HOWARD
ROTAVATOR
REGD TRADE MARK

Gem V
Instruction Book
and
Spare Parts List

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TO HER MAJESTY THE QUEEN
MANUFACTURERS OF
AGRICULTURAL EQUIPMENT
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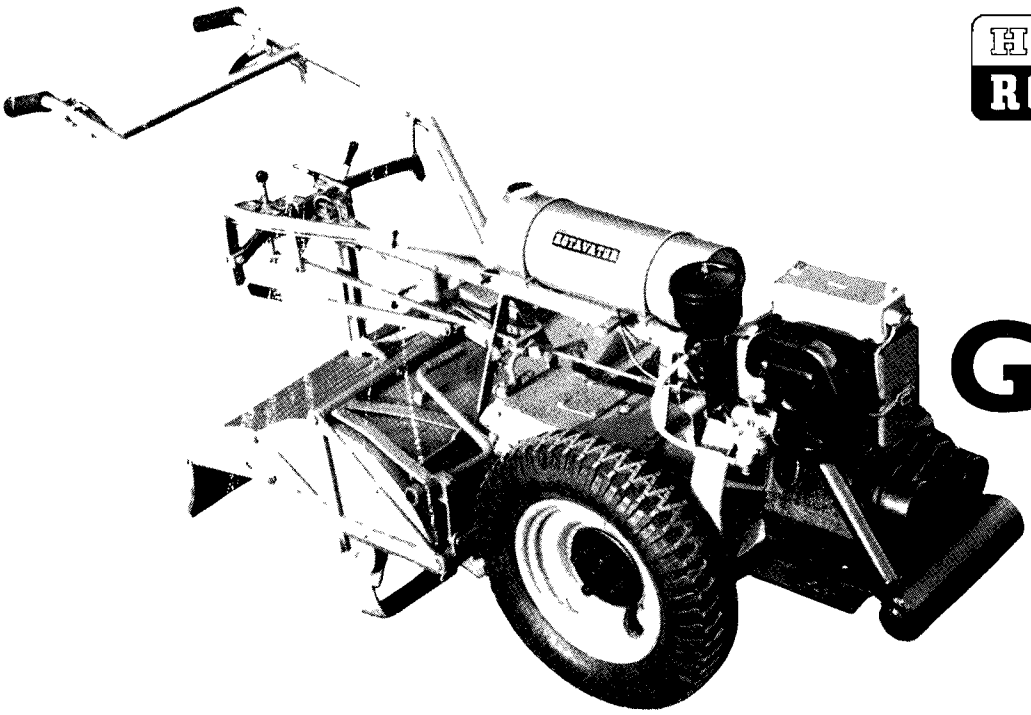
HOWARD ROTAVATOR



Gem V

SPECIFICATION

Engine

(a) Howard 810 c.c. 4 stroke Twin Cylinder Petrol or V.O. Engine—developing 12 b.h.p. at 2,000 r.p.m. 3″ diameter bore x 3½″ stroke.
(b) Sachs 2-stroke single cylinder water cooled Diesel Engine. 499 c.c. developing 9 h.p. at 2,000 r.p.m.

Clutch

Heavy duty twin dry plate.

Gearbox

Three speed and Reverse Transmission by hardened gears running in oil. All shafts mounted on ball bearings. Differential gear for easy turning, automatically locked when rotor is engaged.

Speeds

1st Gear	.87 m.p.h.	(1.4 k.p.h.)
2nd Gear	1.3 m.p.h.	(2.1 k.p.h.)
3rd Gear	2.82 m.p.h.	(4.5 k.p.h.)
Reverse Gear	1.69 m.p.h.	(2.7 k.p.h.)

Fuel Capacity

2 gallons (9 litres).

Dimensions

(Petrol driven model).
Length: 6′ 8″ (203 cms.).
Width: 20″ Rotor 2′ 1″ (63.5 cms.).
24″ ,, 2′ 5″ (74 cms.).
30″ ,, 2′ 11″ (89 cms.).

Weight

Petrol model approximately 5½ cwt. (280 kg.).
Diesel ,, ,, 6½ ,, (330 kg.).

Oil Capacities

Gearbox—6 pints (3.4 litres).
Chaincase—¾ pint (¼ litre).

Wheels

20″ tyres.
Tyre pressure 20 lb. per sq. in.

Controls

1. Rod operated gear lever.
2. Rod operated rotor engagement lever.
3. Rod operated clutch lever with safety reverse interlock.
4. Engine governor control by Bowden cable.

Rotavator

Drive by heavy duty ¾″ pitch roller chain.
Rotor diameter 18″ (46 cms.).
Rotor speed 172 r.p.m. at 2,000 r.p.m. engine speed.
Tillage width—20″, 24″ or 30″ (51 cms., 61 cms. or 76 cms.).

P.T.O. (Optional fitment)

10″ diameter pulley, 4″ face.
500 r.p.m. } at 2,000 r.p.m. engine speed.
Belt speed 1,309 r.p.m. }

The New Machine

Before attempting to start the 'GEM', study the Instruction books for both machine and engine.

Check all oil level and lubrication points.

Run the machine lightly at first, and gradually increase the loads during the first 25 hours' work. Never allow the engine to labour during this period.

After the first five hours of operation all nuts and bolts should be checked for tightness, including the two Main Hub Nuts.

Opening the Machine

Start the engine according to the engine instruction book. Lift the clutch lever and engage the appropriate gear. Do not force the gears into mesh. If they do not immediately engage, release the clutch lever momentarily.

The slight noise which may be heard when the clutch is engaged is due to the positive action of the twin plates.

When in a position to start rotavating, lift the clutch lever again, and move the rotor engagement lever to the 'IN' position. Increase the engine speed and gently release the clutch, allowing the machine to pull itself into work.

Note: The rotor engagement lever also operates the differential lock. The lever must therefore be put into the 'OUT' position for turning.

The depth is controlled by pressing the depth control lever to the right, which frees the skid in the socket and allows it to be repositioned in the desired hole. There are two alternative holes in the skid itself. The lower one will permit a greater depth to be obtained.

Choose the depth to suit the crop to be planted. If this is deeper than can be obtained in one pass without the engine labouring, several passes should be made at progressively increasing depths.

First gear should be used for heavy work, and where a fine tilth is required. Second gear for normal conditions. Top gear for light hoeing and road work.

Where a coarse tilth is required the rotor shield should be raised as high as possible with the trailing board folded back. The rotor should always be disengaged when reversing as well as when turning at headlands.

To stop the machine, raise the clutch and move the gear lever to the neutral (centre) position. Move the rotor engagement lever to the 'OUT' position and then release the clutch.

To reverse, operate as follows:

Pull up clutch lever, move gear lever to Reverse (which operates safety interlock) release clutch lever. No movement takes place until the clutch lever is pushed down. Removal of pressure automatically stops the machine. To disengage levers pull up the clutch lever and move lever to Neutral.

It is often found that the machine is most easily turned in reverse gear, especially when ground conditions are very wet, and a considerable amount of earth may have adhered to the underside of the shield. Provided the blades are lifted clear of the ground, the 'GEM' can be turned quite easily, either in Forward or Reverse gear. If there appears any difficulty in turning check that the differential lock is fully disengaged when the rotor lever is pulled back. Adjustment can be made on the differential lock control rod should this not be the case.

The handlebars can be adjusted for height to suit the operator by means of the alternative holes provided in the handlebar lugs. The handlebars can be swung to either side by pressing the handlebar positioning lever to its full extent, and swinging the handlebar to whichever side is desired. A hole is provided at each end of the slide to hold it in position at that point.

Lubrication and Maintenance

OILS

Use only good quality oils S.A.E. 90 Grade should be used in the gearbox and chaincase, and engine oil in the other lubricating points.

AIR CLEANER

Pay particular attention to the Air Cleaner at all times. It may be necessary to change the air cleaner oil twice daily under dusty conditions. If the oil is not changed in time the accumulated dust will raise the level to a point where the oil is sucked into the engine, where the absorbed dirt would cause immediate and expensive damage. Never allow sediment to build up in the air cleaner base.

Routine Maintenance

Every 10 hours' work or daily (time required 5-15 minutes)

1. Check Engine oil level.
2. Check level and condition of oil in air cleaner. Clean and renew if necessary. (Twice daily in extremely dusty conditions.)
3. Check tightness of blade bolts. Straighten any bent blades with blade setting bar.
4. Watch for signs of undue rotor clutch slip. Adjust if necessary on the four spring-loaded clutch nuts on the left end of the rotor. The normal setting is to tighten these up so that the springs are fully compressed and then slacken back about half a turn.

LUBRICATION and MAINTENANCE CHART

EVERY 25 HOURS
LUBRICATE THROTTLE CABLE, GEAR CLUTCH AND ROTOR CONTROL PIVOTS, HANDLEBAR SWIVEL AND SLIDE SHIELD HINGES, DEPTH CONTROL MECHANISM

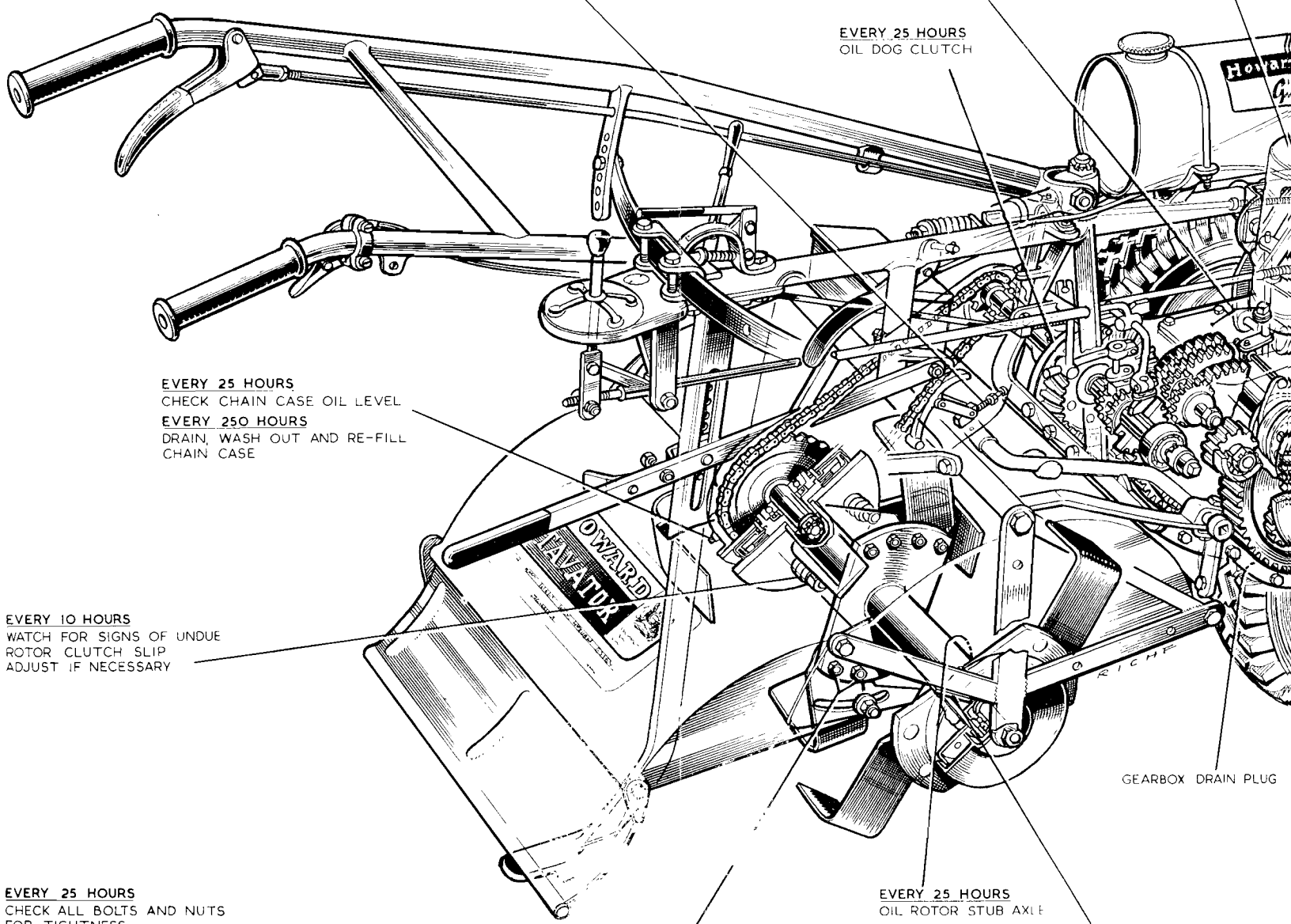
EVERY 25 HOURS
CHECK CHAIN TENSION

EVERY 25 HOURS
CHECK GEARBOX OIL LEVEL

EVERY 250 HOURS
DRAIN AND RE-FILL GEARBOX

EVERY 10 HOURS (OR TWIC
IN VERY DUSTY CONDITIONS
CHECK AIR CLEANER OIL

EVERY 25 HOURS
OIL DOG CLUTCH



EVERY 25 HOURS
CHECK CHAIN CASE OIL LEVEL

EVERY 250 HOURS
DRAIN, WASH OUT AND RE-FILL CHAIN CASE

EVERY 10 HOURS
WATCH FOR SIGNS OF UNDUE ROTOR CLUTCH SLIP
ADJUST IF NECESSARY

GEARBOX DRAIN PLUG

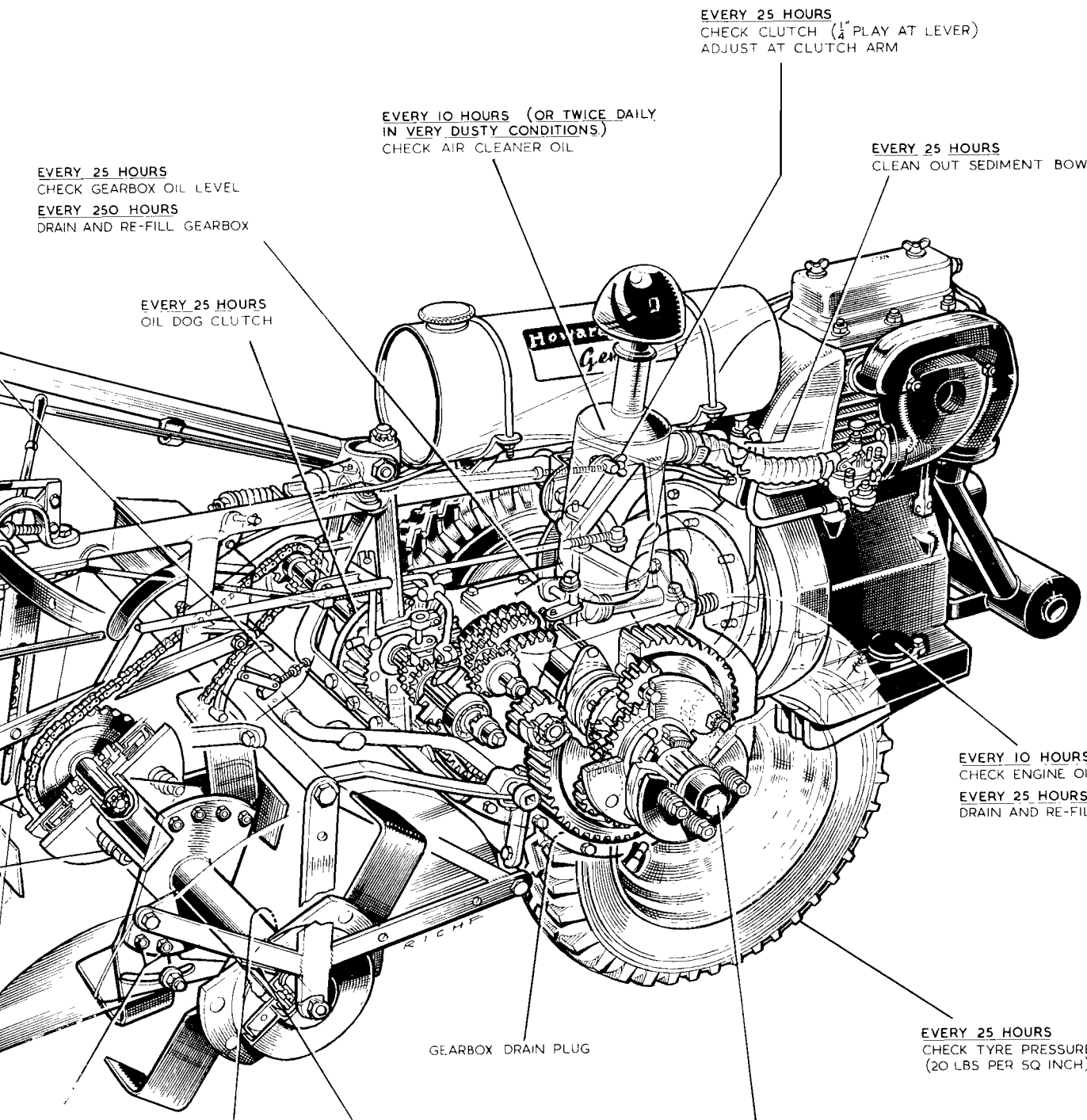
EVERY 25 HOURS
CHECK ALL BOLTS AND NUTS FOR TIGHTNESS

EVERY 10 HOURS
CHECK FOR BENT BLADES AND BLADE BOLT TIGHTNESS

EVERY 25 HOURS
OIL ROTOR STUB AXLE

EVERY 25 HOURS
CHECK WEED CUTTER BLADES
ADJUST IF NECESSARY

RICATION and MAINTENANCE CHART



EVERY 25 HOURS
CHECK CLUTCH ($\frac{1}{4}$" PLAY AT LEVER)
ADJUST AT CLUTCH ARM

EVERY 10 HOURS (OR TWICE DAILY IN VERY DUSTY CONDITIONS.)
CHECK AIR CLEANER OIL

EVERY 25 HOURS
CLEAN OUT SEDIMENT BOWL

EVERY 25 HOURS
CHECK GEARBOX OIL LEVEL

EVERY 250 HOURS
DRAIN AND RE-FILL GEARBOX

EVERY 25 HOURS
OIL DOG CLUTCH

EVERY 10 HOURS
CHECK ENGINE OIL LEVEL

EVERY 25 HOURS
DRAIN AND RE-FILL ENGINE SUMP

GEARBOX DRAIN PLUG

EVERY 25 HOURS
CHECK TYRE PRESSURE
(20 LBS PER SQ INCH)

EVERY 250 HOURS
CHECK HUB NUTS FOR TIGHTNESS

EVERY 25 HOURS
OIL ROTOR STUB AXLE

HOUR
OR BENT BLADES AND
OLT TIGHTNESS

EVERY 25 HOURS
CHECK WEED CUTTER BLADES,
ADJUST IF NECESSARY

RECOMMENDED LUBRICANTS

GEARBOX AND CHAIN CASE	S.A.E. 90
ROTOR DOG CLUTCH ROTOR STUB AXLE DEPTH CONTROL WHEEL (IF FITTED)	USE ENGINE OIL.

Every 25 hours' work (time required about 30-45 minutes):

1. Maintain engine as per Instruction Book.
2. Check gearbox oil level with dipstick.
3. Give several squirts from an oil-can (engine oil) to the rotor dogs. The small square headed plug on the rotor dog clutch housing gives access to this point.
4. Check chaincase oil level. Oil should just seep over the oil level plughole (situated at rear of chaincase) when blades are touching the ground.
5. Lubricate rotor stub axle bearing with an oil can (the oilway screw is situated on the rotor tube just inside the right hand flange).
6. Lightly oil throttle cable, gear, clutch and rotor control pivots, handlebar swivel and slide, shield hinges and depth control mechanism.
7. Check the chain tension and reset if necessary to give a total up and down movement of $\frac{3}{8}$ in. to $\frac{1}{2}$ in. This can be checked with a suitable screwdriver inserted through the oil filler hole and turned to grip the chain between the links. Loosen locknut on the external adjuster (bottom front of chaincase), and screw in the adjusting screw to increase chain tension. Then retighten locknut.
8. Check engine clutch adjustment, and reset if necessary, to give approximately $\frac{1}{4}$ in. free movement at the handlebar lever. Adjustment should be taken up at the front clutch control arm by means of the wing nut.
9. Remove and clean out the sediment bowl on the fuel tank.
10. Check all nuts and bolts for tightness.
11. Check tyre pressures to 20 lb. per sq. in. (4.1 kg. per sq. cm.).
12. Adjust weed cutter blades if necessary to just clear the outside blades of the rotor.

Every 250 hours' work (time required about 60 minutes):

1. Drain and refill gearbox with fresh oil. Drainplug is at the lowest part of the gearbox on the inside face. Use 6 pints (3.4 litres) S.A.E. 90 gear oil.
2. Remove the chaincase. Wash out with petrol (including chain). Replace and refill with fresh oil - $\frac{3}{8}$ pint ($\frac{1}{4}$ litre) S.A.E. 90 gear oil.
3. Check the hub nuts for tightness. These are the big nuts which hold the hubs on to the taper splined shafts.

Road Wheels

Note. The Road Wheels are mounted on the hubs by a friction clutch device. These are adjusted so that the wheels have sufficient grip to pull the machine, but will slip if they become jammed with an obstruction between the wheels and the frame.

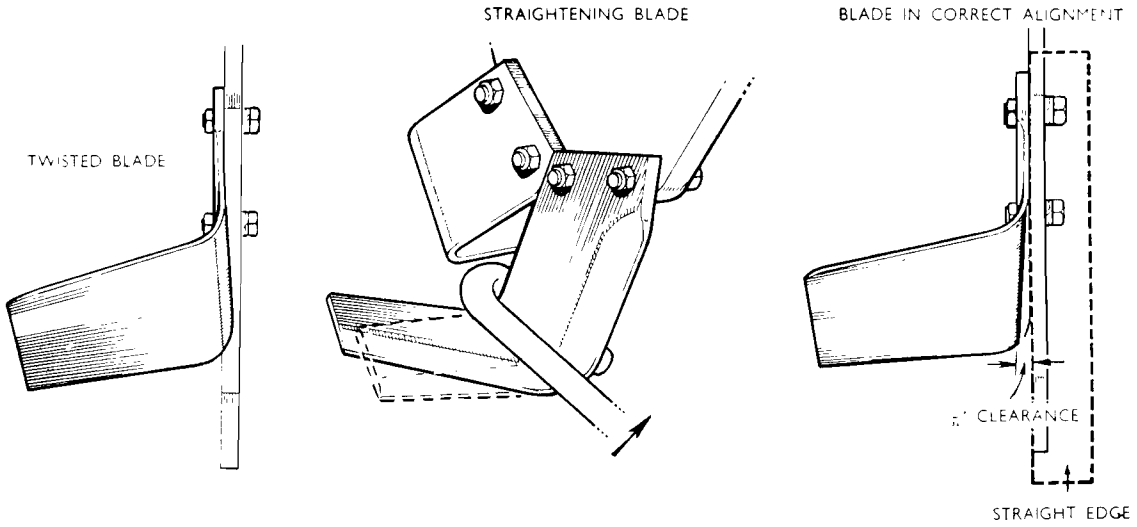
Normal adjustment is to tighten each nut until the springs are fully compressed and then slacken back half a turn.

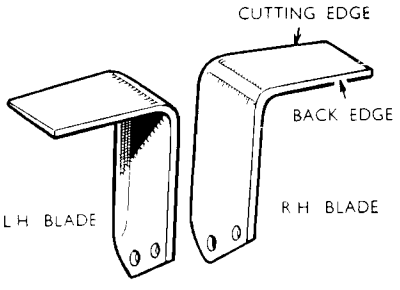
Should the wheels appear not to be driving, check that this adjustment is correct.

BLADES

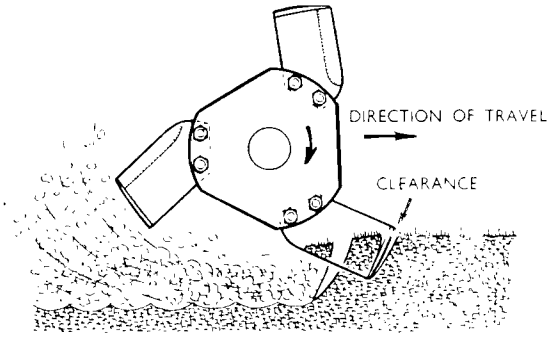
The 'GEM' is normally delivered with the blades already fitted. If it is necessary to fit your own blades, this is the way it should be done:

1. Identify left hand and right hand blades.
2. The left hand end flange carries two right hand blades; The right hand end flange carries two left hand blades.
3. The centre flange (or flanges, dependent on the width of the rotor), carries two left hand and two right hand blades leading. The blades should be fitted to the left hand side of the centre flanges, with the heads of the bolts in contact with the blades and with the spring washers fitted under the nuts.





How to identify right and left-hand blades.



Correct blade setting showing clearance at back of blade

Making the most of your Gem

GENERAL

The Howard Rotavator 'GEM' will cultivate to a maximum depth of 9 in. (23 cms.). On certain, especially the heavier, types of soil, this depth will not be obtained in a single pass. Where cultivation in depth is needed, a first pass should be made at 3-4 in. (7-10 cms.) and followed by a second at full depth.

If the surface of the ground is very hard or baked, the depth control should be adjusted so that the machine just bites the surface. Further passes should then be made until the required depth is reached.

On heavy land which is to be laid up for the winter, the surface should be left rough. By using the ridging or furrowing attachment during this final or late autumn cultivation the land can be left in ridges to promote better drainage and to expose a greater surface area to weather.

If heavy land is rotavated too finely and left bare to the winter rains, the soil may run together, and spring cultivations will be difficult.

On light land two courses are open. It may either be left rough, or it may be rotavated to medium depth and sown to a green crop, e.g. rye. The green crop will prevent the leaching out of the soil nitrogen. In the early part of the year the crop is rotavated. After a week or ten days, the spring seed bed may be prepared; this rotavation should be more shallow than that which worked in the green crop.

SEED BEDS

In ground which has been cultivated properly, seed beds should seldom exceed 2 in. (5 cms.) in depth, except for certain crops. Seeds require a well-aerated soil with a firm bottom. Some small seeds require a seed bed to be lightly consolidated. This is particularly important on light soil, where consolidation will bring moisture nearer to the seedling plant.

Weeds are at their most dangerous when the crop is in the seedling stage. To obtain weed-free seed beds, the ground should be prepared a few weeks in advance of the sowing dates. Rotavation should be carried out at a depth of 4 in. (10 cms.) and this causes any weed seeds to germinate. These weeds may be turned in by a second rotavation, which will prepare the seed bed at the same time. It is most important that this second rotavation is shallower than the first. Remember that the ground is now more open and the machine will consequently tend to dig more deeply.

WEED CONTROL

Rotavation produces a well-aerated warm seed bed in which germination takes place readily. Inevitably, these conditions also favour weed seeds.

Weeds are eliminated by preventing them from reaching flower or from feeding the deep tap roots or rhizomes. Weeds are killed most easily and inexpensively by rotavating them directly they have shown green. Annuals will be killed off outright and perennials will be reduced until they too, die out. This is true even of such persistent weeds as couch and twitch.

ROW-CROP WORK

Weeds between rows may be controlled by rotavation under almost all conditions while the weeds are small. This will not prevent weeds growing in the rows themselves. Such weeds must be controlled by hand-hoeing when small. Should land become filthy because these weeds have been allowed to seed, the following crop should be a cleaning crop, e.g. roots or potatoes which will give a period of several weeks in the early part of the year when the weed seeds will shoot and can be killed by rotavation. In planning your crops so that the best use may be made of the 'GEM'; two or three inches over the effective width should be allowed on either side of the machine.

GREEN MANURING

Land not immediately required may be sown down to such crops as mustard or rye grass during the spring and summer, or rye during the winter.

These crops should be allowed to mature, if they are to be used as green manures; they will then have the best effect on the soil. But a winter cover crop will preserve plant foods which would otherwise be leached away, and need not be allowed to mature.

LAND RECLAMATION

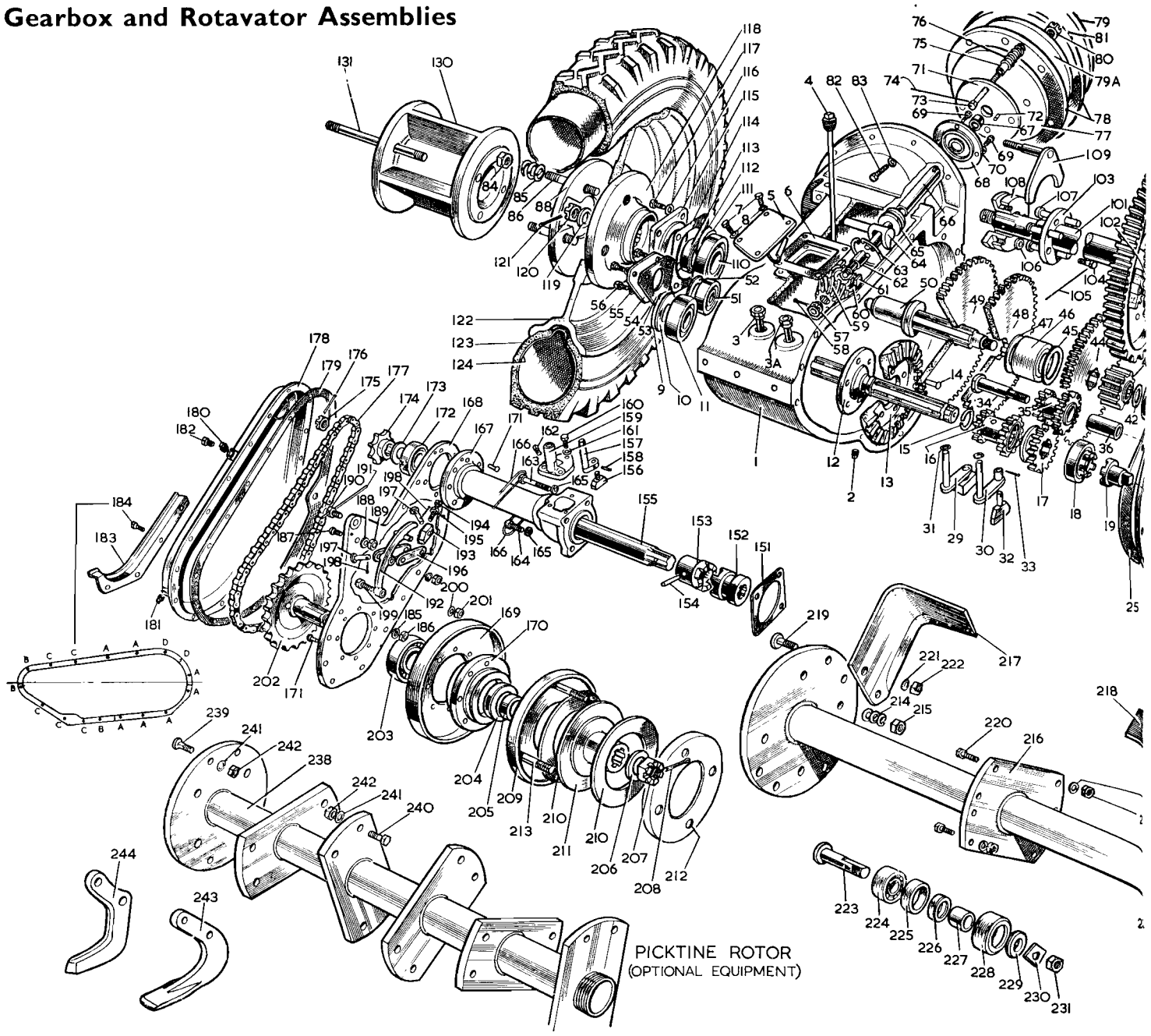
The 'GEM' may also be used for bringing derelict land back into cultivation. When virgin land is being cultivated, the first pass should be at shallow depth Depth can be increased by subsequent passes made at intervals of about a week or ten days.

Parts List

IMPORTANT. When ordering spare parts always give the serial number of your machine. Then give the part number (not the illustration number) and description. We cannot guarantee that correct parts will be supplied unless these numbers are quoted.
In the following parts list all directions are given left or right looking forward from the back of the machine.
The right to alter and/or amend all designs, specifications and/or prices quoted without prior notice is strictly reserved.

Illus. No.	Part No.	Description	No. off.
		GEARBOX	
1	62907	Gearbox Casing	1
2		Drain Plug $\frac{1}{4}$" B.S.P. Sq. Head, Taper Plug	1
3	G.481	Selector Bush	1
3A	62913	Selector Bush	1
4	G.476	Dipstick	1
5	26908	Inspection Cover	1
6	25185	Inspection Cover Gasket	1
7		Setscrew $\frac{1}{4}$" B.S.W. x $\frac{1}{2}$" long, Hex. Head	4
8		Spring Washer $\frac{1}{4}$" dia.	4
9	25530	Jackshaft Bearing Shim	As Req'd
10	G.461	Jackshaft Shim	As Req'd
11	BRM.1	Ballbearing 1" i.d. x $2\frac{1}{2}$" o.d. x $\frac{3}{4}$" w. (Hoff.MS.10)	1
12	25029a	Jackshaft	1
13	25008	Crownwheel	1
14		Rivet $\frac{5}{16}$" dia. x $\frac{3}{4}$" long, Round Head ...	6
15	G.436	Special Circlip, Anderton No. 900/100 ...	1
16	25005	Double Pinion	1
17	62914	Single Pinion	1
18	G.437	Starting Dog Bearing	1
19	G.373	Starting Dog	1
20	G.402	Starter Dog Bearing Housing Gasket ...	1
21	G.374	Starter Dog Bearing Housing	1
22		Setscrew $\frac{3}{8}$" B.S.W. x $\frac{7}{8}$" long, Hex. Head ...	4
23		Spring Washer $\frac{3}{8}$" dia.	4
24	62908	Gearbox Cover	1
25	25050	Cover Gasket	1
26		Setscrew $\frac{5}{16}$" B.S.W. x $\frac{7}{8}$" long, Hex. Head	14
27		Spring Washer $\frac{5}{16}$" dia.	14
28	25059	Mills Pin $\frac{5}{16}$" dia. x $\frac{5}{8}$" long, GP.2	2
29	25115	Speed Change Selector	1
30	62910	Reverse Selector	1
31	25648	Washer	As Req'd
32	25072	Reverse Selector Block	1
33		Split Pin $\frac{1}{16}$" dia. x $\frac{3}{4}$" long	1
34	25026	Reverse Idler Pin	1
35	62915	Reverse Idler Gear	1
36	25034	Reverse Idler Bush	1
37		Washer $\frac{1}{2}$" dia.	1
38		Nyloc Nut $\frac{1}{2}$" B.S.F. Type NT/F.166 ...	1
39	25038	Special Nut	1
40		Split Pin $\frac{5}{32}$" dia. x $1\frac{1}{8}$" long	1
41	BRL.1	Ballbearing 1" i.d. x $2\frac{1}{4}$" o.d. x $\frac{5}{8}$" w. (Hoff.LS.10)	1
42	25054	Shim	As Req'd
43	25025	Bull Pinion	1
44	62916	Layshaft Small Gear	1
45	25758	Small Gear Shim	As Req'd
46	25015	Spacer	1
47	25757	Spacer Shim	As Req'd
48	25012	Medium Gear	1
49	25011	Large Gear	1
50	25037	Layshaft	1
51	BRL.$\frac{3}{4}$	Ballbearing $\frac{3}{4}$" i.d. x $1\frac{7}{8}$" o.d. x $\frac{9}{16}$" w. (Hoff.LS.8)	1
52	25684	Layshaft Shim	As Req'd
53	G.355	Gasket	1
54	G.354	Layshaft Bearing Stop	1
55		Spring Washer $\frac{5}{16}$" dia.	3
56		Setscrew $\frac{5}{16}$" B.S.W. x $\frac{3}{8}$" long, Hex. Head	3
57	25061	Special Nut	1
	25794	Spacer	As Req'd
58		Split Pin $\frac{3}{32}$" dia. x $1\frac{1}{4}$" long	1
59	25007	Spiral Bevel Pinion	1
60	G.292	Clutch Fulcrum Shim...	As Req'd
61	BRM.$\frac{3}{4}$	Ballbearing $\frac{3}{4}$" i.d. x 2" o.d. x $\frac{11}{16}$" w. (Hoff. MS.8)...	1
62	62921	Clutch Shaft	1
63		Circlip 2" dia. Internal	1
64	G.291	Clutch Operating Pawl	1
65	SFL.$\frac{3}{4}$	Thrust Race $\frac{3}{4}$" i.d. x $1\frac{15}{32}$" o.d. x $\frac{3}{8}$" w. ...	1
66	62922	Thrust Sleeve	1
67	62919	Thrust Sleeve Spacer	1
68	25069	Special Oilseal	1
69		Setscrew $\frac{1}{4}$" B.S.W. x $\frac{1}{2}$" long, Round Head	3
70		Spring Washer $\frac{1}{4}$" dia.	3
	26170	Clutch Thrust Plate ... ... comprising:—	1
71	G.233	Plate	1
72	G.234	Pin	1
73	25776	Special Bolt	4
74	G.251	Locking Wire 16 S.W.G. x 12" long ..	1
75	62063	Distance Piece	4
76	G.260	Spring	4
77	26171	Clutch Plate Fixed	1
78	G.220	Friction Disc	2
79	G.231	Clutch Plate Loose	1
79A	62918	Clutch Plate Loose	1
80	25062	Special Nut	1
81		Split Pin $\frac{3}{32}$" dia. x 1" long	1
82		Setscrew, Engine to Gearbox $\frac{1}{4}$" B.S.W. x 1" long, Hex. Head	8
83		Spring Washer $\frac{1}{4}$" dia.	8
84		Nut $\frac{1}{2}$" B.S.W.	8
85	G.142	Spring	8
86	G.141	Stud	8
87	25878	Hub Nut	1
88	G.162	Wheel Hub Disc	2
89	25051	Wheel Hub Right Hand	1
90	27517550	Oilseal $1\frac{3}{4}$" i.d. x $2\frac{3}{4}$" o.d. x $\frac{1}{2}$" w.	1
91	BRE.$1\frac{3}{4}$	Ballbearing $1\frac{3}{4}$" i.d. x 3" o.d. x $\frac{9}{16}$" w. (Hoff.XLS.$1\frac{3}{4}$)	1
92	25042	Special Nut	3
93		Split Pin $\frac{3}{32}$" dia. x $1\frac{1}{4}$" long	3
94	25028	Differential Plate	1
95	25023	Differential Pinion Pin	3
96	25020	Loose Hub Gear	1
97	25019	Fixed Hub Gear	1
98	25022	Differential Pinion	6
99	25024	Pinion Stud	3
100	25021	Bullwheel	1
101	25046	Roadwheel Axle	1
102		Rivet $\frac{5}{16}$" dia. x $1\frac{3}{4}$" long, Round Head ...	6
103	T.G.314	Differential Lock Ring	1
104	G.317	Differential Lock Setscrew	3
105	G.327	Locking Wire 16 S.W.G. x 9" long... ...	1
106	G.316	Differential Lock Spacer	3
107	25056	Differential Lock Pin	3
108	TG.313	Differential Lock	1
109	25359	Differential Lock Selector	1
110	BRL.$1\frac{1}{4}$	Ballbearing $1\frac{1}{4}$" i.d. x $2\frac{3}{4}$" o.d. x $\frac{11}{16}$" w. (Hoff.LS.12)	1
111	25906	Shim	As Req'd
112	25058	Oilseal Shim	As Req'd
113	20012550	Oilseal $1\frac{1}{4}$" i.d. x 2" o.d. x $\frac{1}{2}$" w.	1
114	25057	Axle Bearing Stop Gasket	1
115	25053	Axle Bearing Stop	1
116		Spring Washer $\frac{3}{8}$" dia.	4
117		Setscrew $\frac{3}{8}$" B.S.W. x $\frac{3}{4}$" long, Hex. Head ...	4
118	25052	Wheel Hub Left Hand	1
119		Washer $\frac{3}{4}$" dia.	1
120	25047	Hub Nut	1
121		Split Pin $\frac{5}{32}$" dia. x $1\frac{1}{2}$" long	1

Gearbox and Rotavator Assemblies



WHEELS

[illegible]	26923	Roadwheel Rim L.H. 20″ & 24″ Models ...	1
	26923	Roadwheel Rim L.H. 30″ Model	3
	26922	Roadwheel Rim R.H.	1
[illegible]	G.134	Outer Tube	2
[illegible]	G.133	Inner Tube	2
[illegible]	G.130	Landwheel 20″ & 24″ Model...	2
	26074	Landwheel R.H. } 30″ Model	1
	26075	Landwheel L.H. }	
		[illegible] additional for 30″ Model.	

EXTENSION RIMS

126	[illegible]75	Extension Rim for 20″ Model	2
	[illegible]	Extension Rim for 24″ Model	2
127		Bolt ⅜″ [illegible] W. x 1¼″ long	10
128		[illegible]	10
129		[illegible]	10

EXTENSION HUBS

Standard Fitment on 30″ Model
Optional Extra for 20″ & 24″ Models

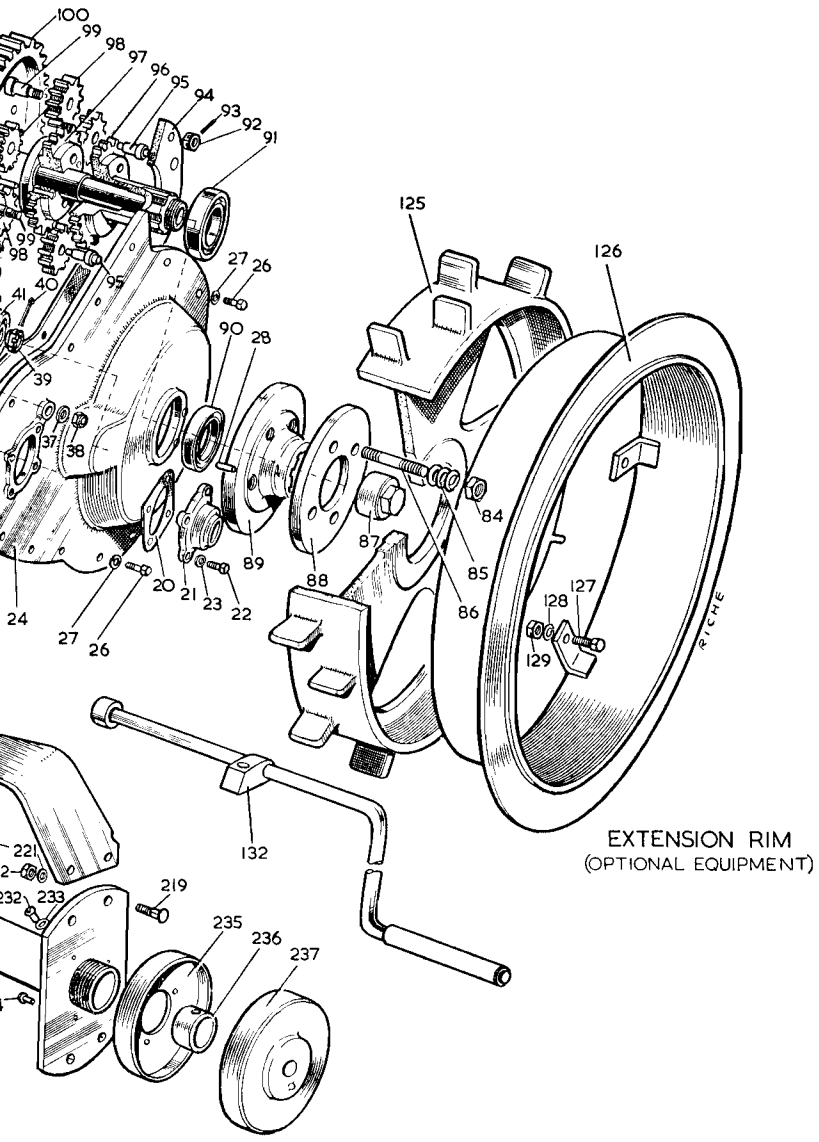
130	25397a	Extension Hub L.H.	1
	25396a	Extension Hub R.H.	1
131	25394	Stud Short L.H.	4
	25393	Stud Long R.H.	4

STARTING HANDLES for use with Extension Rims and Hubs

132	25466	Starting Handle for 20″ Model	1
	25750	Starting Handle for 24″ Model	1
133-150		not allocated.	

JACKSHAFT EXTENSION AND BACKPLATE

151	G.402	Gasket	1
152	G.439	Sliding Dog	1
153	G.452/2	Fixed Dog	1
154	G.452 3	Fixed Dog Pin	1



EXTENSION RIM
(OPTIONAL EQUIPMENT)

155	G.452.1	Extension Shaft 20″ Model	1
	26045.1	Extension Shaft 24″ Model	1
	25738.1	Extension Shaft 30″ Model	1
156	G.156	Selector Block	1
157	G.153	Selector Crank	1
158	16706	Selector Cotter Pin	1
159	G.456	Rotor Dog Clutch Selector Housing ...	1
160		Setscrew $\frac{5}{16}$″ B.S.W. x $\frac{3}{4}$″ long, Hex. Head	3
161		Spring Washer $\frac{5}{16}$″ dia.	3
162	G.458a	Oil Plug $\frac{1}{8}$″ B.S.P. Taper	1
163	25776	Special Bolt	2
164	25777	Special Setscrew	2
165		Spring Washer $\frac{3}{8}$″ dia.	4
166	25778	Locking Wire	2
167	G.453	Jackshaft Housing 20″ Model	1
	25865	Jackshaft Housing 24″ Model	1
	25735	Jackshaft Housing 30″ Model	1
168	G.530	Backplate	1
169	G.545	Bearing Dust Cover	1
170	G.540	Rotor Bearing Housing	1
171		Rivet $\frac{1}{4}$″ dia. x $\frac{5}{8}$″ long, Pan Head	16
172	BRM.1	Ballbearing 1″ i.d. x $2\frac{1}{2}$″ o.d. x $\frac{3}{4}$″ w. (Hoff. MS.10)	1
173	G.462	Shim	As Req'd
174	G.460	Jackshaft Sprocket	1
175	G.455	Special Nut	1
176		Split Pin $\frac{1}{8}$″ dia. x $1\frac{1}{2}$″ long	1

CHAINCASE ASSEMBLY

177	25101	Drive Chain	1
	26152	Outer Link	26
	26153	Inner Link	27
	26154	Connecting Link	1
178	G.520	Chaincase	1
179	26842	Chaincase Gasket	1
180	G.522	Oil Plug $\frac{3}{8}$″ B.S.P. Sq. Head	1
181	G.458	Oil Level Plug $\frac{1}{8}$″ B.S.P. Sq. Head	1
182	G.590	Frame Bolt, Chaincase to Staytube ...	1
183	G.519	Wearing Shoe	1
184a		Setscrew $\frac{1}{4}$″ B.S.W. x $\frac{3}{4}$″ long, Round Head	7
184b		Setscrew $\frac{1}{4}$″ B.S.W. x $\frac{5}{8}$″ long, Round Head	3
184c		Setscrew $\frac{1}{4}$″ B.S.W. x $\frac{1}{2}$″ long, Round Head	5
184d		Setscrew $\frac{1}{4}$″ B.S.W. x $\frac{7}{8}$″ long, Hex. Head	2
185		Spring Washer $\frac{1}{4}$″ dia.	17
186		Nut $\frac{1}{4}$″ B.S.W.	10
187		Setscrew, Backplate to Shield, $\frac{1}{4}$″ B.S.W. x $\frac{5}{8}$″ long, Rd. Head	1
188		Spring Washer $\frac{1}{4}$″ dia.	1
189		Nut $\frac{1}{4}$″ B.S.W.	1
190	G.591	Frame Setscrew, Countersunk Head ...	1
191		Locking Wire $\frac{1}{16}$″ dia. x 4″ long	1
192	25917	Chain Skid	1
193	25920	Sliding Block	1
194	25913	Adjusting Screw	1
195		Nut $\frac{5}{16}$″ B.S.F.	1
196	25919	Connecting Link	2
197	25914	Connecting Pin	2
198		Split Pin $\frac{1}{16}$″ dia. x 1″ long	2
199		Chain Skid Bolt, $\frac{5}{16}$″ B.S.W. x $1\frac{1}{4}$″ long ...	1
200		Washer $\frac{5}{16}$″ dia.	1
201		Nut $\frac{5}{16}$″ B.S.W.	1

ROTOR DRIVE

202	G.561a	Rotor Drive Shaft	1
203	BRM.030	Ballbearing 30 m.m. i.d. x 72 m.m. o.d. x 19 m.m. w. (Hoff.330)	1
204	25015050	Oilseal $2\frac{1}{2}$″ o.d. x $1\frac{1}{2}$″ i.d. x $\frac{1}{2}$″ w.	1
205	53404	Spacing Sleeve	1
206		Washer $\frac{3}{4}$″ dia.	1
207		Nut $\frac{3}{4}$″ B.S.F. Slotted	1
208		Splitpin $\frac{1}{8}$″ dia. x $1\frac{1}{2}$″ long	1

ROTOR SAFETY CLUTCH

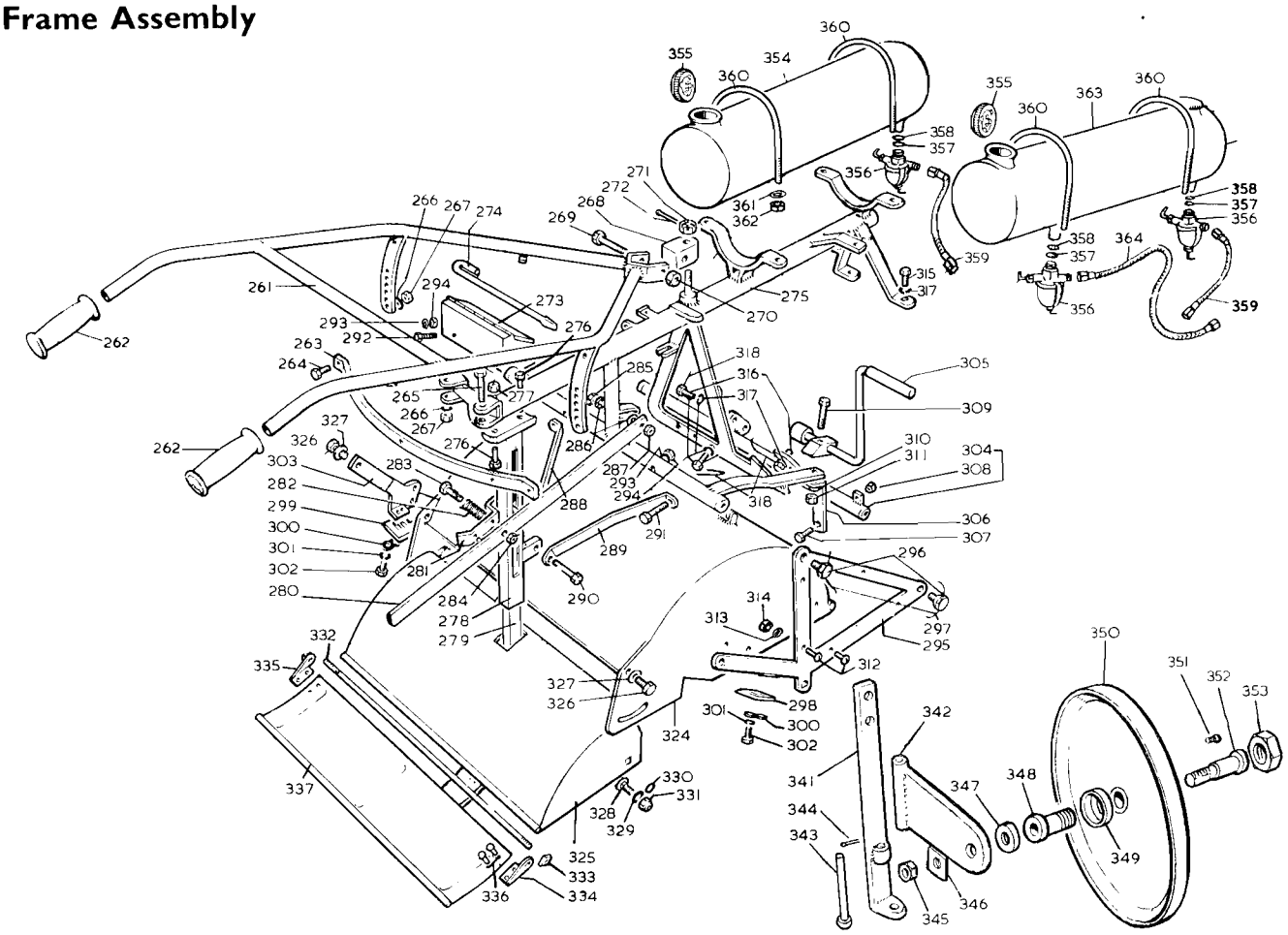
209	G.605	Drive Plate	1
210	G.607	Friction Disc	2
211	G.606	Rotor Drive Disc	1
212	G.544	Wearing Plate	1
213	G.603	Rotor Drive Stud	4
214	G.602	Rotor Drive Spring	4
215		Nut $\frac{1}{2}$″ B.S.W.	4

ROTOR

216	G.600a	Rotor 20″ Model		1
	25462	Rotor 24″ Model		1
	25734	Rotor 30″ Model		1
			24″ & 30″	2
217	G.900R	Hoe Blade R.H.	6	4
218	G.900L	Hoe Blade L.H.	6	4
219	G.919	Blade Bolt, End Flanges ...	8	8
220	G.918	Blade Bolt, Intermediate Flanges	16	8
221		Spring Washer $\frac{7}{16}$″ dia. . .	24	16
222		Nut $\frac{7}{16}$″ B.S.F. ..	24	16
	26530	Swept Back Blade L.H. ... }	*	2
	26531	Swept Back Blade R.H. ... }	*	2
	9943	Universal Blade L.H. }	*	2
	9944	Universal Blade R.H. }	*	2

* Alternative Fitments

Frame Assembly



ROTOR STUB AXLE

223	G.630	Rotor Stub Axle	1
224	BRM.5/8	Ballbearing 5/8" i.d. x 1 3/16" o.d. x 5/8" w. (Hoff.MS.7)	1
225	G.637	Oilseal Holder...	1
226	15008740	Oilseal 1 1/2" o.d. x 7/8" i.d. x 13/32" w.	1
227	G.634	Spacing Sleeve	1
228	G.632	Bearing Cap	1
229	G.629	Felt Dust Seal	1
230	G.648	Tab Washer	1
231		Nut 5/8" B.S.F. Locknut	1
232		Oiling Screw 1/4" B.S.W. x 3/8" long, Round Head	1
233		Spring Washer 1/4" dia.	1
234		Rivet 3/16" dia. x 1/2" long, Round Head ...	3
235	G.639	Inner Dust Cover	1
236	G.635	Back Plug	1
237	G.640	Outer Dust Cover	1

PICKTINE ROTOR—Optional Extra.

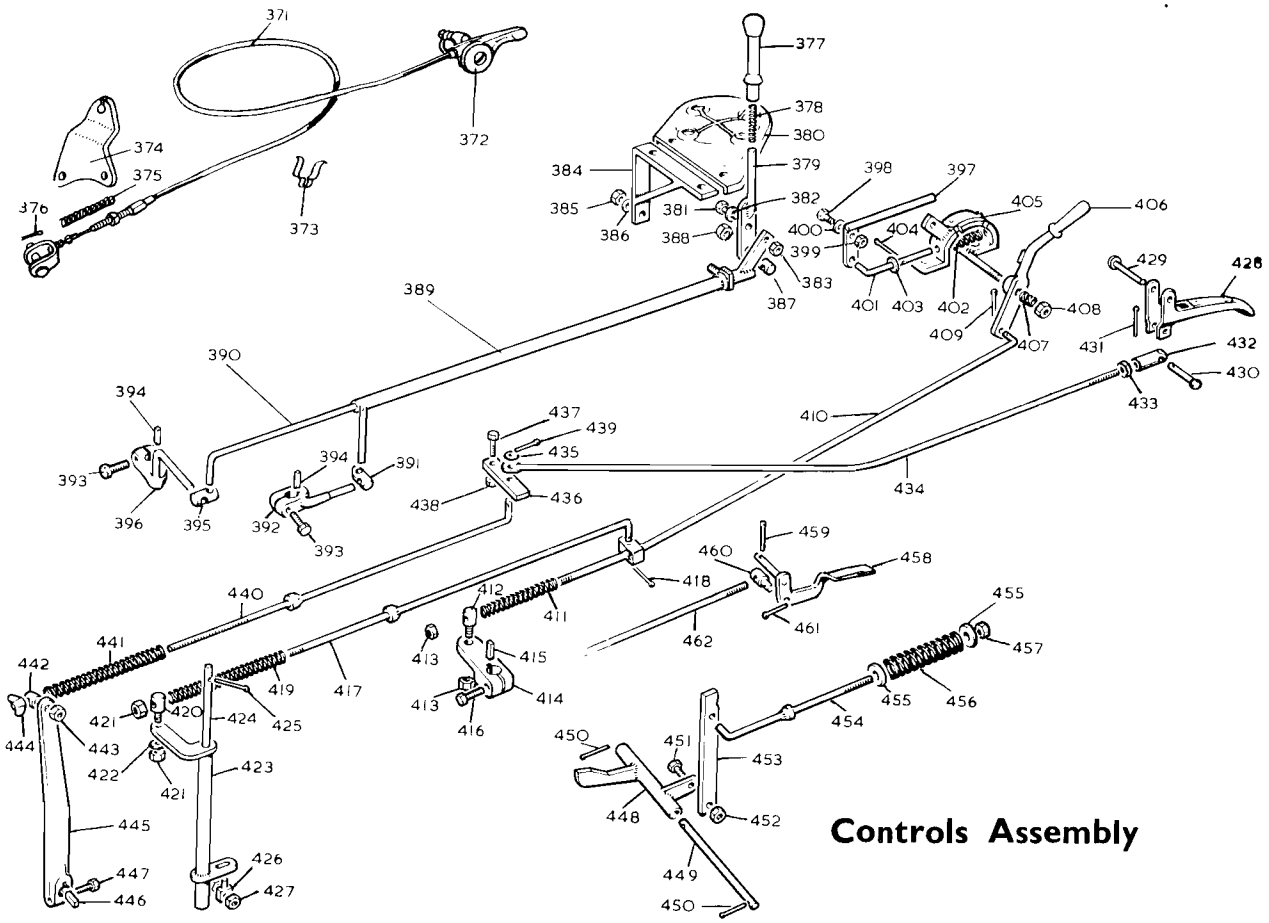
238	G.600B	Picktine Rotor 20" Model (6 flanges) ...	1
	25473	Picktine Rotor 24" Model (7 flanges) ...	1
	25969	Picktine Rotor 30" Model (9 flanges) ...	1
239	G.922	End Flange Bolt ... ... per flange	4
240	G.921	Intermediate Flange Bolt ... ... per flange	4
241		Spring Washer 7/16" dia. ... ... per flange	4
242		Nut 7/16" B.S.F. ... ... per flange	4
243	26992	Picktine ... ... per flange	2
244	G.991	Lucerne Tine ... ... per flange	2
245-260		not allocated.	

FRAME AND HANDLEBARS

261	62948	Handlebar	1
262	G.121	Handlebar Grip	2
263	G.123	Handlebar Side	1
264		Bolt, Slide Bar 3/8" B.S.W. x 1 1/4" long Hex. Head	2
265	25392	Slide Clamp Bolt	2
266		Spring Washer 3/8" dia.	4
267		Nut 3/8" B.S.W.	4
268	G.104	Pivot Block	1
269		Pivot Bolt 1/2" B.S.W. x 2 3/8" long	1
270		Locknut 1/2" B.S.W.	1
271		Nut 3/8" B.S.F. Slotted	1
272		Splitpin 5/32" dia. x 1 1/2" long	1
273	25636	Tool Box	1
274	16811	Blade Setting Bar 20" Model...	1
	G.993	Blade Setting Bar 24" Model	1
	G.993	Blade Setting Bar 30" Model	1
275	62928	Main Frame 20" Model	1
	62943	Main Frame 24" Model	1
	62947	Main Frame 30" Model	1

DEPTH CONTROL

276		Socket Bolt 3/8" B.S.W. x 2 1/2" long	2
277		Nut 3/8" B.S.W.	2
278	25219	Depth Control Socket	1
279	G.950	Depth Control Skid—(See Depth Control Wheel for 30" Model)	1
280	G.671	Depth Control Arm	1
281	G.674	Clip	1
282	G.675	Spring	1
283		Bolt 1/4" B.S.W. x 1 1/2" long	1
284		Locknut 1/4" B.S.W.	1
285		Pivot Bolt 3/8" B.S.W. x 1 3/4" long	1
286		Washer 3/8" dia.	2
287		Locknut 3/8" B.S.W.	1
288	G.668	Support Stay L.H.	1
289	G.667	Support Stay R.H.	1



Controls Assembly

290		Bolt ¼" B.S.W. x 1¼" long	1
291		Bolt ¼" B.S.W. x 2" long	2
292		Bolt ¼" B.S.W. x 1¾" long	1
293		Spring Washer ¼" dia.	4
294		Locknut ¼" B.S.W.	4
295	26928	Side Frame	1
296	G.591	Frame Bolt, Countersunk Head	2
297		Locking Wire $\frac{1}{16}$" dia. x 4" long	2
298	G.821	Weed Cutter Blade R.H.	1
299	G.820	Weed Cutter Blade L.H.	1
300	G.830	Weed Cutter Keeper Plate	2
301		Spring Washer ¼" dia.	4
302		Setscrew ¼" B.S.W. x ½" long	4
303	26959	Weed Cutter Bracket	1

STAYTUBE AND STARTING HANDLE

304	G.589	Staytube 20" Model	1
	25428	Staytube 24" Model	1
	25747	Staytube 30" Model	1
305	G.380	Starting Handle 20" Model } Not required	1
	25466	Starting Handle 24" Model } with Sach	1
	25750	Starting Handle 30" Model } Engine	1

Note:—For South African Machines use 24" Starting Handle on 20" Machines and 30" Starting Handle on 24" Machines.

306	G.381	Starting Handle Support Lug	1
307		Setscrew, Lug to Staytube ⅜" B.S.W. x ¾" long, Hex. Head...	1
308		Locknut ⅜" B.S.W.	1
309	G.382	Pivot Bolt ... } Not required ...	1
310		Washer $\frac{7}{16}$" dia. } with Sach ...	1
311		Locknut $\frac{7}{16}$" B.S.W. } Engine ...	1
312		Setscrew, Side Frame to Shield, ¼" B.S.W. x ¾" long, Round Head	5
313		Spring Washer ¼" dia.	5
314		Nut ¼" B.S.W.	5
315		Setscrew, Frame to Gearbox ⅜" B.S.W. x 1" long	2
316	G.317	Setscrew, Staytube to Gearbox and Frame to Gearbox	7
317		Spring Washer ⅜" dia.	9
318		Locking Wire $\frac{1}{16}$" dia. x 40" long	1
319-323		not allocated.	

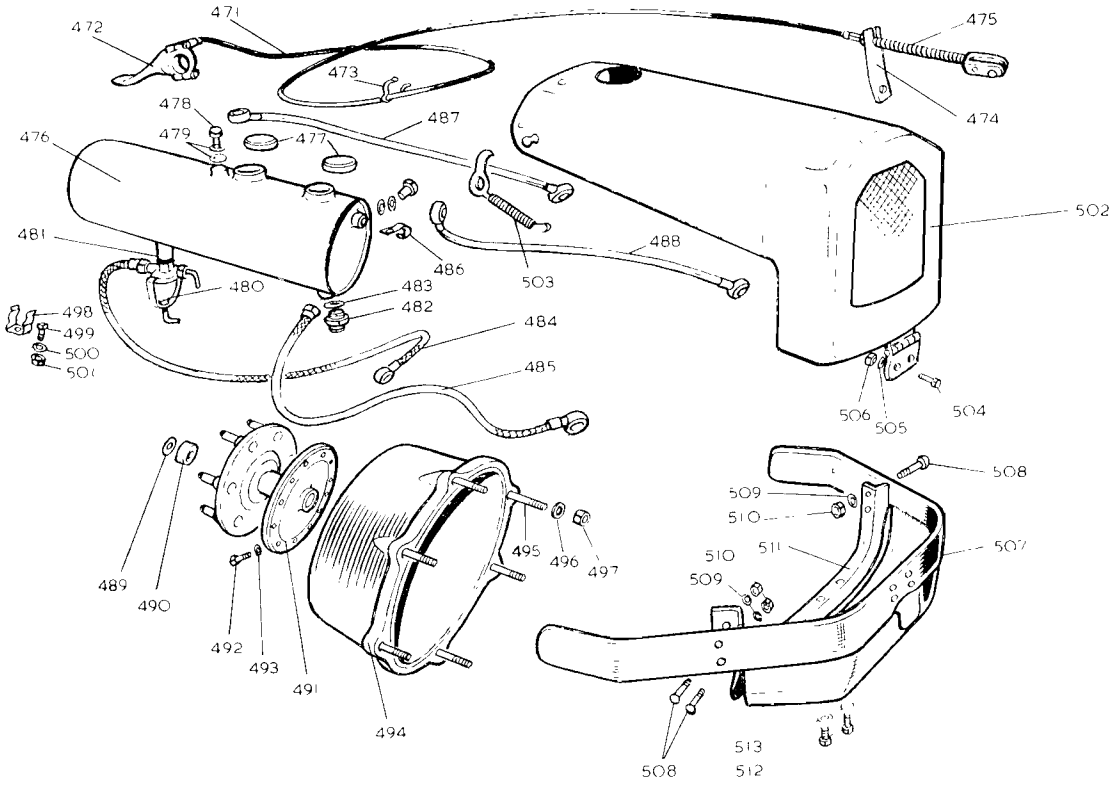
SHIELDS

324	25218	Front Shield 20" Model	1
	25436	Front Shield 24" Model	1
	25743	Front Shield 30" Model	1
325	G.642	Rear Shield 20" Model	1
	25443	Rear Shield 24" Model	1
	25744	Rear Shield 30" Model	1
326		Setscrew ⅜" B.S.W. x 1" long, Hex. Head...	2
327		Spring Washer ⅜" dia.	2
328	G.644	Clamping Bolt	2
329		Washer $\frac{7}{16}$" dia.	2
330		Washer, Thackeray ⅜" dia.	2
331		Nut, Simmonds ⅜" B.S.W.	2
332	G.646	Hinge Bar 20" Model	1
	25479	Hinge Bar 24" Model	1
	25751	Hinge Bar 30" Model	1
333		Locknut $\frac{5}{16}$" B.S.W.	1
334	G.647	Hinge Bracket R.H.	1
335	25964	Hinge Bracket L.H.	1
336		Rivet $\frac{3}{16}$" dia. x ⅜" long, Round Head ...	4
337	25575	Trailing Board 20" Model	1
	25454	Trailing Board 24" Model	1
	25746	Trailing Board 30" Model	1
338-340		not allocated.	

DEPTH CONTROL WHEEL—Standard Fitment for 30" Model Optional Extra for 20" and 24" Model

341	G.664	Pedestal	1
342	G.663	Arm	1
343	G.666	Swivel Pin	1
344		Splitpin ⅛" dia. x 1" long	1
345		Locknut ⅝" B.S.W.	1

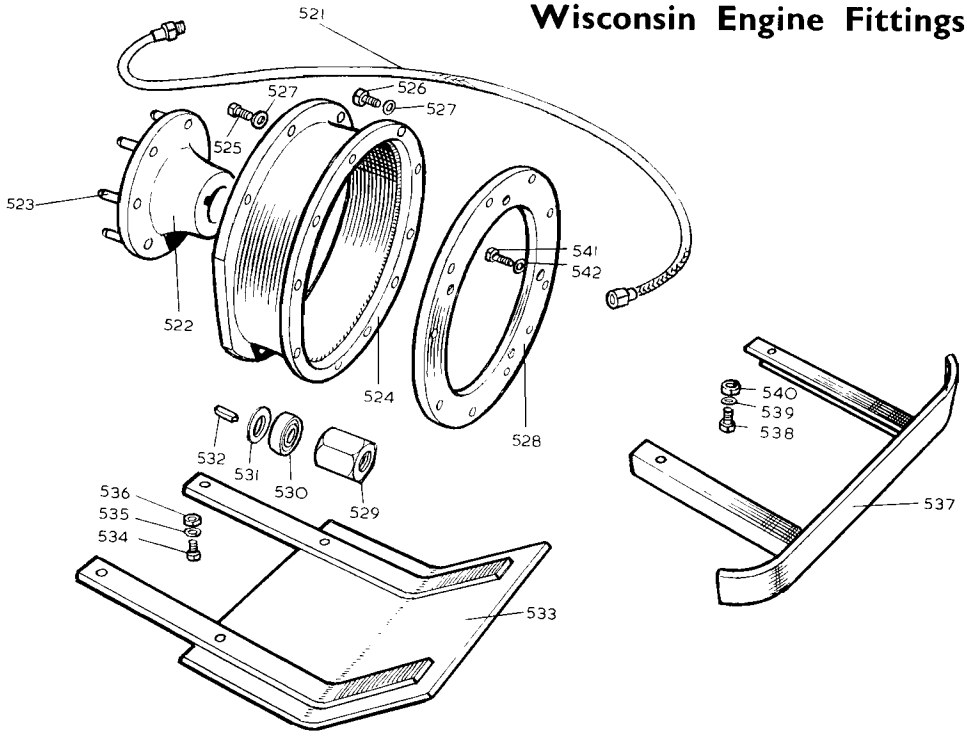
Diesel Engine Fittings



346	G.665	Tab Washer	1
347	G.657	Inner Dust Cover	1
348	G.659	Bush	1
349	G.658	Outer Dust Cover	1
350	G.660	Wheel	1
351		Oiling Screw $\frac{1}{4}$" B.S.W. x $\frac{3}{8}$" long, Round Head	1
352	G.661	Axle	1
353	G.662	Wheel Cap	1
		FUEL TANK—PETROL	
354	26598	Petrol Tank	1
355	G.172	Tank Cap	1
356		Petrol Filter—Wipac Type 50	1
357		Sealing Washer—Wipac Type 03178 ...	1
358	26899	Fibre Washer	1
359	26892	Fuel Pipe	1
360	G.175	Tank Strap	2
361		Spring Washer $\frac{1}{4}$" dia.	4
362		Nut $\frac{1}{4}$" B.S.W.	4
		FUEL TANK—V.O. AND LAMP OIL	
363	26588	Fuel Tank	1
364	26889	Fuel Pipe	1
355	G.172	Tank Cap	2
356		Filter—Wipac Type 50	2
357		Sealing Washer—Wipac Type 03178 ...	2
358	26899	Fibre Washer	2
359	26892	Fuel Pipe—Short	1
360	G.175	Tank Strap	2
361		Spring Washer $\frac{1}{4}$" dia.	4
362		Nut $\frac{1}{4}$" B.S.W.	4
363-370		not allocated.	
		THROTTLE CONTROL FOR TWIN ENGINE	
371	27059	Throttle Cable...	1
372		Hand Control, Doherty 100 R.H. 1" ...	1
373		Throttle Cable Spring Clip, Herbert Terry No. 136	1
374		Support Plate	1
375		Throttle Cable Spring	1
376		Spring $\frac{1}{32}$" dia. x $\frac{3}{8}$" long	1

		TRAVEL GEAR CONTROL	
377	25154	Gear Lever Upper	1
378	25161	Hand Lever Spring	1
379	25158	Gear Lever Lower	1
380	25173	Gate	1
381		Pivot Bolt $\frac{1}{4}$" B.S.W. x $\frac{3}{4}$" long	1
382		Washer $\frac{1}{4}$" dia.	1
383		Locknut $\frac{1}{4}$" B.S.W.	1
384	25136	Rear Support Bracket	1
385		Nut $\frac{5}{16}$" B.S.W.	1
386		Washer $\frac{5}{16}$" dia.	1
387	25415	Control Rod Trunnion	1
388		Nyloc Nut $\frac{5}{16}$" B.S.W. No. NT/V.106 ...	1
389	25139	Control Tube—to 2nd & 3rd Gears ...	1
390	25165	Control Rod—to 1st & Reverse Gears ...	1
391	25172	Universal Joint—1st & 2nd Gears	1
392	25332	Control Arm—1st & 2nd Gears	1
393		Bolt, Control Arms $\frac{5}{16}$" B.S.W. x 1" long ...	2
394	G.155	Key	2
395	25166	Universal Joint—1st & Reverse Gears ...	1
396	25331	Control Arm—Reverse & 3rd Gears ...	1
		ROTOR, DIFFERENTIAL AND HANDLEBAR CONTROL	
397	25320	Handlebar Positioning Arm	1
398		Bolt $\frac{1}{4}$" B.S.W. x $\frac{3}{4}$" long	1
399		Nut $\frac{1}{4}$" B.S.W.	1
400		Washer $\frac{1}{4}$" dia.	2
401	G.465	Positioning Pin	1
402	G.466	Spring	1
403		Washer $\frac{5}{16}$" dia.	1
404		Splitpin $\frac{5}{64}$" dia. x $\frac{3}{4}$" long	1
405	25222	Gear Control Quadrant	1
406	G.781	Control Hand Lever	1
407	G.792	Spring	1
408		Nyloc Nut $\frac{5}{16}$" B.S.W. No. NT/V.106 ...	1
409		Splitpin $\frac{5}{64}$" dia. x $\frac{3}{4}$" long	1
410	G.793	Rotor Control Rod	1
411	25412	Spring	1
412	G.773	Eye Bolt	1
413		Nyloc Nut $\frac{5}{16}$" B.S.W. No. NT/V.106 ...	2

Wisconsin Engine Fittings



414	G.152	Rotor Control Arm	1
415	G.155	Key	1
416		Setscrew $\frac{5}{16}$" B.S.W. x 1" long	1
417	G.321	Differential Lock Control Rod	1
418		Splitpin $\frac{5}{64}$" dia. x $\frac{3}{4}$" long	1
419	G.324	Control Rod Spring	1
420	G.773	Eye Bolt	1
421		Nyloc Nut $\frac{5}{16}$" B.S.W. No. NT/V.106 ...	2
422		Washer $\frac{5}{16}$" dia.	1
423	25356	Differential Lock Selector Quadrant ...	1
424	25352	Quadrant Pin	1
425		Splitpin $\frac{1}{16}$" dia. x 1" long	1
426	G.319	Trunnion	1
427		Locknut $\frac{1}{2}$" B.S.W.	2

CLUTCH CONTROL

428	25145	Hand Lever	1
429	G.699	Pin	1
430	25149	Link Pivot Pin	1
431		Splitpin $\frac{1}{16}$" dia. x $\frac{1}{2}$" long	1
432	25150	Adjusting Link...	1
433		Locknut $\frac{5}{16}$" B.S.W.	1
434	25170	Hand Lever to Pivot Lever Rod	1
435		Washer $\frac{1}{4}$" dia.	1
436	25144	Pivot Lever	1
437		Bolt $\frac{1}{4}$" B.S.W. x $\frac{3}{4}$" long	1
438		Nut $\frac{1}{4}$" B.S.W.	1
439		Splitpin $\frac{5}{64}$" dia. x $\frac{3}{4}$" long	1
440	25446	Pivot Lever to Control Arm Rod	1
441	25412	Spring	1
442	25410	Trunnion	1
443		Nyloc Nut $\frac{5}{16}$" B.S.W. No. NT/V.106 ...	1
444	25411	Wing Nut	1
445	G.710	Control Arm	1
446	G.711	Key	1
447		Setscrew $\frac{5}{16}$" B.S.W. x 1" long, Hex. Head	1

REVERSE INTERLOCK

448	25132	Rocker	1
449	25153	Rocker Pin	1
450		Splitpin $\frac{1}{16}$" dia. x $\frac{3}{8}$" long	2
451		Setscrew $\frac{1}{4}$" B.S.W. x $\frac{3}{4}$" long, Hex. Head ...	1
452		Nut $\frac{1}{4}$" B.S.W....	1
453	25152	Vertical Link	1
454	25181	Rod	1
455	25178	Special Washer	2
456	25131	Spring	1
457		Nut $\frac{5}{16}$" B.S.W.	1

DECOMPRESSOR CONTROL—for Twin Engine

458	G.188	Hand Lever	1
459		Splitpin $\frac{5}{64}$" dia. x $\frac{3}{4}$" long	1
460	G.789	Trunnion	1
461		Splitpin $\frac{1}{16}$" dia. x $\frac{1}{2}$" long	1
462	25646	Valve Lifter Rod	1
463-470		not allocated.	

CONVERSION UNIT FOR SACH 500 and 600 ENGINES

471	26337	Throttle Cable	1
472		Throttle Control Lever—Doherty No. 100 R.H. 1" dia.	1
473		Throttle Cable Spring Clip—Herbert Terry No. 186	1
474	26576	Bracket	1
475	26575	Spring	1
476	55891	Fuel and Oil Tank—for 500 Engine ...	1
	27036	Fuel and Oil Tank—for 600 Engine ...	1
477	G.172	Tank Cap	2
478	55961	Banjo Bolt } for 500 Engine ...	1
479	55962	Fibre Washer } ...	2
478	55961	Banjo Bolt } for 600 Engine ...	2
479	55962	Fibre Washer } ...	4
480		Petrol Filter—Wipac Type 50	1
481	26899	Fibre Washer	2
482		Union $\frac{1}{4}$" B.S.P.—Griflex Type F.181 ...	1
483		Fibre Washer $\frac{3}{4}$" o.d. x $\frac{1}{2}$" i.d. x $\frac{1}{16}$" thick...	1
484	26338	Fuel Pipe	1
485	26336	Oil Feed Pipe	1
486	26578	Pipe Clip	1
487	27037	Injector Spill Pipe } for 600 Engine ...	1
488	27038	Pump Spill Pipe } ...	1
489	BJ.8007	Special Washer	1
490	BRL.$\frac{1}{2}$	Ballbearing 1 $\frac{5}{16}$" o.d. x $\frac{1}{2}$" i.d. x $\frac{3}{8}$"	1
491	26565	Drive Adaptor... } ...	1
492		Setscrew, Drive Adaptor to Flywheel 6 m.m. dia. } for Engine 18 m.m. long } ...	12
493		Spring Washer 6 m.m. dia. } ...	12

491	26844	Drive Adaptor...	1
492		Setscrew, Drive Adaptor to Flywheel 8 m.m. dia. x 18 m.m. long ... ... for 600 Engine	6
493		Spring Washer 8 m.m. dia	6
494	26745	Bell Housing	1
495	26746	Stud	6
496		Washer $\frac{7}{16}$" dia.	6
497		Nut $\frac{7}{16}$" B.S.W.	6
498	26579	Spring Clip	1
499		Bolt $\frac{5}{16}$" B.S.W. x 1" long ... ... for 20" & 24" Models	1
500		Spring Washer $\frac{5}{16}$" dia.	1
501		Nut $\frac{5}{16}$" B.S.W.	1
498	26579	Spring Clip	1
499		Bolt $\frac{5}{16}$" B.S.W. x 1" long	2
500		Spring Washer $\frac{5}{16}$" dia. for 30" Models	2
501		Nut $\frac{5}{16}$" B.S.W.	2
		FOR SACH 500 ENGINE ONLY	
502	26724	Bonnet	1
503	26753	Bonnet Fastener—Terrys Type 1046 ...	2
504		Setscrew $\frac{5}{16}$" B.S.F. x $\frac{3}{4}$" long, Hex. Head ...	2
505		Washer $\frac{5}{16}$" dia. Shakeproof	2
506		Nut $\frac{5}{16}$" B.S.F.	2
507	26756	Bumper Bar	1
508		Coach Bolt $\frac{3}{8}$" B.S.W. x $2\frac{1}{4}$" long, Rd. Head, Sq. Neck	4
509		Spring Washer $\frac{3}{8}$" dia.	4
510		Nut $\frac{3}{8}$" B.S.W.	4
511	26741	Angle Support	1
512	26749	Special Setscrew	2
513		Spring Washer $\frac{1}{2}$" dia.	2
514-520		not allocated	

		WISCONSIN TF, AHH. and AEN. ENGINES	
521	26897	Petrol Supply Pipe	1
	26554	Drive Flange Rivet Assembly comprising:— ... ... Model AEN.	1
522	26555	Drive Flange	1
523	26432	Driving Pin	6
	26446	Drive Flange Rivet Assembly comprising:— ... ... Model TF. & AHH.	1
522	26431	Drive Flange	1
523	26432	Driving Pin	6
524	26430	Adaptor	1
525		Bolt $\frac{1}{4}$" B.S.W. x 1" long	8
526		Bolt $\frac{1}{4}$" B.S.W. x 1" long	10
527		Spring Washer $\frac{1}{4}$" dia.	18
528	26552	Adaptor Ring (Model AEN. and TF.) ...	1
	26519	Adaptor Ring (Model AHH.)	1
529	26553	Flywheel Nut (Model AEN.)	1
	26434	Flywheel Nut (Model TF. and AHH.) ...	1
530	BRL.$\frac{1}{2}$	Ballbearing for Flywheel Nut (Hoff. LS.5.)	1
531	BJ.8007	Retaining Plate	1
532	26438	Key	1
533	26556	Cowling Guard	1
534		Bolt $\frac{3}{8}$" U.N.C. x 3" long Model AEN.	4
535		Spring Washer $\frac{3}{8}$" dia.	4
536		Nut $\frac{3}{8}$" U.N.C.	4
537	26436	Bumper Bar	1
538		Bolt $\frac{1}{2}$" U.N.C. x 2" long Model TF. ...	2
539		Spring Washer $\frac{1}{2}$" dia. & AHH. ...	2
540		Nut $\frac{1}{2}$" U.N.C.	2
541		Bolt $\frac{7}{16}$" A.N.C. x $1\frac{1}{4}$" long (Model AEN. and TF.)	4
		Bolt $\frac{7}{16}$" A.N.C. x $1\frac{3}{4}$" long (Model AHH.) ...	4
542		Spring Washer $\frac{7}{16}$" dia.	4

Numerical Parts List

Part No.	Illus. No.
G.104	268
G.121	262
G.123	263
G.130	125
G.133	124
G.134	123
G.135	126
G.141	86
G.142	85
G.152	414
G.153	157
G.155	394
G.155	415
G.156	156
G.162	88
G.172	355
G.172	477
G.175	360
G.188	458
G.220	78
G.231	79
G.233	71
G.234	72
G.251	74
G.260	76
G.291	64
G.292	60
TG.313	108
TG.314	103
G.316	106
G.317	104
G.317	316
G.319	426
G.321	417
G.324	419
G.327	105
G.354	54
G.355	53
G.373	19
G.374	21
G.380	305
G.381	306
G.382	309
G.402	20
G.402	151
G.436	15
G.437	18
G.439	152
G.452/1	155
G.452/2	153
G.452/3	154
G.453	167
G.455	175
G.456	159
G.458	181
G.458a	162
G.460	174
G.461	10
G.462	173
G.465	401
G.466	402
G.476	4
G.481	3
G.519	183
G.520	178
G.522	180
G.530	168
G.540	170
G.544	212
G.545	169
G.561a	202
G.589	304
G.590	182
G.591	190
G.591	296
G.600a	216
G.600b	238
G.602	214
G.603	213
G.605	209
G.606	211
G.607	210
G.629	229
G.630	223
G.632	228
G.634	227
G.635	236
G.637	225
G.639	235
G.640	237
G.642	325
G.644	328
G.646	332
G.647	334
G.648	230
G.657	347
G.658	349
G.659	348
G.660	350
G.661	352
G.662	353
G.663	342
G.664	341
G.665	346
G.666	343
G.667	289
G.668	288
G.671	280
G.674	281
G.675	282
G.699	429
G.710	445
G.711	446
G.773	412
G.773	420
G.781	406
G.789	460
G.792	407
G.793	410
G.820	299
G.821	298
G.830	300
G.900R	217
G.900L	218
G.918	220
G.919	219
G.921	240
G.922	239
G.950	279
G.991	244
G.993	274
BJ.8007	489
BJ.8007	531
9943	218
9944	217
16706	158
16811	274
25005	16
25007	59
25008	13
25011	49
25012	48
25015	46
25019	97
25020	96
25021	100
25022	98
25023	95
25024	99
25025	43
25026	34
25028	94
25029a	12
25034	36
25037	50
25038	39
25042	92
25046	101
25047	120
25050	25
25051	89
25052	118
25053	115
25054	42
25056	107
25057	114
25058	112
25059	28
25061	57
25062	80
25069	68
25072	32
25101	177
25115	29
25131	456
25132	448
25136	384
25139	389
25144	436
25145	428
25149	430
25150	432
25152	453
25153	449
25154	377
25158	379
25161	378
25165	390
25166	395
25170	434
25172	391
25173	380
25178	455
25181	454
25185	6
25218	324
25219	278
25222	405
25320	397
25331	396
25332	392
25352	424
25356	423
25359	109
25392	265
25393	131
25394	131
25396a	130
25397a	130
25410	442
25411	444
25412	411
25412	441
25415	387
25428	304
25436	324
25443	325
25446	440
25454	337
25462	216
25466	132
25466	305
35473	238
25479	332
25530	9
25575	337
25636	273
25646	462
25648	31
25684	52
25734	216
25735	167
25738/1	155
25743	324
25744	325
25746	337
25747	304
25750	132
25750	305
25751	332
25757	47
25758	45
25776	163
25777	164
25778	166
25794	57
25865	167
25875	126
25878	87
25906	111
25913	194
25914	197
25917	192
25919	196
25920	193
25964	335
25969	238
25992	243
26045/1	155
26074	125
26075	125
26152	177
26153	177
26154	177
26170	71
26171	77
26336	485
26337	471
26338	484
26430	524
26431	522
26432	523
26434	529
26436	537
26438	532
26446	522
26519	528
26530	218
26531	217
26552	528
26553	529
26554	522
26555	522
26556	533
26565	491
26575	475
26576	474
26578	486
26579	498
26588	363
26598	354
26724	502
26741	511
26745	494
26746	495
26749	512
26753	503
26756	507
26842	179
26844	491
26889	364
26892	359
26897	521
26899	358
26899	481
26908	5
26922	122
26923	122
26928	295
26959	303
27036	476
27037	487
27038	488
27059	371
27060	375
27076	374
53404	205
55891	476
55961	478
55962	479
62063	75
62907	1
62908	24
62910	30
62913	3
62914	17
62915	35
62916	44
62918	79
62919	67
62920	73
62921	62
62922	66
62928	275
62943	275
62947	275
62948	261

BEARINGS

BRL.$\frac{1}{2}$	490
BRL.$\frac{1}{2}$	530
BRL.$\frac{3}{4}$	51
BRL.1	41
BRL.1$\frac{1}{4}$	110
BRM.$\frac{5}{8}$	224
BRM.$\frac{3}{4}$	61
BRM.1	11
BRM.1	172
BRM.030	203
BRE.1$\frac{3}{4}$	91
SFL.$\frac{3}{4}$	65

OILSEALS

150.087.40	226
200.125.50	113
250.150.50	204
275.175.50	90

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