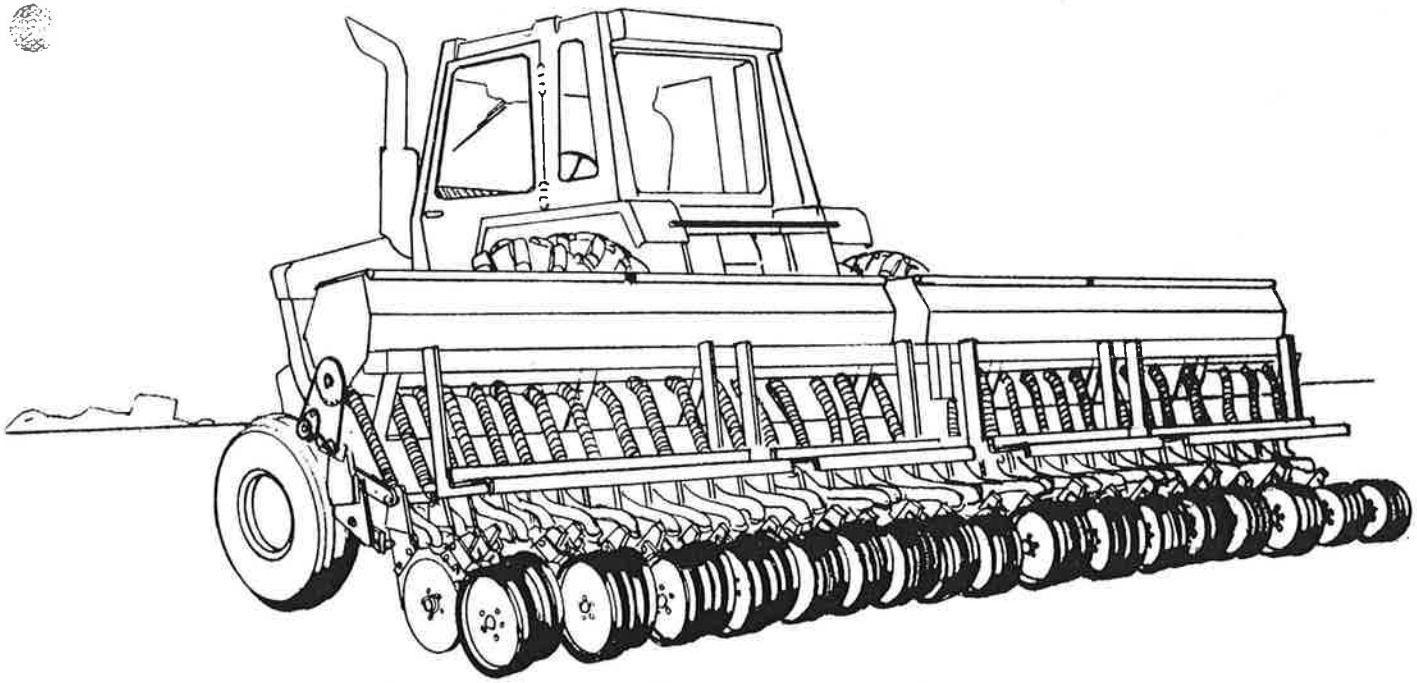
CrustBuster
SPEED KING INC.

3700 Mounted Double-Disc Drill

OWNER'S MANUAL



OPERATION • MAINTENANCE • REPAIR PARTS

WARRANTY

WARRANTY: In addition to the implied warranties of fitness and of merchantability, CrustBuster®/ Speed King, Inc. warrants new products sold by it to be free from defects in workmanship and material for a period of 12 months, from the date of delivery to the first user customer. Warranty on purchased parts (cylinders, blades, bearings, shanks, etc.) will be the same as that offered by the appropriate manufacturer of these parts.

EXCLUSIONS: No warranty of any kind is made by CrustBuster®/Speed King, Inc. with regard to new products which have been subject to operation in excess of recommended capacities, misuse, abuse, negligence, or accident, or have been altered or repaired in any manner not authorized by CrustBuster®/ Speed King, Inc. CrustBuster®/Speed King, Inc. is constantly striving to improve its products. Changes in design and improvement will be made whenever CrustBuster®/Speed King, Inc. believes the efficiency of its products will be improved thereby, but without incurring any obligation to incorporate such improvements in any products which have been shipped or are in service. No obligation exists for compensation of unauthorized repairs or modifications without prior approval. And in no event will CrustBuster®/Speed King, Inc. be liable for consequential damages, such as but not limited to: downtime, delayed or late tillage or planting, etc.

WARRANTY REGISTRATION: This warranty is not valid unless registered with CrustBuster®/Speed King, Inc. within 10 days from the date of purchase. It is the sole responsibility of the selling retail dealer to fill out the registration forms and see that they are properly filed with CrustBuster®/Speed King, Inc.

WARRANTY PROCEDURE: Should any part fail to conform with this warranty, CrustBuster®/Speed King, Inc. will repair or replace the part or parts which do not conform. If a part is defective, take it to your authorized CrustBuster® Farm Equipment Dealer immediately, along with your warranty registration, and complete the proper forms requesting a warranty adjustment. Our representative will pick up the part to be returned to the factory for examination. If the customer (first user) requests that a new part be substituted for the old part, a new part will be charged to the dealer who will in turn charge the customer. If the part is found by us to be defective, a credit for the part will be given to the dealer to be passed on to the customer. If the dealer or customer wishes to repair the part, this will be done only if authorized by CrustBuster®/Speed King, Inc. This warranty procedure is in addition to all remedies authorized by law.

CRUSTBUSTER®/SPEED KING, INC.
Box 1438
Dodge City, KS 67801

Specifications are subject to change without notice.

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BE A SAFE OPERATOR
BY THINKING BEFORE ACTING
AND
BY READING
YOUR OWNER'S MANUAL

Avoid Accidents

Most accidents, whether they occur in industry, on the farm, at home, or on the highway, are caused by the failure of some individual to follow simple and fundamental safety rules or precautions. For this reason most accidents can be prevented by recognizing the real cause and doing something about it before the accident occurs.

Regardless of the care used in the design and construction of any type of equipment, there are many conditions that cannot be completely safeguarded against without interfering with reasonable accessibility and efficient operation.

A Careful Operator
Is the Best Insurance Against an Accident.
The complete observance of one simple rule
would prevent many thousands
of serious injuries each year.

That rule is:

Never Attempt to Clean, Oil or Adjust
A Machine While It Is In Motion.

To Our Customers

The following pages and illustrations are printed to help supply you with the knowledge to better operate and service your new CrustBuster equipment.

We are proud to have you as a customer and feel you will be proud to be a CrustBuster owner.

Any piece of equipment needs, and must have, a certain amount of service and maintenance to keep it in top running condition. We have attempted to cover all the adjustments required to fit most conditions; however, there may be times when special care must be taken to fit a condition.

Study this owner's manual carefully and become acquainted with all the adjustments and operating procedures before attempting to operate your new equipment. Remember, it is a machine and has been designed and tested to do an efficient job in most operating conditions and will perform in relation to the services it receives.

If special attention is required for some condition, ask your CrustBuster dealer; he will be glad to help and answer any questions on operations and service of your new machine.

TAKE TIME FOR SAFETY

Before Operating This Equipment

Remove support stands before transporting or operating drill.

If transporting drill while box is full, turn drive wheels manually before drilling to assure that packing has not stopped seed flow.

Field Operating Checklist

- ❑ Drill is hooked secure to tractor.
- ❑ Three point center link is adjusted for level drill operation.
- ❑ Tires at recommended air pressure.
- ❑ Lubrication as required.
- ❑ Seed shafts turned manually to check for obstructions and improper chain alignment on drive sprockets.
- ❑ Correct sprocket selection and rotor slot width for seed planted.
- ❑ Drive wheel turnbuckle set to provide adequate opener movement.
- ❑ Opener down pressure spring adjusted for field conditions.
- ❑ Record starting number for acre meter.
- ❑ Lower drill while moving to avoid plugging opener and seed tube.

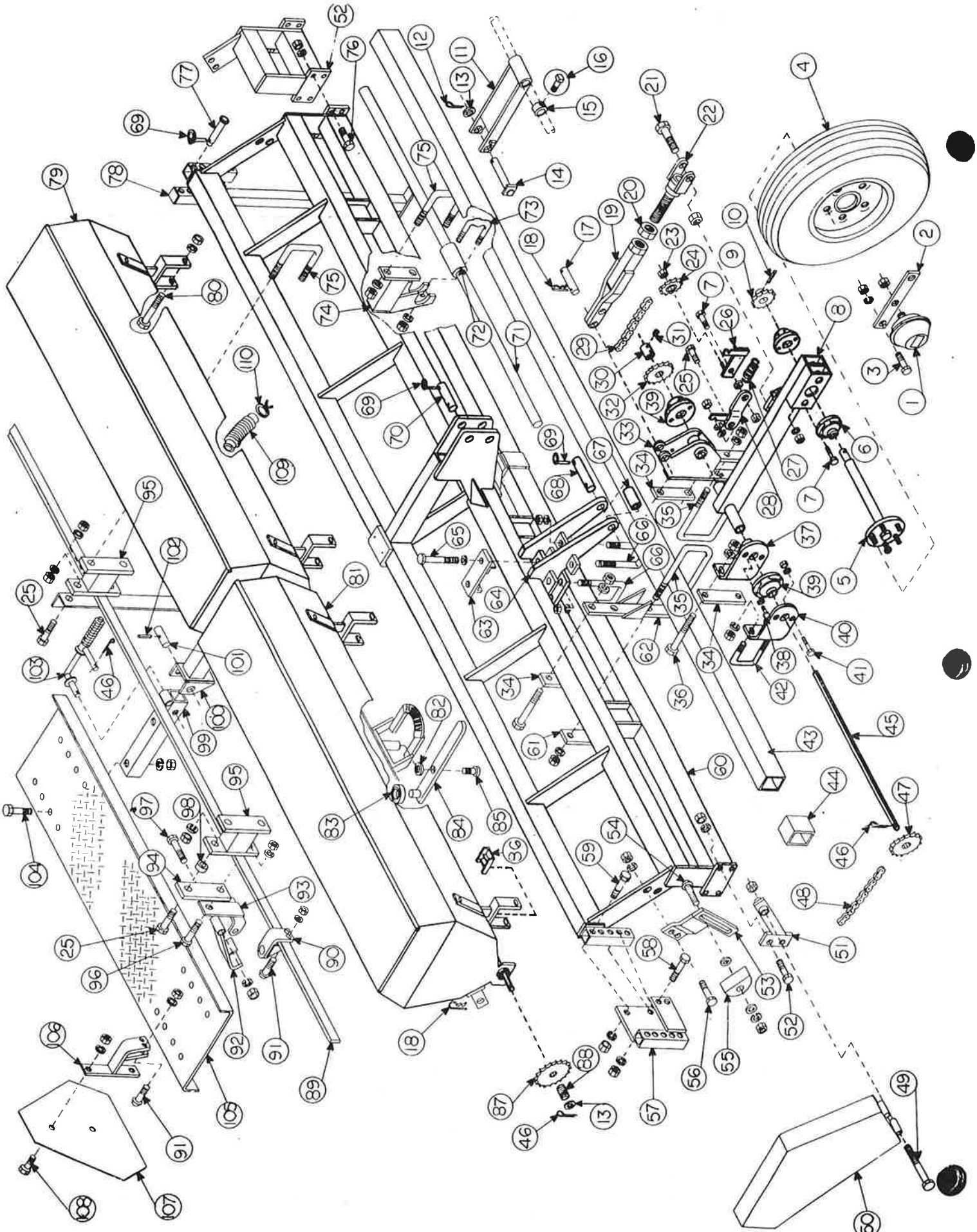
Description

Most CrustBuster® management and employees have close ties to the soil—we were born and raised on farms in the middle of the Great Plains. Our fields are separated by roads, highways and miles and we saw a need to eliminate multiple hitches and lengthy down time for movement from one field to another. The affordable portable CrustBuster® tools are the result.

The CrustBuster® Mounted Double-Disc Drill is fitted with a parallel linkage—much like a planter. Firming wheels act as individual gauge wheels, allowing the seed to be planted at your settings. They pack the soil around the bean, leaving a center crown of soft earth over the top, and channeling rain to the sides of the seed. Resulting crusting is then heaviest beside—not over— the emerging plant. Each opener is subject to just enough tension to keep its action at the right planting depth at all times and positive depth stop permits it to maintain that chosen depth.

The patented one point adjustable ductile seed metering cup assemblies are recognized as the most accurate, trouble free assemblies available for a wide variety of agricultural seeds.

CrustBuster's® Mounted Double Disc Drill is affordable and portable—as is our entire line of CrustBuster® Farm Equipment.



Exacta-Depth Bed Drill W/Fourth Bar
FIGURE 2-1

Section Two: Assembly Instructions

Item No.	Part No.	Description
1	603621	Acre Counter, 15'
	603753	Acre Counter, 20'
	603746	Acre Counter, 28'
	603787	Acre Counter, 30'
2	185017	Revolution Counter Bracket
3	01029800	1/2" x 1" Cap Screw
4	807313	9.5L Tire mounted on 15 x 6" Rim
*	530238	15 x 6", 5 Bolt Rim
5	922088	Bed Drill Axle
6	400697	1 3/4" Axle Bearing
7	01147800	1/2" x 1 1/2" Cap Screw
8	922096	Gauge Wheel Arm
9	430504	23 Tooth Drive Sprocket
10	330662	5/16" x 1 3/4" Roll Pin
11	931824	Parallel Linkage Arm, Long
	927889	Parallel Linkage Arm, Short
12	335380	3/16" x 1 1/2" Cotter Pin
13	332528	3/4" x 1 1/4" Machine Bushing, 18 Ga.
14	930917	Opener Hinge Pin
15	144444	Lock Collar
16	334748	5/16" x 1/2" Square Head Set Screw
17	303131	1" x 4 1/2" Wheel Adjustment Pin
18	332577	3/16" Hair Pin
19	936906	Adjusting Screw Swivel Bracket
20	331264	1 1/4" Jam Nut
21	334870	1" x 4" Cap Screw
22	936914	Adjusting Link Swivel Bracket
23	01572700	5/8" Lock Nut
24	430603	17 Tooth Idler Sprocket
25	331926	1/2" x 2" Cap Screw
26	922237	Idler Arm Bracket, Right (Shown)
	922229	Idler Arm Bracket, Left
27	500173	Idler Spring
28	919878	Chain Tension Bracket, Right (Shown)
	919886	Chain Tension Bracket, Left
29	430587	67 Links, 2040 Chain
30	140665	Lock Collar
31	331348	1/4" x 5/16" Set Screw
32	430454	32 Tooth Steel Sprocket
33	937003	Wheel Bracket, Right (Shown)
	937011	Wheel Bracket, Left
34	185108	Wheel Assembly Plate
35	331181	3/4" x 4" x 9 1/2" U Bolt
36	334284	3/4" x 6 1/2" Cap Screw, Grade 5
37	925511	Wheel Bracket Assembly
38	01011600	5/16" x 1 1/4" Cap Screw
39	400804	5/8" Hex Bearing
40	925537	Bearing Bracket
41	335448	5/16" x 1 1/2" Cap Screw
42	333526	1/2" x 3" x 5 1/2" U-Bolt
43		Fourth Bar
44	114033	Wheel Bracket Spacer Tube
45	304758	Hex Drive Shaft, 15'
	302588	Hex Drive Shaft, 20'
	302992	Hex Drive Shaft, 28' & 30'
46	330498	3/16" x 1 1/4" Cotter Pin
47	430462	25 Tooth Steel Sprocket
48	430512	45 Links, 2040 Chain
49	334458	1/2" x 6" Cap Screw
50	936377	Chain Guard, Right (Shown)
	936385	Chain Guard, Left
51	936328	Chain Guard Hinge
52	335125	3/4" x 2" Cap Screw
53	936302	Chain Guard Idler Bracket, Right
54	936310	Chain Guard Idler Bracket, Left
55	601955	Wood Idler
56	01158500	3/8" x 1 1/4" Cap Screw
57	928739	Jack Extension, Right
	928747	Jack Extension, Left
58	330233	3/4" x 4 1/2" Cap Screw
59	01110600	3/4" x 4" Cap Screw
60		Bed Drill Frame
61	936922	Fourth Bar Bracket Plate
62	936856	Fourth Bar Bracket
63	919852	3-Point Hitch Top Plate
64	926352	3-Point Lower Hitch, Right
	926345	3-Point Lower Hitch, Left
65	332809	1" x 5" Cap Screw, Grade 5
66	334144	3/4" x 3" x 7 1/4" U-Bolt
67	144220	3-Point Lower Hitch Spool
68	302844	3-Point Lower Hitch Pin
69	330456	7/16" Klick Pin
70	302927	3-Point Upper Hitch Pin
71		Pull Shaft
72	146233	1 3/4" Spacer Bushing
	900431	2" Spacer Bushing
	144493	3 3/4" Spacer Bushing
	144501	5 3/4" Spacer Bushing
73	333906	3/8" Flattened U-Bolt
74	930511	Pull Shaft Hanger
75	333492	1/2" X 4" x 4" U-Bolt
76	930560	Frame Extension, Left (Shown)
	930545	Frame Extension, Right
77	330449	3/4" x 4 1/2" Pull Pin
78	927574	Support Stand
79		Grain Box Assembly, Left
80	330126	1/2" x 5 1/2" Cap Screw
81		Grain Box Assembly, Right
82	501320	Belleville Washer
83	401042	Bearing
84	842088	Adj. Bracket Handle Assembly
85	335299	1/2" x 1/2" Shoulder Bolt
86	919902	Box Spacer Clamp
87	430439	46 Tooth Steel Sprocket
88	500330	Spring
89		Spring Retainer Bar
90	931816	Spring Slide Guide
91	332890	3/8" x 1 3/4" Carriage Bolt
92	937094	Walkboard Hook (on 6")
93	937102	Walkboard Hook Bracket
94	186825	Spring Retainer Clamp Plate
95	937664	Spring Retainer Mount

Item No.	Part No.	Description
96	335422	1/2" x 2 1/2" Cap Screw
97	330886	3/8" x 3" Cap Screw
98	142752	1/2" Bushing
99	925438	Walkboard Bracket
100	930578	Folding Walkboard Bracket
101	304360	Folding Walkboard Pin
102	332452	5/32" x 1 1/4" Roll Pin
103	826917	Walkboard Spring Assembly
104	331884	3/8" x 2 1/2" Cap Screw
105	251181	58" Walkboard
	251199	78" Walkboard
106	929034	SMV Sign Bracket
107	600445	SMV Sign
108	01057900	1/4" x 3/4" Cap Screw
109	570754	Accordian Feed Tube
110	600106	Hose Clamp

Hydraulic Marker

Figure 2-2

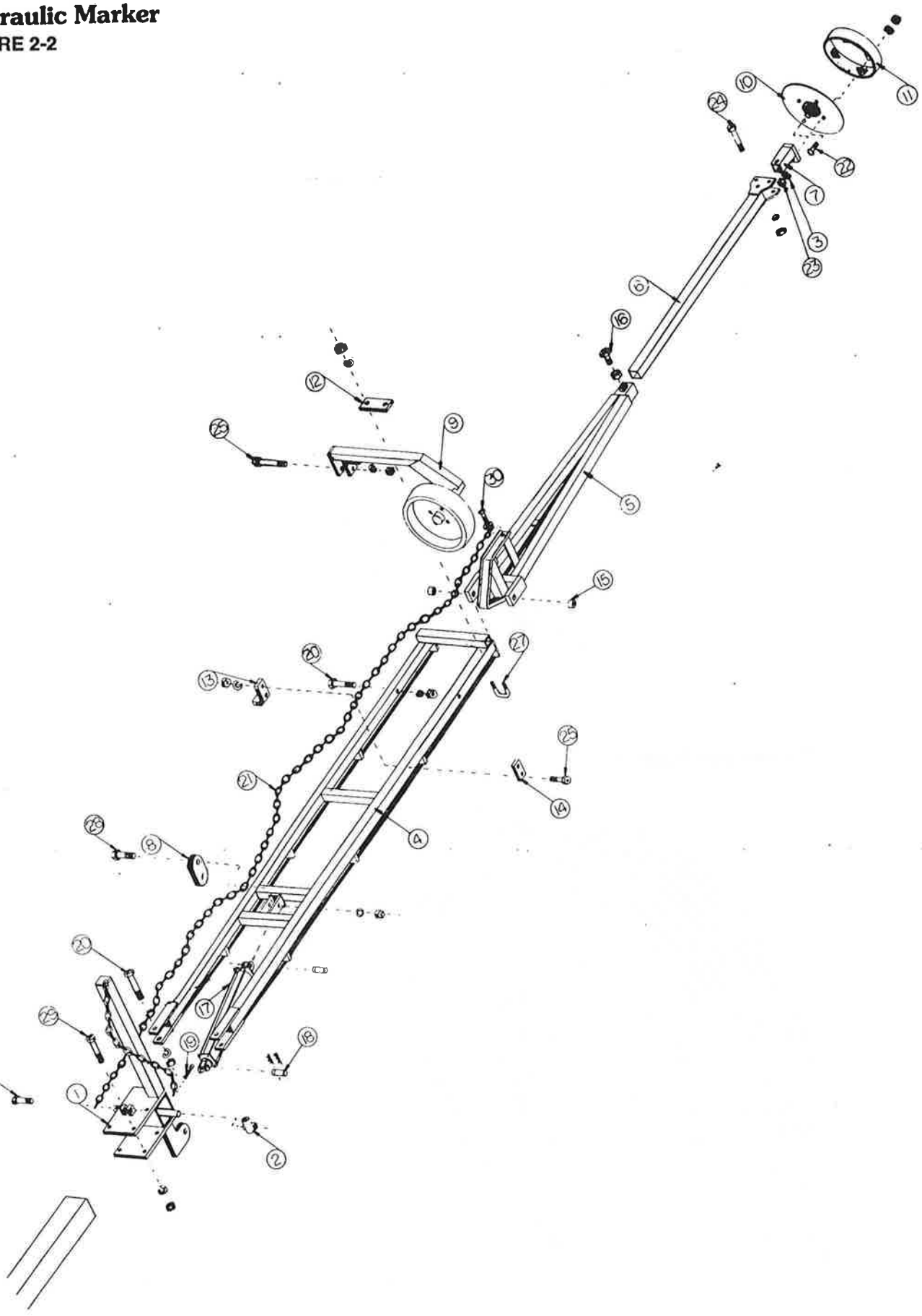
Item No.	Part No.	Description
1	919621	Mounting Bracket
2	919670	U-Joint (1 1/2" O.D. Pipe)
3	330878	5/8" Lock Washer
4	*919522	Marker Frame
	*919530	Marker Frame
	919548	Marker Frame
	919555	Marker Frame
5	*919563	Marker Arm
	*919571	Marker Arm
	*919589	Marker Arm
6	*919605	Adjustable Marker Arm (46")
	*919597	Adjustable Marker Arm (34")
	*919613	Adjustable Marker Arm (55")
7	919639	Angle Adjustment Tube
8	182535	Hydraulic Lug
9	819631	Support Wheel Arm Assembly
10	842500	Marker Disc Blade—Complete
11	928564	Depth Band
12	183145	U-Bolt Lock Plate
13	182402	Fold Arm Stop
14	182394	Fold Arm Stop Lock Plate
15	142646	Marker Arm Spacer
16	331223	5/8" x 1 1/2" Set Screw w/
	331538	5/8" Jam Nut
17	463703	2" x 8" Hydraulic Cylinder w/o Depth Control
18	460451	Cylinder Pin
19	332577	3/16" Hair Pin
20	332080	3/4" x 3 1/2" H.H.C.S. w/
	330332	3/4" Lock Washer w/
	330290	3/4" Hex Nut
21	*430553	1/4 Proof Chain x 6'6"
	*430561	1/4 Proof Chain x 8'
	*430579	1/4 Proof Chain x 11'6"
22	330548	3/8" x 3/4" Carriage Bolt w/
	330043	3/8" Lock Washer
	330035	3/8" Hex Nut
23	332494	5/8" Hex Nut (SAE)
24	334946	1/2" x 3" Cap Screw w/
	330142	1/2" Lock Washer
	330134	1/2" Hex Nut
25	330886	3/8" x 3" Cap Screw w/
	330043	3/8" Lock Washer
	330035	3/8" Hex Nut
26	334243	3/8" x 2" Cap Screw w/
	330043	3/8" Lock Washer
	330035	3/8" Hex Nut
27	333518	1/2" x 3" x 4 1/2" U-Bolt w/
	330142	1/2" Lock Washer
	330134	1/2" Hex Nut
28	02307700	3/4" x 3" Cap Screw w/
	330332	3/4" Lock Washer
	330290	3/4" Hex Nut
29	334458	1/2" x 6" Cap Screw Grade 5 w/
	330142	1/2" Lock Washer
	330134	1/2" Hex Nut
30	01158500	3/8" x 1 1/4" H.H.C.S.
	330894	3/8" Flat Washer
	330043	3/8" Lock Washer
	330035	3/8" Hex Nut

*Refer to chart below for correct part number for your size marker.

	11' & 14' Center & Tire Mark 20' Tire Mark 14' (4 Row) Center & Tire 20' (6 Row) Tire Mark	20' Center Mark 24' & 26' Tire Mark 20' (6 Row) Center 28' (8 Row) Tire	24' & 26' Center Mark 32' Tire Mark 28' (8 Row) Center
Marker Frame	919522	919530	919548
Adj. Marker Arm	919605	919597	919597
Marker Arm	N/A	919563	919571
Hyd. Marker Mtg. Bkt.	919621	919621	919621
1/4 Proof Chain x 6'6"	N/A	430553	N/A
1/4 Proof Chain x 8'	N/A	N/A	430561
1/4 Proof Chain x 11'6"	N/A	N/A	N/A

Hydraulic Marker

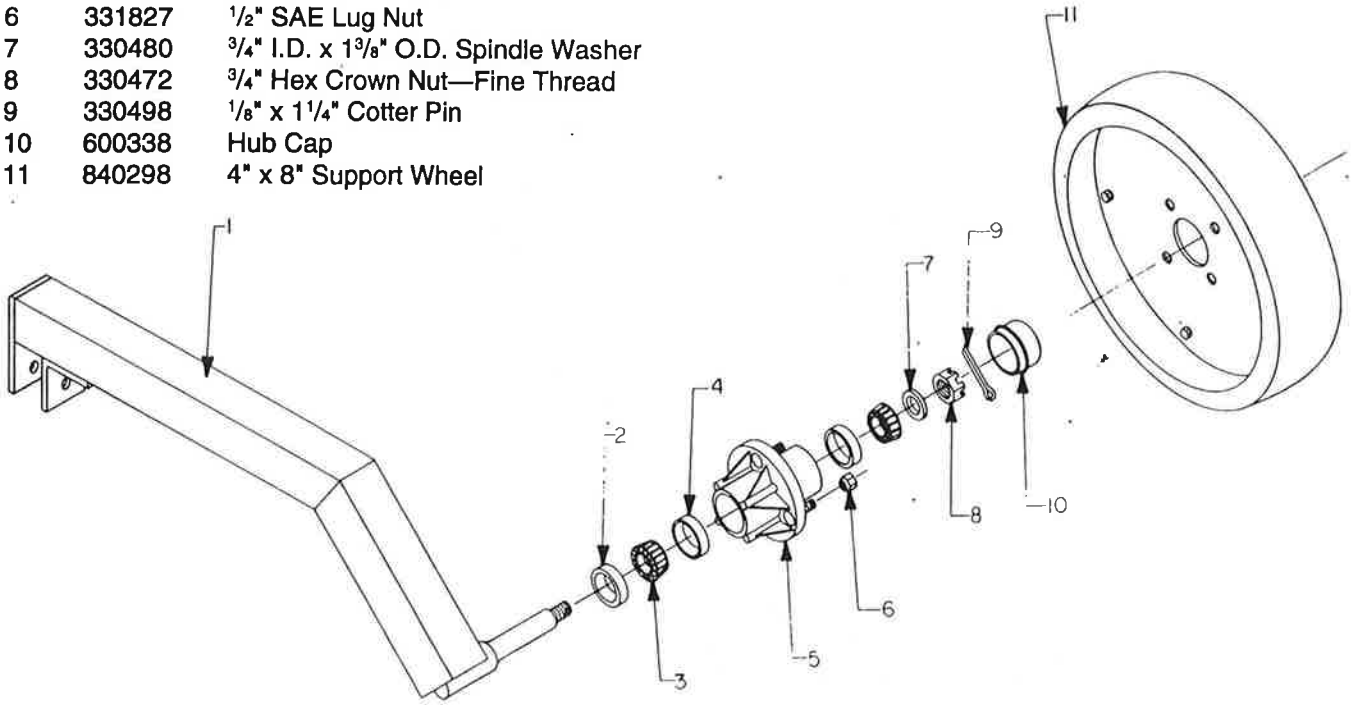
FIGURE 2-2



819631 Marker Support Wheel w/Bracket

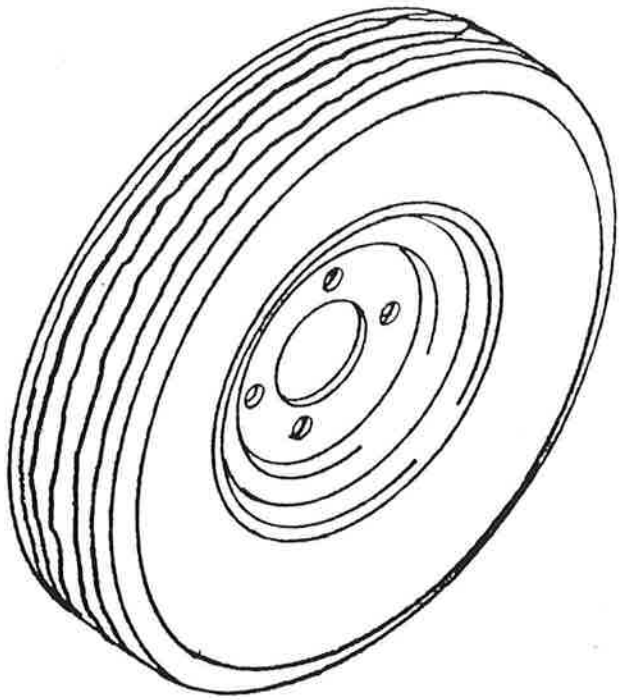
FIGURE 2-3

Item No.	Part No.	Description
1	920538	Hydraulic Marker Support Wheel Brkt.
2	400374	Dust Seal
3	400382	Bearing Cone
4	400390	Bearing Cup (Pressed in Hub)
5	550129	4- Bolt Hub w/Bolts
6	331827	1/2" SAE Lug Nut
7	330480	3/4" I.D. x 1 3/8" O.D. Spindle Washer
8	330472	3/4" Hex Crown Nut—Fine Thread
9	330498	1/8" x 1 1/4" Cotter Pin
10	600338	Hub Cap
11	840298	4" x 8" Support Wheel



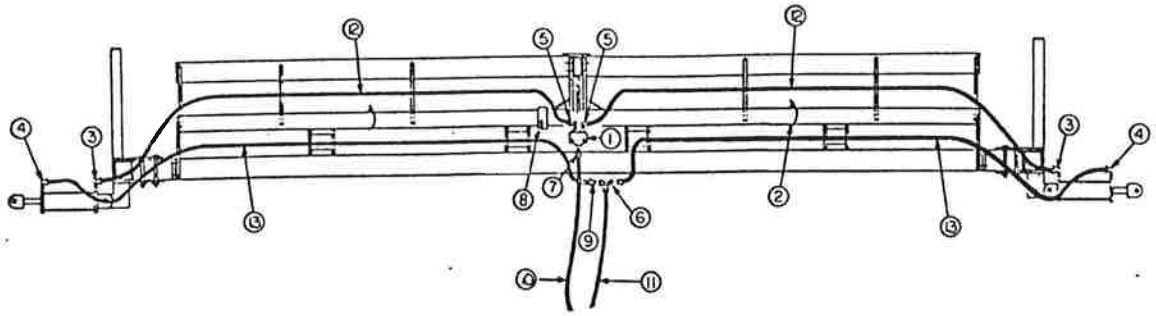
840298 4" x 8" Support Wheel

FIGURE 2-4



Double Marker Double Action Hydraulic System—15' Drill

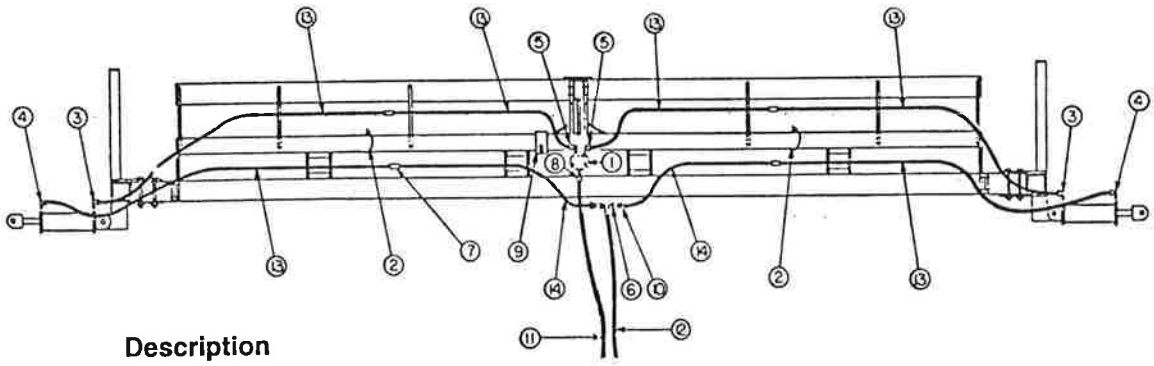
FIGURE 2-5



Item No.	Description
1	Sequence Valve
2	21" Cable Tie
3	3/8" M Solid x 1/4" F Swivel 90° Elbow
4	3/8" M Solid x 1/4" F Swivel Elbow
5	3/4" M O-Ring x 1/4" NPSM Female Swivel 90° Elbow
6	3/8" F Solid x 3/8" F Swivel x 3/8" F Swivel Tee
7	3/4" Male O-Ring x 3/8" Swivel Adapter
8	Sequence Valve Bracket
9	3/8" x 1/4" Bushing
10	3/8" Hydraulic Hose x 56"
11	3/8" Hydraulic Hose x 60"
12	1/4" Hydraulic Hose x 109"
13	1/4" Hydraulic Hose x 121"

Double Marker Double Action Hydraulic System—20' & 28' Drill

FIGURE 2-6



Item No.	Description
1	Sequence Valve
2	21" Cable Tie
3	3/8" Male Solid x 1/4" Female Swivel 90° Elbow - 1/16" Restricted
4	3/8" Male Solid x 1/4" Female Swivel Elbow
5	3/4" Male O-Ring x 1/4" NPSM Female Swivel 90° Elbow
6	3/8" F Solid x 3/8" F Swivel x 3/8" Female Swivel Tee
7	1/4" Pipe Coupler
8	3/4" Male O-Ring x 3/8" Swivel Adapter
9	Sequence Valve Bracket
10	3/8" x 1/4" Bushing
11	3/8" Hydraulic Hose x 56"
12	3/8" Hydraulic Hose x 60"
13	1/4" Hydraulic Hose x 86" (20') or 109" (28')
14	1/4" Hydraulic Hose x 86" (20') or 98" (28')

Hydraulic Marker Assembly Instructions

(Item numbers refer to **Figure 2-2** unless otherwise specified.)

Step 1. (Figure 2-1) Bolt marker mounting tube (Item 2) to the end plate on the frame using four 3/4" x 2" H.H.C.S. (Item 15) with lock washers and hex nuts.

Step 2. Slide marker mounting bracket (Item 1) on to the drill frame and secure with four 1/2" x 6" H.H.C.S. (Item 29).

Step 3. Slide U- joints (Item 2) over each end of the shaft on the mounting bracket (Item 1). Turn the U-joint so the vertical spool is toward the inside of the drill **(Figure 2-5)** and slide the marker frame (Item 4) over them and secure with 3/4" x 3 1/2" cap screws. Install hydraulic lug (Item 8) between plates on marker frame (Item 4) with a 3/4" x 3" cap screw (Item 28).

FOR SINGLE SECTION MARKER ASSEMBLY SKIP TO STEP 7.

Step 4. Place marker arm (Item 5) underneath marker frame (Item 4) and line up with the holes in the side tubes on the marker frame (Item 4). Slip bushings (Item 15) and secure with 3/4" x 3 1/2" H.H.C.S. (Item 20).

Step 5. Install fold arm stop (Item 13) to the marker frame using plate (Item 14) and secure with 3/8" x 3" H.H.C.S. (Item 31). This should be adjusted so the marker blade does not hit the marker frame or cylinder when marker is folded

Step 6. Install one end of the chain (Item 21) to the marker arm (Item 5) using a 3/8" x 1 1/4" cap screw (Item 30) with flat washer, lock washer and hex nut. Lay the chain over the channel guide and on top of the marker frame. Raise the

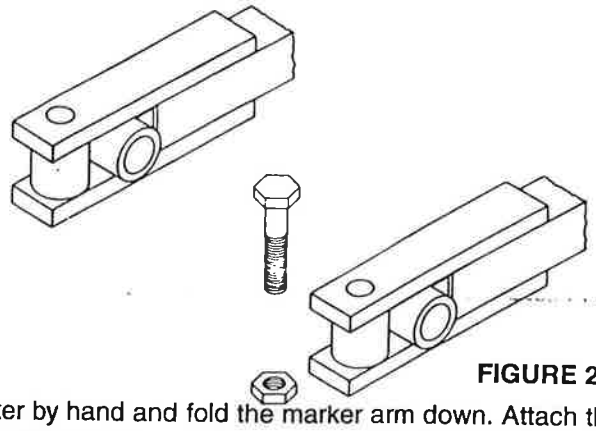


FIGURE 2-7

marker by hand and fold the marker arm down. Attach the chain to the small lug on the marker mounting bracket (Item 1) using a 3/8" x 2" H.H.C.S. (Item 26) and lock washer and hex nut. Leave a small amount of slack in the chain. This can be adjusted finer by twisting the chain slightly to shorten it.

Step 7. Install angle adjusting tube (Item 7) between the plates on the adjustable marker arm (Item 6) using three 1/2" x 3" H.H.C.S (Item 24) . Install blade to this tube using the fine thread 5/8" hex nut and lock washer (Items 23 & 3).

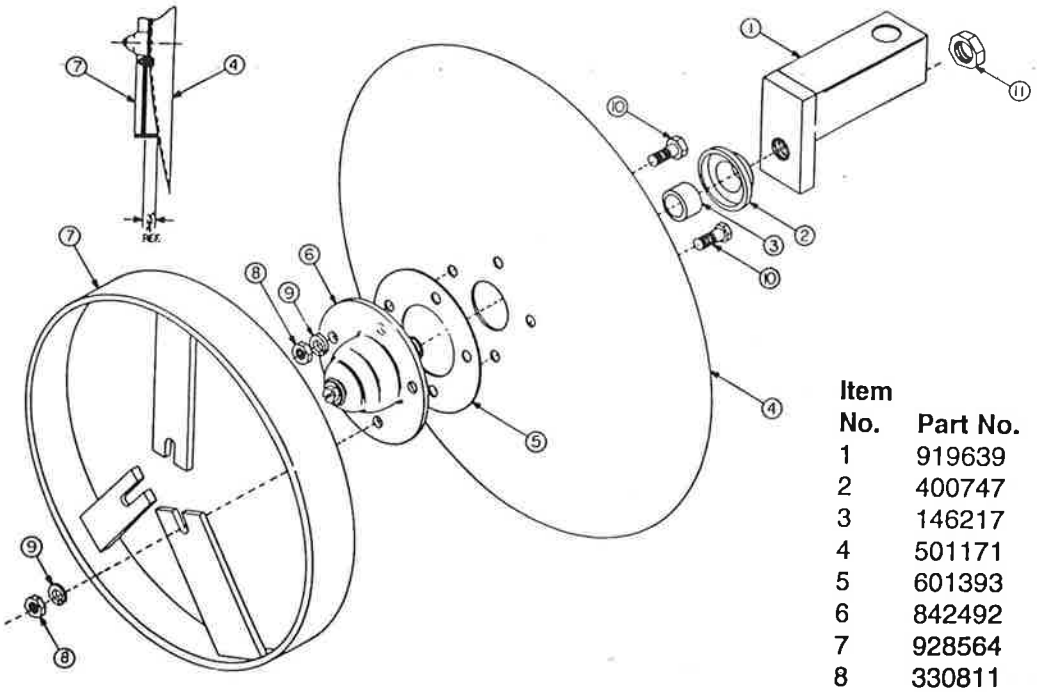
Step 8. Slide the adjustable arm (Item 6) into the marker arm tube and use a 5/8" x 1 1/2" set screw to secure it to the length needed.

Step 9. Install the cylinder with the base end attached to the marker mounting bracket (Item 1) and the ram end to the bolt-on lug (Item 8). Connect the hydraulic lines as shown in the appropriate hydraulic diagram **(Figures 2-3 & 2-4).**

Step 10. The marker may be secured in the folded position by wrapping the small chain around the marker arm (Item 5), inserting the end link through one of the other links and securing with a hair pin (Item 19).

842500 Marker Blade Assembly

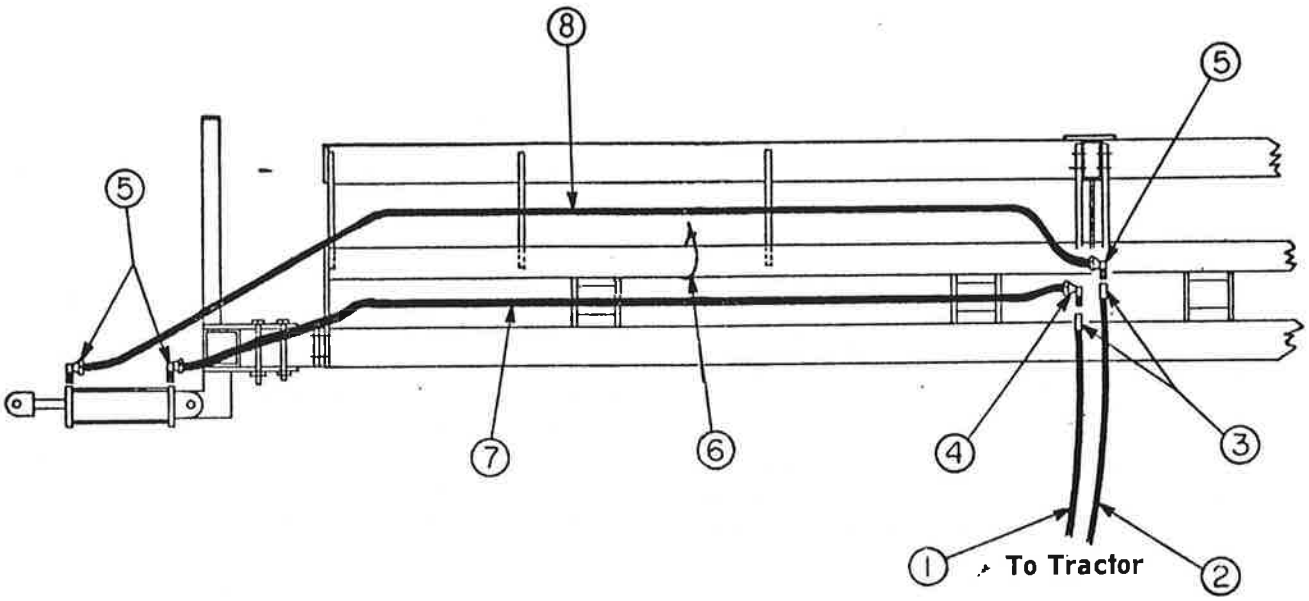
FIGURE 2-8



Item No.	Part No.	Description
1	919639	Marker Angle Adjusting Tube
2	400747	Neoprene Seal
3	146217	7/8" OD x .635 ID x 3/8" Bushing
4	501171	Marker Disc Blade
5	601393	Cellulose Fiber Gasket
6	842492	Marker Bearing Assembly
7	928564	Depth Band
8	330811	5/16" Hex Nut
9	330845	5/16" Lock Washer
10	01144500	5/16" x 3/4" H.H.C.S.
11	331538	5/8" Jam Nut

Single Marker Double Action Hydraulic System—15'

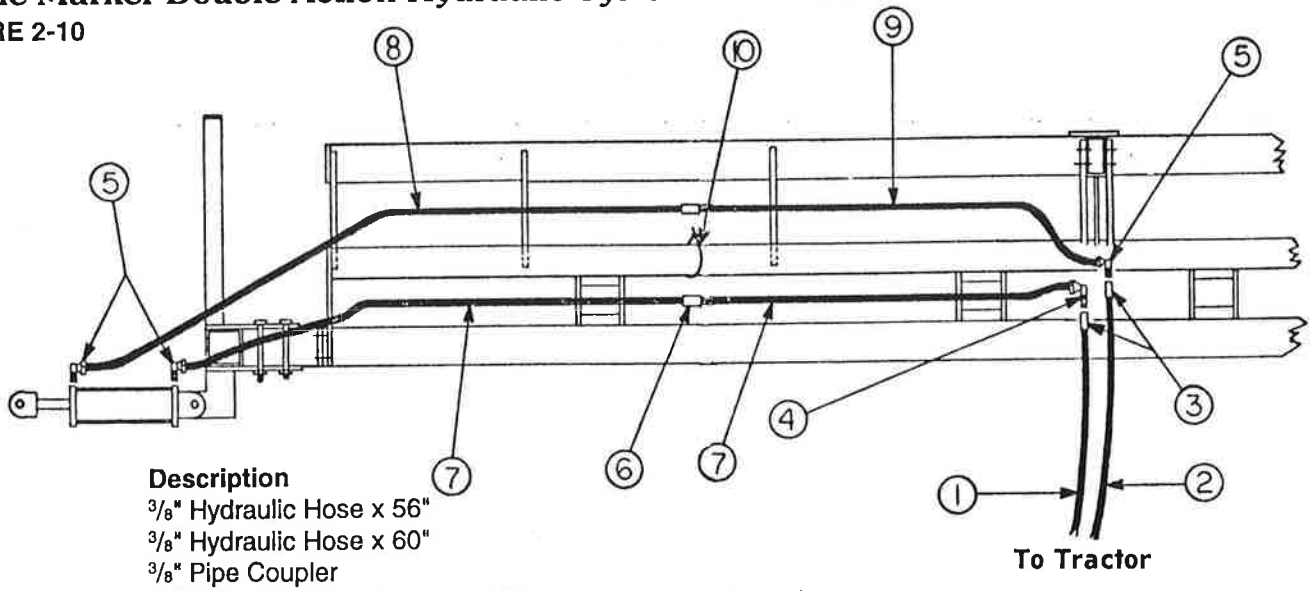
FIGURE 2-9



Item No.	Description
1	3/8" Hydraulic Hose x 56"
2	3/8" Hydraulic Hose x 60"
3	3/8" Pipe Coupler
4	3/8" Male x 1/4" Female Swivel 90° Elbow—1/16" Restricted
5	3/8" Male x 1/4" Female Swivel Elbow
6	21" Cable Tie
7	1/4" Hydraulic Hose x 98"
8	1/4" Hydraulic Hose x 109"

Single Marker Double Action Hydraulic System—20' & 28'

FIGURE 2-10



Item No.	Description
1	3/8" Hydraulic Hose x 56"
2	3/8" Hydraulic Hose x 60"
3	3/8" Pipe Coupler
4	3/8" Male x 1/4" Female Swivel 90° Elbow—1/16" Restricted
5	3/8" Male x 1/4" Female Swivel Elbow
6	1/4" Pipe Coupler
7	1/4" x 86" Hydraulic Hose (20' & 28')
8	1/4" Hydraulic Hose x 86" (20') or 109" (28')
9	1/4" Hydraulic Hose x 86" (20') or 98" (28')
10	21" Cable Tie

Assembly Instructions

(Item numbers refer to **Figure 2-1** unless otherwise stated.)

The main frame is pre-assembled at the factory to simplify final assembly. Stand unit upright and support securely. The support stand is provided only for storage and the drill should be firmly supported in some manner when working around the unit.

Loosen and set lower 3-point hitch units (Items 4 & 5) to fit the category hitch on the tractor. These dimensions can be found In the tractor owner's manual for the particular tractor used. (Approximate measurements for Category II lower hitches is 35 3/8" center to center and 40 7/8" center to center for Category III lower hitches.) Be sure hitches are centered on the frame.

The 3/4" x 3" x 7 1/4" U-Bolt may be mounted in either the center or outside set of holes, depending on the category hitch and drill opener spacing. See **Figure 2-5A** to determine the placement.

Attach depth adjusting arms (Item 19) to the drive wheel tubes. Coarse adjustments in depth are made by moving the pin (Item 31) in one of the three holes provided at the top of the adjusting arm. Finer adjustments are made by loosening the jam nut and turning the shaft.

Bolt the wheels to the drive spindles. A tire with dimensions comparable to 9.5L x 15" tire should be used so that seed rates will not change. The seed rates are based on a tire with 96" circumference. A tire with a smaller circumference will cause the drill to seed a higher rate.

Before attaching the openers to the frame, mark off the desired spacing by first locating the center line of the frame. Then put a mark half the desired spacing to the left of the center line and a mark half the desired spacing to the right of the center line. From those marks continue marking the desired spacing out to each end of the frame.

Attach the opener assemblies to the lower frame tubing using the 1/2" x 4" x 4 1/4" U-bolts. When using staggered openers, alternate the standard opener assembly with the offset opener assembly. Be sure the opener bracket sets square on the tube. Unequal tightening of the U-bolt will cause the opener to be tilted forward or rearward.

Connect the grain feed hoses to the openers with the spring-type hose clamps provided. Now attach the other end of the hose to the seed cup directly above it and secure with another spring-type hose clamp. These hoses should be taken off and stored in a cool, dry place when the drill is stored for an extended period of time.

When drilling bedded ground, the wheel assemblies may be moved along the frame so the tires will run on the top of the beds. Approximate measurements from the center of the machine to the outside of the wheel assembly clamp are given in the table below.

	30" Rows	40" Rows
15' (4 Row)	80"	80"
20' (6 Row)	90"	80"
28' (8 Row)	120"	120"

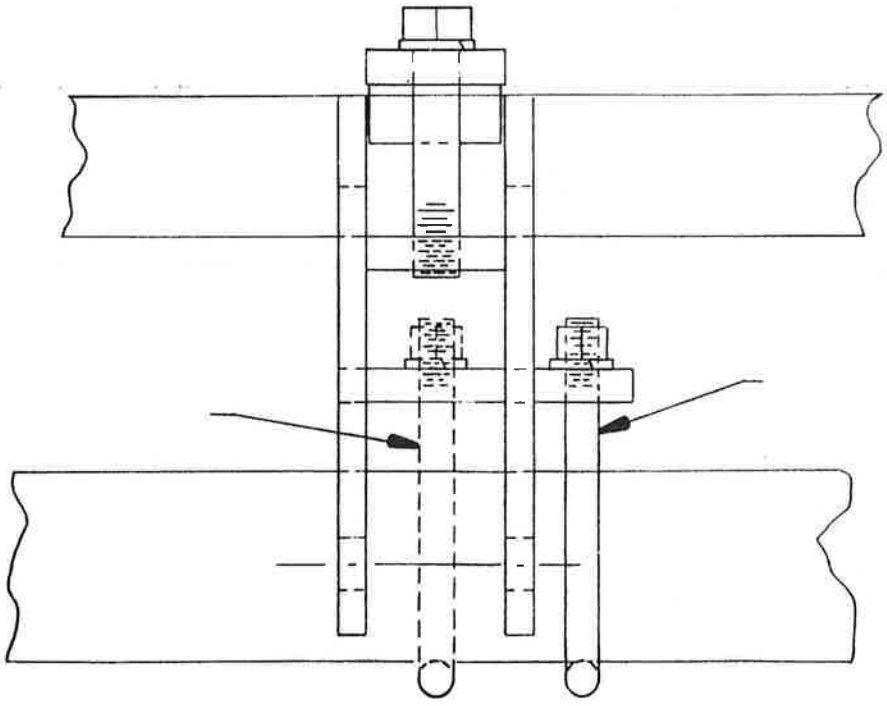
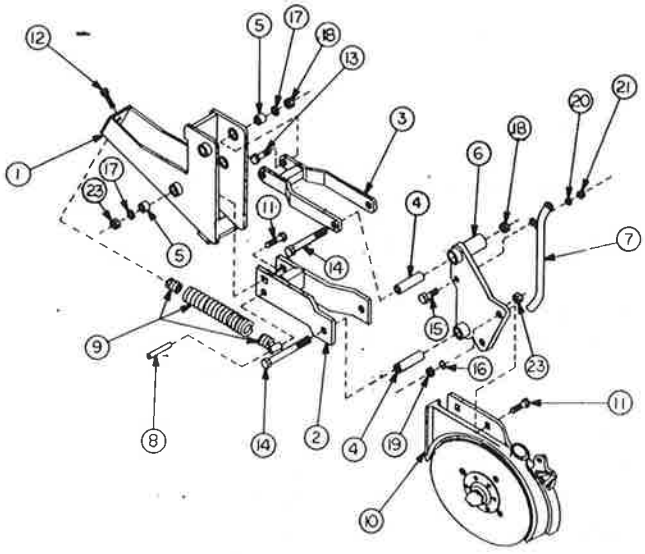


FIGURE 2-11

822775 Offset Opener Assembly

FIGURE 2-12



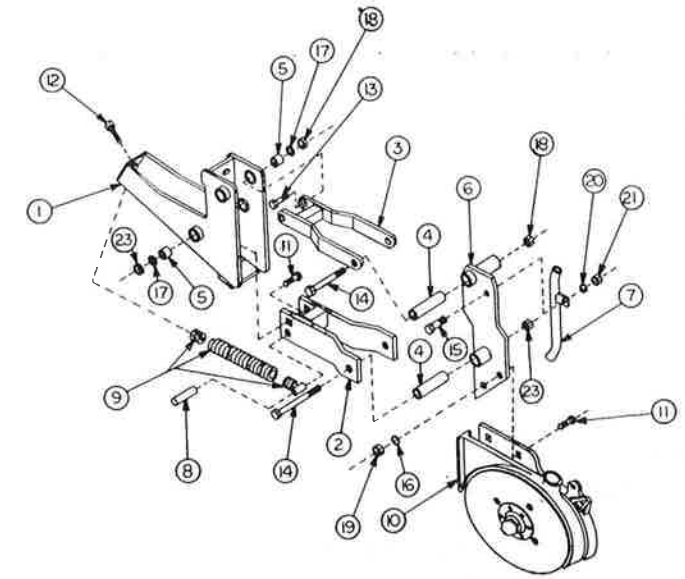
Item No.	Part No.	Description
1	927608	Opener Mounting Bracket
2	920017	Bottom Opener Linkage
3	927673	Top Opener Linkage
4*	601633	Opener Bracket Bushing
5*	601559	Opener Linkage Bushing
6	919944	Offset Opener Bracket
7	919928	Offset Opener Drill Tube
8	302919	Spring Lug Pin
9	826354	Bed Drill Spring Assembly
10	819656	Double Disc Opener w/Blade Only
11	333484	1/2" x 1" Carriage Bolt
12	333427	1/2" x 3 1/2" All Thread Bolt
13	335240	1/2" x 1 3/4" H.H.C.S.
14	01225200	1/2" x 5" H.H.C.S.
15	331835	1/4" x 1" H.H.C.S.
16	330142	1/2" Lock Washer
17	334276	1/2" Internal Tooth Lock Washer
18	334110	1/2" Hex Jam Lock Nut
19	330134	1/2" Hex Nut
20	330050	1/4" Lock Washer
21	332205	1/4" Hex Nut
*	600122	Nyliner Bushing (not shown) used w/ Items 4 & 5.

U-BOLT TO ATTACH OPENER TO FRAME

333492	1/2" x 4" x 4" U-Bolt
330134	1/2" Hex Nut
330142	1/2" Lock Washer

822767 Standard Opener Assembly

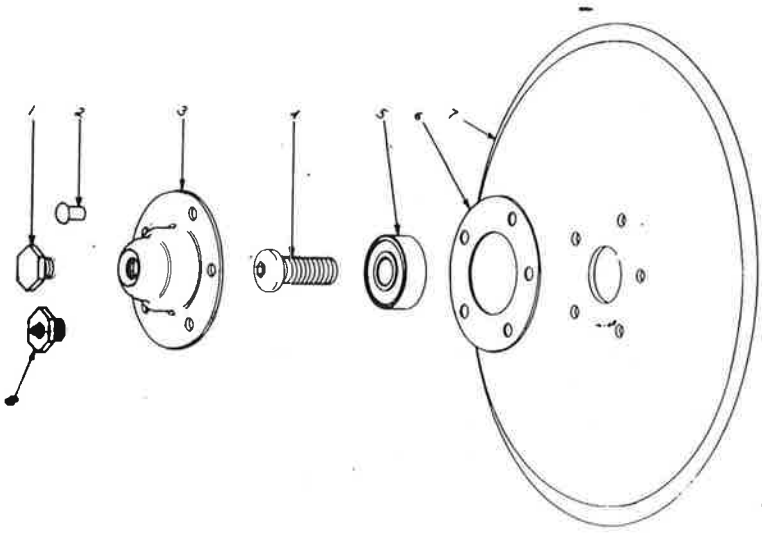
FIGURE 2-14



Item No.	Part No.	Description
1	927608	Opener Mounting Bracket
2	920017	Bottom Opener Linkage
3	927673	Top Opener Linkage
4*	601633	Opener Bracket Bushing
5*	601559	Opener Linkage Bushing
6	919951	Standard Opener Bracket
7	919936	Standard Opener Drill Tube
8	302919	Spring Lug Pin
9	826354	Bed Drill Spring Assembly
10	819656	Double Disc Opener w/Blade
11	333484	1/2" x 1 3/4" Carriage Bolt
12	333427	1/2" x 3 1/2" All Thread Bolt
13	335240	1/2" x 1 3/4" H.H.C.S.
14	01225200	1/2" x 5" H.H.C.S.
15	331835	1/4" X 1" H.H.C.S
16	330142	1/2" Lock Washer
17	334276	1/2" Internal Tooth Lock Washer
18	334110	1/2" Hex Jam Lock Nut
19	330134	1/2" Hex Nut
20	330050	1/4" Lock Washer
21	332205	1/4" Hex Nut
*	600122	Nyliner Bushing (not shown) used w/ Items 4 & 5.

Double Disc Blade Assemblies

FIGURE 2-15



842575 Double Disc Blade Assembly—Right

Item No.	Part No.	Description
1	333872	Flange Plug
2	601351	5/16" x 1/2" Button Head Rivet
3	400713	Bearing Flange
4	333948	Hex Socket Button Head Cap Screw (Right)
5	401042	Bearing
6	601393	3 3/4" O.D. x 2" I.D. Gasket
7	501189	13 1/2" Flat Disc Blade

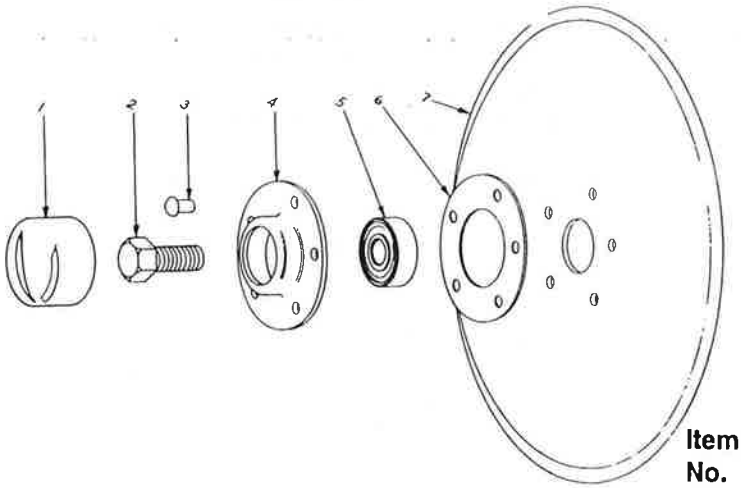
842567 Double Disc Blade Assembly—Left

Item No.	Part No.	Description
1	333872	Flange Plug
2	601351	5/16" x 1/2" Button Head Rivet
3	400713	Bearing Flange
4	333963	Hex Socket Button Head Cap Screw (Left)
5	401042	Bearing
6	601393	3 3/4" O.D. x 2" I.D. Gasket
7	501189	13 1/2" Flat Disc Blade
8*	334128	Flange Plug w/Zerk

*Not included in above assemblies.

FIGURE 2-16

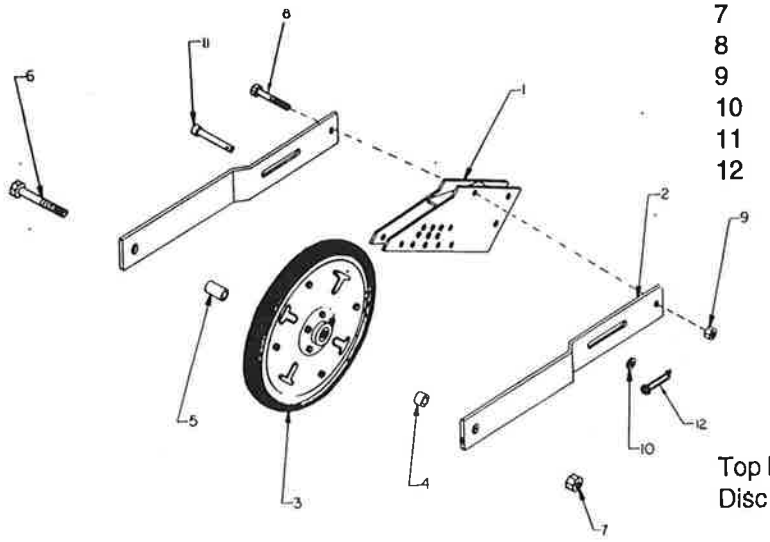
This blade complete is no longer available.
For complete blade assembly order one of the above assemblies.
Be sure to specify right or left.



Item No.	Part No.	Description
1	601369	Dust Cap
2	333336	5/8" x 1 1/4" H.H.C.S. (Left)
	01088400	5/8" x 1 1/4" H.H.C.S. (Right)
3	601351	5/16" x 1/2" Rivet
4	400721	Bearing Flange
5	401042	Bearing
6	601393	3 3/4" O.D. x 2" I.D. Gasket
7	501189	13 1/2" Flat Disc Blade

823229 Single 2 x 13 Press Wheel Hanger Assembly

FIGURE 2-17



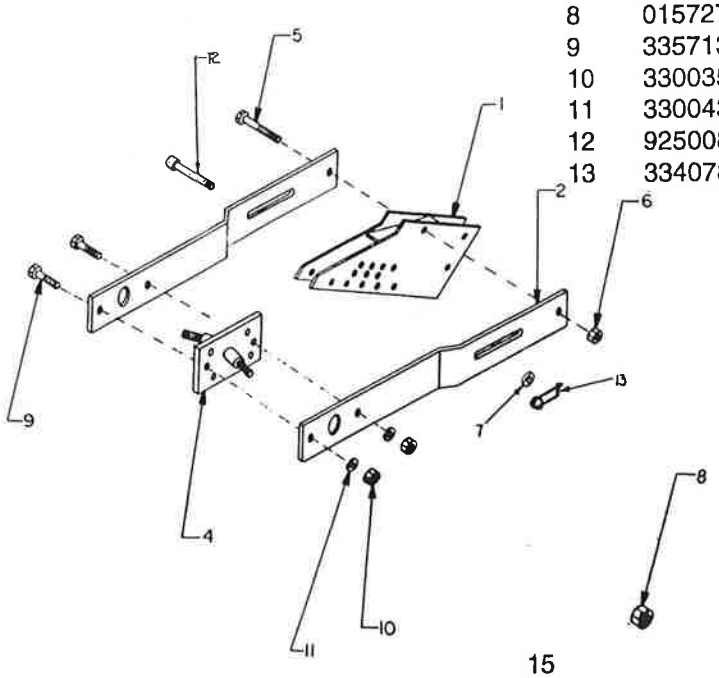
Item No.	Part No.	Description
1	922211	Press Wheel Hanger Bracket
2	186031	Press Wheel Plate
3	842518	2" x 13" Press Wheel
4	143354	Short Bushing (1/2")
5	143347	Long Bushing (1 1/4")
6	01116300	5/8" x 3 1/2" H.H.C.S.
7	01572700	5/8" Lock Nut
8	335729	3/8" x 2 1/4" H.H.C.S
9	330837	3/8" Flat Washer
10	330894	3/8" Flat Washer
11	925008	Press Wheel Adjustment Pin
12	334078	Safety Pin

Top Mount 922211 Press Wheel Hanger Bracket To double Disc Casting Use:

335703 3/8" x 1 1/2" H.H.C.S. w/
330043 3/8" Lock Washer
330035 3/8" Hex Nut

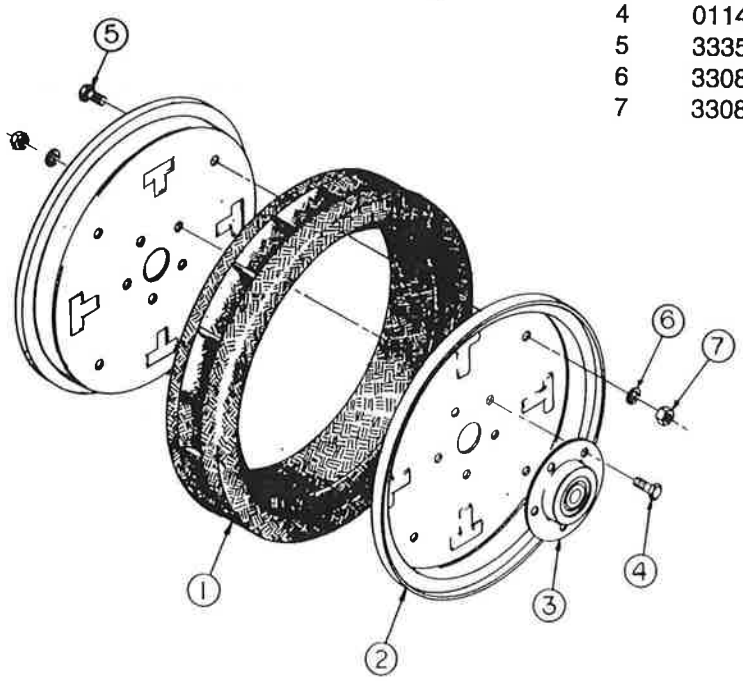
823245 Dual 2 x 13 Press Wheel Hanger Assembly

FIGURE 2-18



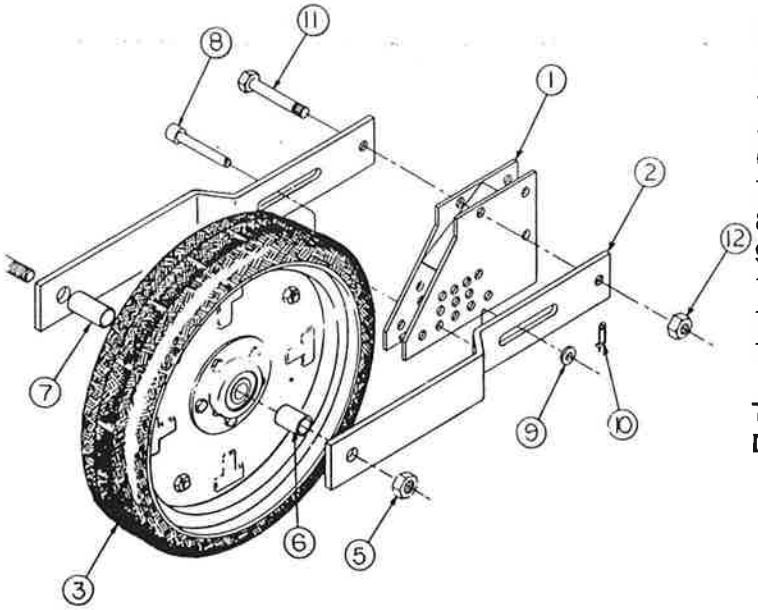
Item No.	Part No.	Description
1	922211	Press Wheel Hanger Bracket
2	184374	Press Wheel Plate
4	923607	Spindle Plates
5	335729	3/8" x 2 1/4" H.H.C.S.
6	330837	3/8" Lock Nut
7	330894	3/8" Flat Washer
8	01572700	5/8" Lock Nut
9	335713	3/8" x 1 1/2" H.H.C.S.
10	330035	3/8" Hex Nut
11	330043	3/8" Lock Washer
12	925008	Press Wheel Adjustment Pin
13	334078	Safety Pin

842526 Single 3 x 13 Press Wheel
FIGURE 2-19



Item No.	Part No.	Description
1	530493	3" x 13" Tire
2	186007	Press Wheel Half
3	633578	Flange and Bearing
4	01144500	5/16" x 3/4" H.H.C.S.
5	333542	5/16" x 5/8" H.H.C.S.
6	330845	5/16" Lock Washer
7	330811	5/16" Hex Nut

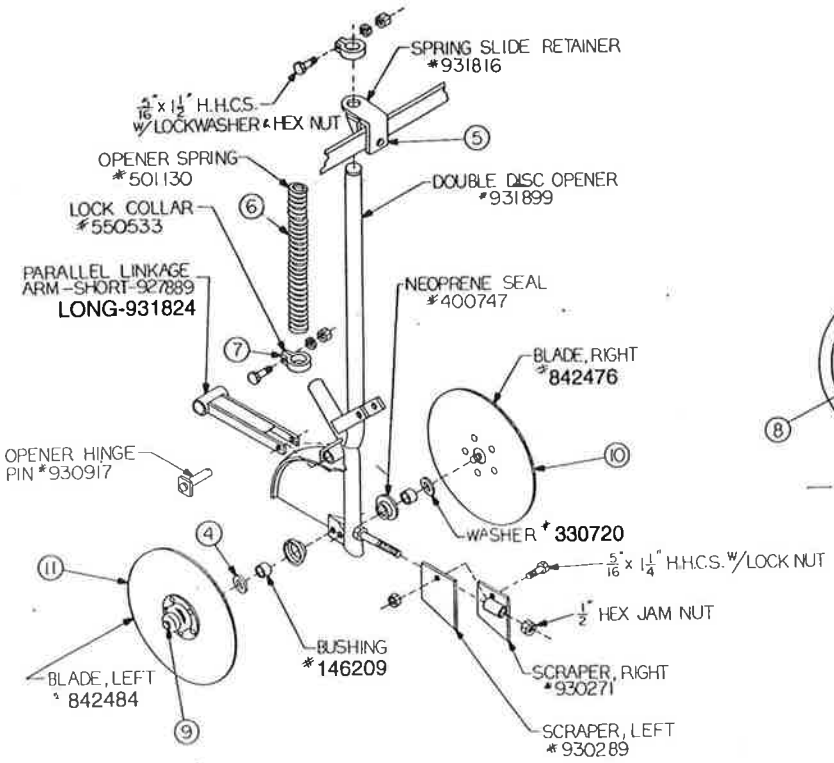
835140 Mounted Double Disc Drill
Single 3 x 13 Press Wheel Hanger Assembly
FIGURE 2-20



Item No.	Part No.	Description
1	922211	Press Wheel Hanger Bracket
2	186031	Press Wheel Plate
3	842526	3" x 13" Press Wheel Complete
4	02274900	5/8" x 5" H.H.C.S.
5	01572700	5/8" Lock Nut
6	144246	Short Bushing (1 1/8" Long)
7	144253	Long Bushing (1 7/8" Long)
8	925008	Press Wheel Adjustment Pin
9	330894	3/8" Flat Washer
10	334078	Safety Pin
11	335729	3/8" x 2 1/4" H.H.C.S.
12	330837	3/8" Lock Nut

To Mount 922211 Press Wheel Hanger Bracket to Double Disc Casting Use:

335703	3/8" x 1 1/2" H.H.C.S. w/
330837	3/8" Lock Nut



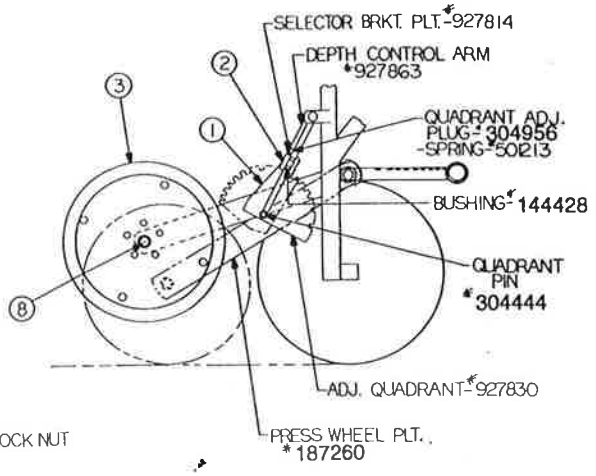


FIGURE 2-21

Double Disc Blade Assembly

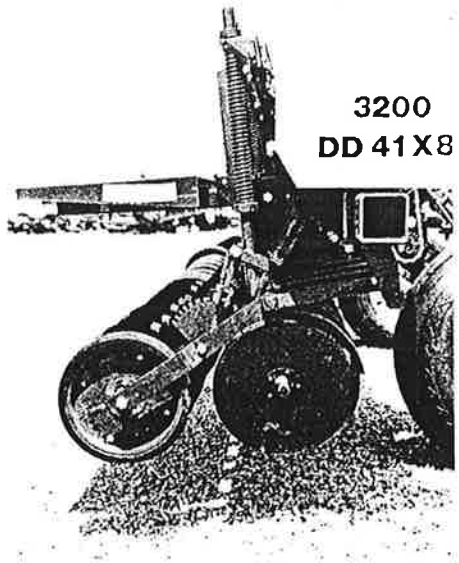


FIGURE 2-22

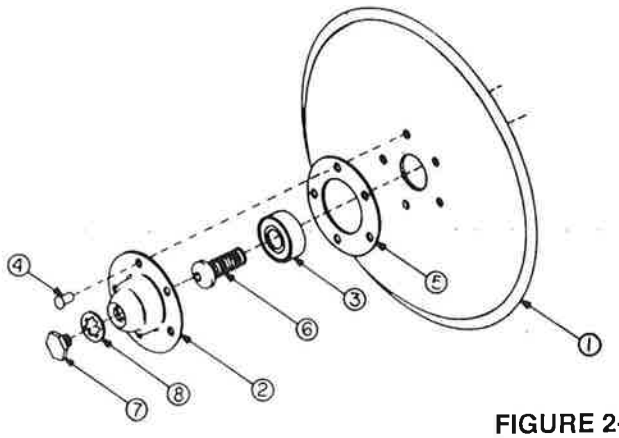


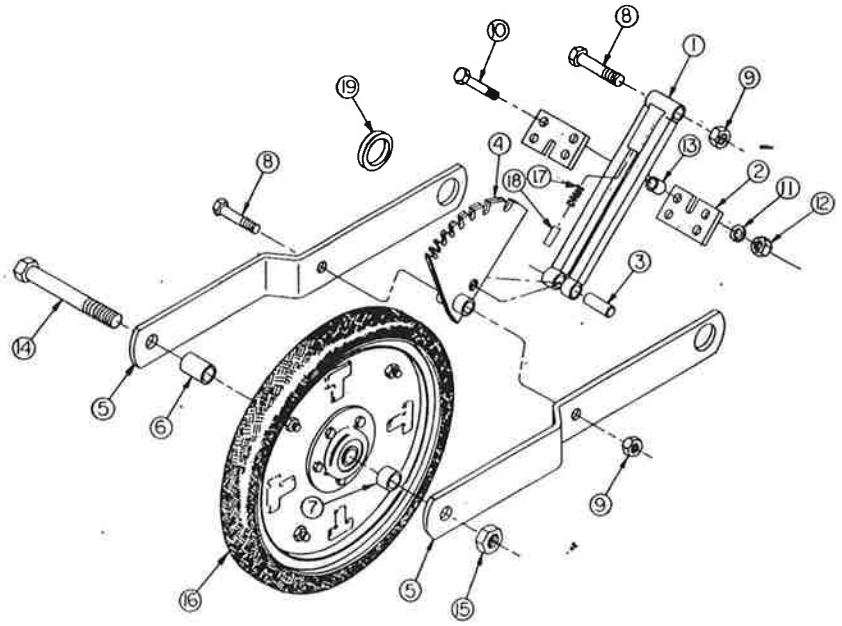
FIGURE 2-23

Item No.	Part No.	Description
1	501189	13 1/2" Flat Disc Blade (3mm)
2	400713	Bearing Flange
3	401042	Bearing
4	601351	5/16" x 1/2" Button Head Rivet
5	601393	Cellulose Fiber Gasket
6	334631	5/8" x 1 1/2" Right Hand Thread Hex Socket Button Head Cap Screw, Grade 5
	334623	5/8" x 1 1/2" Left Hand Thread Hex Socket Button Head Cap Screw, Grade 5
7	333872	Metal Flange Plug
8	334730	1/2" External Tooth Lock Washer

842559 Single 2" x 3" Press Wheel Assembly

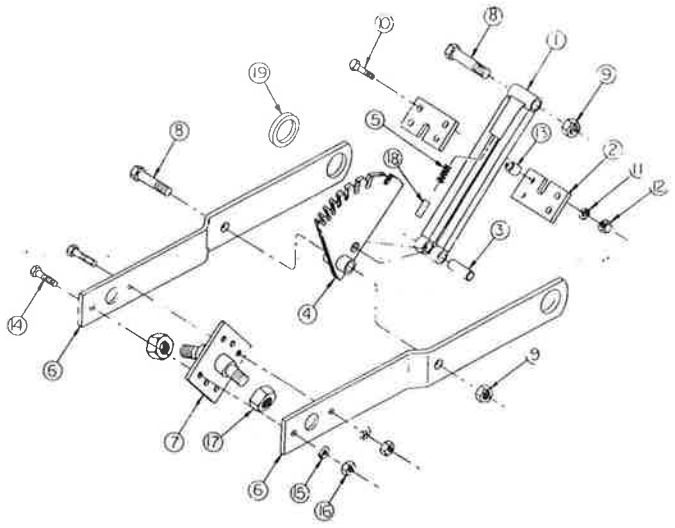
FIGURE 2-24

Item No.	Part No.	Description
1	927863	Depth Control Arm
2	186742	Selector Bracket Plate
3	304444	Quadrant Pin
4	927830	Adjusting Quadrant
5	187286	Press Wheel Plate
6	144253	Long Bushing
7	146225	Short Bushing
8	335422	1/2" x 2 1/2" H.H.C.S.
9	331363	1/2" Lock Nut
10	331843	1/4"x 1 1/2" H.H.C.S.
11	330050	1/4" Lock Washer
12	332205	1/4" Hex Nut
13	144428	Selector Bracket Bushing
14	02274900	5/8" x 5" H.H.C.S.
15	01572700	5/8" Lock Nut
16	842518	2" x 13" Press Wheel
17	501213	Quadrant Adj. Spring
18	304956	Quadrant Adj. Plug
19	144600	3/8" Spacer Bushing



836411 Dual Press Wheel Mounting Assembly

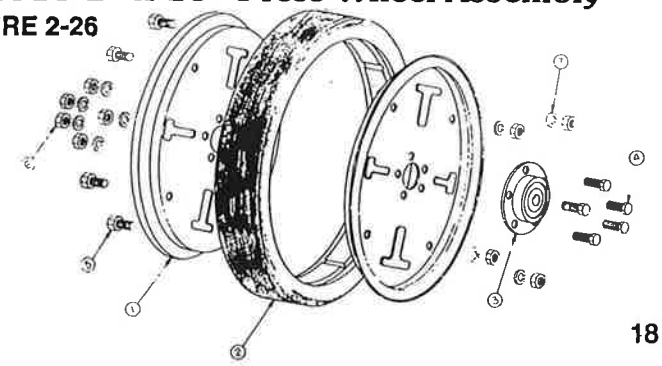
FIGURE 2-25



Item No.	Part No.	Description
1	927863	Depth Control Arm
2	186742	Selector Bracket Plate
3	304444	Quadrant Pin
4	927830	Adjusting Quadrant
5	501213	Quadrant Adj. Spring
6	187260	Press Wheel Plate
7	923607	Spindle Plate
8	335422	1/2" x 2 1/2" H.H.C.S.
9	331363	1/2" Lock Nut
10	331843	1/4" x 1 1/2" H.H.C.S.
11	330050	1/4" Lock Washer
12	332205	1/4" Hex Nut
13	144428	Selector Bracket Bushing
14	335703	3/8" x 1 1/2" H.H.C.S.
15	330043	3/8" Lock Nut
16	330035	3/8" Hex Nut
17	01572700	5/8" Lock Nut
18	304956	Quadrant Adj. Plug
19	144600	3/8" Spacer Bushing

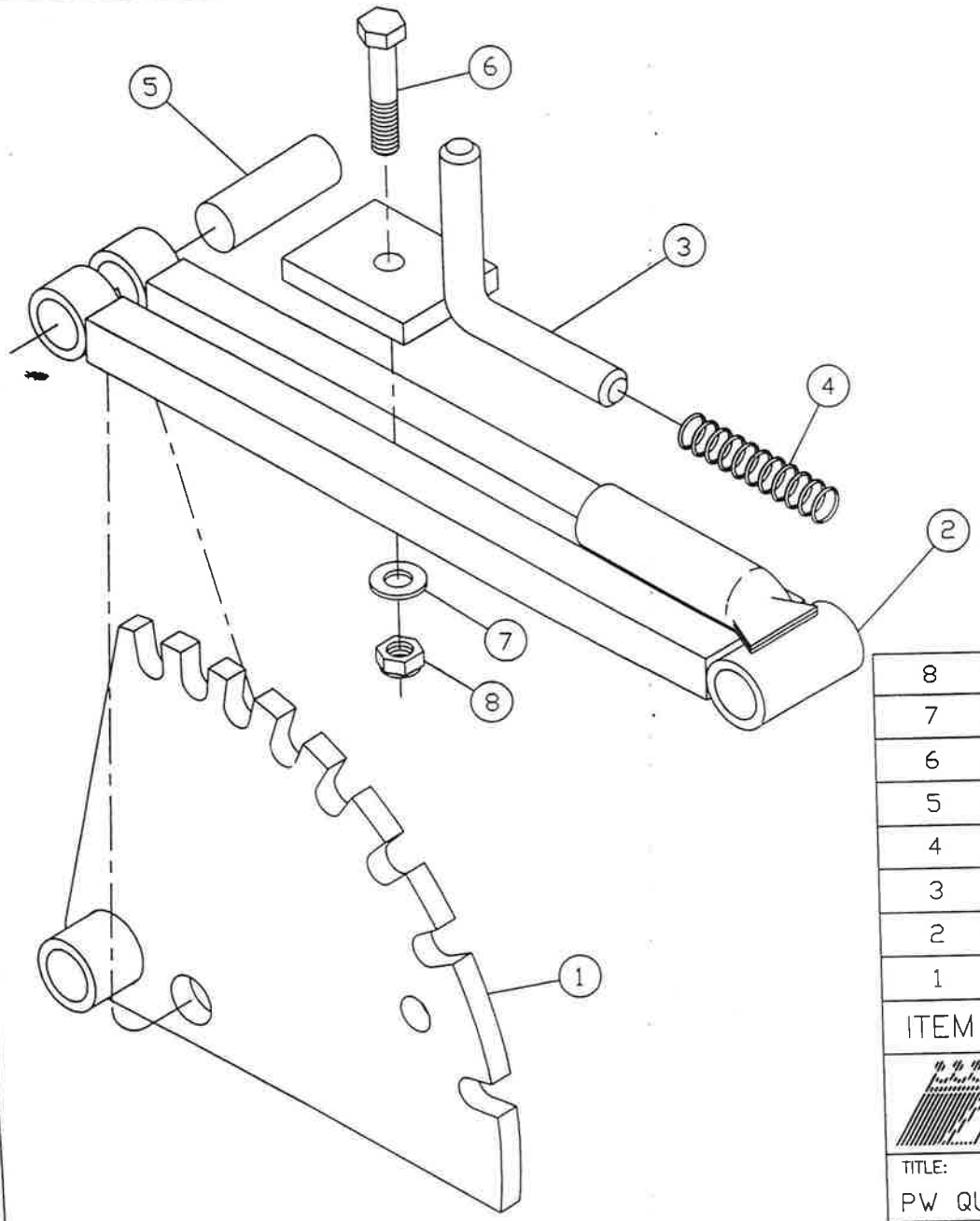
842518 2" x 13" Press Wheel Assembly

FIGURE 2-26



Item No.	Part No.	Description
1	184192	Press Wheel Half
2	530428	Rubber Press Wheel
3	633578	Flange & Bearing
4	01144500	5/16" x 3/4" H.H.C.S.
5	333542	5/16" x 5/8" H.H.C.S.
6	330811	5/16" Hex Nut
7	330845	5/16" Lock Washer

DRAWING NUMBER:
853945



ITEM	QTY	NUMBER	DESCRIPTION
8	1	330522	HEX NYLOCK NUT .250
7	1	02016400	FLAT WASHER .250
6	1	333633	HHCS .250 X 1.250
5	1	304444	CRR .500 X 1.438
4	1	501213	QUADRANT SPRING
3	1	937458	QUADRANT ADJ PLUG BRKT
2	1	952432	DEPTH CONTROL ARM
1	1	927830	PW ADJ QUADRANT

CrustBuster SPEED KING INC.
P.O. BOX 1438
DODGE CITY, KANSAS 67801
(620) 227-7106

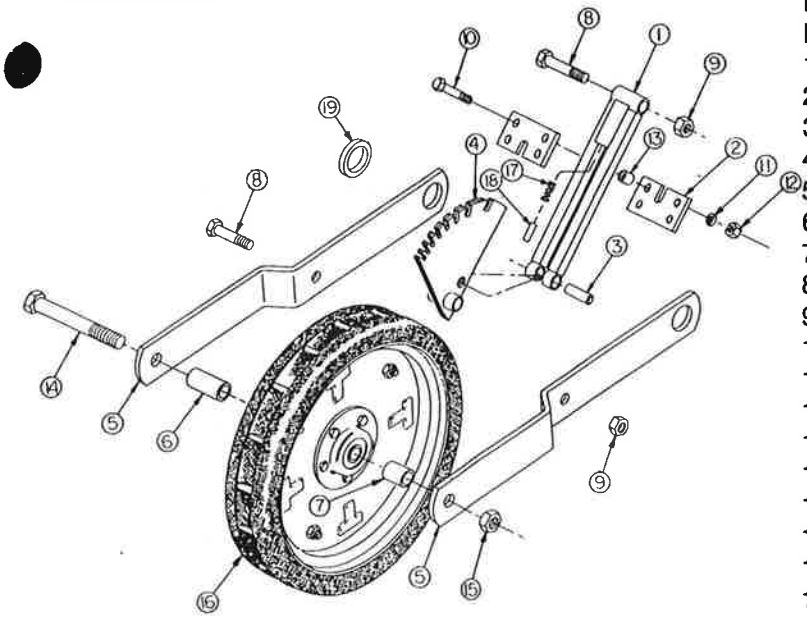
TITLE:
PW QUADRANT ADJUSTMENT ASSEMBLY

DRAWN BY:	DATE:	SCALE:	DRAWING NUMBER:
J Peintner	07-26-04	1/2=1	853945
APPROVED BY:			

(1) REDRAWN ACAD

842542 Single 3" x 13" Press Wheel Mounting Assembly

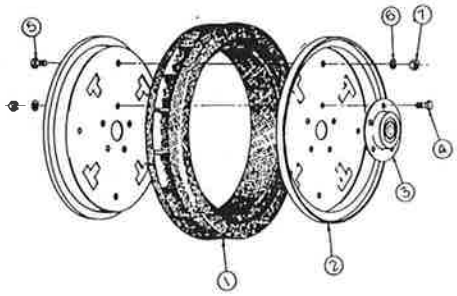
FIGURE 2-27



Item No.	Part No.	Description
1	927863	Depth Control Arm
2	186742	Selector Bracket Plate
3	304444	Quadrant Pin
4	927830	Adjusting Quadrant
5	187286	Press Wheel Plate
6	144253	Long Bushing
7	146225	Short Bushing
8	335422	1/2" x 2 1/2" H.H.C.S.
9	331363	1/2" Lock Nut
10	331843	1/4" x 1 1/2" H.H.C.S.
11	330050	1/4" Lock Washer
12	332205	1/4" Hex Nut
13	144428	Selector Bracket Bushing
14	02274900	5/8" x 5" H.H.C.S.
15	01572700	5/8" Lock Nut
16	842526	Single 3" x 13" Press Wheel
17	501213	Quadrant Adj. Spring
18	304956	Quadrant Adj. Plug
19	144600	3/8" Spacer Bushing

842526 3" x 13" Press Wheel Assembly

FIGURE 2-28



Item No.	Part No.	Description
1	530493	3" x 13" Tire
2	186007	Press Wheel Half
3	633578	Flange and Bearing
4	01144500	5/16" x 3/4" H.H.C.S.
5	333542	5/16" x 5/8" H.H.C.S.
6	330845	5/16" Lock Washer
7	330811	5/16" Hex Nut

Mount the press wheel assembly to the back of the opener casting using two 3/8" x 1 1/2" H.H.C.S. with lock washer and hex nut. Tighten well.

The spindle plate on the dual press wheels has adjustable toe in and toe out. The plate has been factory set for zero toe out. To toe out the front of the press wheels remove the 3/8" x 1 1/2" bolts and rotate the front of the plate downward. Toeing out the press wheel will pull more dirt between the press wheels. In cloddy conditions excessive toe out could cause clogging between the press wheels

Mount the dual press wheels with the bearing to the inside. Secure with a 5/8" lock nut. Due to the complexity of the parallel linkage and the close tolerance between the narrow spacing on the dual firming wheel, minor adjustments may be required (**Figure 2-10**).

If press wheel is shifted left, put 1/2" flat washer(s) on rear bolt. If press wheel is shifted right, put 1/2" flat washer(s) on front bolt. One flat washer shifts press wheels approximately 1/2". The maximum number of washers which should be added is two.

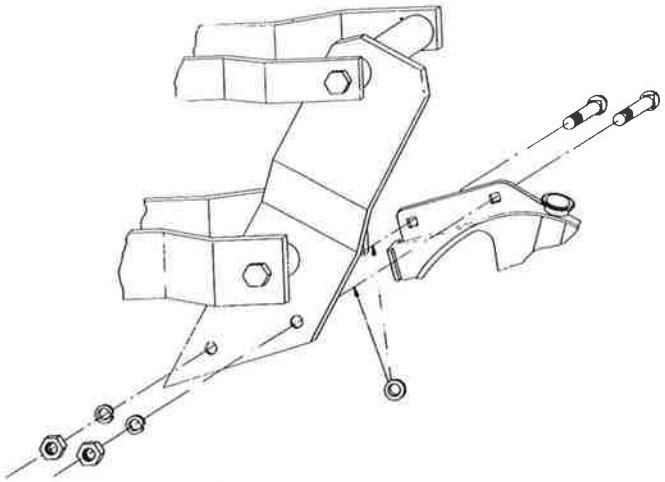


FIGURE 2-29

Mount the walkboard brackets (Item 7) to the top tube at the rear of the drill using a 1/2" x 4" x 4 1/4" U-Bolt (Item 22) with hex nuts and lock washers. Mount the walkboards using 3/8" x 1" H.H.C.S. with hex nuts and lock washers (Item 25).

The S.M.V. bracket (Item 8) is attached to the walkboard as near the center of the drill as possible. The S.M.V. sign (Item 9) is attached with two 1/4" x 3/4" H.H.C.S. with the point of the triangle up .

The reflector brackets (Item 9) are mounted to the walkboards near the right and left ends of the drill. Red and amber reflectors (Items 10 & 11) are attached with 1/4" x 3/4" H.H.C.S. to the left reflector bracket with the red reflector facing backward and the amber one forward. The other red reflector is bolted to the right reflector in the same manner as the left side.

Revolution Counter

Mount the revolution counter (Item 5) to the center hole of the mounting bracket (Item 3) using the 1/2" nut (Item 6) furnished with the counter. Attach the mounting bracket to the wheel rim of the drive tire using two 1/2" x 1" H.H.C.S. (Item 4) with lock washers and hex nuts.

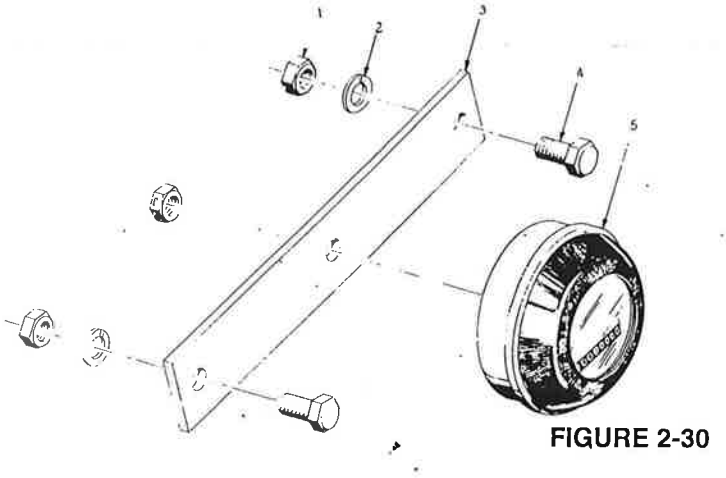


FIGURE 2-30

Section Three: Operation

Safe Operation

Never ride drill when in operation! Particular care should be exercised at all times when drill is hooked to tractor and there is a chance of activating the hydraulics.

Reduce speed when transporting over uneven or rough terrain. The maximum recommended drilling speed is six m.p.h. Speeds greater than this will scatter the seed on top of the ground.

Never allow anyone around the drill when you are performing operating functions of the grain drill.

Shift the tractor into a lower gear before transporting down hills or steep slopes.

If your tractor is equipped with a seatbelt, be sure to keep it fastened when operating or transporting the grain drill.

Always lower the grain drill and stop the tractor engine before lubricating.

Before filling grain boxes, properly hitch drill to tractor to prevent possibility of drill tipping over backward.

Field Operation

Check drill carefully before starting to seed. A small amount of time spent before field operation could save a lot of down time in the field plus the aggravation and loss of a seeding job poorly done.

Secure drill hitch to tractor 3-point with proper pins and lock in place.

Raise drill, unlock support stand, lift and lock stand into field position.

Before filling box with seed, rotate seed shaft. The elementsof weather, dirt, etc, may cause corrosion and freeze the seed shaft from the time of previous seeding. Remove undesirable material from inside of box A small amount of penetrating oil (or similar light lubricant) in each seed cup will help free the shaft. Check rotors for correct slot width (See Section 4 Seeding).

With the drill lowered to planting depth, adjust the upper 3-point link on the tractor to level the drill from front to back. If the drill is not level during planting, the seeding rate is affected. If the drill is tipped forward the seed rate will be reduced; rearward the rate will increase.

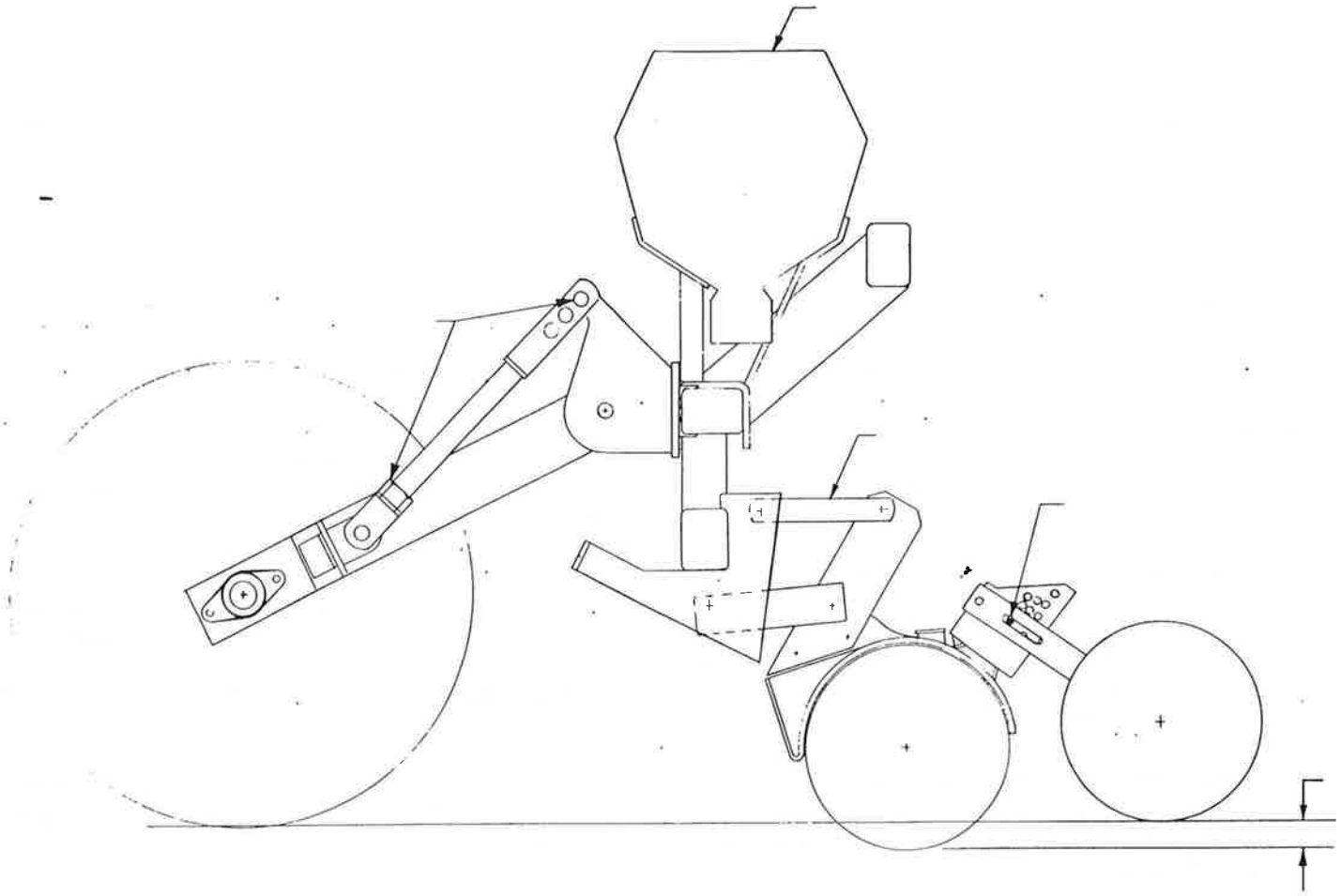
With either the single or dual press wheels the depth of planting can be controlled by adjusting the press wheel assembly up and down with relation to the opener blades. To do this remove the 3/8" pin in front of the press wheels. Raise or lower the press wheels to the desired depth and reinsert the pin.

Penetration is achieved by the amount of force being applied to each disc opener by the opener spring. To increase penetration, tighten the bolt at the front of each opener assembly. To decrease penetration, loosen the same bolt.

For openers which run in the tractor track, the spring force should be increased to overcome the compaction.

Be careful not to apply so much spring force that the drill is lifted off the ground. Enough pressure is needed on the drive wheels so they will not slip and cause erratic seeding.

FIGURE 3-1



Set gauge wheels to desired depth by moving pin in one of the three holes in the adjusting arm for coarse adjustments. Finer adjustment is accomplished by loosening the jam nut at the lower end of the adjusting arm and turning the shaft. The openers should run with the parallel links in a horizontal position. This allows the opener to float up and down over rough ground. Be sure to retighten the jam nut.

As the blades or the double disc opener wear, they will develop a larger than normal gap between themselves in the front of the opener. (Normally the gap should be 1/16" to 3/16".) This could catch trash and stop the blades from turning. To adjust the blades closer together, remove the plug and use a 3/8" allen wrench to remove the blade, being careful not to lose the washers behind the blade. (NOTE: the right blade is secured with a right hand thread bolt and the left blade is secured with a left hand thread bolt.)

Remove combination of washers from behind the blade that will tighten the blades. Remove an equal amount of washers from each side so the blades are moved in equally. CAUTION: Do not remove so many washers that the blades force the bearing to run with an excessive amount of misalignment or side load. This could also cause the edge of the leading blade to be ground off.

Seed Stoppage

Never drop implement into wet ground from a stand still as this could plug the grain tubes. Always put the drill in the ground while moving forward to avoid plugging grain tubes.

Never back up or turn too sharp so the ends of the drill back up. This will wedge the dirt between the blades on the double opener and cause the blades to stop turning.

Bridging in drill box may occur in oats and corn. An agitator may need to be installed. Powdered inoculant on soybeans may also cause bridging and stoppage of the feed cup. It can cause the shaft to turn hard causing excessive wear. LIQUID INOCULANT IS RECOMMENDED. Addition of powdered graphite with each filling may be helpful with using inoculated seed.

Check drill often making certain unit is functioning and seeding properly. If not, take corrective action.

Section Four: Seeding Bushels and Pounds

Nerve center for your grain drill is the patented CrustBuster® Feed Slot. It is an accurate meter that controls the volume of seeds you plant without regard for size or weight of those seeds.

The difference in pounds per-acre lies in the seed itself, beginning with kind of grain and variety. Seed moisture content. size, type and weight all contribute to the variances of the number of seeds per bushel. For example, the large seeds may be lighter in weight, lower moisture content, with some unfilled kernels; they will fill a bushel, but may weigh only 40 pounds. The small seeds by volume fill the same bushel, but weigh 60 pounds.

CrustBuster® Feed Slots turning the same number of revolutions meter exactly the same volume of both the large and small seeds. They both fill the bushel, but with large seeds, you are planting at 40 pounds/acre; small seed at 60 pounds/acre.

Follow the six steps under "How to Check Quantities Drilled" and the seeding rate charts in this manual to calculate total amount of seed grain you will need.

Determine the rate of seeding in pounds per acre and refer to the proper seed chart. Seeding rates may be changed by either changing sprocket combinations or by opening and closing the feed slot.

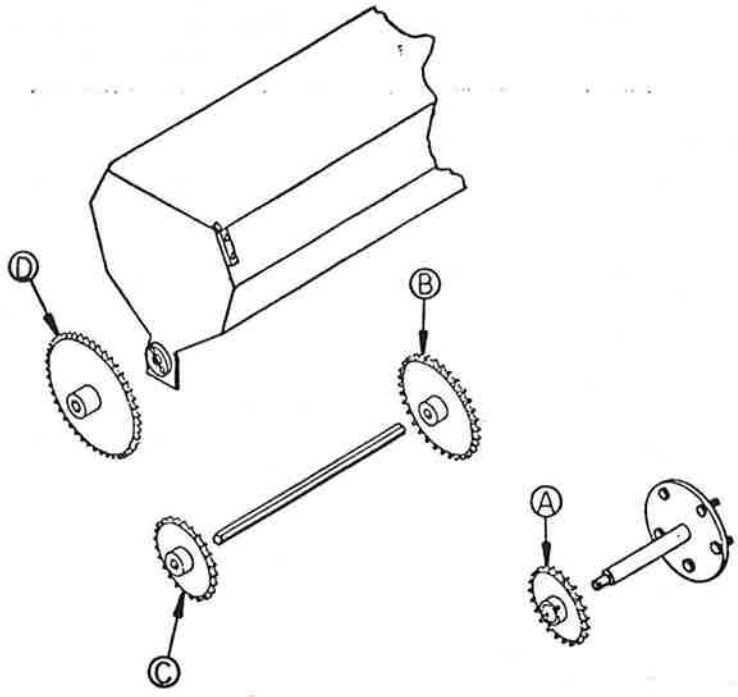
Slot width may be determined by checking the decal plate located on one of the feed cups next to the adjustment screw or by inserting a round rod with the correct diameter into the slot inside the drill box. Select the rate on the chart which you wish to seed. To the left of the various rates you will find the proper sprocket combination.

EXAMPLE: If you own a 10" drill and the feed slot is set 5/8" and you are drilling wheat (60 lb. test weight) and want drill at the rate of 60 pounds per acre, go to the chart for wheat. Look under the 5/8" slot column for a 10" spacing. Go down column until you reach 61. This is the closest number to 60 under the 5/8" slot.

You will see that for this rate it requires a 23 tooth sprocket (A) for the drive wheel, a 32 tooth sprocket on the left side of the jack shaft (B), and a 37 tooth sprocket for the right side of the jack shaft (C) and a 46 tooth sprocket on the drill box (D).

Arrange your sprockets in the manner just described and you will be ready to drill at the rate of 61 pounds per acre.

If you decide that you are getting too much or not enough seed on then you may close or open the slot to adjust to the desired rate. Notice that closing the slot 1/8" down to a 1/2" width decreases the rate to 47 pounds per acre and opening the slot 1/8" to 3/4" width increases the rate to 72 pounds per acre.



Sprocket Arrangement
FIGURE 4-1

NOTE: To close the feed slot with grain in the box, close the slot down a maximum of 1/8" and then rotate the shaft one turn to clear the slot of jammed grain. Repeat this until the desired slot width is reached.

Slot width may be determined by checking the decal plate located on one of the feed cups next to the adjustment screw.

If the desired rate can not be obtained by adjusting the feed slot, then the sprocket combination will have to be changed. By changing sprockets, of course, chain length will vary. Chains should be lengthened or shortened as necessary so the chain will run snug.

Extra sprockets may be carried on sprocket carriers located in boxes.

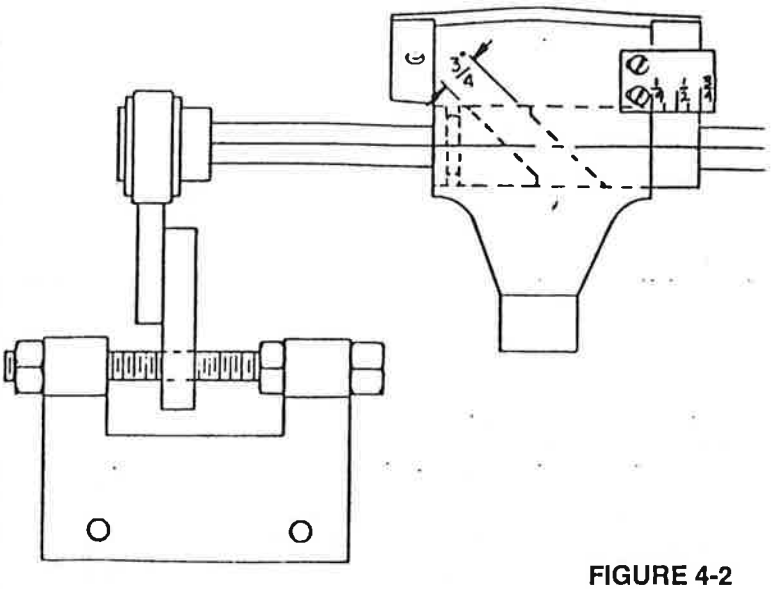


FIGURE 4-2

PLANT POPULATIONS PER ACRE AT VARIOUS ROW SPACINGS

Plants Per Foot of Row	SPACING BETWEEN ROWS						
	6 in.	8 in.	10 in.	14 in.	18 in.	20 in.	40 in.
20	1,792,180	1,306,800	1,045,440	746,740	580,800	522,700	261,360
18	1,612,962	1,176,120	940,896	672,066	522,720	470,530	235,244
15	1,344,128	980,100	784,080	560,055	435,600	392,025	196,020
12	1,075,308	784,080	627,264	448,044	348,044	313,620	156,816
10	896,090	653,400	522,720	373,370	290,400	261,350	130,680
9	806,480	588,060	470,448	336,033	261,360	235,315	117,612
8	716,864	522,720	418,176	298,320	209,080	104,544	
7	627,264	457,380	365,904	261,359	203,280	182,945	91,476
6	537,654	392,040	313,632	224,022	174,240	156,816	78,408
5	448,044	326,700	261,360	186,685	145,200	130,675	65,340
4	358,432	261,360	209,088	149,358	116,160	104,540	52,272
3	268,826	196,020	156,816	112,011	87,120	78,405	39,204
2	179,216	130,080	104,544	74,674	58,080	52,272	26,136
1	89,610	65,340	52,272	37,337	29,040	26,136	13,068

NOTE: Table above shows the rapid increase in plant population as rows are narrowed. It is important that extra fertilizer and moisture be provided for as plant population increases.

Sample Seed Rate Calculation

(Using spacings other than what is in the seed chart.)

If you are planting 40" single row, multiply your desired feed rate in pounds per acre by four and find this rate under the 10" spacing column and set sprockets as shown.

EXAMPLE: Type of seed: Milo
Opener Spacing: 40"
Desired Feed Rate: 4 lbs./acre
Slot Width: 1/4"

Step 1: (4 lbs. per acre) x (4) - 16 lbs. per acre
Looking under 10" spacing, 1/4" slot find 16 lbs.
16 x .25 - 4.0 lb. per acre actual rate.
Sprockets would be: A 23, B 32, C 25, D 37.

If you are planting 30" rows, multiply your desired feed rate by three instead of four and follow the same procedure.

If you are planting double row crop on 40" beds, multiply your desired feed rate in lbs. per acre by 2 and find this rate under the 10" spacing column and set the sprockets as shown.

EXAMPLE: Type of Seed: Milo
Opener Spacing: Double Row 40"
Desired Feed Rate: 4 lbs./acre
Slot Width: 1/4"

Step 1: (4 lbs. per acre) x (2) = 8 lbs./acre. 8 lbs. is found in line seven. Sprockets would be: A 23, B 25, C 12, D 46.

If the exact value is not shown on the chart, use the closest value found and open or close slot slightly to adjust to the desired rate.

How To Check Quantities Drilled

The general method for checking quantities drilled is as follows:

1. Make all adjustments as explained above.
2. Fill the box level full in the field. Then pull the drill a short distance to settle the seed. Refill the box so that it is exactly level full.
3. Drill a calculated one acre.
4. Carefully weigh the seed required to fill the box level full.
5. Compare the weight of seed required to fill the box at the predetermined rate.
6. Adjust seeding rate accordingly to compensate for any variation between the rate desired and the amount actually drilled.

If a more accurate check is required, raise the drill off the ground and check in the following manner:

1. Place seed in drill box and a container under each feed.
2. Set the seeding rate on drill for desired quantity per acre as shown on the rate charts.
3. Place a mark on the drive wheel and lower the drill into the ground. Pull the drill through the field and count the number of revolutions the drive wheel is turning. Use the chart (**Figure 4-3**) to determine how many revolutions it takes for one opener to plant one acre or a fraction of an acre.
4. Carefully weigh the seed in each individual container and compare that to the weight shown on the rate charts.
5. Adjust the seeding rate to compensate for any variation and repeat the test until the desired quantity is obtained.

DRIVE WHEEL REVOLUTIONS

	Spacing		
To Plant	**6"**	**8"**	**10"**
1 acre	10,890	8,168	6,534
3/4 acre	8,168	6,126	4,901
1/2 acre	5,455	4,084	3,267
1/4 acre	2,723	2,042	1,634

Be cautious of any backward or side movement of drill while in field position. It is very easy to back or pivot the outside openers while turning. This can plug feed tubes and, if severe enough, can damage disc opener brackets. It is strongly advised to raise implement to out-of-ground position before stopping or while make sharp turns. Also have implement moving forward before lowering into field position.

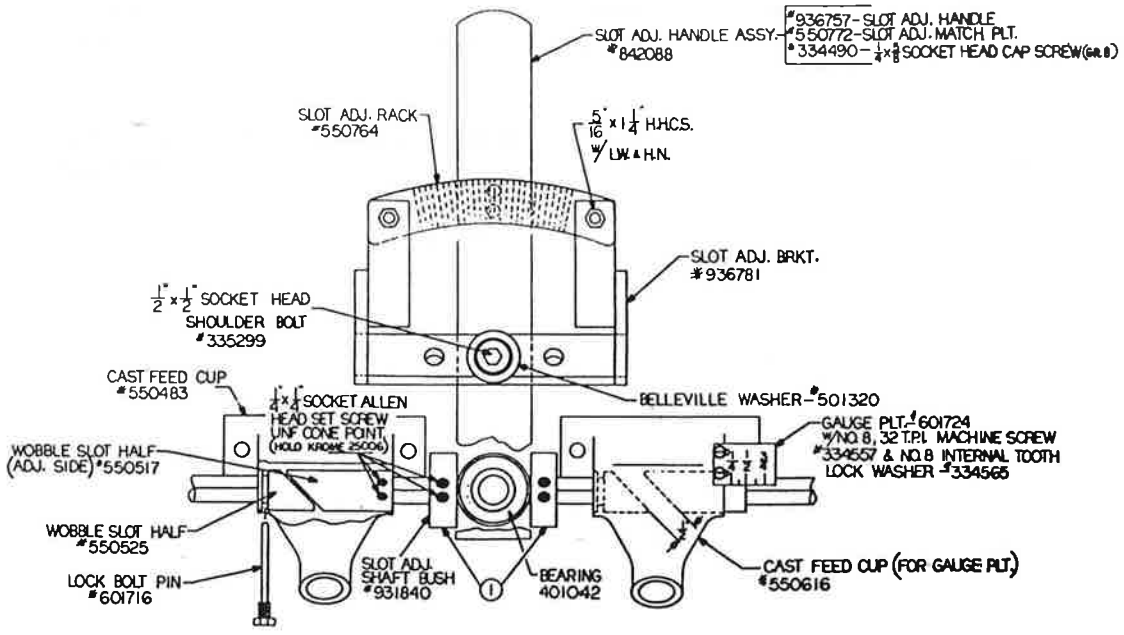
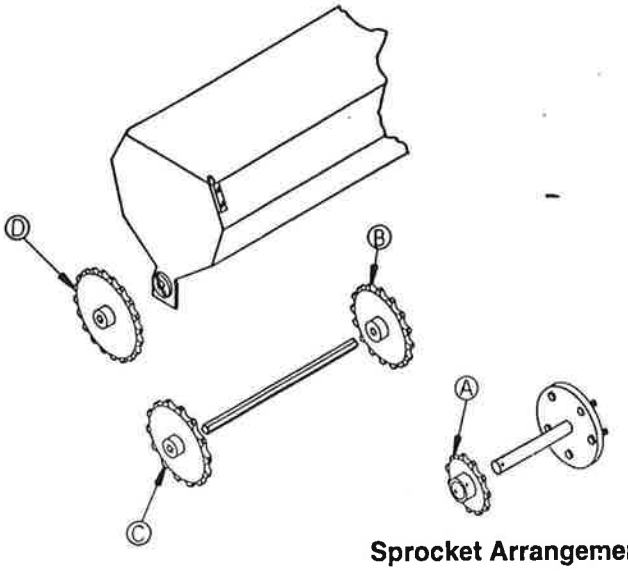
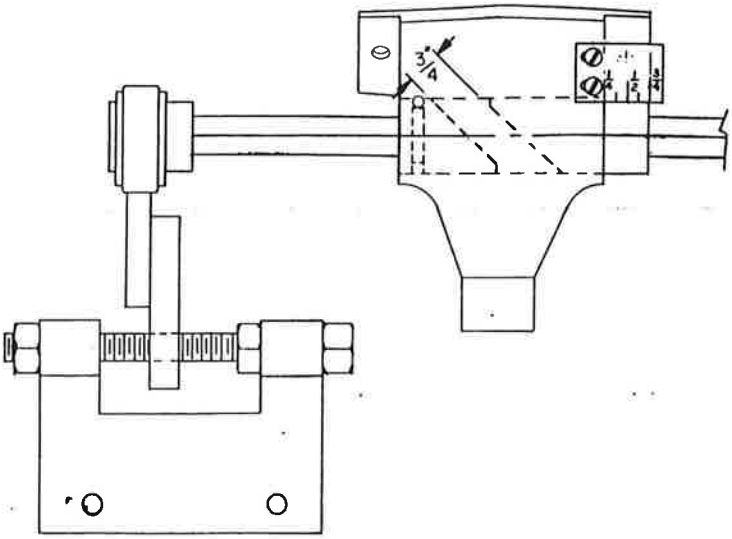


FIGURE 4-3

Section Five: Seed Charts



Sprocket Arrangement



Feed Slot Settings

ALFALFA Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				1/8"	1/4"	1/2"	1/8"	1/4"	1/2"	1/8"	1/4"	1/2"
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
14	46	12	46	4	6		2	5		2	4	
14	37	12	46	5	8		4	6		3	5	
14	32	12	46	5.5	9		4.5	7		3.5	6	
14	25	12	46	7	12		5	9		4	7	
23	37	12	46	7	13		6	10		5	8	
23	32	12	46	9	15		7	11		5.5	9	
23	25	12	46	11	19		9	15		7	12	
23	25	12	37	14	24		11	18		9	15	
23	37	25	46	16	27		12	21		10	16	
23	32	25	46	19	32		14	24		11	19	
23	37	32	46	21	35		15	26		12	21	
23	32	25	37	23	39		17	30		14	24	
23	32	37	46	27	47		21	35		16	28	
23	25	32	46	30	52		23	39		18	31	
23	25	37	46	35	60		26	45		21	36	
23	25	32	37	38	65		28	48		23	39	
23	32	46	37	42	73		32	54		25	44	
23	25	37	32	51	86		38	65		30	52	
23	25	46	37	54	93		41	70		33	56	
23	25	46	32	63	107		47	81		38	64	

NOTE: Rates are based on 60 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

BARLEY Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				1/2"	5/8"	3/4"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
23	37	12	46	17	20	24	12	16	18	10	12	14
23	32	12	46	19	23	28	14	18	22	11	14	17
23	25	12	46	24	30	36	18	23	26	14	18	22
23	25	12	37	30	37	44	23	28	34	18	23	26
23	37	25	46	34	42	50	25	31	38	20	25	30
23	32	25	46	40	49	59	29	36	44	24	29	35
23	37	32	46	43	54	65	32	41	48	26	32	38
23	32	25	37	49	60	73	36	46	54	29	36	43
23	32	37	46	58	72	86	43	54	65	35	43	52
23	25	32	46	64	80	96	48	60	72	38	48	58
23	25	37	46	74	92	110	55	70	83	44	55	66
23	25	32	37	79	100	119	60	74	89	48	60	72
23	32	46	37	90	112	134	67	84	101	54	67	80
23	25	37	32	107	133	160	80	100	120	64	79	96
23	25	46	37	114	143	172	86	107	128	68	85	103
23	25	46	32	132	164	198	100	124	149	79	98	119
23	25	46	25	169	211	253	127	158	190	102	127	152
23	25	25	12	192	239	287	144	179	215	115	144	173
23	25	32	12	246	306	367	185	229	276	148	184	221
23	25	37	12	284	354	425	214	265	319	170	212	254

Box Agitator may be required for seeding barley.

Note: Rates are based on 48 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

CORN Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				1/2"	5/8"	3/4"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
23	37	12	46	9	12	15	7	9	11	5	7	9
23	32	12	46	10	14	17	8	11	13	6	9	10
23	25	12	46	13	18	22	10	14	17	8	11	13
23	25	12	37	16	23	27	12	17	21	10	14	16
23	37	25	46	18	26	31	14	19	23	11	15	19
23	32	25	46	21	30	36	16	22	27	13	18	22
23	37	32	46	23	33	40	17	25	30	14	20	24
23	32	25	37	26	37	45	20	28	33	16	22	27
23	32	37	46	31	44	53	23	33	40	19	26	32
23	25	32	46	34	49	59	26	37	44	21	29	35
23	25	37	46	40	56	68	30	42	51	24	34	41
23	25	32	37	43	61	73	32	45	55	26	36	44
23	32	46	37	48	68	82	36	51	62	29	41	49
23	25	37	32	57	81	98	43	61	73	34	49	59
23	25	46	37	61	87	105	46	65	79	37	52	63
23	25	46	32	71	101	122	53	76	91	43	60	73
23	25	46	25	91	129	156	68	97	117	55	77	93
23	25	25	12	103	146	176	77	110	132	62	88	106
23	25	32	12	132	187	226	99	140	169	79	112	135
23	25	37	12	152	216	261	114	162	196	91	130	156

Note: Rates are based on 56 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

COTTON Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				1/2"	5/8"	3/4"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
23	37	12	46	12	14	18	9	11	14	7	9	11
23	32	12	46	14	17	21	10	13	16	8	10	13
23	25	12	46	18	21	27	13	16	20	11	13	16
23	25	12	37	22	27	33	17	20	25	13	16	20
23	37	25	46	25	30	38	19	23	28	15	18	23
23	32	25	46	29	35	44	22	26	33	17	21	26
23	37	32	46	32	39	48	24	29	36	19	23	29
23	32	25	37	36	43	54	27	33	41	22	26	32
23	32	37	46	43	52	64	32	39	48	26	31	39
23	25	32	46	48	57	71	36	43	53	29	34	43
23	25	37	46	55	66	82	41	50	62	33	40	49
23	25	32	37	59	71	89	44	53	67	36	43	53
23	32	46	37	67	80	100	50	60	75	40	48	60
23	25	37	32	79	95	119	59	71	89	48	57	71
23	25	46	37	85	102	127	64	77	96	51	61	76
23	25	46	32	98	118	147	74	89	111	59	71	88
23	25	46	25	126	151	189	94	113	142	76	91	113
23	25	25	12	143	171	214	107	128	160	86	103	128
23	25	32	12	183	219	273	137	164	205	110	132	164
23	25	37	12	211	254	316	158	190	237	127	152	190

Note: Rates are based on 48 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

FESCUE Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				3/8"	1/2"	5/8"	3/8"	1/2"	5/8"	3/8"	1/2"	5/8"
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
14	46	12	46	3	4	6	2	3	4	2	3	3
14	37	12	46	4	6	7	3	4	5	2.5	3.5	4
14	32	12	46	5	6.5	8	3.5	5	6	3	4	5
14	25	12	46	6	8	10	4	6	8	4	5	6
23	37	12	46	7	9	12	5	7	9	4.5	5.5	7
23	32	12	46	8	10	13	6	8	10	5	6	8
23	25	12	46	10	13	17	7	10	13	6	8	10
23	25	12	37	12	17	21	9	13	16	7	10	13
23	37	25	46	14	19	24	10	14	18	8	11	15
23	32	25	46	16	22	28	12	16	21	9	13	17
23	37	32	46	18	24	31	13	18	23	11	15	19
23	32	25	37	20	27	35	15	20	26	12	16	21
23	32	37	46	23	32	41	18	24	31	14	19	25
23	25	32	46	26	36	46	19	27	34	16	21	27
23	25	37	46	30	41	53	22	31	40	18	25	32
23	25	32	37	32	44	57	24	33	43	19	27	34
23	32	46	37	36	50	64	27	37	48	22	30	38
23	25	37	32	43	59	76	32	45	57	26	36	46
23	25	46	37	46	64	82	35	48	61	28	38	49
23	25	46	32	54	74	95	40	55	71	32	44	57

Note: Rates are based on 22 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

MILLET Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				1/8"	1/4"		1/8"	1/4"		1/8"	1/4"	
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
14	46	12	46	3	6		2	4		1.5	3	
14	37	12	46	3.5	7		3	5		2	4	
14	32	12	46	4	8		3.5	6		2.5	5	
14	25	12	46	5	10		4	8		3	6	
23	37	12	46	6	12		4.5	9		3.5	7	
23	32	12	46	7	13		5	10		4	8	
23	25	12	46	8	17		6	13		5	10	
23	25	12	37	10	21		8	16		6	13	
23	37	25	46	12	24		9	18		7	14	
23	32	25	46	14	28		10	21		8	17	
23	37	32	46	15	31		11	23		9	19	
23	32	25	37	17	35		13	26		10	21	
23	32	37	46	20	41		15	31		12	25	
23	25	32	46	22	46		17	34		13	27	
23	25	37	46	26	53		19	40		15	32	
23	25	32	37	28	57		21	43		17	34	
23	32	46	37	31	64		23	48		19	38	
23	25	37	32	37	76		28	57		22	46	
23	25	46	37	40	82		30	61		24	49	
23	25	46	32	46	94		35	71		28	57	

Note: Rates are based on 50 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

MILO Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				1/4"	3/8"	1/2"	1/4"	3/8"	1/2"	1/4"	3/8"	1/2"
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
14	46	12	46	4	8	10	3	6	8	3	5	6
14	37	12	46	5	10	13	4	8	10	3.5	6	8
14	32	12	46	6	12	15	5	9	11	4	7	9
14	25	12	46	8	15	19	6	11	14	4.5	9	12
23	37	12	46	9	16	21	7	12	16	5	10	13
23	32	12	46	10	19	25	8	14	19	6	11	15
23	25	12	46	13	24	32	10	18	24	8	15	19
23	25	12	37	16	30	39	12	23	29	10	18	24
23	37	25	46	19	34	44	14	26	33	11	21	27
23	32	25	46	21	40	51	16	30	39	13	24	31
23	37	32	46	24	44	57	18	33	43	14	26	34
23	32	25	37	27	49	64	20	37	48	16	30	38
23	32	37	46	32	59	76	24	44	57	19	35	46
23	25	32	46	35	65	84	26	49	63	21	39	51
23	25	37	46	41	75	97	31	56	73	24	45	58
23	25	32	37	44	81	105	33	61	79	26	49	63
23	32	46	37	49	91	118	37	68	88	30	55	71
23	25	37	32	59	108	140	44	81	105	35	65	84
23	25	46	37	63	116	151	47	87	113	38	70	90
23	25	46	32	73	135	174	55	101	131	44	81	104

Note: Rates are based on 56 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

OATS Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
A	B	C	D	1/2" slot	5/8" slot	3/4" slot	1/2" slot	5/8" slot	3/4" slot	1/2" slot	5/8" slot	3/4" slot
23	37	12	46	10	13	15	8	10	11	6	8	9
23	32	12	46	12	15	18	9	12	13	7	9	11
23	25	12	46	15	20	22	11	15	17	9	12	13
23	25	12	37	19	25	28	14	18	21	11	15	17
23	37	25	46	22	28	32	16	21	24	13	17	19
23	32	25	46	25	32	37	19	24	27	15	19	22
23	37	32	46	28	36	40	21	27	30	17	21	24
23	32	25	37	31	40	45	23	30	34	19	24	27
23	32	37	46	37	48	54	28	36	41	22	29	32
23	25	32	46	41	53	60	31	40	45	25	32	36
23	25	37	46	47	61	69	35	46	52	28	37	42
23	25	32	37	51	66	74	38	49	56	30	39	45
23	32	46	37	57	74	84	43	55	63	34	44	50
23	25	37	32	68	88	100	51	66	75	41	53	60
23	25	46	37	73	94	107	55	71	80	44	57	64
23	25	46	32	84	109	124	63	82	93	51	65	74
23	25	46	25	108	140	158	81	105	119	65	84	95
23	25	25	12	122	158	179	92	119	134	73	95	108
23	25	32	12	157	202	230	117	152	172	94	121	138
23	25	37	12	181	234	265	136	175	199	109	140	159

Box Agitator may be required for seeding oats.

Note: Rates are based on 32 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

PINTO BEANS Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
A	B	C	D	1/2" slot	5/8" slot	3/4" slot	1/2" slot	5/8" slot	3/4" slot	1/2" slot	5/8" slot	3/4" slot
23	37	12	46	11	14	17	8	10	13	6	8	10
23	32	12	46	12	16	20	9	12	15	7	10	12
23	25	12	46	16	21	25	12	16	19	9	12	15
23	25	12	37	19	26	31	15	19	23	12	15	19
23	37	25	46	22	29	35	16	22	26	13	17	21
23	32	25	46	25	34	41	19	25	31	15	20	24
23	37	32	46	28	37	45	21	28	34	17	22	27
23	32	25	37	32	42	51	24	31	38	19	25	30
23	32	37	46	38	50	60	28	37	45	23	30	36
23	25	32	46	42	55	67	31	41	50	25	33	40
23	25	37	46	48	64	77	36	48	58	29	38	46
23	25	32	37	52	69	83	39	51	62	31	41	50
23	32	46	37	58	77	93	44	58	70	35	46	56
23	25	37	32	69	92	111	52	69	83	42	55	67
23	25	46	37	74	99	119	56	74	89	45	59	72
23	25	46	32	86	114	138	65	86	103	52	68	83
23	25	46	25	110	146	177	83	110	132	66	88	106
23	25	25	12	125	165	200	94	124	150	75	99	120
23	25	32	12	160	212	256	120	159	192	96	127	154
23	25	37	12	185	245	296	138	184	222	111	147	178

Note: Rates are based on 56 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

RICE Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				1/2"	5/8"	3/4"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
23	37	12	46	15	18	21	11	14	16	9	11	13
23	32	12	46	17	21	24	13	16	18	10	13	15
23	25	12	46	22	27	31	16	20	24	13	16	19
23	25	12	37	27	33	39	20	25	29	16	20	23
23	37	25	46	30	38	44	23	28	33	18	23	26
23	32	25	46	35	44	51	26	33	38	21	26	31
23	37	32	46	39	48	56	29	36	42	23	29	34
23	32	25	37	44	54	63	33	41	48	26	33	38
23	32	37	46	52	65	76	39	49	57	31	39	45
23	25	32	46	57	72	84	43	54	63	34	43	50
23	25	37	46	66	83	97	50	62	73	40	50	58
23	25	32	37	71	89	104	54	67	78	43	53	62
23	32	46	37	80	100	117	60	75	88	48	60	70
23	25	37	32	95	119	139	72	89	104	57	71	83
23	25	46	37	103	128	149	77	96	112	62	77	90
23	25	46	32	119	148	173	89	111	130	71	89	104
23	25	46	25	152	189	221	114	142	166	91	114	133
23	25	25	12	172	214	250	129	161	188	103	129	150
23	25	32	12	220	275	320	165	206	240	132	165	192
23	25	37	12	255	317	371	191	238	278	153	190	222

Note: Rates are based on 45 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

RYE Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				1/2"	5/8"	3/4"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
23	37	12	46	21	27	34	15	20	26	12	16	20
23	32	12	46	24	31	39	18	23	30	14	18	24
23	25	12	46	30	39	50	23	30	38	18	24	30
23	25	12	37	38	49	63	28	37	47	23	29	38
23	37	25	46	43	55	71	32	42	53	26	33	43
23	32	25	46	49	64	82	37	48	62	30	38	49
23	37	32	46	55	71	91	41	53	68	33	43	55
23	32	25	37	61	80	102	46	60	77	37	48	61
23	32	37	46	73	95	122	55	71	91	44	57	73
23	25	32	46	81	105	135	61	79	101	49	63	81
23	25	37	46	94	121	156	70	91	117	56	73	93
23	25	32	37	101	131	167	75	98	126	60	78	100
23	32	46	37	113	147	188	85	110	141	68	88	113
23	25	37	32	134	175	224	101	131	168	81	105	134
23	25	46	37	145	188	241	108	141	180	87	113	144
23	25	46	32	167	217	278	125	163	209	100	130	167
23	25	46	25	214	278	356	161	208	267	128	167	214
23	25	25	12	242	314	403	182	236	302	145	189	242
23	25	32	12	310	403	516	233	302	387	186	242	310
23	25	37	12	359	465	597	269	349	448	215	279	358

Note: Rates are based on 56 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

SOYBEANS Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				1/2"	5/8"	3/4"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
23	37	12	46	14	17	20	11	13	15	9	10	12
23	32	12	46	16	20	23	12	15	17	10	12	14
23	25	12	46	21	25	30	16	19	22	13	15	18
23	25	12	37	26	31	37	20	24	28	16	19	22
23	37	25	46	30	36	42	22	27	31	18	21	25
23	32	25	46	34	41	48	26	31	36	21	25	29
23	37	32	46	38	46	53	28	34	40	23	27	32
23	32	25	37	43	51	60	32	38	45	26	31	36
23	32	37	46	51	61	71	38	46	53	30	37	43
23	25	32	46	56	67	79	42	51	59	34	40	47
23	25	37	46	65	78	91	49	58	68	39	47	55
23	25	32	37	70	84	98	52	63	74	42	50	59
23	32	46	37	78	94	110	59	71	83	47	56	66
23	25	37	32	93	112	131	70	84	98	56	67	79
25	25	46	37	110	120	141	75	90	106	60	72	85
23	25	46	32	116	139	163	87	104	122	70	84	98
23	25	46	25	148	178	209	111	134	157	89	107	125
23	25	25	12	168	202	236	126	151	177	101	121	142
23	25	32	12	215	258	303	161	194	227	129	155	182
23	25	37	12	249	299	350	187	224	262	149	179	210

Note: Rates are based on 60 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

SUNFLOWERS Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				1/2"	5/8"	3/4"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
14	46	12	46	4	5	6	3	4	5	2	3	4
14	37	12	46	5	6	8	4	5	6	3	4	5
14	32	12	46	6	7	9	4.5	5.5	7	3.5	4.5	5.5
14	25	12	46	7	9	11	5	7	8	4	6	7
23	37	12	46	8	10	12	6	8	9	5	6.5	7.5
23	32	12	46	9	12	14	7	9	11	5.5	7	9
23	25	12	46	12	15	18	9	11	14	7	9	11
23	25	12	37	15	19	23	11	14	17	9	11	14
23	37	25	46	16	22	26	12	16	20	10	13	16
23	32	25	46	19	25	30	14	19	23	11	15	18
23	37	32	46	21	28	33	16	21	25	13	17	20
23	32	25	37	24	31	37	18	23	28	14	19	22
23	32	37	46	28	37	45	21	28	33	17	22	27
23	25	32	46	31	41	49	23	31	37	19	24	30
23	25	37	46	36	47	57	27	35	43	22	28	34
23	25	32	37	39	51	61	29	38	46	23	30	37
23	32	46	37	43	57	69	33	43	52	26	34	41
23	25	37	32	52	68	82	39	51	61	31	41	49
23	25	46	37	56	73	88	42	55	66	33	44	53
23	25	46	32	64	84	102	48	63	76	39	51	61

Note: Rates are based on 34 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

WHEAT Seeding Rate

Sprockets				Seeding Rates (Pounds Per Acre)								
				6" Spacing			8" Spacing			10" Spacing		
				1/2"	5/8"	3/4"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
A	B	C	D	slot	slot	slot	slot	slot	slot	slot	slot	slot
23	37	12	46	22	28	33	16	21	25	13	17	20
23	32	12	46	25	33	39	19	25	29	15	20	23
23	25	12	46	32	42	49	24	32	37	19	25	30
23	25	12	37	40	52	62	30	39	46	24	31	37
23	37	25	46	45	59	70	34	44	52	27	35	42
23	32	25	46	53	68	81	39	51	60	32	41	48
23	37	32	46	58	76	89	44	57	67	35	45	53
23	32	25	37	65	85	100	49	64	75	39	51	60
23	32	37	46	78	101	119	58	76	89	47	61	72
23	25	32	46	86	112	132	65	84	99	52	67	79
23	25	37	46	100	130	153	75	97	114	60	78	92
23	25	32	37	107	139	164	80	104	123	64	84	98
23	32	46	37	120	156	184	90	117	138	72	94	111
23	25	37	32	143	186	219	107	140	164	86	112	132
23	25	46	37	154	200	236	115	150	177	92	120	141
23	25	46	32	178	232	273	133	174	205	107	139	164
23	25	46	25	228	296	349	171	222	262	137	178	209
23	25	25	12	258	336	395	193	252	296	155	201	237
23	25	32	12	330	429	506	247	322	379	198	258	304
23	25	37	12	381	497	585	286	372	439	229	298	351

Note: Rates are based on 60 pounds per bushel. 78 Tooth Sprocket is a special order sprocket.

Section Six: Maintenance

1. Grease drive line bearing once a day.

2. Grease wheel hubs once a season.

3. Grease disc blades once a season. This is done by removing disc hub and inserting the metal grease plug provided with the drill.

4. Clean grain from drill boxes after drilling. A light coat of diesel fuel will help prevent rust.

CAUTION: Be careful when cleaning with diesel fuel so that it does not ignite. Use only in a well ventilated area and away from sparks or flame.

Trouble Shooting

1. Chains jump off—Check for misaligned sprockets, worn chain, or bent sprockets. Also check shafts to see they turn freely.

2. Erratic feeding—Grain may be bridging and an agitator may be required. The rotor half that is set screwed to the 5/8" hex shaft may have slipped. If this has happened close all of the slots down to zero and retighten the set screws to 70 inch pounds of torque.

3. Double disc blades not turning—The inside scraper bolt may have worked loose allowing the scraper to rotate forward and catch a rivet. Tighten the scraper bolt.

4. Too much gap between blades or a groove wearing on the Inside edge of the leading blade (gap too narrow)—See page 15 for gap adjustment of the blades.

5. Dual press wheels clog—Shedder shields may be required in some conditions. See your dealer. The spindle may be rotated to allow too much toe out. See page 13 for spindle adjustment.

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