OF ROTAVATOR ◆



◆ CHECKING OIL ◆

Type	Checking Part	Capacity	Lubricant	Checking Frequency				Method
				Daily	50Hours	100Hours	200Hours	
MGW	Gear Box	4.7L	Gear Oil SAE 90					Supplement and change the oil after checking the optimum and viscosity with oil gauge
	Gear Case	3.5L			△		○	
	Bearing Case Cover	0.27L						

As with all mechanical equipment, the running in period is critical in ensuring a maximum trouble free service life of the machine.

While running in minute, metal particles can be generated from the bedding in of components.

To remove these particles and any other impurities, it is very important that after 50 hours all oils are drained.

As with all oil changes, Gear boxes and gear or chain cases should be drained while the oil is at operating temperature and any impurities are suspended in the oil.

This allows all of them to be removed.

Note on service

- Always use the recommended oil and do not replace it with grease.
- Stop the Rotavator and allow the oil to settle before checking the oil level.
- Always clean around the area where oil level checks are made on both gearboxes and gear cases to avoid contamination.
- Always change oils when they are at operating temperature to ensure removal of any impurities.
- Use only oil from reputable manufacturers and never recycled oil.

◆ TROUBLE SHOOTING CHART ◆

In the even of any problem, it is very important to deal with the problem as quickly as possible to avoid further problems.

To assist with this, the following trouble shooting chart deals with a range of items, the symptoms and the way to rectify the problem for anything not covered by this chart, please consult your local dealer.

Problem	Part	Symptom	Cause	Corrective Action
	Spline	Noisy	Lack of Grease	Grease it
PTO Shaft	Universal Joint	Vibration	Not aligned	Align Joint
		Vibration Breakage	Improper Angle	Operate at correct angles and not in the raised position
Gear Box	Gear / Bearing	Noisy	Lack of Oil	Drain, flush and refill
		Broken Gear or Bearing	Lack of Oil or overloading	Replace parts clean and fill with oil
Chain Case	Chain	Chain Failure	Broken master link	Replace link
			Chain Worn out	Replace Chain
		Chain tension device	Overload / Lack of Oil	Replace faulty parts Drain oil
Gear Case	Gear	Gear failure or noise		
Blade Shaft	Blade	Broken	Stony soil / overload	Replace blades work within capacity
	Flange	broken / Distorted	Hit obstacle or severe overload	Replace shaft
All Parts containing oil		Oil leaks	Loose Bolts Faulty gasket Faulty seal Faulty o-ring	Tighten Replace Replace Replace

◆ *DEMENSION AND SPECIFICATION* ◆

Model	Body(mm)			Weight (kg)	Flange (pcs)	Blade (pcs)	Working Width (mm)	Tractor (HP)
	Length	Width	Height					
WR2050MGW	2285	1030	1200	550	7	42	2050	65~100
WR2150MGW	2380	1030	1200	610	8	48	2150	68~100
WR2250MGW	2488	1030	1200	640	9	54	2200	80~100
WR2350MGW	2541	1030	1200	680	9	54	2350	80~110
WR2500MGW	2580	1030	1200	720	9	54	2400	85~110
WR2600MGW	2790	1030	1200	750	10	60	2600	90~150
WR2850MGW	3030	1030	1200	760	11	66	2850	100~150
WR3050MGW	3265	1030	1200	780	12	72	3050	110~175

◆ *CHANGE ROTAVATOR SPEED* ◆

Disengage the PTO and lower the Rotavator on the ground.

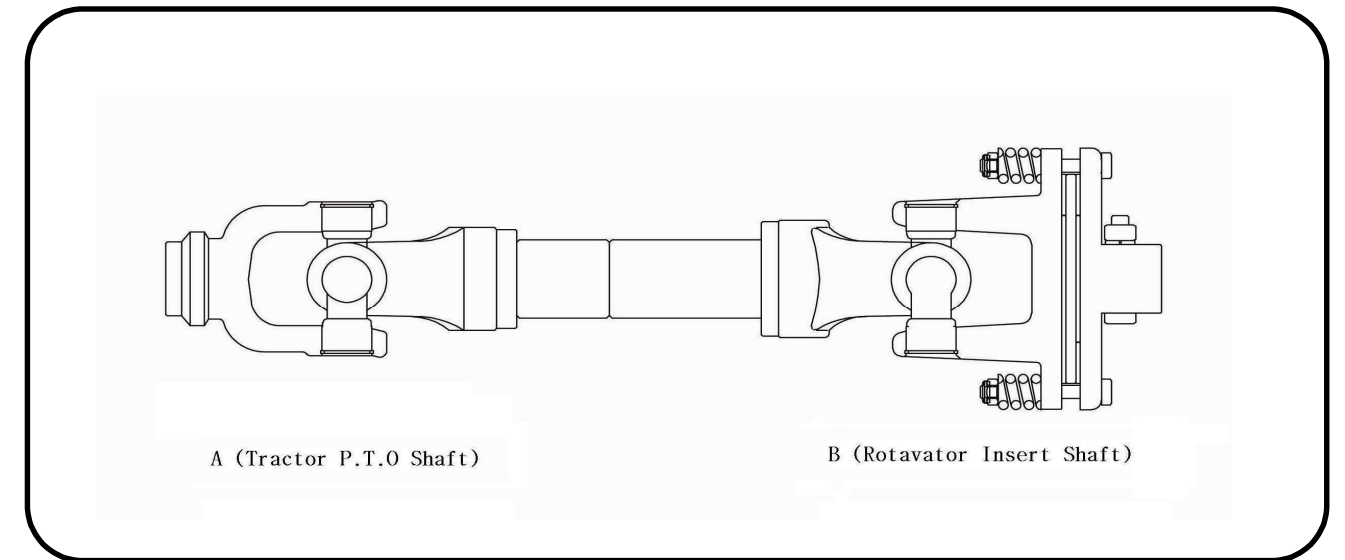
Before doing any mechanical work ensure that the outside of the gearbox is perfectly clean and dry to avoid any contamination of moving parts.

- Drain the oil from the gearbox in a clean container.
- Avoid contamination of the oil by covering the container.
- Remove all nuts from the gearbox side cover and remove the cover.
(ensure that the gears do not fall on the ground)
- Change the gears to the ratio required.
- Wipe the inside of the gearbox side plate and the edge of the gearbox to ensure that the join is perfectly clean.
- Place a light coating of the grease on the mating surface of the gearbox to ensure that the join is perfectly clean.
- Refill the gearbox with oil to the correct level and work the rotavator for a short time and then check that there are no oil leaks.

Gear Box Chart (*Default)

Speed	Change Gear		Ratio	Rotavator Speed@ 540 PTO rpm
	Pinion Shaft	Input Shaft		
1 st	19 T	16 T	1 : 0.1907	103RPM
2 nd	17 T	18 T	1 : 0.2588	140RPM
*3 rd	18 T	17 T	1 : 0.3161	171RPM
4 th	16 T	19 T	1 : 0.4290	232RPM

◆ *CONNECTING THE PTO SHAFT* ◆



- Ensure that the universal joints at each end of the PTO shaft are in alignment as shown in the drawing.
If they are not, rectify the problem before attempting to fit the shaft.
(when universal joints on a PTO shaft are not correctly aligned they will cause severe vibration and prolonged use without correction will destroy the PTO shaft)
- Fit the PTO shaft to the shaft on the Rotavator and ensure that the quick release button or retaining pin/bolt is secure.
- Now fit the other universal joint to the tractor PTO outlet and again ensure that the quick release button or retaining pin/bolt is secure.
- Raise the Rotavator approx"(10cm) of the ground and adjust the sway chains (or bars) so the Rotavator is central behind the tractor and the tractor PTO shaft and the Rotavator input shaft are as near as possible to being in line.
- Raise and lower the Rotavator gently with the three point linkage to ensure the sway chains are adjusted correctly for a range of heights.
- As a final check lower the Rotavator until it is just in the ground and engage the PTO and increase revolutions for 540 rpm PTO speed. Check that there is no vibration then starting the tillage.
- It is very important that the Rotavator is not operated in the raised position as this will damage the universal joints or the PTO shaft or both. Always stop the PTO before raising the Rotavator.
(Some modern tractors have an automatic setting on the PTO and it is recommended that this be used where it is fitted)