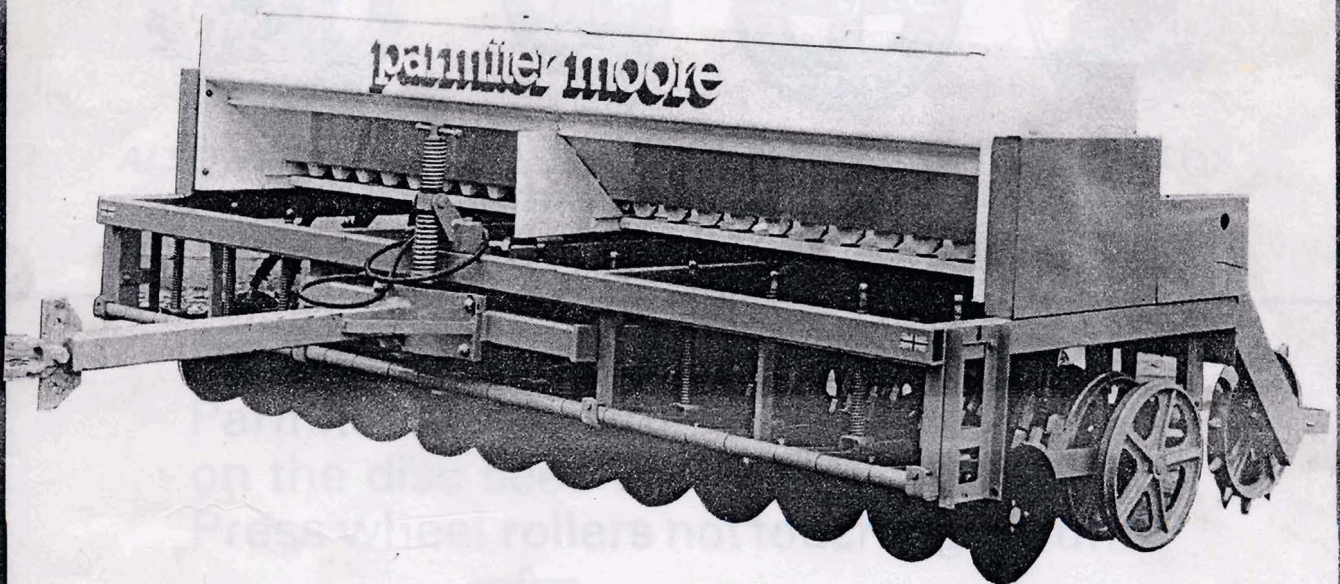


# PARMITER-MOORE 4 metre DRILL

BRITISH PATENT Nos. 1,218,785 1,591,607 2,040,656 U.S.A. PATENT Nos. 3,611,956 4,196,679  
AUSTRALIA PATENT No. 518,030 CANADA PATENT No. 1,082,530 NEW ZEALAND PATENT No. 192,436  
SOUTH AFRICA PATENT No. 79/6679. OTHER PATENTS PENDING.

## Instruction Manual and Parts List.



MANUFACTURED BY:



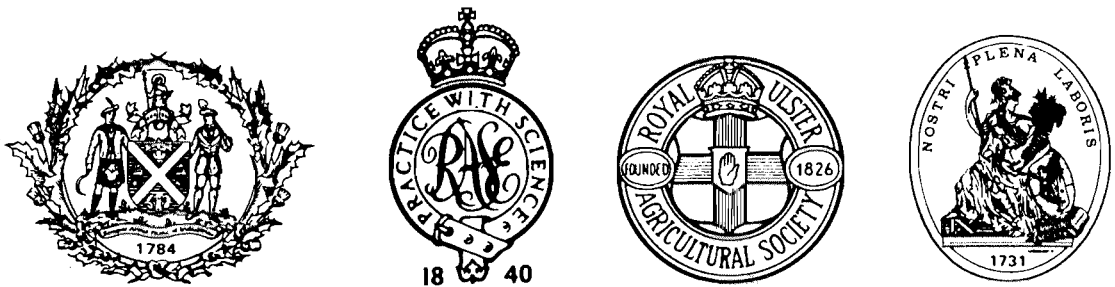
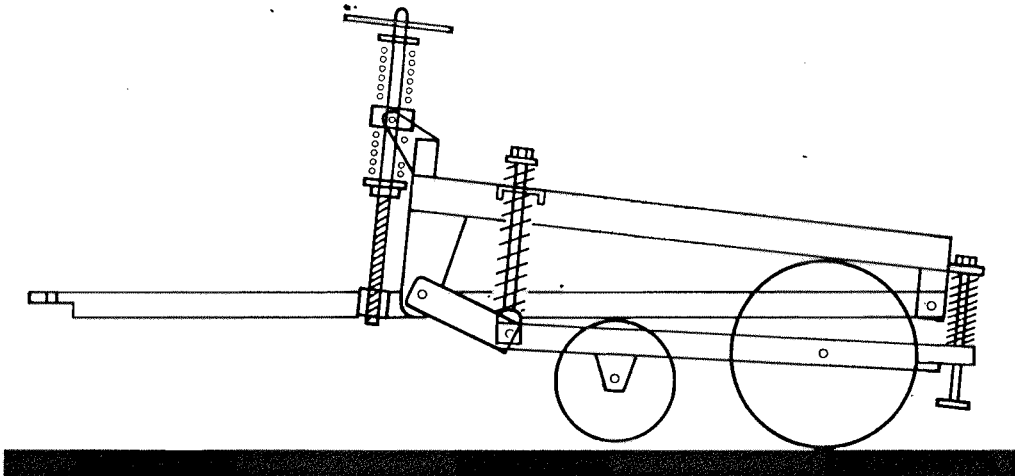
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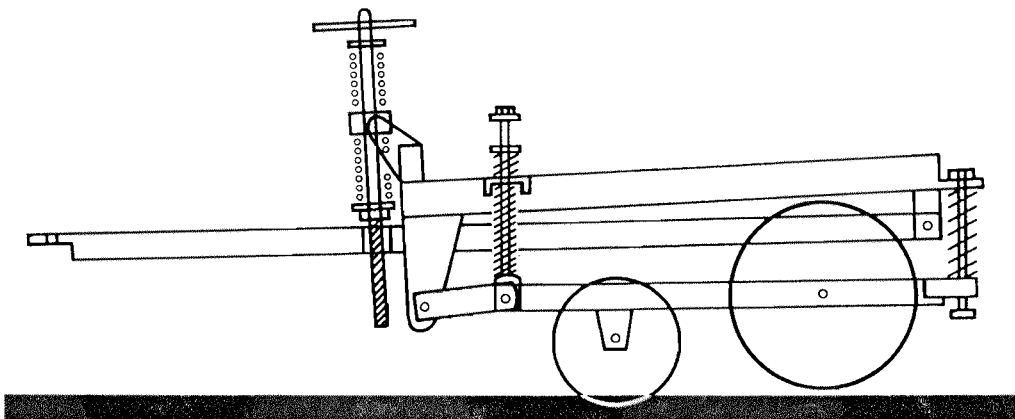
# The Parmiter-Moore Drill System

FIGURE A: MINIMUM PENETRATION  
Parmiter Moore Drill with all the weight  
on the press wheel rollers -  
Disc seed coulters not touching ground



ALSO WINNER OF THE BURKE TROPHY FOR THE MACHINE OF  
OUTSTANDING MERIT AT  
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FIGURE B: MAXIMUM PENETRATION  
Parmiter Moore Drill with all the weight  
on the disc seed coulters -  
Press wheel rollers not touching ground



# The Parmiter-Moore Drill System

- FIG 1 THE PARMITER-MOORE 4 METRE DRILL -

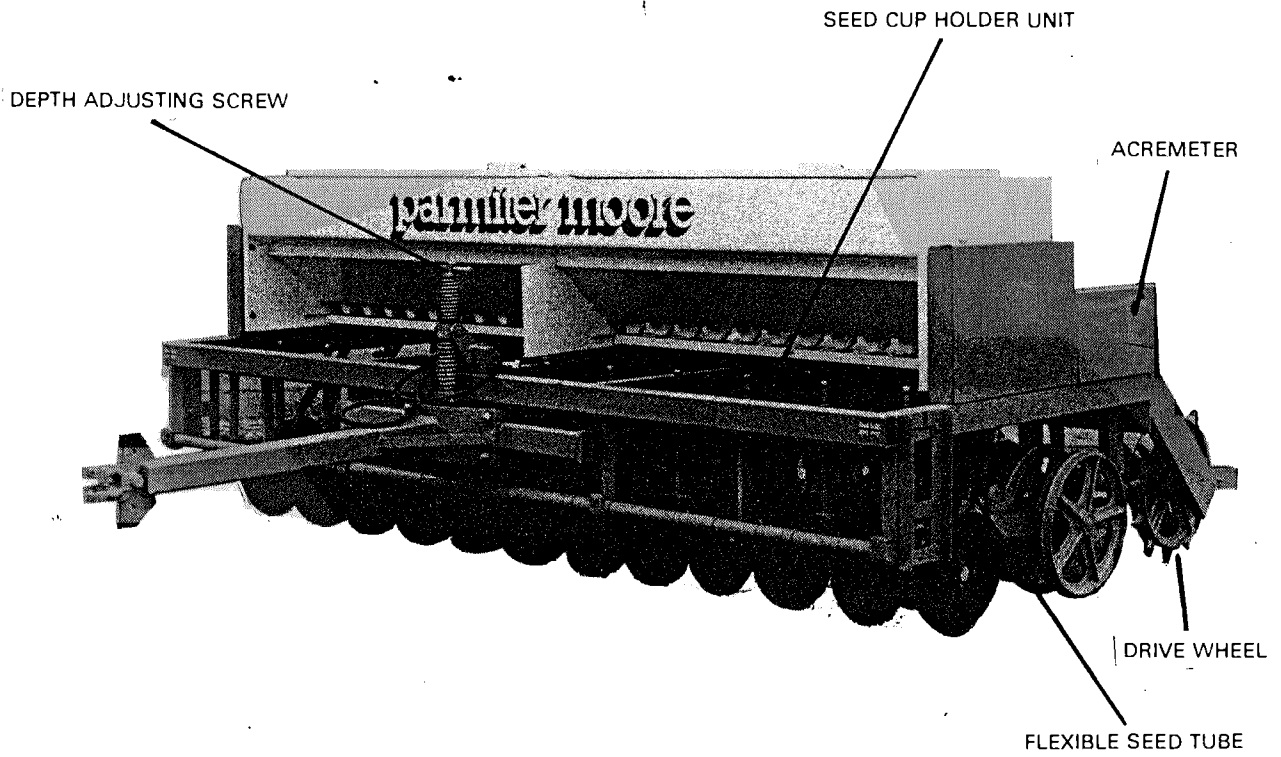
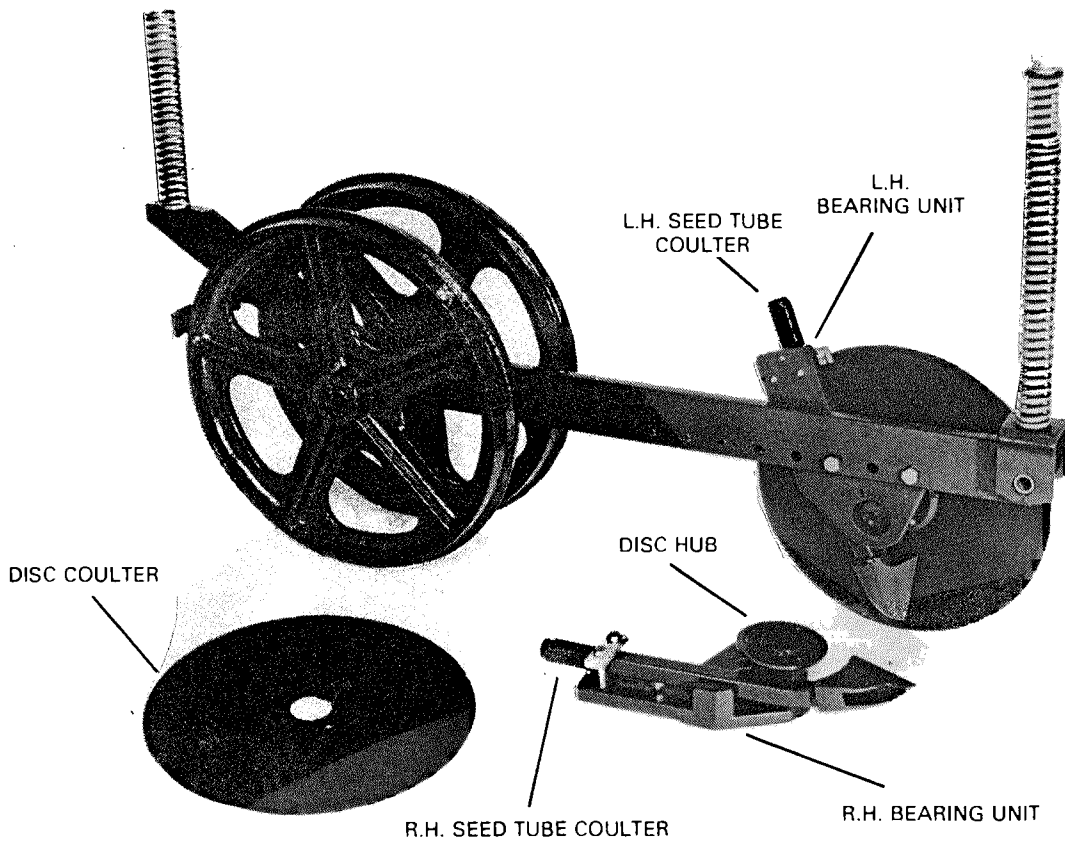


FIGURE 2 DRAG ARM SEEDING UNIT



# The Parmiter-Moore Drill System

## 1. DESCRIPTION

The Parmiter-Moore Depth Charge Drill will sow almost any seed into a variety of seed beds. It can be used for direct drilling or no-till application right through 'scratch' cultivations, minimum tillage to conventional seed beds. It is of robust construction and has an output of up to nine acres per hour (4 Hectares per hour).

The Parmiter-Moore Depth Charge Drill consists of twelve independent drag arm seeding units which are spring mounted to the main frame. Each unit consists of 2 discs and 2 press wheel rollers, - the discs are mounted each side of the drag arm at opposite angles. A seed tube coulter is mounted on the inside of each disc, in a position which enables the seed to be placed in a slit cut by the disc.

The press wheel rollers are mounted to the rear of the drag arms behind the discs, rolling directly over the slits.

## 2. SPECIFICATION

Overall Width	12ft.10in.	3900mm
Overall Length	13ft.6in.	4100mm
Overall Height (Transport)	5ft.10in.	1790mm
Overall Height (Working)	5ft.1in.	1550mm
Total Weight	5910 lbs.	2680 kg.
Sowing Width	13ft.1½in.	4000mm
Number of Coulters	24	24
Row Width	6½in.	166mm
Seedbox Capacity	37cu.ft.	1050 litres

## 3. WORKING PRINCIPLE

When the drill is in the raised position, the weight of the machine is carried on the two land wheels and the tractor drawbar. As the machine is lowered, the disc coulters and press wheels touch the ground, meet resistance from the soil, and begin to compress the springs attached to each end of the drag arm seeding units - the frame can be lowered until all the available weight of the machine is supported on the springs.

The penetration of the discs and hence the seed depth can be controlled by the depth adjusting screw. This alters the relationship between the discs and the roller press wheels; weight can be transferred from the rollers to the discs or vice-versa (*See Figs A and B*). As each drag arm is separately sprung both front and back, each unit is able to follow ground contours independently. As the drill is drawn forward, the inclined disc opens a slit and the seed tube coulter acts like a tine to prepare a tilth into which the seeds are dropped. The roller press wheels then consolidate to ensure good seed/soil contact and moisture retention.

## 4. DEPTH CONTROL<sup>™</sup>

This is achieved by turning the depth adjusting screw to raise or lower the discs to the required depth in different field conditions and seed requirements; turning the screw clockwise increases depth, while turning the screw anti-clockwise reduces the depth. Care must be taken with this setting to achieve correct seed depth and effective pressing with the rear press wheels. The tractor drawbar height may need to be altered to achieve the necessary result.

In soft field conditions it is essential to set the discs deep enough to cut through all the matt or surface trash. Seed will germinate and grow better when in contact with the soil. In wet, soft conditions the discs may be set to penetrate deeper than required. As the drill moves forward the seed is trapped by the sides of the slit and do not necessarily fall to the bottom of the slit.

## 5. SEEDBOX (See Figs. 3 and 4)

Each seed distribution unit of the Parmiter-Moore Drill is supplied with seed from the hopper by means of a seed feed box. The variable opening of the distribution unit regulates the seed rate. At the lowest part of the feeding box, a plastic feed rotor, operated by the stalker drive wheel, supplies the distribution unit with seed at a high degree of uniformity. Made of flexible plastic (Lucolen) the feed rotor is adapted to, and fits the shape of all kinds of seed: large or small, heavy or light, round or long. An anti-compaction plate can be fitted over the seed feed boxes to give less damage to the larger, more easily damaged seeds such as

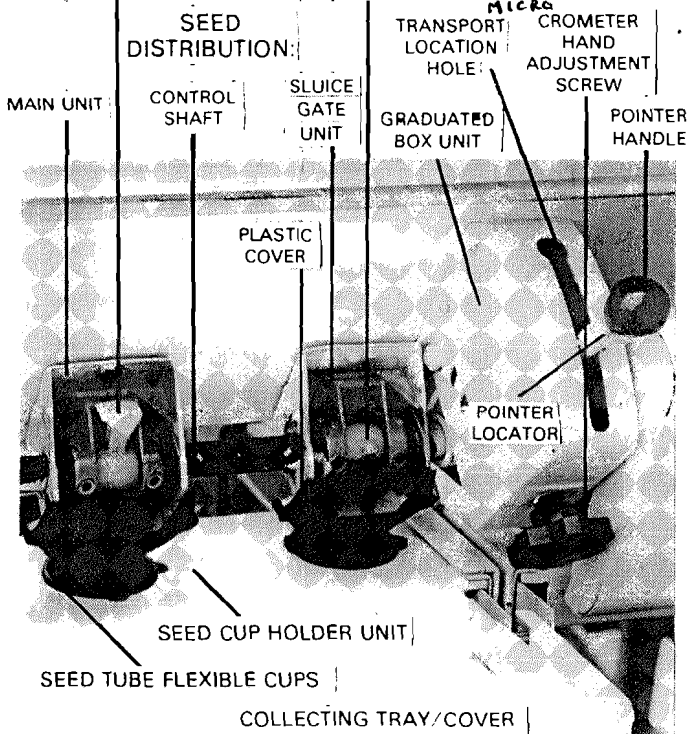
# The Parmiter-Moore Drill System

- FIGURE 3 -  
SEED DISTRIBUTION  
AND CALIBRATION UNITS

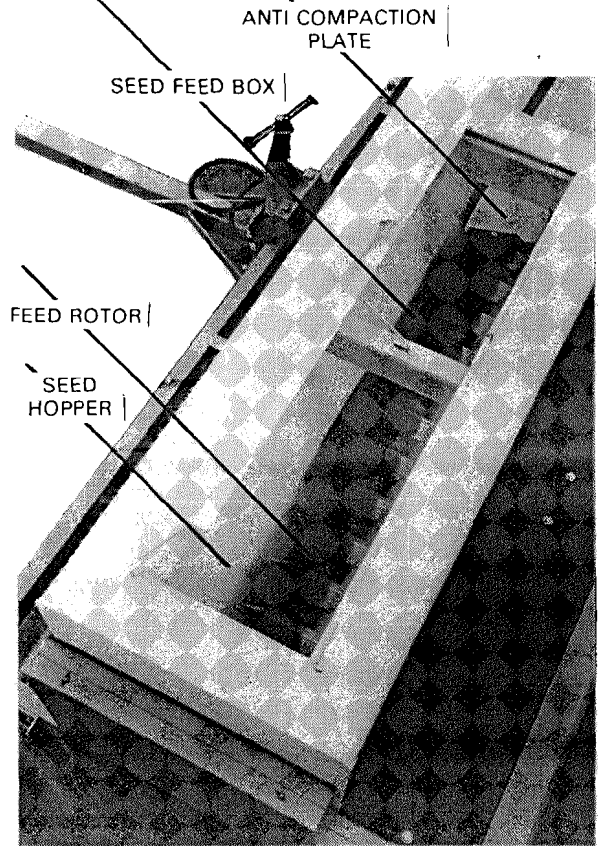
SEED DISTRIBUTION UNITS WITH THE  
NYLON BLANK-OFF SHUTTERS IN THE  
OPEN POSITION

CLOSED POSITION

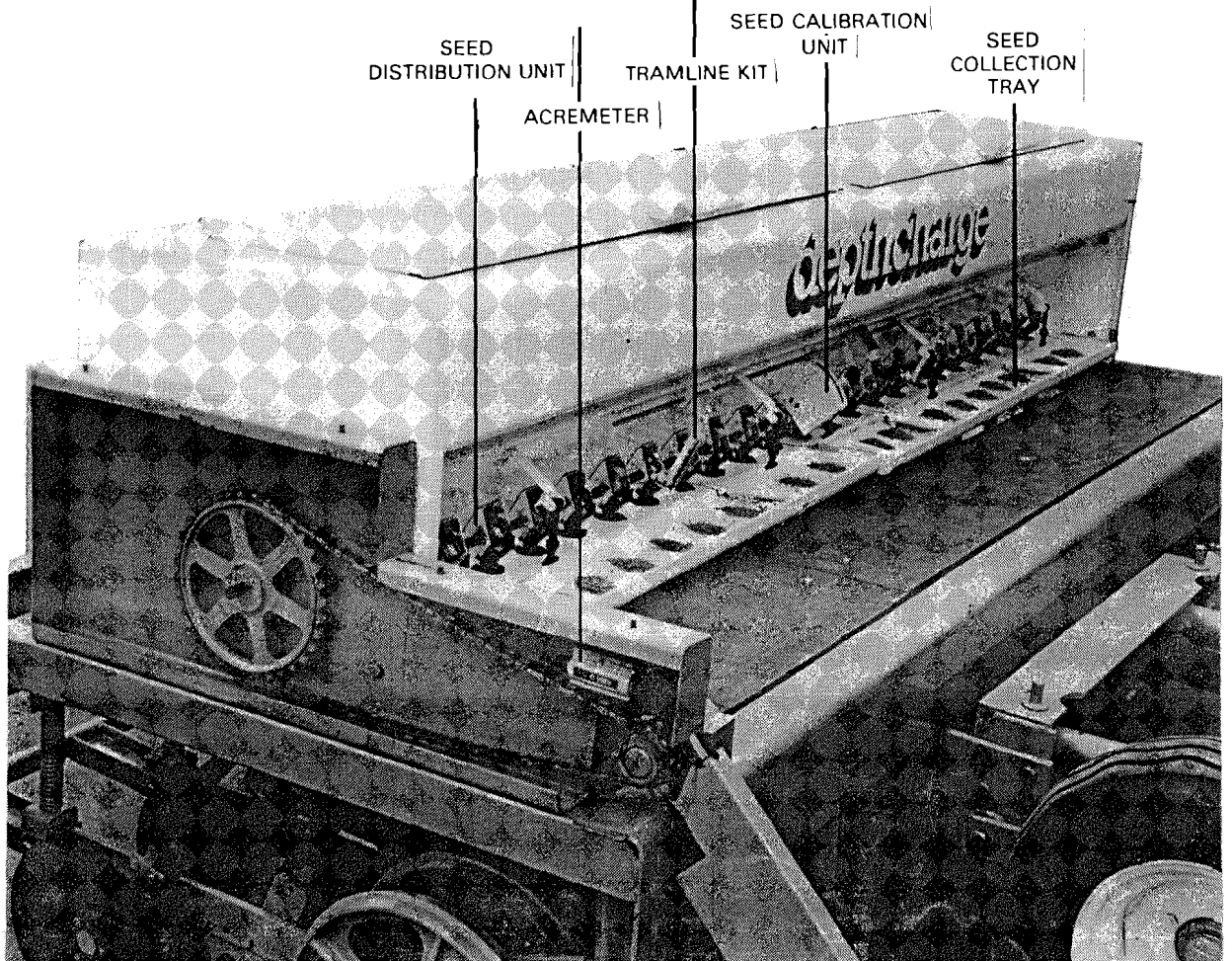
CALIBRATION



- FIGURE 4 -  
SEEDBOX



- FIGURE 5 SEED CALIBRATION -



# The Parmiter-Moore Drill System

soya beans or peas.

A micrometer hand control screw is used to adjust the openings of the seed distribution units for precise seed rate settings.

## 6. SEEDING AT DIFFERENT ROW WIDTHS

It is possible to sow seeds at row widths of 6½in.,(16.5 cms.), 13in.,(33 cms.), 19½in.,(49.5cms.), and 26 ins.,(66 cms.).

Blank off the seeding units not required by turning the nylon blank off shutters to close the openings of the seed distribution units, as shown in *Fig. 3*.

For transportation or moving the drill from field to field, all the distribution units can be closed by pushing the pointer handle to the top of the graduation scale. It can be locked in this position by dropping the locator into the transport location hole.

## 7. ACREMETER

The acremeter is actuated by a linkarm attached to the end of the double drive sprocket. The adjustable arm on the end of the meter should be positioned so that the linkarm is free when the end of the crank is at the top of its stroke.

The acremeter is calibrated so that it takes 1000 actuations to read 1 acre, therefore, only the first 3 digits read the acres and the last 2 digits the decimal fraction of an acre.

The acremeter can be set to Zero by turning the ribbed knob on the end of the meter.

## 8. CALIBRATION (See Figs. 5 and 6)

The Seed Charts are not a guarantee of the correct amount of seed to be sown - use them only as a guide to the seed quantities required. Compilation of a Seed Rate Chart is not possible due to variations in seed types and seed mixtures.

To Check the Seed Rate, set the calibration pointer to the reading as given in the Seeding Tables: open the covers protecting the distribution units and hinge them down to form collection trays for the seeds. Release the spring loaded locating pins at each of seed cup holder unit, and slide them forward so that the seed collection trays are underneath the outlets of the seed distribution units.

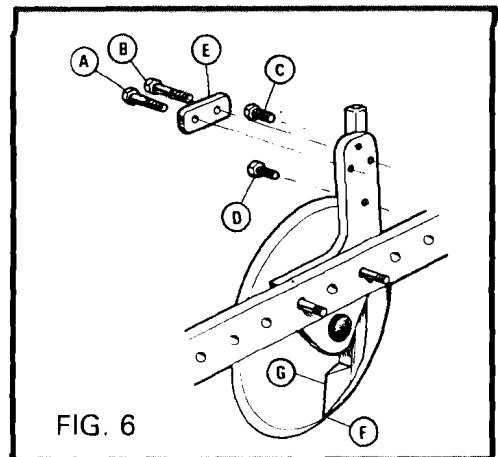
Partially fill the seedbox and actuate the acremeter 100 times or (26 turns of the handle when attached to the 34-tooth seedbox drive sprocket), remove the collection trays and weigh the seed: this will represent the seed rate for one-tenth of an acre. Multiply by 10 to obtain the Seed Rate Per Acre. By adjusting the micrometer control screw the rate can be varied and the desired Seed Rate obtained.

## 9. THE SEED TUBE COULTER ADJUSTMENT (See Fig. 7)

The tip F, of the seed tube couler should be set so that it is approximately ½" above the outer edge of the disc. The leading edge of the seed couler should be set parallel to the disc and just touching it. This can be achieved by means of the retaining bolts A and B and the adjusting screws C and D. If the tip, F, of the seed couler is out from the disc, this can be corrected by tightening bolt A (front bolt) more than bolt B, while the top, G of the seed couler can be brought in towards the disc by tightening bolt B (rear bolt) more than bolt A.

Some discs, may be slightly distorted, but when in work the side force of the soil on the disc will keep it in contact with seed couler. A certain amount of bedding in and wear takes place between the disc and the seed couler and it may become necessary to adjust screws C and D to position the seed couler closer to the disc.

To obtain better depth control for small seeds, e.g. oilseed, rape, turnips etc., in loose or cultivated soil it may be necessary to lower the tip of the seed tube couler almost to the edge of the disc. In heavy trash conditions it may be necessary to raise the tip of the seed tube coulers, so that the disc will cut through the trash before the couler opens the slit.



# The Parmiter-Moore Drill System

## *NOTE: Taper Roller Bearing Adjustment*

Timkin Duo-Seal Taper Roller Bearings are fitted to both the discs and the press wheel rollers. If the bearings become slack due to wear etc., it may be necessary to re-adjust them - remove the dust cover and tighten up the coneloc nut ( $\frac{5}{8}$ " UNF) until it is completely tight, then slacken off so that the bearing can turn freely. The bearings are packed with Shell Alvania Grease.

## 10. OPERATION

Attach the drill to the tractor and raise the drill to its maximum height, remove the road transport pins.

Calibrate the seeding mechanism. Set the drilling depth and drill the headlands; it is wise to drill in an anti-clockwise direction to avoid risk of damage to the Drive Wheel. Check seeding depth once operating into the field as the headlands tend to be more compacted than the remainder of the field.

Do not turn sharp corners with the Drill in operation as this will give wrong disc-to-soil side thrust. When this happens the disc is parted from the seed coulter and trash can then enter between them resulting in blockage to the seed flow. It is better to lift the machine out of and into work when turning corners.

Work rates of up to 9 acres per hour can be obtained. The operating speed and the quality of work which results is controlled by field conditions but wherever possible a steady speed should be maintained. As field conditions vary, it may be necessary to adjust the coulter settings to maintain seed depth and cover.

The drill will work equally well in cultivated soil - here most of the drill weight is carried on the press wheel rollers and tractor drawbar. Seed depth can be obtained by adjusting the depth control screw in the usual manner. A higher drawbar hitch point may be required. The soil is usually tracked to the depth required by the disc seeding units and compacted by the press wheel rollers - this gives ideal conditions for seed germination. In some fields it may be necessary to roll first, especially if there are loose stones on the surface; this helps to prevent blockages.

All nuts and bolts should be checked regularly. When working in stony or trashy conditions it will be necessary to check all nuts and bolts daily, particularly the seed coulters and disc bolts.

# The Parmiter-Moore Drill System

FIGURE 6: APPROXIMATE SEEDING RATES FOR PARMITER-MOORE DRILL.

CALIBRATION SCALE READING	SEEDING RATE LBS/ACRE				
	ITALIAN RYEGRASS (COARSE)	GRASS SEEDS MIXTURE (FINE)	CEREALS WHEAT, BARLEY, OATS, RYE.	LARGE SEEDS PEAS, SOYA BEANS	SMALL SEEDS TURNIPS, KALE, RAPE, ALFAFA.
2					2
3					4
4					8
5					16
6					32
7					
8		8			
9		12	30		
10		16	45		
11		21	65		
12		26	80	70	
13		32	100	90	
14	9	38	120	110	
15	12	45	150	135	
16	15	55	180	155	
17	18		220	190	
18	21		250	240	
19	24				
20	28				
21	32				
22	38				

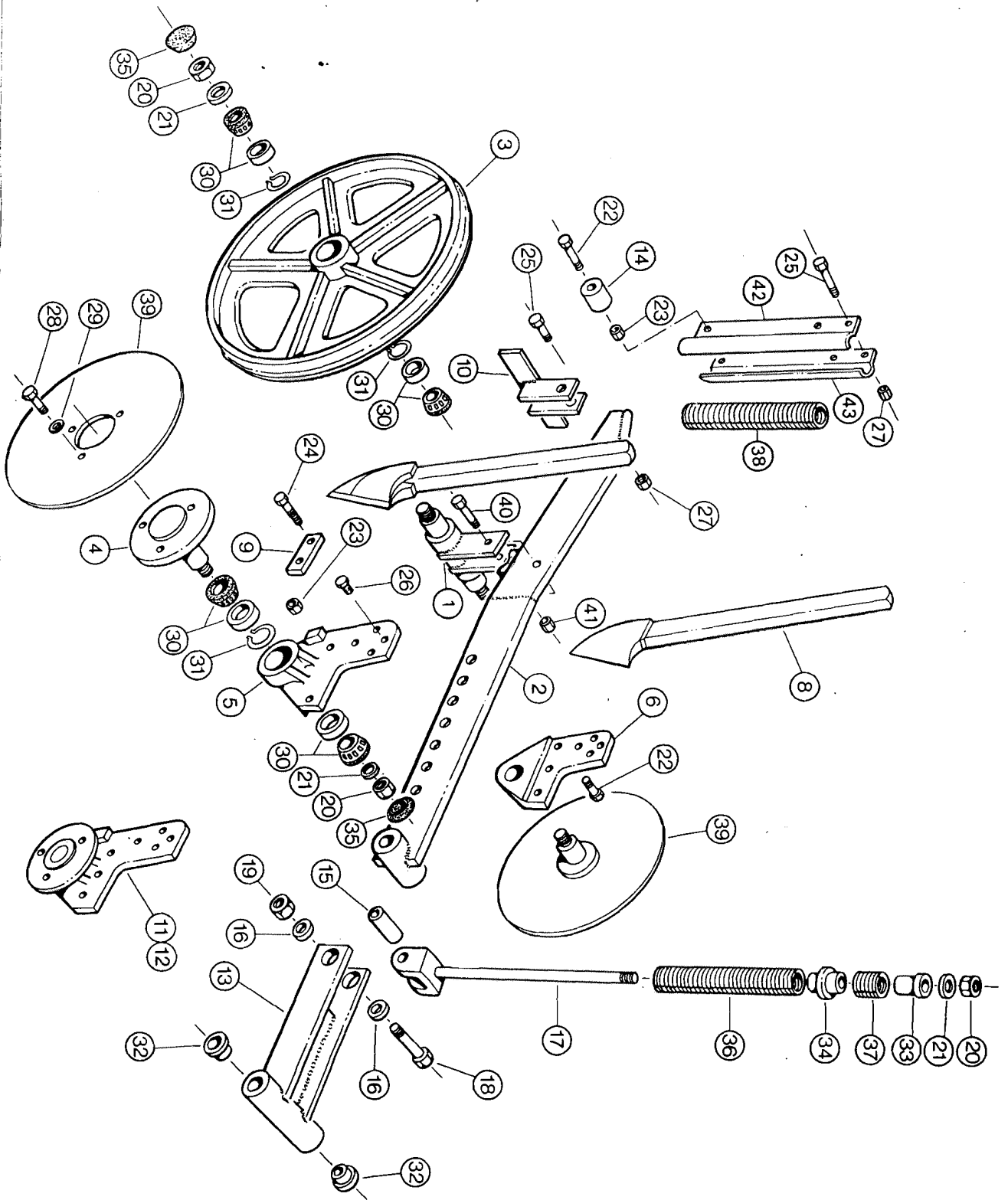
**NOTE:** This Seed Chart is not a guarantee of the correct amount of seed to be sown - use it only as a guide for the seed quantities required.

Correct seed rates can be obtained by actuating the Acremeter 100 times (26 turns of the handle when attached to the 34-tooth seed box sprocket) and weighing the seeds in the Collection Trays provided. The weight of the seed is equivalent to that used to sow one tenth of an acre. By adjusting the Micrometer Control Screw, the Seed Rate can be varied and the desired Seed Rate obtained.



# The Parmiter-Moore Drill System

## DRAG ARM SEEDING UNIT

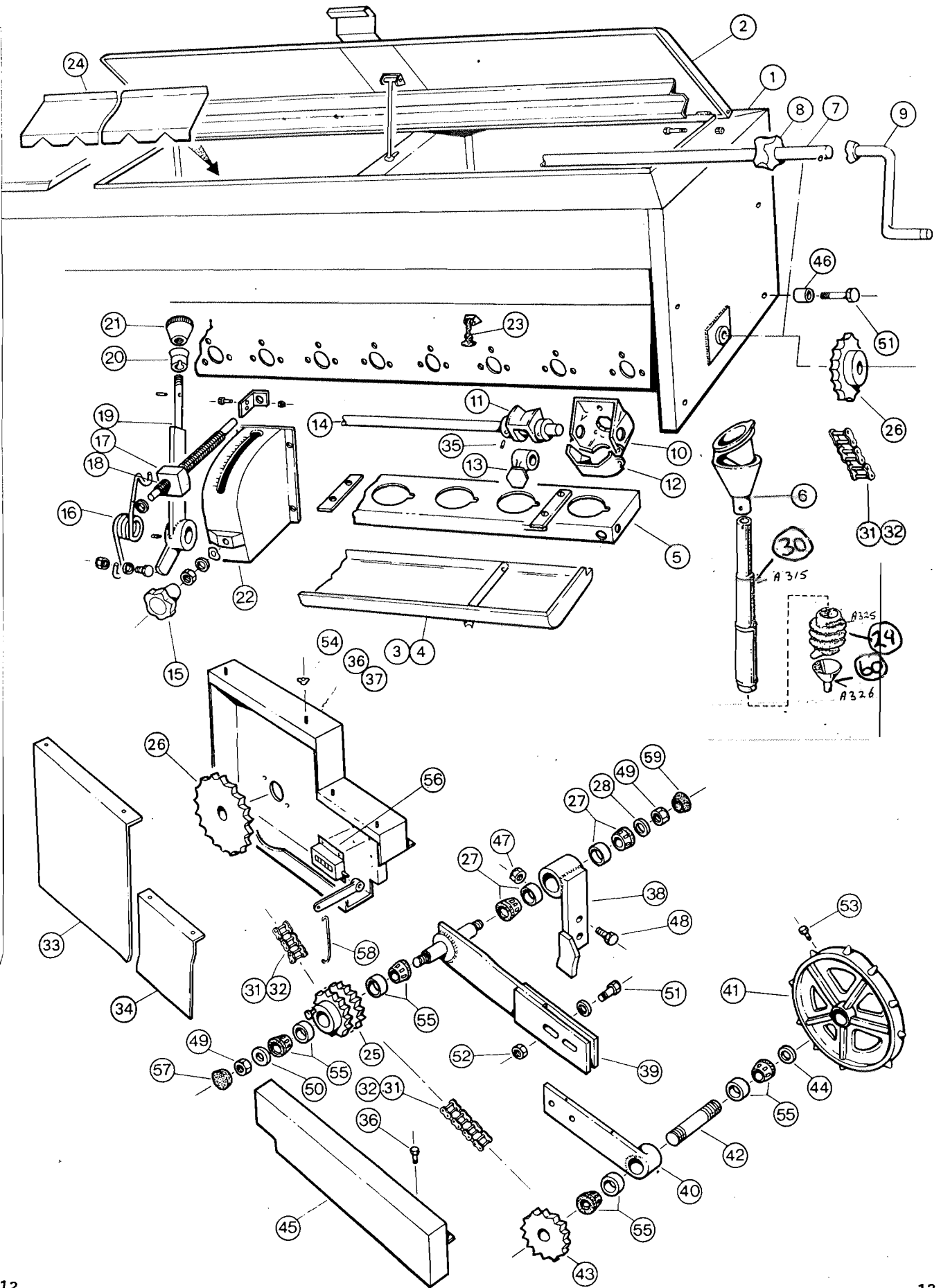


# The Parmiter-Moore Drill System

## DRAG ARM SEEDING UNIT

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	1002-41	Drag Arm Axle Unit	1
2	1002-40	Drag Arm Mounting Bar - Cranked	1
3	1002-3	Press Wheel	2
4	1002-4	Disc Hub	2
5	1002-31	Disc Mounting Bracket - RH	1
6	1002-32	Disc Mounting Bracket - LH	1
7	1002-7	Seed Tube Coulter - RH	1
8	1002-8	Seed Tube Coulter - LH	1
9	1002-9	Seed Coulter Retaining Plate	2
10	1002-33	Press Wheel Scraper	1
11	1002-28	Disc Bearing Repl. Unit - RH	1
12	1002-29	Disc Bearing Repl. Unit - LH	1
13	1001-23	Pivot Arm Unit	1
14	1002-44	Dragarm Support Distance Piece	1
15	1002-15	Pivot Sleeve	1
16	1002-16	Pivot Sleeve Bush	2
17	1002-17	Front Pivot Spring Arm	1
18	B4	Bolt - 1" x 1½" UNC	1
19	B8	Nyloc Nut - ¾" UNC	1
20	B10	Coneloc Nut - ⅝" UNF	5
21	B11	Washer - N16 x 32 H.D.	5
22	B14	Bolt - M12 x 50	5
23	B15	Coneloc Nut - M12	5
24	B22	Bolt - M10 x 65	4
25	B23	Bolt M10 x 50	<del>4</del> 3
26	B25	Set Screw - M10 x 20	4
27	B27	Coneloc Nut - M10	<del>4</del> 3
28	B32	Set Screw - ⅜" x ⅝" UNF	6
29	B33	Shakeproof Washer ⅜"	6
30	B51	Timkin 1" Taper Roller Bearing	8
31	B52	Bearing Circlip	6
32	B55	Pivot Arm Oilite Bush	2
33	B88	Spring Retaining Bush	1
34	B89	Spring Locating Bush	1
35	B90	Dust Cap	4
36	B92	Front Spring - Lower	1
37	B93	Front Spring - Upper	1
38	B95	Rear Spring H.D.	1
39	B99	Seed Disc Coulter 16" Dia. (406 mm)	2
40	B9	M16 x 55 Bolt	1
41	B26	M16 Coneloc	1
42	1002-42	Dragarm Guide Plate RH	1
43	1002-43	Dragarm Guide Plate LH	1

# The Parmiter-Moore Drill System

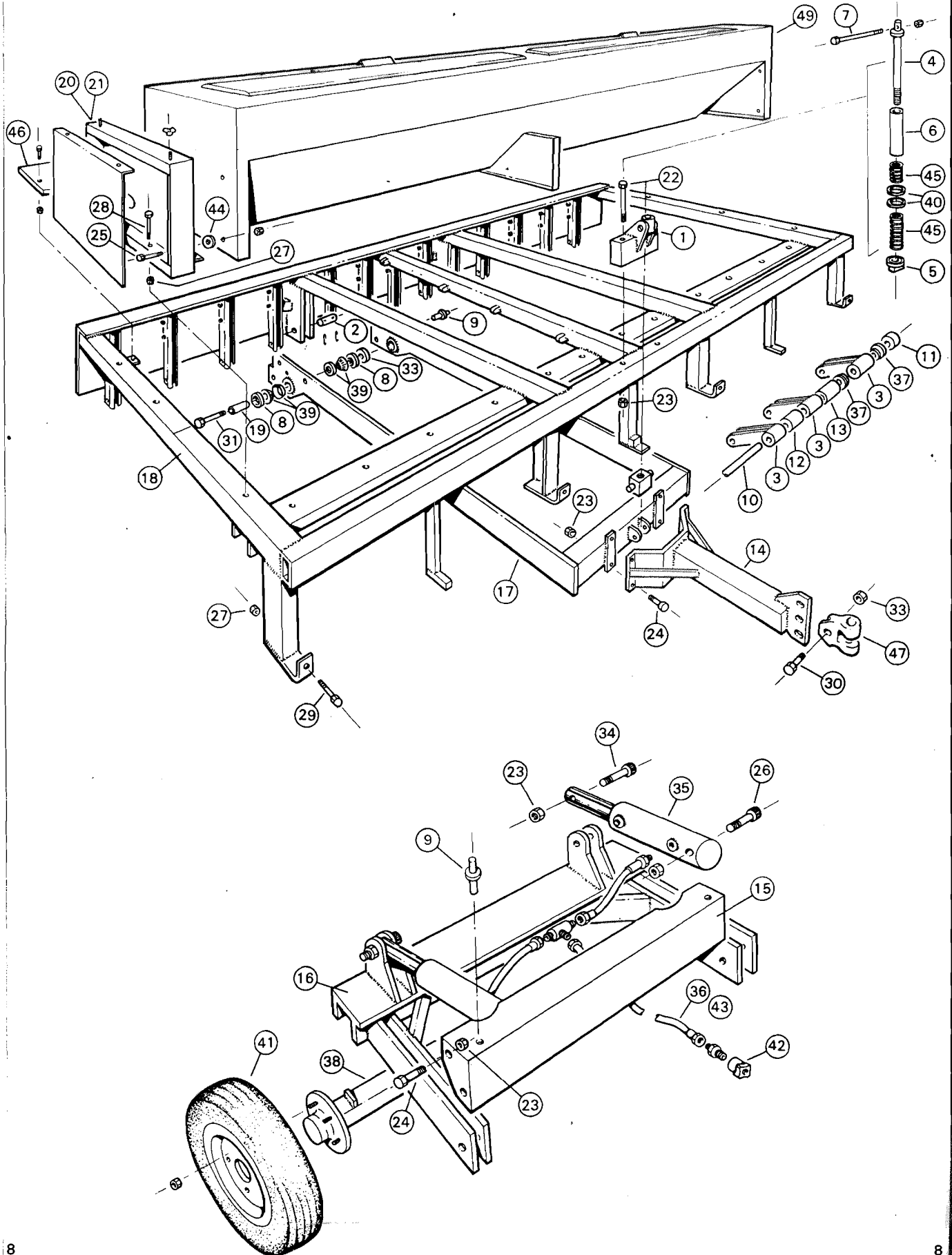


# The Parmiter-Moore Drill System

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	B271	Seedbox Shell	1
2	B272	Seedbox Lid	1
3	B273	Collecting Tray/Cover - RH	1
4	B274	Collecting Tray/Cover - LH	1
5	B275	Seed Cup Holder Unit	1
6	B206	Seed Cup Holder	24
7	B279	Rotor Drive Shaft	1
8	B208	Rotor Feed Propellor	24
9	B209	Calibration/Jack Handle	1
10	B210	Distribution - Main Unit	24
11	B211	Distribution - Sluice Gate Unit	24
12	B212	Distribution - Plastic Cover	24
13	B213	Distribution - Nylon Shutter	24
14	B276	Distribution - Shaft	1
15	B215	Calibration - Hand Adjustment Screw	1
16	B216	Calibration - Spring	1
17	B217	Calibration Adjuster Nut	1
18	B218	Calibration - Screw Thread	1
19	B219	Calibration - Pointer Shaft	1
20	B220	Calibration - Pointer Locator	1
21	B221	Calibration - Pointer Handle	1
22	B222	Calibration - Graduated Box Unit	1
23	B279	Rubber Strap	2
24	B278	Anti Compaction Plate	2
25	1003-53	9T Twin Sprocket	1
26	1003-68	34T Sprocket	1
27	B57	1 3/8" Timken Taper Bearing	2
28	1003-88	Bearing Washer	1
29	<del>B111</del> A325	Flexible Joint TUBE - BELLOWS	24
30	<del>B110</del> A315	Flexible Seed Tube - 3T	24
31	B184	<del>176</del> L Drive Chains - Upper & Lower	2
32	B174	Drive Chain - <del>lower</del> connecting link	2
33	1003-83	Chain Guard-Large	2
34	1003-84	Chain Guard-Small	1
35	B41	Socket Head Screw - M6 x 10	48
36	1003-85	Seed Box Mounting Bracket - RH	1
37	1003-86	Seedbox Mounting Bracket - LH	1
38	1003-49	Support Arm Pivot Housing	1
39	1003-46	Drive Wheel Support Arm - Upper	1
40	1003-47	Drive Wheel Support Arm - Lower	1
41	1003-75	Drive Wheel	1
42	1003-76	Drive Wheel Axle	1
43	1003-48	Lower Drive Sprocket - 16T	1
44	1003-78	Drive Wheel Spacer	1
45	1003-82	Chain Guard - Lower	1
46	1003-87	Seedbox Spacer	8
47	B2	M20 Nut-Coneloc	2
48	B7	M20 x 65 Bolt	2
49	B10	5/8 UNF Nut-Coneloc	2
50	B11	M16 x 32 Washer - H.D.	2
51	B14	M12 x 55 Bolt	8
52	B15	M12 Nut-Coneloc	8
53	B24	M10 x 30 Set Screw	1
54	B28	M10 Wing Nut	6
55	B51	1" Timken Taper Roller Bearing	4
56	B78	Acrometer	1
57	B90	Dust Cap	1
58	B98	Acrometer Linkarm	1
59	B280	Large Dust Cap	1
60	A326	FLEXIBLE SEED TUBE - JOINT	24

# The Parmiter-Moore Drill System

## MAIN FRAME AND DRAWBAR ASSEMBLY



# The Parmiter-Moore Drill System

## MAIN FRAME AND DRAWBAR ASSEMBLY

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	1001-11	Depth Control Screw Holder	1
2	1001-17	Drawbar Pivot Pin	2
3	1001-23	Pivoting Arm Unit	9
4	1001-34	Depth Control Screw	1
5	1001-35	Depth Control Nut	1
6	1001-36	Depth Control Tube	1
7	1001-37	Depth Control Handle	1
8	1001-50	Pivot Collar	4
9	1001-63	Transport Pin	2
10	1001-86	Pivot Bar - Front	1
11	1001-68	Spacer Bush - End	2
12	1001-66	Spacer Bush - Inner Bushed	2
13	1001-67	Spacer Bush - Inner	6
14	1001-84	Drawbar - Towing Arm	1
15	1001-85	Drawbar - Rearcross Member	1
16	1001-82	Drawbar - Axle Mounting Unit	1
17	1001-83	Drawbar Assembly	1
18	1001-81	Main Frame Assembly	1
19	1001-95	Pivot Bush	2
20	1003-85	Seedbox Mounting Bracket - RH	1
21	1003-86	Seedbox Mounting Bracket - LH	1
22	B1	M20 x 220 Bolt	2
23	B2	M20 Nut Coneloc	12
24	B7	M20 x 65 Bolt	8
25	B14	M12 x 55 Bolt	8
26	B12	M20 x 180 Bolt Special H.T.	1
27	B15	M12 Nut Coneloc	14
28	B18	M12 x 120 Bolt	4
29	B19	M12 x 100 Bolt	4
30	B38	1" x 4" UNC Bolt	1
31	B39	1" x 6" UNC Bolt	2
32	B43	M6 x 50 Split Pin	6
33	B44	1" UNC Nut Nyloc	3
34	B47	M20 x 100 Bolt Special H.T.	1
35	B53	3" Diameter Hydraulic Cylinder	1
36	B74	Hydraulic Hose - Kit Single Acting	1
37	B55	1½ x 1¼ x 1¾ F. Oilite Bush	24
38	B75	Road Wheel Axle - 4M	1
39	B57	1 ¾" Timken Taper Roller Bearing	4
40	B58	2" Timken Taper Roller Bearing	1
41	B76	Road Wheel 10 x 5 x 15 x 10 Ply	2
42	B68	Dowty Coupling	1
43	B77	Hydraulic Hose Kit Double Acting	1
44	1003-87	Seedbox Specer Bush	8
45	B91	Depth Control Spring	2
46	B107	Rear Platform - 4M	1
47	B185	Clevis Hitch	1
48	B209	Calibration/Jack Handle	1
49	B270	Seedbox Complete	1