



HDII RAKE PARTS BOOK



Revision #04
Starting Serial #610943

HSMFG0216

Part #59780

Manufactured By
H&S MANUFACTURING CO., INC.

P.O. BOX 768 (715) 387-3414 FAX (715) 384-5463
MARSHFIELD, WISCONSIN 54449

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INSTRUCTIONS FOR ORDERING PARTS

All service parts should be ordered through your authorized H&S dealer. They will be able to give you faster service if you will provide them with the following

1. Model & Serial number is located on the left, rear main frame of your unit.
2. All reference to left or right apply to the machine as viewed from the rear.
3. Parts should not be ordered from illustration only. Please order by complete part number.
4. If your dealer has to order parts - give shipping instructions:
VIA truck - large pieces (please specify local truck lines)
VIA United Parcel Service (include full address)

H&S MFG. CO. INC.	
MARSHFIELD, WIS.	
MOD. NO.	<input type="text"/>
SER. NO.	<input type="text"/>
DESCR.	<input type="text"/>

PLEASE RECORD NUMBERS FOR YOUR UNIT FOR QUICK REFERENCE

ABOUT IMPROVEMENTS

H&S IS CONTINUALLY STRIVING TO IMPROVE IT'S PRODUCTS

We must therefore, reserve the right to make improvements or changes whenever it becomes practical to do so without incurring any obligation to make changes or additions to the equipment previously sold.

FIGURE 1

AXLE UPRIGHTS/TANDEMS

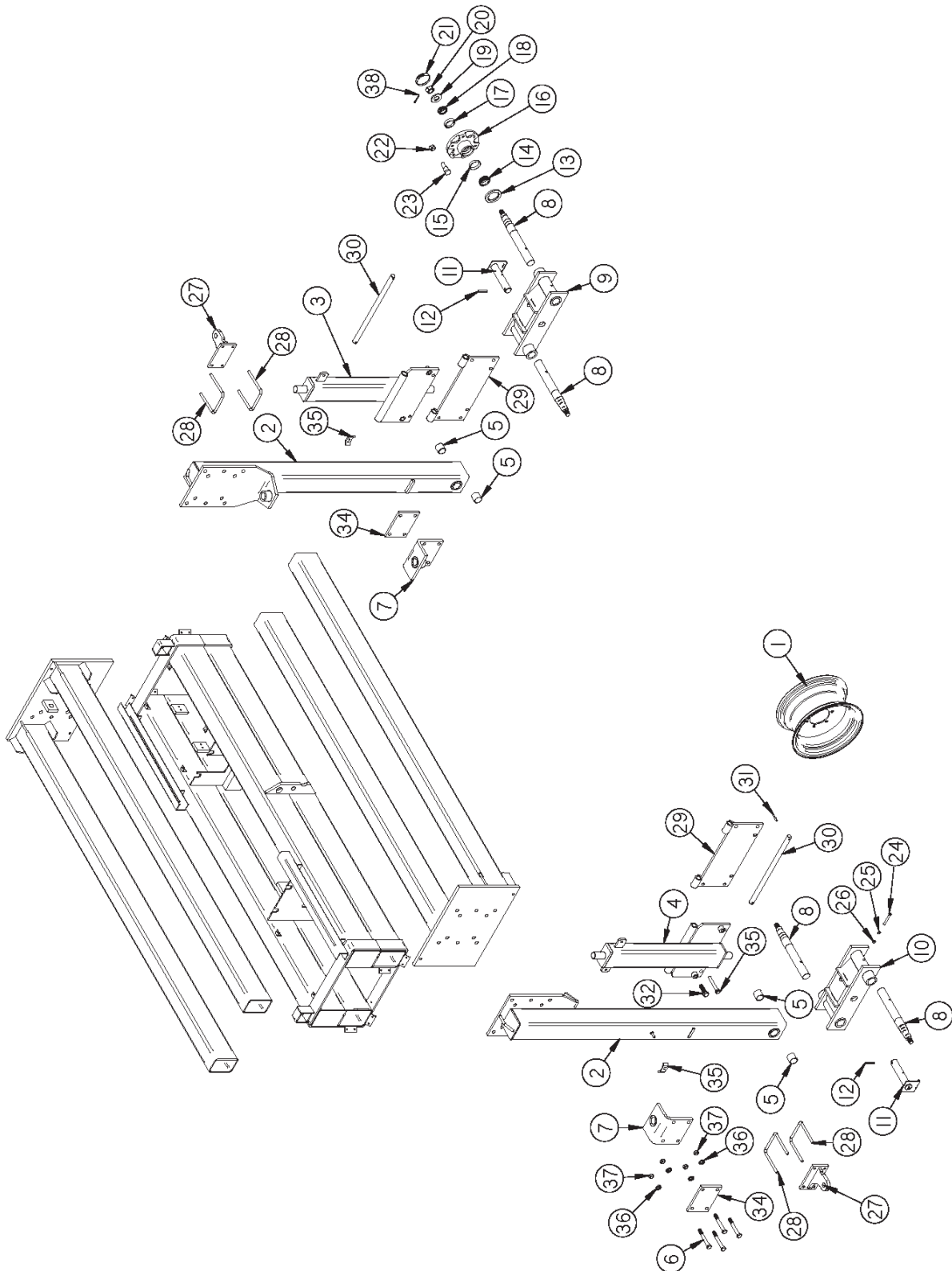


FIGURE 1

AXLE UPRIGHTS/TANDEM

ITEM	PART #	DESCRIPTION
1	12N24	WHEEL 15 X 8
*	UR1	TIRE & TUBE 9.5L X 15 10 PLY
2	HD94	AXLE UPRIGHT
3	HD95	BEAM PIVOT LEFT
4	HD96	BEAM PIVOT RIGHT
5	HD153	BUSHING
6	YBHH20105	BOLT, 5/8" X 7" GR. 5
7	HD98	UPRIGHT BOTTOM PIVOT
8	HD99	SPINDLE
9	HD100	TANDEM AXLE LEFT
10	HD101	TANDEM AXLE RIGHT
11	HD102	TANDEM PIN
12	YPEX12025	EXPANSION PIN, 3/8" X 2-3/4"
13	12N17	SEAL
14	RG99	INNER BEARING
15	RG100	INNER RACE
16	RG101	HUB
17	RG47	OUTER RACE
18	RG48	OUTER BEARING
19	HD200	WASHER
20	YNSL28005	HEX NUT, SLOTTED, 7/8-14
21	17G144	DUST CAP
22	YNWL16005	WHEEL NUT, 1/2"-20 UNF
23	YBSD16010	STUD BOLT, 1/2"-20 UNF X 1-7/8" (3/4" SHOULDER)
24	YBHH12145	BOLT, 3/8" X 3-1/2" GR. 5
25	YWLO12005	WASHER, LOCK, 3/8"
26	YNHX12005	HEX NUT, 3/8"-16
27	HD151	CYLINDER MOUNT UPRIGHT END
28	HD152	1/2" U-Bolt
29	HD164	BEAM PIVOT PLATE
30	HD165	HINGE PIN
31	YPEX10015	EXPANSION PIN, 5/16" X 1-3/4"
32	YBHH24020	BOLT, 3/4" X 2-1/2" GR. 5
33	YBHH20055	BOLT, 5/8" X 3-1/2" GR. 5
34	HD182	PIVOT MOUNT PLATE
35	HE42	HOSE CLAMP
36	YWLO20005	WASHER, LOCK, 5/8"
37	YNHX20005	HEX NUT, 5/8"-11 PLATED
38	YPCT05010	COTTER PIN, 5/32" X 1-1/2"

NOTE: * MEANS NOT SHOWN

FIGURE 2

MAIN FRAME

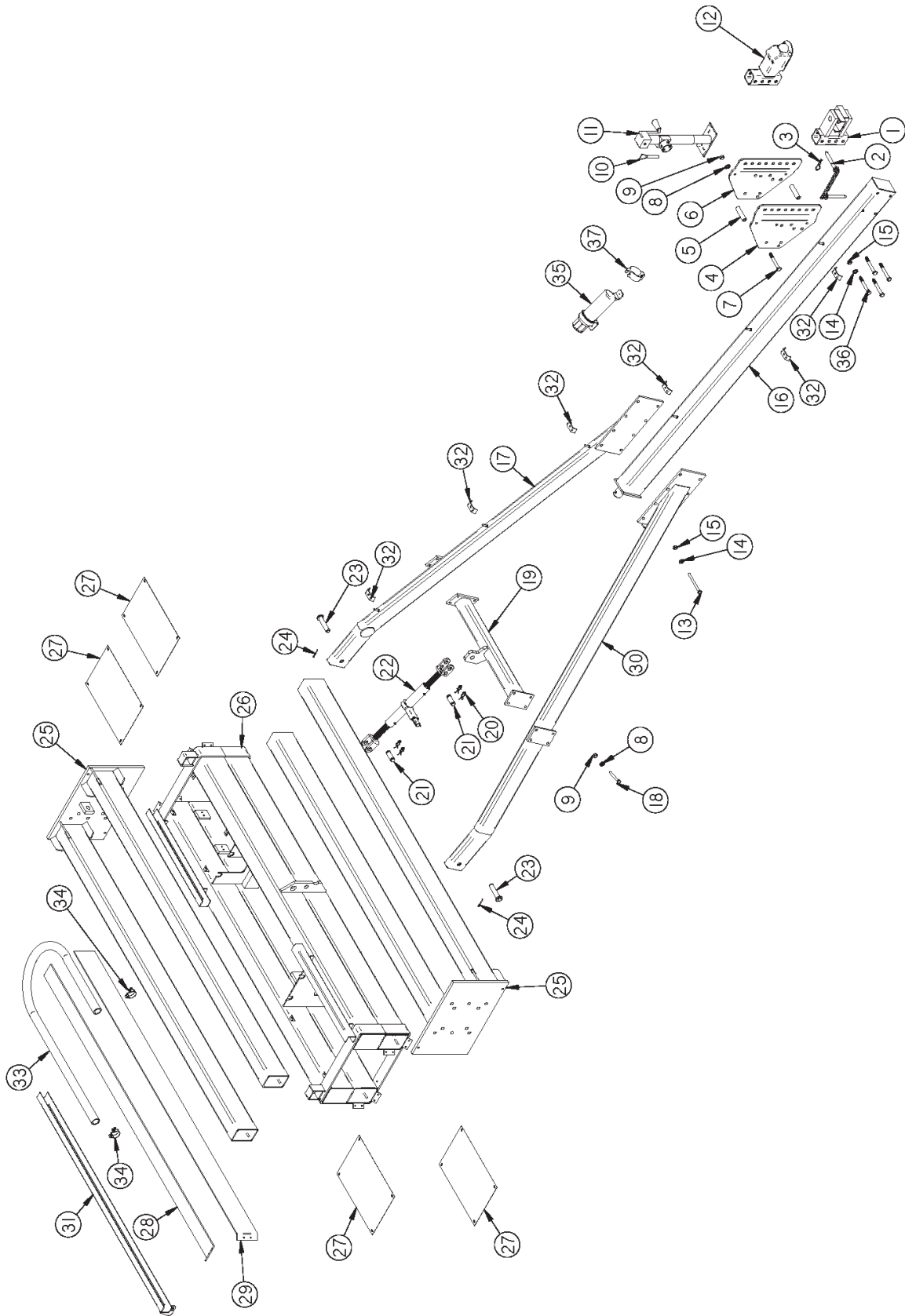


FIGURE 2

MAIN FRAME

ITEM	PART #	DESCRIPTION
1	HD83	HITCH CLEVIS
2	BFR450	HITCH PIN
3	YPHR02010	HAIR PIN, #21-07
4	HD84	HITCH MOUNT RIGHT HITCH
5	BFR467	CENTER SLIDER SPACER
6	HD86	HITCH MOUNT LEFT
7	YBHH16160	BOLT, 1/2" X 5-1/2" GR. 5
8	YWLO16005	WASHER, LOCK, 1/2"
9	YNHX16005	HEX NUT, 1/2"
10	12N117	JACK PIN & CHAIN
11	BFR773	JACK
12	HD172	BALL COUPLER (OPTIONAL)
13	YBHH20100	BOLT, 5/8" X 6" GR. 5
14	YWLO20005	WASHER, LOCK, 5/8"
15	YNHX20005	HEX NUT, 5/8"-11 PLATED
16	HD89	POLE FRONT
17	HD90	POLE BACK LEFT
18	YBHH16125	BOLT, 1/2" X 3-3/4" GR. 5
19	HD92	JACK MOUNT TUBING HAIR
20	YPHR02020	PIN, #23-10
21	T143	JACK PIN
22	60206	RATCHET JACK
23	HD93	POLE PIVOT PIN
24	YPCT05010	COTTER PIN, 5/32" X 1-1/2"
25	HD103	INNER SLIDER
26**	HD104	CENTER SLIDER OUTSIDE
***	HD183	CENTER SLIDER OUTSIDE
27	HD105	SHIELD
28	HD106	POLY SLIDE NARROW 1/4"
*	HD155	POLY SLIDE NARROW 3/16"
29	HD107	POLY SLIDE WIDE 1/4" POLY
*	HD156	SLIDE WIDE 3/16" POLE
30	HD108	BACK RIGHT
31**	HD140	HOSE CHANNEL
***	HD184	HOSE CHANNEL
32	23N67	HOSE BRACKET
33**	HD169	HOSE SHIELD
***	HD185	HOSE SHIELD
34**	HD170	HOSE CLAMP (SIZE 40)
***	HD186	HOSE CLAMP (SIZE 48)
35	S522	MANUAL HOLDER
36	YBHH20095	BOLT, 5/8" X 5-1/2" GR. 5
37	S23	MANUAL CLAMP - LARGE

NOTE: * MEANS NOT SHOWN

**** (USED SERIAL #0032 AND BEFORE)**

***** (USED SERIAL #0033 AND AFTER)**

FIGURE 3

RAKE BEAMS

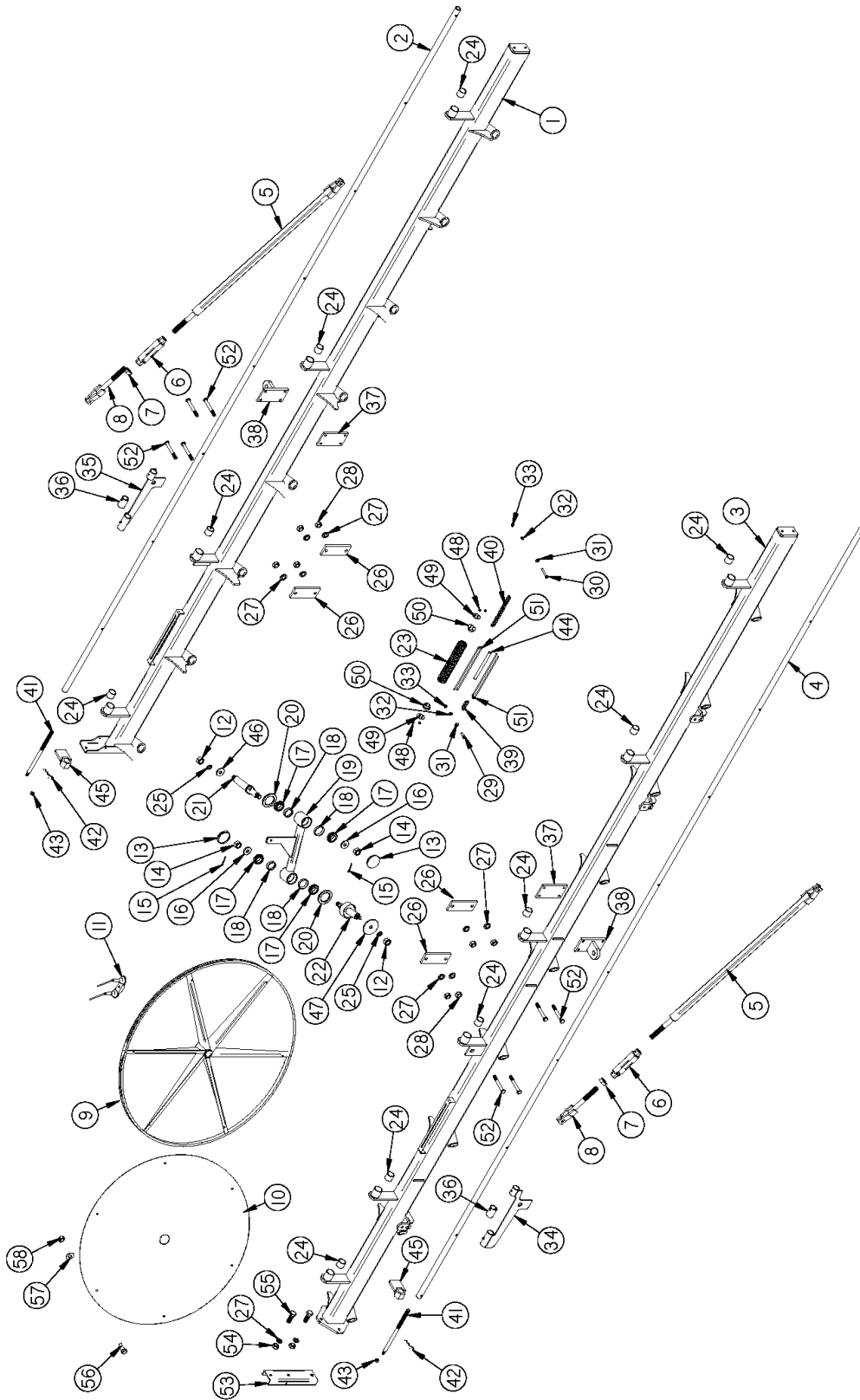


FIGURE 3

RAKE BEAMS

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	HD229	RAKE BEAM LEFT A
2	HD110	LIFTING PIPE LEFT
3	HD230	RAKE BEAM RIGHT A
4	HD112	LIFTING PIPE RIGHT
5	HD113	STABILIZER TUBING
6	HD114	TURNBUCKLE
7	YNJM32010	HEX NUT, JAM, 1"-8
8	HD116	TURNBUCKLE END
9	HD117	RAKE WHEEL
*	HD203	COMPLETE LH RAKE WHEEL
*	HD204	COMPLETE RH RAKE WHEEL
10	59843	WIND GUARD
11	58710	DOUBLE RUBBER RAKE TOOTH
12	YNHX24005	HEX NUT, 3/4"-10 PLATED
13	17G144	DUST CAP
14	YNSL28005	HEX NUT, SLOTTED, 7/8"-14
15	YPCT05010	COTTER PIN, 5/32" X 1-1/2"
16	YWFL28005	WASHER, FLAT, 7/8" USS
17	HD122 3G18	BEARING
18		BEARING RACE
19	HD123	RAKE ARM
20	HD124	SEAL
21	HD125	PIVOT SPINDLE
22	HD126	RAKE WHEEL SPINDLE
23	HD127	SPRING
*	HD201	COMPLETE SPRING ASSEMBLY
24	HD128	BUSHING
25	YWSI24005	WASHER, LOCK, STAR, INTERNAL/EXTERNAL, 3/4"
26	HD202	BEAM PLATE
27	YWLO20005	WASHER, LOCK, 5/8"
28	YNTL20005	HEX NUT, TOP LOCK, 5/8"-11
29	YBHH12035	BOLT, 3/8" X 1-1/4" GR. 5
30	YBHH12100	BOLT, 3/8" X 2-1/4" GR. 5

NOTE: * MEANS NOT SHOWN

FIGURE 3

RAKE BEAMS

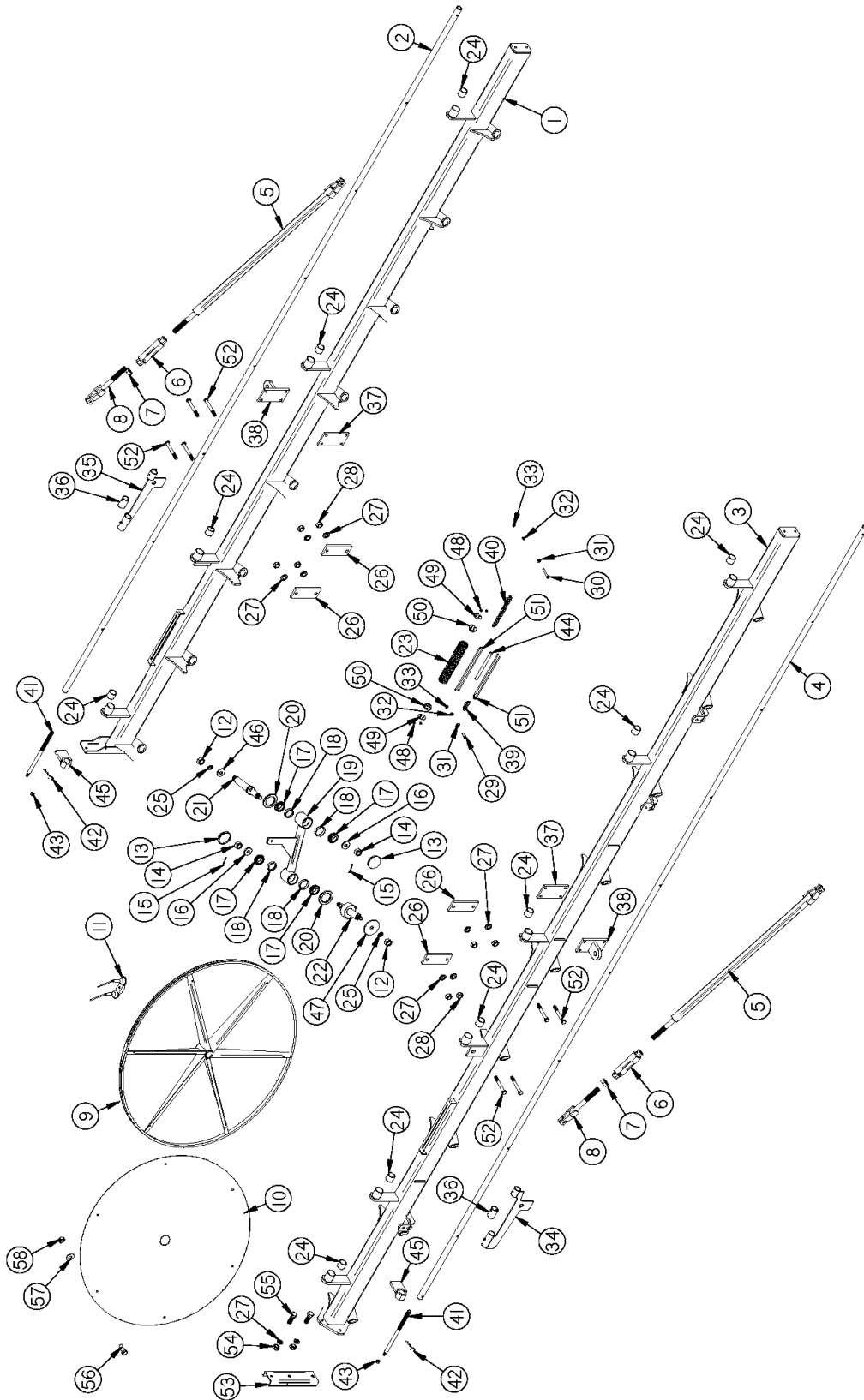


FIGURE 3

RAKE BEAMS

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
31	YWFL12005	WASHER, FLAT, 3/8" USS
32	YWLO12005	WASHER, LOCK, 3/8"
33	YNTL12005	HEX NUT, TOP LOCK, 3/8"-16
34	HD130	LIFTING CYLINDER MOUNT RIGHT
35	HD131	LIFTING CYLINDER MOUNT LEFT
36	HD175	LIFTING PIPE COLLAR
37	HD91	STANDOFF MOUNTING PLATE
38	HD132	CYLINDER MOUNT
39	HD214	RAKE WHEEL SHORT CHAIN
40	HD210	RAKE WHEEL CHAIN
41	HD154	ACME ROD
42	YPHR08040	HAIR PIN, 1/4" X 5"
43	YNHX16005	HEX NUT, 1/2"
44	HD179	SPRING STOPPER
45	BFR426	RAKE PRESSURE HANDLE
46	HD157	PIVOT WASHER
47	HD158	SPINDLE WASHER
48	YNNY08005	HEX NUT, NYLON LOCKNUT, 1/4"-20
49	HD176	SPRING HOLDER WASHER
50	HD177	POLY SPRING HOLDER
51	HD178	TORSION BAR
52	YBHH20085	BOLT, 5/8" X 5" GR. 5
53	HD231	ADJUSTMENT POST RIGHT
54	YNHX20005	HEX NUT, 5/8"-11 PLATED
55	YBHH20010	BOLT, 5/8" X 1-1/2" GR. 5
56	YBHH08100	BOLT, 1/4" X 3/4" GR5
57	YWFL08005	WASHER, FLAT, 1/4" USS
58	YNTL08005	HEX NUT, TOP LOCK, 1/4"-20

FIGURE 4 HYDRAULICS

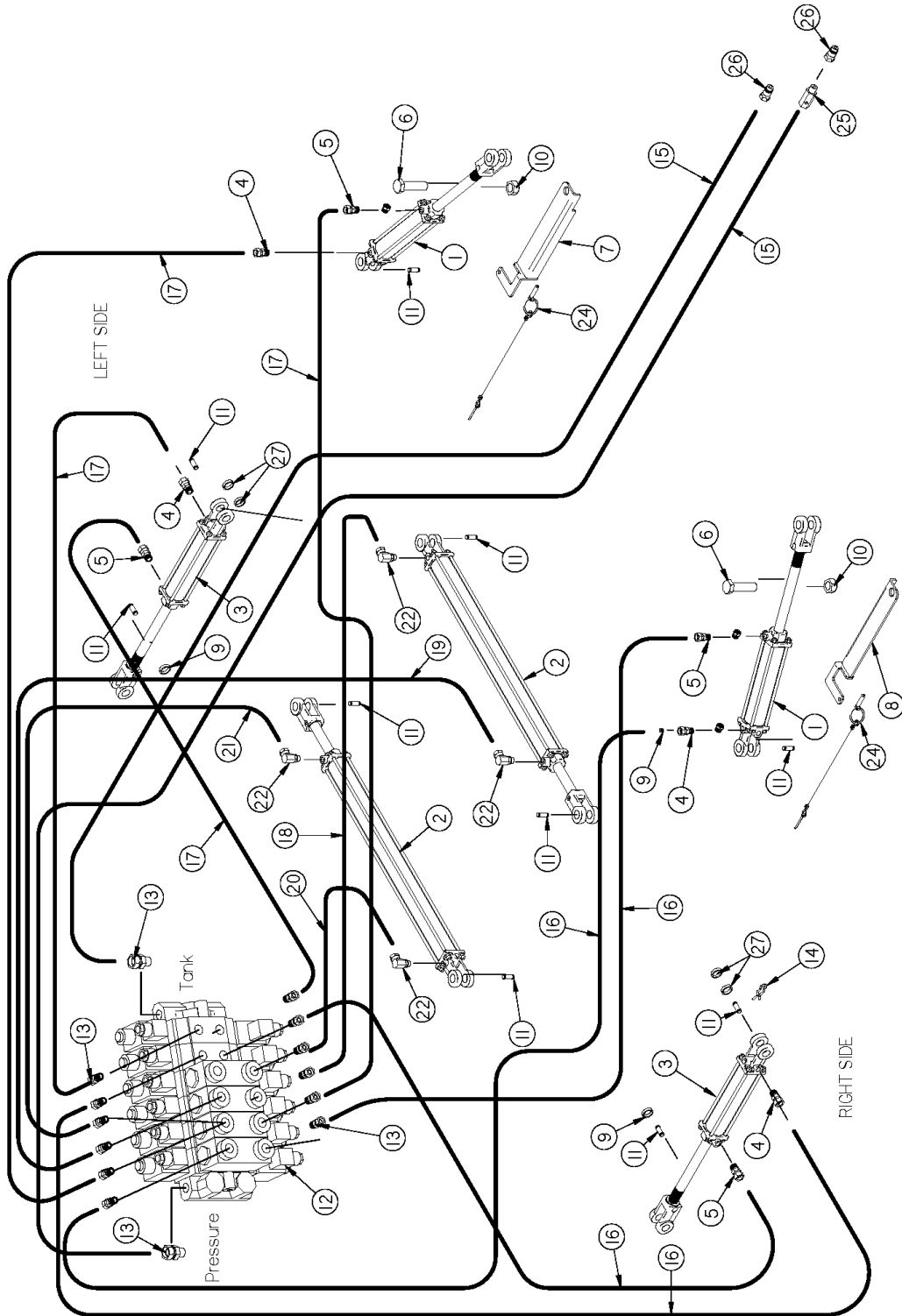


FIGURE 4

HYDRAULICS

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	56009	3" X 8" CYLINDER (3000 PSI)
2	56014	3.5" X 60" CYLINDER (3000 PSI)
3	56000	2" X 10" CYLINDER (3000 PSI)
4	58723	3/8 MALE ADPTER WITH .062 ORIFICE
5	DWM233	3/8" UNION ADAPTER
6	YBHH32015	BOLT, 1"-8 X 4" GR. 5
7	HD137	TRANSPORT LOCK LEFT
8	HD138	TRANSPORT LOCK RIGHT
9	HD187	SPACER 3/4 x 1"
10	YNTL32005	HEX NUT, TOP LOCK, 1"-8
11	T143	HYDRAULIC CYLINDER PIN
12	HD139	HYDRAULIC VALVE
*	60724	TIE ROD, VALVE
*	HD216	SOLENOID TUBE ASSEMBLY
13	DWM268	9/16" MALE O-RING TO 3/8" PIPE UNION ADAPTER
14	T144	CYLINDER CLIP PIN
15	HD141	HYD. HOSE 3/8 X 288" 1/2MP & 3/8MP
16	HD142	HYD. HOSE 1/4 X 288" 3/8MP & 3/8MP
17	HD143	HYD. HOSE 1/4 X 210" 3/8MP & 3/8MP
18	HD144	HYD. HOSE 1/4 X 36" 3/8MP & 1/2MP
19	HD145	HYD. HOSE 1/4 X 96" 3/8MP & 1/2MP
20	HD147	HYD. HOSE 1/4 X 60" 3/8MP & 1/2MP
21	HD146	HYD. HOSE 1/4 X 20" 3/8MP & 1/2MP
22	WM175	1/2" 90° UNION ADAPTER
23	JB82	BUSHING 1/2" TO 3/8"
24	HD224	LYNCH PIN LANYARD ASSEMBLY
25	DF18	1/2" CHECK VALVE
26	DWM205	1/2" MALE QUICK COUPLER
27	X94	SPACER 5/16 x 1"

NOTE: * MEANS NOT SHOWN

FIGURE 5

WIRING

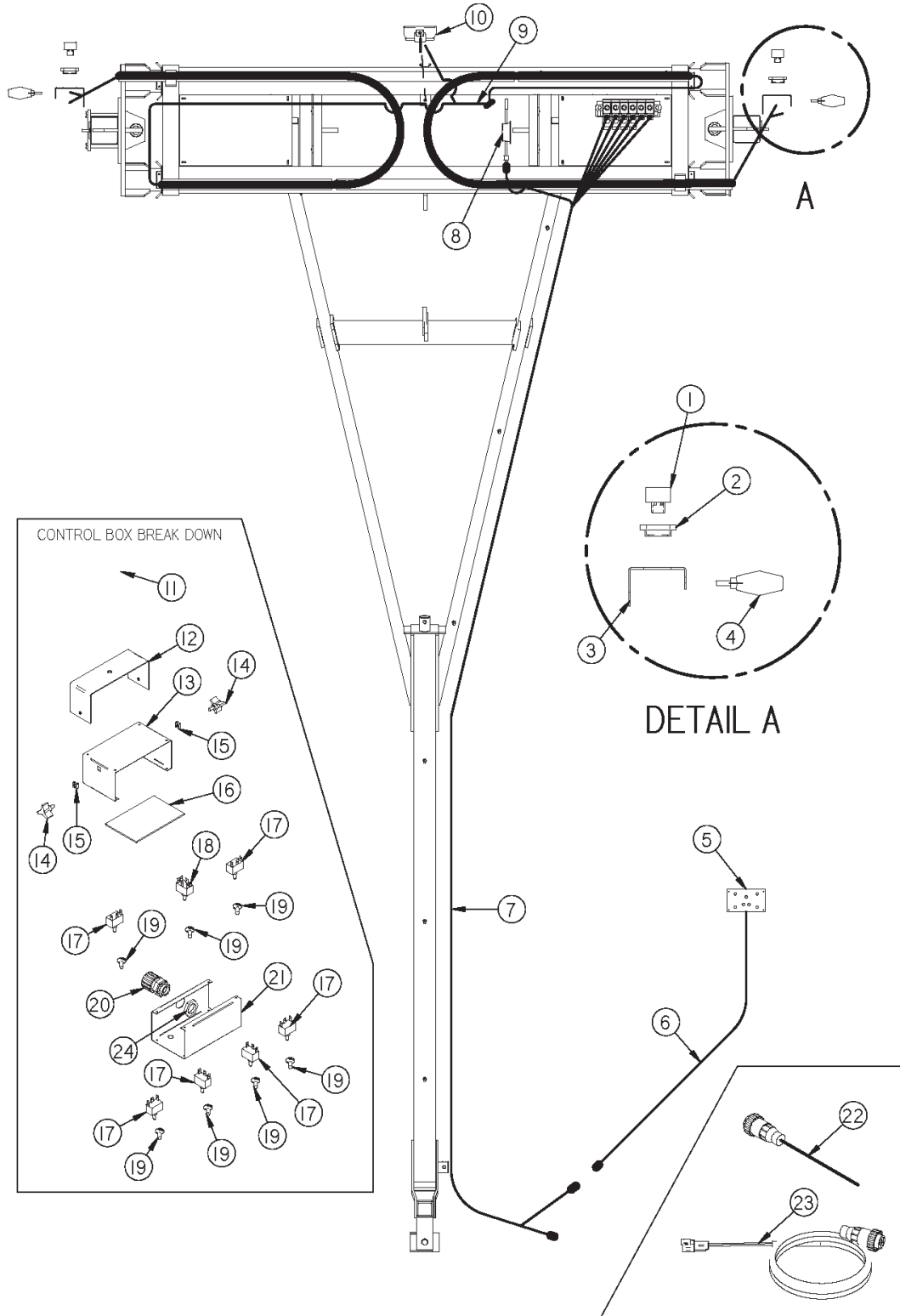


FIGURE 5

WIRING

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	S310	RED TAIL LIGHT
2	S308	RUBBER LIGHT MOUNT
3	HD148	LIGHT BRACKET
4	DWM129	YELLOW HAZARD LIGHT
5	HD180	COMPLETE CONTROL BOX W/ HARNESS
6	HD160	CONTROL BOX WHIP
7	HD161	MAIN HARNESS
8	69908	MODULE, CONTROL, BLINKER
9	HD149	TAIL LIGHT LOOM
10	DWM130	FLOOD/WORK LIGHT
11	61003	CONTROL BOX DECAL
12	DWM326	CONTROL BOX MOUNT
13	DWM140	CONTROL BOX BOTTOM
14	HD174	KNOB
15	HD173	PANEL NUT
16	HD163	POLY SHIELD
17	HD207	MOMENTARY SWITCH
18	HD159	MASTER SWITCH
19	16SV235	SWITCH BOOT
20	DWM175	STRAIN RELIEF
21	HD150	CONTROL BOX TOP
22	16SV269	TRACTOR CONTROL CABLE
23	59107	CABLE, POWER
24	56918	NUT POLY 3/4" NPT, USED ON DWM175

FIGURE 6

HYDRAULIC CYLINDERS

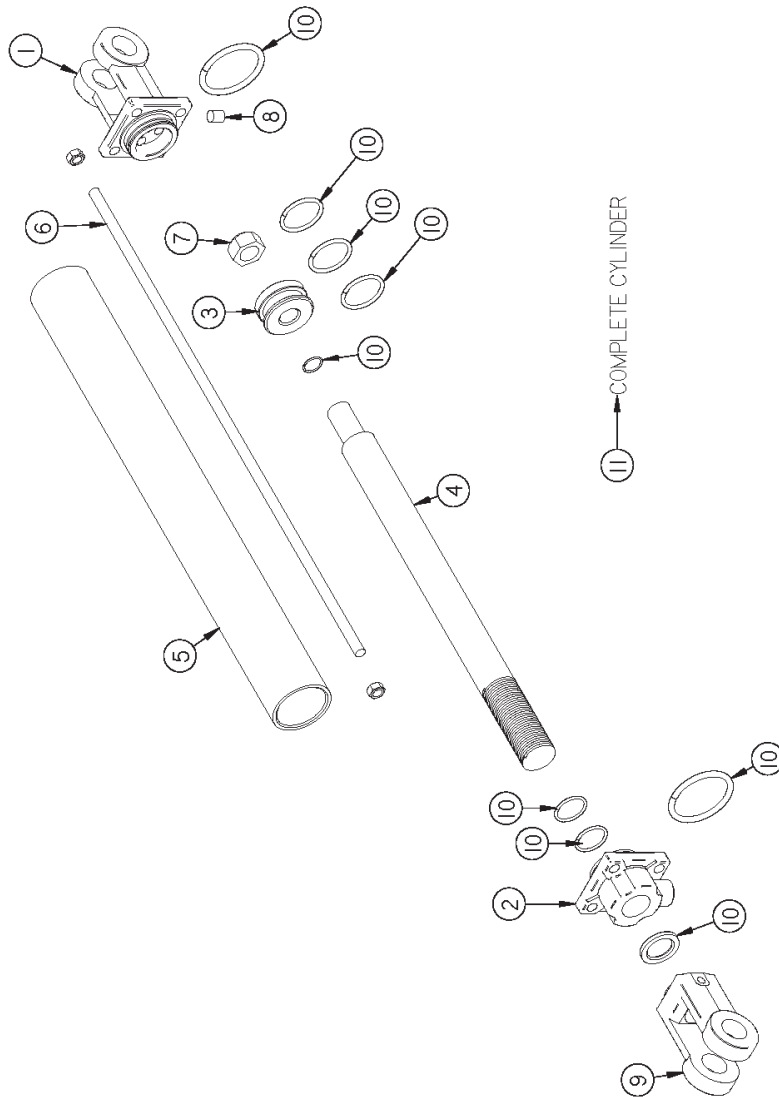


FIGURE 6

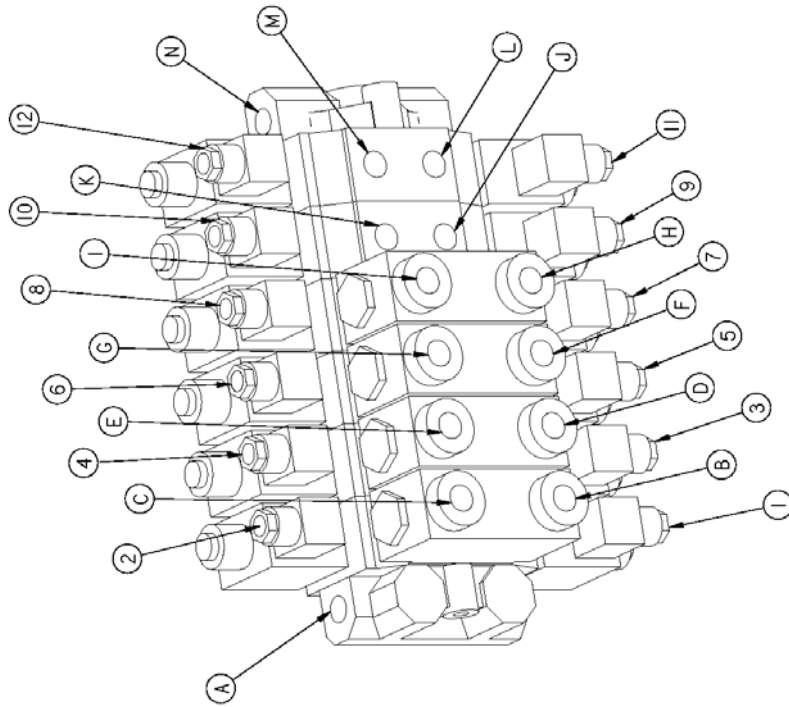
HYDRAULIC CYLINDERS

	LIFT CYLINDER/ WING CYLINDER/ FRAME WIDTH			
	2" X 10"	3" x 8"	3-1/2" x 60"	
<u>ITEM</u>	<u>PART #</u>	<u>PART #</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	23N142A	CHM138	XR55	CLEVIS CAP (SERIAL #315498 AND PRIOR)
2	23N143A	HD188	HD189	ROD CAP (SERIAL #315498 AND PRIOR)
*	56174	56176	56179	ROD CAP (SERIAL #315499 AND FORWARD)
3	23N144	DWM194	HD198	PISTON (SERIAL #315498 AND PRIOR)
*	56180	56182	56183	PISTON (SERIAL #315499 AND FORWARD)
4	16SV168A	HD190	HD191	ROD
5	16SV169	HD192	HD193	CYLINDER TUBE
6	16SV170	HD194	HD195	TIE ROD
7	23N148	XR61	XR61	PISTON NUT
8	23N149	XR62	XR62	PLUG
9	23N150A	XR63	XR63	ROD CLEVIS
10	23N151	HD196	HD197	SEAL KIT (SERIAL #315498 AND PRIOR)
*	56187	56189	56192	SEAL KIT (SERIAL #315499 AND FORWARD)
11	16SV171A	HD135	HD136	HYDRAULIC CYLINDER (SERIAL #315498 AND PRIOR)
*	56000	56009	56014	HYDRAULIC CYLINDER (SERIAL #315499 AND FORWARD)

NOTE: * MEANS NOT SHOWN

FIGURE 7

HYDRAULIC VALVE



A	PRESSURE PORT	
B	RIGHT BEAM OPEN	Din # 1
C	RIGHT BEAM CLOSED	Din # 2
D	LEFT BEAM OPEN	Din # 3
E	LEFT BEAM CLOSED	Din # 4
F	RIGHT WIDTH OUT	Din # 5
G	RIGHT WIDTH IN	Din # 6
H	LEFT WIDTH OUT	Din # 7
I	LEFT WIDTH IN	Din # 8
J	RIGHT RAKE WHEEL UP	Din # 9
K	RIGHT RAKE WHEEL DOWN	Din # 10
L	LEFT RAKE WHEEL UP	Din # 11
M	LEFT RAKE WHEEL DOWN	Din # 12
N	TANK PORT	

FIGURE 8 MAIN HARNESS

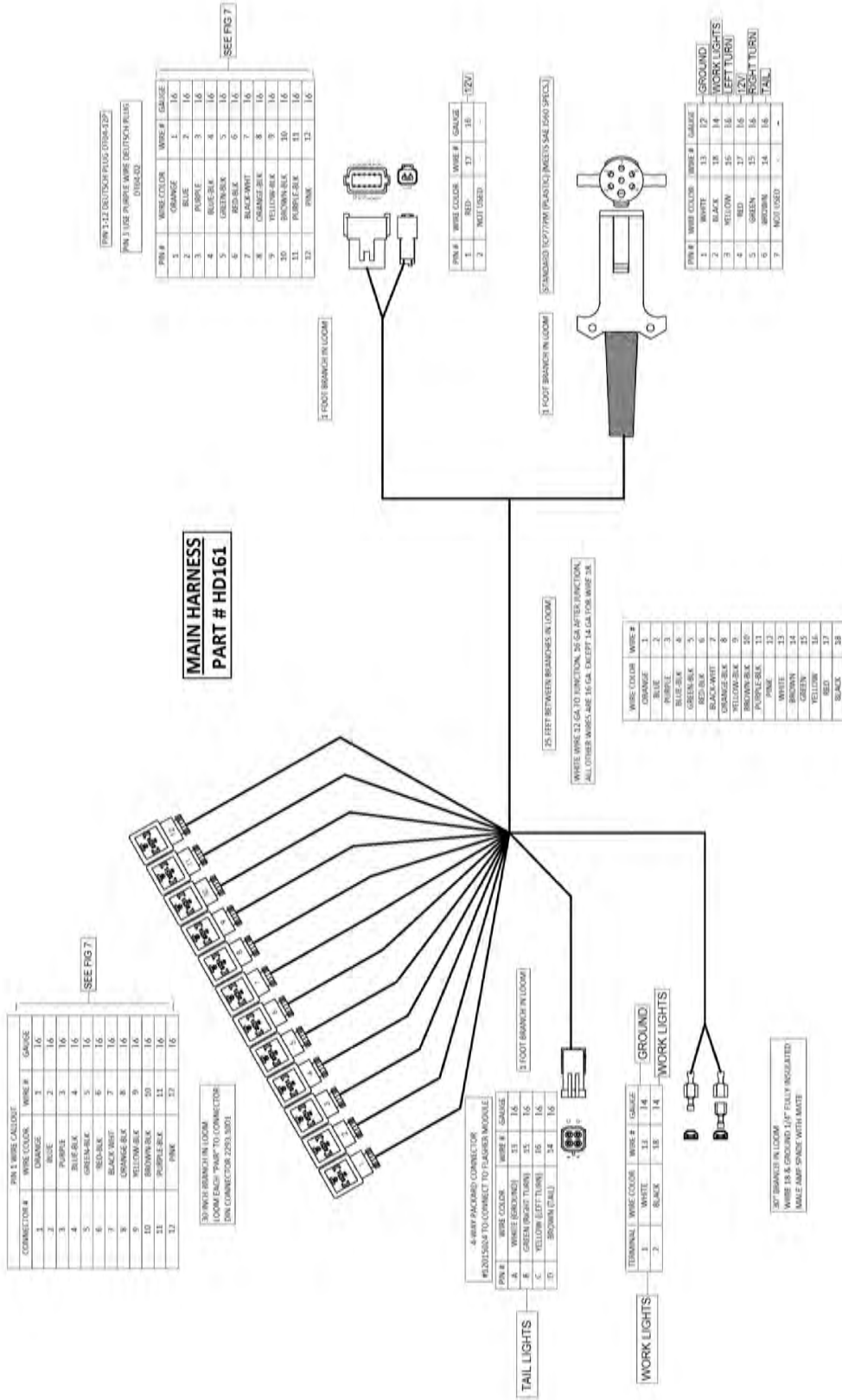


FIGURE 9

CONTROL BOX WIRING

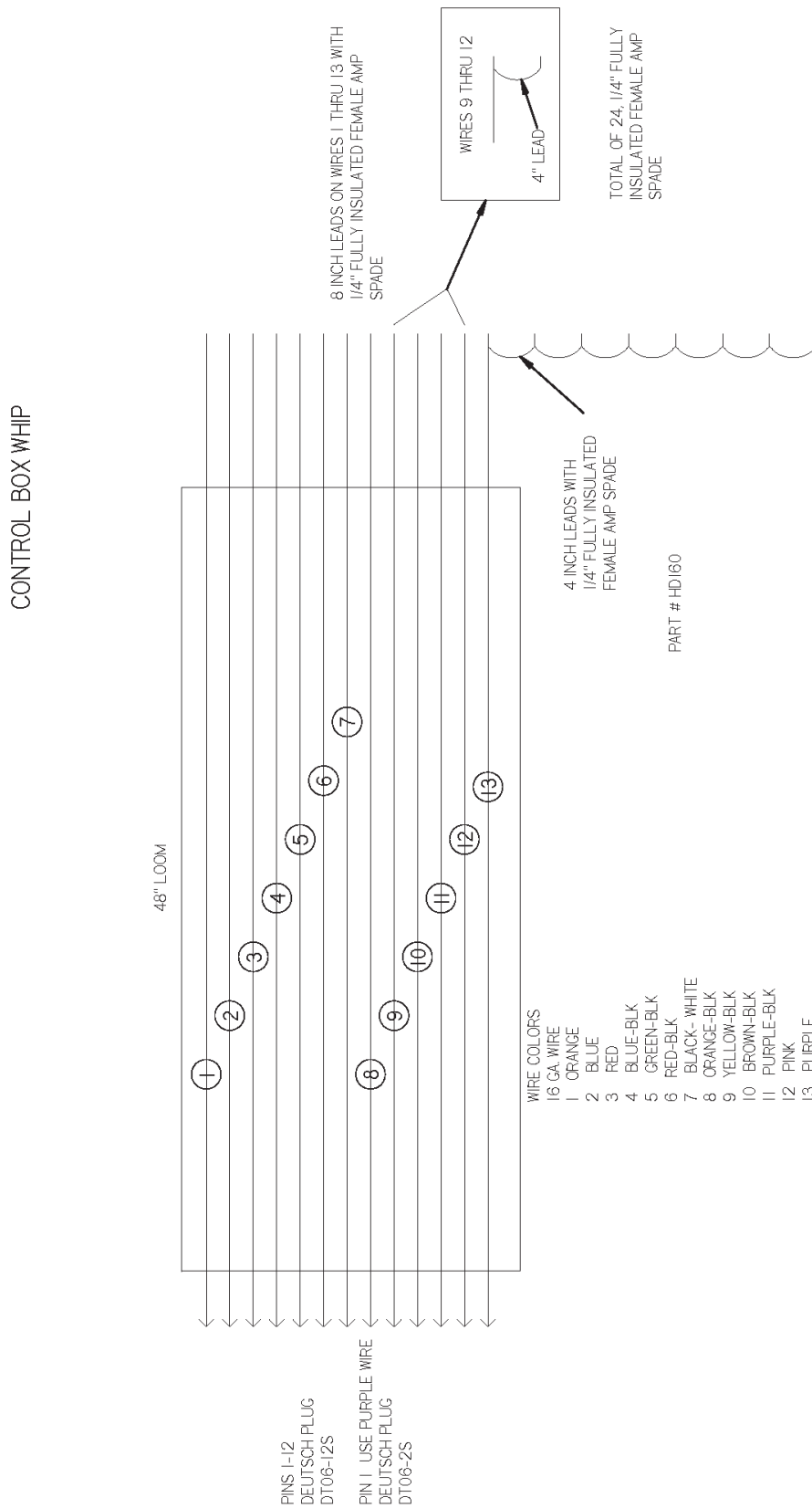
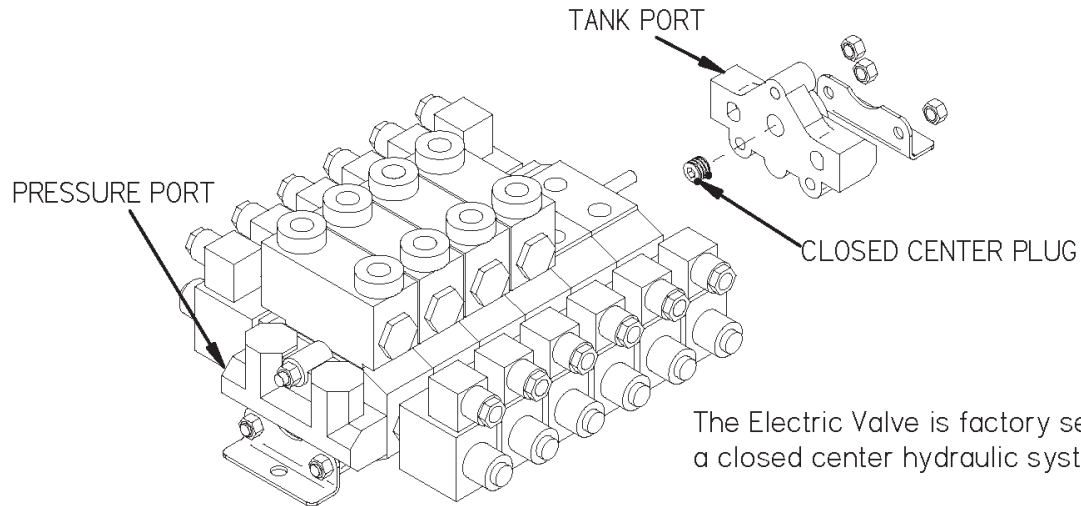


FIGURE 10

OPEN CENTER CHANGE



If closed center valve is used on a open center tractor it will cause the oil to heat because oil is dumping over relief.

Instructions for converting valve to open center:

1. Widen left side of rake using left frame width switch on control box (Remember to be moving forward or rearward when doing this).
2. Release all pressure in hydraulic system (Shut tractor OFF and remove ignition Key).
3. Support valve bottom.
4. Remove left mounting bolt.
5. Remove 3 tie rod nuts on tank port (the outward side of valve).
6. Remove end cap, (do not loose the o-rings that are between the sections).
7. Remove plug in end cap with allen wrench, (save for future use).
8. Re-Assemble end cap and mounting angle, (torque tie rod nuts to 140 in.lbs. (16 N-M).
9. Install bolt in mounting angle.

FIGURE 11
FRONT RAKE WHEEL EXTENSION

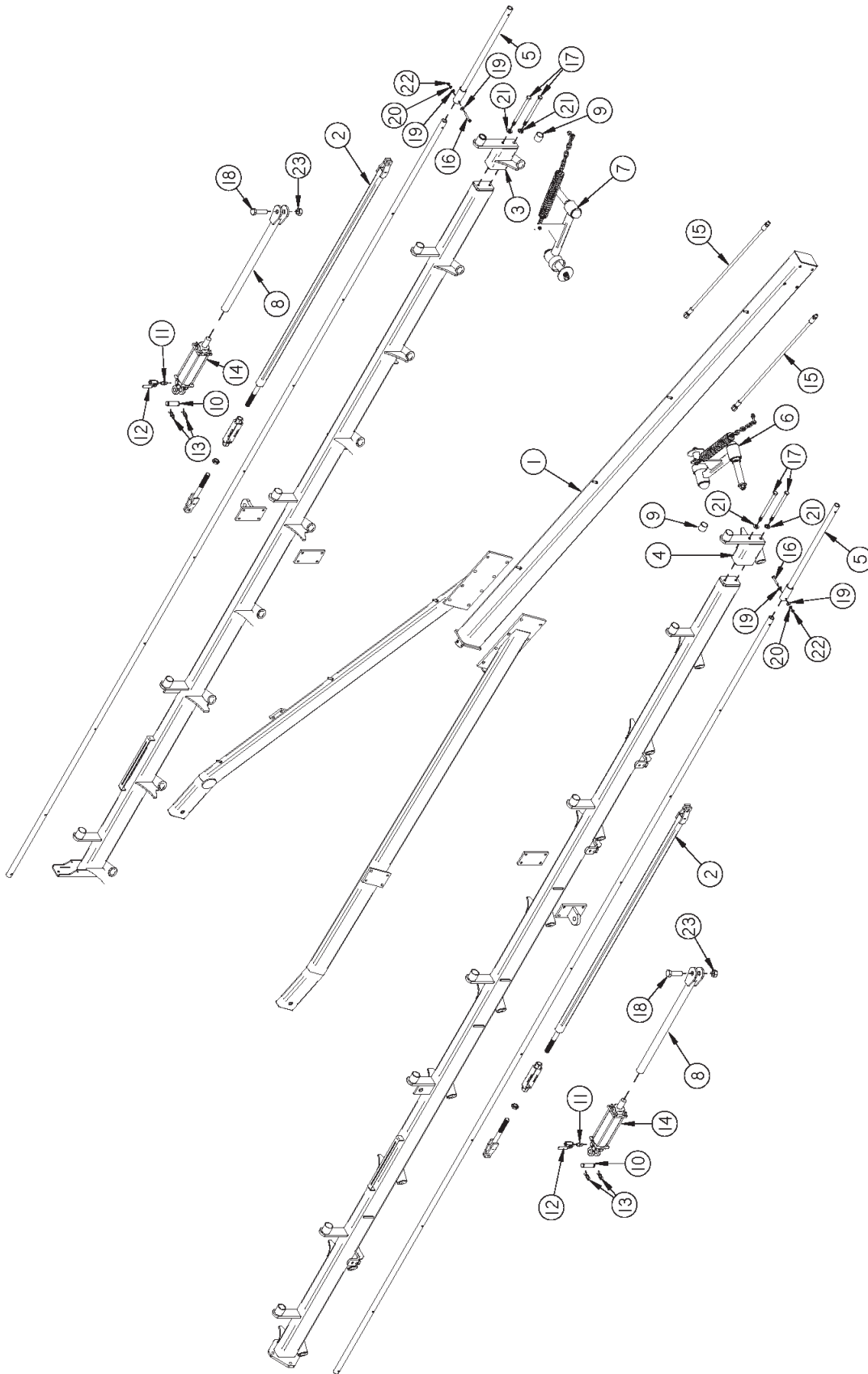


FIGURE 11

FRONT RAKE WHEEL EXTENSION

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	HD252	POLE
2	HD251	TURNBUCKLE LONG STUB LEFT
3	HD259	RAKE BEAM LEFT EXTENSION
4	HD260	RAKE BEAM RIGHT EXTENSION
5	HD253	LIFT PIPE
6	HD246	RAKE ARM RIGHT COMPLETE (INCLUDING SPRING ASSEMBLY) (SEE FIGURE 3 FOR DETAIL)
7	HD245	RAKE ARM LEFT COMPLETE (INCLUDING SPRING ASSEMBLY) (SEE FIGURE 3 FOR DETAIL)
8	HD248	CYLINDER ROD
9	HD128	BUSHING
10	T143	CYLINDER PIN
11	16SV351	VALVE, BALL, 3/8"
12	16SV338	3/8" BALL VALVE
13	T144	CYLINDER CLIP PIN
14	56810	3" X 8" CYLINDER, WITH NO ROD CLEVIS (3000 PSI)
15	BFR635	HYDRAULIC HOSE 3/8" X 33" (102HY-8-6, 101HY-8-6)
16	YBHH12090	BOLT, 3/8" X 2-1/2" GR. 5
17	YBHH20120	BOLT, HEX HEAD, 5/8" X 9" GR. 5
18	YBHH32010	BOLT, 1"-8 X 3-1/2" GR. 5
19	YWFL12005	WASHER, FLAT, 3/8" USS
20	YWLO12005	WASHER, LOCK, 3/8"
21	YWLO20005	WASHER, LOCK, 5/8"
22	YNHX12005	HEX NUT, 3/8"-16
23	YNTL32005	HEX NUT, TOP LOCK, 1"-8
*	HD203	COMPLETE LH RAKE WHEEL
*	HD204	COMPLETE RH RAKE WHEEL

NOTE: * MEANS NOT SHOWN

FIGURE 12

RIGHT REAR WHEEL EXTENSION

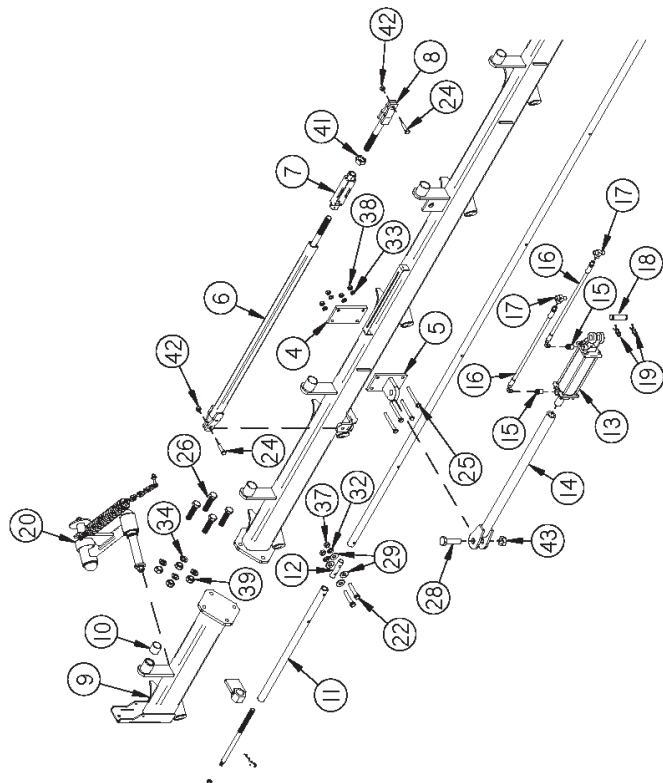
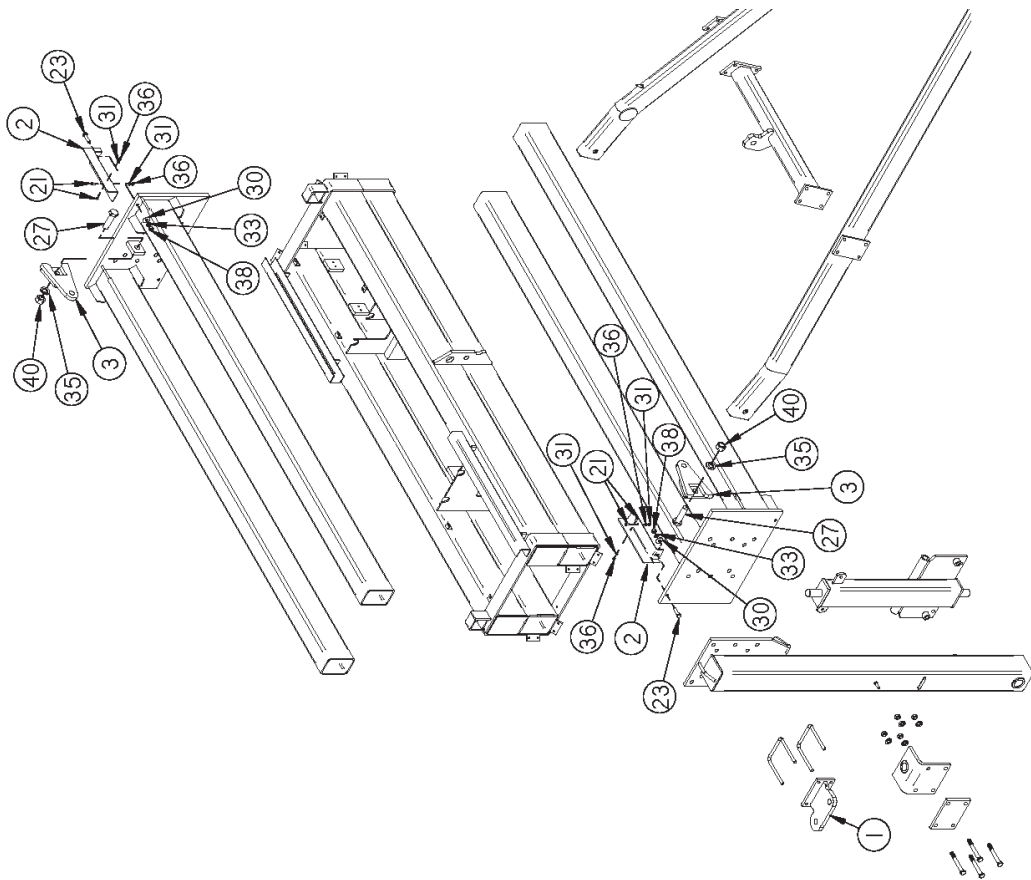


FIGURE 12

RIGHT REAR WHEEL EXTENSION

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	HD244	CYLINDER MOUNT DOUBLE
2	HD242	HOSE HOLDER
3	HD243	CYLINDER MOUNT EXTENSION
4	HD91	STANDOFF MOUNTING PLATE
5	HD132	CYLINDER MOUNT
6	HD113	STABILIZER TUBING
7	HD114	TURNBUCKLE
8	HD116	TURNBUCKLE END
9	HD239	RAKE BEAM REAR EXTENSION
10	HD128	BUSHING
11	HD241	LIFT PIPE
12	XR41	EXTENSION LIFT PIPE CONNECTOR
13	56810	3" X 8" CYLINDER, WITH NO ROD CLEVIS (3000 PSI)
14	HD248	CYLINDER ROD
*	HD256	REAR CYLINDER WITH ROD
15	SHM32	MALE CONNECTOR FTX 4-8
16	0216AS10	1/4" X 22" HYDRAULIC HOSE (139HY-4-4 & 103HY-6-4)
17	23N116	SERVICE TEE .375
18	T143	CYLINDER PIN
19	T144	CYLINDER CLIP PIN
20	HD246	RAKE ARM RIGHT COMPLETE (INCLUDING SPRING ASSEMBLY) (SEE FIGURE 3 FOR DETAIL)
21	YBHH08100	BOLT, 1/4" X 3/4" GR. 5
22	YBHH12075	BOLT, 3/8" X 2" GR. 5
23	YBHH16055	BOLT, 1/2" X 1-3/4" GR. 5
24	YBHH16065	BOLT, 1/2" X 2" GR. 5
25	YBHH16150	BOLT, 1/2" X 4-3/4" GR. 5
26	YBHH20025	BOLT, 5/8" X 2" GR. 5
27	YBHH32006	BOLT, 1"-8 X 2-3/4" GR. 5
28	YBHH32010	BOLT, 1"-8 X 3-1/2" GR. 5
29	YWFL12005	WASHER, FLAT, 3/8" USS
30	YWFL16005	WASHER, FLAT, 1/2" USS
31	YWLO08005	WASHER, LOCK, 1/4"
32	YWLO12005	WASHER, LOCK, 3/8"
33	YWLO16005	WASHER, LOCK, 1/2"
34	YWLO20005	WASHER, LOCK, 5/8"
35	YWLO32005	WASHER, LOCK, 1"
36	YNHX08005	HEX NUT, 1/4"-20
37	YNHX12005	HEX NUT, 3/8"-16
38	YNHX16005	HEX NUT, 1/2"
39	YNHX20005	HEX NUT, 5/8"-11 PLATED
40	YNHX32010	HEX NUT, 1"-8 PLATED
41	YNJM32010	HEX NUT, JAM, 1"-8
42	YNL16005	HEX NUT, TOP LOCK, 1/2"-13
43	YNL32005	HEX NUT, TOP LOCK, 1"-8
*	HD203	COMPLETE LH RAKE WHEEL (SEE FIGURE 3 FOR DETAIL)
*	HD204	COMPLETE RH RAKE WHEEL (SEE FIGURE 3 FOR DETAIL)
*	HD240	RAKE BEAM REAR EXTENSION KIT (INCLUDES RAKE ARM, SPRING ASSEMBLY, REAR EXT.)

NOTE: * MEANS NOT SHOWN

H&S MFG. CO.

products approved

for the

FEMA

SEAL OF QUALITY

