



1460/1660 HI-CAPACITY RAKE

PARTS BOOK



Revision #03
1460/1660 Starting Ser. #411512

HSMFG0214

Part #59786

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.	
SER. NO.	
DESCR.	

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.

MAIN FRAME REAR

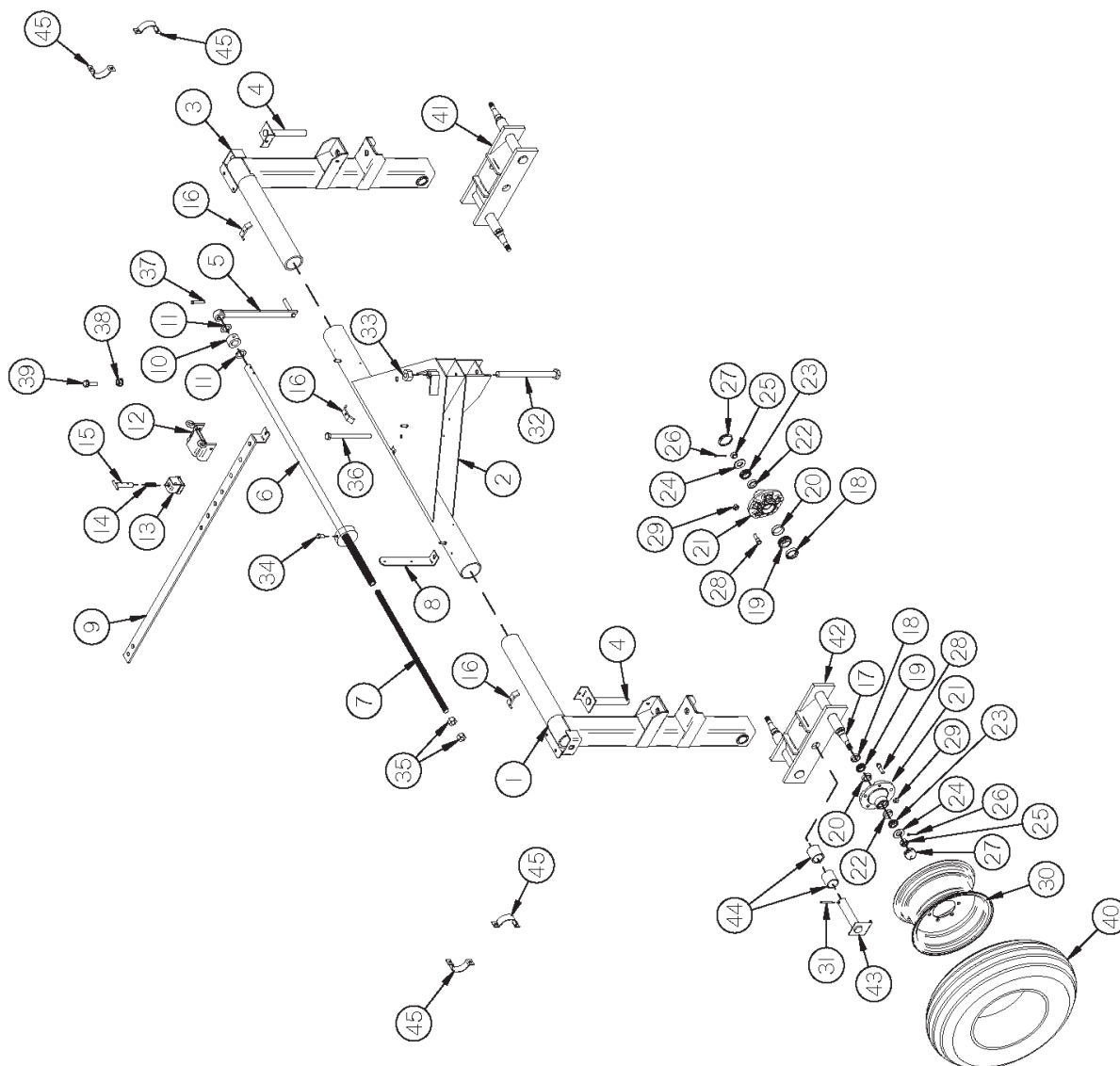


FIGURE 1

MAIN FRAME REAR

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	BFR754	RIGHT AXLE UPRIGHT
2	BFR709	REAR PIVOT ASSEMBLY
3	BFR755	LEFT AXLE UPRIGHT
4	BFR756	BEAM PIVOT SHAFT
5	BFR423	WIDTH ADJUSTMENT HANDLE
6	BFR485	REAR WIDTH ADJUSTMENT TUBE
7	BFR420	REAR WIDTH ADJUSTMENT ROD
8	BFR649	SMV BRACKET
9	BFR611	WIDTH ADJUSTMENT BAR
10	BFR422	WIDTH ADJUSTMENT COLLAR
11	BFR523	POLY WASHER
12	BFR616	WIDTH ADJUSTMENT STOP
13	BFR239	SLEEVE ADJUSTABLE LOCK
14	BFR240	SPRING
15	BFR241	ADJUSTMENT HANDLE
16	23N67	HOSE HOLDER
17	BFR522	SPINDLE
18	BFR57	SEAL
19	17G145	INNER BEARING
20	17G146	INNER RACE
21	BFR60	HUB
22	BFR61	OUTER RACE
23	BFR62	OUTER BEARING
24	YWFL24005	WASHER, FLAT, 3/4" USS
25	YNSL24010	HEX NUT, SLOTTED, 3/4"-16
26	BFR65	COTTER PIN
27	BFR66	HUB CAP
28	YBSD16005	STUD BOLT, 1/2"-20 UNF X 1-7/8" (3/8" SHOULDER)
29	YNWL16005	WHEEL NUT, 1/2"-20 UNF
*	BFR75	COMPLETE GROUND WHEEL HUB
30	BFR67	WHEEL (15 X 5)
31	YPEX12025	EXPANSION PIN, 3/8" X 2-3/4"
32	YBHH24115	BOLT, 3/4" X 8-1/2" GR. 5
33	YNHX24010	HEX NUT, 3/4"-16
34	YBHH16010	BOLT, 1/2" X 1" GR. 5
35	YNAC24005	HEX NUT, ACME, 3/4"-6
36	YBHH24090	BOLT, 3/4" X 6" GR. 5
37	YBHH12090	BOLT, 3/8" X 2-1/2" GR. 5
38	BFR642	WIDTH ADJUSTMENT SPACER
39	BFR724	SELF TAPPING BOLT
40	BFR128	TIRE (6.70 X 15)
41	BFR510	LH TANDEM AXLE
42	BFR509	RH TANDEM AXLE
43	BFR524	TANDEM PIN
44	56244	BUSHING
45	BFR732	WIDTH STOP RING

NOTE: * MEANS NOT SHOWN

FIGURE 2
MAIN FRAME POLE AND LINKAGE

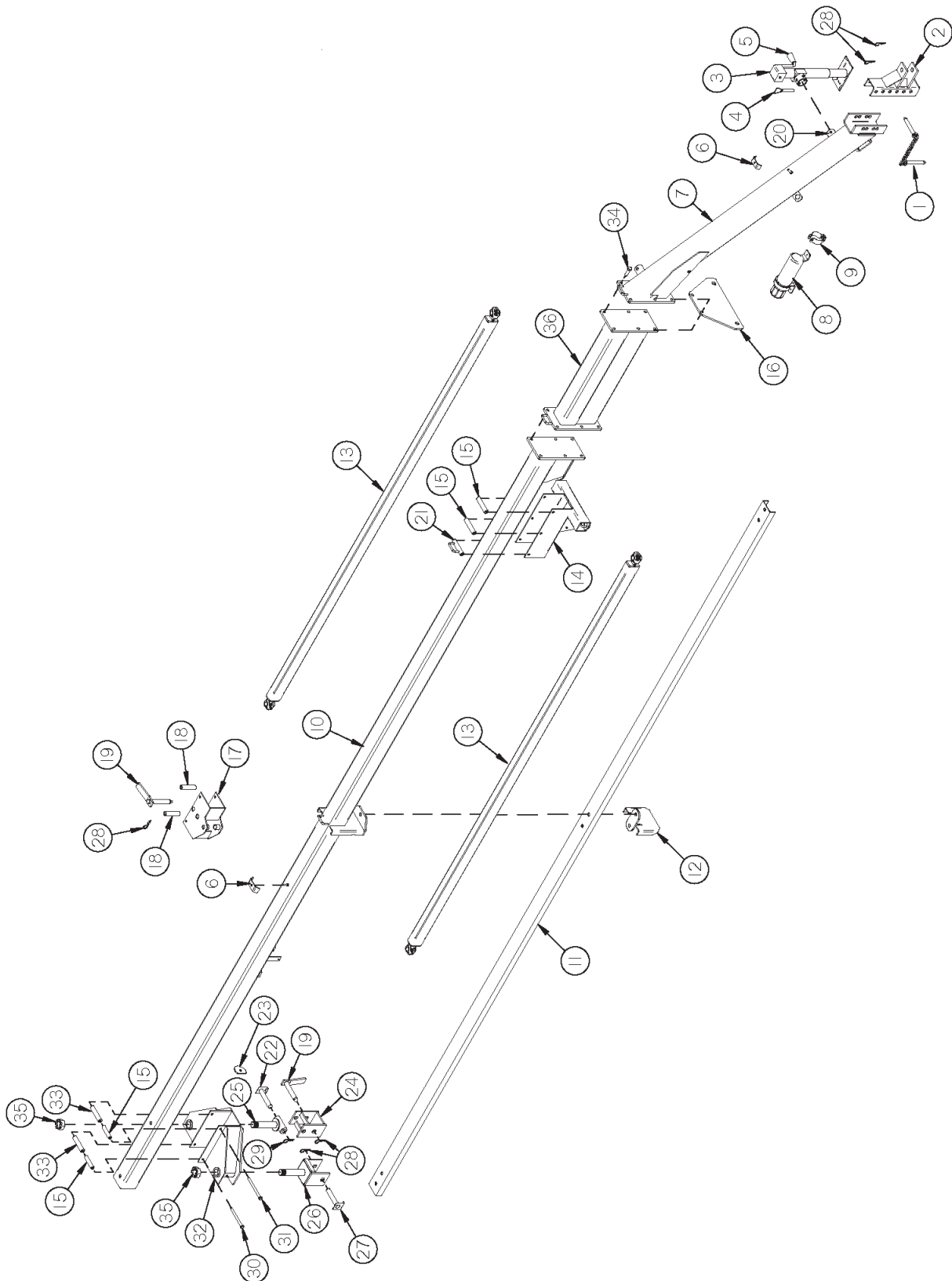


FIGURE 2

MAIN FRAME POLE AND LINKAGE

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	BFR450	HITCH PINS
2	BFR157	HITCH
3	BFR753A	JACK
4	12N117	JACK PIN & CHAIN
5	5N78	JACK HANDLE
6	HE42	HOSE HOLDER
7	BFR730	POLE
8	S522	MANUAL HOLDER
9	S23	MANUAL CLAMP - LARGE
10	14DWE81	POLE
11	14DCH07	POLE CHANNEL
12	14DWE83	MIDDLE LINKAGE STOP BOTTOM
13	BFR458	FRONT LINKAGE
14	BFR455	FRONT LINKAGE SLIDER
15	BFR457	SLIDER SPACER
16	BFR731	TRANSPORT MOUNT
17	BFR465	CENTER SLIDER
18	BFR467	CENTER SLIDER SPACER
19	BFR716	CENTER SLIDER PIN
20	12N121	JACK MOUNT
21	BFR456	HOSE GUIDE SPACER
22	BFR468	LINKAGE PINS
23	BFR693	STOP WASHER
24	BFR477	BACK LINKAGE YOKE LH
25	BFR480	LEFT PIVOT YOKE SHAFT
26	BFR476	BACK LINKAGE YOKE RH
27	BFR479	PIVOT YOKE SHAFT PIN RH
28	YPHR02010	HAIR PIN, #21-07
29	YPHR06040	HAIR PIN, 3/16" X 3-3/4"
30	YBHH16165	BOLT, 1/2" X 6" GR. 5
31	YBHH16175	BOLT, 1/2" X 6-1/2" GR. 5
32	BFR491	BACK LINKAGE SLIDER
33	BFR471	BACK SLIDER ROLLER
34	YBHH20025	BOLT, 5/8" X 2" GR. 5
35	YNSL40005	HEX NUT, SLOTTED, 1-1/2"-12
36	031WE04	POLE EXTENSION

FIGURE 3
RAKE BEAMS AND ARMS

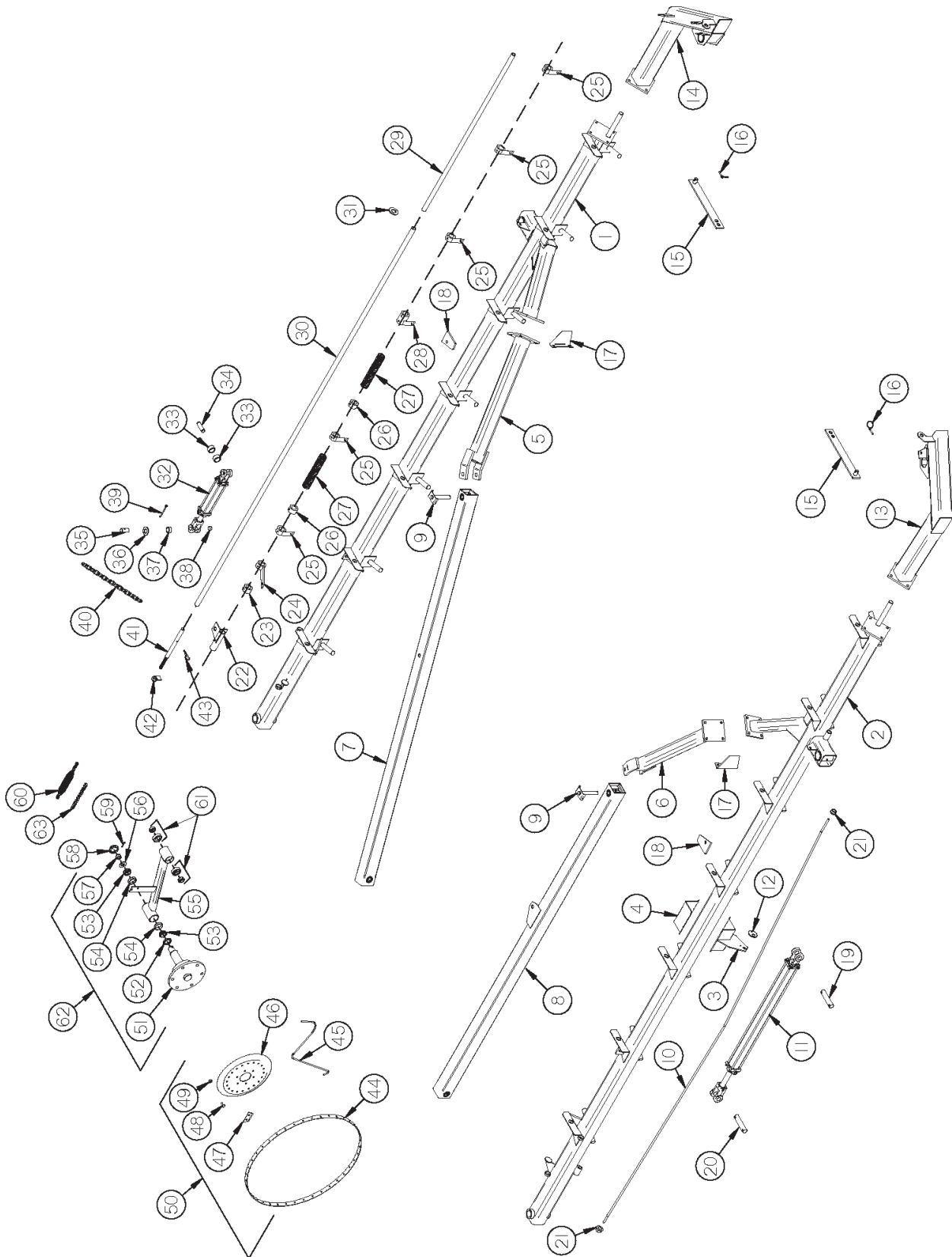


FIGURE 3

RAKE BEAM AND ARMS

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	14DWE86	RAKE BEAM LEFT
2	14DWE89	RAKE BEAM RIGHT
3	14DWE85	ROD STAND-OFF
4	14D3G18	ROD STAND-OFF BRACKET
5	BFR745	RAKE BEAM ARM LH
6	BFR744	RAKE BEAM ARM RH
7	BFR463	LEFT REAR LINKAGE
8	BFR462	RIGHT REAR LINKAGE
9	BFR461	RAKE BEAM ARM PIN
10	BFR612	SIDE ARM STABILIZER ROD
11	56004	HYDRAULIC CYLINDER (2" X 40")
12	DF22	WASHER
13	BFR726	RIGHT EXTENSION
14	BFR727	LEFT EXTENSION
15	BFR597	SAFETY BAR
16	YPLY12010	LYNCH PIN, 7/16" X 1-3/4"
17	BFR549	TOOTH DEFLECTOR
18	63796	RAKE ARM STOP
19	BFR396	CYLINDER PIN
20	BFR634	FRONT WIDTH CYLINDER PIN
21	YNFG24005	HEX NUT, FLANGED-LOCK, 3/4"-10
22	BFR530	HYDRAULIC CYLINDER END SLIDE LH
*	BFR531	HYDRAULIC CYLINDER END SLIDE RH
23	BFR83	PIPE CLAMP (2 HOLES)
24	BFR430	RH SPRING BRACKET
25	BFR431	LH SPRING BRACKET
26	BFR82	PIPE CLAMP (1 HOLE)
27	BFR84	COMPRESSION SPRING
28	BFR749	LH LIFTING PIPE CONNECTOR
*	BFR750	RH LIFTING PIPE CONNECTOR
29	BFR520	LIFTING PIPE FRONT
30	BFR521	LIFTING PIPE BACK
31	BFR641	WASHER
32	56000	HYDRAULIC LIFT CYLINDER (2" X 10")

NOTE: * MEANS NOT SHOWN

FIGURE 3
RAKE BEAM AND ARMS

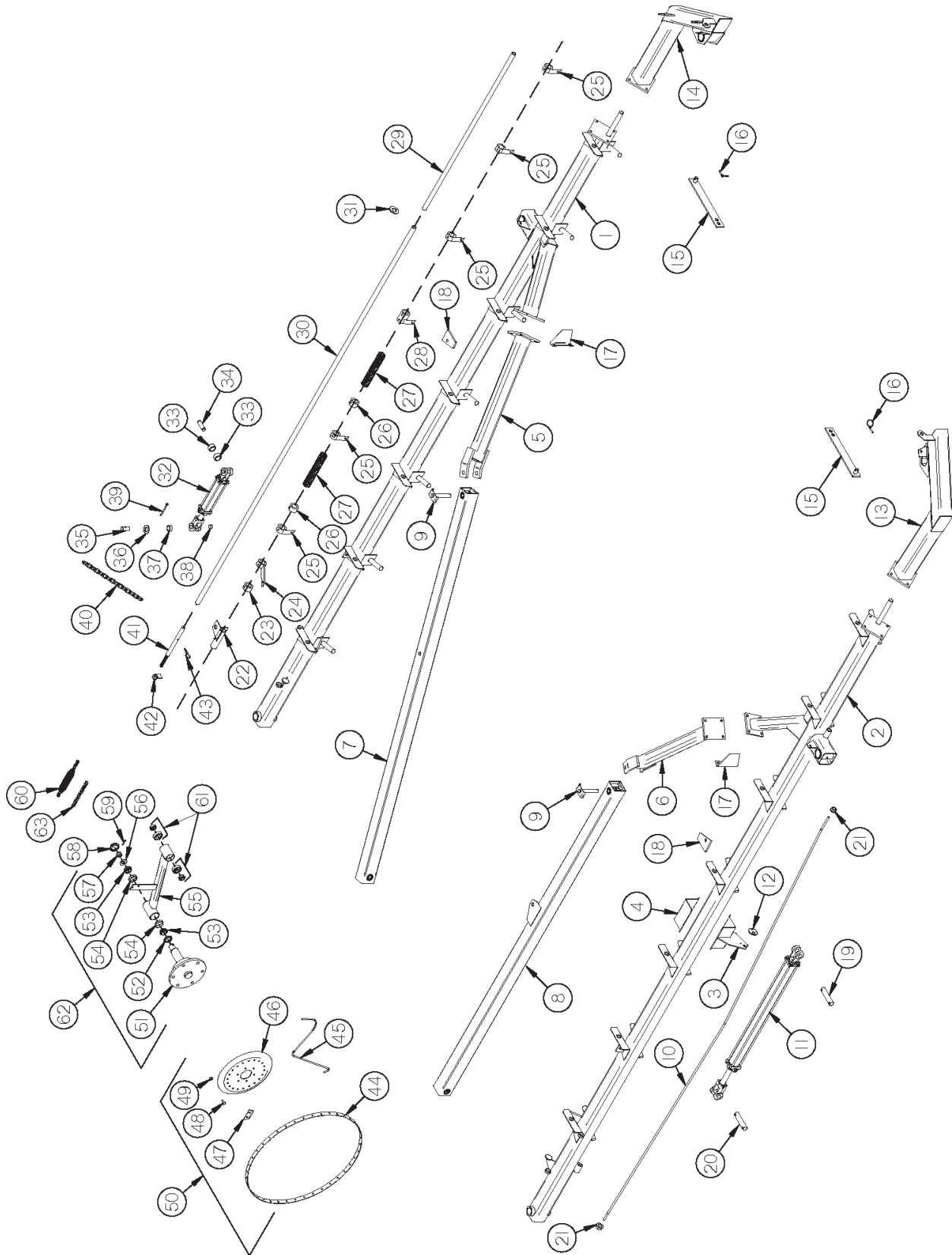


FIGURE 3

RAKE BEAM AND ARMS

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
33	X94	CYLINDER SPACER
34	T143	CYLINDER PIN
35	BFR517	CYLINDER PIN - BACK
36	16SV136	WASHER
37	K106	CYLINDER SPACER
38	BFR506	NYLON WEAR BLOCK
39	YPCT07005	COTTER PIN, 7/32" X 2 "
40	BFR111	BACK RAKE ARM ADJUSTMENT CHAIN
41	BFR486	RAKE ARM LOCK-UP SHAFT
42	BFR426	RAKE PRESSURE HANDLE
43	YPHR08040	HAIR PIN, 1/4" X 5"
44	FR72	OUTER RING
45	FR73	RAKE WHEEL TOOTH
46	FR71	RAKE WHEEL CENTER
47	FR74	RAKE TOOTH CLIP
48	YBCR76005	CARR. BOLT, 10MM X 25MM
49	YNHX76015	NUT HEX, M10-1.5
50	FR69	COMPLETE RAKE WHEEL LH
*	FR70	COMPLETE RAKE WHEEL RH
51	FR24	RAKE WHEEL HUB
52	HD124	SEAL
53	HD122	BEARING
54	58714	RACE, 15245 PEER
55	14DWE93	RAKE ARM LH
*	14DWE94	RAKE ARM RH
56	YWFL28010	WASHER, FLAT, SAE 7/8"
57	YNSL28005	HEX NUT, SLOTTED, 7/8"-14
58	57875	HUB CAP- ZINC PLATED
59	YPCT05010	COTTER PIN, 5/32" X 1-1/2"
60	8771	RAKE ARM SPRING
61	BFR525	BEARING WITH LOCK COLLAR
62	14DAS16	HI CAP HEAVY ARM LH ASSY
*	14DAS17	HI CAP HEAVY ARM RH ASSY
63	BFR140	RAKE ARM ADJUSTMENT CHAIN

NOTE: * MEANS NOT SHOWN

FIGURE 4
GAUGE WHEEL

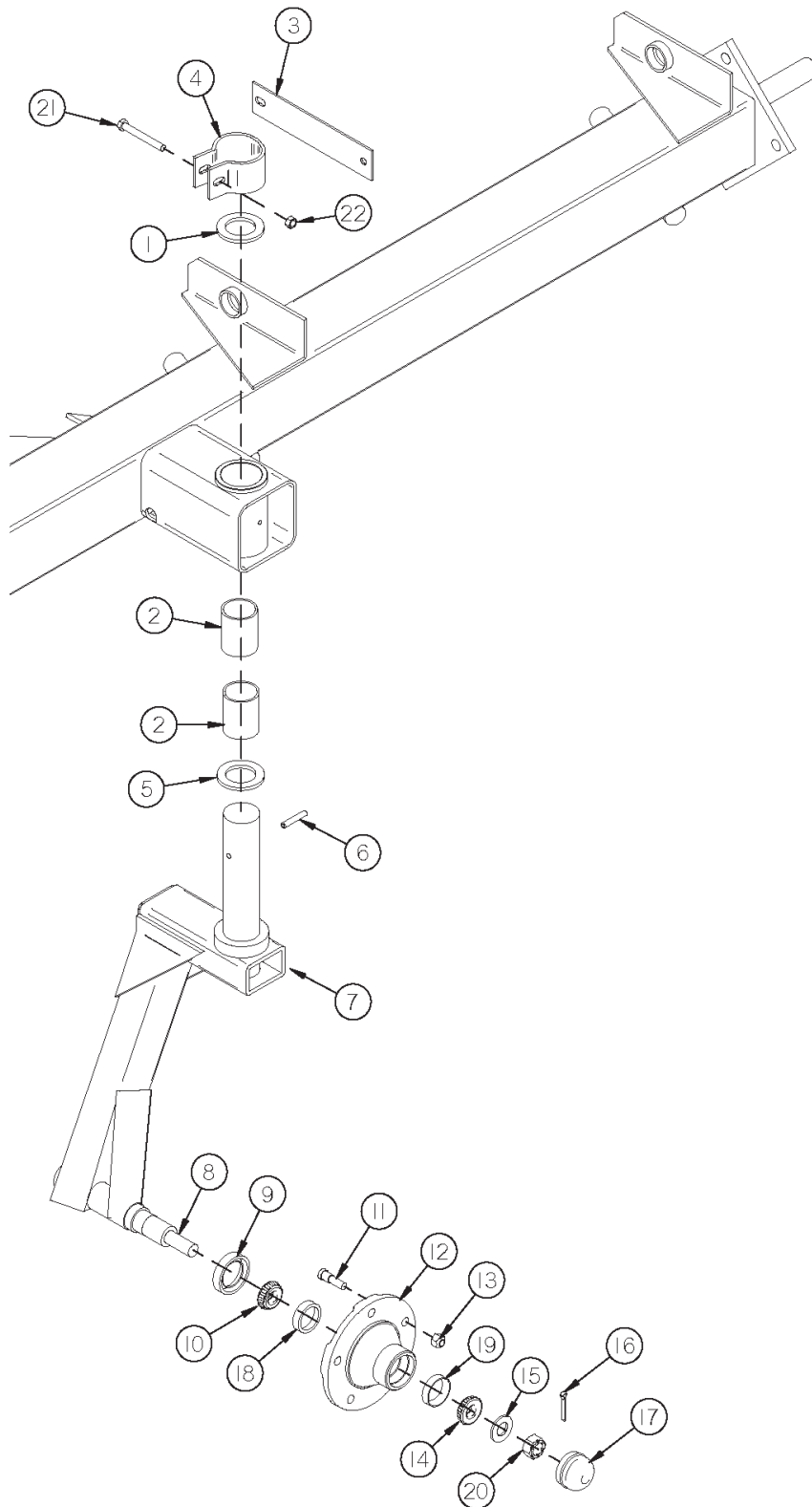


FIGURE 4

GAUGE WHEEL

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	BFR309	GAUGE WHEEL WASHER
2	RG26	BRONZE BUSHING
3	BFR310	BRAKE PAD (2)
4	BFR311	BRAKE COLLAR
5	RG24	BRONZE WASHER
6	YPEX10025	EXPANSION PIN, 5/16" X 2-3/4"
7	BFR312	COMPLETE FORK RH
*	BFR316	COMPLETE FORK LH
8	BFR56	SPINDLE
9	BFR57	SEAL
10	17G145	INNER BEARING
11	YBSD16005	STUD BOLT, 1/2"-20 UNF X 1-7/8" (3/8" SHOULDER)
12	BFR60	HUB
13	YNWL16005	WHEEL NUT, 1/2"-20 UNF
14	BFR62	OUTER BEARING
15	YWFL24005	WASHER, FLAT, 3/4" USS
16	YPCT05010	COTTER PIN, 5/32" X 1-1/2"
17	BFR66	HUB CAP
18	17G146	INNER RACE
19	BFR61	OUTER RACE
20	YNSL24010	HEX NUT, SLOTTED, 3/4"-16
21	YBHH12125	BOLT, 3/8" X 3" GR. 5 FULL THREAD
22	YNHX12005	HEX NUT, 3/8"-16
*	BFR75	COMPLETE GROUND WHEEL HUB
*	BFR67	WHEEL 5 X 15
*	BFR128	6.70 X 15 TIRE

NOTE: * MEANS NOT SHOWN

FIGURE 5
HYDRAULICS

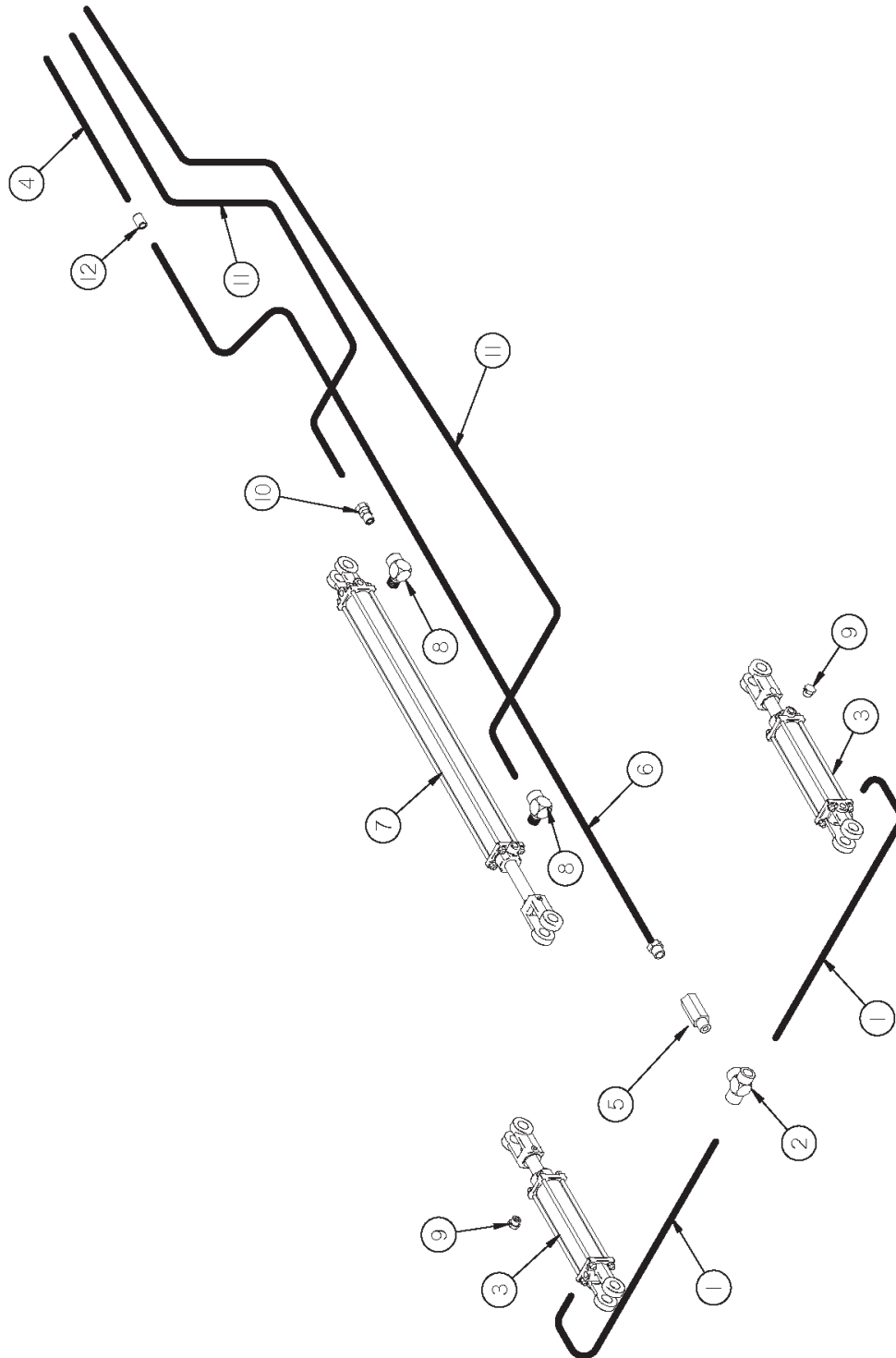


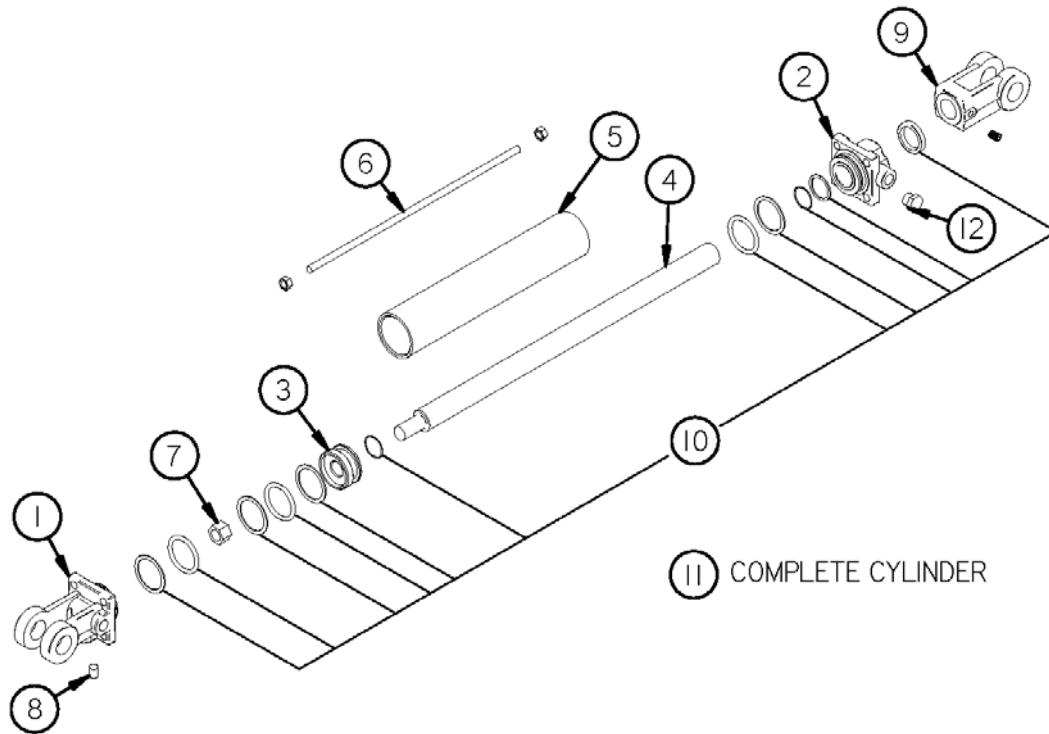
FIGURE 5

HYDRAULICS

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	37N60	HYDRAULIC HOSE 108"
2	BFR74	3/8" FEMALE TEE
3	56000	HYDRAULIC LIFT CYLINDER (2" X 10")
4	BFR740	HYDRAULIC HOSE 3/8" X 132" MP X 1/2" MP
5	BFR554	FLOW VALVE
6	BFR738	HYDRAULIC HOSE 3/8" X 255" 1/2"MP X 3/8"MP
7	56004	HYDRAULIC CYLINDER (2" X 40")
8	23N234	3/8" STREET ELBOW
9	BFR70	VENT PLUG
10	58721	3/8" MALE ADAPTER WITH .031 ORIFICE
11	BFR739	HYDRAULIC HOSE 3/8" X 3" 3/8" MP X 1/2" MP
12	HE60	3/8" PIPE COUPLER

FIGURE 6

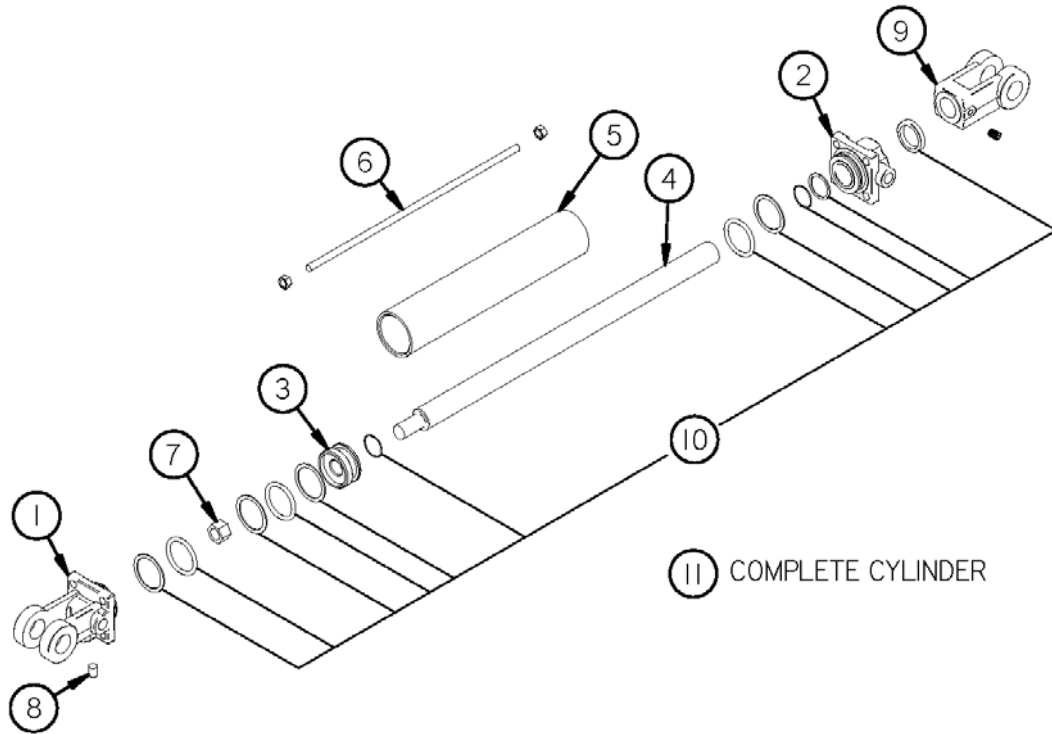
HYDRAULIC LIFT CYLINDER



<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	23N142A	CLEVIS CAP
2	56174	ROD CAP
3	56180	PISTON
4	16SV168A	ROD
5	16SV169	CYLINDER TUBE
6	16SV170	TIE ROD
7	23N148	PISTON NUT
8	23N149	PLUG
9	23N150A	ROD CLEVIS
10	56187	SEAL KIT
11	56000	COMPLETE CYLINDER (2" X 10")
12	BFR70	VENT PLUG

FIGURE 7

HYDRAULIC OPEN CYLINDER



<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	23N142A	CLEVIS CAP
2	56174	ROD CAP
3	56180	PISTON
4	BFR654	ROD
5	BFR655	CYLINDER TUBE
6	BFR656	TIE ROD
7	23N148	PISTON NUT
8	23N149	PLUG
9	23N150A	ROD CLEVIS
10	56187	SEAL KIT
11	56004	COMPLETE CYLINDER (2" X 40")

FIGURE 8
2-WHEEL EXTENSION KIT

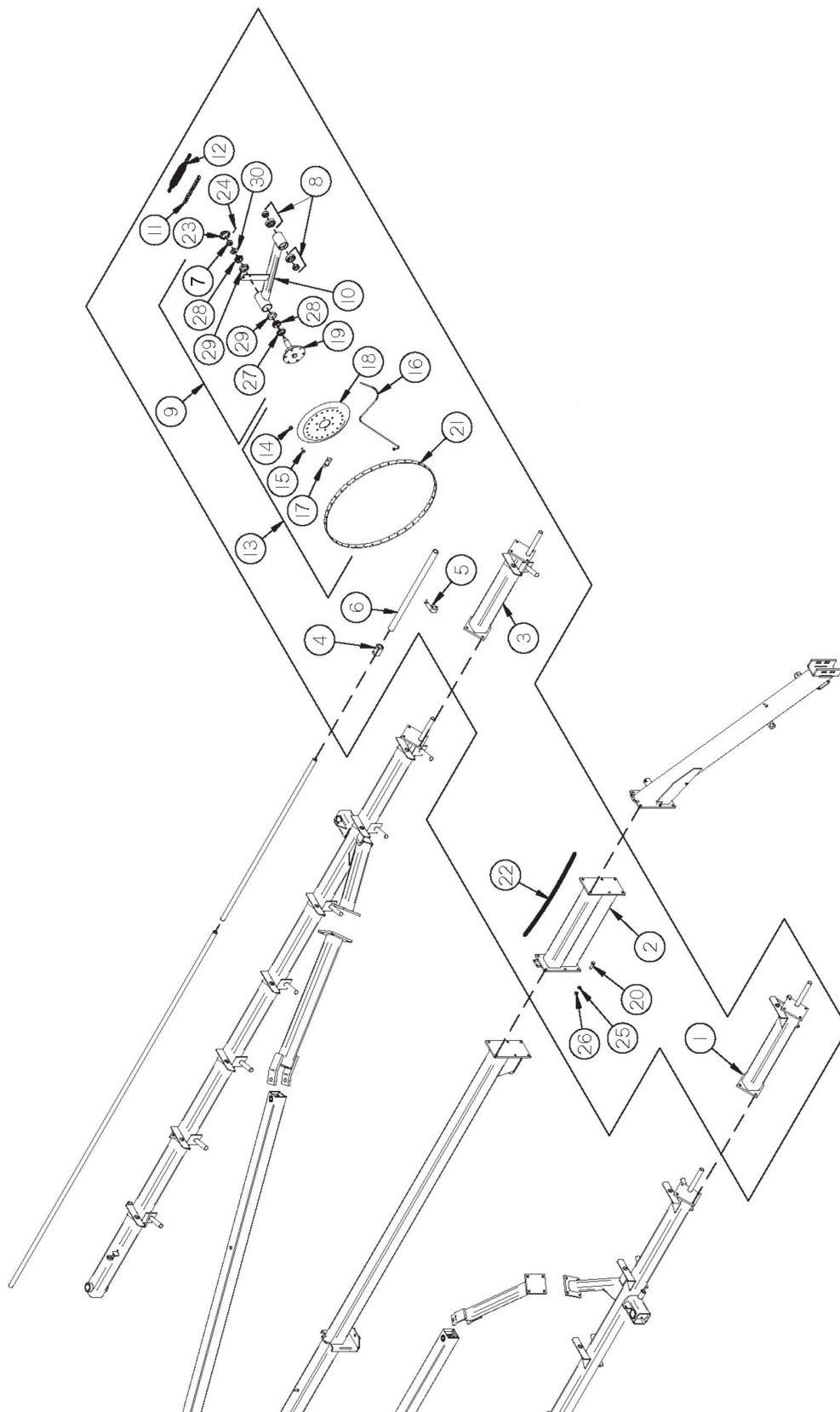


FIGURE 8

2-WHEEL EXTENSION KIT

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	BFR733	RAKE BEAM EXPANSION RIGHT
2	031WE04	POLE EXTENSION
3	BFR734	RAKE BEAM EXPANSION LEFT
4	BFR537	LIFTING PIPE CONNECTOR
5	BFR431	LH SPRING CLAMP
*	BFR430	RH SPRING CLAMP
6	BFR536	LIFTING PIPE EXTENSION
7	YNSL28005	HEX NUT, SLOTTED, 7/8"-14
8	BFR525	BEARING WITH LOCK COLLAR
9	14DAS16	HI CAP HEAVY ARM LH ASSY. HI
*	14DAS17	CAP HEAVY ARM RH ASSY.
10	14DWE93	RAKE ARM LH
*	14DWE94	RAKE ARM RH
11	BFR140	RAKE ARM ADJUSTMENT CHAIN
12	8771	SPRING
13	FR69	RAKE WHEEL LH
*	FR70	RAKE WHEEL RH
14	YNHX76015	NUT HEX, M10-1.5
15	YBCR76005	CARR. BOLT, 10MM X 25MM
16	FR73	RAKE WHEEL TOOTH
17	FR74	RAKE TOOTH CLIP
18	FR71	RAKE WHEEL CENTER
19	FR24	RAKE WHEEL HUB
20	YBHH20025	BOLT, 5/8" X 2" GR. 5 (14 PCS.)
21	FR72	RAKE WHEEL BAND
22	BFR635	HOSE 1/2" FP X 1/2" MP X 33" (3)
23	17G144	HUB CAP
24	YPCT05010	COTTER PIN, 5/32" X 1-1/2"
25	YWLO20005	WASHER, LOCK, 5/8"
26	YNHX20005	HEX NUT, 5/8"-11 PLATED SEAL
27	HD124	BEARING
28	HD122	RACE, 15245 PEER
29	58714	WASHER, FLAT, SAE 7/8"
30	YWFL28010	HEX NUT, SLOTTED, 7/8"-14

NOTE: * MEANS NOT SHOWN

FIGURE 9
OPTIONAL 2-WHEEL KICKER WHEEL

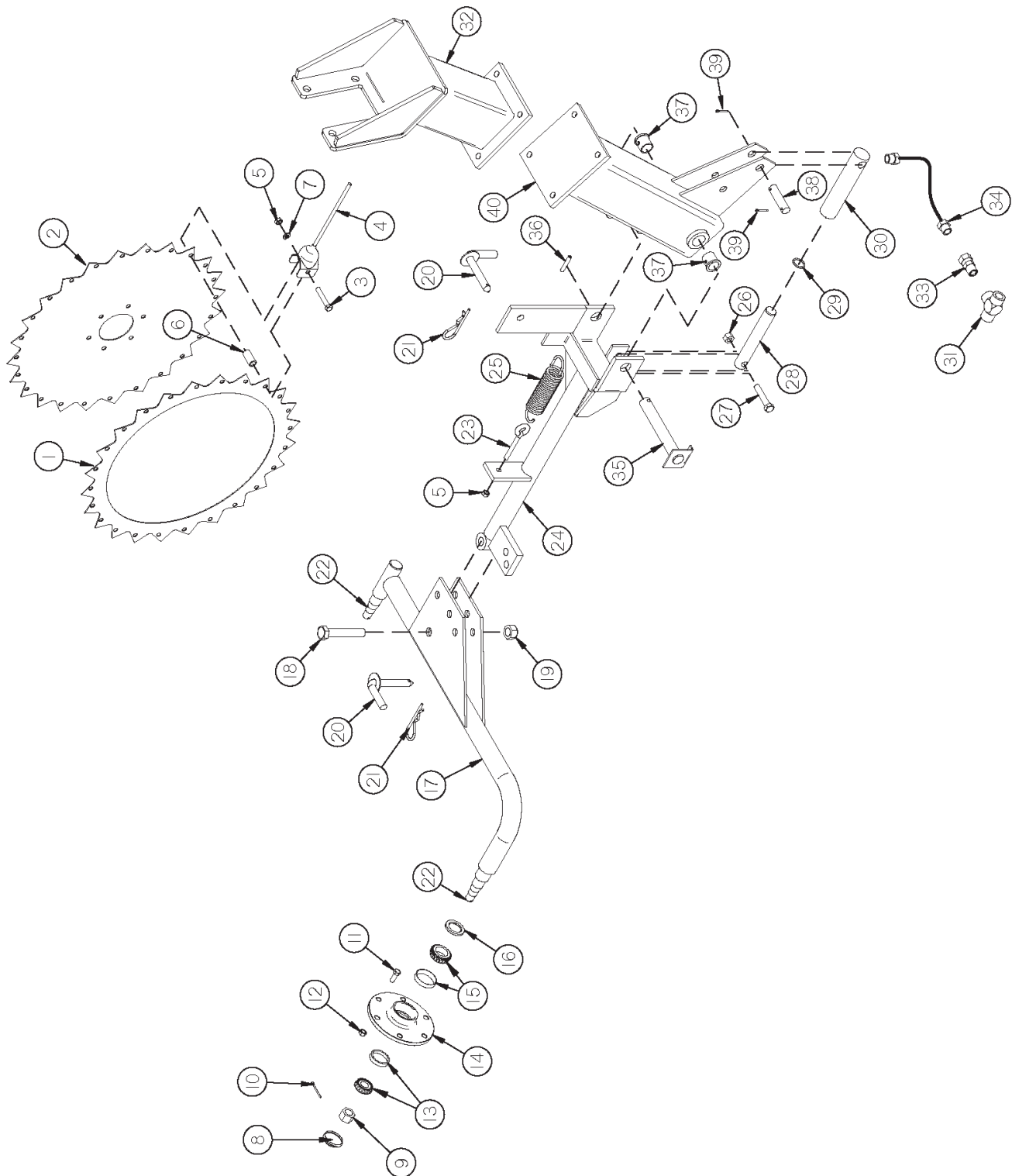


FIGURE 9

OPTIONAL 2-WHEEL KICKER WHEEL

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	BFR369	RAKE WHEEL RING
2	BFR370	RAKE WHEEL CENTER
3	YBHH12100	BOLT, 3/8" X 2-1/4" GR. 5
4	T82	RAKE WHEEL TOOTH
5	YNTL12005	HEX NUT, TOP LOCK, 3/8"-16
6	BFR371	RAKE WHEEL SPACER
7	YWLO12005	WASHER, LOCK, 3/8"
8	T173	HUB CAP
9	YNSL24010	HEX NUT, SLOTTED, 3/4"-16
10	YPCT05010	COTTER PIN, 5/32" X 1-1/2"
11	YBHH76005	BOLT, 10MM X 25MM
12	YNHX76015	HEX NUT, 10MM
13	600014	OUTER BEARING AND RACE
14	BFR32	RAKE WHEEL HUB
15	600012	INNER BEARING AND RACE
16	T163	SEAL
17	BFR511	CENTER KICKER WHEEL ARM
18	YBHH24050	BOLT, 3/4" X 3" GR. 5
19	YNTL24005	HEX NUT, TOP LOCK, 3/4"-10
20	BFR197	LOCKING PIN
21	YPHR02010	HAIR PIN, #21-07
22	BFR36	SPINDLE
23	YBTE12025	TURNED EYE BOLT, 3/8" X 3" FULL THREAD
24	BFR512	CENTER KICKER WHEEL PIVOT
25	BR62	SPRING
26	YNTL16005	HEX NUT, TOP LOCK, 1/2"-13
27	YBHH16080	BOLT, 1/2" X 2-1/2" GR. 5
28	BFR114	PISTON
29	BFR115	O-RING
30	BFR116	HYDRAULIC CYLINDER
31	BFR74	3/8" PIPE TEE
32	BFR736	STANDOFF
*	BFR748	COMPLETE WHEEL ASSEMBLY
33	58721	3/8" UNION ADAPTER WITH .031 ORIFICE
34	BFR737	HYDRAULIC HOSE 1/4" X 53" 3/8"MP X 1/4"MP
35	BFR379	AXLE SHAFT
36	YPEX10015	EXPANSION PIN, 5/16" X 1-3/4"
37	BFR27	BUSHING
38	BFR515	CYLINDER PIN
39	YPCT05010	COTTER PIN, 5/32" X 1-1/2"
40	BFR514	KICKER WHEEL OFFSET

NOTE: * MEANS NOT SHOWN

FIGURE 10
OPTIONAL 3-WHEEL KICKER WHEEL

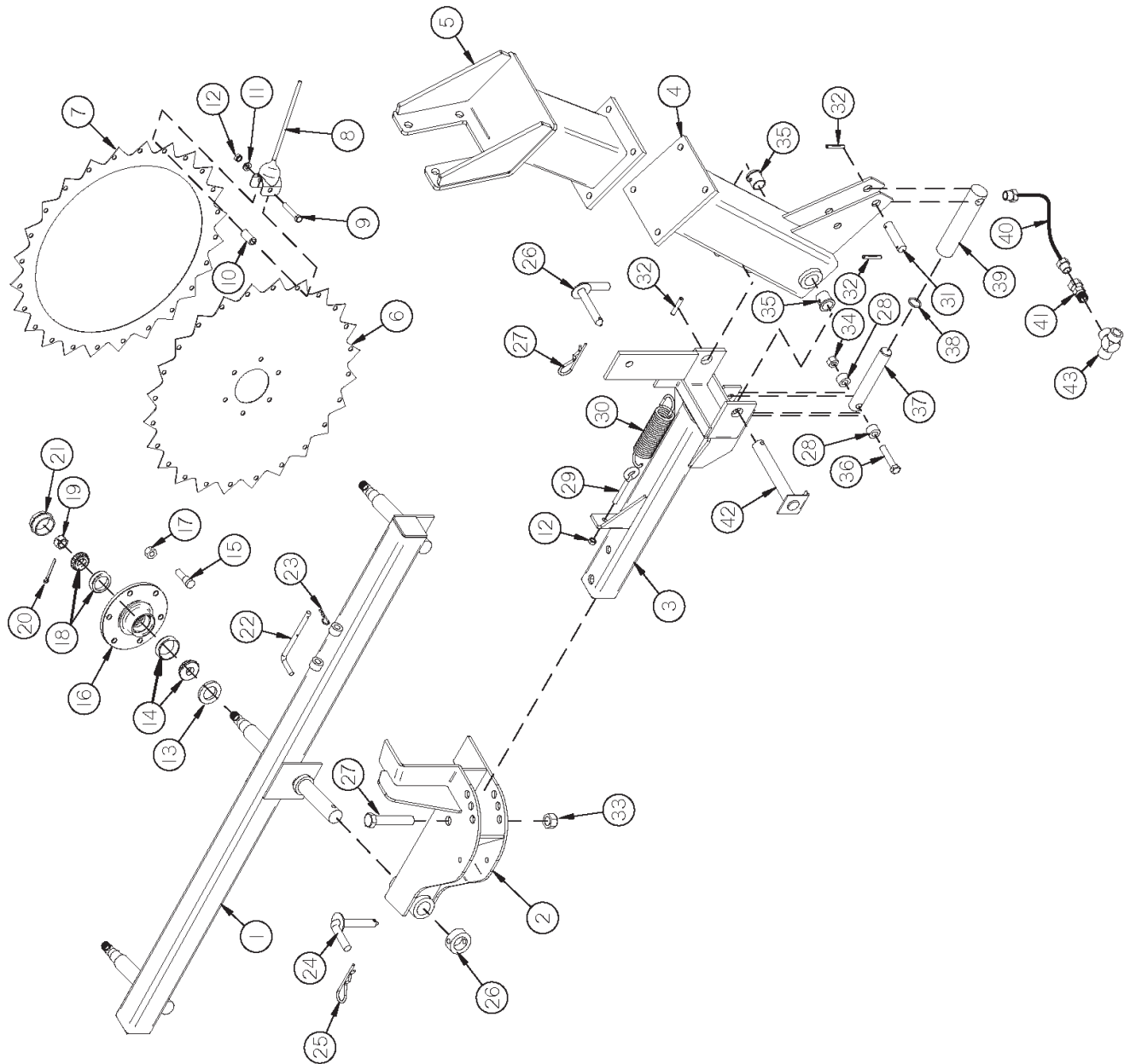


FIGURE 10

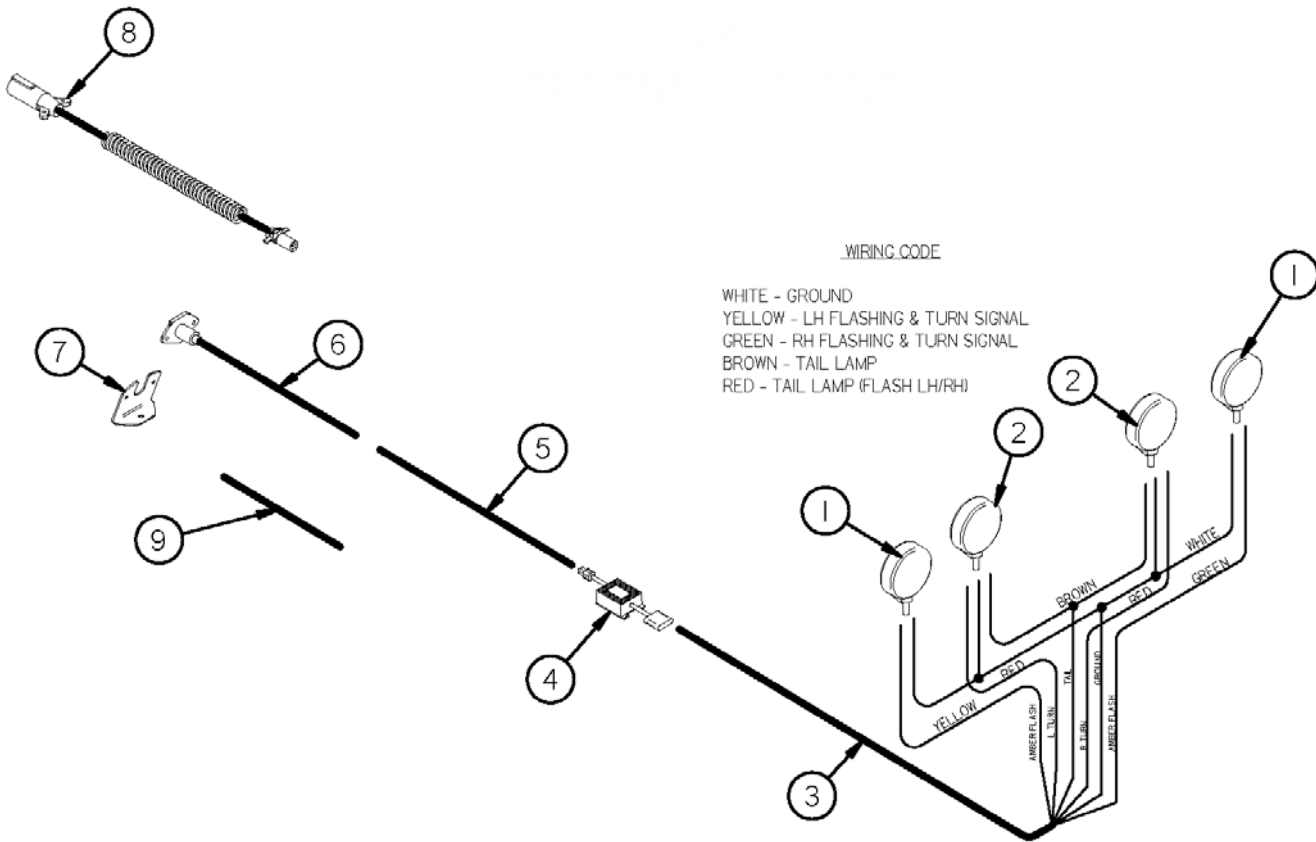
OPTIONAL 3-WHEEL KICKER WHEEL

<u>ITEM</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	BFR717	KICKER RAKE BEAM
2	BFR718	PIVOT
3	BFR719	SQUARE RAKE ARM
4	BFR514	KICKER WHEEL OFFSET
5	BFR736	STANDOFF
6	BFR370	RAKE WHEEL CENTER
7	BFR369	RAKE WHEEL RING
8	T82	RAKE WHEEL TOOTH
9	YBHH12100	BOLT, 3/8" X 2-1/4" GR. 5
10	BFR371	RAKE WHEEL SPACER
11	YWLO12005	WASHER, LOCK, 3/8"
12	YNTL12005	HEX NUT, TOP LOCK, 3/8"-16
13	T163	SEAL
14	600012	INNER BEARING AND RACE
15	YBHH76005	BOLT, 10MM X 25MM
16	BFR32	RAKE WHEEL HUB WITH RACES
17	YNHX76015	HEX NUT, 10MM
18	600014	OUTER BEARING AND RACE
19	YNSL24010	HEX NUT, SLOTTED, 3/4"-16
20	YPCT05010	COTTER PIN, 5/32" X 1-1/2"
21	T173	HUB CAP
22	BFR721	BEAM LOCK PIN
23	YPHR02005	HAIR PIN, #21-05 (1-7/8" LONG, 3/8-7/16" SHAFT)
24	BFR197	LOCKING PIN
25	YPHR02010	HAIR PIN, #21-07
26	BFR720	PIVOT LOCK COLLAR
27	YBHH24070	BOLT, 3/4-10" X 4" GR. 5
28	BFR722	LIFT CYLINDER SPACER
29	YBTE12025	TURNED EYE BOLT, 3/8" X 3" FULL THREAD
30	BR62	SPRING
31	BFR515	CYLINDER PIN
32	YPEX10015	EXPANSION PIN, 5/16" X 1-3/4"
33	YNTL24005	HEX NUT, TOP LOCK, 3/4"-10
34	YNTL16005	HEX NUT, TOP LOCK, 1/2"-13
35	BFR27	BUSHING
36	YBHH16115	BOLT, 1/2" X 3-1/2" GR. 5
37	BFR114	PISTON
38	BFR115	O-RING
39	BFR116	HYDRAULIC CYLINDER
40	BFR737	HYDRAULIC HOSE 1/4" X 53" 3/8"MP X 1/4"MP
41	58721	3/8" UNION ADAPTER WITH .031 ORIFICE
42	BFR379	AXLE SHAFT
*	BFR748	COMPLETE WHEEL ASSEMBLY
43	BFR74	3/8" PIPE TEE

NOTE: * MEANS NOT SHOWN

FIGURE 11

OPTIONAL LIGHTING



ITEM	PART #	DESCRIPTION
1	DWM129	AMBER LIGHT
2	BFR675	RED LIGHT
3	BFR667	LIGHT HARNESS (6 WIRE)
4	S441	LIGHT MODULE
5	BFR741	14 WHEEL LIGHT HARNESS
6	BFR706	FRONT PIGTAIL
7	BFR659	MOUNTING BRACKET
8	TLPC	TRACTOR CORD (OPTIONAL)
9	BFR666	16 WHEEL EXT. LIGHT HARNESS

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H&S MFG. CO.

products approved

for the

FEMA

SEAL OF QUALITY

