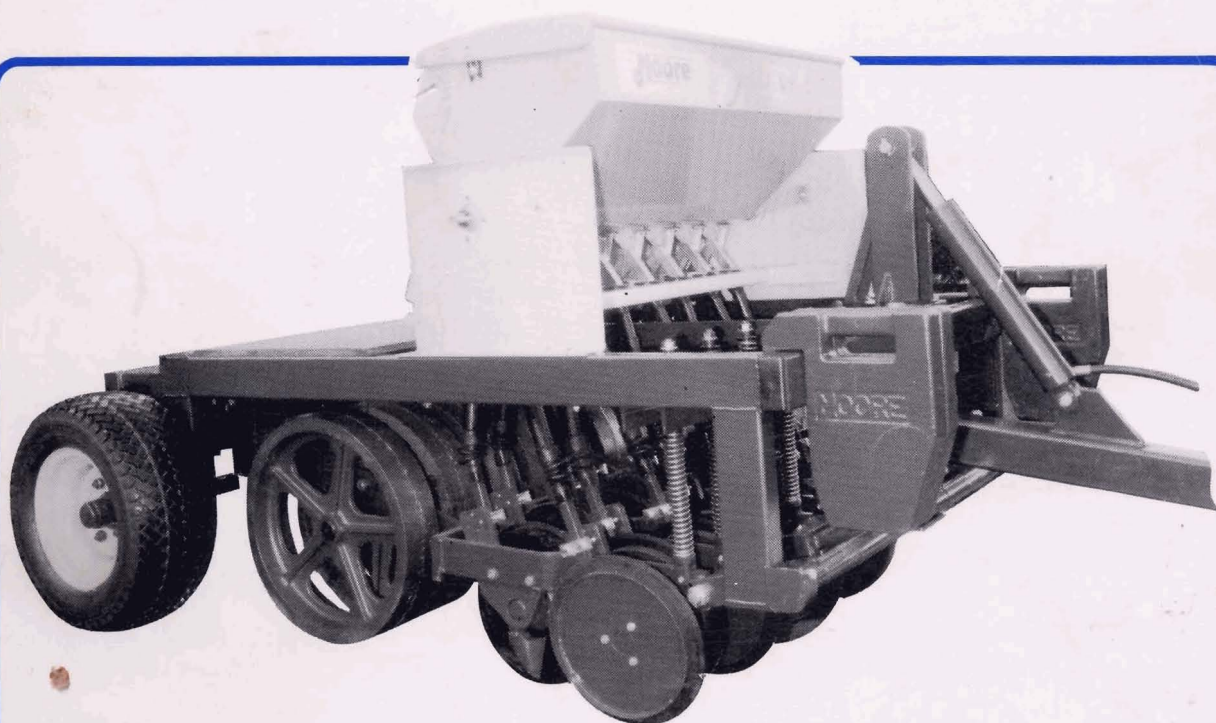


Moore

1.3 METER UNI-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 & Parts List.



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1. DESCRIPTION

The Uni-Drill is designed to sow grass seeds into all types of sports, leisure and amenity grounds. Use the Moore Uni-Drill to obtain a better wearing turf on sportsfields.

The Uni-Drill plants seeds at a constant depth into a prepared mini seedbed. The heavy press wheels consolidate the seed and soil giving good, even seed germination.

Grass seeds planted at 1/2" (12 mm) deep give an excellent rooting structure, which holds the grass sward together better than shallow planted seeds which tend to be more easily scuffed off.

No stones or trash are left on the surface and it is possible to use the playing fields within a few days of planting.

The Uni-Drill consists of a row of independent dragarm seeding units which are spring mounted to the main frame. Each unit consists of 4 discs and 2 press wheel rollers. The discs are mounted each side of the pair of dragarms 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 dragarms behind the discs, rolling directly over the slits (See Fig. 2.).

Seed is distributed to the seed tube coulters from the seedbox mounted on top of the main frame and operated by a ground driven stalker wheel.

2. SPECIFICATION

Sowing Width	1333 mm	4 ft 6 in
Overall Width	2000 mm	6 ft 6 in
Total Weight	1900 kg	4190 lbs
No. of Coulters	16	16
Row Width	83 mm	3 1/4 in
Seedbox Capacity	140 ltrs	5 cu ft

3. WORKING PRINCIPLE

When the drill is in the raised position, the weight of the machine is carried on the 2 transport 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 dragarm 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 seed tube coulters is controlled by depth control bands which are on the front units. Each unit is limited in penetration by these bands which follow the ground contours. As each dragarm is separately sprung front and back, each dragarm unit follows 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 placed. The roller press wheels then consolidate to ensure good seed/soil contact and moisture retention.

4. TRANSPORT

When transporting the drill behind a tractor please use the ram locking device, so that the drill may not be accidentally dropped on the road and also to protect the ram seals. Also, the seed distribution units can be closed by pushing the Pointer Handle to the top of the Graduation Scale (see Fig. 3). It can be locked in this position by dropping the Locator into the Transport Location Hole.

When the Uni-drill is lowered into the working position it is important that the hydraulic control valve is left in the float position, in order to allow the Uni-drill to follow the ground contours.

IMPORTANT

TRANSPORT SPEED SHOULD BE KEPT TO A MINIMUM, ESPECIALLY OVER UNEVEN TERRAIN.

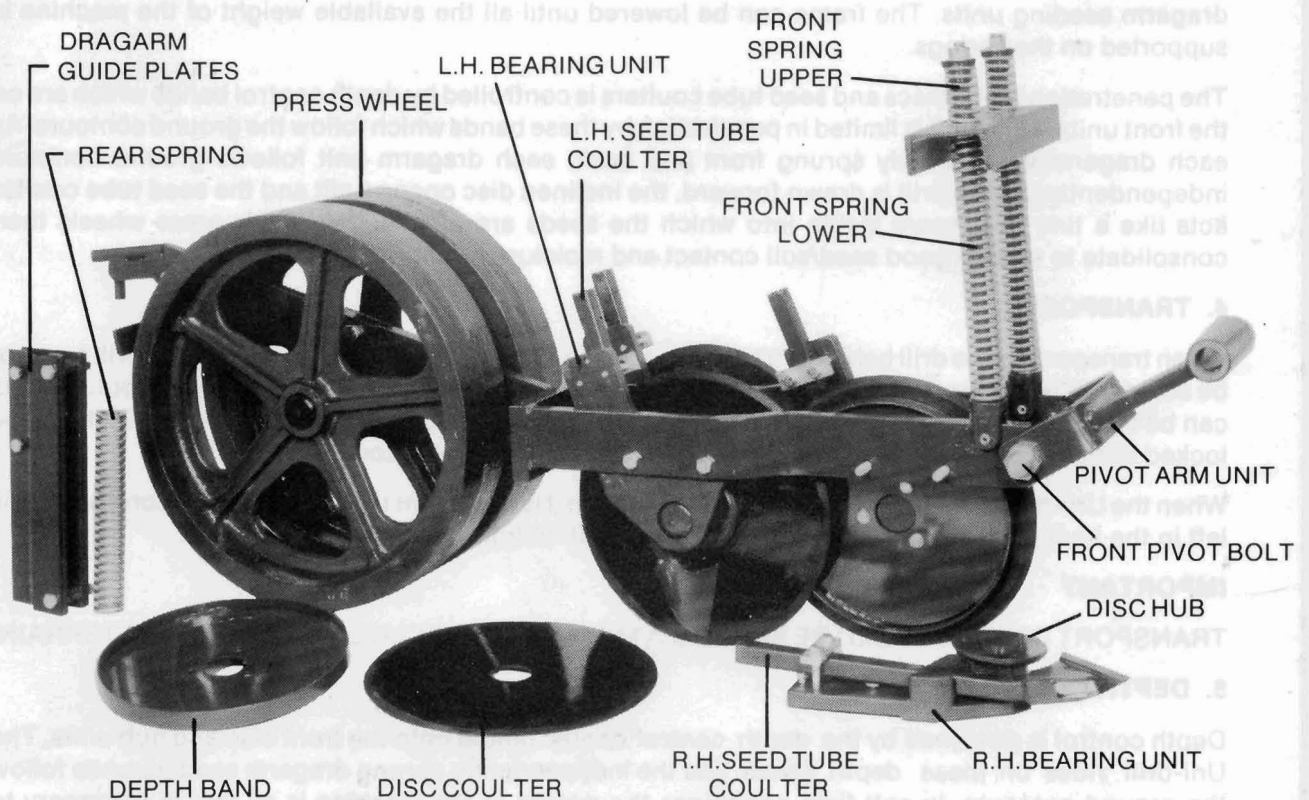
5. DEPTH CONTROL

Depth control is governed by the depth control bands bolted onto the front disc and hub units. The Uni-drill rides on these depth bands and the independently sprung dragarm seeding units follow the ground contours. In soft field conditions the weight of the machine is all that is necessary to achieve penetration. In harder conditions enough auxiliary weights should be added to the front of the drill in order to get discs to penetrate to the depth control band.

FIG:1 1.3 M. UNI-DRILL



FIG:2 DRAGARM SEEDING UNIT



6. SEEDBOX (See Fig. 3)

Each seeding unit of the Uni-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.

Mounted below the seed distribution unit there is a "seed flow splitting device" which allows each distributor to feed two disc/coulter units. This is a simple but very effective tool. The only maintenance required, is to ensure that the "splitting fin", is centred with the seed distribution unit.

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

7. CALIBRATION (See Fig. 4)

In order to calibrate the drill the following suggestions should be used.

To collect the seed, use either the collection tray/covers or place a plastic sheet on the ground below the seeding units so as to collect all the seeds from the units.

To use the collection tray/covers:-

A Put a quantity of seed in the seedbox and use the following table as an approximate guide

Calibration Scale Reading	Sowing Rates lbs/acre.	Kg/ha
8	12	14
10	20	23
12	30	34
14	42	48
16	56	63
18	72	80
20	90	100
22	115	140

This table is only to be used as a guide, as different type's of seed will affect the calibration. Fine seeds mixture can double the seed rate for the same scale reading.

REMEMBER, when cross drilling, only 1/2 the seed rate is required.

B Set the calibration pointer to the reading as given in the seeding tables.

C Open the covers protecting the distribution units and hinge them down to form collection trays for the seeds.

D Release the spring loaded locating pins at each end of the seed cup holder unit and slide it forwards so that the seed collection trays are underneath the outlets of the seed distribution units. To make this easier remove rear seed tubes from the seed cup holder unit.

E Hang the stalker drive wheel, using the chain provided, so that it clears the ground. Turn the drive wheel anti-clockwise (ie direction of travel) the required number of times.

(a) 35 Turns - 100 square yards

(b) 42 Turns - 100 square metres

F Remove the collection trays and weigh the seed or collect and weigh the seed on the plastic sheet, this will represent the seed rate for:-

(a) 100 Square yards Lbs x 48.2 - lbs/acre

(b) 100 Square metres Kgs x 100 - kg/hectare

G By adjusting the micrometer control screw the rate can be varied and the desired seed rate obtained.

FIG:3 SEED DISTRIBUTION & CALIBRATION

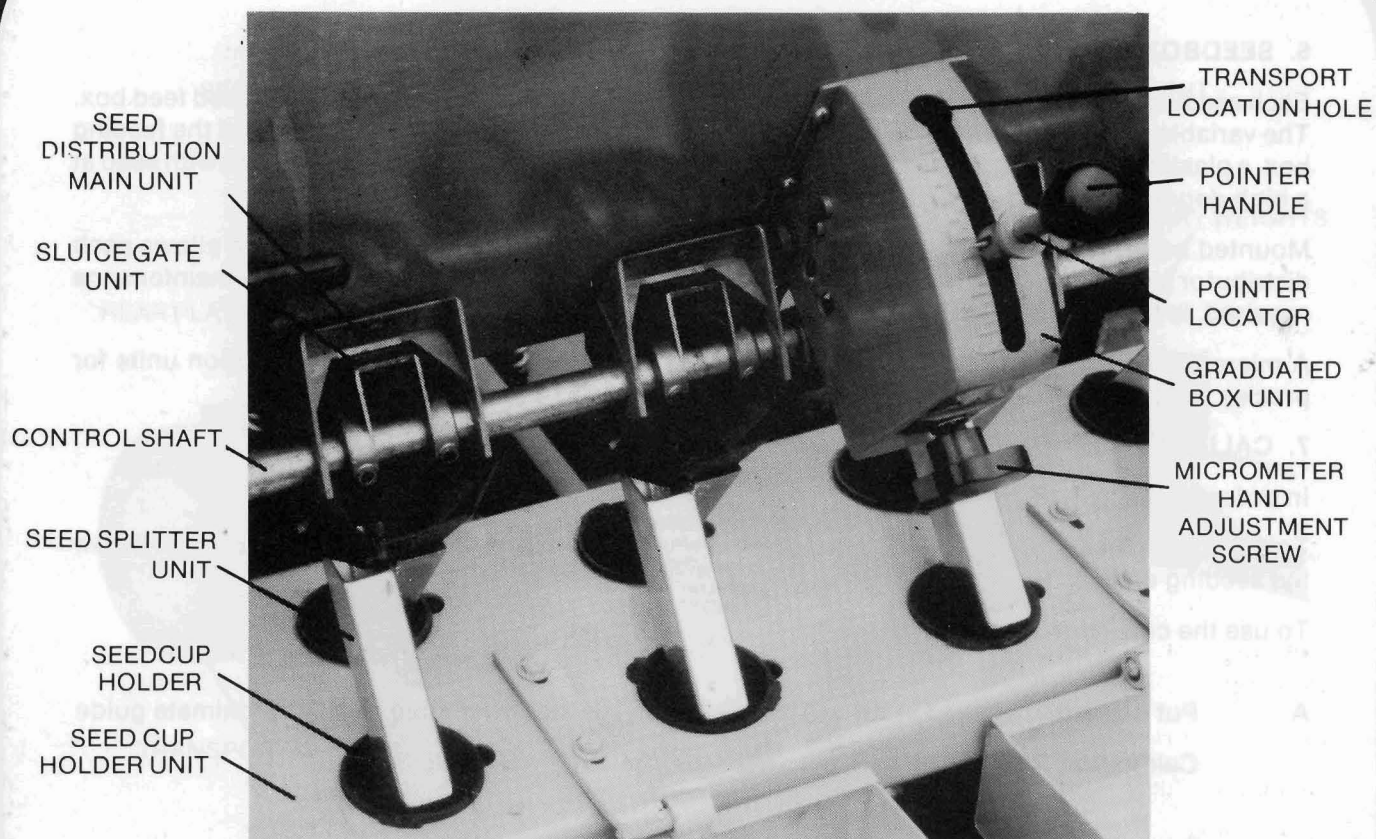
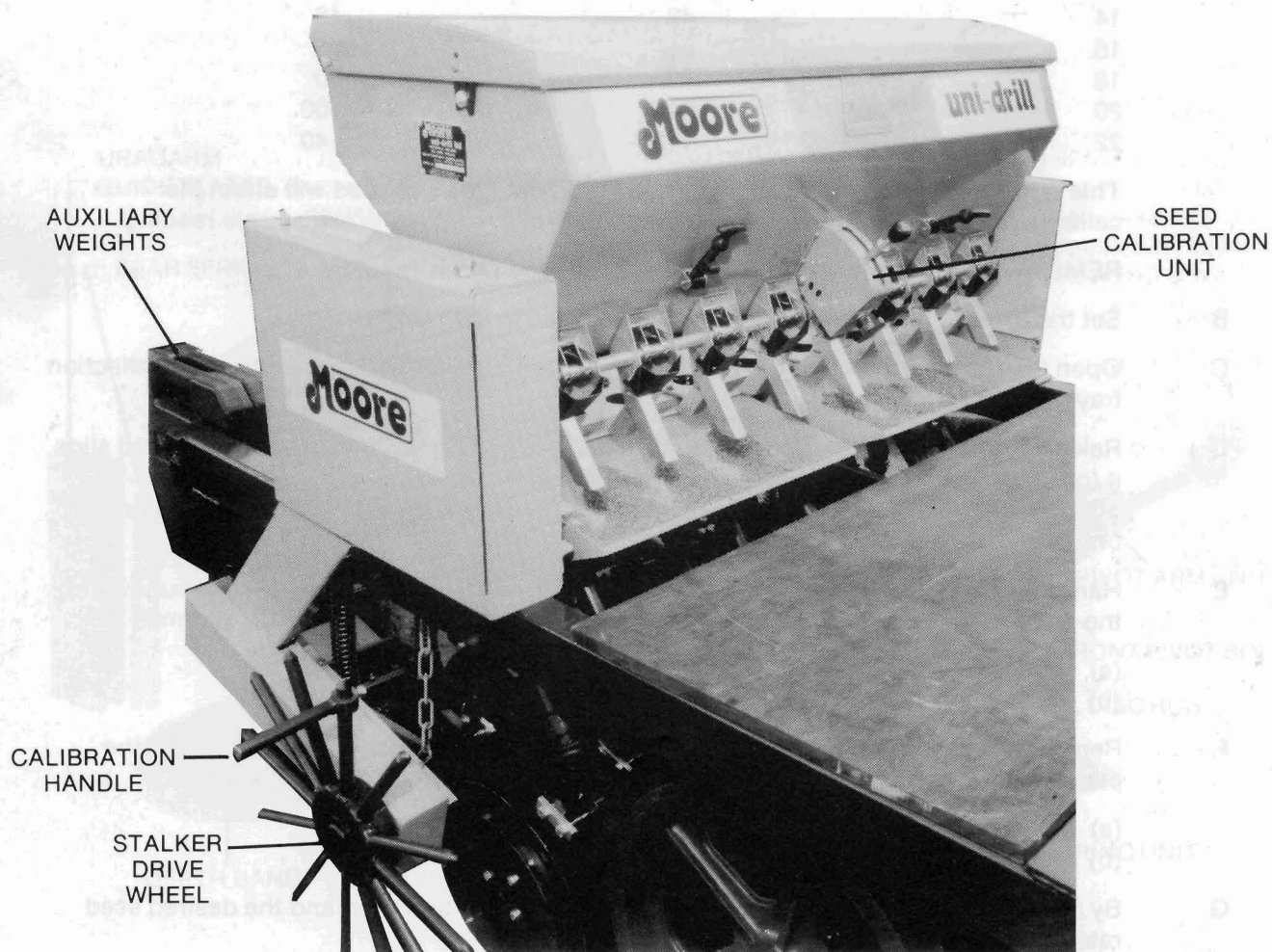


FIG:4 CALIBRATION



8. EMPTYING SEEDBOX

To empty seedbox:-

- A Remove as much seed as possible using a hand shovel or scoop.
- B Use a vacuum cleaner.

If a vacuum is not available then proceed as follows:-

- C Place a plastic sheet on the ground below the seed distribution units.
- D Fully open the seed distribution units.
- E Turn the seed rotors by means of the stalker wheel and remove as much seed as possible.
- F Wrap up a large paper tissue and place it between the rotor and the seed feed box.
- G Turn the rotor so that it will take the tissue around the bottom of the seedbox wiping it clean.

9. MAINTENANCE

A NUTS AND BOLTS

All nuts and bolts should be checked regularly, particularly the seed tube coulters, disc bolts and bearing nuts.

B BEARINGS

Check disc and press wheel bearings for correct adjustment.

1" Dia. Timken Duo Seal Taper Roller Bearings are fitted to the press wheels and disc hubs on the drill. Remove the dust cover and use a socket on the lock nut to tighten up the 2 taper roller bearings so that they can just turn freely. When the bearings are slack the rubber seals will wear thus allowing in dust, ending up with a dry bearing. The bearings are packed with Shell Alvania Grease.

C SEED TUBE COULTER ADJUSTMENT

Check the position of the seed tube coulters in relation to the disc coulters frequently.

For most seeding conditions and as a general rule the tip F of the seed tube coulters should be set so that it is approximately 1/2" above the edge of the disc. The leading edge of the seed coulters 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 coulters 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 coulters 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 the seed coulters. A certain amount of bedding in and wear takes place between the disc and the seed coulters and it may become necessary to adjust screws C and D to position the seed coulters close to the disc.

D DEPTH CONTROL BANDS

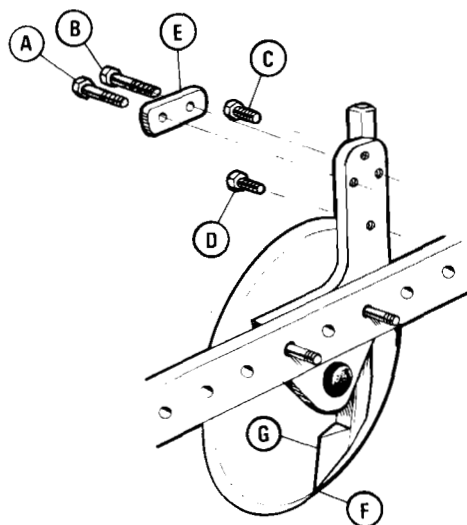
Where necessary, in order to increase the working life of a set of discs, smaller diameter "depth control bands" are available. These are required whenever the disc diameter decreases due to wear and therefore satisfactory seed placement can not be achieved.

E DRAGARM FRONT PIVOT GREASE NIPPLE

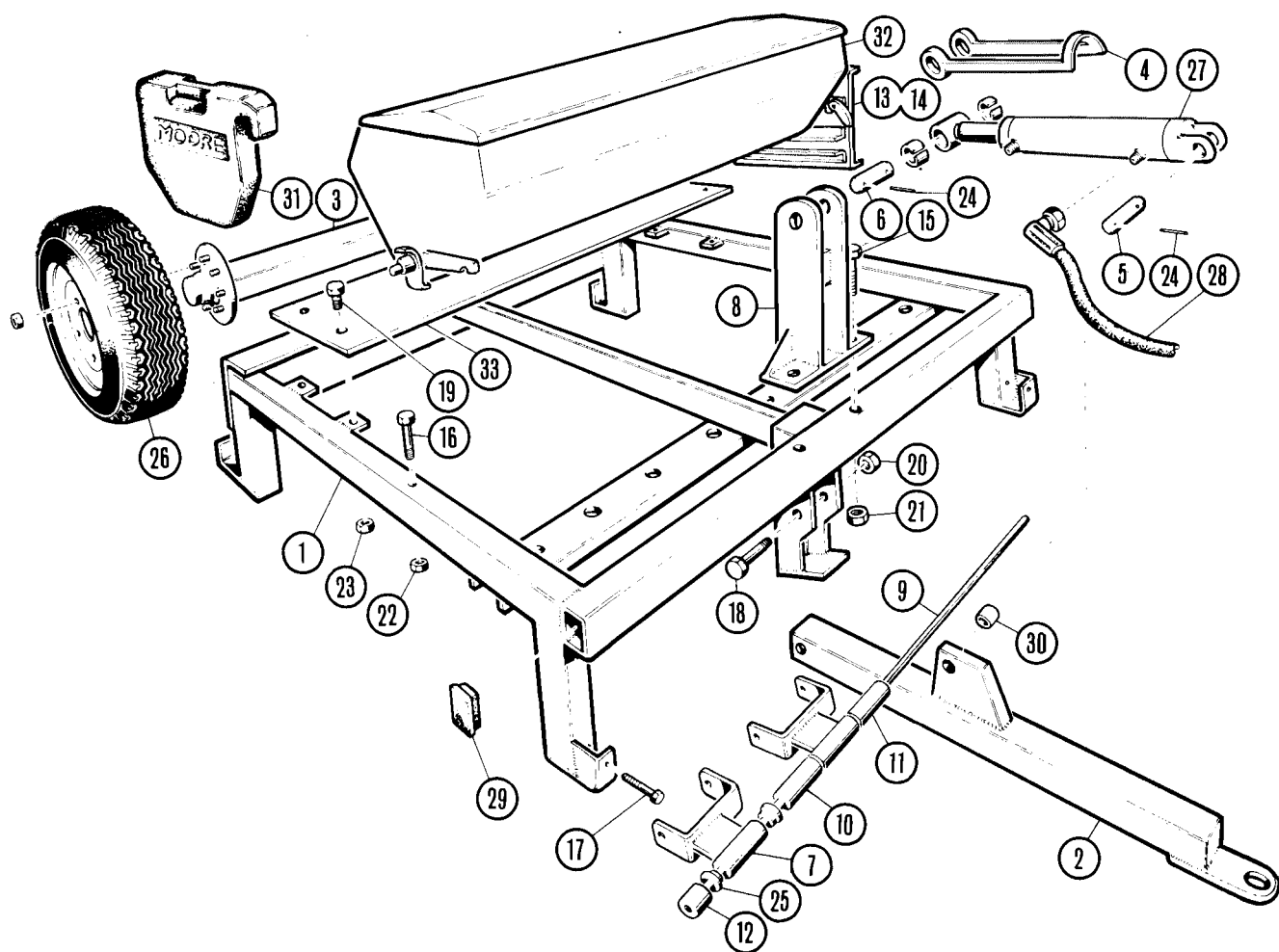
Apply grease to the front pivot nipple every 100 acres. It is important that this pivot nipple is greased at the end of each sowing season, or after the drill has been working and may not be used for a period of time. This prevents the pivot bolt from rusting and seizing in the pivot joint.

F TYRE PRESSURES

Pressure: 15lbs / sq.ins.
Standard Tyres - 23 x 10.5 x 4 Ply.



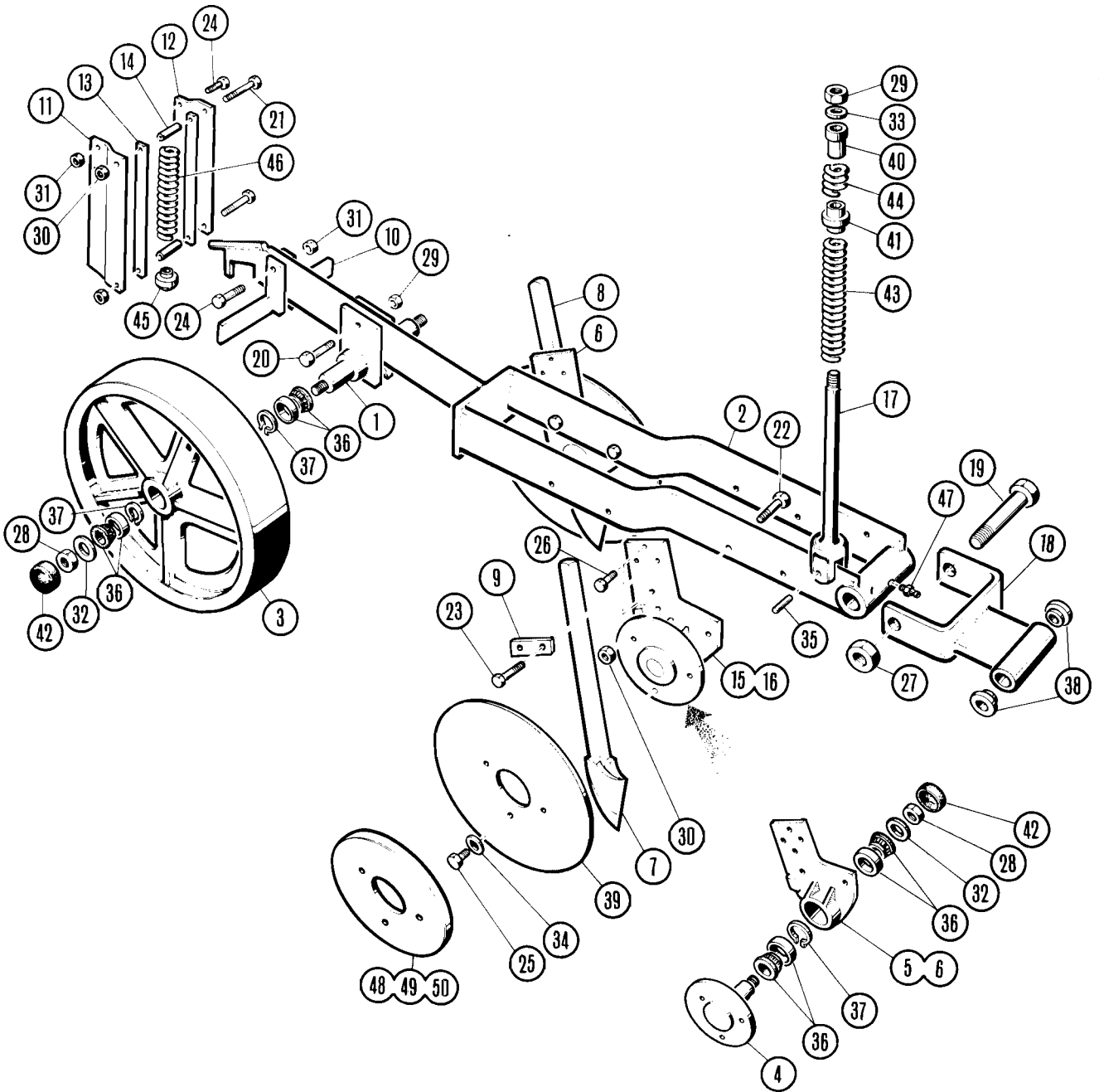
MAIN FRAME & DRAWBAR



1.3 M MAIN FRAME & DRAWBAR

ITEM	PART NO.	DESCRIPTION	QTY.
1	110-5000	Main Frame	1
2	121-5000	Drawbar Towing Arm	1
3	126-5000	Axle Mounting Unit	1
4	127-5000	Transport Safety Arm	1
5	128-1234	Ram - Drawbar Pin	1
6	129-1234	Ram - Holder Pin	1
7	132-0200	Pivoting Arm Unit	4
8	139-5000	Depth Control Ram Holder	1
9	141-5000	Front Pivot Bar	1
10	142-0234	Spacer Bush - Inner	2
11	143-0234	Spacer Bush - Inner Bushed	1
12	144-5000	Spacer Bush - End	2
13	350-5000	Seedbox Mounting Bracket - R.H.	1
14	351-5000	Seedbox Mounting Bracket - L.H.	1
15	A101	1" x 6" UNC Bolt	2
16	A108	M 12 x 120 Bolt	4
17	A110	M 12 x 75 Bolt	2
18	A117	1 1/4" x 8" UNC Bolt	1
19	A121	M 10 x 40 Set Screw	4
20	A129	1 1/4" UNC Nut	1
21	A130	1" UNC Locknut	2
22	A138	M 12 Locknut	4
23	A139	M 10 Locknut	4
24	A153	M 8 x 40 Spirol Pin	4
25	A159	Oilite Bush	12
26	A166	Road Wheel 23 x 10.5 x 4 Ply	2
27	A169	2 1/2" Dia. Hydraulic Cylinder	1
28	A172	Hydraulic Hose/Ram Tractor	1
29	A198	100 x 50 Plastic Cap	2
30	A199	1 1/8" x 1" x 1" Hardened Bush	1
31	A200	30 Kg Weight	10
32	A209	Seedbox Complete	1
33	A299	Rear Platform	1

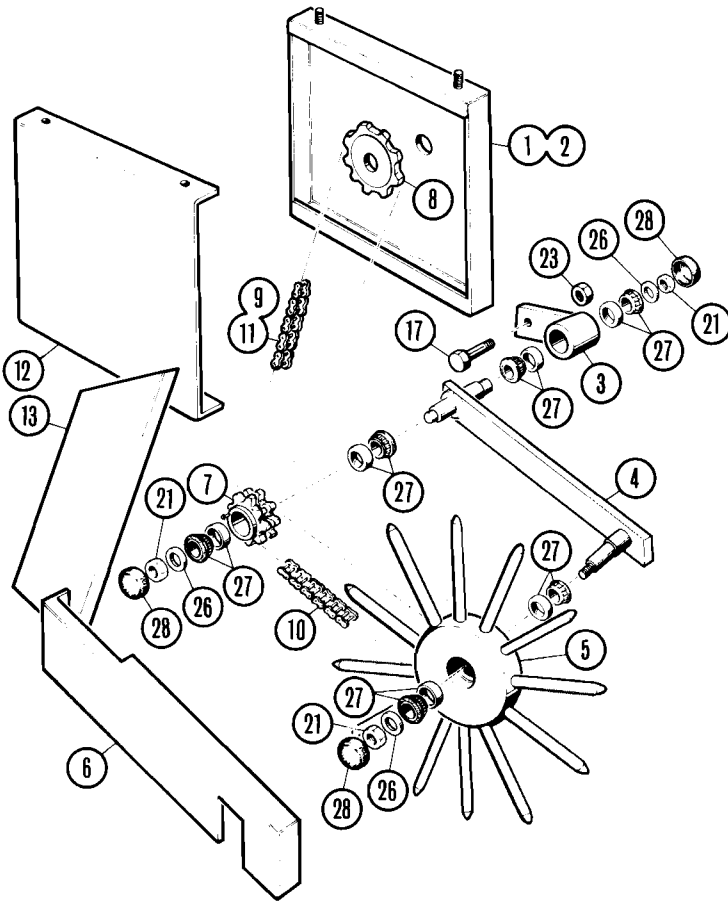
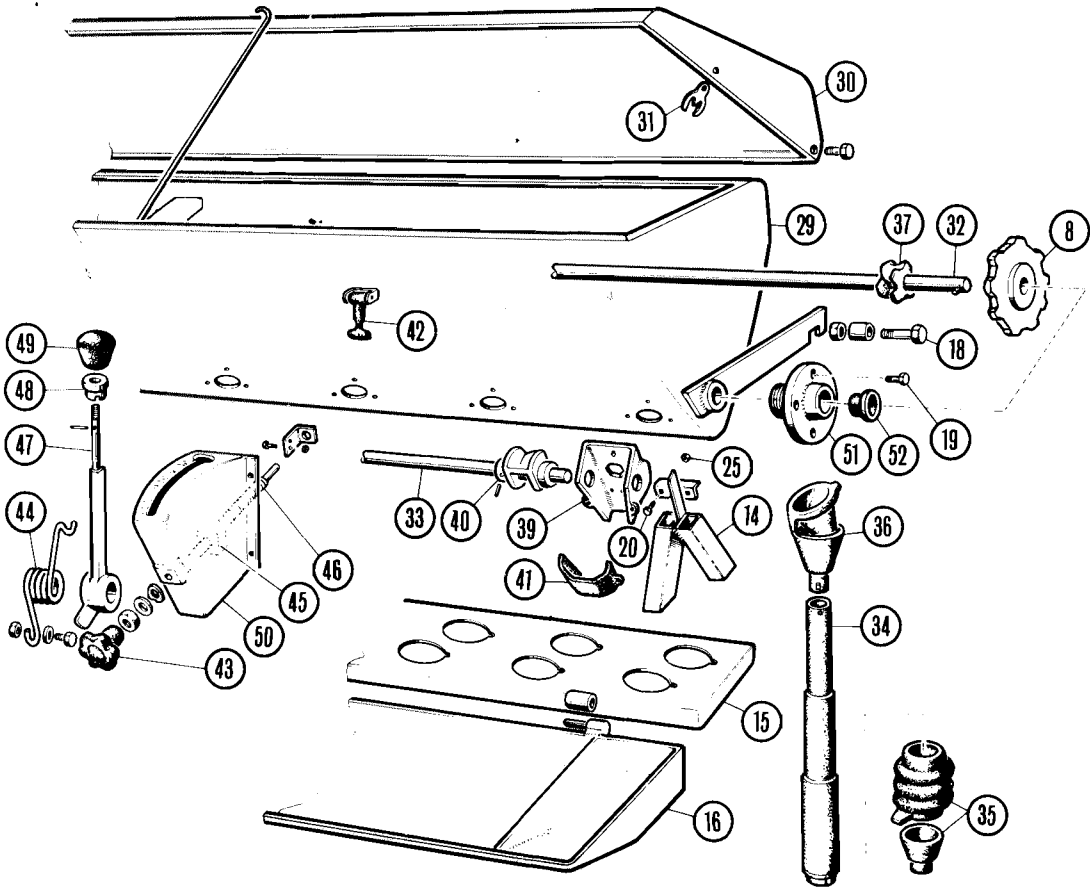
DRAGARM SEEDING UNIT



1.3 M DRAGARM SEEDING UNIT

ITEM	PART NO.	DESCRIPTION	QTY.
1	201-0234	Dragarm Axle Unit	1
2	220-0200	Dragarm Mounting Bar	1
3	203-0200	Press Wheel	2
4	204-1234	Disc Hub	4
5	205-1200	Disc Mounting Bracket - R.H.	2
6	206-1200	Disc Mounting Bracket - L.H.	2
7	207-1234	Seed Tube Coulter - R.H.	2
8	208-1234	Seed Tube Coulter - L.H.	2
9	209-1234	Seed Tube Retaining Plate	4
10	210-0200	Press Wheel Scraper	1
11	211-1234	Dragarm Guide Plate - R.H.	1
12	212-1234	Dragarm Guide Plate - L.H.	1
13	213-1234	Guide Plate Bar	2
14	214-1234	Guide Plate Distance Piece	2
15	215-1200	Disc Bearing Replacement Unit - R.H.	2
16	216-1200	Disc Bearing Replacement Unit - L.H.	2
17	221-1234	Front Spring Arm	2
18	132-0200	Pivot Arm Unit	1
19	133-0200	1" x 10" UNC Bolt	1
20	A107	M 16 x 55 Bolt	1
21	A110	M 12 x 75 Bolt	2
22	A111	M 12 x 55 Bolt	8
23	A113	M 10 x 65 Bolt	8
24	A114	M 10 x 50 Bolt	3
25	A119	3/8" x 3/4" UNF Setscrew	12
26	A122	M 10 x 20 Setscrew	8
27	A130	1" UNC Binx Nut	1
28	A132	3/4" UNF Binx Nut	6
29	A137	M 16 Locknut	3
30	A138	M 12 Locknut	10
31	A139	M 10 Locknut	3
32	A145	M 20 x H.D. Washer	6
33	A146	M 16 x H.D. Washer	2
34	A148	M 10 Shake Proof Washer	12
35	A149	1/2" x 3/4" Spirol Pin	2
36	A157	1" Timken Taper Roller Bearing	12
37	A158	1" Timken Circlip	8
38	A159	Oilite Bush	2
39	A160	Seed Disc Coulter 14 1/2" Dia.	4
40	A180	Spring Retaining Bush	2
41	A181	Spring Locating Bush	2
42	A182	Dust Cap - Small	6
43	A186	Front Spring - Lower	2
44	A187	Front Spring - Upper	2
45	A188	Rear Spring Bush	1
46	A189	Rear Spring - H.D.	1
47	A190	Grease Nipple	1
48	222-2A	Disc Depth Band A 12.23" Dia.	2
49	222-2B	Disc Depth Band B 11.25" Dia.	2
50	222-2C	Disc Depth Band C 10.25" Dia.	2

SEEDBOX & DRIVE UNIT



1.3 M SEEDBOX & DRIVE UNIT

ITEM	PART NO.	DESCRIPTION	QTY.
1	350-5000	Seed Box Mounting Bracket R.H.	1
2	351-5000	Seed Box Mounting Bracket L.H.	1
3	313-5000	Support Arm Pivot Bracket	1
4	314-5000	Drive Wheel Support Arm	1
5	316-5000	Drive Wheel	1
6	322-5000	Chain Guard Lower	1
7	323-1234	9T Double Drive Sprocket	1
8	326-5000	9T Drive Sprocket Upper	1
9	329-1234	Chain Connecting Link	2
10	331-5000	40L Drive Chain - Lower	1
11	332-5000	62L Drive Chain - Upper	1
12	360-5000	Chain Guard Cover - Large	1
13	361-5000	Chain Guard Cover - Small	1
14	375-0200	Seed Splitter Unit	8
15	380-5000	Seed Cup Holder Unit	1
16	385-5000	Collection Tray Cover	2
17	A105	M 20 x 100 Bolt	1
18	A121	M 10 x 40 Setscrew	2
19	A123	M 8 x 16 Setscrew	10
20	A125	M 5 x 16 Setscrew	16
21	A132	1/4" UNF Binx Nut	3
22	A134	M 10 Wing Nut	2
23	A135	M 20 Locknut	1
24	A140	M 8 Nut	8
25	A141	M 5 Locknut	16
26	A145	M 20 x 32 Washer - H.D.	2
27	A157	1" Timken Taper Roller Bearing	6
28	A182	Dust Cap - Small	3
29	A219	Seedbox Shell	1
30	A229	Seedbox Lid	1
31	A342	Nylon Clip	4
32	A269	Rotor Drive Shaft	1
33	A279	Distribution Shaft	1
34	A315	Flexible Seed Tube - 3T	16
35	A325	Seed Tube Joint - 3T	16
36	A330	Seed Cup Holder	16
37	A350	Feed Rotor	8
38	A361	Calibration Handle	1
39	A370	Distribution - Main Unit	16
40	A380	Distribution - Sluicgate Unit	16
41	A390	Distribution - Plastic Cover	8
42	A343	Rubber Strap	2
43	A410	Calibration - Hand Adjustment Screw	1
44	A420	Calibration - Spring	1
45	A430	Calibration - Adjustment Nut	1
46	A440	Calibration - Screw Thread	1
47	A450	Calibration - Pointer Shaft	1
48	A460	Calibration - Pointer Locator	1
49	A470	Calibration - Pointer Handle	1
50	A480	Calibration - Graduated Box	1
51	A491	Seedbox - Pivot Casting	2
52	A492	Seedbox - Pivot Casting Bush	2