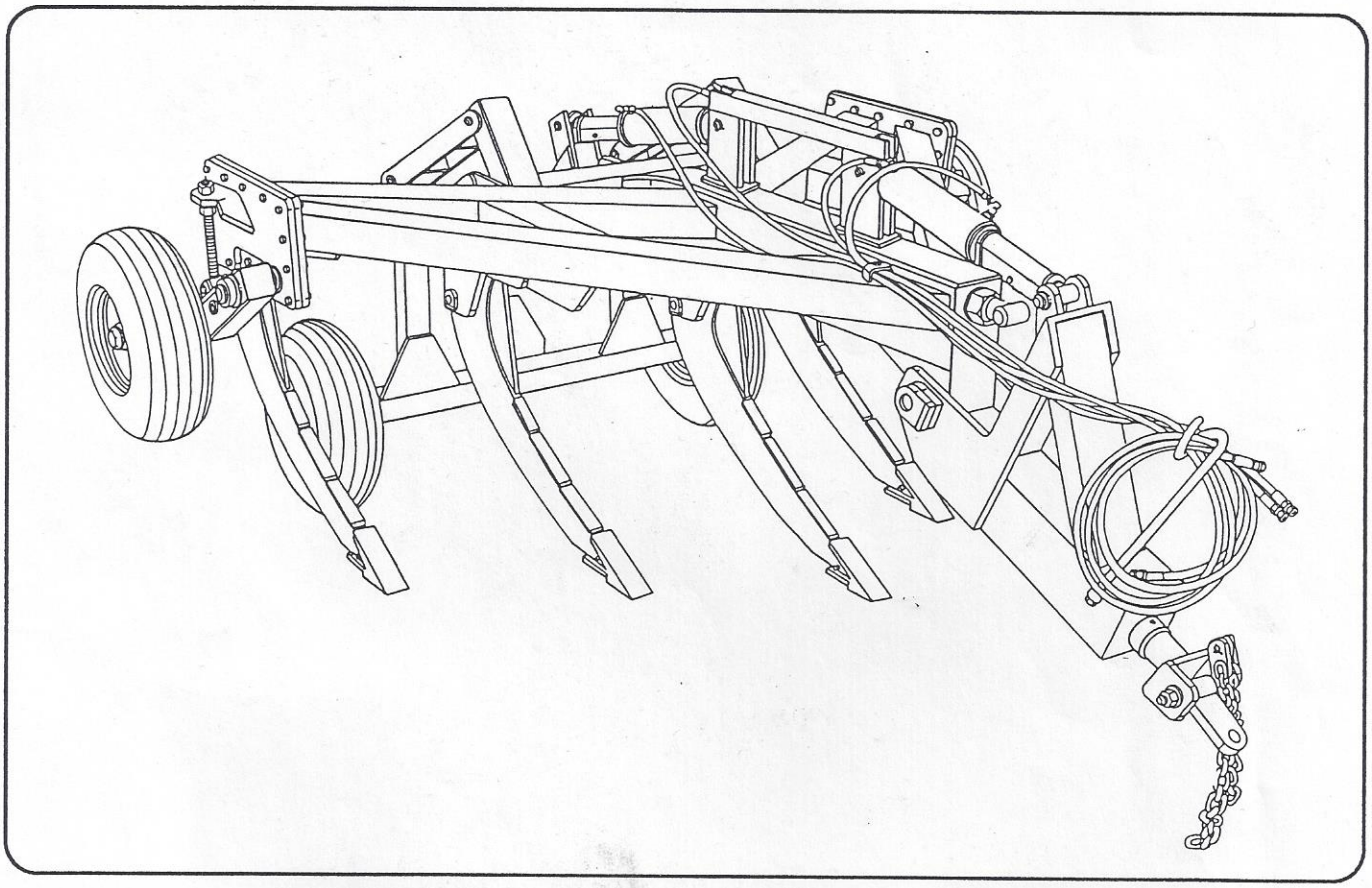
KELLO-BILT

Series 5000
Deep Tillage Subsoiler



PARTS LIST
ASSEMBLY AND OPERATING INSTRUCTIONS

Series 5000 Deep Tillage Subsoiler

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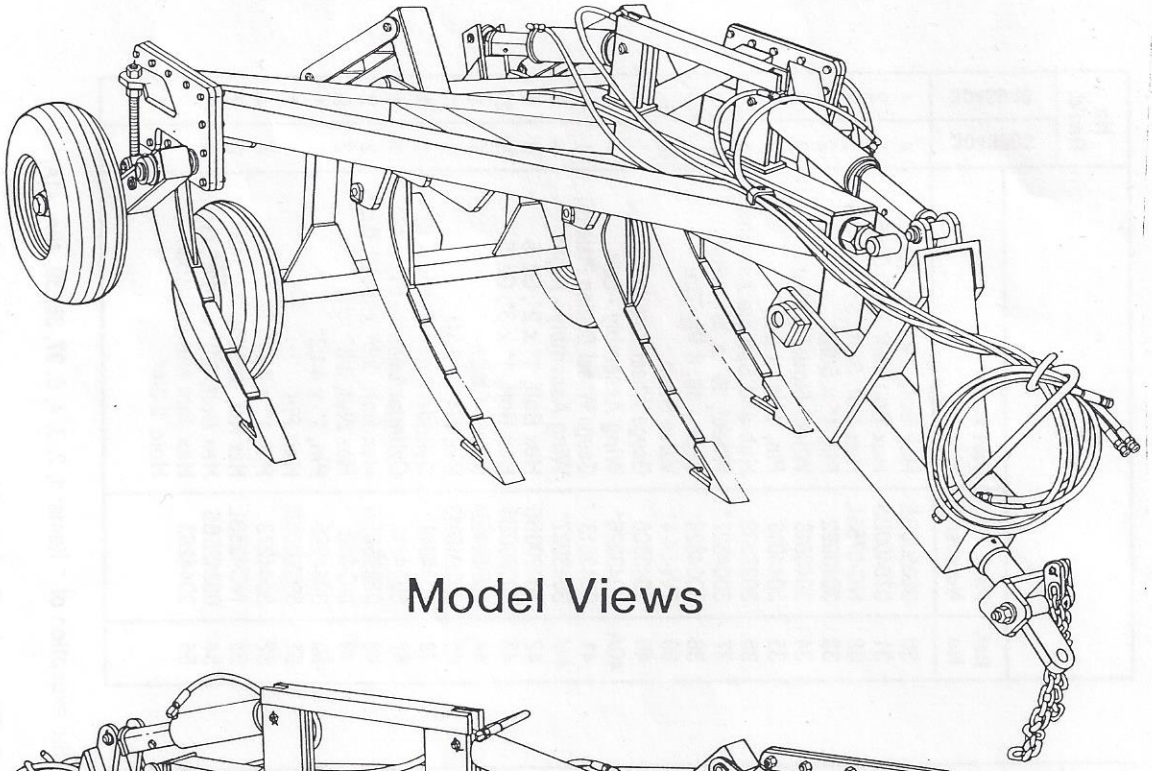
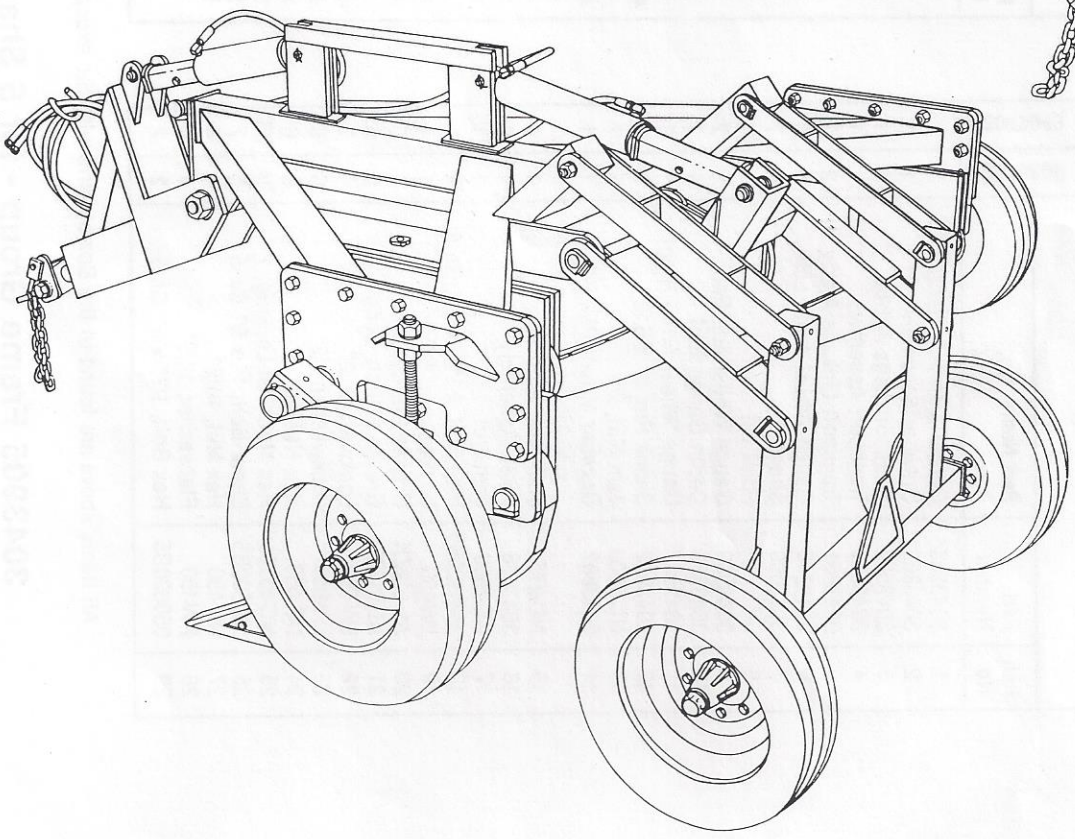
Parts List and Assembly and Operating Instructions



Model Views



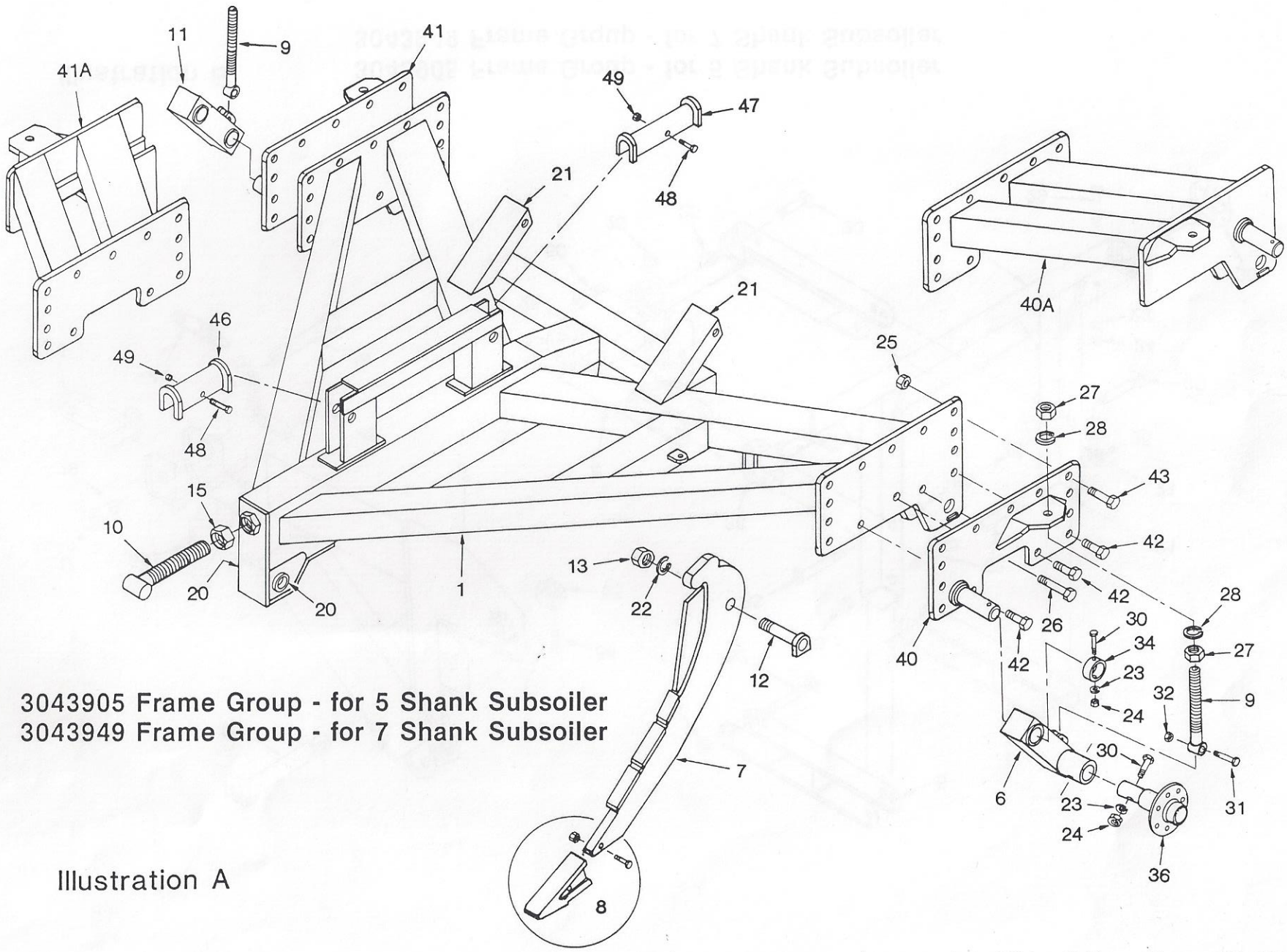
Model 530 Deep Tillage Subsoiler

Ref. No.	Part Number	Part Name	No. Req'd. 3043905	No. Req'd. 3043949
1	3043928*	Center Frame Assembly	1	1
2	3043852*	Drawbar Assembly	1	1
3	3043589*	Transport Legs Asb'ly.	1	1
4	3043636*	Transport Assembly	1	1
5	3043631	Transport Linkage Asb'ly.	2	2
6	3043646	Gauge Wheel Arm - Left	1	1
7	3043900	Shank	5	7
8	—*	Point Kit	Ref.	Ref.
9	3043909	Gauge Wheel Adj. Rod	2	2
10	3043885	Depth Gauge Rod	1	1
11	3043647	Gauge Wheel Arm - Right	1	1
12	3043902	Shank Pin, 2" x 5.12"	5	7
13	NC-200J	Jam Nut, 2"	5	7
14	3043882	Drawbar Mount Pin, 2-3/4" x 16.31"	1	1
15	NC-275J	Jam Nut, 2-3/4"	1	1
16	3043668	Hitch Assembly	1	1
17	NC-150J	Jam Nut, 1-1/2"	1	1
18	1501100B5	Hex Bolt, 1-1/2" x 11", Gr. 5	1	1
19	LW-150	Lockwasher, 1-1/2"	1	1
20	AL-012ZK	Grease Fitting, Std.	5	5
21	AL-012ZL	Grease Fitting, Long	6	6
22	LW-200	Lockwasher, 2"	5	7
23	LW-050	Lockwasher, 1/2"	6	6
24	NC-050	Hex Nut, 1/2"	6	6
25	NC-100SL	Hex Nut, Self-Locking, 1"	34	36
26	100500B5	Shear Bolt, 1" x 5", Gr. 5	5	7
27	NC-150	Hex Nut, 1-1/2"	4	4
28	FW-150	Flatwasher, 1-1/2"	4	4
29	050600B5	Hex Bolt, 1/2" x 6", Gr. 5	2	2

Ref. No.	Part Number	Part Name	No. Req'd. 3043905	No. Req'd. 3043949
30	050500B5	Hex Bolt, 1/2" x 5", Gr. 5	4	4
31	075400B5	Hex Bolt, 3/4" x 4", Gr. 5	2	2
32	NC-075SL	Hex Nut, Self-Locking, 3/4"	2	2
33	3043992	Pin, 1" x 5-1/2"	2	2
34	3043618	Wheel Mount Collar	2	2
35	3044016	Pin, 1-1/4" x 8.12"	2	2
36	3027033	Hub and Spindle Assembly	4	4
37	3004827*	Wheel, 10" x 16", 8-Bolt	Ref.	Ref.
38	3004828*	12.5L - 16, 8 Ply Tire	Ref.	Ref.
39	FW-84-4*	Valve Stem	Ref.	Ref.
40	3043606	Gauge Wheel Bolting Plate (L)	1	—
40A	3043926*	Wing Assembly - Left	—	1
41	3043613	Gauge Wheel Bolting Plate (R)	1	—
41A	3043927*	Wing Assembly - Right	—	1
42	100200B5	Hex Bolt, 1" x 2", Gr. 5	6	6
43	100300B5	Hex Bolt, 1" x 3", Gr. 5	20	20
44	0501064004	Safety Chain	1	1
45	0501018043	Pin, 3/4" x 2-3/4"	1	1
46	3044012	Cylinder Lock Asb'ly. - 13"	1	1
47	3044011	Cylinder Lock Asb'ly. - 17"	1	1
48	038350B5	Hex Bolt, 3/8" x 3-1/2", Gr. 5	2	2
49	NC-038	Hex Nut, 3/8"	2	2
50	3044265	Pin, 1" x 4-1/2"	1	1
51	0503030168	Hair Pin	1	1
52	3044273	Pin, 1" x 7.81"	4	4
53	NC-125SL	Hex Nut, Self-Locking, 1-1/4"	2	2
54	038125B5	Hex Bolt, 3/8" x 1-1/4", Gr. 5	1	1
55	3044283	Hex Jam Nut w/Tapped Hole, 2-3/4"	1	1

All items above are found in the Box-of-Parts with the exception of * items: 1, 2, 3, 4, 8, 37, 38, 39, 40A, 41A.

3043905 Frame Group - for 5 Shank Subsoiler Model - 530
3043949 Frame Group - for 7 Shank Subsoiler Model - 730



3043905 Frame Group - for 5 Shank Subsoiler
3043949 Frame Group - for 7 Shank Subsoiler

Illustration A

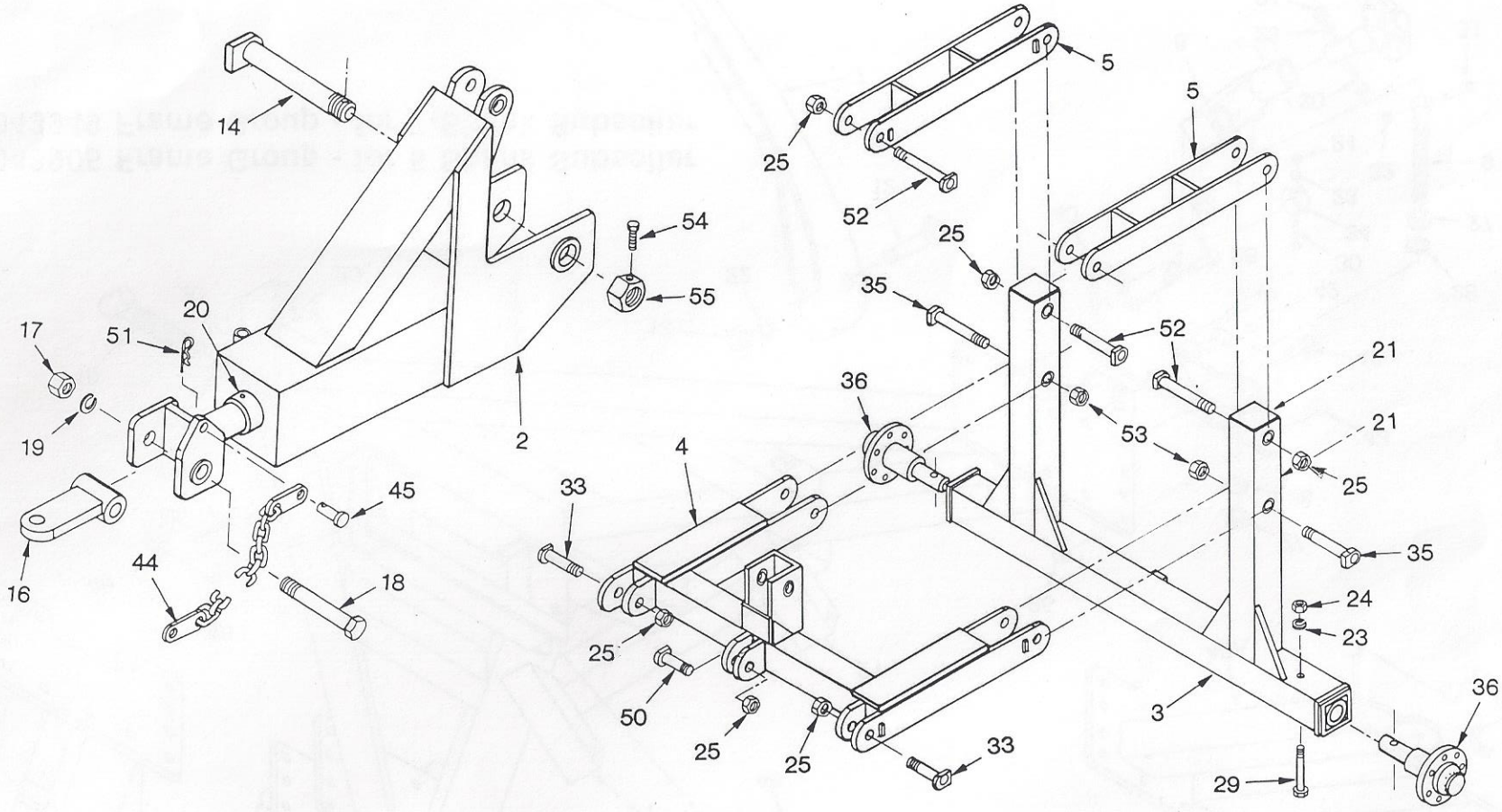
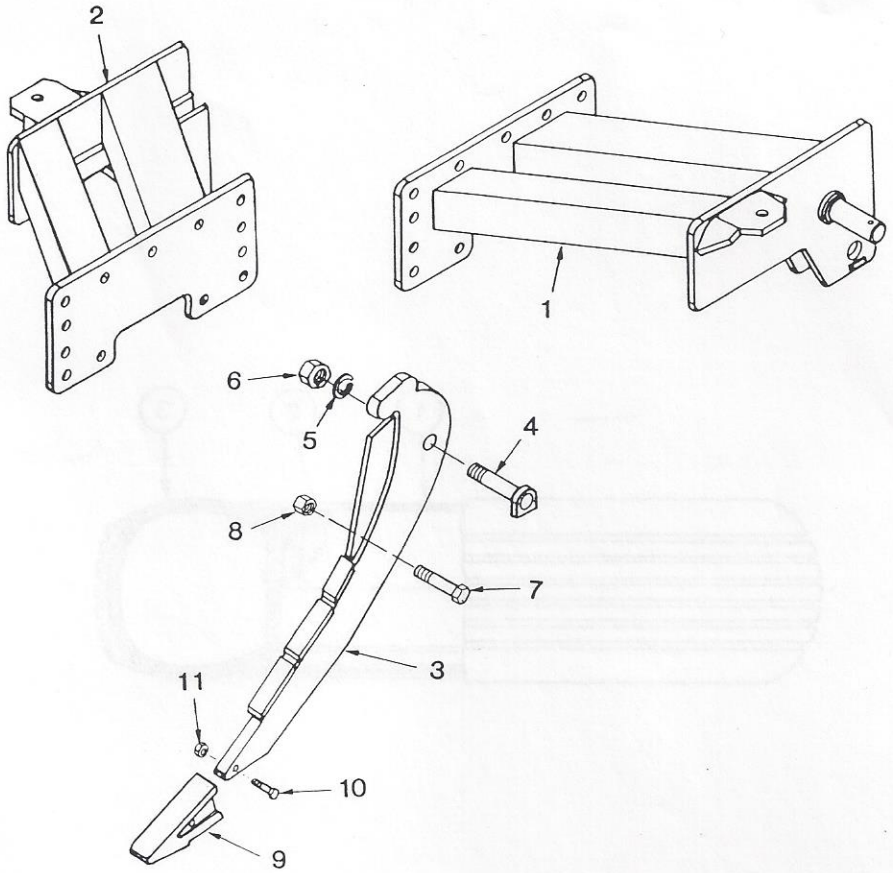


Illustration B

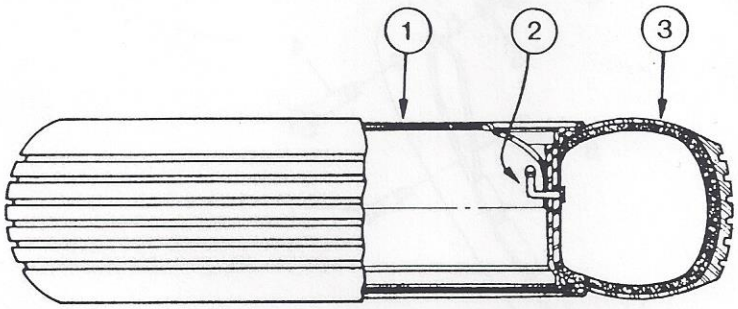
3043905 Frame Group - for 5 Shank Subsoiler
3043949 Frame Group - for 7 Shank Subsoiler



Shank Conversion Kits - Change 5 shanks to 7

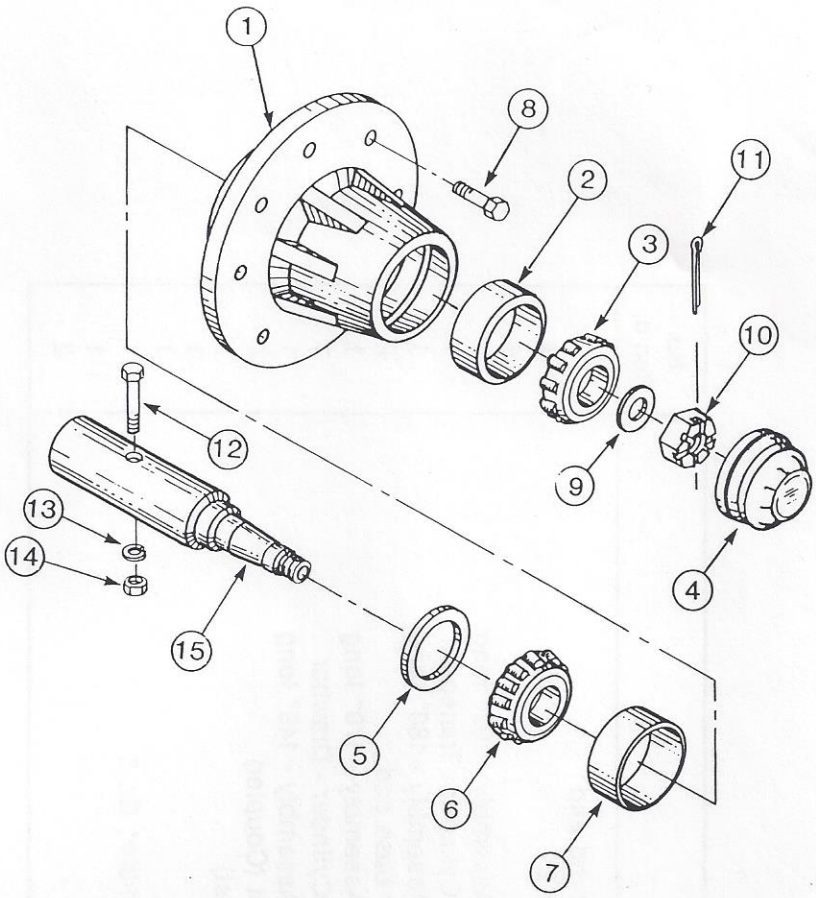
Ref. No.	Part Number	Part Name	No. Req'd. 3044289	No. Req'd. 3044257
1	3043926	Wing Assembly - Left	1	1
2	3043927	Wing Assembly - Right	1	1
3	3043900	Shank	2	2
4	3043902	Shank Pin, 2″ x 5.12″	2	2
5	LW-200	Lockwasher, 2″	2	2
6	NC-200J	Jam Nut, 2″	2	2
7	100500B5	Shear Bolt, 1″ x 5″, Gr. 5	2	2
8	NC-100SL	Hex Nut, Self-Locking, 1″	2	2
9	5005077	Cast Point Kit: or	2	—
9	3044288	Fabricated Point Kit:	—	2
10	050325B5	Hex Bolt, 1/2″ x 3-1/4″	2	—
10	050300B5	Hex Bolt, 1/2″ x 3″	—	2
11	NC-050SL	Hex Nut, Self-Locking, 1/2″	2	2

3044289 Shank Conversion Kit with 5005077 Cast Point Kit
3044257 Shank Conversion Kit with 3044288 Fabricated Point Kit



Ref. No.	Part Number	Part Name	No. Req'd.
1	3004827	Wheel - 10" x 16", 8 Bolt	4
2	FW-84-4	Valve System	4
3	3004828	12.5L - 16, 8 Ply Tire	4

3044287 - Wheel and Tire Group



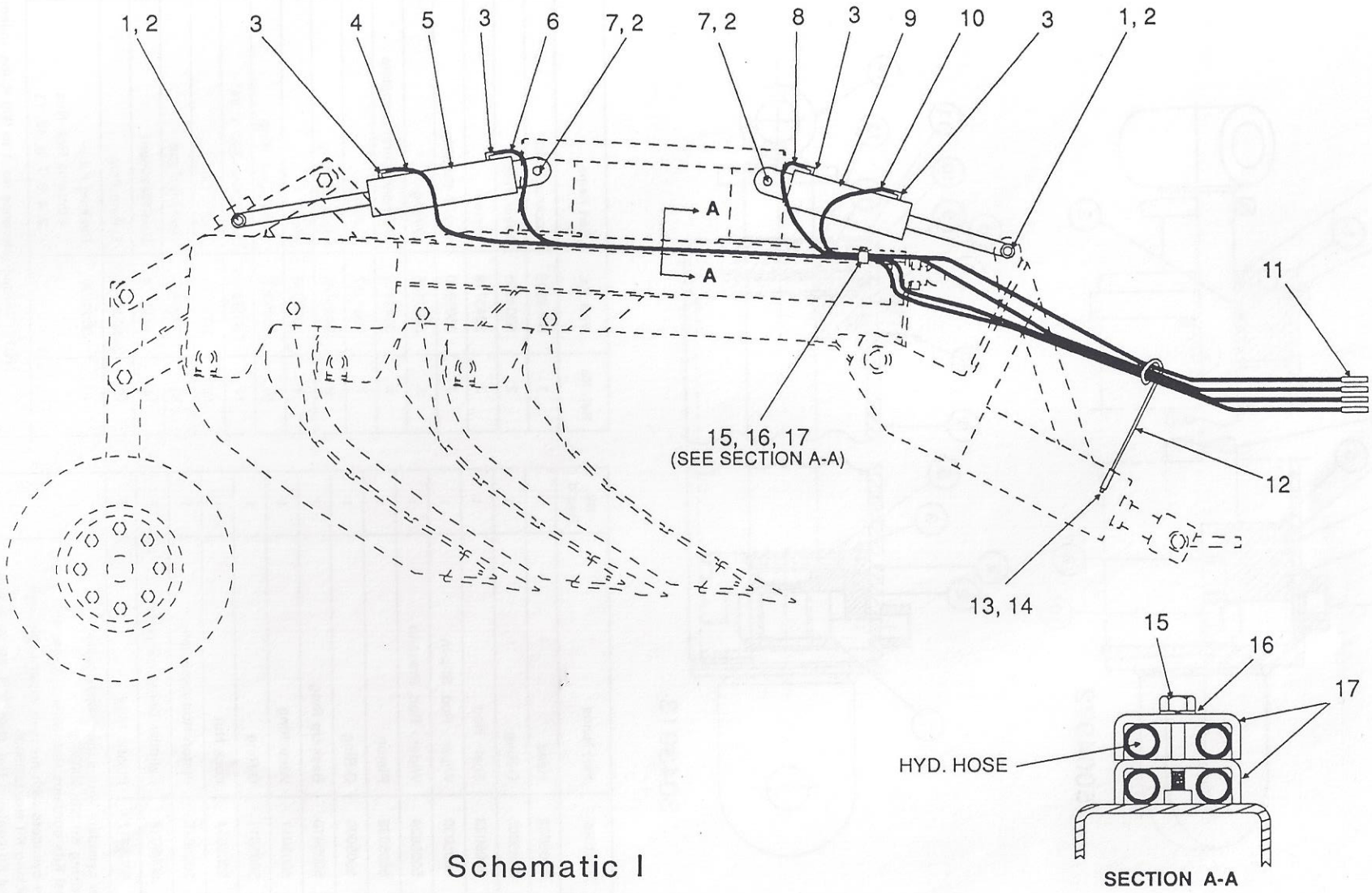
	3027033 * CTD	0501044227 * TATU	* Name of manufacturer cast in bearing housing for identification.	
Ref. No.	Part Number	Part Number	Part Name	No. Req'd.
—	5004974	—	Hub Assembly, Complete:	1
1	5004997	0502010960	Hub	1
2	5004998	0503011156B	Outer Cup	1
3	5004999	0503011156A	Outer Cone	1
4	5005000	0511012495	Dust Cap	1
5	5005001	0503011155	Seal	1
6	5005002	0503010008A	Inner Cone	1
7	5005003	0503010008B	Inner Cup	1
8	3005217	0503011152	Wheel Bolt	8
9	FW-100H	0511012492	Flatwasher, 1" - Hardened	1
10	NF-100S	0503030009	Slotted Hex Nut, 1"	1
11	CK-19150	0503010018	Cotter Key	1
12	050400B8	050400B8	Hex Bolt, 1/2" x 4"	Ref.
13	LW-050	LW-050	Lockwasher, 1/2"	Ref.
14	NC-050	NC-050	Hex Nut, 1/2"	Ref.
15	3027006	0511012493	Spindle	1

Items listed above are included in Box-of-Parts.

3027033 - 8 Bolt Hub Assembly (Canadien Tool and Die)
0501044227 - 8 Bolt Hub Assembly (TATU)

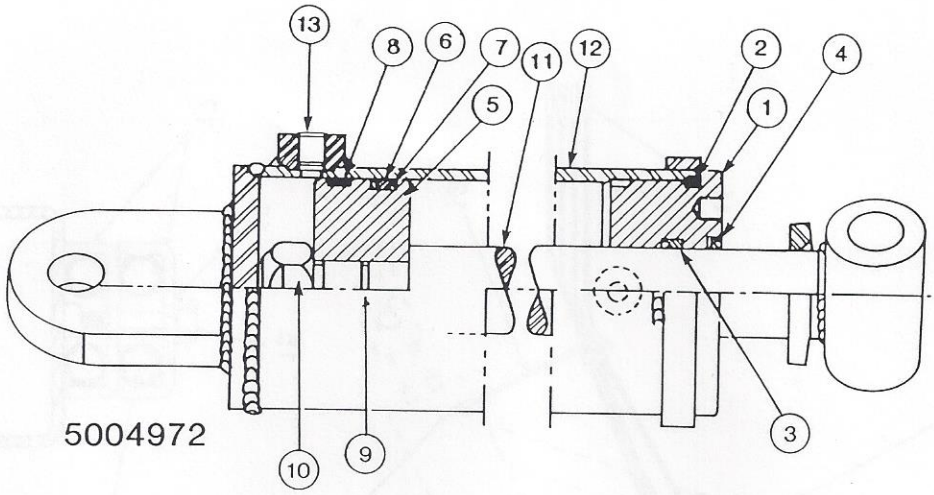
Ref. No.	Part Number	Part Name	No. Req'd.
1	3044264	Cylinder Pin - for rod end	2
2	CK-025200	Cotter Key, 1/4" x 2"	4
3	500611	90 Degree Elbow	4
4	3043821	Hydraulic Hose Assembly - 192" long	1
5	5004975	5 x 16 Hydraulic Cylinder - Transport	1
6	3043820	Hydraulic Hose Assembly - 180" long	1
7	0501018044	Cylinder Pin - for base end	2
8	3043819	Hydraulic Hose Assembly - 170" long	1
9	5004972	5 x 12 Hydraulic Cylinder - Drawbar	1
10	3043818	Hydraulic Hose Assembly - 148" long	1
11	5004267	Quick Disconnect (Coupler)	4
12	0501064054	Hose Holder (Mast)	1
13	LW-075	Lockwasher, 3/4"	1
14	NC-075	Hex Nut, 3/4"	1
15	038175B5	Hex Bolt, 3/8" x 1-3/4", Gr. 5	1
16	LW-038	Lockwasher, 3/8"	1
17	TBX-50	Hose Clamp	2

3043811 — Hydraulic Group - for Models 530 and 730

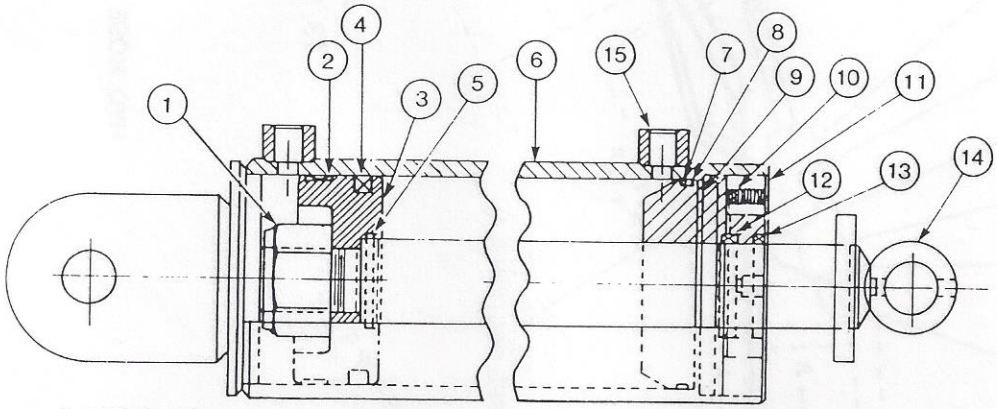


Schematic I

3043811 — Hydraulic Group - for Models 530 and 730



5004972



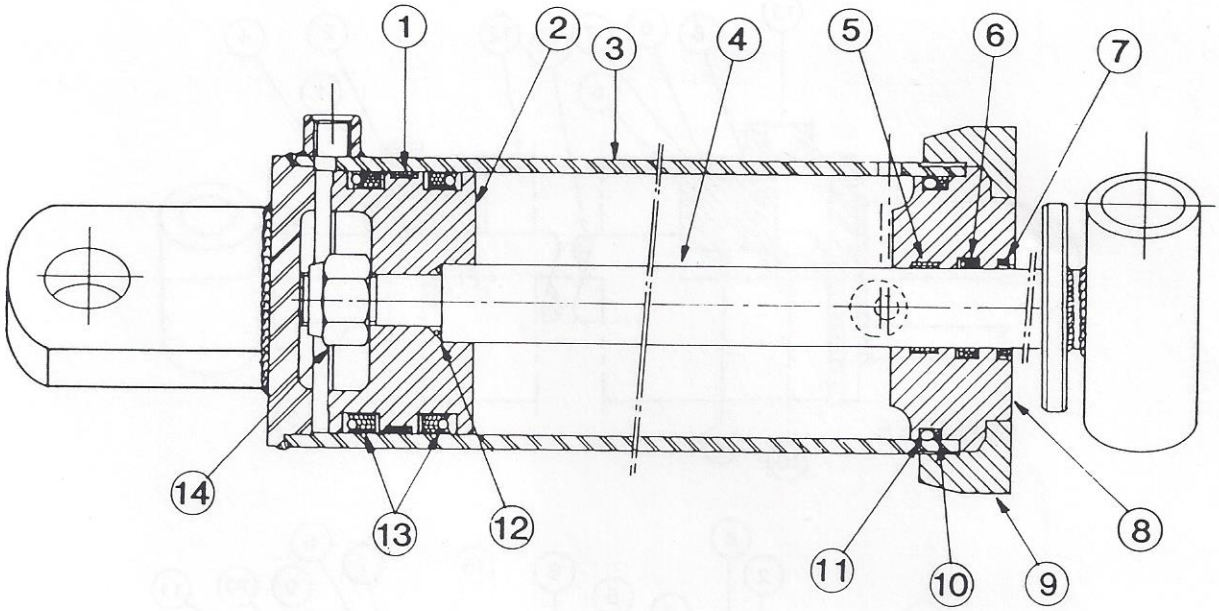
3043913

Ref. No.	Part No.	Part Name	No. Req'd.
1	5005022	Head	1
2	5005005	O-Ring	1
3	5005023	Seal - Rod	1
4A	5005030	Wiper - Rod, Slip-In	1
4B	5005024	Wiper - Rod, Press-In	1
5	5005032	Piston	1
6	5005009	O-Ring	1
7	5005010	Back-Up Ring	2
8	5005011	Wear Ring	1
9	5005013	O-Ring	1
10	5005014	Lock Nut	1
11	5005025	Piston Rod Assembly	1
12	5005028	Cylinder Barrel Assembly	1
13	5005017	Plastic Plug	2
Note: For cylinders with slip-in wiper seals, use Packing Kit No. 5005020. Seal Kits contains Ref. Nos. 2, 3, 4A, 6, 7, 8, 9.			1
Note: For cylinders with press-in wiper seals, use Packing Kit No. 5005026. Seal Kit contains Ref. Nos. 2, 3, 4B, 6, 7, 8, 9.			1

5004972 - 5" x 12" Cylinder Assembly

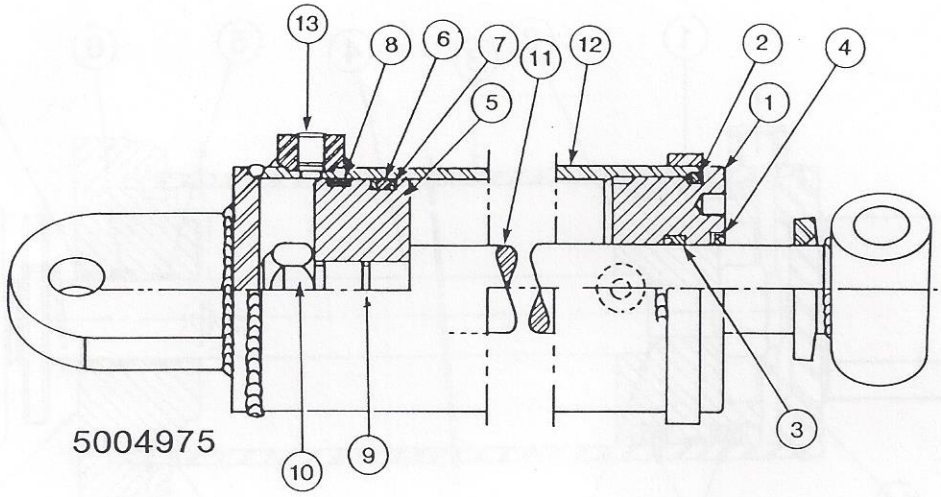
Ref. No.	Part No.	Part Name	No. Req'd.
1	NF-150E	Locknut, 1-1/2"	1
2	5004995	Wear Ring	1
3	3043718	Piston	1
4	3005830	Seal Assembly	1
5	5001186	O-Ring	1
6	3043915	Cylinder Barrel Complete	1
7	5001187	O-Ring	1
8	5001185	Back-Up Ring	1
9	3005353	Head	1
10	3005308	Gland Lock Ring	1
11	SS-038075	Set Screw, 3/8" x 3/4"	1
12	3006021	Seal U-Cup	1
13	3006020	Seal Lip Type	1
14	3043914	Rod Weldment	1
15	5000753	O-Ring Plug	2
	5004996	Packing Kit — Contains Ref. Nos. 2, 4, 5, 7, 8, 12, 13.	1
NOTE: Torque reference no. 1 to 900 ft./lbs. (oiled)			

3043913 - 5" x 12" Cylinder Assembly

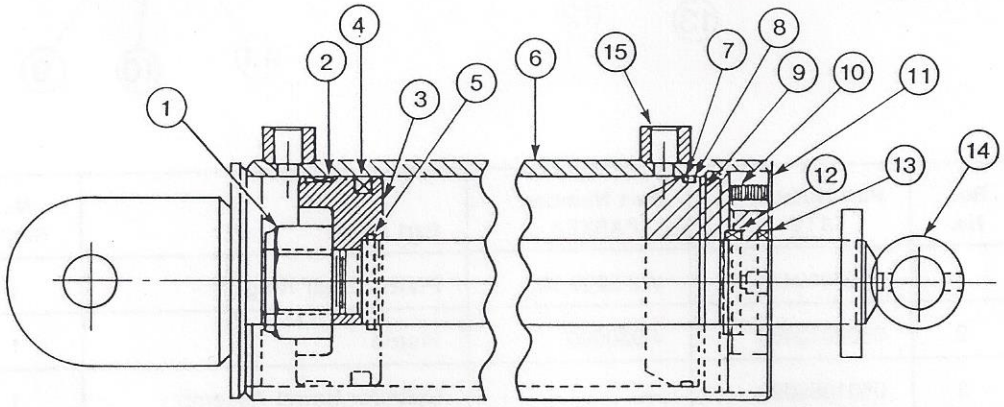


Ref. No.	Part Number TATU	Part Number PARKER	Part Name	No. Req'd.
1	0503010474	W2-5000-500	Piston Wear Ring	1
2	0502010463	4-930090	Piston	1
3	0501066093	—	Cylinder Barrel Assembly	1
4	0501066096	—	Piston Rod Assembly	1
5	0503010952	W2-2250-500	Rod Wear Ring	1
6	0503010991	1870-2000-375B	Rod Seal	1
7	0503010039	D-2000	Rod Wiper	1
8	0502010962	4-930089	Head	1
9	051102590	—	Gland Nut	1
10	0503011062	8-425	Gland Back-Up Ring	1
11	0501030469	2-425-N3006-9B	Gland O-Ring	1
12	0503010042	2-214-N3006-9B	Piston O-Ring	1
13	0503010552	3750-4250-625B	Piston Seal	2
14	0503010044	—	Lock Nut, 1-1/4", NF	1
		PACKING KIT — Contains Ref. Nos. 1, 5, 6, 7, 10, 11, 12, 13.		1

0501044229 - 5" x 12" Cylinder Assembly



5004975



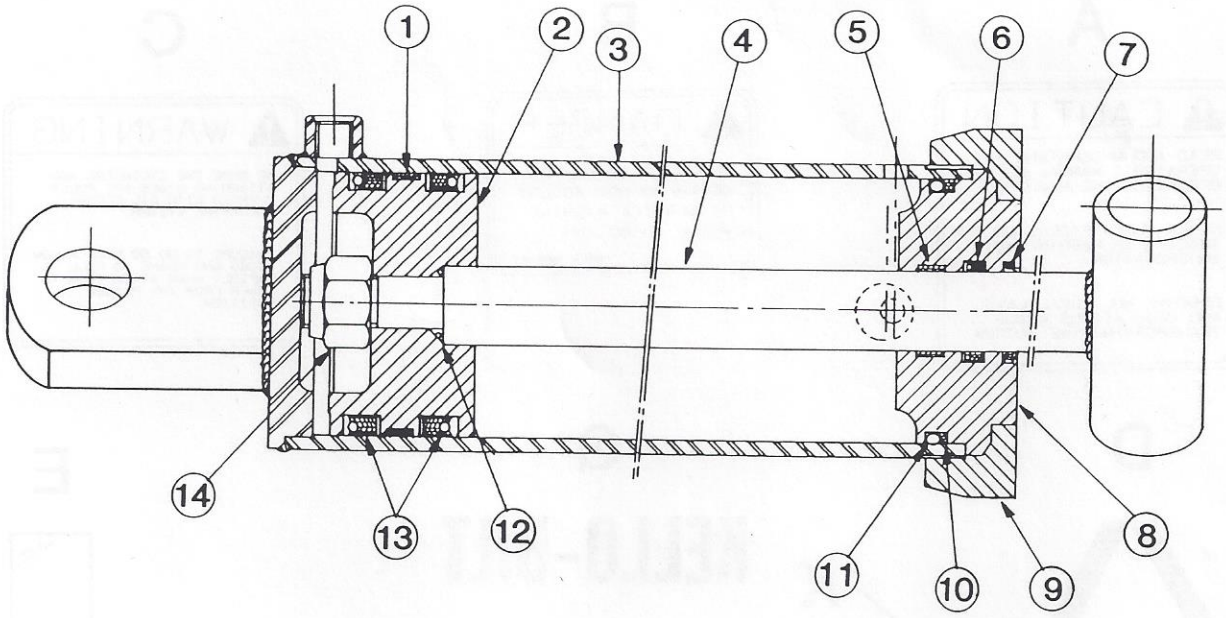
3043932

Ref. No.	Part No.	Part Name	No. Req'd.
1	5005022	Head	1
2	5005005	O-Ring	1
3	5005023	Seal - Rod	1
4A	5005030	Wiper - Rod, Slip-In	1
4B	5005024	Wiper - Rod, Press-In	1
5	5005032	Piston	1
6	5005009	O-Ring	1
7	5005010	Back-Up Ring	2
8	5005011	Wear Ring	1
9	5005013	O-Ring	1
10	5005014	Lock Nut	1
11	5005027	Piston Rod Assembly	1
12	5005029	Cylinder Barrel Assembly	1
13	5005017	Plastic Plug	2
Note: For cylinders with slip-in wiper seals, use Packing Kit No. 5005034. Seal Kits contains Ref. Nos. 2, 3, 4A, 6, 7, 8, 9.			1
Note: For cylinders with press-in wiper seals, use Packing Kit No. 5005035. Seal Kit contains Ref. Nos. 2, 3, 4B, 6, 7, 8, 9.			1

5004975 - 5″ x 16″ Cylinder Assembly

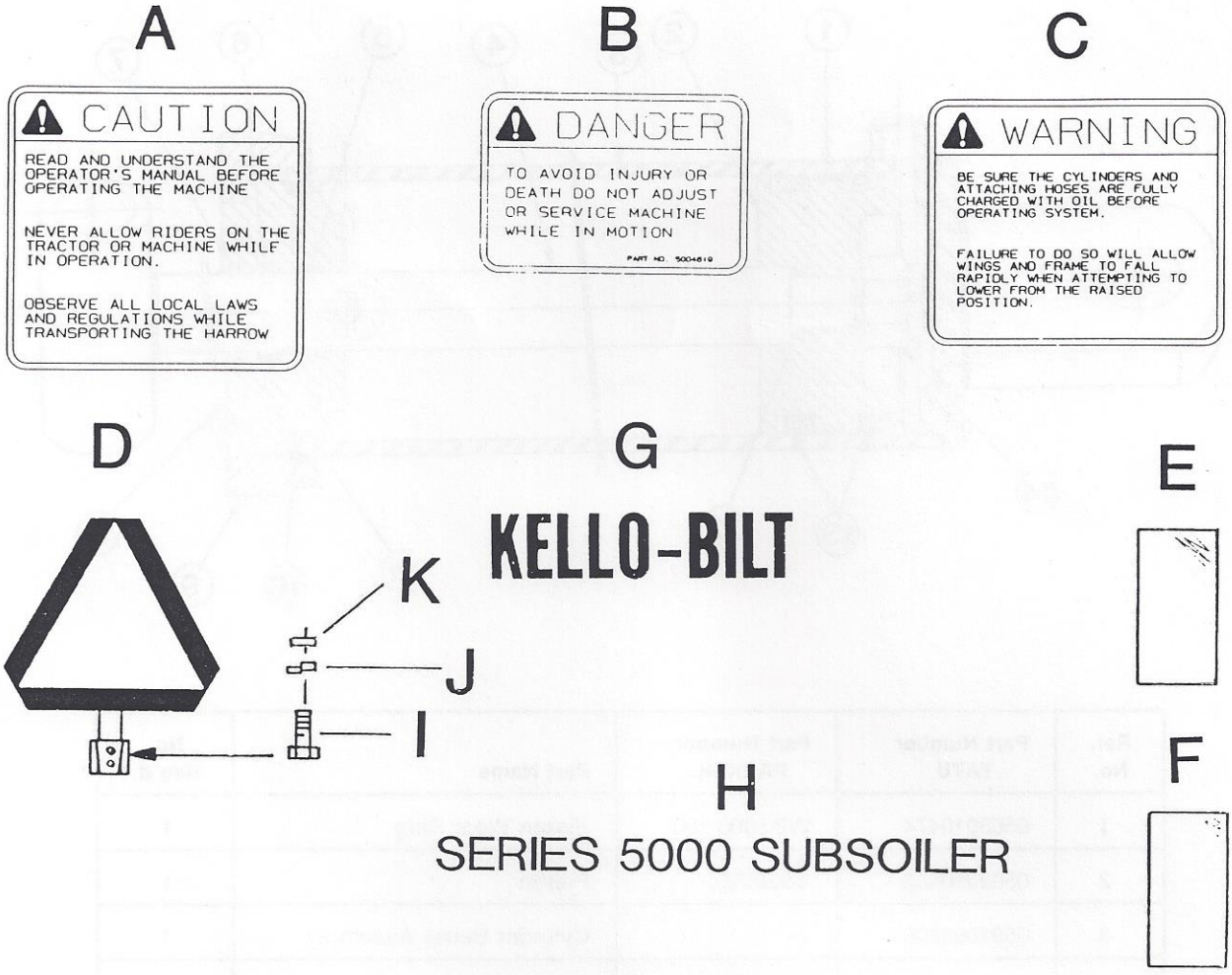
Ref. No.	Part No.	Part Name	No. Req'd.
1	NF-150E	Locknut, 1-1/2″	1
2	5004995	Wear Ring	1
3	3043718	Piston	1
4	3005830	Seal Assembly	1
5	5001186	O-Ring	1
6	3043935	Cylinder Barrel Complete	1
7	5001187	O-Ring	1
8	5001185	Back-Up Ring	1
9	3005353	Head	1
10	3005308	Gland Lock Ring	1
11	SS-038075	Set Screw, 3/8″ x 3/4″	1
12	3006021	Seal U-Cup	1
13	3006020	Seal Lip Type	1
14	3043934	Rod Weldment	1
15	5000753	O-Ring Plug	2
	5004996	Packing Kit — Contains Ref. Nos. 2, 4, 5, 7, 8, 12, 13.	1
NOTE: Torque reference no. 1 to 900 ft./lbs. (oiled)			

3043932 - 5″ x 16″ Cylinder Assembly



Ref. No.	Part Number TATU	Part Number PARKER	Part Name	No. Req'd.
1	0503010474	W2-5000-500	Piston Wear Ring	1
2	0502010463	4-930090	Piston	1
3	0501066106	—	Cylinder Barrel Assembly	1
4	0501066105	—	Piston Rod Assembly	1
5	0503010952	W2-2250-500	Rod Wear Ring	1
6	0503010991	1870-2000-375B	Rod Seal	1
7	0503010039	D-2000	Rod Wiper	1
8	0502010962	4-930089	Head	1
9	051102590	—	Gland Nut	1
10	0503011062	8-425	Gland Back-Up Ring	1
11	0501030469	2-425-N3006-9B	Gland O-Ring	1
12	0503010042	2-214-N3006-9B	Piston O-Ring	1
13	0503010552	3750-4250-625B	Piston Seal	2
14	0503010044	—	Lock Nut, 1-1/4", NF	1
		PACKING KIT — Contains Ref. Nos. 1, 5, 6, 7, 10, 11, 12, 13.		1

0501044231 - 5" x 16" Cylinder Assembly



Ref. No.	Part Number	Part Name	No. Req'd.
A	5004619	DANGER - Decal	1
B	5004616	CAUTION - Decal	1
C	5004617	WARNING - Decal	1
D	5004770	SMV Reflector - Emblem	1
—	5004771	- Staff	1
—	5004772	- Base	1
E	5002719	Red Reflector - Stick-On	2
F	5002720	Amber Reflector - Stick-On	1
G	5004969	Kello-Bilt - Decal	2
H	5005054	Series 5000 Subsoiler - Decal	2
I	031050B5	Hex Bolt, 5/16" x 1/2", Grade 5	2
J	LW-031	Lockwasher, 5/16"	2
K	FW-031	Flatwasher, 5/16"	2

All items listed above are included in the Box-of-Parts.

3044036 Safety Decal Group - Series 5000

Ref. No.	Part Number	Part Name	No. Req'd. 3044284	No. Req'd. 3044285
1	3043161	Transport Linkage Asb'ly.	2	2
2	3043646	Gauge Wheel Arm, Left	1	1
3	3043900	Shank	5	7
4	3043909	Gauge Wheel Adjusting Rod	2	2
5	3043885	Depth Gauge Rod	1	1
6	3043647	Gauge Wheel Arm, Right	1	1
7	3043902	Shank Pin, 2" x 5.12"	5	7
8	NC-200J	Jam Nut, 2"	5	7
9	3043882	Drawbar Mount Pin, 2-3/4" x 16.31"	1	1
10	NC-275J	Jam Nut, 2-3/4"	1	1
11	3043668	Hitch Assembly	1	1
12	NC-150J	Jam Nut, 1-1/2"	1	1
13	1501100B5	Hex Bolt, 1-1/2" x 11", Gr. 5	1	1
14	LW-150	Lockwasher, 1-1/2"		
15	AL-012ZK	Grease Fitting - Standard	5	5
16	AL-012ZL	Grease Fitting - Long	6	6
17	LW-200	Lockwasher, 2"	5	7
18	LW-050	Lockwasher, 1/2"	6	6
19	NC-050	Hex Nut, 1/2"	6	6
20	NC-100SL	Hex Nut, Self-Locking, 1"	34	36
21	100500B5	Shear Bolt, 1" x 5", Gr. 5	5	7
22	FW-150	Flatwasher, 1-1/2"	4	4
23	NC-150	Hex Nut, 1-1/2"	4	4
24	050600B5	Hex Bolt, 1/2" x 6", Gr. 5	2	2
25	050500B5	Hex Bolt, 1/2" x 5", Gr. 5	4	4
26	075400B5	Hex Bolt, 3/4" x 4", Gr. 5	2	2
27	NC-075SL	Hex Nut, Self-Locking, 3/4"	2	2
28	3043992	Pin, 1" x 5-1/2"	2	2
29	3043618	Wheel Mount Collar	2	2
30	3044016	Pin, 1-1/4" x 8.12"	6	6
31	3027033	Hub and Spindle Ass'y.	4	4
32	3043606	Gauge Wheel Bolting Plate - Left	1	—
33	3043613	Gauge Wheel Bolting Plate - Right	1	—
34	100200B5	Hex Bolt, 1" x 2", Gr. 5	6	6
35	100300B5	Hex Bolt, 1" x 3", Gr. 5	20	20
36	0501064004	Safety Chain	1	1
37	0501018043	Pin, 3/4" x 2-3/4"	1	1
38	3044012	Cylinder Lock Assembly - 13"	1	1
39	3044011	Cylinder Lock Assembly - 17"	1	1
40	038350B5	Hex Bolt, 3/8" x 3-1/2", Gr. 5	2	2
41	NC-038	Hex Nut, 3/8"	2	2
42	3044265	Pin, 1" x 4-1/2"	1	1
43	0503030168	Hair Pin	1	1
44	3044273	Pin, 1" x 7.81"	4	4
45	NC-125SL	Hex Nut, Self-Locking, 1-1/4"	2	2
46	038125B5	Hex Bolt, 3/8" x 1-1/4", Gr. 5	1	1
47	3044283	Hex Jam Nut with Tapped Hole, 2-3/4"	1	1

3044284 Box-of-Parts for Model 530 Subsoiler - 5 Shank
3044285 Box-of-Parts for Model 730 Subsoiler - 7 Shank

Series 5000 Deep Tillage Subsoilers

Assembly and Operating Instructions

INTRODUCTION

Carefully read this manual to determine how to properly operate and service your models 530 and 730 subsoilers. They were designed to achieve maximum penetration with minimal horsepower requirements. This was made possible through the use of long curved Parabolic Shanks arranged in a V-type configuration. In order to take full advantage of the benefits of this concept, the operating procedures outlined in this manual should be followed.

This manual should remain with the implement when you trade or sell it.

The right-hand and left-hand sides of the implement are determined by facing in the direction the implement will travel when moving forward.

Accurately record all the numbers showing on the serial number plate for reference when ordering parts or in case the implement is stolen.

Warranty is provided to assure you that the manufacturer will stand behind its products should defects appear within the warranty period. If the equipment is abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and repairs may be denied. Refer to the Warranty page, Section VI, of this manual for specific details and information contained in that document.

All specifications, illustrations and information that appear in this manual are based on current product information at the time of publication. We reserve the right to change material and specifications, at any time, without prior notification.

Reference to one or more of the drawings listed below are found in each assembly step. These visual aids will assist in the assembly of your implement.

TO THE OWNER

Your new subsoiler is designed to meet today's exacting operating requirements. The ease of operation and ability to adjust to field conditions lighten your work load and shorten your hours on the job.

Be sure to read the instructions for adjusting and operating the implement found in the operators manual. Check each item referred to and acquaint yourself with the adjustments required to obtain efficient operation and maximum trouble-free performance. Remember, an implement which is properly lubricated and adjusted saves time, labor, and fuel.

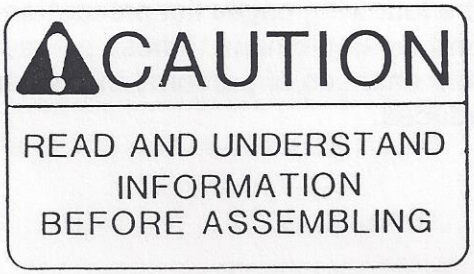
After the operating season, thoroughly clean your implement and inspect it. Preventive maintenance pays dividends. Your dealer has original equipment parts which assure proper fit and best performance.

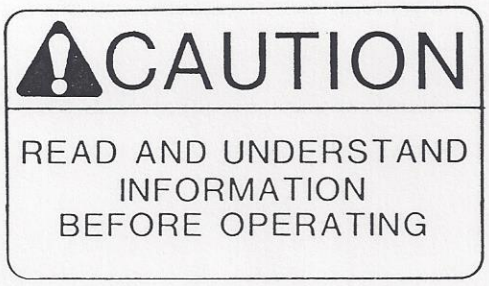
Your subsoiler has been designed for safe operation. You and your employees must follow certain precautions when operating and servicing the implement to prevent personal injury. The following pages list precautions that should be taken when working in and around the implement. If these precautions are followed and common sense is used, the chances of personal injury while operating and servicing the unit will be reduced.

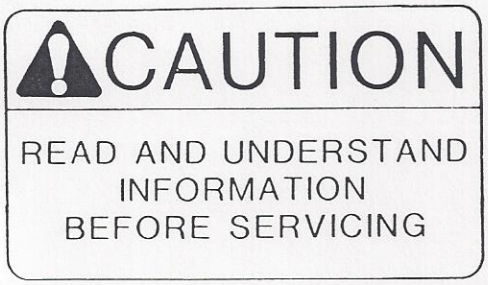
I. SAFETY

ACCIDENTS CAN BE PREVENTED

Without the complete co-operation of the implement operator, no accident prevention program can be successful. Many accidents can be prevented by the operator anticipating the result before the accident occurs and taking steps to remedy the situation. No power-driven equipment, whether it be transportation or processing . . . on the highway, in the field or shop, can be safer than the man who is at the controls. If accidents are to be prevented . . . it will be accomplished by equipment operators who accept these responsibilities seriously. Elimination of careless acts and unsafe operating practices will be a help in getting your safety program off to a good start.







⚠ ASSEMBLY SAFETY ⚠

1. **HANDLE THE SHANK ASSEMBLIES WITH CARE.**

   The shanks are heavy and unwieldly to handle. Carefully wrap chains or straps around standards when lifting with hoist. Wear gloves when handling the shank assemblies.

2. **SUPPORT THE FRAME DURING ASSEMBLY.**

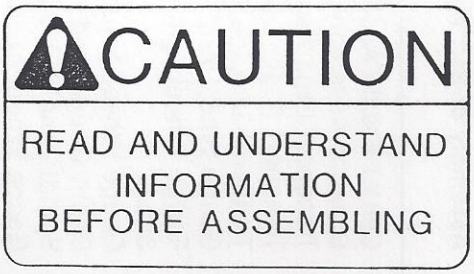
   Support the centerframe with stands that are in good condition and that are capable of handling the weight of the assembly. Be sure that the supports are on a clean dry surface.

3. **PURGE AIR FROM THE HYDRAULIC SYSTEM BEFORE OPERATION.**

   After connecting the hydraulic lines, carefully cycle the hydraulic cylinders several times to purge air from the hydraulic system. Visually check all connections for leaks before cycling the hydraulic cylinders.

4. **NEVER USE YOUR HANDS TO CHECK FOR HYDRAULIC LEAKS.**

   Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin causing serious personal injury. If injured by escaping hydraulic fluid, obtain medical treatment immediately.



II. ASSEMBLY/SET-UP INSTRUCTIONS

Ref. No.	Assembly or Part Name	Where Shown • Figure 1	Figure 2	Figure 3
1	Center Frame Assembly	•	•	•
2	Drawbar Assembly	•	•	
3	Transport Legs Assembly	•	•	•
4	Transport Assembly		•	•
5	Transport Linkage Assembly	•	•	•
6	Gauge Wheel Arm - Left		•	
7	Gauge Wheel Arm - Right	•		
8	Shank	•		•
9	Gauge Wheel Adjusting Rod	•		•
10	Depth Gauge Rod	•		
11	Spindle and Hub Assembly		•	•
12	Gauge Wheel Assembly	•	•	•
13	Transport Wheel Assembly	•	•	•
14	Transport Cylinder - 5 x 16	•	•	•
15	Drawbar Cylinder - 5 x 12	•	•	•
16	Safety Chain	•	•	

Model 530 - 5 Shank Subsoiler - See figures 1, 2 and 3

II. ASSEMBLY/SET-UP INSTRUCTIONS

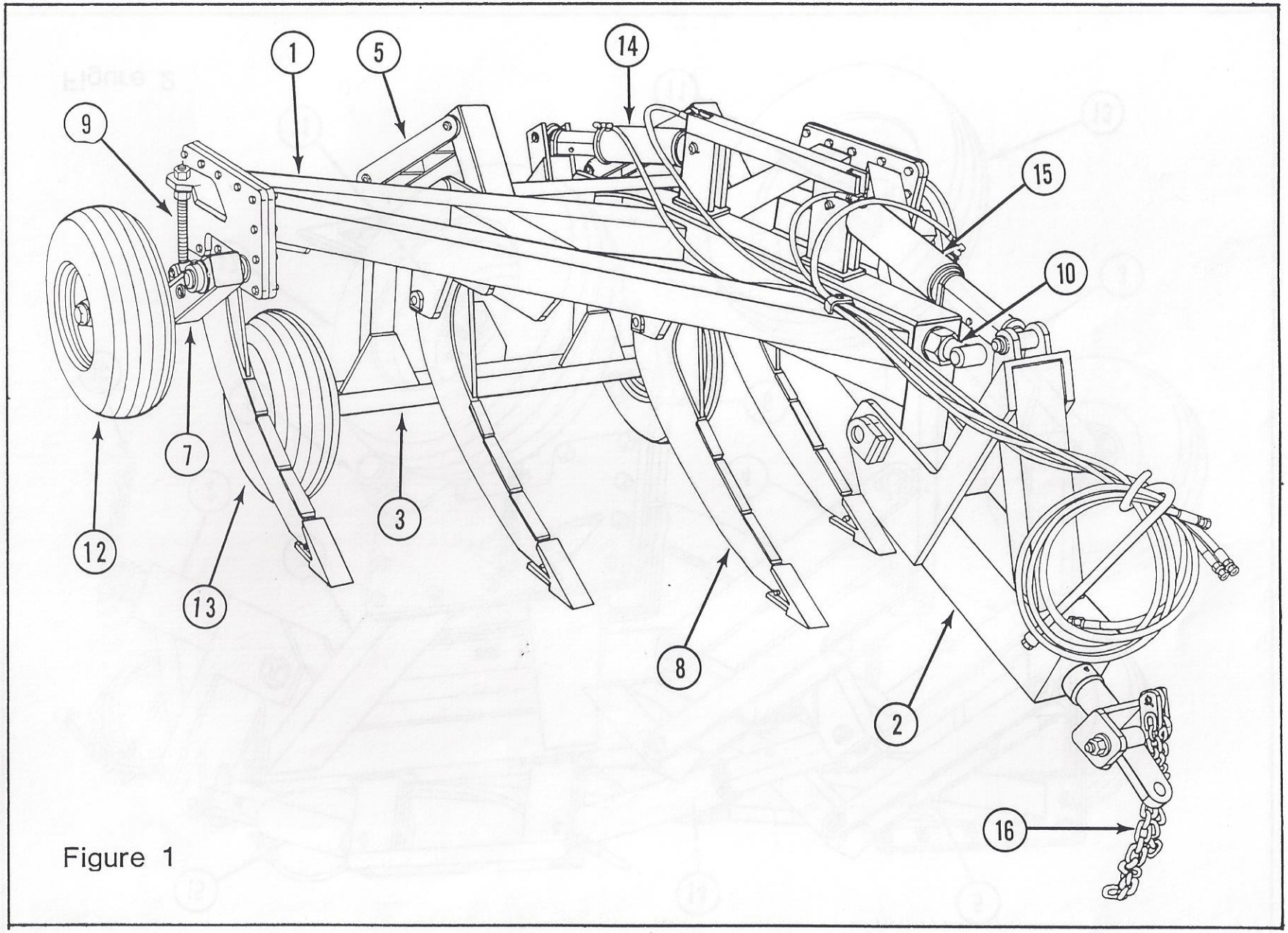


Figure 1

Model 530 – 5 Shank Subsoiler

II. ASSEMBLY/SET-UP INSTRUCTIONS

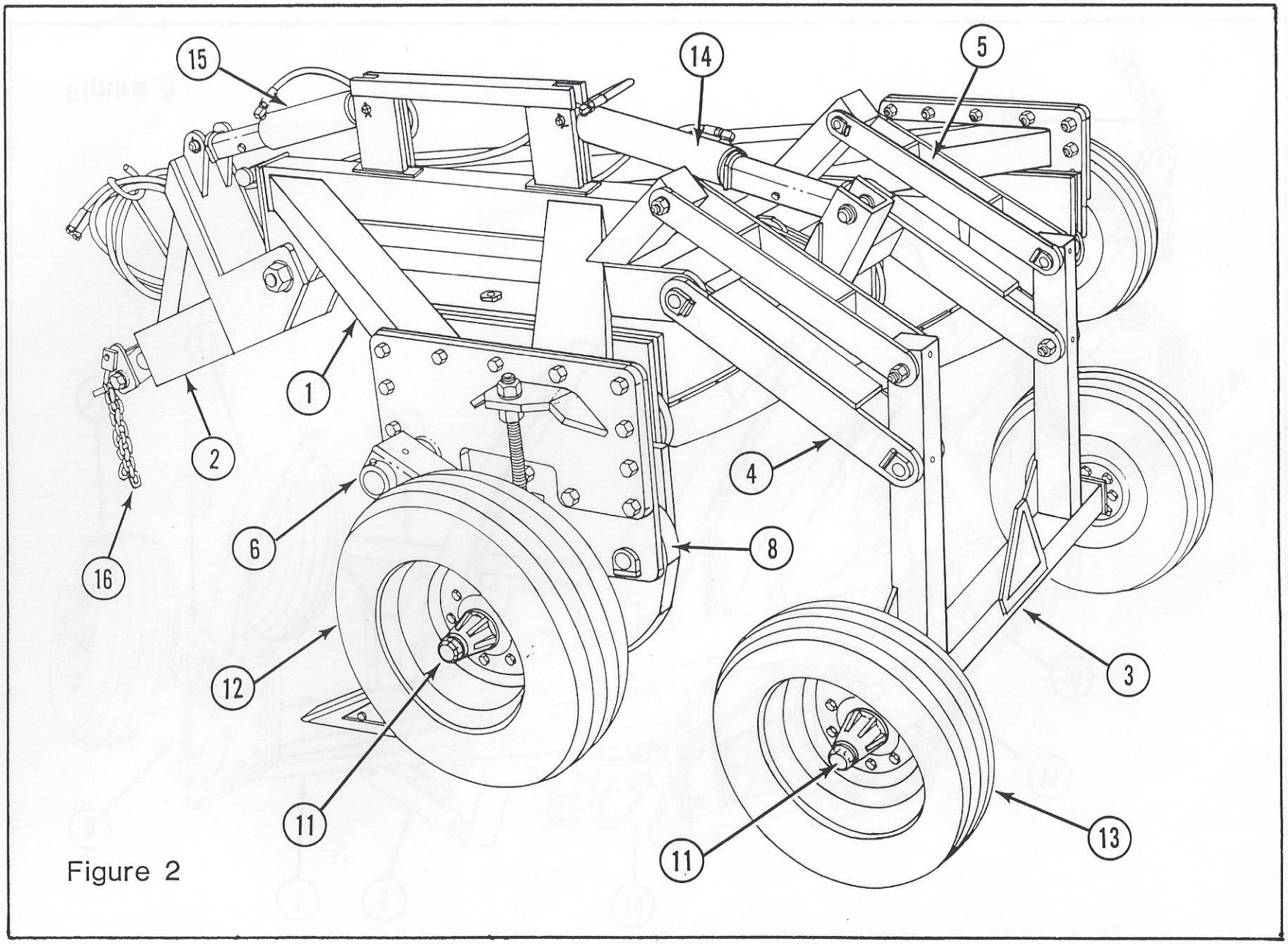


Figure 2

Model 530 – 5 Shank Subsoiler

II. ASSEMBLY/SET-UP INSTRUCTIONS

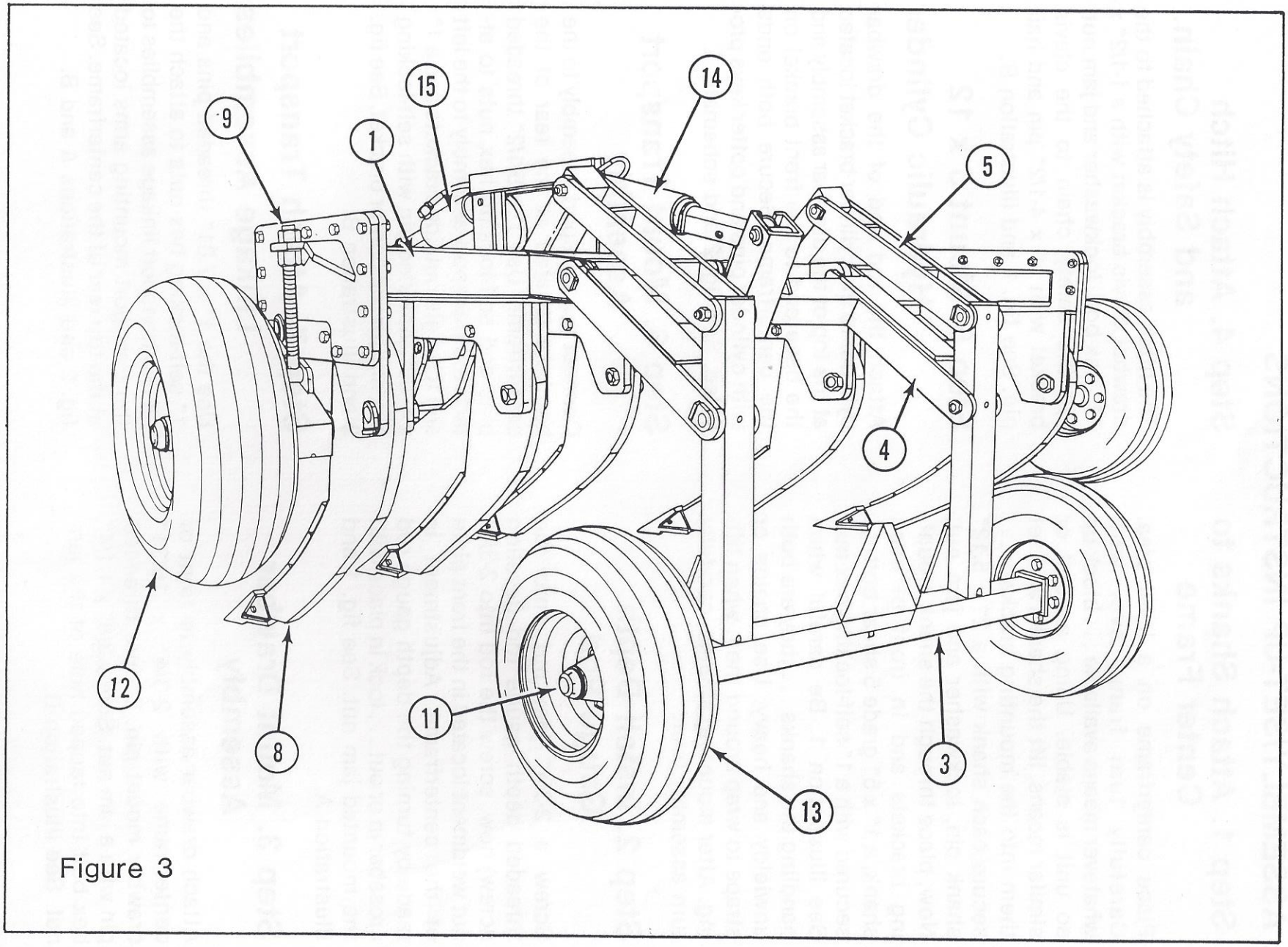


Figure 3

Model 530 – 5 Shank Subsoiler

II. ASSEMBLY/SET-UP INSTRUCTIONS

Step 1. Attach Shanks to Center Frame

Place centerframe on a level area. Carefully turn frame over with whatever means available . . . block up so unit is stable. Using a hoist or similar means, lift the shanks and set them into the mounting brackets . . . secure each shank with a 2" x 5.12" shank pin, lockwasher and jam nut. Now, place through the shank mounting brackets and in front of each shank, a 1" x 5" grade 5 shear bolt . . . secured with a 1" self-locking hex nut. See illustration 1. Be careful when handling the shanks . . . they are both unwieldy and heavy. Use chains or straps to wrap around them when lifting. After mounting shanks, carefully turn assembly over.

Step 2. Install Depth Gauge Rod

Screw a 2-3/4" jam nut onto the threaded depth gauge rod (leveling screw) now, screw the rod into 2-3/4" nut weldment located in the front plate of the centerframe. Adjustment is made by turning the depth gauge rod crossbar in or out . . . lock in place with the mounted jam nut. See fig. 1 and illustration A.

Step 3. Mount Drawbar Assembly

Attach drawbar assembly to front of centerframe with 2-3/4" x 16.31" drawbar mount pin. Secure threaded pin with a jam nut. Screw 3/8" x 1-1/4" hex bolt into tapped hole of the jam nut. See illustration B.

Step 4. Attach Hitch and Safety Chain.

The hitch assembly is attached to the drawbar clevis bracket with a 1-1/2" x 11" hex bolt, lockwasher and jam nut. Pin the safety chain to the clevis bracket with 1" x 4-1/2" pin and hair pin. See fig. 1 and illustration B.

Step 5. Mount 5 x 12 Hydraulic Cylinder

Attach the rod end of the drawbar cylinder to the cylinder bracket located at the top of the drawbar assembly and the base end to the front bracket on the centerframe. Secure both ends with cylinder pins and cotter keys provided. See fig. 2 and schematic I.

Step 6. Mount Transport Assembly

Connect the transport assembly to the brackets located at the rear of the centerframe. Use 1" x 5-1/2" threaded pins and self-locking hex nuts to attach the transport assembly to the left and the right outside brackets and a 1" x 4-1/2" threaded pin with self-locking hex nut for the center bracket. See fig. 2 and illustration B.

Step 7. Attach Transport Linkage Assemblies

Use the 1" x 7.81" threaded pins and 1" self-locking hex nuts to attach the (2) two transport linkage assemblies to the transport mounting arms located at the top rear of the centerframe. See fig. 2 and illustrations A and B.

II. ASSEMBLY/SET-UP INSTRUCTIONS

Step 8. Mount Transport Leg Assembly

With the transport leg assembly in the upright position, connect both transport linkage assemblies to the top set of holes on each leg of the assembly . . . secure with 1″ x 7.81″ threaded pins and 1″ self-locking hex nuts. Now, connect the attaching brackets located on the transport assembly to the bottom set of holes on each leg of the leg assembly with 1-1/4″ x 8.12″ threaded pins and 1-1/4″ self-locking hex nuts. See fig. 2 and illustration B.

Step 9. Attach Spindles, Hubs and Wheel Assemblies - Transport

Insert spindles into round tubing of transport leg assembly and bolt into place with 1/2″ x 6″ hex bolts, lockwashers and nuts. Attach hub assemblies to spindles . . . secure with 1″ slotted hex nuts and cotter keys (part of hub assembly). Mount wheels on hubs with (8) eight (lug) wheel bolts provided. See fig. 2 and illustration B. Be sure valve stem is on the outside of the wheel. Care should be taken to ensure the tapered rim bolt holes match the taper on the wheel bolts.

WARNING! Failure to do this will cause rim to loosen and wheel damage to occur.

NOTE! It is important that all wheel bolts are torqued to 80-100 ft./lbs.

Step 10. Mount 5 x 16 Hydraulic Cylinder

Attach the rod end of the 5 x 16 transport cylinder to the cylinder bracket located on the cross member of the transport assembly. Connect the base end to the cylinder bracket on the centerframe. Secure both ends with the cylinder pins and cotter keys provided. See fig. 2 and schematic I.

Step 11. Mount Gauge Wheel Bolting Plates - for 5 Shank Subsoiler

Attach right and left bolting plates to bolting shank mounting plates on each side of the centerframe. For each plate, use (3) three 1″ x 2″ hex bolts and (10) ten 1″ x 3″ hex bolts . . . all secured with (13) thirteen 1″ self-locking hex nuts. See fig. 2 and illustration A for bolt placement.

Step 11A. Mount Wing Assemblies and Shanks - for 7 Shank Subsoiler

Bolt right and left wing assemblies to the bolting shank mounting plates on each side of the centerframe. Use the same hardware as was used in mounting the gauge wheel mounting plates - Step 11 . . . bolt placement is identical. See illustration A. Now, carefully position a shank into the shank retaining plates on each wing assembly . . . secure with 2″ x 5.12″ shank pins, lockwashers and nuts. Be sure to put the 1″ x 5″ grade 5 shear pins with self-locking nuts in their proper place.

II. ASSEMBLY/SET-UP INSTRUCTIONS

Step 12. Mount Gauge Wheel Arms

Mount left and right gauge wheel arms on the wheel mount shafts located on the gauge wheel bolting plates (5 shank) or wing assemblies (7 shanks) and secure with wheel mount collars, 1/2" x 5" hex bolts, lockwashers and nuts. See fig. 2 and illustration A.

Step 13. Attach Spindles, Hubs and Wheel Assemblies - Gauge Wheels

Insert spindle into each gauge wheel arm sleeve and bolt into place with 1/2" x 5" hex bolts, lockwashers and nuts. Attach hub assemblies to spindles . . . secure with 1" slotted hex nuts and cotter keys (part of hub assembly). Mount wheels on hubs with (8) eight (lug) wheel bolts provided. See fig. 2 and illustration A. Be sure valve stem is on the outside of the wheel. Care should be taken to ensure the tapered rim bolt holes match the taper on the wheel bolts.

WARNING! Failure to do this will cause rim to loosen and wheel damage to occur.

NOTE! It is important that all wheel bolts are torqued to 80-10 ft./lbs.

The gauge wheels on the 5 shank model go toward the rear of the implement, while on the 7 shank model, they go toward the front.

Step 14. Attach Hydraulic Hose Holder (Mast)

Mount hose holder to bracket on right side of drawbar assembly with 3/4" lockwasher and nut. See fig. 1 and schematic I.

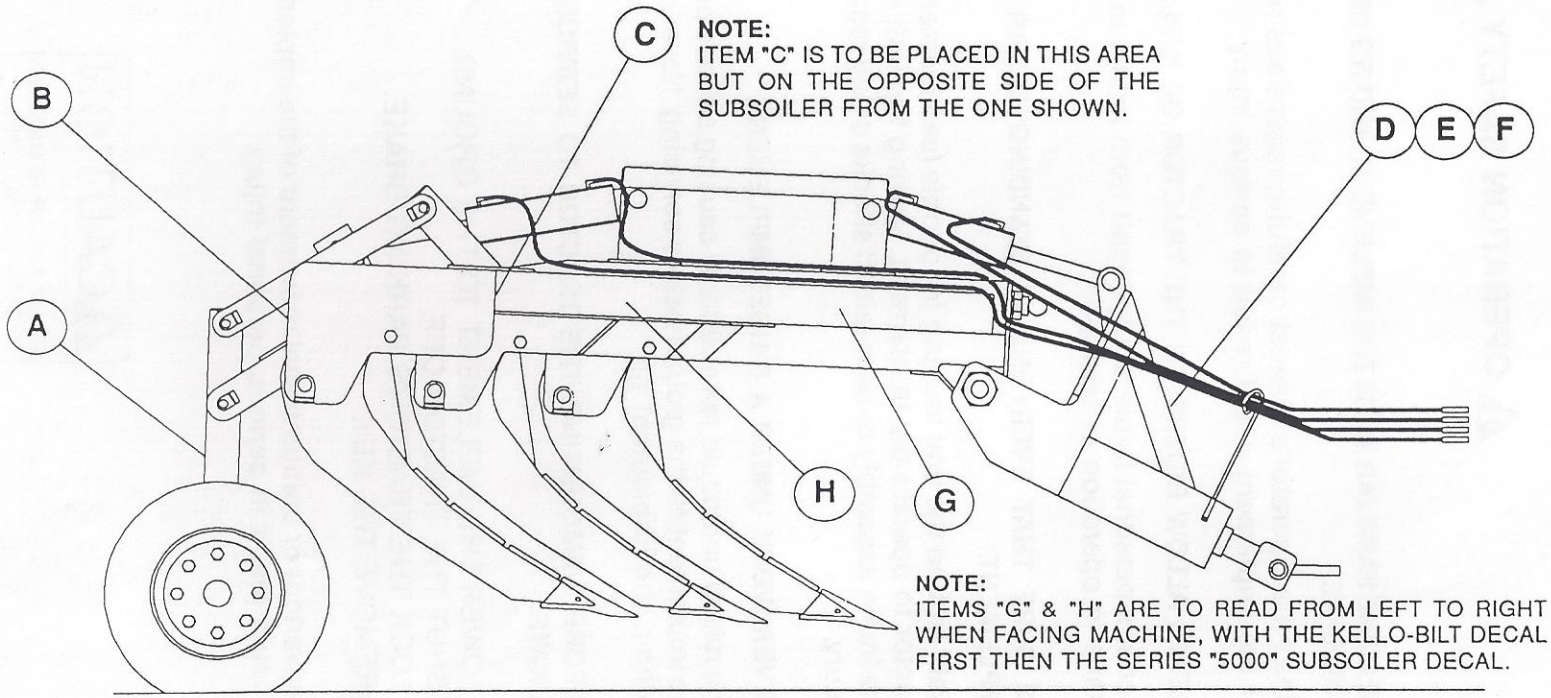
Step 15. Attach Hydraulic Hose Group

Screw a 90° elbow into the (2) two ports located on each hydraulic cylinder. 5 x 16 Transport cylinder - connect 192" long hose to rod end fitting . . . 180" long hose to base end fitting. 5 x 12 Drawbar cylinder - connect148" long hose to rod end fitting . . . 170" long hose to base end fitting. Run hoses through the (2) two stacked hose clamps . . . secure clamps with 3/8" x 1-3/4" hex bolt and lockwasher (tapped hole on frame). Hoses pass through loop in hose holder. Attach to the end of each hose a quick disconnect. See fig. 1 and schematic I.

Step 16. Attach Safety Decals and Warning Devices

See schematic II for proper placement.

II. ASSEMBLY/SET-UP INSTRUCTIONS



Schematic II

⚠ OPERATION SAFETY ⚠

1. **BECOME FAMILIAR WITH THE IMPLEMENT AND ITS OPERATION BEFORE RUNNING THE UNIT.**

   Read the Operator's Manual carefully, regardless of experience. Improper use of the implement could result in serious injury.

2. **NEVER ALLOW RIDERS ON THE TRACTOR OR IMPLEMENT.**

   Serious personal injury could result from falling in the path of the implement while in operation or transport.

3. **BE SURE THAT EVERYONE IS STANDING CLEAR BEFORE OPERATING THE IMPLEMENT.**

   Walk around the unit looking for people (servicemen, etc.) before mounting the tractor to operate the implement. Moving the unit while someone is between the frame assembly or near raised shanks could result in their serious personal injury.

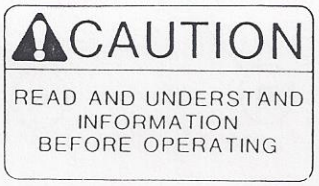
4. **NEVER WORK UNDER A RAISED IMPLEMENT.**

   The raised unit could fall suddenly causing serious personal injury. Always lower the implement to the ground before servicing. Never rely on the hydraulic system to hold the implement up.

   BEFORE DISMOUNTING THE TRACTOR TO SERVICE OR MAKE ADJUSTMENTS ALWAYS:

   1. LOWER THE IMPLEMENT TO THE GROUND.
   2. SHUT THE TRACTOR OFF.
   3. LOCK THE TRACTOR'S PARKING BRAKE.
   4. REMOVE THE KEY.

   Inadvertent or unintentional movement of the implement while working around it could result in serious personal injury.



III. ADJUSTING AND OPERATING

Before Going to the Field . . . Do the Following:

1. Hitch tractor to the implement . . . be sure to inspect and remove any debris from hydraulic connectors prior to hook-up of hoses to tractor hydraulics to avoid contaminating oil. Completely extend rod on the 5x12 drawbar cylinder. Remove cylinder lock assembly from the cylinder rod . . . store it on the cylinder lock mount plate located on the crossbeam . . . left hand side of centerframe. Now retract the rod to raise the hitch so it can be pinned to the tractor drawbar. Be sure to connect the safety chain to tractor drawbar.

⚠ **CAUTION!** Take care to prevent injury to the hands or fingers when hitching the implement to the tractor.

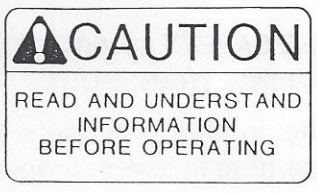
2. For two wheel drive tractors, with or without front wheel assist, equipped with a swinging drawbar: The drawbar should be located in a fixed position in the center of the tractor.

3. For articulated tractors with four wheel drive equipped with a swinging drawbar: The drawbar should be allowed enough side-to-side movement to permit full swing when subsoiling. The drawbar must be in the center (fixed) position and correctly stabilized before transporting.

4. Make sure that all routine maintenance has been completed . . . all hardware, pins, nuts and bolts must be tight.

5. Before transporting the implement to the field, fully extend the rod on the 5 × 16 transport cylinder in order to raise the subsoiler to its full height. Remove the cylinder lock assembly (17″) from its storage position . . . attach it to the rod. Extend rod on the 5 × 12 drawbar cylinder. Attach the 13″ cylinder lock assembly to the rod in a similar fashion. Consequently, the cylinder cannot retract and damage implement should hydraulic pressure be lost while transporting.

6. Pin tractor drawbar in center position to prevent side-to-side movement. When transporting implement on a smooth surface road, do not exceed maximum safe tractor speed. Reduce speed considerably when traveling over rough ground. Reduce speed when turning. Serious injury can result from contact with electric lines . . . use extreme care when moving or operating subsoiler near overhead or buried electric lines to avoid contact. To obtain maximum safety, be sure reflectors and SMV sign are clean when transporting.



⚠ TRANSPORTING SAFETY ⚠

1. **USE CARE WHEN HITCHING THE IMPLEMENT TO THE TRACTOR.**

   Hands or fingers can be injured when caught between the hitch and the tractor.

2. **NEVER ALLOW RIDERS ON THE TRACTOR OR IMPLEMENT.**

   Serious personal injury can result from falling in the path of the implement while in operation or transport.

3. **OBSERVE ALL LAWS AND REGULATIONS WHILE TRANSPORTING THE IMPLEMENT.**

   Never transport the implement at speeds greater than 20 MPH. Reduce speed and exercise caution on turns, bridges, rough roads, steep grades, and other adverse conditions.

4. **ALWAYS INSTALL TRANSPORT CYLINDER LOCKS ON BOTH CYLINDER RODS BEFORE TRANSPORTING THE IMPLEMENT.**

   Without the transport cylinder locks installed, the implement could fall during transport, resulting in damage to the machine or personal injury to the operator or bystanders. When transporting, raise the implement to its full height and install locking devices.

5. **EXERCISE CAUTION WHEN TRANSPORTING THE IMPLEMENT ON PUBLIC ROADS.**

   The implement, depending on size, may be wider than a highway lane. Beware of traffic and avoid obstacles on the roadside such as sign posts and mail boxes.

6. **BE SURE THAT WARNING DEVICES ARE IN PLACE, CLEAN, AND VISIBLE.**

   Be sure an SMV (slow moving vehicle) emblem is attached on the rear of the unit. When transporting the implement during the day or at night, use accessory lights and other devices in order to give adequate warning to the operators of other vehicles.

7. **IF THE TRACTOR IS EQUIPPED WITH A SWINGING DRAWBAR, LOCK THE DRAWBAR IN THE FIXED POSITION.**

8. **USE SAFETY CHAINS TO SECURE THE IMPLEMENT TO THE TRACTOR DRAWBAR DURING TRANSPORT.**

   The implement could separate from the tractor drawbar during transport resulting in severe property damage or serious injury to bystanders or passers by.

III. ADJUSTING AND OPERATING

Operating Subsoiler in the Field.

⚠ **CAUTION!** Failure to remove transport cylinder lock before attempting to lower shanks may result in damage to frame and cylinder or injury to persons.

1. Remove both transport cylinder locks and secure them to storage brackets. Keep all persons away from implement when raising or lowering.

2. Check wheels and tires closely during the initial period of operation . . . check wheel bolts each half hour of operation . . . retighten as necessary until they are securely locked. If the wheels are run loose, they will be damaged beyond repair. Check wheel bearings once per day for tightness . . . grease sparingly. Tires should be inflated to 55 p.s.i.

3. Gauge wheels are used to determine the working depth desired . . . depth of penetration of the shanks into the ground. Changing the adjustment of the gauge wheel adjusting rods located on the gauge wheel arms will raise the wheels (clockwise turn) and increase the working depth or lower the wheels (counterclockwise turn) and decrease the working depth. For maximum penetration, the 1-1/2" hex nut on the underside of the bracket should be removed from the adjusting rod and the top hex nut tightened up completely. The adjusting rods must be tightened securely with the hex nuts to avoid damage to the threads. Never use the transport wheels for the purpose of depth control.

4. After the subsoiler is in the ground and operating at the selected working depth, check the level of the implement. It may change with each change in working depth. The subsoiler will pull with the least draft if the frame at the front plate is approximately 1" higher than the rear of the frame while at working depth. If adjustment is necessary, raise shanks out of ground. Turn the large screw crossbar on the depth control rod located at the top of the centerframe front plate. Turn clockwise to lower the front of the frame, after adjustment, secure rod with mounted jam nut. Run shanks at working depth . . . check to see if level is correct . . . if not, repeat until it is. This adjustment allows the tip of the parabolic shank to lead the rest of the shank by as much as possible, while still penetrating, as it moves through the soil profile. Because draft is minimized, horsepower requirements and fuel consumption are less . . . as well as wear on the shear points.

5. A cast or fabricated bolt-on point is used at the tip of each shank. The point should not be allowed to wear out completely as the shank "frog" will be damaged in the process and require repairs that are both extensive and expensive. The shank wears fastest just above the point. Therefore, a short piece of the wear strip above the point is replaceable. This should be cut off or ground off and replaced when worn thin . . . before it is worn away completely.

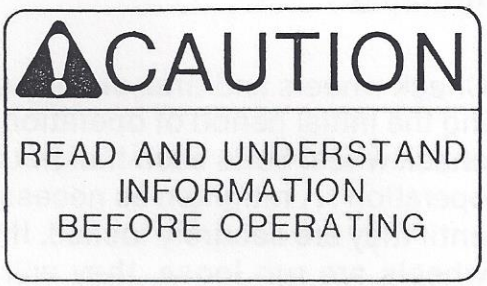
III. ADJUSTING AND OPERATING

Operating Subsoiler in the Field . . . continued

5. As it is necessary to raise the implement shanks out of the ground when turning, get in the habit of glancing over the points while they are out of the ground. Be sure to inspect them closely at the end of the work day.

6. Each subsoiler shank is protected against rock damage by the use of a 1″ x 5″ grade 5 shear bolt. If an obstacle is encountered and in the event a shear bolt breaks, the shank should be lifted out of the ground while slowly backing up. This will swing the shank back under the frame and facilitate the installation of a new shear bolt. Care should be taken not to overtighten the shank pins, as this may cause the shanks to bind between the shank mounting plates and thereby restrict the effectiveness of the shear bolts. The drawbar connector is designed to absorb rock impact and should be kept well greased.

7. To detach implement from tractor:
   a. Lower shanks completely to the ground before unhitching from the tractor. If the implement is to be unhitched in a raised position, be sure the transport cylinder lock is installed and the subsoiler is on a firm, level surface . . . drawbar is supported with blocks of wood, etc.
   b. Raise hitch off tractor drawbar and remove hitch pin.
   c. Disconnect hydraulic hoses from quick disconnects (couplers) after bleeding off pressure from the system. Plug hoses and place on hose support (mast) assembly.
   d. Unhook safety chain from tractor drawbar. Turn off tractor engine.



IV. MAINTENANCE AND LUBRICATION

CAUTION! Always block-up raised equipment when servicing. NEVER rely on the hydraulic system.

Hydraulic hoses —

Once each year, carefully inspect all hydraulic hoses for leaks, abrasions and cracks. Tighten all fittings and replace hoses as necessary.

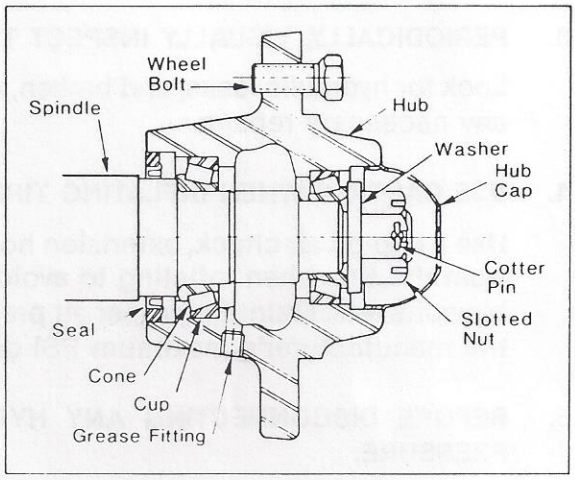
Once each year, do the following:

Wheel Hub Bearings —

- Remove wheel hubs.
- Place bearings, seals, caps, washers, and nuts in clean container and clean them with kerosene or other solvents.
- Inspect the bearings and seals. If they are not in satisfactory condition, replace them with new parts available at your dealer.
- Clean inside of hubs.
- Pack the bearing cones and seals with No. 2 multi-purpose lithium grease or equivalent.
- Make sure no foreign material is allowed to get into the lubricant or bearings.
- Reinstall the hub and bearings. Refer to the illustration for proper assembly.

  Be sure to:

  1. Press the oil seal very lightly against the shoulder on the spindle.
  2. Press the cups against the shoulders in the hub.
  3. Press the sleeve to the shoulder in the hub.



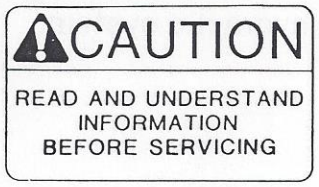
Adjust the wheel bearing nut until there is a noticeable drag while turning the wheel. Do not back the nut off. Secure the nut with a cotter pin.

NOTE! When placing the hub on the spindle, care must be exercised to avoid damaging the seal.

⚠ MAINTENANCE SAFETY ⚠

1. **BEFORE SERVICING THE IMPLEMENT, ALWAYS:**

   A. LOWER THE SHANKS TO THE GROUND.
   B. SHUT THE TRACTOR ENGINE OFF.
   C. LOCK THE TRACTOR'S PARKING BRAKE.
   D. REMOVE THE IGNITION KEY.



   Inadvertent or unintentional movement of the implement while working around it could result in serious personal injury.

2. **NEVER WORK UNDER A RAISED IMPLEMENT.**

   The raised implement can fall resulting in serious personal injury. Always lower the shanks to the ground before servicing.

3. **PERIODICALLY, VISUALLY INSPECT THE IMPLEMENT.**

   Look for hydraulic leaks, and broken, missing, or malfunctioning parts and make any necessary repairs.

4. **USE CAUTION WHEN INFLATING TIRES.**

   Use a clip-on air chuck, extension hose with gauge, and stand to one side away from the tire when inflating to avoid the possibility of personal injury due to blowoffs, etc. Maintain proper air pressure in the tires. **Important!** Never exceed the manufacturer's maximum PSI displayed on the sidewall of the tire.

5. **BEFORE DISCONNECTING ANY HYDRAULIC LINE RELIEVE THE HYDRAULIC PRESSURE.**

   Hydraulic fluid escaping under pressure can have sufficient force to penetrate the skin causing serious personal injury. If injured by escaping fluid, obtain medical treatment immediately.

6. **PURGE AIR FROM THE HYDRAULIC SYSTEM BEFORE OPERATION.**

   Always be sure the hydraulic lines and cylinders are free of air and do not leak. After connecting new parts, replacing old parts,, or servicing the hydraulic components, carefully cycle the hydraulic cylinders several times to purge entrapped air from the system and check all components for leaks.

V. SPECIFICATIONS, STANDARD and OPTIONAL EQUIPMENT

Series 5000
Deep Tillage Subsoiler

Specifications

MODEL	NO. OF SHANKS	SHANK SIZE in. (mm)	MAXIMUM PENETRATION in. (mm)	TRANSPORT WIDTH ft./in. (mm)	OVERALL LENGTH ft./in. (mm)	APPROX. WEIGHT lb. (Kg)
530	5	1-1/2" x 11 " x 42" (38 x 279 x 1167 mm)	24" (610)	14' 9" (4496)	16' 0" (4877)	6610 (2998)
730	7	1-1/2" x 11" x 42" (38 x 279 x 1167 mm)	24" (610)	20' 8" (6299)	16' 0" (4877)	8050 (3651)

STANDARD EQUIPMENT

- Center "V" frame all welded box type construction ... 6" x 8" x 3/8" rectangular tubing with 1/2" x 6" fishplates.
- Parabolic curved shanks ... 1-1/2" x 42" ... machineable grade T-1 alloy steel.
- Shear bolts - 1" x 5", Grade 5.
- Four (4) 12.5 x 16 - 8 ply tires ... (2) transport and (2) gauge wheel - all on 8 bolt hub assemblies.
- Hydraulic control group includes two (2) cylinders ... drawbar (5 x 12) and transport (5 x 16) and hoses with fittings and quick couplers to reach rear of tractor.

STANDARD EQUIPMENT

- Depth gauge rod provides leveling (frame) adjustment.
- Gauge wheels determine the desired working depth ... adjustment made with gauge wheel adjusting rods.
- Cylinder lock assemblies for each cylinder rod ... keeps cylinder from retracting if pressure is lost while transporting.

OPTIONAL EQUIPMENT

- Points for subsoiler shanks ... cast points and fabricated points - both are bolted on.
- Shank conversion kits to change 5 shank subsoiler to 7 shank subsoiler ... includes either cast or fabricated points.

Materials and specifications subject to change without notice.

VI. PARTS ORDERING INSTRUCTIONS AND WARRANTY

HOW TO ORDER PARTS

Please be sure to furnish the quantity, part number, and name of each part wanted. It is also important to give the Serial Number of the machine for which the parts are intended. It is suggested that the Serial Number of the machine be written in the space below so that it will be readily available when you need it.

THIS PARTS BOOK IS FOR MACHINE SERIAL NUMBER

_____

Serial Number

To insure prompt delivery, please furnish the correct name of the consignee, as well as the street address, town, country, state, and zip code to which the parts are to be shipped, and indicate whether shipment is to be by freight, express, parcel post, or by other means.

ONLY ORIGINAL EQUIPMENT PARTS GIVE MAXIMUM PERFORMANCE

The same quality and craftsmanship that have made our products famous throughout the world are built into all replacement parts.

KELLO-BILT

KELLO-BILT LTD.
Box 1119, Stettler, Alberta, Canada T0C 2L0
Phone (403) 742-3663 Fax (403) 742-1140

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