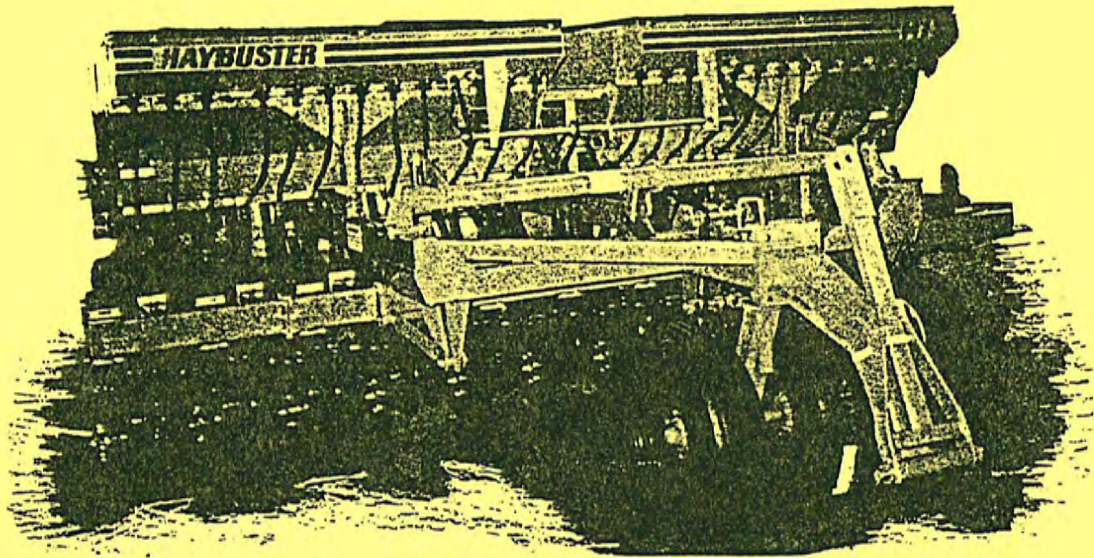


HAYBUSTER

100 SERIES



89100 to 92225

147 DRILL OPERATOR'S MANUAL and PARTS BOOK

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100 SERIES DRILL

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INTRODUCTION

HAYBUSTER 100 SERIES DRILL

The 100 Series Drill is designed to seed No-Till - Minimum Till - Conventional Tillage. The drill is light enough for conventional tilled soils, yet with added ballast plus the offset double disc, it will penetrate tough no-till conditions.

Each individual run is equipped with parallel linkage - dual mounted openers and adjustable attached packer wheels to provide accurate depth control. Openers are staggered 9½ inches front to rear for heavy trash and rock clearance.

Large two compartment hopper offers the flexibility of seeding with fertilizer, seeding alone or planting two different seeds. Hopper bottoms have slides for easy cleanout.

Infinitely adjustable seed metering system allows seed rate adjustment for different seeds.

Drill is engineered for easy access to all adjustments such as pressure springs on openers and depth adjustment on packer wheels.

SPECIFICATIONS — #147 DRILL

7" SPACING

Overall Width:	165 Inches
Seeding Width:	168 Inches
Height:	73 Inches
Weight:	5,434 Lbs.
Tire Size: 9.5L x 14 Flotation	
Hopper Capacity:	
Grain - Front	18 Bu.
Granulated Fertilizer	1400 Lbs. (Rear)
Grain - Front & Rear	35 Bu.
Feed System:	Infinitely Adjustable Meter
Hoses:	Rubber Convolute
Row Spacing:	7 Inches
Openers: Double Disc	14 Inches
Press Wheels:	Standard - Steel
	Optional - Double Press 1 x 12
	Optional - Twin Rib 4 x 16
Optional Equipment:	
Acre Counter	
Legume Box	
2-Way Swivel Hitch	

147 DRILL

LUBRICATION

Description	Type	Frequency	No. Zerks
Swivel Wheel Pivot	Grease	20 Hrs.	1
Torque Tube Bushings	Grease	40 Hrs.	2
Universal Joints	Grease	40 Hrs.	2
Square Drive Line	Grease	40 Hrs.	1
Feed Wheel Shaft	Grease	50 Hrs.	8
Roller Chains	Oil	Daily in Dusty Conditions	

Packer Wheel Bearings and Coulter-Disk Bearings are Non-Relubable.

TRANSPORTING

CAUTION: Transporting drills with seed and fertilizer in the tanks is not recommended. If drills are moved any distance with seed or fertilizer in tanks, materials will settle around feed wheels. Before starting to seed, operator should check with a wrench on drive end of feed wheel shaft to make sure they are free to turn. Shaft may be turned either clockwise or counter clockwise with openers in raised position.

SAFETY: Maximum transport speed should never exceed 20 M.P.H., and should be less where conditions demand.

STORAGE

If possible, drills should be stored in a dry place. Before drills are stored, clean out slides should be opened to remove as much seed and fertilizer as possible. Both tanks should be flushed out thoroughly to prevent any caking of seed or fertilizer. Open and close while flushing to allow any fertilizer that might be under the calibration slide to work its way free.

After inside of the tank is thoroughly dry, apply a coat of oil or diesel fuel to calibration slide, bearings and other parts that have been in contact with fertilizer.

Fertilizer can be damaging if left in contact with metal parts for a prolonged period.

ADJUSTMENT

To gain versatility for all types of terrain and soil conditions, it is important to have a considerable amount of up and down travel built into each individual run. When seeding on level terrain, adjust hydraulic cylinder stroke to lower Movable Frame so openers penetrate soil approximately two (2) inches and Parallel Bars are about level when viewed from the side. This will allow runs to move up or down according to terrain.

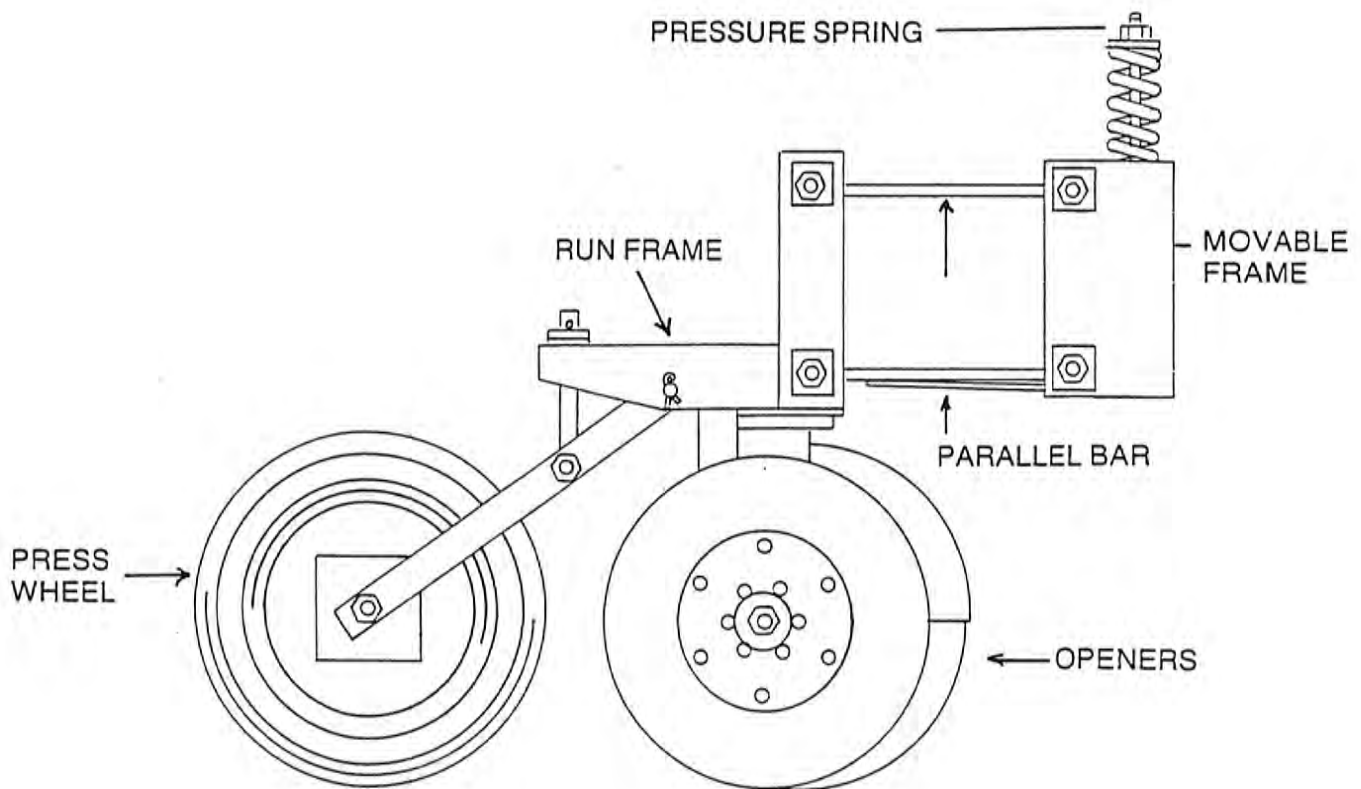
PRESS WHEEL AND OPENER RELATION

The Press Wheel has two purposes — one, to firm the soil around seed; and two, it serves as a gauge wheel for the openers. Through the use of Parallel Bars, the relation of the Press Wheels and Openers remains consistent regardless of terrain or density of the soil. If the seed is too deep, lower Press Wheel with Depth Adjustment until Run Frame is riding on lower adjusting washers as illustrated on page 5. Once adjustment is made for satisfactory seed depth, it will remain consistent.

PRESSURE SPRING: Drills are assembled at the factory with Pressure Spring adjusted for Conventional tillage. No-till seeding may require more down pressure on Openers. This can be attained by tightening Pressure Spring rather than by adding more stroke to hydraulic cylinder.

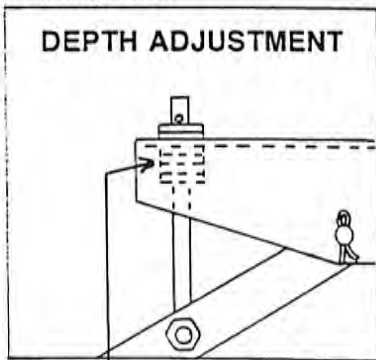
CAUTION: Raise Movable Frame to the up position before adjusting. Adjusting Pressure Spring to less than 10 inches (see illustration on page 5), will void the warranty on damage caused to spring and related parts.

In extremely loose soils such as freshly worked summer fallow, it will be necessary to lessen tension on Pressure Spring instead of lessening hydraulic cylinder stroke.

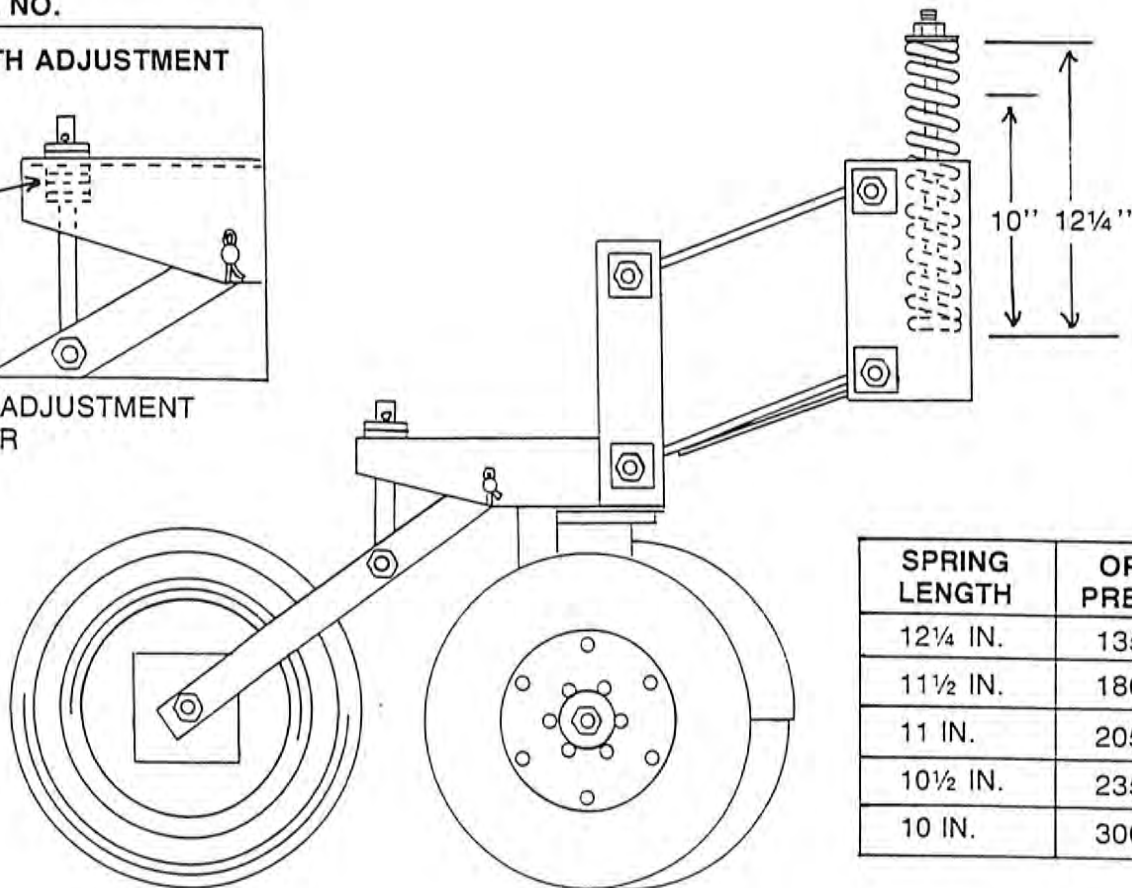


SERIAL NO.

DEPTH ADJUSTMENT

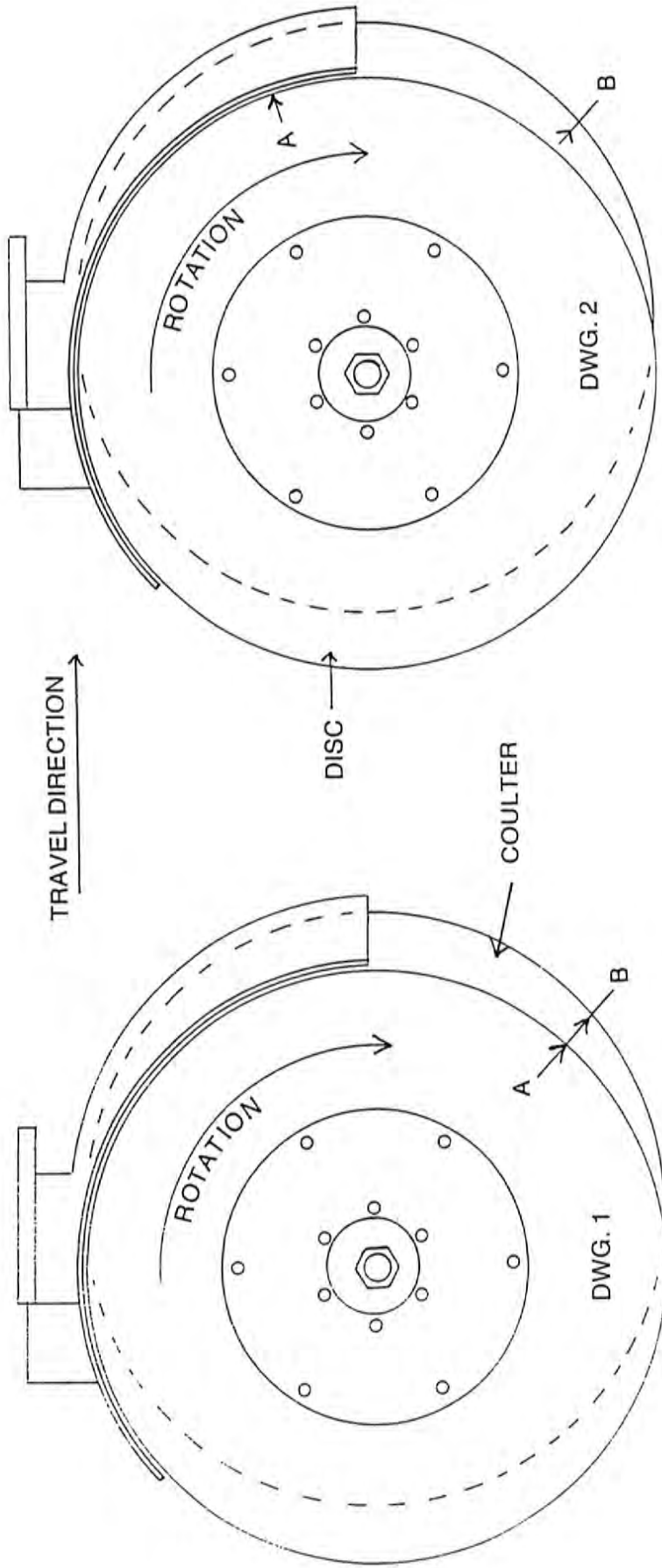


DEPTH ADJUSTMENT
WASHER



HAYBUSTER 100 DRILL OPENER

The 147 Drill uses a couller-disc offset opener. The couller blade leads the disc by 1½". Both blades are the same size and due to the offset, there is some sliding action where the blades contact. This sliding or scissor action provides excellent residue cutting action at ground level, especially in wet residue. The scissor action causes some wear into the couller blade at the point of contact. This wear is normal and the heavier couller blade is bolted to the bearing cage to allow easy replacement.



One complete turn changes points A and B (DWG. 1) the amount shown in DWG. 2. It takes six (6) turns to bring points A and B back together.

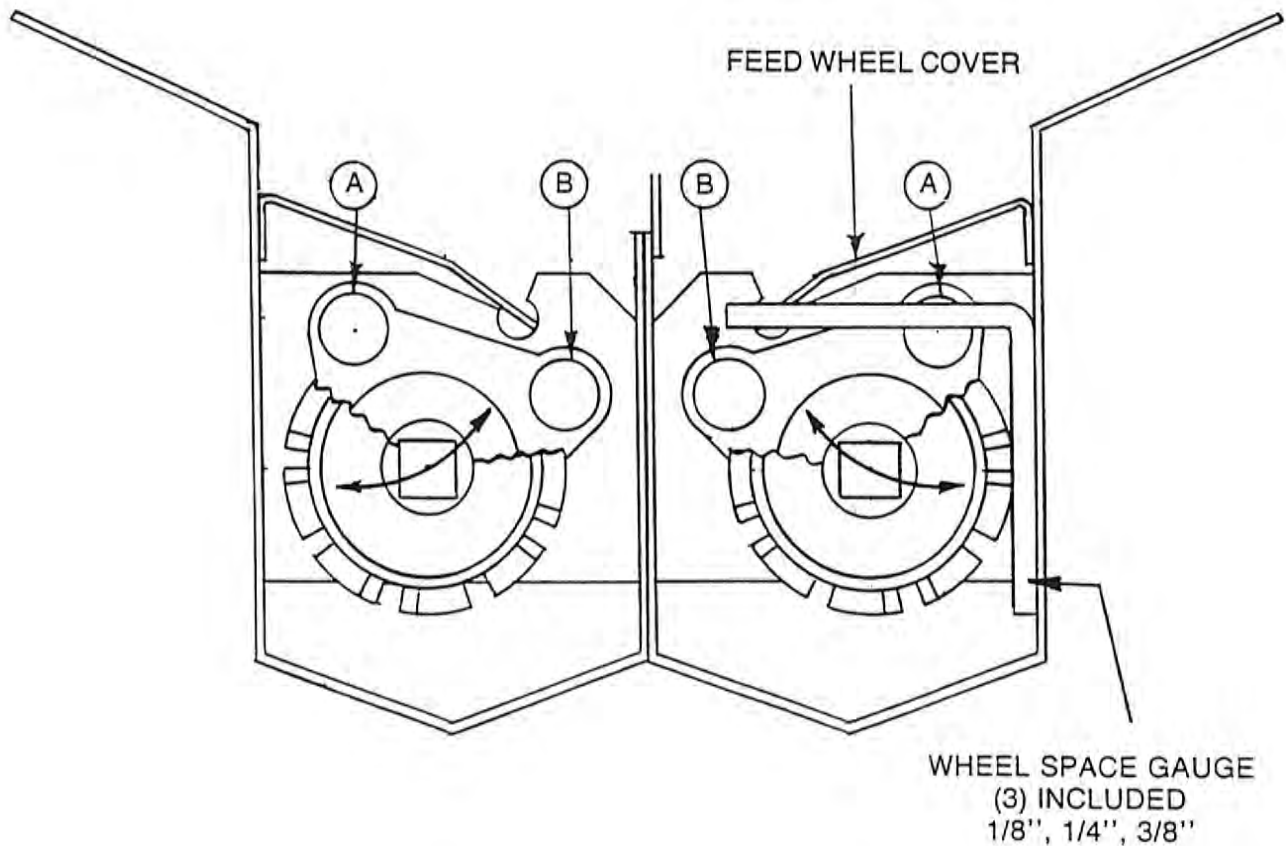
FEED WHEEL SPACE ADJUSTMENT

Large seeds require more space between feed wheel lugs and tank wall than small seeds to prevent cracking. Small seeds require less space to provide an even flow. Therefore each seed listed in the feed rate chart shows a required wheel space.

See Illustration Below

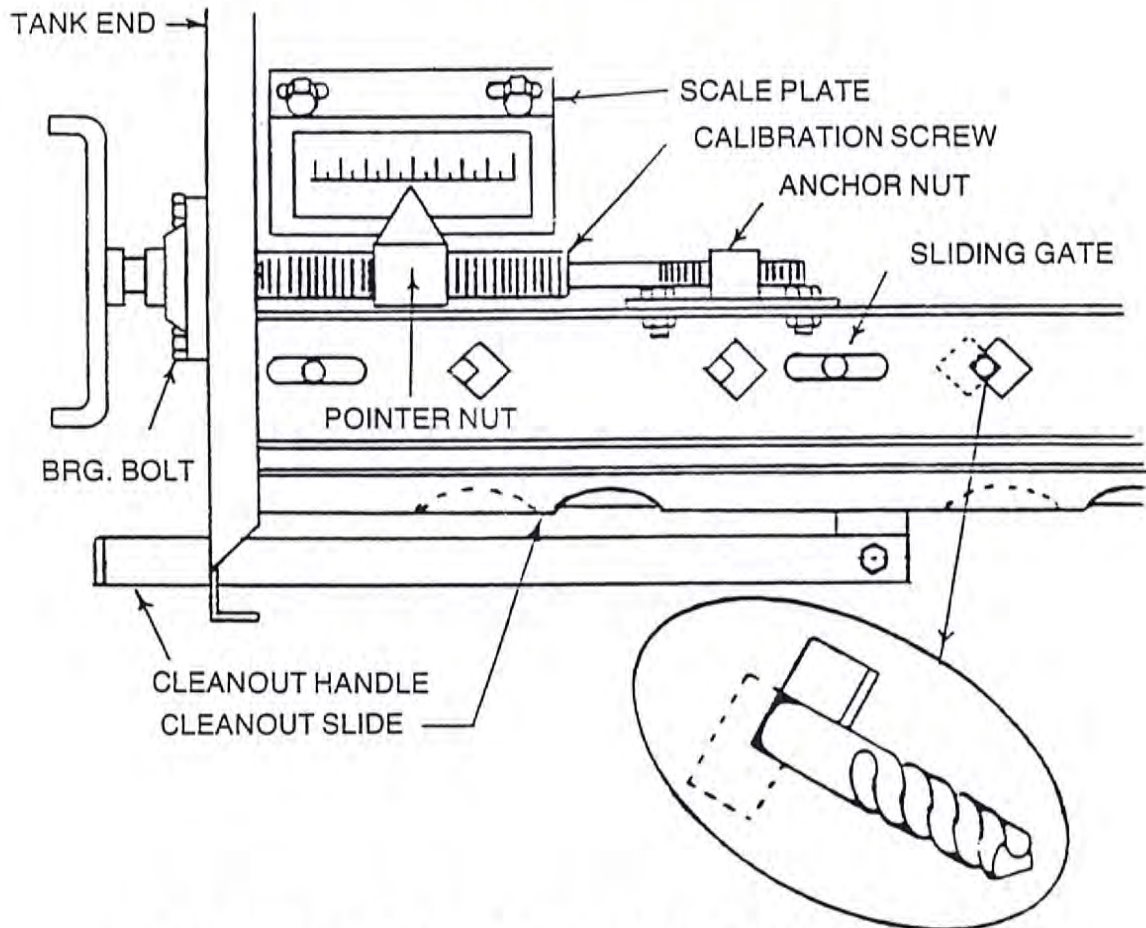
Remove feed wheel covers. Loosen bolts A and B. Insert gauge required and retighten bolts. Recheck for accuracy. Be sure to replace feed wheel cover before filling tank.

Fertilizer requires only the 1/8 setting.



100 DRILL CLEANOUT SLIDES

Cleanout slides are provided on both grain and fertilizer tanks. Handles for opening and closing the slides are located on the side of the drill.



CALIBRATION POINTER ADJUSTMENT

Grain and fertilizer sliding gates are preadjusted at the factory. In the event any part of the calibrating mechanism is removed or replaced, it can be recalibrated in this order:

Step 1 — Place both pointer nut and anchor nut in the center of their respective thread.

Step 2 — Insert a short length of 7/16" rod or the shank end of a 7/16" drill bit into the square hole in sliding gate as shown.

Step 3 — Tighten bearing bolts securing calibration screw to end of tank.

Step 4 — Tighten bolts securing anchor nut to sliding gate.

Step 5 — Place scale plate on tank so number eight (8) is directly in line with top of pointer. This will insure pointer setting to coincide with chart. Scale plate must be parallel with calibration screw to allow pointer to operate smoothly along plate.

100 DRILL

SETTING AND CHECKING FEED RATE

The rates shown on the charts serve only as a starting point. Due to variations in material size and density the rates may vary from the chart. The following method may be used to determine a proper setting for your particular seed or fertilizer.

Setting and Checking Feed Rate Using Wheat as an Example:

1. You want to see wheat at a rate of 95 lbs. per acre on 7" spacing.
2. Seed rate chart calls for a wheel space of 1/8" (page 10). Pointer set on eight (8) (page 10). This adjustment should be made before filling grain tank.
3. Make sure feed wheel cover is in place. Put grain in tank.
4. Seed far enough so you can visually check grain flowing into seed cups.

CHECKING FEED RATE

1. Measure a distance of 311 (1/10 acre) 7" spacing. Remove one hose from seed hopper on each drill. Attach a container (cloth or plastic bag) to hopper to collect seed.
2. Operate drill at intended planting speed through entire length of test track.
3. Weigh the sample in ounces (less weight of sample container). Use the following formula to determine lbs./acre for your particular shank spacing.

$$| \text{ 7" Spacing - oz. x 15.03 = lbs./acre}$$

EXAMPLE:

Sample and container weighs	7.8 ounces
Container weighs	<u>- 1.5 ounces</u>
Weight of sample only	6.3 ounces

4. Use formula No. 1, to figure pounds per acre.

$$6.3 \text{ ounces} \times 15.03 = 94.7$$

5. To calibrate a seed not shown on the chart or a mix of different seeds, compare to a similar charted seed to obtain a trial setting. Recalibrate as necessary.
6. The same method may be used to determine fertilizer rates.

SERIES 100
SPACING 7"

CHART FOR DRILLING GRAIN IN POUNDS PER ACRE

POINTER SETTING

WHEEL SPACE	POINTER SETTING															
	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
WHEAT	1/8															
BARLEY	1/8															
OATS	1/8															
RYE	1/8															
SOYBEANS	3/8															
BUCKWHEAT	1/8															
SORGHUM OR VETCH	1/8															
ALFALFA OR RAPE	1/8															
MILLET	1/8															
FLAX OR SUDAN GRASS	1/8															
ORCHARD GRASS	1/8															
FESCUE	1/8															
SWITCH GRASS	1/8															
SUNFLOWER (#3 6500/LB)	1/8															
FERTILIZER	1/8															
18-46.0																

100 DRILL DETERMINING SEED POPULATION

The 100 Drill seeds 10.50' 126" per pass.

The drill travels 4,149 feet to seed one (1) acre.

Following is the lineal feet of seeded row to seed one (1) acre.

7" — 18" rows — 74,682

EXAMPLE:

150,000 beans on 7" row spacing
 $150,000 \div 74,682 = 2.0$ beans per ft.
 10 ft. of row - 20 beans.

CHART FOR DRILLING LEGUMES AND SMALL GRASSES IN POUNDS PER ACRE



LEGUME BOX ATTACHMENT FOR 100 DRILL ON 7" SPACING

NOTCHES ON INDEX	LBS. BU.																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
ALFALFA; RED, ALSIKE, LADINO CLOVER; VETCH	62	2.2	4.7	7.7	10.7	13.6	17.0	20.4	23.9	27.3	30.9	31.7	37.9	41.3	44.7	47.6	50.6
SWEET CLOVER	64	2.3	5.1	8.4	12.4	17.4	22.5	28.4	30.9	37.1	41.6	46.7	51.2	56.3	59.6	63.0	66.4
BIRDSFOOT TREFOIL	64	2.3	4.5	7.9	10.7	14.1	17.4	21.4	25.3	28.1	32.1	36.0	39.4	42.2	46.7	50.1	55.1
MILLET TIBBET CLOVER	60	2.1	4.9	7.7	10.7	14.3	17.4	21.2	26.1	28.5	30.9	35.5	39.4	42.8	46.7	51.0	55.9
UNHULLED SERICEA	36	1.1	2.8	4.5	6.8	9.6	11.8	14.6	17.4	20.3	23.1	26.4	28.7	31.5	33.8	36.0	40.5
UNHULLED LESPEDEZA	46	1.7	3.9	5.6	8.4	11.8	15.2	18.0	21.9	25.3	28.7	32.6	35.4	38.3	41.8	45.0	50.1
BAHIAGRASS	46	1.1	2.8	5.1	6.2	8.4	10.7	11.8	14.8	16.9	18.6	20.8	22.5	24.2	25.9	27.6	28.1
LOVEGRASS	64	2.3	5.1	7.9	11.3	16.3	20.3	24.2	28.7	32.6	36.6	42.2	46.7	51.2	55.1	57.9	60.2

SEED MIXTURES

SELECT THE SETTING FOR THE
DESIRED QUANTITY OF EACH SEED.
ADD INDIVIDUAL SETTINGS.

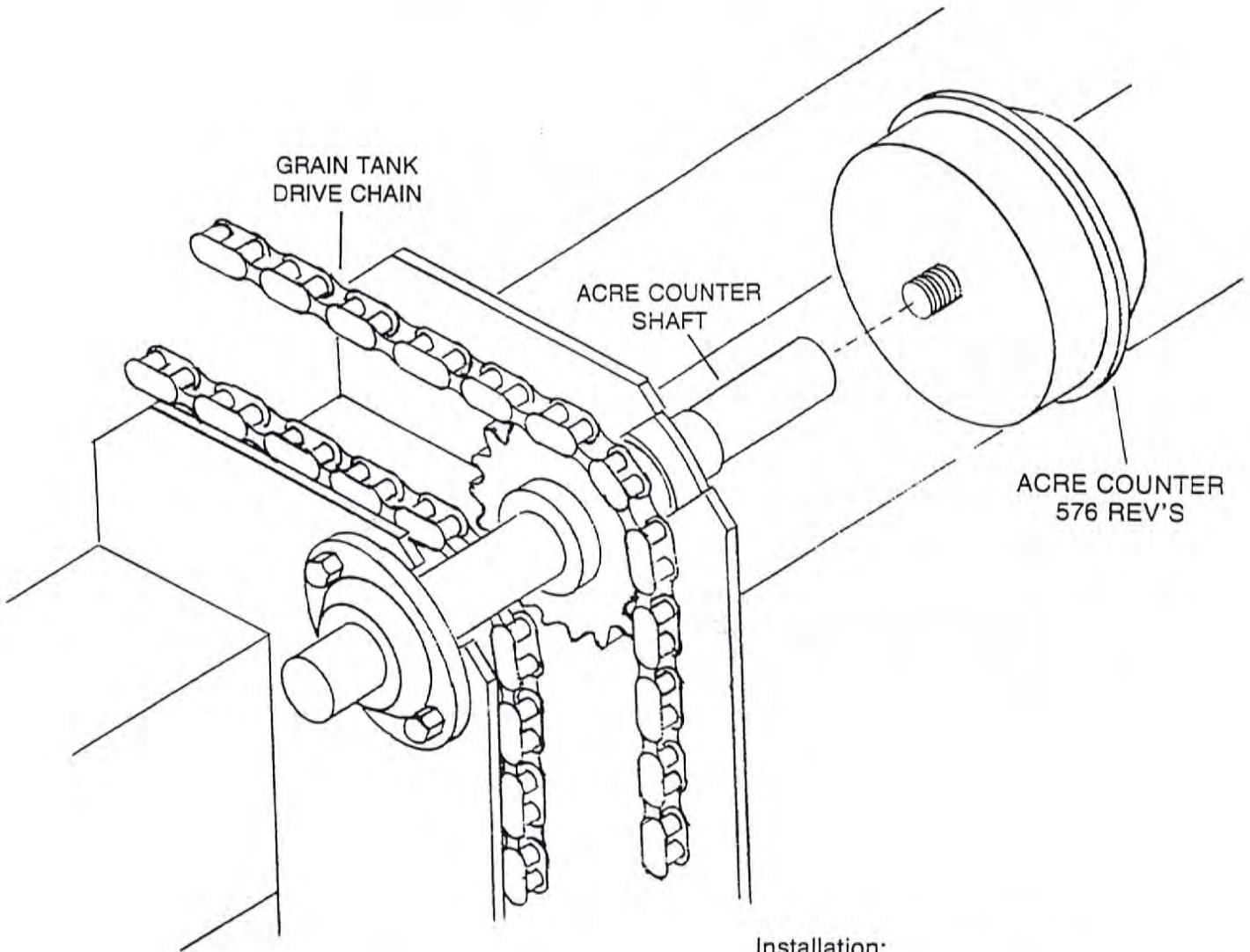
EXAMPLE:

	LBS./ACRE	NOTCH
ALFALFA	5	2
SWEET CLOVER	5	2
TIMOTHY	2	1
TOTAL		5

WHEN USING HALF SPEED DRIVE
DIVIDE CHARTED RATES BY TWO.
REPLACE 17 TOOTH SPROCKET ON
COUNTERSHAFT WITH 35 TOOTH.
(SEE MANUAL FOR DETAILS.)

DENSITY OF THE SAMPLES USED
TO PREPARE THIS CHART ARE
GIVEN IN THE FIRST COLUMN TO
THE RIGHT OF THE CROP NAME
IN POUNDS PER BUSHEL.

	LBS. BU.																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
TIMOTHY	50	1.7	3.9	6.2	9.6	12.9	16.9	20.9	24.8	28.1	32.6	37.1	40.5	44.4	46.7	49.5	54.6
SWITCHGRASS	55	2.3	4.5	6.8	9.6	12.4	15.8	18.6	20.8	24.2	28.1	30.9	33.8	37.1	39.9	42.2	47.8
FLAX SESAME	55	1.4	3.7	6.2	8.7	11.6	14.7	17.5	20.6	23.1	26.5	29.6	32.4	35.5	37.9	40.5	44.5
RAPE MUSTARD	53	1.7	4.2	7.4	10.2	12.9	16.4	19.2	22.6	25.6	28.2	31.8	34.9	37.7	40.5	43.3	45.9
ORCHARD GRASS	17		0.8	1.7	2.8	3.4	3.9	5.1	5.6	6.8	7.3	8.4	9.0	10.1	10.7	11.3	11.9
PERENNIAL RYEGRASS	31		2.3	3.4	5.6	7.3	9.0	10.7	11.8	13.5	15.2	16.9	18.6	20.8	21.9	23.1	24.8
FESCUE	27		1.1	2.8	3.9	5.6	6.8	8.4	9.6	11.3	12.4	13.5	15.2	16.9	18.0	19.1	21.9
COMMON BERMUDA GRASS		2.7	5.0	7.4	10.6	14.3	17.6	20.8	25.1								



Installation:

1. Turn acre counter into threaded hole in end of acre counter shaft. (See Illustration)



ENGAGE LOCKS AFTER DRILLS
ARE RAISED FOR TRANSPORT
DISENGAGE BEFORE LOWERING

14

147

2

WARNING

NO RIDERS

SERIOUS PERSONAL INJURY COULD RESULT FROM RIDING ON STEP

450010A

12

WARNING FOR YOUR PROTECTION AND PROTECTION OF OTHERS, PRACTICE THE FOLLOWING SAFETY RULES.

1. BEFORE OPERATING THIS MACHINE, READ THE OPERATOR'S MANUALS SUPPLIED WITH THIS MACHINE AND YOUR TRACTOR.
2. CHECK OPERATOR'S MANUALS TO BE SURE YOUR TRACTOR MEETS THE MINIMUM REQUIREMENTS FOR THIS MACHINE.
3. READ ALL DECALS PLACED ON THIS MACHINE FOR YOUR SAFETY AND CONFIDENCE.
4. NEVER ALLOW RIDERS ON THIS IMPLEMENT OR THE TRACTOR.
5. KEEP OTHERS AWAY FROM THIS MACHINE WHILE IN OPERATION.
6. KEEP ALL SHIELDS IN PLACE WHILE MACHINE IS OPERATING.
7. KEEP HANDS, FEET, LOOSE CLOTHING, ETC., AWAY FROM POWER DRIVEN PARTS.
8. ALWAYS SHUT OFF MACHINE AND ENGINE BEFORE SERVICING, UNBLOCKING, INSPECTING, OR WORKING NEAR THIS MACHINE FOR ANY REASON. ALWAYS PLACE TRANSMISSION IN PARK OR SET PARK BRAKE AND WAIT FOR ALL MOVEMENT TO STOP BEFORE APPROACHING THIS MACHINE.

450010A

15

KEEP WHEEL BOLTS TIGHT

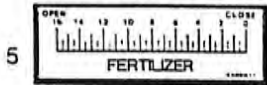
13

SEED DEPTH

SOIL PENETRATION

PARALLEL BAR ADJUSTMENT

9



5



4

IMPORTANT

AVOID MAKING SHARP TURNS WITH OPENERS IN THE GROUND

3

CHART FOR DRILLING GRAIN IN POUNDS PER ACRE

ROW SPACING	POWER SETTINGS	DRILLING SPEED	DRILLING RATE
30"	12	1200	4000
30"	11	1100	3600
30"	10	1000	3200
30"	9	900	2800
30"	8	800	2400
30"	7	700	2000
30"	6	600	1600
30"	5	500	1200
30"	4	400	800
30"	3	300	400
30"	2	200	0
30"	1	100	0

7

IMPORTANT

TRANSPORTING DRILL WITH FERTILIZER AND GRAIN IN TANKS IS NOT ADVISED. SETTLING OF FERTILIZER MAY OCCUR IF LEFT OVER A PERIOD OF TIME OR DURING TRANSPORT. MAKE SURE FERTILIZER SHAFT TURNS FREELY BEFORE FILLING TANK.

STORAGE

DO NOT LEAVE FERTILIZER IN CONTACT WITH METAL PARTS FOR A PROLONGED PERIOD. FLUSH WITH WATER - LET DRY - APPLY A COAT OF OIL OR DIESEL FUEL BEFORE STORING.

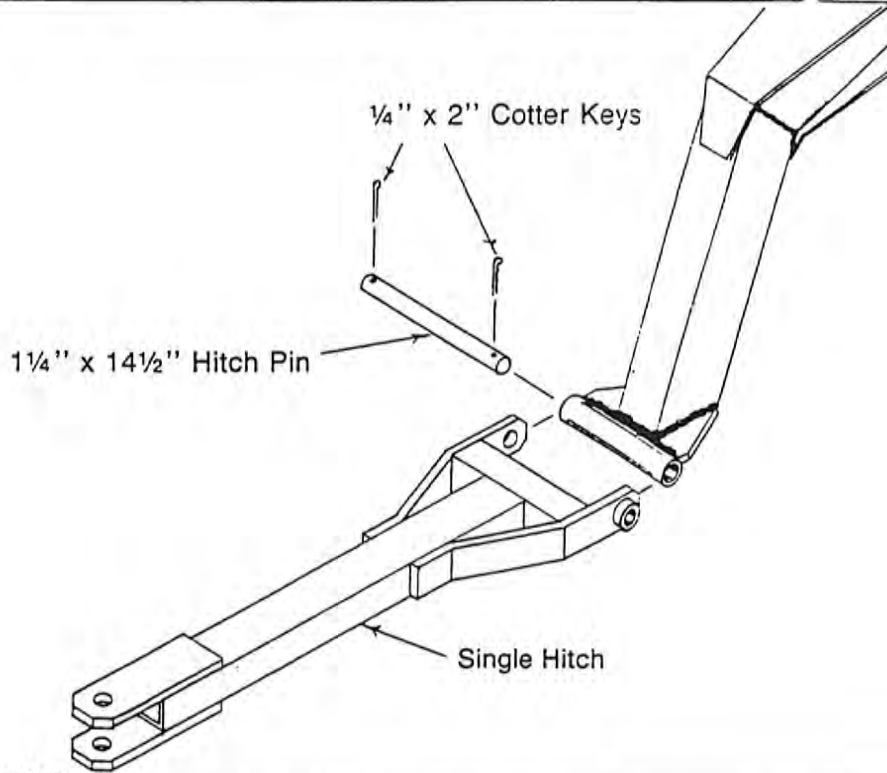
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IMPORTANT

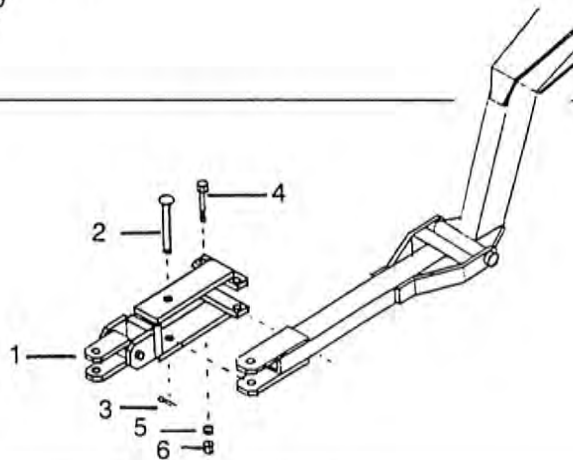
FEED WHEEL SHAFT BUSHINGS MUST BE GREASED WEEKLY DURING PLANTING SEASON, AND PRIOR TO STORAGE

11

18 100 Drill Single Hitch



Item	Qty.	Description
1	1	Hitch
2	1	1 1/4" x 14 1/2" Hitch Pin
3	2	1/4" x 2" Cotter Key



Item	Qty.	Description
1	1	2-Way Swivel Hitch
2	1	1" x 6" Hitch Pin
3	1	1/4" x 2" Cotter Pin
4	2	1/2" x 4" Bolt
5	2	1/2" Lock Washer
6	2	1/2" Nut

Legume Hopper Shipping Kit 19

Item	Qty.	Description
1	1	Calibration Chart
2	2	Hopper Assembly (1) R.H., (1) L.H.
3	2	Mounting Brackets (1) R.H., (1) L.H.
4	4	Mounting Straps ¼" x 1¼" Flat
5	2	Bearing Standard (1) R.H., (1) L.H.
6	2	1" Bearing Insert With Collar
7	4	52-MST-C2 Flangetts
8	3	Wood Blocks
9	1	1" Shaft 52½" Long
10	1	4017 Sprocket 1" Bore
11	3	4015 Sprocket 1" Bore
12	4	¼" x 1" Square Keys
13	2	No. 40 Chain, 53 Links
14	1	No. 40 Chain, 79 Links
15	3	No. 40 Connector Links
16	3	No. 40 Offset Links
17	24	5/8 I.D. Plastic Hose, See Note*
18	4	3/8" x 1¼" Bolts
19	8	3/8" x 3" Bolts
20	3	3/8" x 2½" Bolts
21	20	3/8" x 1" Bolts
22	33	3/8" Nuts
23	33	3/8" Lock Washer
24	10	3/8" Flat Washer
25	37	5/16" x 3/4" Carriage Bolts
26	37	5/16" Nuts
27	10	5/16" Lock Washer
28	1	Center Bearing Standard
29	1	Center Bearing Standard Plate
30	1	1" Pillow Block Bearing With Collar
31	2	3/8" x 1¼" Bolt

*Note: 5/8 I.D. Plastic Hose is:
22½" Long for 147 Drills

20 147 Drill Legume Box Attachment

The legume box attachment features fluted-feed cups which are capable of accurately metering small seeds even at very low rates. The hopper will hold up to 200 lbs., of seed.

INSTALLATION

- Step 1.** Drill "12" 7/16" diameter holes in the front (grain) boxes as shown in Figure 1. Measure these holes carefully and use a good center punch to mark locations before drilling. Loosely bolt the mounting bracket to the grain box observing left hand and right hand parts.
- Step 2.** Install 15-tooth sprocket as shown in Figure 2.
- Step 3.** Bolt legume box to grain tank using the "12" 3/8 x 1" bolts provided. The mounts welded to the rear of the legume box should go between the mounting brackets installed in Step 1. Tighten all mounting bolts securely.
- Step 4.** Bolt the two bearing standards to the brackets on the legume box using six 5/16" x 3/4" carriage bolts, lock washers and nuts. Bolt the center bearing standard to the tank support frame using 3/8" x 3" bolts, lock washers and nuts. Loosely bolt pillow block bearing to the center standard with 3/8" x 1 3/4" bolts, flat washers, lock washers and nuts. Align the bearing standards before securely tightening bolts. Loosely bolt the bearings to the outsides of the bearing standards using the four 5/16" x 3/4" carriage bolts. Install the 52 1/2" shaft with the 17-tooth sprocket BETWEEN the bearings as shown in Figure 2. Tighten the bearings and lock the collars on shaft. Align all sprockets before securing the set screws on the 1/4" x 1" keys provided. Install the three (3) drive chains as shown in Figure 2. Install three (3) wooden block chain tighteners using 3/8" x 2 1/2" bolts, two (2) flat washers, lock washers and nuts. Tighten the drive chains.
- Step 5.** Cut 5/8" I.D. clear plastic hose to 22" lengths. Twenty-four (24) are required. Install hoses on the grain cups first and then on legume box cups. Dipping the ends in a liquid soap solution (1 part soap - 1 part water) will ease installation of the hoses.

FIGURE 1

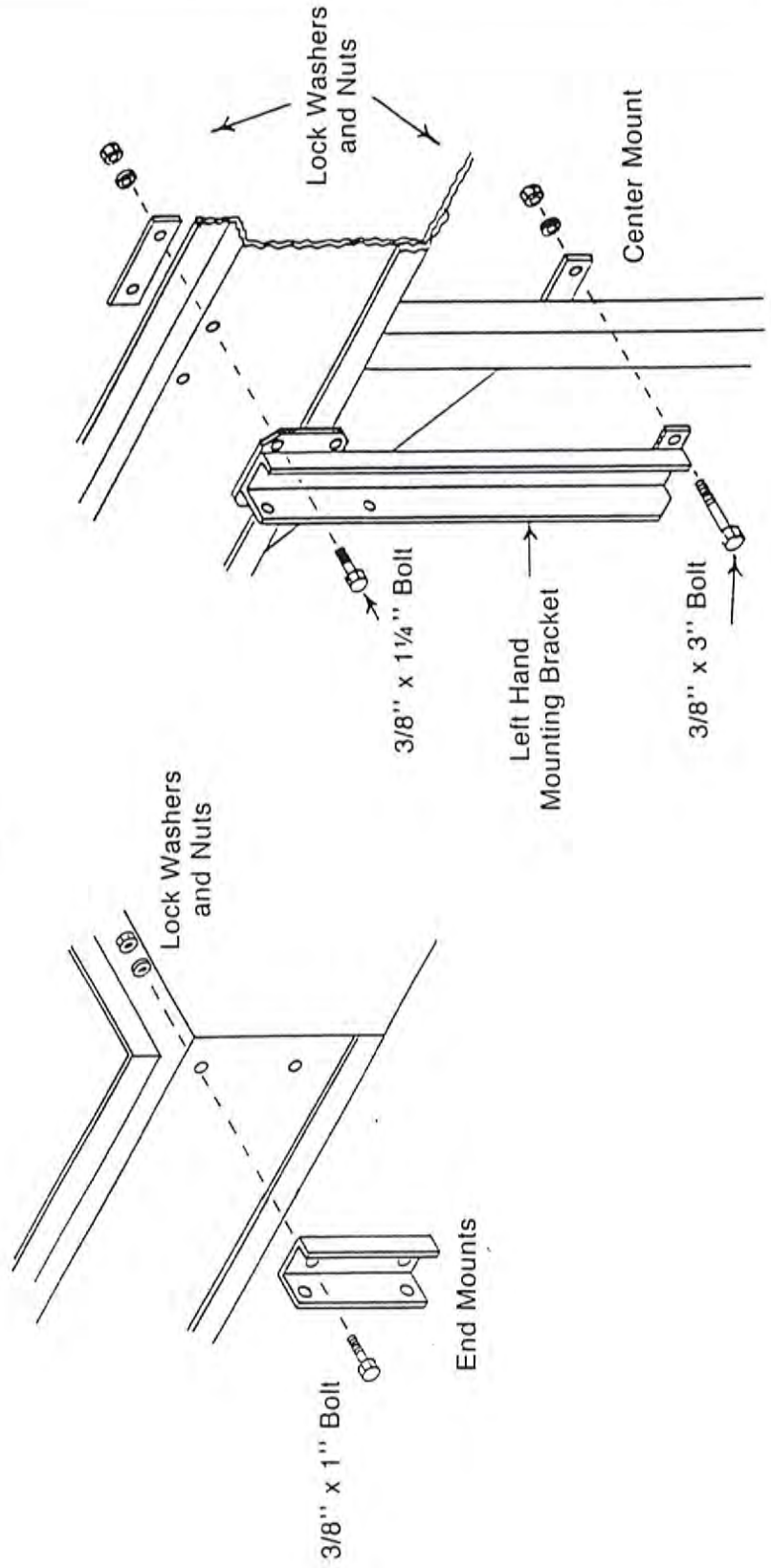
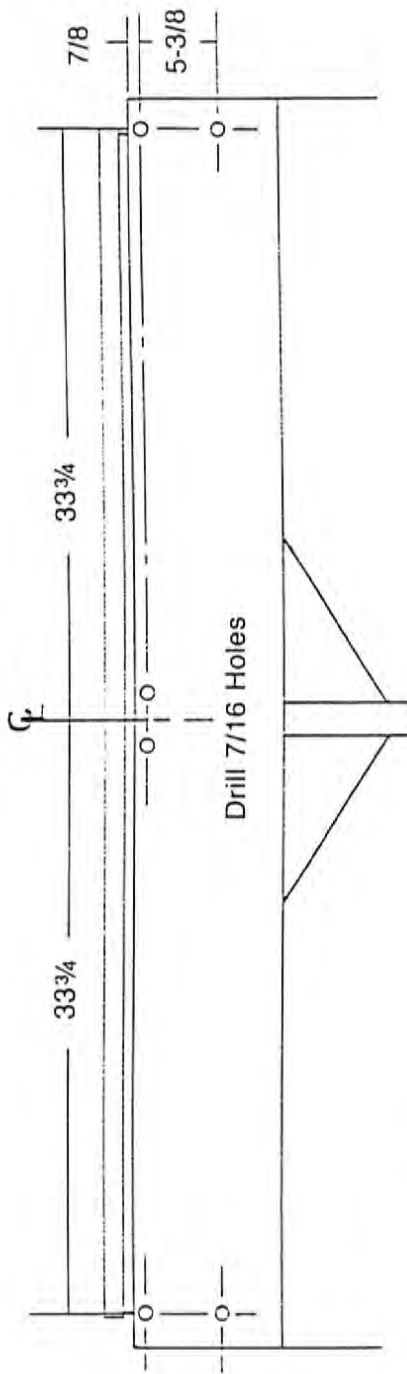
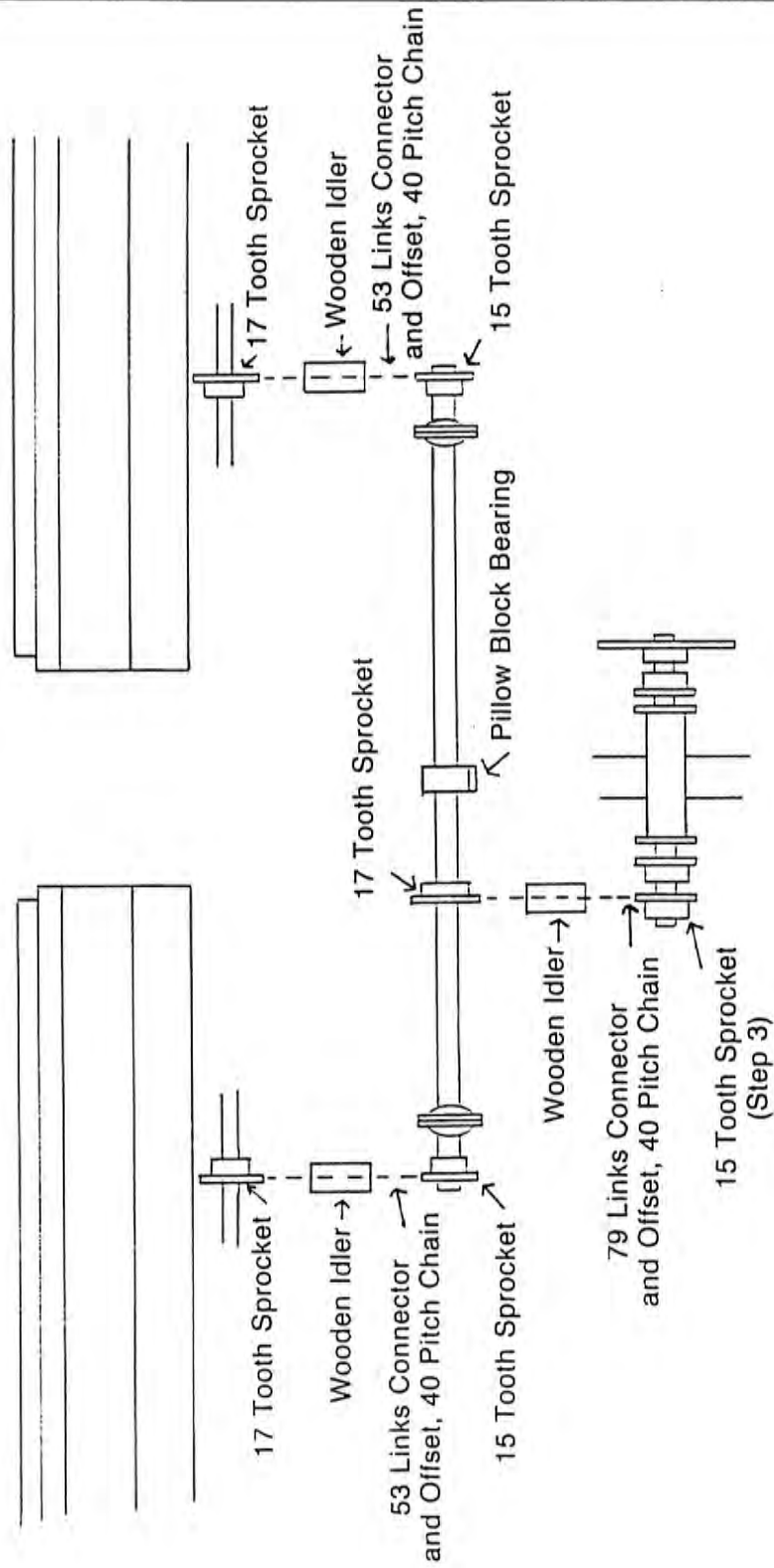
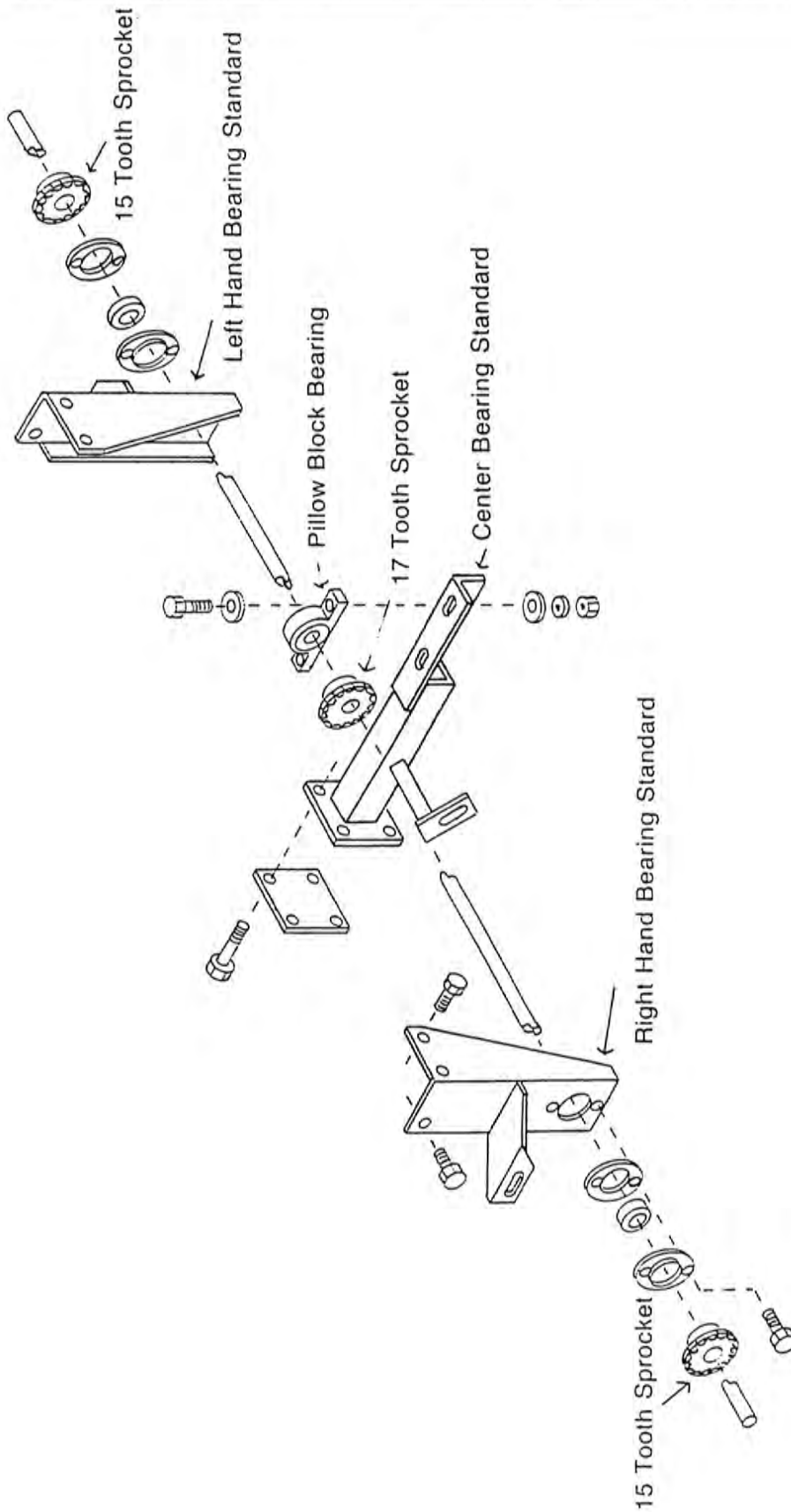


Figure 2







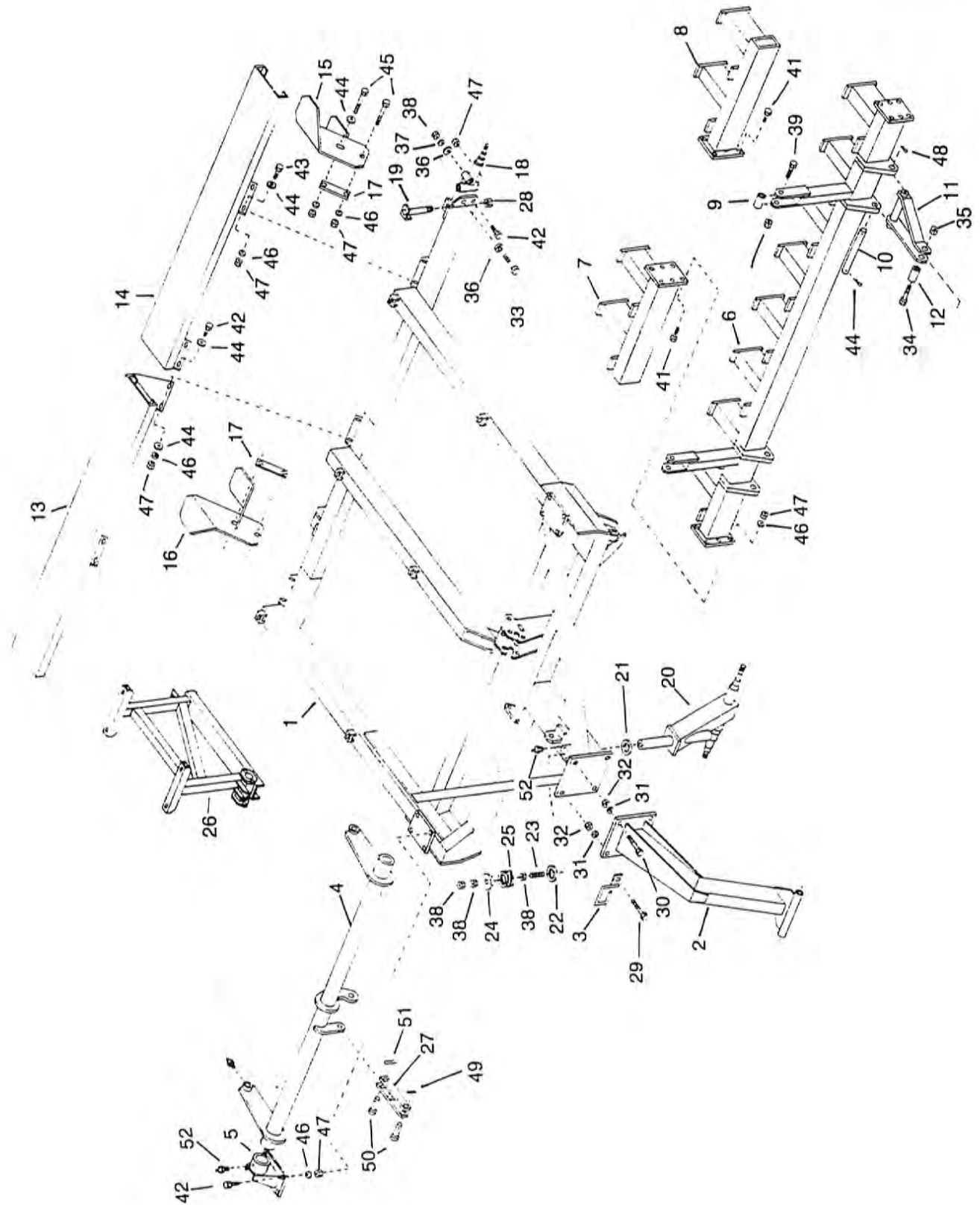
100 SERIES

**147 DRILL
PARTS BOOK**

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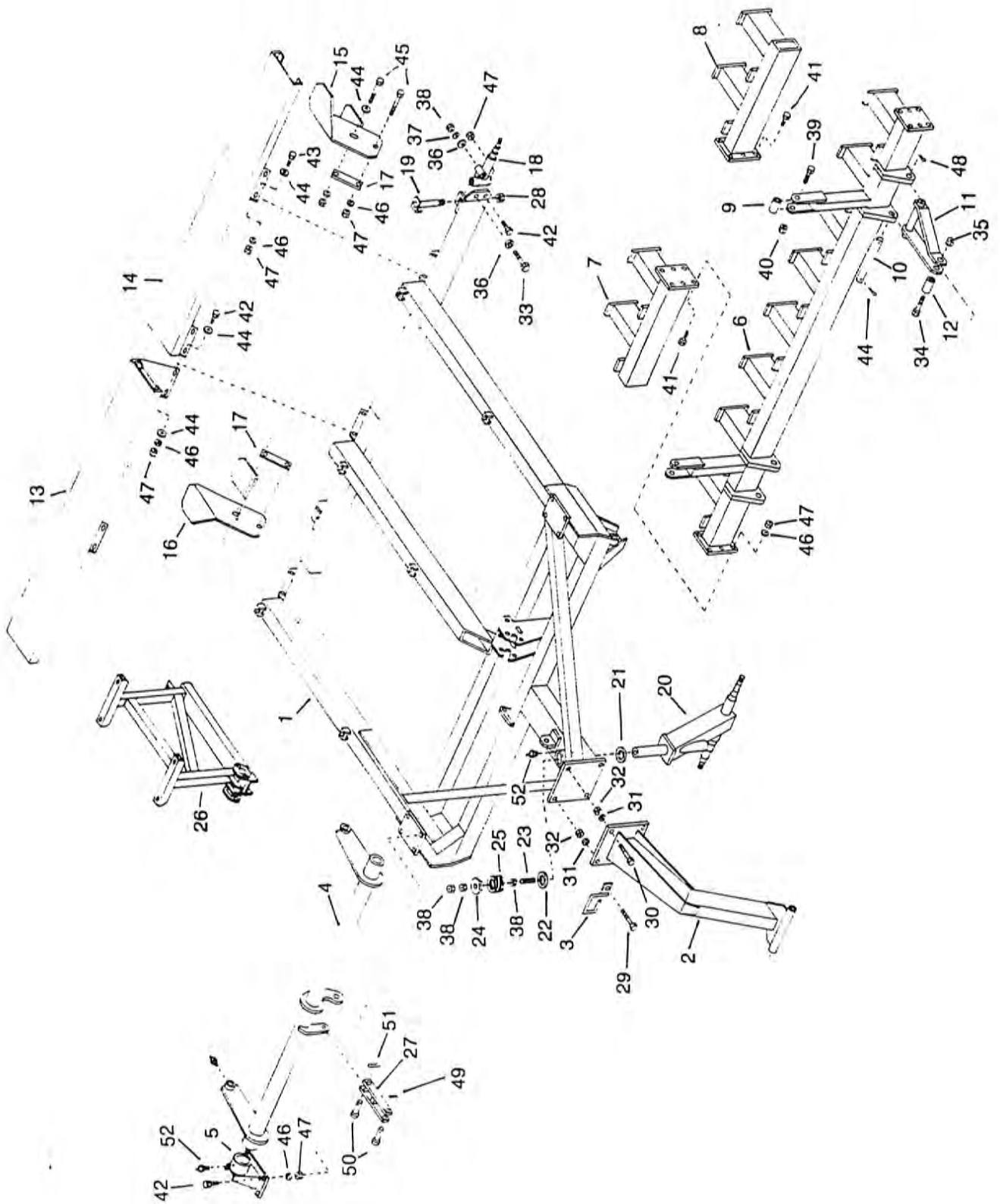
26 147 Main Frame



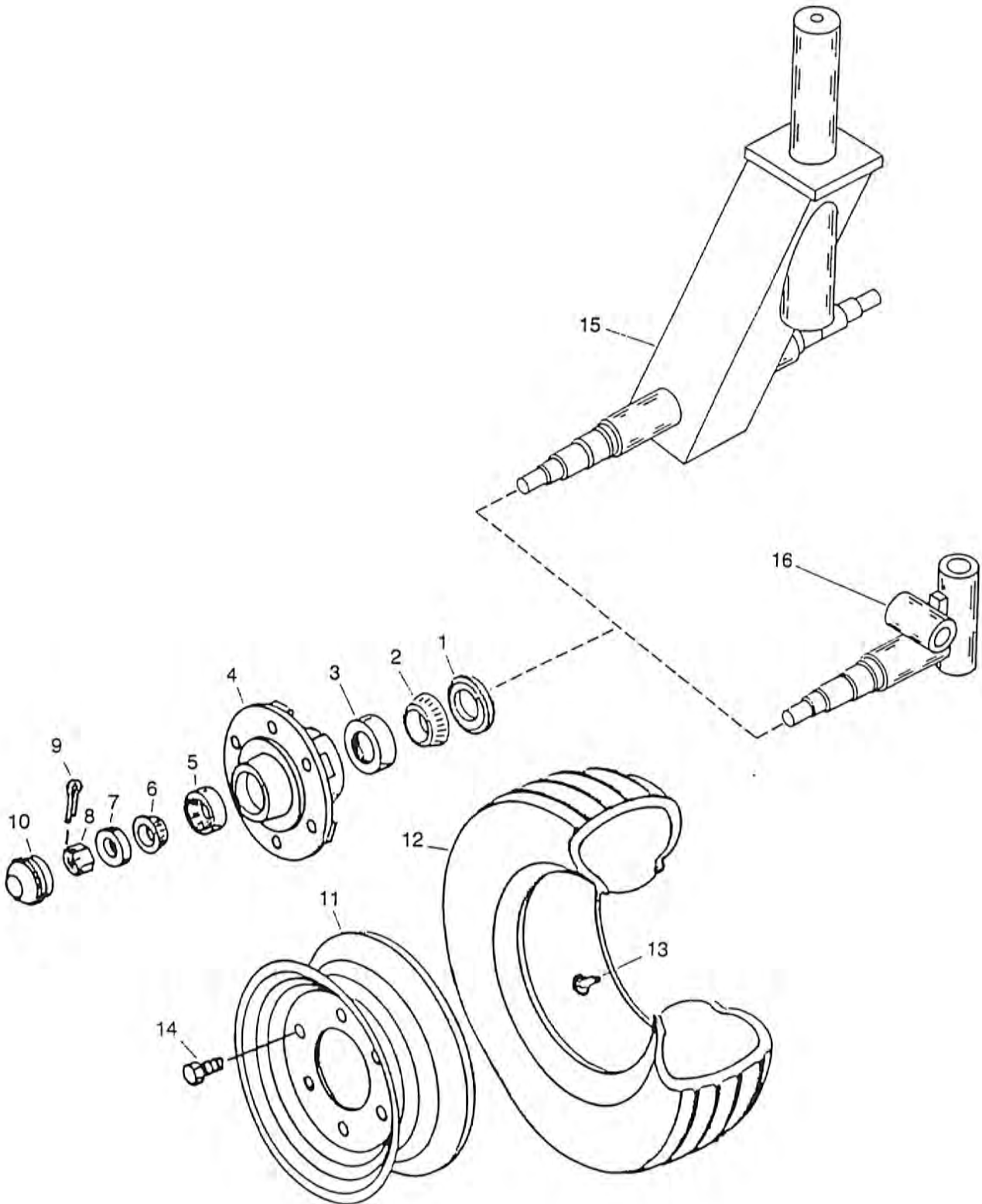
147 Main Frame 27

Item	Part Number	Qty.	Description
1	8400286	1	Main Frame
2	8400287	1	Goose Neck
3	8400033	1	Hose Minder
4	8400288	1	Torque Tube
5	8400036	2	Torque Tube Pivot
6	8400290	1	Tool Bar Center Section 7" Spacing
7	8400291	1	Tool Bar Right End Section 7" Spacing
8	8400292	1	Tool Bar Left End Section 7" Spacing
9	8400150	2	Tool Bar Bushing 1¼" O.D. x ¾" I.D. x 2" Long
10	8500010	2	Lift Arm Pin 1" x 11¼"
11	8400038	2	Lift Arm
12	8400039	2	Lift Arm Bushing 1" O.D. x 5/8" I.D. x 2-1/8" Long
13	8400293	1	Walkway Right Side
14	8400294	1	Walkway Left Side
15	8400155	1	Rear Step L.H.
16	8400156	1	Rear Step R.H.
17	8400157	2	Rear Step Strap
18	8400134	2	Rear Wheel Spindle
19	8400042	2	Rear Wheel Pivot Bolt
20	8400133	1	Swivel Wheel Frame
21	8400147	1	Swivel Wheel Thrust Washer 2½" I.D.
22	5000054	1	Swivel Wheel Spring Washer
23	8400282	1	Threaded Rod 5/8" x 4"
24	8400296	1	Swivel Wheel Retarder Cap 3½" O.D.
25	6100045	1	Spring
26	8400297	1	Tank Support
27	8400103	1	Hold Up Bar (Transport)
28	4900015	2	1" NC Lock Nut
29	4800017	1	¾" x 3" Hex Bolt
30	4800115	3	¾" x 2½" Hex Bolt
31	5000012	4	¾" Lock Washer
32	4900004	4	¾" Hex Nut
33	4800158	2	5/8" x 4½" Hex Bolt
34	4800100	2	5/8" x 4" Hex Bolt
35	4900012	2	5/8" Lock Nut
36	5000002	4	5/8" Flat Washer
37	5000003	2	5/8" Lock Washer
38	4900005	5	5/8" Hex Nut

28 147 Main Frame



30 Drill Wheel and Hub Assembly

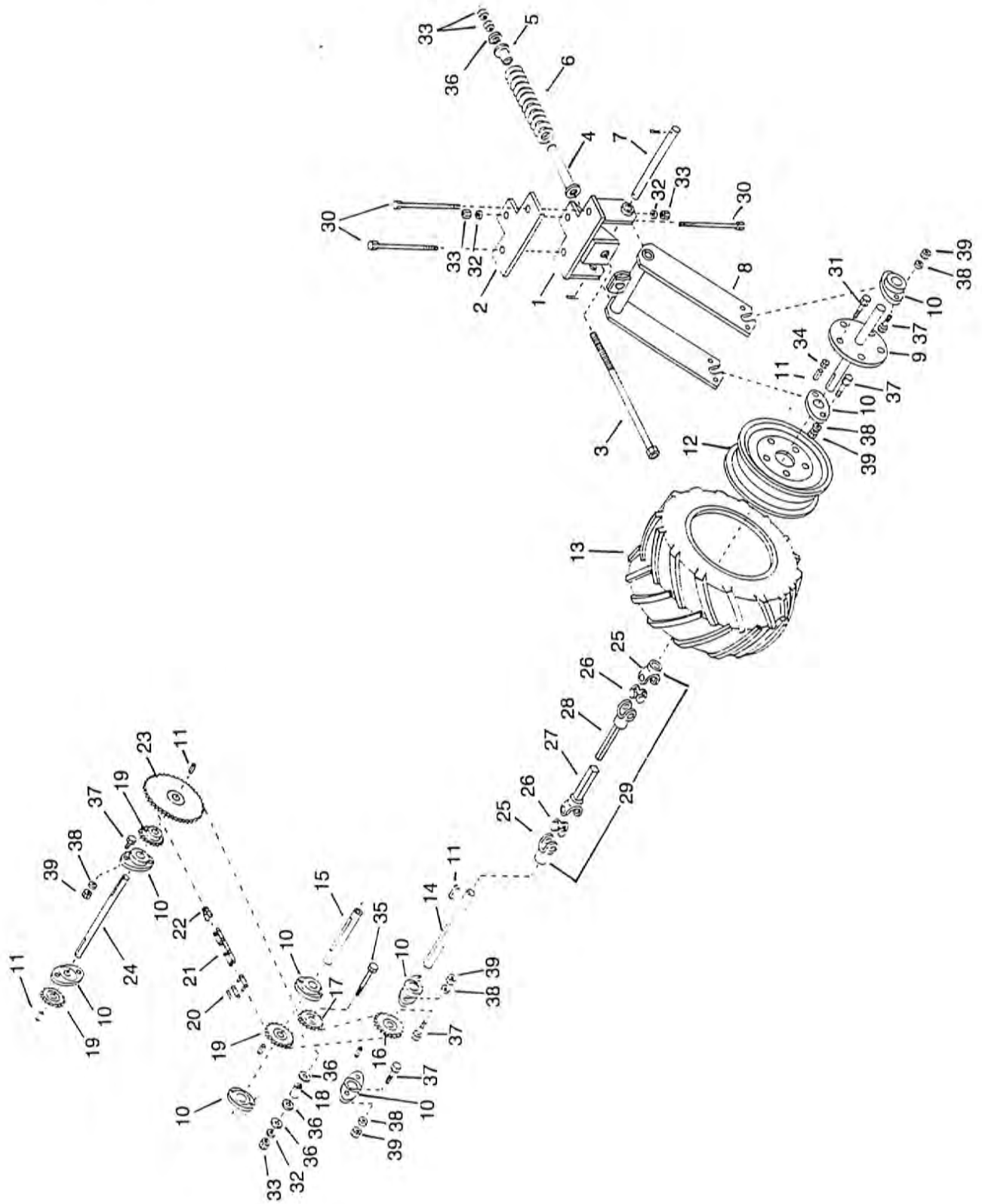


Drill Wheel and Hub Assembly 31

Item	Part Number	Qty.	Description
1	2900065	1	Grease Seal
2	2900066	1	Cone Inner
3	2900067	1	Cup Inner
4	2900068	1	Hub 6 Bolt
5	2900017	1	Cup Outer
6	2900018	1	Cone Outer
7	2900047	1	Washer
8	3000012	1	Nut
9	3000005	1	Cotter Pin
10	2900048	1	Dust Cap
11	2800001	1	Wheel 14" 6 Bolt
12	2600013	1	Tire 9.5L x 14
13	2700009	1	Tube
14	2900010	6	Wheel Bolt
15	8400133	1	Swivel Wheel Frame
16	8400134	1	Rear Wheel Spindle Weidment

NOTE: Items 15 and 16, also found in Main Frame Page 2 and 3.

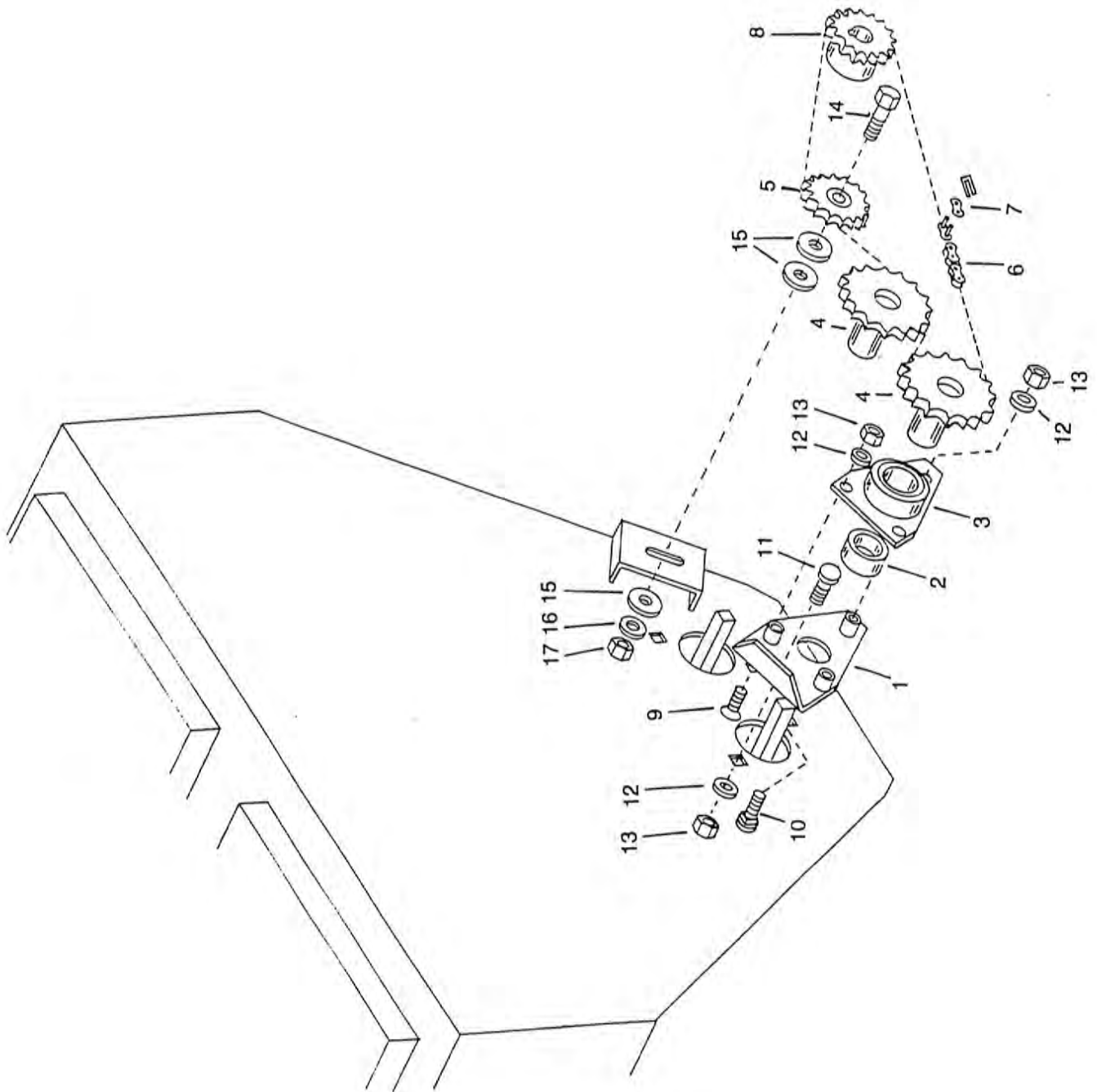
32 147 Drive Assembly



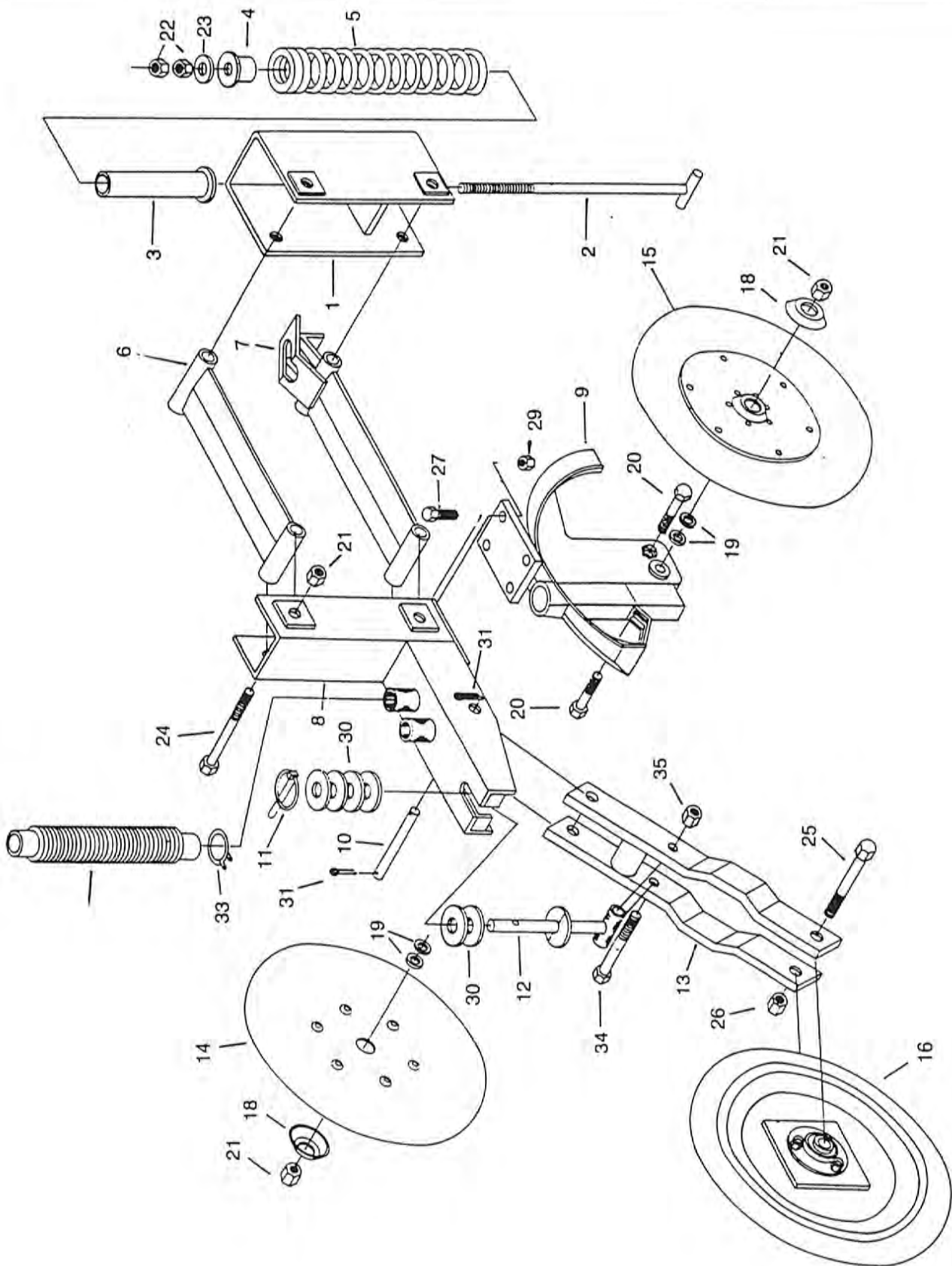
147 Drive Assembly 33

Item	Part Number	Qty.	Description
1	8400298	1	Drive Wheel Frame 147
2	8400299	1	Drive Wheel Mount Plate
3	8400024	1	Drive Wheel Spring Rod
4	8400025	1	Spring Guide (long)
5	8400026	1	Spring Guide (short)
6	6100032	1	Spring
7	8500034	1	Pin 1" x 13-5/8"
8	8400300	1	Drive Wheel Fork
9	8500035	1	Drive Wheel Shaft
10	1900009	8	1" Cast Flangette
11	6200005	7	1/4" x 1 1/2" Key
12	2800023	1	Wheel 12" x 8 1/2" 5 Bolt
13	2600022	1	Tire 23 x 8 1/2" x 12"
14	8500006	1	First Shaft 1" x 8 3/4"
15	8500037	1	Acre Counter Shaft 1" x 8 1/2"
16	1000067	1	5016 Sprocket
17	1000039	1	Idler Sprocket 15 Tooth
18	8400058	1	Spacer 1" x 1" O.D.
19	1000029	3	5014 Sprocket
20	1100111	1	2050 Conn. Link
21	1100115	1	2050 Chain 84 Links
22	1100060	1	No. 50 Pitch Half Link
23	1000062	1	5036 Sprocket
24	8500038	1	1" x 14" Shaft
25	3600103	2	GRW 1" Yoke
26	3600104	2	GRW Cross and Bearing
27	3600105	1	LGW Tube with Yoke
28	3600106	1	LGW Shaft with Yoke
29	3600102	1	LGW Power Shaft Comp.
30	4800080	3	1/2" x 7" Hex Bolt
31	4800082	5	1/2" x 1 1/2" Hex Bolt
32	5000006	4	1/2" Lock Washer
33	4900001	6	1/2" Hex Nut
34	4900014	5	1/2" Lock Nut
35	4800068	1	1/2" x 3" Hex Bolt
36	5000004	4	1/2" Flat Washer
37	4800098	16	3/8" x 1 1/4" Hex Bolt
38	5000019	16	3/8" Lock Washer
39	4900002	16	3/8" Hex Nuts

34 147 Drill Tank End Drive



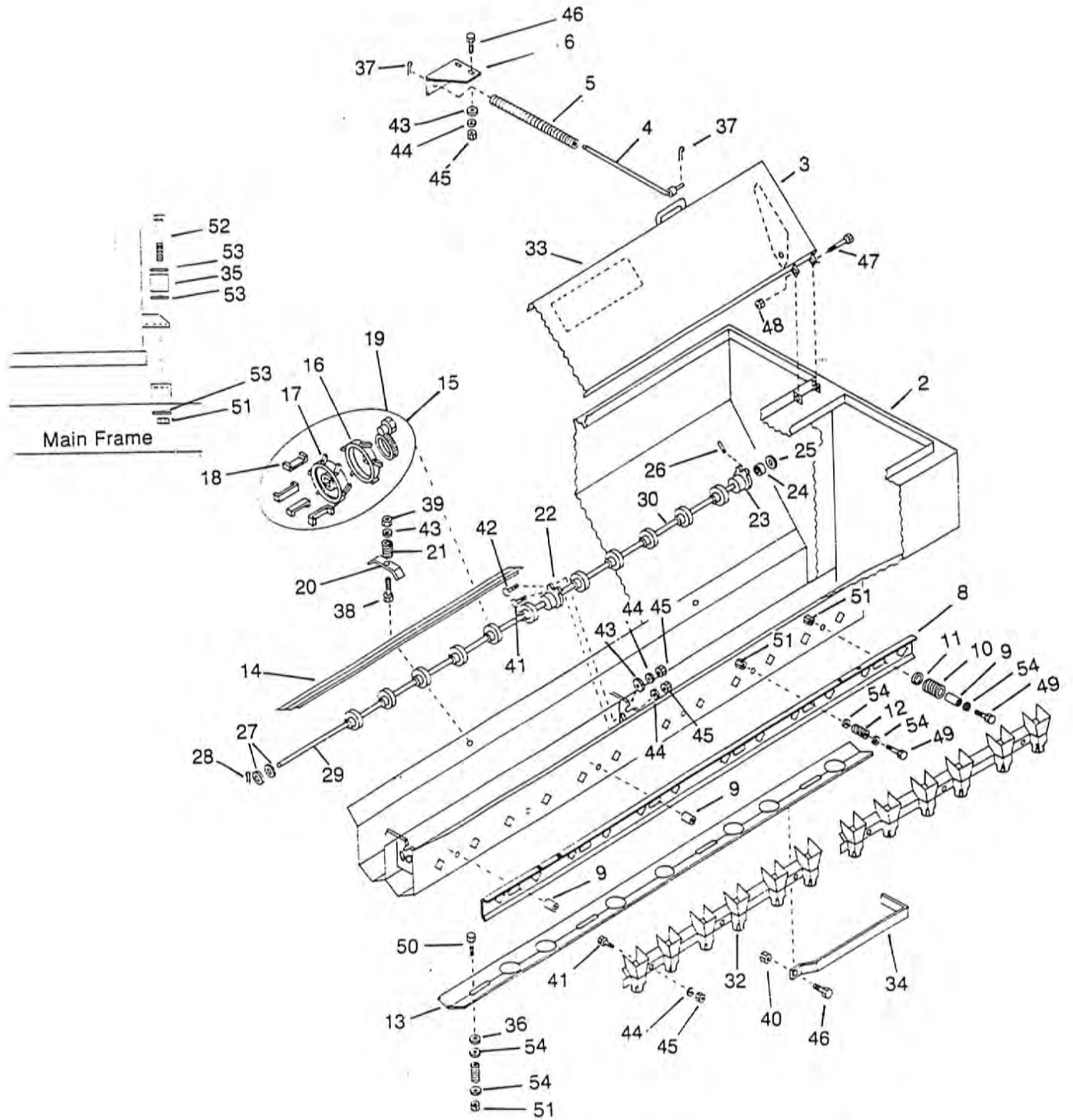
36 Run Assembly



Run Assembly 37

Item	Part Number	Qty.	Description
1	8400046	1	Run Front Frame
2	8400047	1	Spring Rod
3	8400025	1	Spring Guide (Long)
4	8400026	1	Spring Guide (Short)
5	6100032	1	Spring
6	8400048	1	Upper Link
7	8400049	1	Lower Link
8	8400102	1	Run Rear Frame
9	7500063	1	Run Boot No. 10 Left Hand (Shown)
9	7500128	1	Run Boot No. 12 Right Hand
10	8500011	1	Packer Wheel Pivot Pin
11	7500044	1	5/16" Klik Pin
12	8400064	1	Packer Wheel Depth Rod
13	8400271	1	Long Packer Wheel Frame (Steel 2 x 13")
14	7500111 1 8 7	1	14" Coultter (Complete) See page 19 <u>Light Brg</u>
15	7500112 1 8 8	1	14" Disk (Complete) See page 19
16	7500066	1	Packer Wheel (Complete) See page 20
17	8400091	1	Scraper (Complete) See page 21
18	8400101	2	Cap
19	5000009	4	Shim Washers
20	4800079	2	5/8" x 2 1/2" Bolt (Heavy Bearings)
21	4900012	6	5/8" Lock Nut
22	4900005	2	5/8" Hex Nut
23	5000002	1	5/8" Flat Washer
24	4800032	4	5/8" x 5" Bolt
25	4800011	1	3/4" x 3 1/2" Bolt
26	4900013	1	3/4" Lock Nut
27	4800160	4	7/16" x 1 1/2" Hex Bolt
29	4900035	4	7/16" Lock Nut
30	5000005	9	3/4" Flat Washer
31	4800050	2	3/16" x 1 1/2" Cotter Pin
32	7500097	2	Hose No. 12125
33	7500098	4	Hose Clamps R-24
34	4800006	1	1/2" x 4" Hex Bolt
35	4900014	1	1/2" Lock Nut

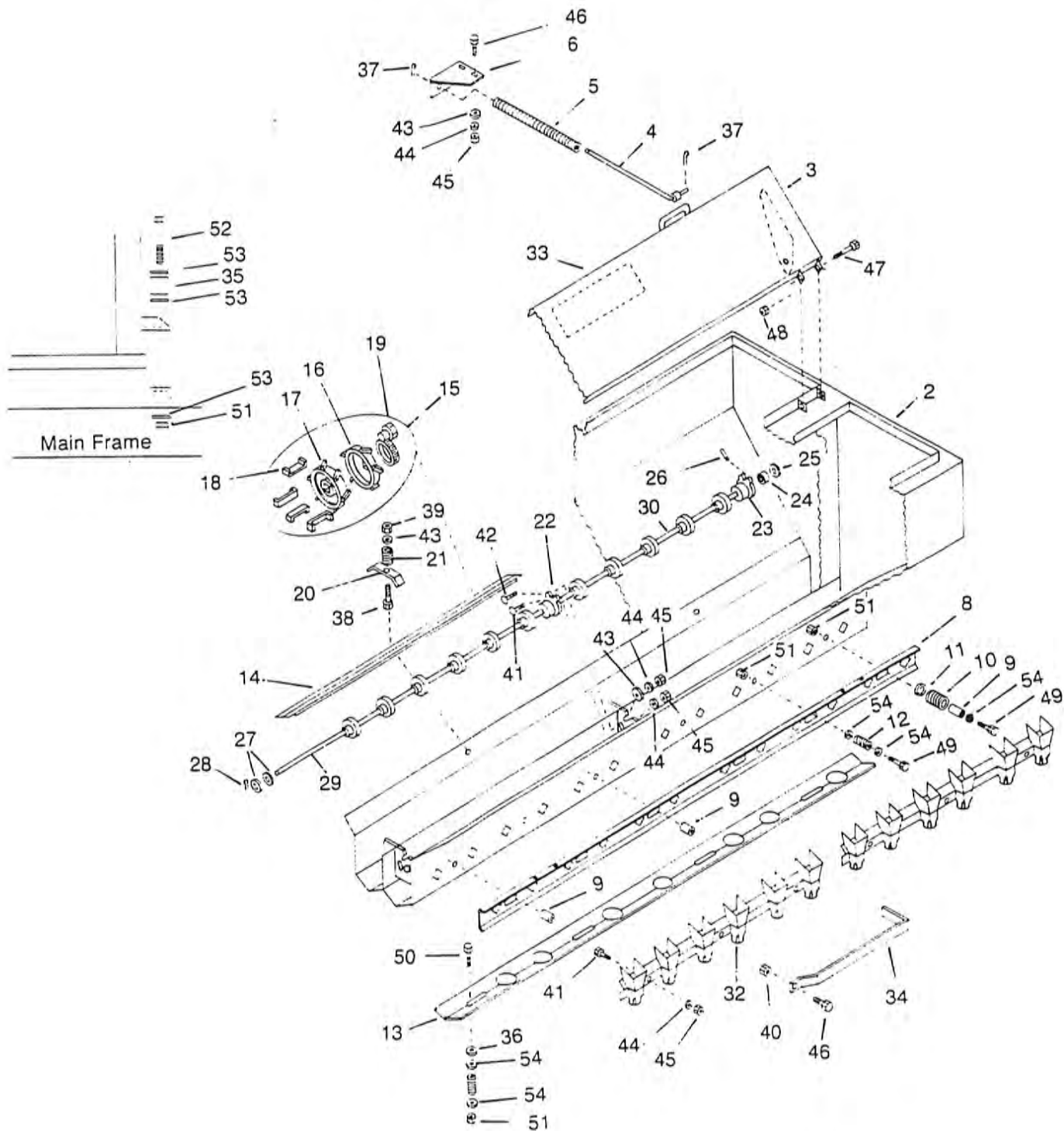
38 147 Tank Assembly



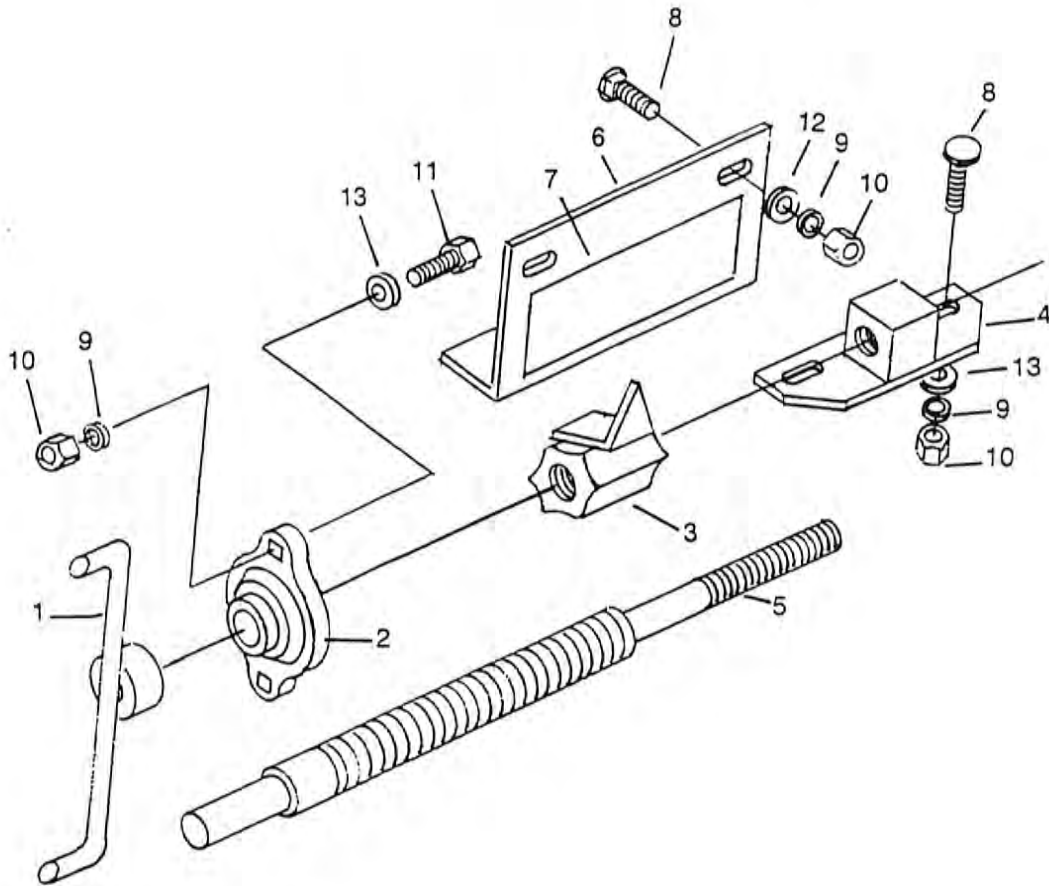
147 Tank Assembly 39

Item	Part Number	Qty.	Description
1	8400301	1	Tank Weldment R.H. (Not Shown)
2	8400302	1	Tank Weldment L.H.
3	8400303	4	Tank Cover
4	8400003	8	Tank Cover Spring Rod
5	6100017	8	Tank Cover Spring
6	8400004	4	Tank Cover Spring Retainer L.H.
7	8400005	4	Tank Cover Spring Retainer R.H. (Not Shown)
8	8400304	4	Control Plate 7" Spacing
9	8400007	12	Control Plate Guide
10	6100031	12	Control Plate Guide Spring
11	5000002	12	Guide Washer
12	6100002	28	Spring
13	8400305	4	Clean Out Plate
14	8400306	8	Feed Wheel Covers
15	7500106	48	Feed Wheel Complete
16	7500007	48	Feed Wheel Left Half (Marked L)
17	7500008	48	Feed Wheel Right Half (Marked R)
18	7400066	192	Feed Wheel Retainer Clips
19	7500107	48	Hose Clamp
20	8400011	8	Feed Wheel Cover Hold Down
21	6100002	8	Wheel Cover Hold Down Spring
22	7500110	8	Cast Bracket with Bearing Complete
23	7500108	8	Cast Bracket
24	7500109	8	Steel Bearing with Hole
25	5000036	8	Retainer Washer
26	4800169	4	1/4" x 1-1/8" Rolled Pin
27	5000027	8	Washer 1-3/8" O.D. x 7/8" I.D.
28	4800044	4	3/16" x 1 1/2" Cotter Key
29	8500039	4	Shaft (Drive End) 37-3/8"
30	8500040	4	Shaft (Tank) 33-1/8"
31	8400100	4	Seed Cup
32	8700015	4	Seed Cup (Not Shown)
33	6500022	1	Calibration Decal 7" Spacing
34	8400112	4	Clean Out Handle
35	7500134	6	Grommet
36	8400016	16	1/2" Flat Washer with 40 Degree Brk.

40 147 Tank Assembly



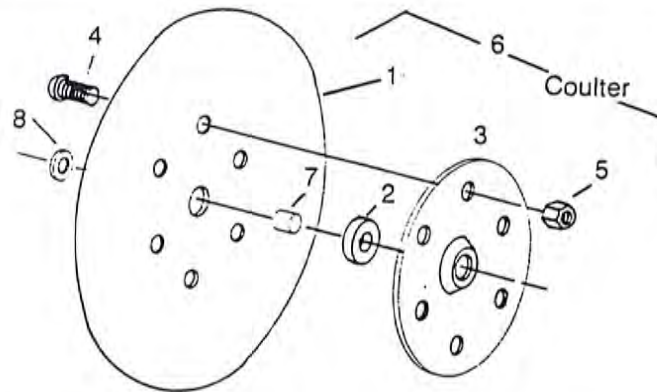
42 Seed & Fertilizer Setting Assembly



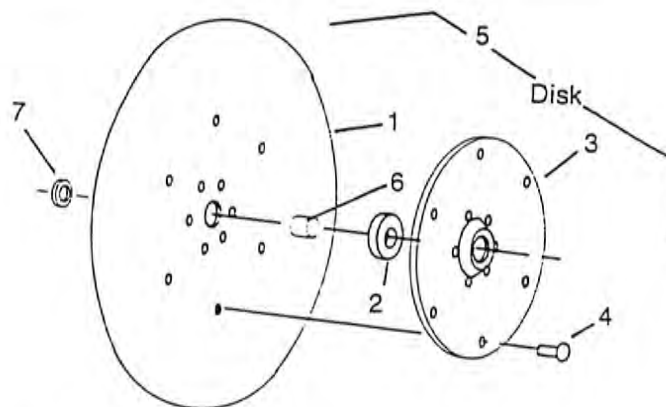
Item	Part Number	Qty.	Description
		Per Drill	
1	8400060	4	Calibration Handle
2	1900013	4	2-Hole Cast Flangette 3/4"
3	7500071	4	Calibration Pointer Nut
4	7500072	4	Calibration Control Plate Nut
5	7500073	4	Calibration Shaft
6	8400061	4	Calibration Scale Plate
7	6500016	2	Calibration Scale Decal - Grain
7	6500017	2	Calibration Scale Decal - Fert.
8	4800153	16	5/16" x 3/4" Carriage Bolt
9	5000022	24	5/16" Lock Washer
10	4900003	24	5/16" Hex Nut
11	4800013	8	5/16" x 1" Hex Bolt
12	5000023	24	5/16" Flat Washer

Coulter, Disk & Scraper Assembly 43

Heavy Bearings

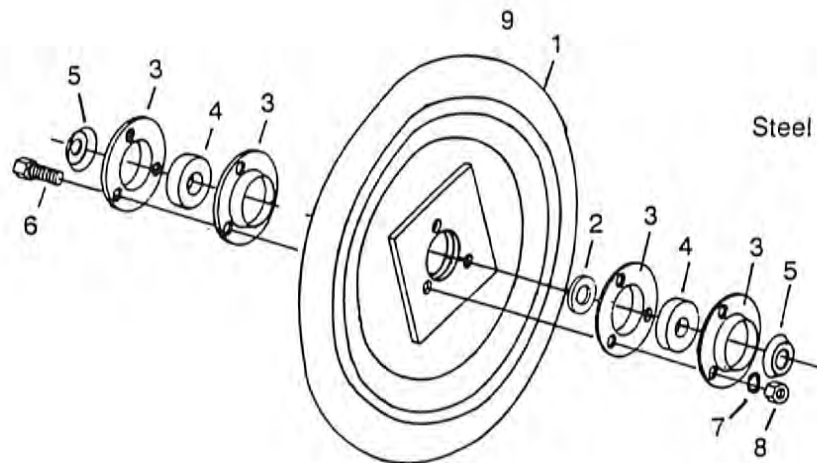


Item	Part Number	Qty.	Description
1	7500064	1	Coulter, 14" 6-Hole
2	2000031	1	Bearing
3	7500165	1	Cage
4	4800161	6	1/2" - 13 x 1-1/8" Button Hd. Socket Screw
5	4900014	6	Lock Nut, 1/2"
6	7500187	1	Coulter (Complete)
7	7500160	1	Sleeve
8	5000009	2	Shim Washers



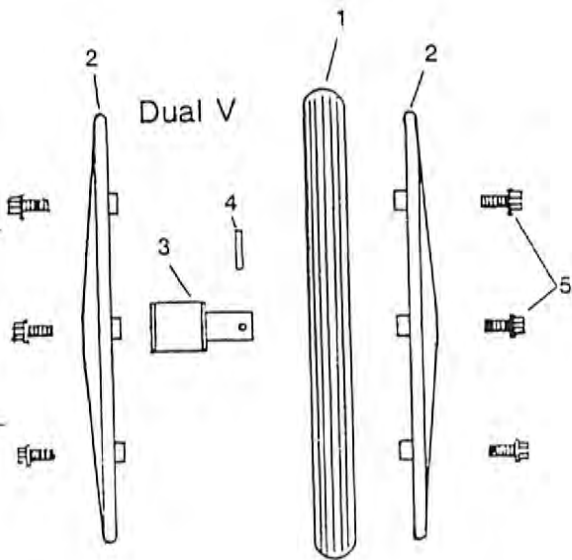
Item	Part Number	Qty.	Description
1	7500010	1	Disk, 14"
2	2000031	1	Bearing
3	7500167	1	Cage
4	4800039	12	Rivets, 1/4" x 1/2"
5	7500188	1	Disk (Complete)
6	7500160	1	Sleeve
7	5000009	2	Shim Washers

44 Press Wheel Assembly

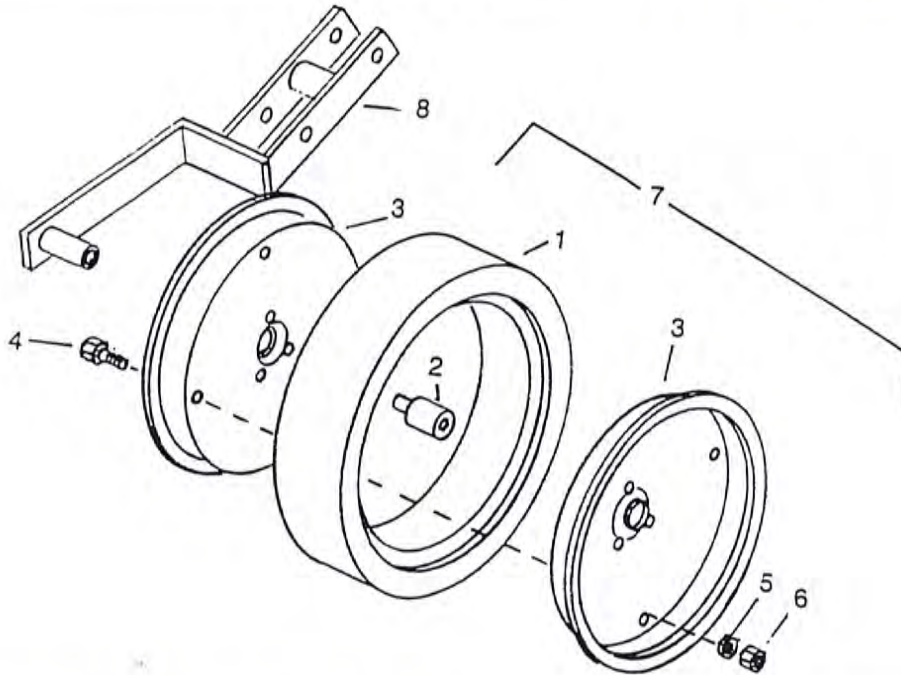


Item	Part Number	Qty.	Description
1	7400165	1	Packer Wheel, Steel V
	8400105	1	Packer Wheel, Steel Round
2	5000010	1	Spacer Washer, 1-5/8" x 3/4" x .090
3	2100006	4	3-Hole Flangettes
4	2000004	2	Bearing, 3/4"
5	7400264	2	Bearing Shield 25/32" I.D.
6	4800071	3	Bolt, 5/16" x 1 1/2", Gr. 5
7	5000015	3	Star Washer, 5/16"
8	4900017	3	Hex Nut, 5/16"
9	7500066	1	Packer Wheel (Complete)

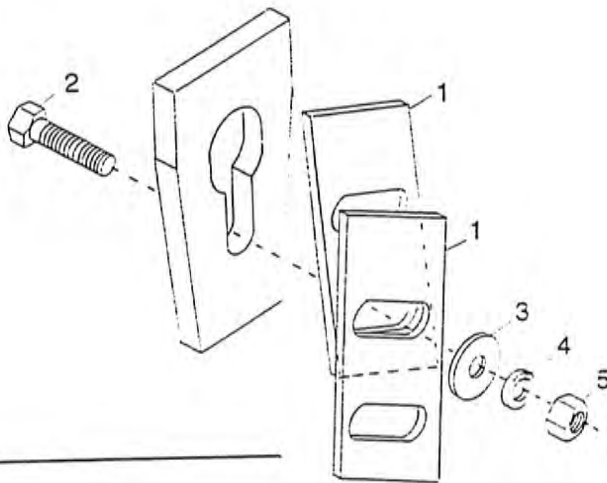
Item	Part Number	Qty.	Description
1	2600011	1	1" x 12" Rubber Tire
2	2800014	2	12" Wheel Halves
3	2000024	1	Water Pump Bearing (1B07032)
4	4800131	1	1/4" x 1" Rolled Pin
5	4800165	6	1/4" x 1" Flange Bolt
6	4900009	6	1/4" Hex Nut (Not Shown)
7	7500076	1	Packer Wheel (Complete)



Press Wheel Assembly 45



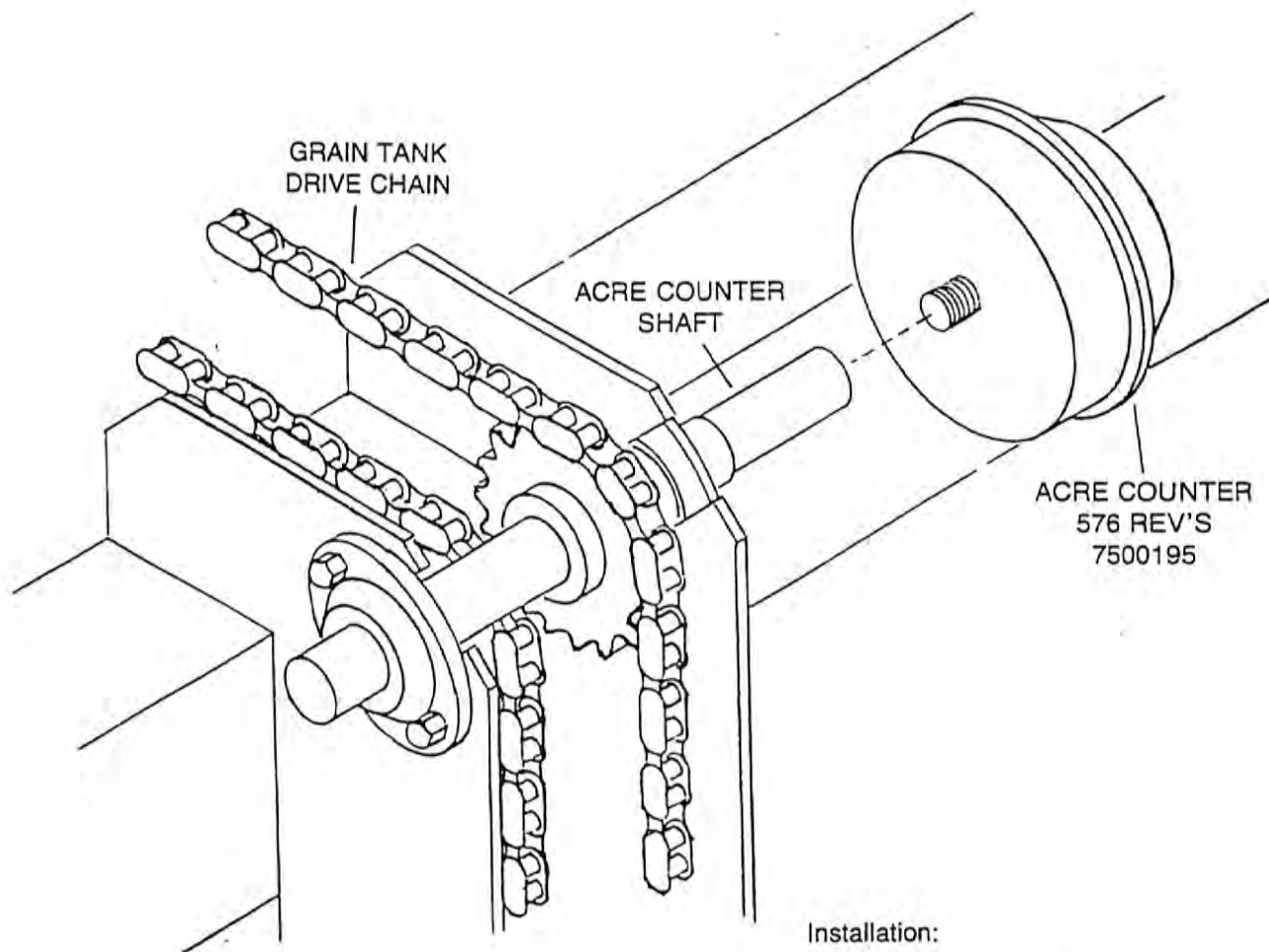
Item	Part Number	Qty.	Description
1	2600021	1	Tire 4 x 16
2	2000024	1	Water Pump Bearing
3	2800022	2	Wheel Haives
4	4800164	7	3/8" x 3/4" Hex Bolt
5	5000019	7	3/8" Lock Washer
6	4900002	7	3/8" Hex Nut
7	7500151	1	4 x 16 Wheel Complete
8	8400237	1	Packer Wheel Frame



Scraper Assembly 21

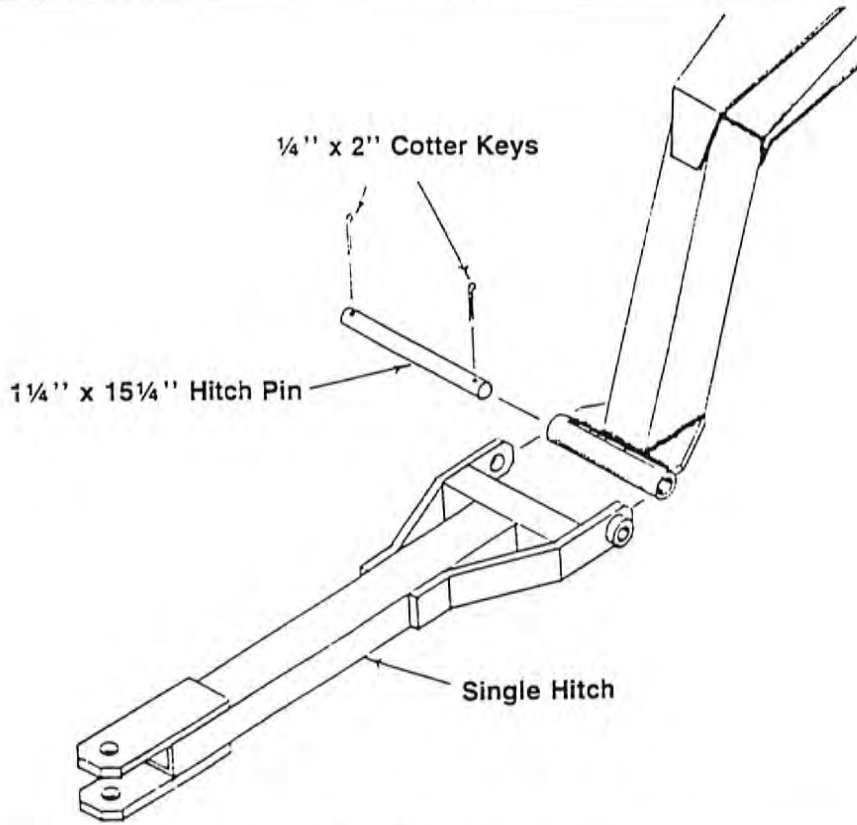
Item	Part Number	Qty.	Description
1	8400091	2	Scraper
2	4800071	1	5/16" x 1 1/4" Bolt
3	4900023	1	5/16" Flat Washer
4	5000022	1	5/16" Lock Washer

48 Acre Counter

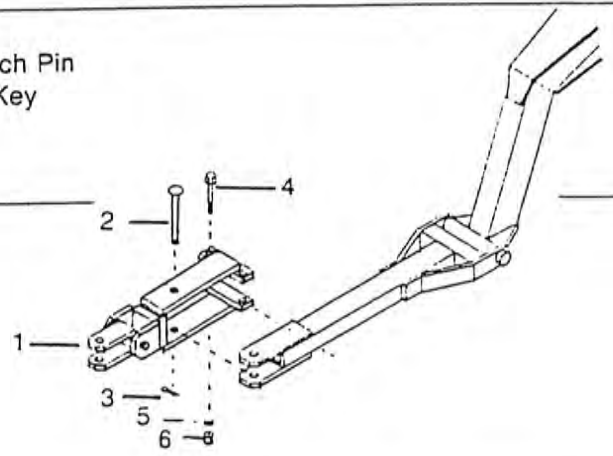


Installation:

1. Turn acre counter into threaded hole in end of acre counter shaft.
(See illustration)



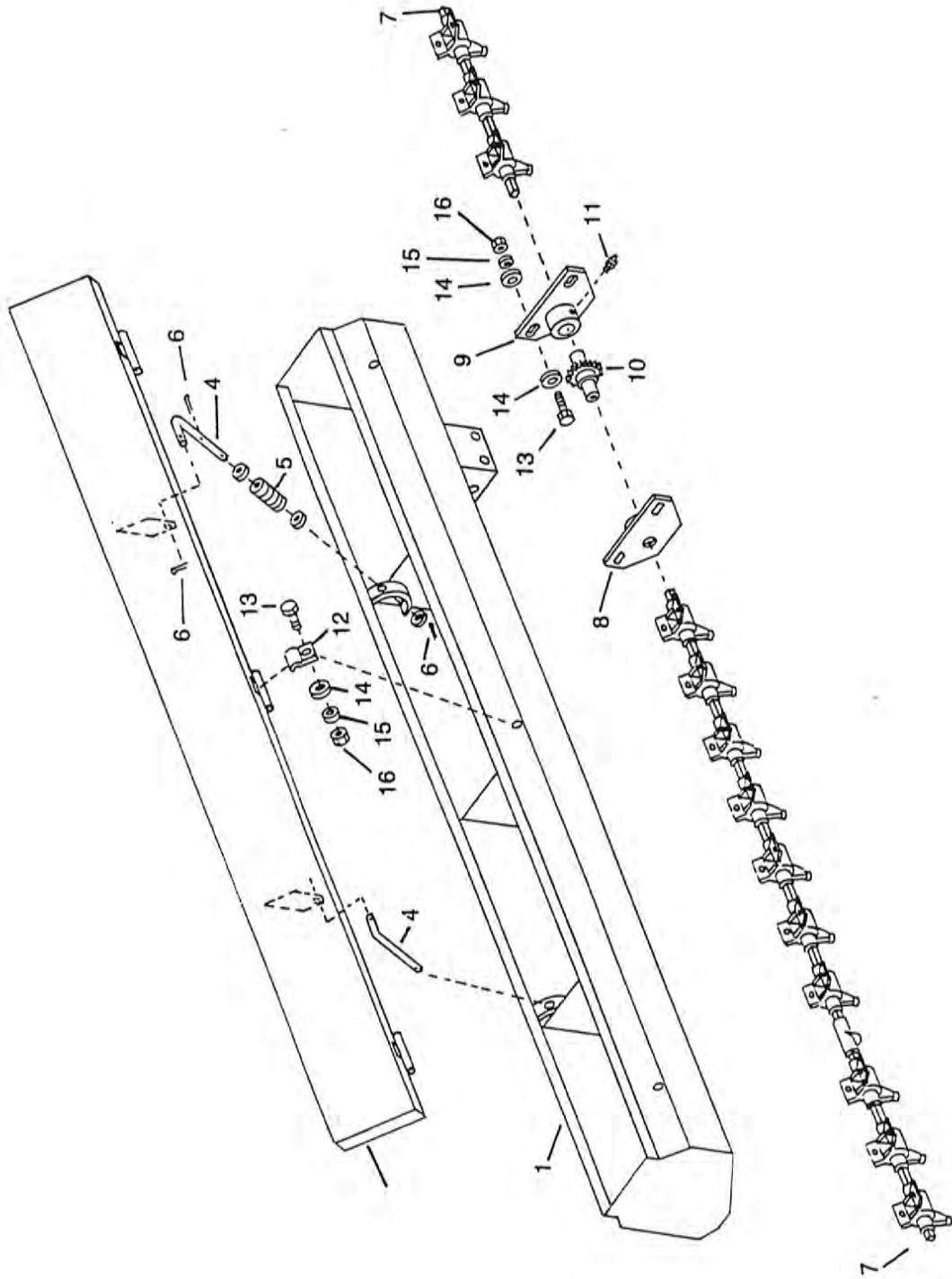
Item	Part Number	Qty.	Description
1	8400307	1	Hitch
2	8500036	1	1 1/4" x 15 1/4" Hitch Pin
3	4800103	2	1/4" x 2" Cotter Key



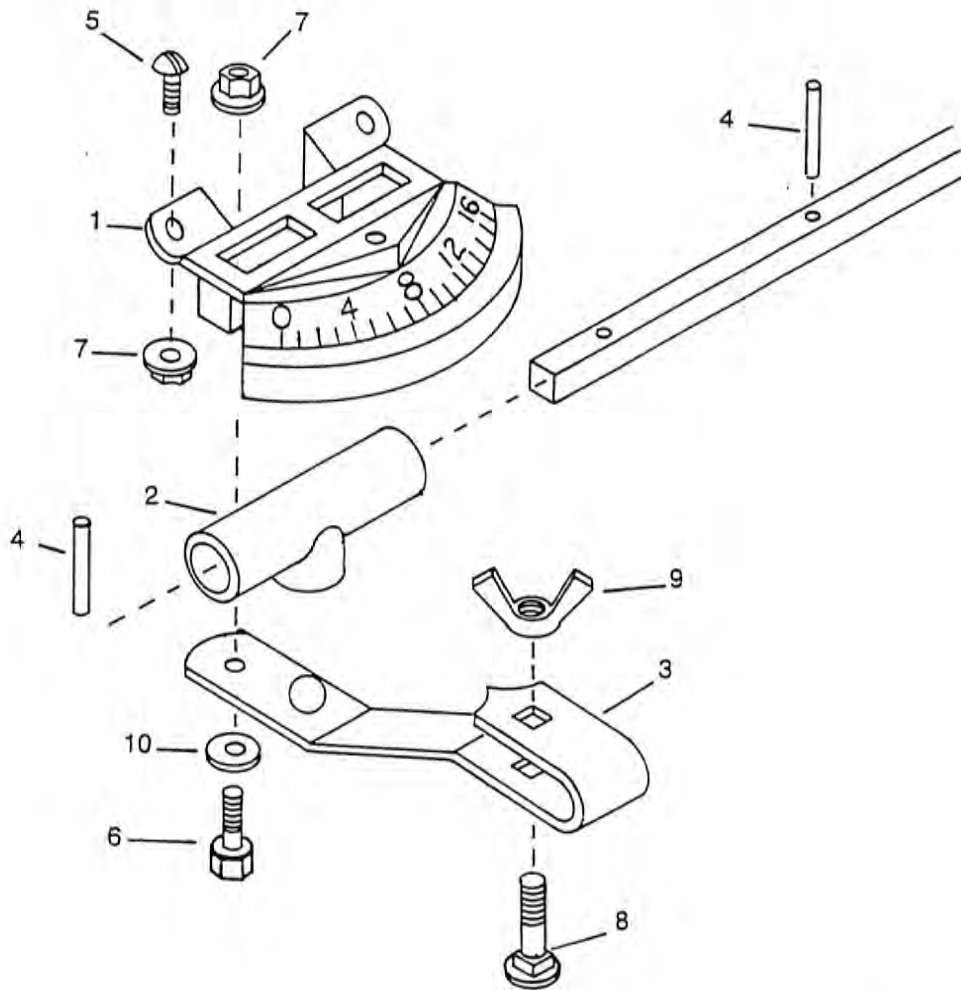
2-Way Swivel Hitch

Item	Part Number	Qty.	Description
1	8400275	1	2-Way Swivel Hitch
2	8600025	1	1" x 6" Hitch Pin
3	4800103	1	1/4" x 2" Cotter Pin
4	4800006	2	1/2" x 4" Bolt
5	5000006	2	1/2" Lock Washer
6	4900001	2	1/2" Nut

50 Legume Box

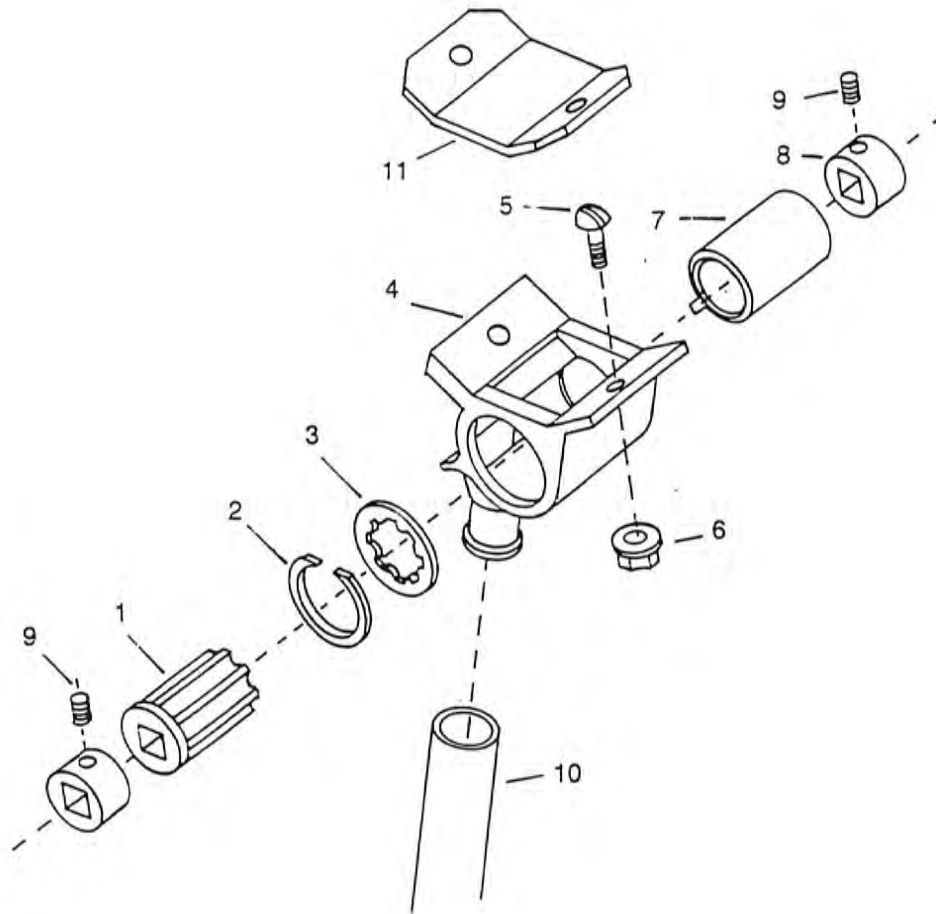


52 Seed Index Assembly Legume Box



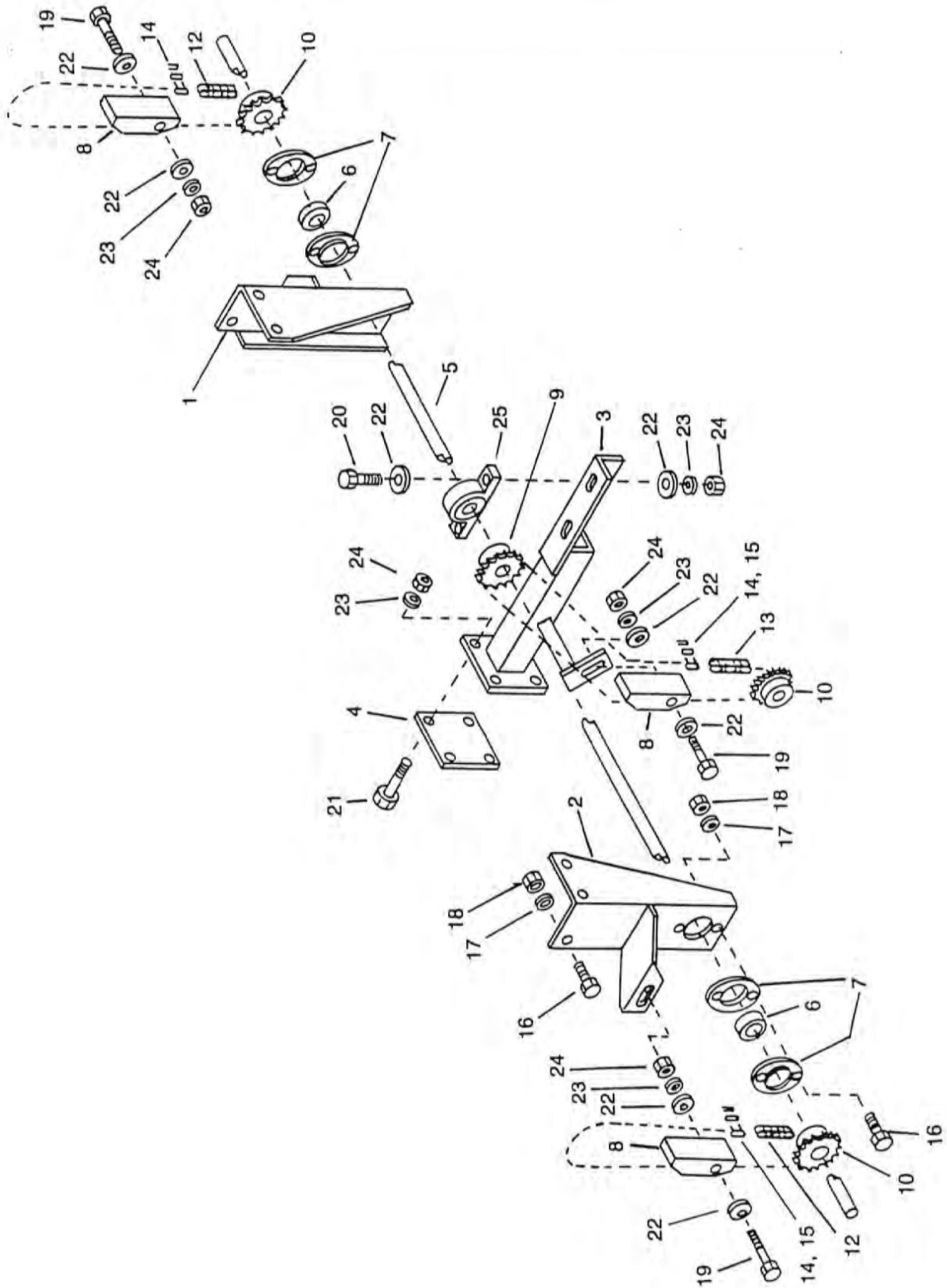
Item	Part Number	Qty.	Description
1	7500183	1	Seed Index Meter
2	7500184	1	Shifter Spool
3	7500185	1	Shifter Arm
4	4800212	2	Rolled Pin 5/32 x 3/4
5	4800213	3	Cap Screw 1/4 x 5/8 Pan Head Machine Screw
6	4800024	1	1/4 x 3/4 Bolt
7	4900040	4	1/4" Flange Nut
8	4800214	1	Carriage Bolt 1/4" x 1"
9	4900041	1	1/4" Wing Nut
10	5000035	1	1/4" Flat Washer

Cup Assembly Legume Box 53



Item	Part Number	Qty.	Description
1	7500177	1	Feed Roller
2	7500178	1	Snap Ring
3	7500179	1	Feed Roller Washer
4	7500180	1	Feed Cup with Washer & Ring
5	4800154	2	1/4" x 1/2" Flat Head Slotted Screw
6	4900040	2	1/4" Flange Nut
7	7500181	1	Gate
8	7500182	2	Collar
9	4800211	2	Set Screw 1/4" x 5/16"
10	3700129	1	5/8" I.D. Hose x 22"
11	8700016	1	Plug for 10" Spacing

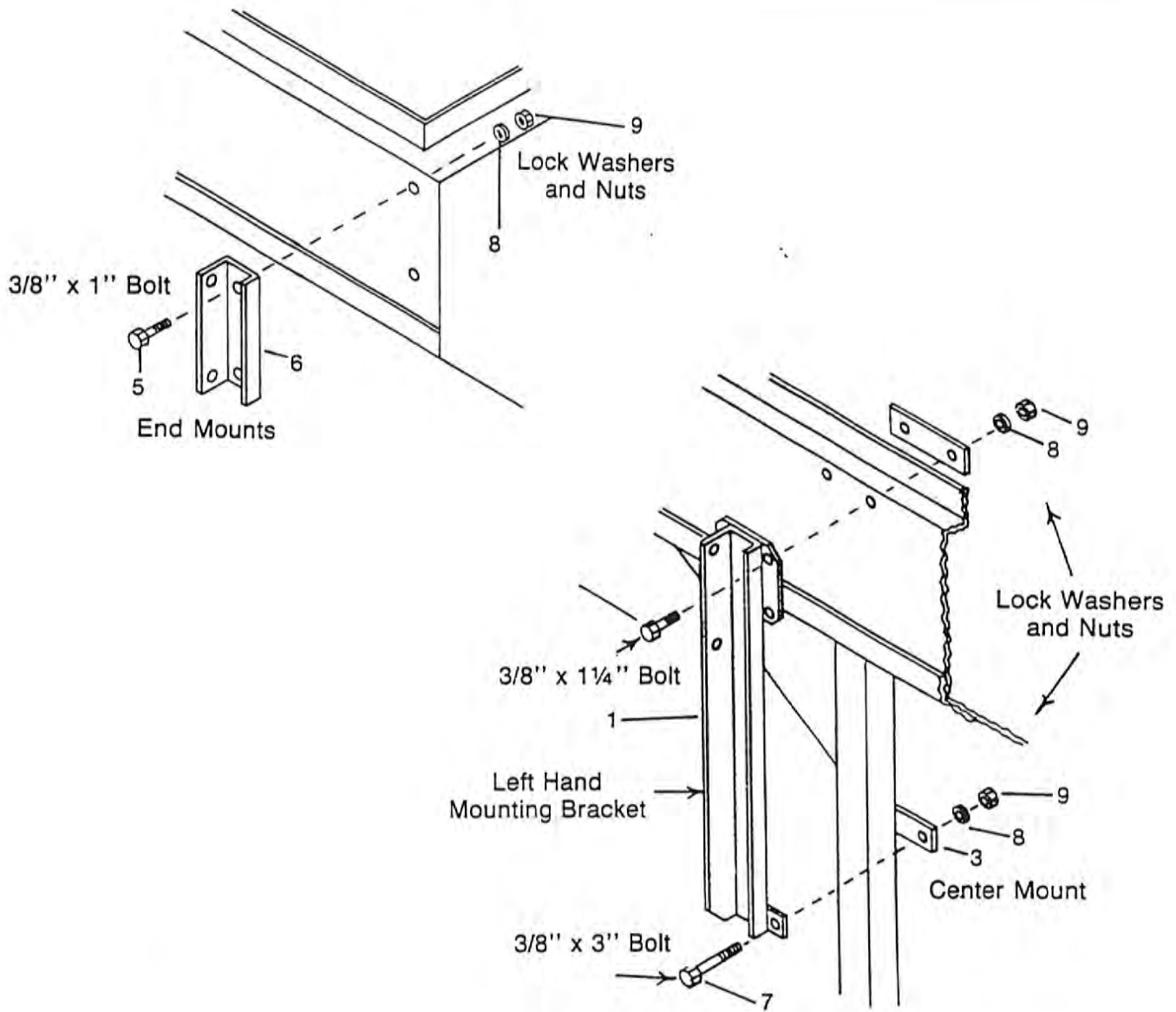
54 Legume Box Drive



Legume Box Drive 55

Item	Part Number	Qty.	Description
1	8700012	1	Bracket Left Hand
2	8700025	1	Bracket Right Hand
3	8700026	1	Center Bearing Standard
4	8700027	1	Center Bearing Standard Plate
5	8700028	1	Shaft 52½"
6	2000002	2	1" Bearing with Lock Collar
7	2100003	4	2-Hole Flangette
8	2000016	3	Wood Block Idler
9	1000111	1	4017 Sprocket 1" Bore
10	1000112	3	4015 Sprocket 1" Bore
11	6200010	4	¼" x 1" Square Keys
12	1100136	2	53 Links, 40 Pitch Chain
13	1100137	1	79 Links, 40 Pitch Chain — 100153
14	1100135	3	40 Pitch Connector Link
15	1100140	3	40 Pitch Offset Link
16	4800153	10	5/16" x ¾" Carriage Bolt
17	5000022	10	5/16" Lock Washer
18	4900003	10	5/16" Hex Nut
19	4800029	3	3/8" x 2½" Hex Head Bolt
20	4800142	2	3/8" x 1¾" Hex Head Bolt
21	4800156	4	3/8" x 3" Hex Head Bolt
22	5000001	10	3/8" Flat Washer
23	5000019	9	3/8" Lock Washer
24	4900002	9	3/8" Hex Nut
25	1800003	1	1" Pillow Block Bearing

56 Legume Tank 147 Drill

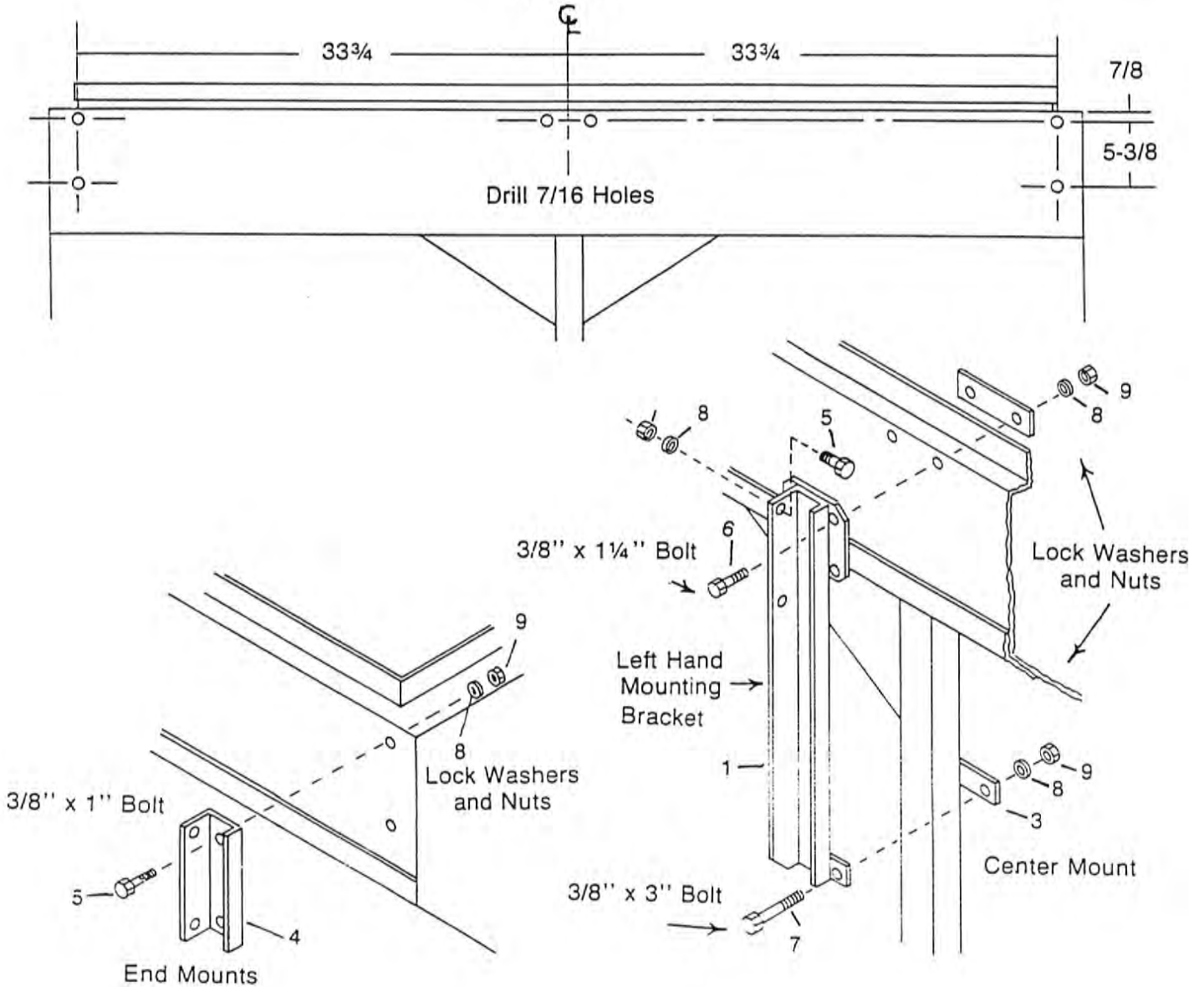


Item	Part Number	Qty.	Description
1	8700001	1	Mounting Bracket Left Hand
2	8700002	1	Mounting Bracket Right Hand (Not Shown)
3	8700003	2	Strap
4	8700029	4	End Mounts
5	4800003	20	3/8" x 1" Bolt
6	4800098	4	3/8" x 1 1/4" Bolt
7	4800156	4	3/8" x 3" Bolt
8	5000019	28	3/8" Lock Washer
9	4900002	28	3/8" Hex Nut

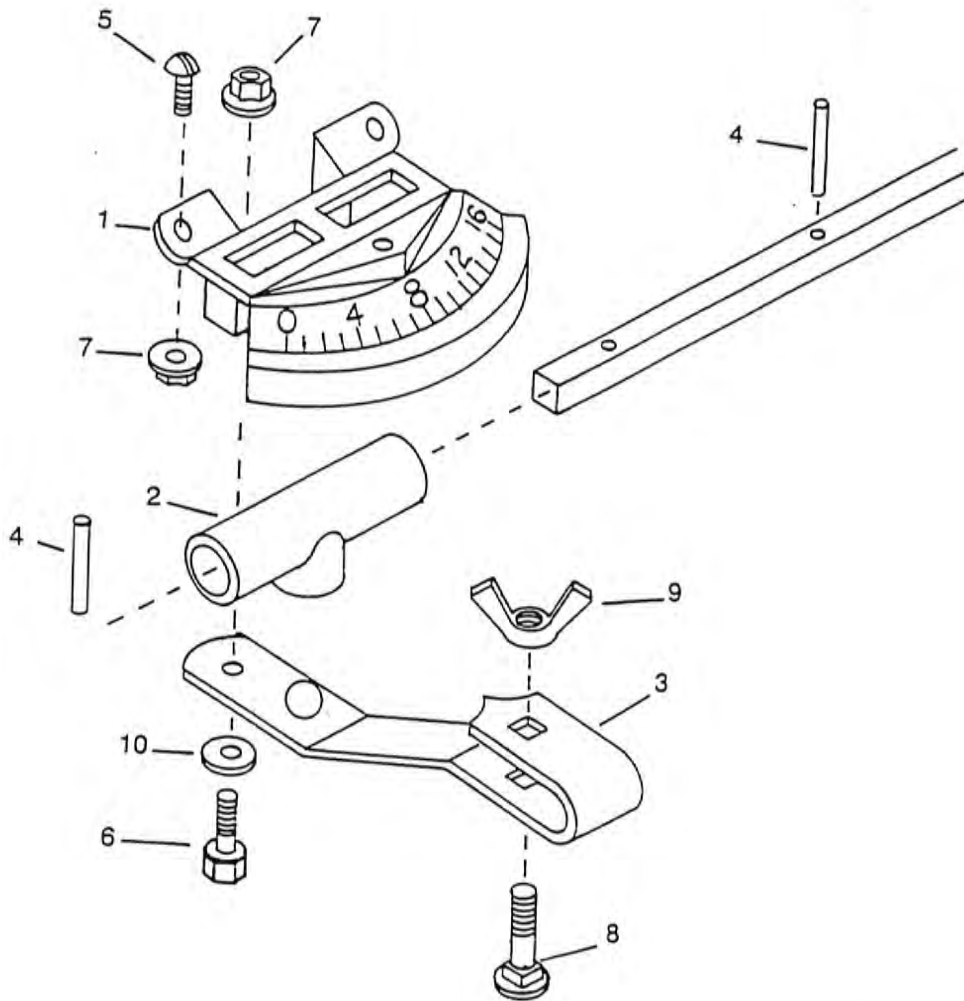
Mounting Bracket 57

Item	Part Number	Qty.	Description
1	8700001	1	Mounting Bracket Left Hand
2	8700002	1	Mounting Bracket Right Hand (not shown)
3	8700003	2	Strap
4	8700029	4	End Mounts
5	4800003	20	3/8" x 1" Bolt
6	4800098	4	3/8" x 1 1/4" Bolt
7	4800156	4	3/8" x 3" Bolt
8	5000019	28	3/8" Lock Washer
9	4900002	28	3/8" Hex Nut

FIGURE 1



52 Seed Index Assembly Legume Box



Item	Part Number	Qty.	Description
1	7500183	1	Seed Index Meter
2	7500184	1	Shifter Spool
3	7500185	1	Shifter Arm
4	4800212	2	Rolled Pin 5/32 x 3/4
5	4800213	3	Cap Screw 1/4 x 5/8 Pan Head Machine Screw
6	4800024	1	1/4 x 3/4 Bolt
7	4900040	4	1/4" Flange Nut
8	4800214	1	Carriage Bolt 1/4" x 1"
9	4900041	1	1/4" Wing Nut
10	5000035	1	1/4" Flat Washer

