



**2011 580 30-40FT CULTIVATOR
ASSEMBLY AND PARTS MANUAL**

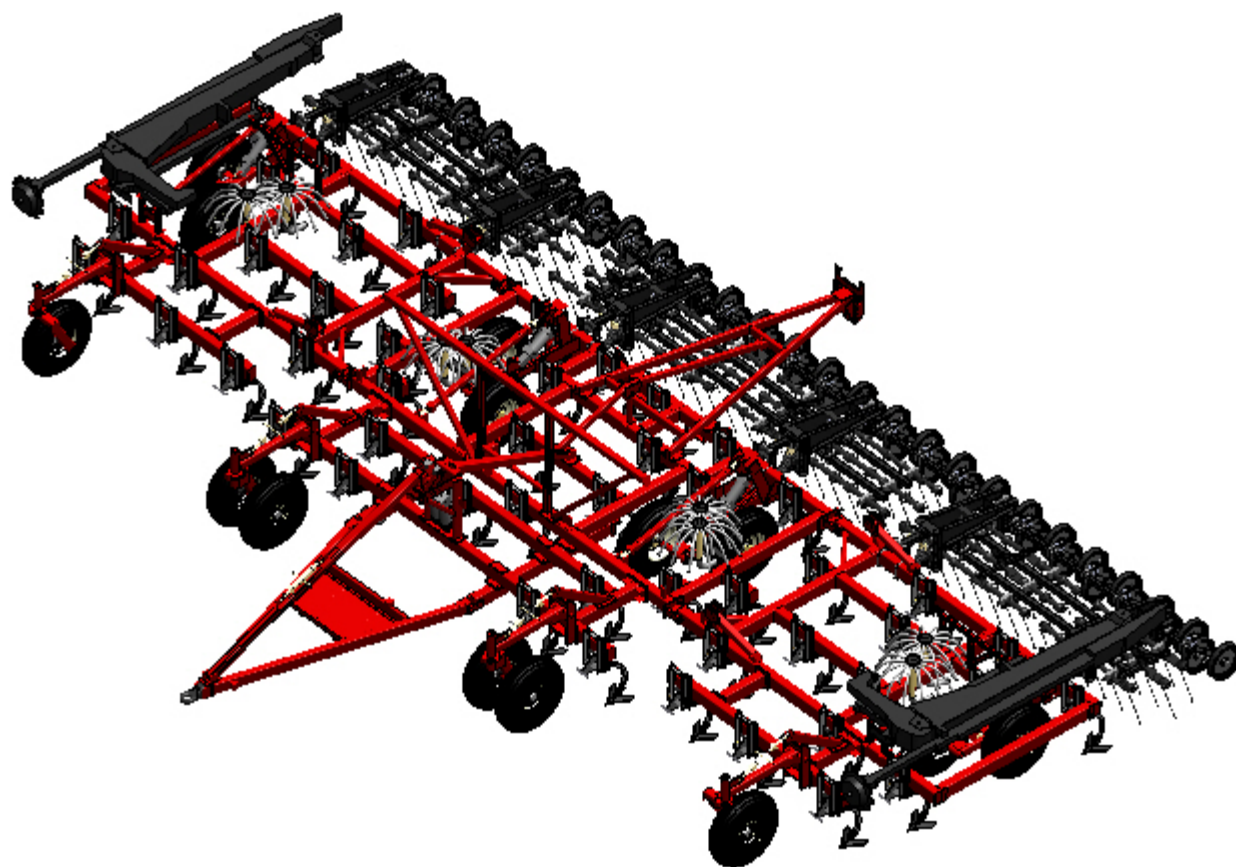


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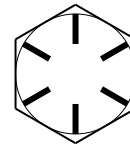
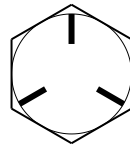
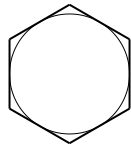
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Notes

Salford Recommended Torque Values



BOLT SIZE	GRADE 2		GRADE 5		GRADE 8	
	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm
1/2"NC	50	68	75	102	105	142
5/8"NC	90	122	150	203	210	285
3/4"NC	160	217	270	366	375	508
7/8"NC	145	197	395	536	610	827
1"NC	210	285	590	800	910	1234

NOTES: These recommended torque values are applicable when applied to the nut only. These recommended torque values are approximate only. The torque-tension relationship is affected by lubrication, surface finish, thread fit, plating, lock-washers, etc.

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

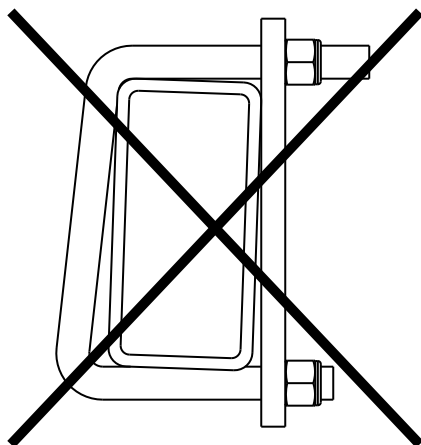
Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same or higher grade. If higher-grade fasteners are used, these should only be tightened to the strength of the original.

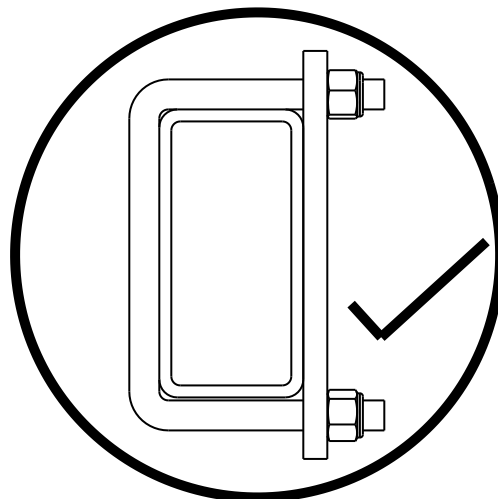
Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

WARNING

Do not tighten one side of the u-bolt before the other side.



Both sides of the u-bolt must be tightened equally.



Wheel Torque Specifications



WARNING - Maintain proper torque to provide safe and secure attachment of the wheel the hub/drum. Improperly tightened wheel nuts can cause the wheel to separate from the wheel mounting surface during operation. This could result in property damage, serious personal injury, or possibly scenario loss of life.

NOTE - if wheel does not have chamfers to match profile of the nuts – use flat side of nuts against rim face.

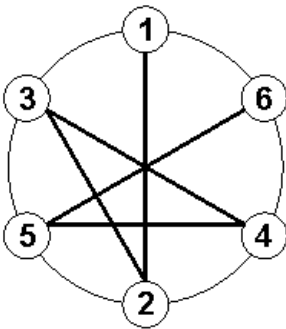
Install all lug nuts/bolts by hand to prevent cross threading and tighten lug nuts/bolts following the steps and tightening sequence diagram below.

- STEP 1. Torque to 20-25 ft/lbs of torque.
- STEP 2. Torque to 55-60 ft/lbs.
- STEP 3. Torque bolts/nuts to the final ft. lb rating (see bolt size below)

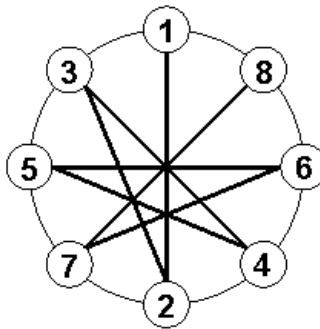
Bolt Size (Hub Size)	Final Torque
1/2" dia. bolt (up to 3000 lb hubs)	85 ft. lbs
9/16" dia. bolt (4000 - 6500 lb hubs)	120 ft. lbs
5/8" dia. bolt (8000 - 12,000 lb hubs)	170 ft. lbs
3/4" dia. bolt (16,000 - 20,000 lb hubs)	300 ft. lbs
7/8" dia. bolt (25,000 lb hubs)	450-500 ft. lbs

Lug Nut/Bolt Tightening Sequence

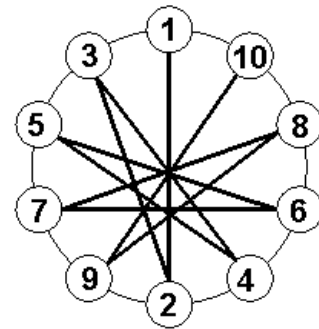
6 LUG BOLT PATTERN



8 LUG BOLT PATTERN



10 LUG BOLT PATTERN



NOTE - Recheck the torque settings of lug nuts/bolts after 10 km (6 miles) and again after 50 km (30 miles). Periodically and at the beginning of each season check the condition and the torque of the lug nuts/bolts.

Tire Pressure Ratings

Ensure proper inflation of each tire for safe operation and extended tire life.

Pressure	Tire Size
35 psi	Load Range C
65 psi	Load Range D
90 psi	Load Range F Truck Tires - 245/70R19-5 - 305/70R22-5 - 425/60R22-5

NOTE - Periodically and at the beginning of each season check the condition and pressure of each tire.

General Safety Precautions

Signal Words

The words **DANGER**, **WARNING** or **CAUTION** are used with the safety alert symbol. Learn to recognize the safety alerts, and follow the recommended precautions and safe practices.

Three words are used in conjunction with the safety-alert symbol:



DANGER

Indicates an imminently hazardous situation that, if not avoided, will cause **DEATH OR VERY SERIOUS INJURY**.



WARNING

Indicates a potentially hazardous situation that, if not avoided, could cause **DEATH OR SERIOUS INJURY**.



CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in **MINOR or MODERATE INJURY**.

Replace any **DANGER**, **WARNING**, **CAUTION** or instructional decal that is not readable or is missing. The location and part number of these decals is identified later in this section of the manual.

The words **Important** and **Note** are not related to personal safety but are used to give additional information and tips for operating or servicing this equipment.

IMPORTANT: Identifies special instructions or procedures which, if not strictly observed could result in damage to, or destruction of the machine, process or its surroundings.

NOTE: Indicates points of particular interest for more efficient and convenient repair or operation.

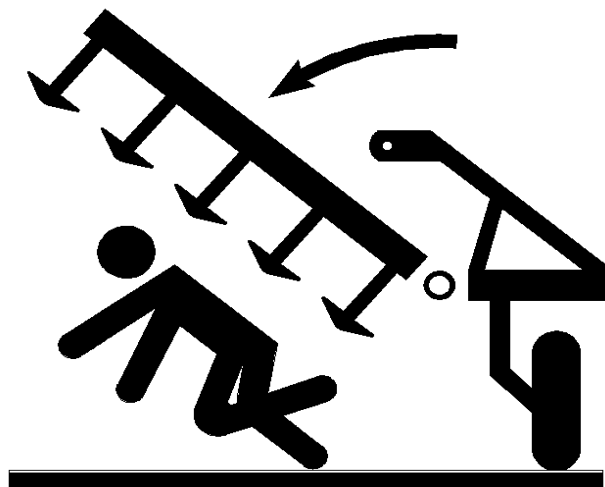
A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT !

General Safety Precautions



DANGER

- Wings may fall rapidly causing injury.
- Always stay clear of wings when being lowered, raised or in an elevated state.
- Always use lockup device provided when raised.
- Ensure cylinder is completely filled with hydraulic fluid to avoid unexpected movement.

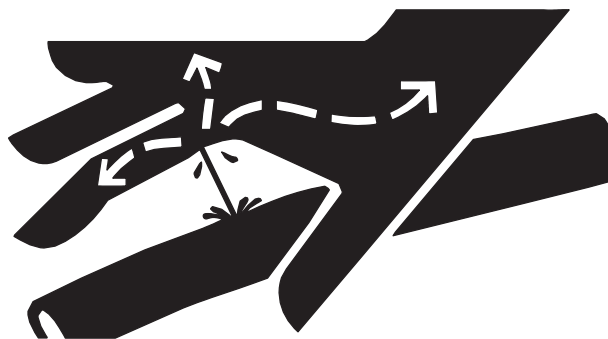


Hydraulics

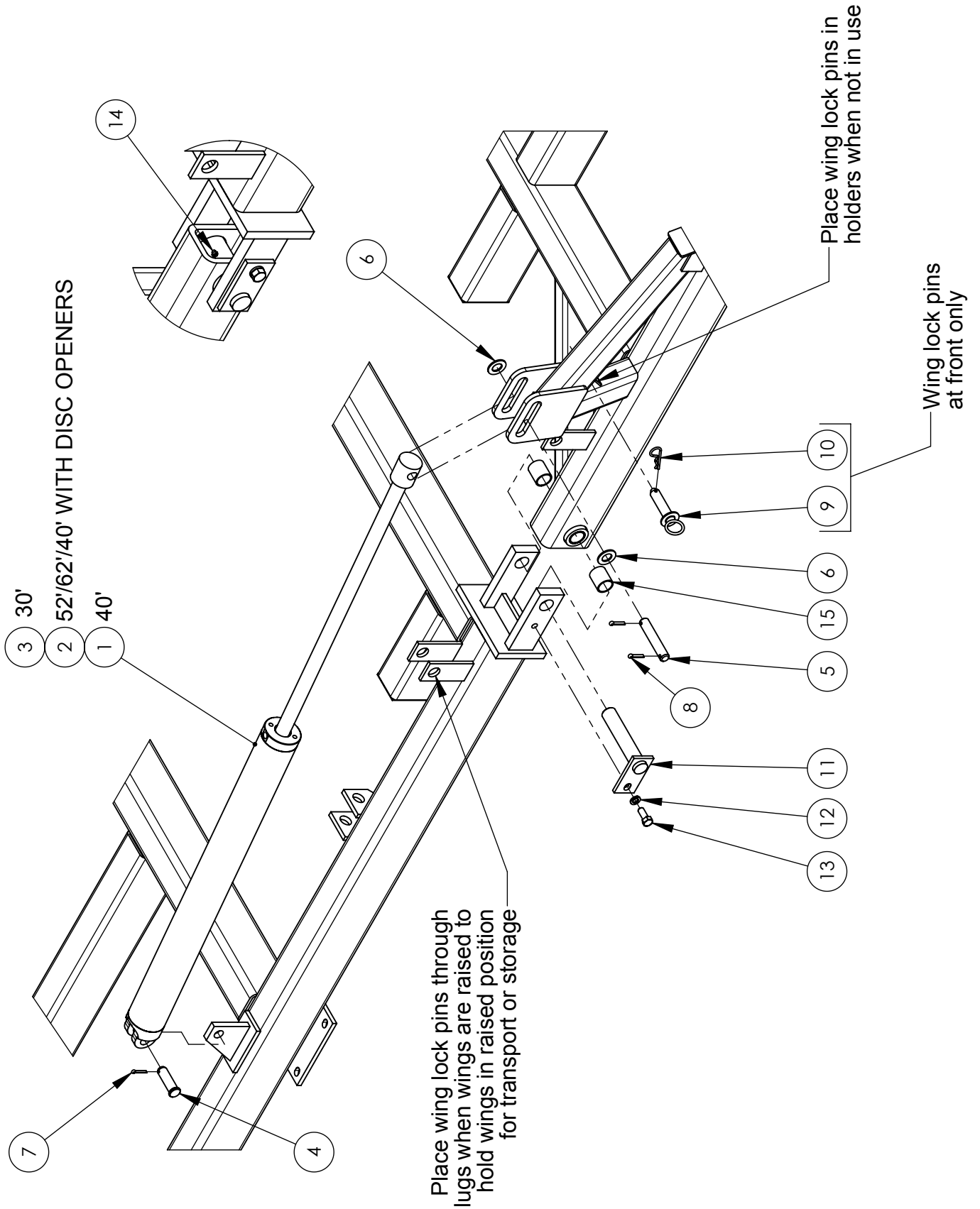


DANGER

- **Do not** search for high pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, thereby requiring immediate medical attention.
- Use cardboard or wood to detect leaks – never your hands.
- Double check that all is clear before operating hydraulics.
- **Never** remove hydraulic hoses or ends with machine elevated. Relieve hydraulic pressure before disconnecting hydraulic hoses or ends.
- Maintain proper hydraulic fluid levels.
- Keep all connectors clean for positive connections.
- Ensure all fittings and hoses are in good condition.
- Do not stand under wings.



Wing Installation



Wing Installation

	ITEM NO.	QTY	PART NUMBER	DESCRIPTION
40'	1	4	HS3536	3 1/2" BORE x 36" STROKE HYD. CYLINDER
52'/62'	2	4	HS4036	4" BORE x 36" STROKE HYD. CYLINDER
30'	3	4	HS3524	3 1/2" BORE x 24" STROKE HYD. CYLINDER
	4	4	GP1600314H04	PIN 1" DIA. x 3 1/4" LG. WITH HEAD
	5	4	GP1600512A05	PIN 1" DIA. x 5 1/2" LG. - 2 HOLES
	6	8	BF16S	1" SAE WASHER
	7	4	BSC0415	1/4" x 1 1/2" COTTER PIN
	8	8	BSC0515	5/16" x 1 1/2" COTTER PIN
	9	2	GP1600414C04	RING & WASHER WING LOCK PIN
	10	2	GHP9	#9 HAIR PIN
	11	4	GPSPEC24080	1 1/2" x 8 1/4" LG. WING HINGE PIN
	12	4	BL10	5/8" LOCKWASHER
	13	4	B1015	5/8 X 1 1/2" PLATED BOLT
	14	4	GF1610	1/8" NPT GREASE FITTING
	15	8	GBB175150200	1 3/4" x 1 1/2" x 2" LG. HARD BUSHING

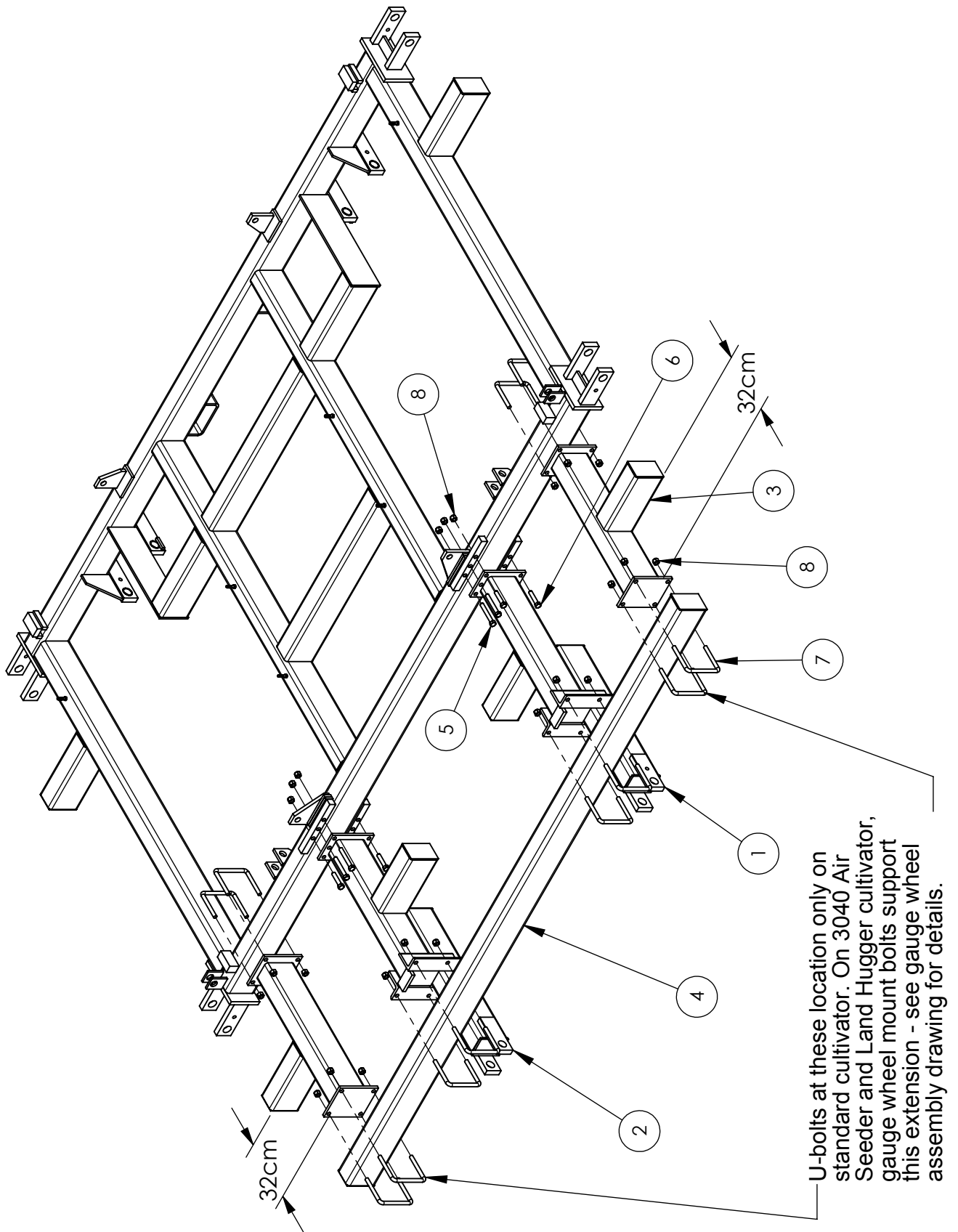
HARD BUSHINGS INSTALLED AT FACTORY

1. Position main frame on stands. Use adequately strong stands or heavy wood blocks to support the main frame about 36" above the floor of the assembly area. Make sure the frame is stable, secure and reasonably level.
2. Install grease fittings (14) into wings at hinge points.
3. Install LH & RH wings. Lubricate the hinge pins (11) with grease and install as shown. Retain the pin to the frame with a 5/8 x 1 1/2" hex bolt (13) and lock washer (12).
4. Attach barrel ends of cylinders (40'-1, 52'/62'-2) to lugs on main frame with 1" x 3 1/4" head pins (4) and 1/4" x 1 1/2" cotter pins (7).

Connect hoses and charge the wing cylinders with fluid following the procedure in the wing fold hydraulics section of this manual before connecting rod ends of the cylinders.

5. Attach rod ends of cylinders to lugs on wings with 1" x 5 1/2" pins (5), 1" SAE washers (6), and 5/16" x 1 1/2" cotter pins (8). Washers go between lugs and cotter pins.
6. Place wing lock pin (9) in holders provided under wing cylinder lugs and retain pin with #9 hairpin (10). Wing lock pins are under the front two wing cylinders only.
7. Apply grease to all fittings.

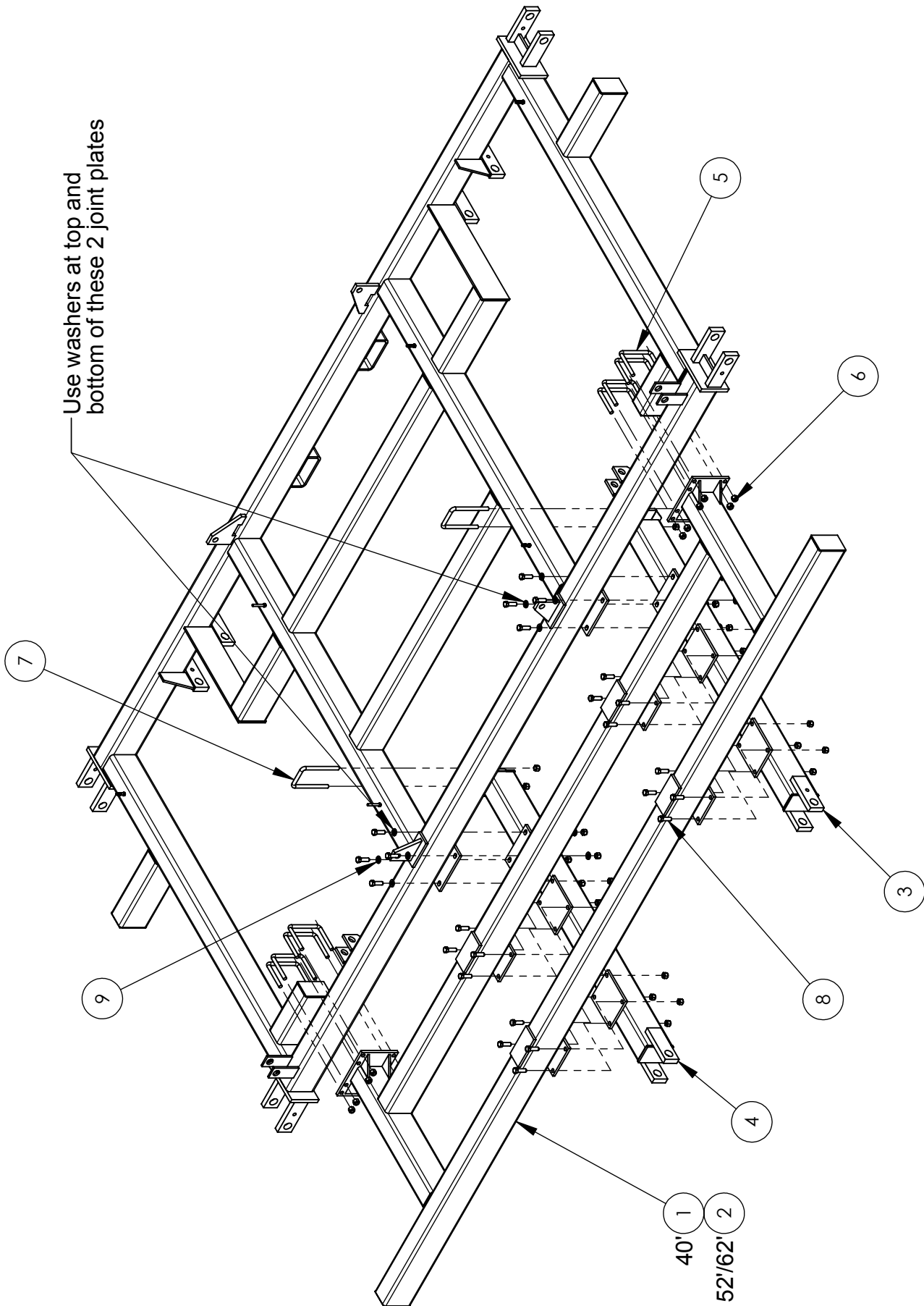
Main Frame 5th Bar Installation 30ft



Main Frame 5th Bar Installation 30ft

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	T00593	3040 AIR SEEDER TONGUE MOUNT - LH
2	1	T00593	3040 AIR SEEDER TONGUE MOUNT - RH
3	2	T00594	31 1/2" EXTENSION WITH 13" STUB
4	1	UC40605140	CAPPED TUBE 4" x 6" x 5/16"W x 140" LG.
5	4	B1045	5/8 x 4-1/2" BOLT
6	8	B1030	5/8"NC x 3" LG. HEX BOLT
7	12	BU1061	U-BOLT 5/8" x 6" x 5 1/2"
8	36	BN10L	5/8" NYLOCK NUT NC

Main Frame 5th Bar Installation 40ft



Main Frame 5th Bar Installation 40ft

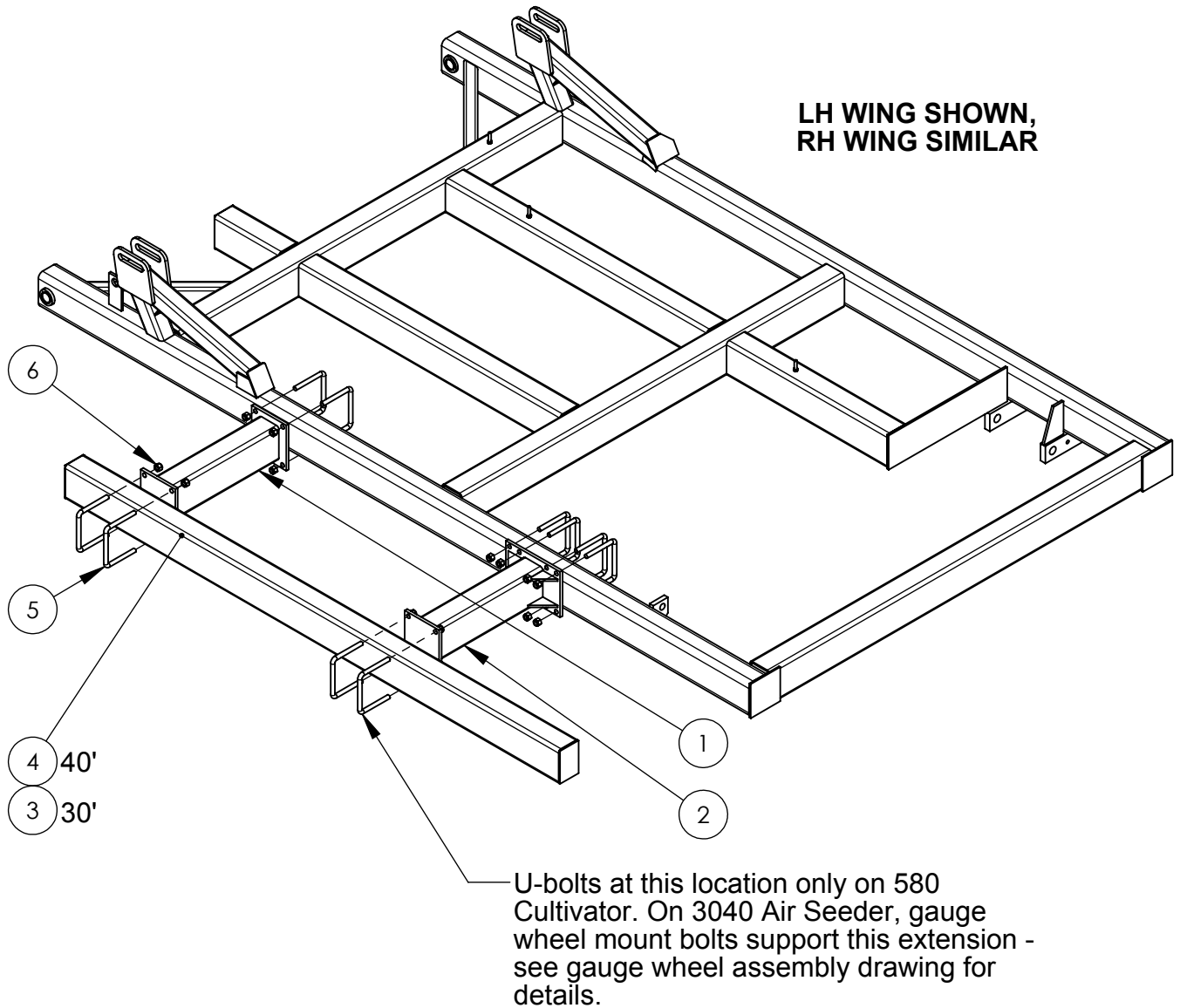
ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	T00329	MAIN FRAME 5TH BAR WELDMENT - 40'
2	1	T00456	MAIN FRAME 5TH BAR WELDMENT - 52'/62'
3	1	T00330L	5TH BAR SUPPORT - LH
4	1	T00330R	5TH BAR SUPPORT - RH
5	8	BU1061	U-BOLT 5/8" x 6" x 5 1/2"
6	44	BN10L	5/8" NYLOCK NUT NC
7	2	BU1046	U-BOLT 5/8" x 4" x 7 1/2" LG.
8	24	B1020	5/8 X 2" BOLT GR. 5 PLATED
9	16	BF10HS	5/8" HARD STRUCTURAL FLAT WASHER

1. Place main frame 5th bar weldment (40'-1, 52'/62'-2) on top of LH support (3) and RH support (4). Note that supports are marked on the rear - "L" for LH and "R" for RH. Attach with 5/8" x 2" hex bolt (8) and 5/8" locknut (6). Do not tighten bolts yet.

2. Line up 5th bar subassembly with main frame. Attach rear of supports with narrow u-bolt (7) and 5/8" locknuts (6). Attach middle of supports to main frame with 5/8" x 2" hex bolts (8), 5/8" structural washers (9), and 5/8" locknuts (6). Attach ends of 5th bar weldment to main frame with wide u-bolts (5) and 5/8" locknuts (6). Do not tighten bolts yet.

3. Measure carefully to position the extension exactly in the center of the main frame, then tighten all bolts and nuts, starting with the wide u-bolts (5).

Wing 5th Bar Installation 30-40ft



See wheel and axle layout drawing for support and 5th bar locations.

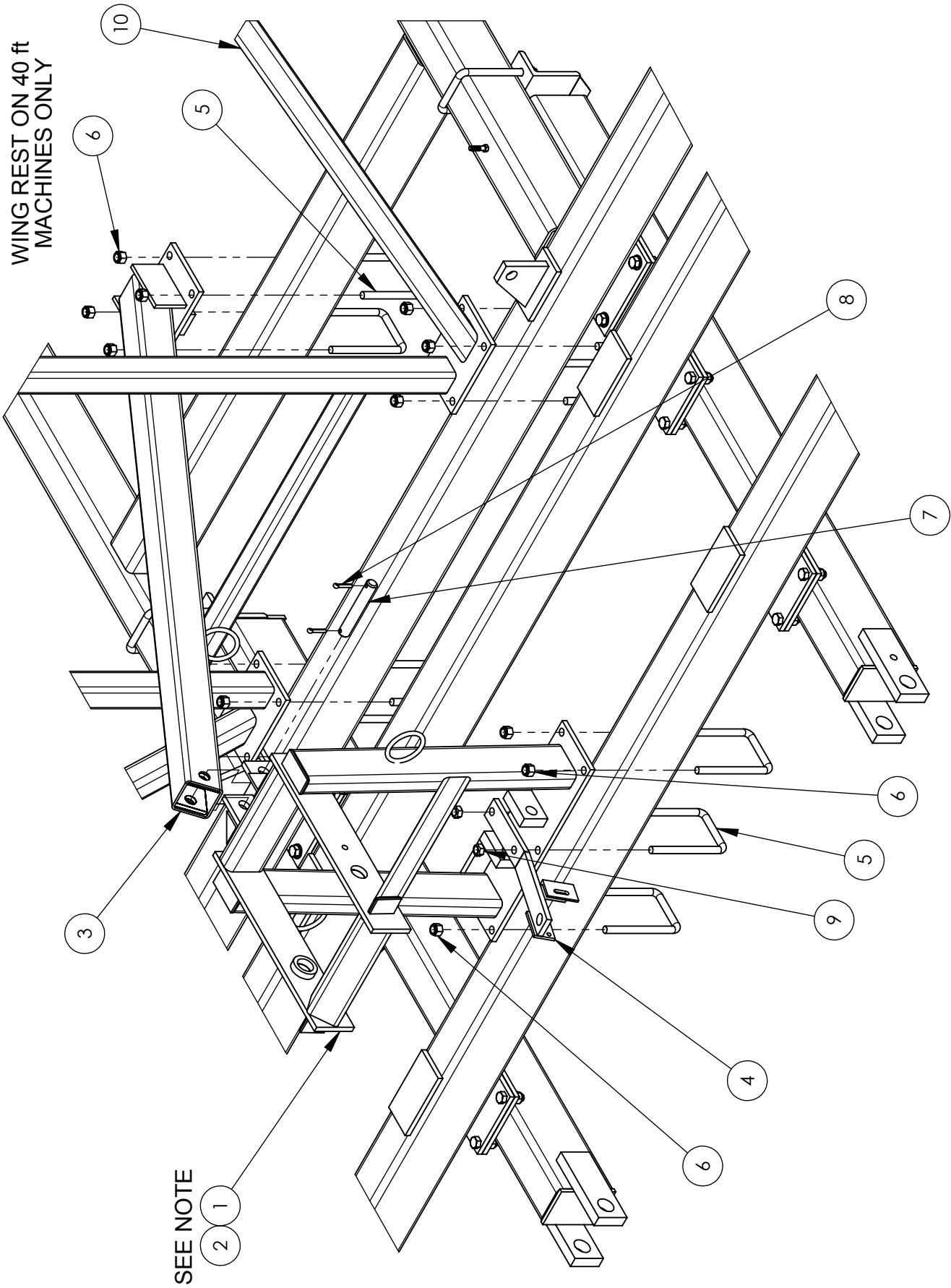
Wing 5th Bar Installation 30-40ft

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	T00075	23" EXTENSION
2	1	T00421	23" EXTENSION - 6 U-BOLTS
3	1	UC40604070	CAPPED TUBE 4" x 6" x 1/4"W x 70" LG.
4	1	UC40604100	CAPPED TUBE 4" x 6" x 1/4"W x 100" LG.
5	10	BU1061	U-BOLT 5/8" x 6" x 5 1/2"
6	20	BN10L	5/8" NYLOCK NUT NC

Note: quantities shown are for fifth bar installation on one side only. Double quantities for complete wing 5th bar installation.

1. Install fifth bar support(s) (1) and wing gauge wheel support (air seeder and "Land Hugger" cultivator only) (2) to wings at locations shown on wheel and axle layout drawing. Retain with wide u-bolt (6) and 5/8" locknuts (7). Do not tighten bolts yet.
2. Attach wing fifth bar tube (40'-3, 52'-4, 62'-5) to supports with wide u-bolts (6) and 5/8" locknuts (7). Verify locations of supports and fifth bars, then tighten all bolts.

Tripod and Wing Rest Installation

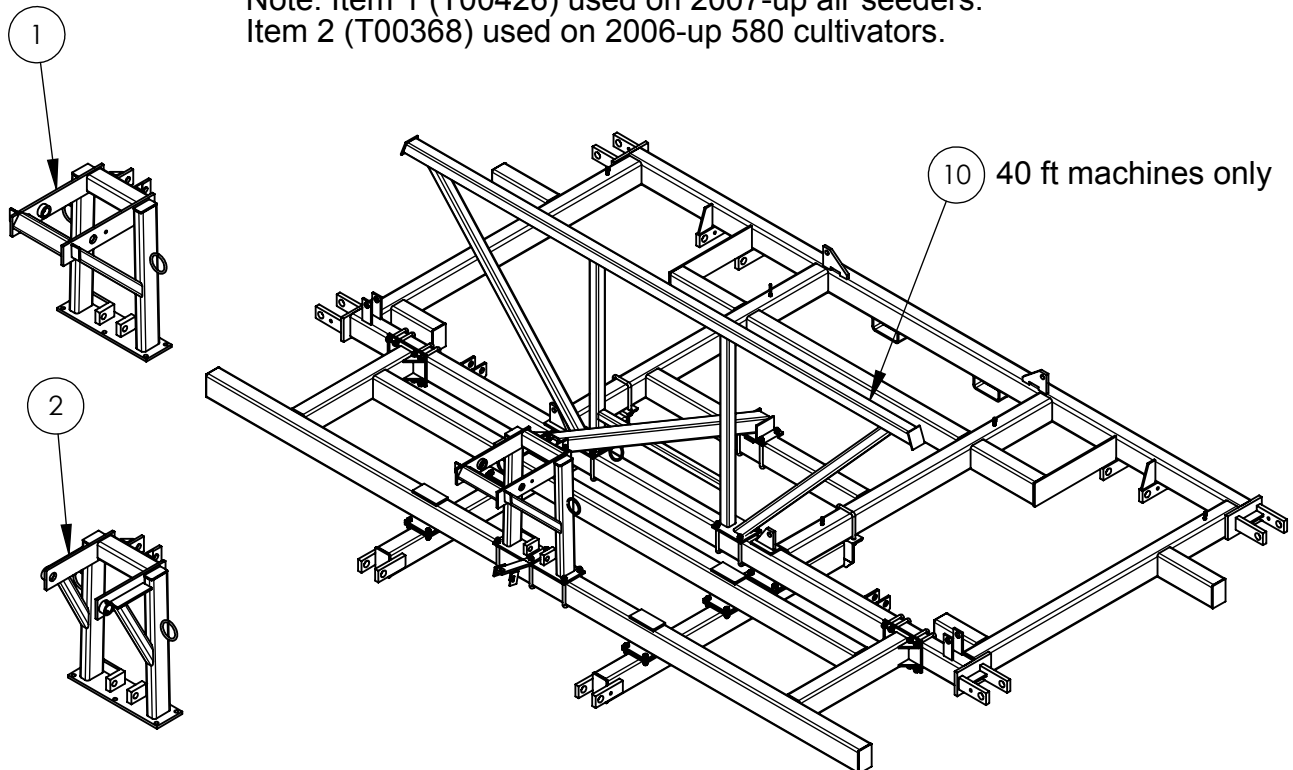


Tripod and Wing Rest Installation

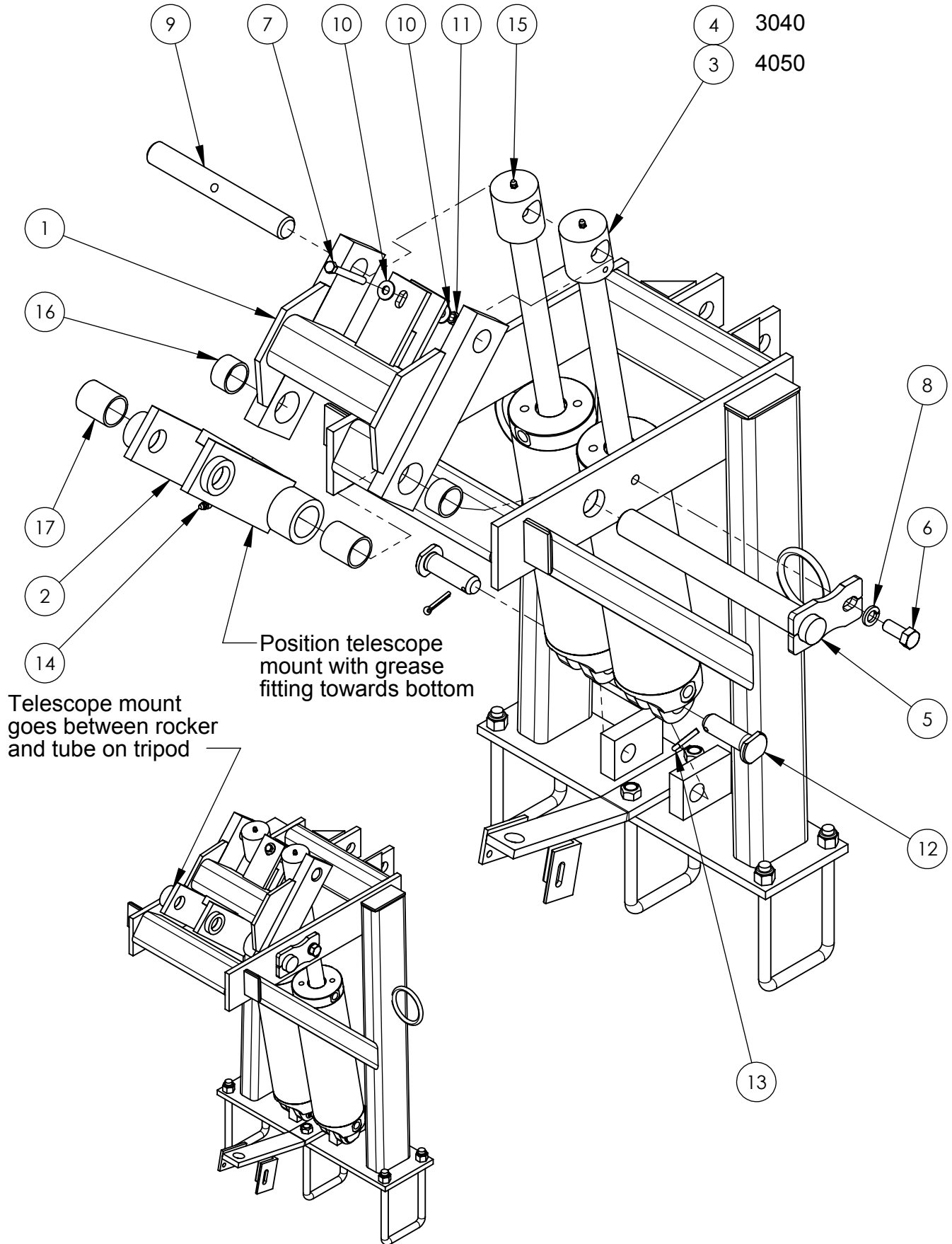
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	T00426	2007 AIR SEEDER TRIPOD TOWER
2	1	T00368	580 TRIPOD TOWER
3	1	T00170	580 TRIPOD BRACE
4	1	T00044	AIR SEEDER POPPET VALVE BRACKET
5	9	BU1046	U-BOLT 5/8" x 4" x 7 1/2" LG.
6	16	BN10L	5/8" NYLOCK NUT NC
7	1	GP1600614A05	PIN 1" DIA. x 6 1/4" LG. - 2 HOLES
8	2	BSC0515	5/16" x 1 1/2" COTTER PIN
9	2	BN10S	5/8" NC STOVER LOCK NUT
10	1	T00168	AIR SEEDER WING REST

1. Mount tripod tower (1 or 2) to middle of front beam of main frame fifth bar. Attach with narrow u-bolts (5) and 5/8" locknuts (6) in outer holes. In middle set of holes, position depth control bracket (4) over holes as shown, and retain with narrow u-bolt (5) and 5/8" stover locknuts (9). Do not tighten bolts until tripod brace is installed.
2. 40 ft machines only: Mount wing rest (10) to main frame front beam. Attach with narrow u-bolt (5) and 5/8" locknuts (6). Centre wing rest on frame before tightening bolts.
3. Attach tripod brace (3) to tower with 1" x 6 1/4" pin (7) and 5/16" x 2" cotter pins (8). Attach tripod brace to main frame with narrow u-bolt (5) and 5/8" locknuts (6).
4. Make sure tripod tower and brace are centered on frame, then tighten all bolts.

Note: Item 1 (T00426) used on 2007-up air seeders.
Item 2 (T00368) used on 2006-up 580 cultivators.



Self Levelling Tower Assembly



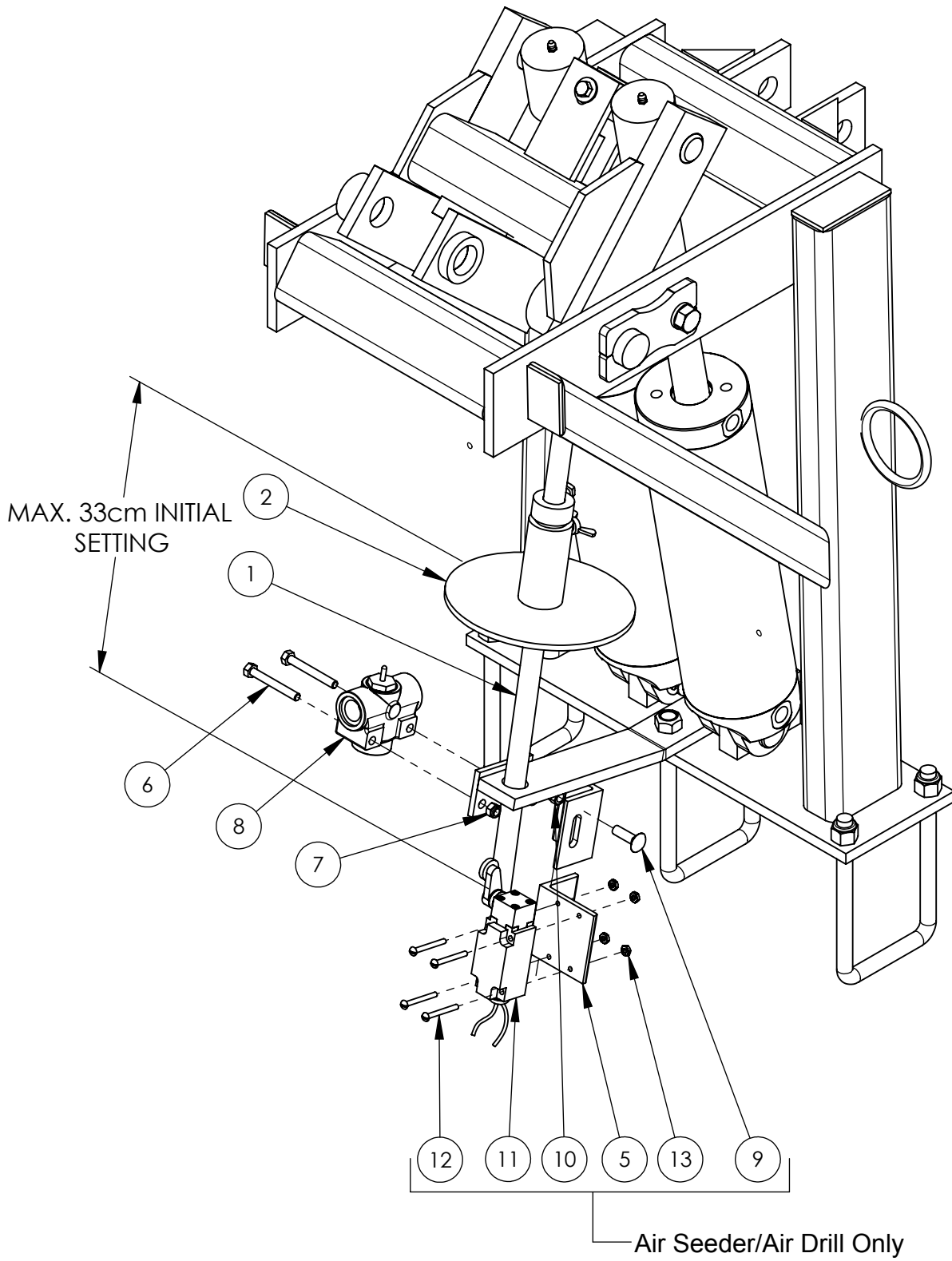
Self Levelling Tower Assembly

ITEM NO.	QTY	PART NO.	DESCRIPTION
	1	T00427	2007 AIR SEEDER ROCKER WELDMENT
	1	T00428	2007 AIR SEEDER TELESCOPE MOUNT BRCT.
4050	2	HSR40095	4" BORE x 9 1/2" STROKE HYD. CYLINDER
3040	2	HSR35095	3 1/2" BORE x 9 1/2" STROKE HYD. CYLINDER
	1	GPH2401312F	1 1/2" x 13 7/8" LG. AXLE PIN - HARDENED
	1	B1015	5/8 X 1 1/2" PLATED BOLT
	1	B0630	3/8"NC x 3" HEX BOLT
	1	BL10	5/8" LOCKWASHER
	1	GPSPEC200934	Ø 1 1/4" x 9 3/4" CENTRE HOLE PIN
	2	BF06	3/8" FLATWASHER
	1	BN06L	3/8"-16NC LOCK NUT
	2	GPHF1600314H04	1" x 3 1/4" SHOULDER PIN HARDENED W/FLATS
	2	BSC0415	1/4" x 1 1/2" COTTER PIN
	1	GF1610	1/8" NPT GREASE FITTING
	2	GF641	1/4"-28NF GREASE FITTING
	2	GBB175150100	1 3/4" x 1 1/2" x 1" LG. HARD BUSHING
	2	GBB175150200	1 3/4" x 1 1/2" x 2" LG. HARD BUSHING

HARD BUSHINGS INSTALLED AT FACTORY

1. Line up telescope mount (2) and rocker (1) with holes on tripod. Insert 1 1/2" x 13 1/2" flatbar pin (5) through tripod, rocker, and telescope mount. Retain pin with 5/8" x 1 1/2" hex bolt (6) and 5/8" lockwasher (7). Position the telescope mount so the grease fitting is at the bottom.
2. Attach base end of hydraulic cylinders (3 or 4) to tripod with 1" x 3 1/4" head pin (12) and 1/4" x 1 1/2" cotter pin (13). Note: cylinder ports should point towards wings of machine.
3. Attach cylinder rods to rocker with 1 1/4" x 9 3/4" centre hole pin (8). Retain pin to rocker with 3/8" x 3" hex bolt (9), 3/8" flatwashers (10) top and bottom, and 3/8" locknut (11).
4. Insert 1/8" NPT grease fittings (14) into telescope mount and 1/4"-28 grease fittings (15) into cylinder rod ends if not already done. Grease all fittings.

Depth Control Installation



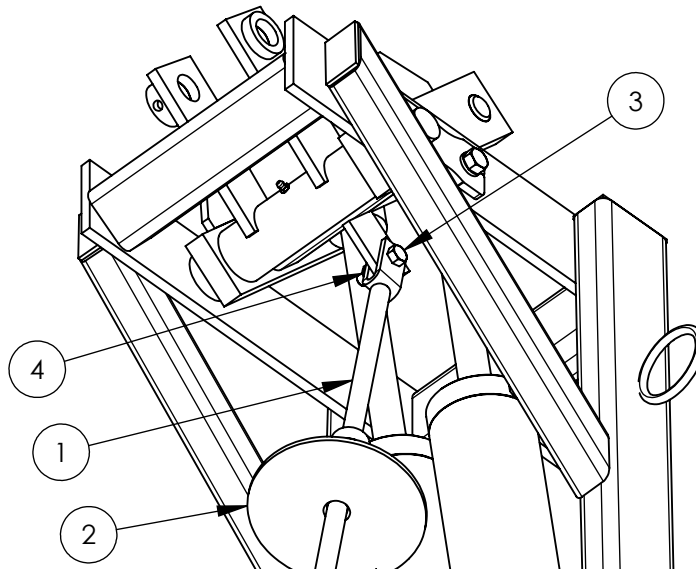
Depth Control Installation

ITEM	QTY	PART NO.	DESCRIPTION
1	1	T00047	AIR SEEDER DEPTH CONTROL ROD - 28"
2	1	C1008	DETENT ADJUSTABLE STOP
3	1	B0820	1/2"NC x 2" LG. HEX BOLT
4	1	BN08L	1/2" NYLOCK NUT NC
5	1	T00172B	580 CLUTCH SWITCH MOUNT 1 OF 2
6	2	B0525	5/16"NC x 2 1/2" HEX BOLT
7	2	BN05L	5/16" LOCK NUT
8	1	HPMSC10	STROKE CONTROL VALVE
9	1	BC0612	3/8" NC X 1 1/4" CARRIAGE BOLT GR2 PLATED
10	1	BN06L	3/8"-16NC LOCK NUT
11	1	T00721	ROLLER ARM LIMIT SWITCH (LS45M42B11)
12	4	B0217	#10-24 x 1 3/4" MACHINE SCREW
13	4	BN02	#10-24 HEX NUT



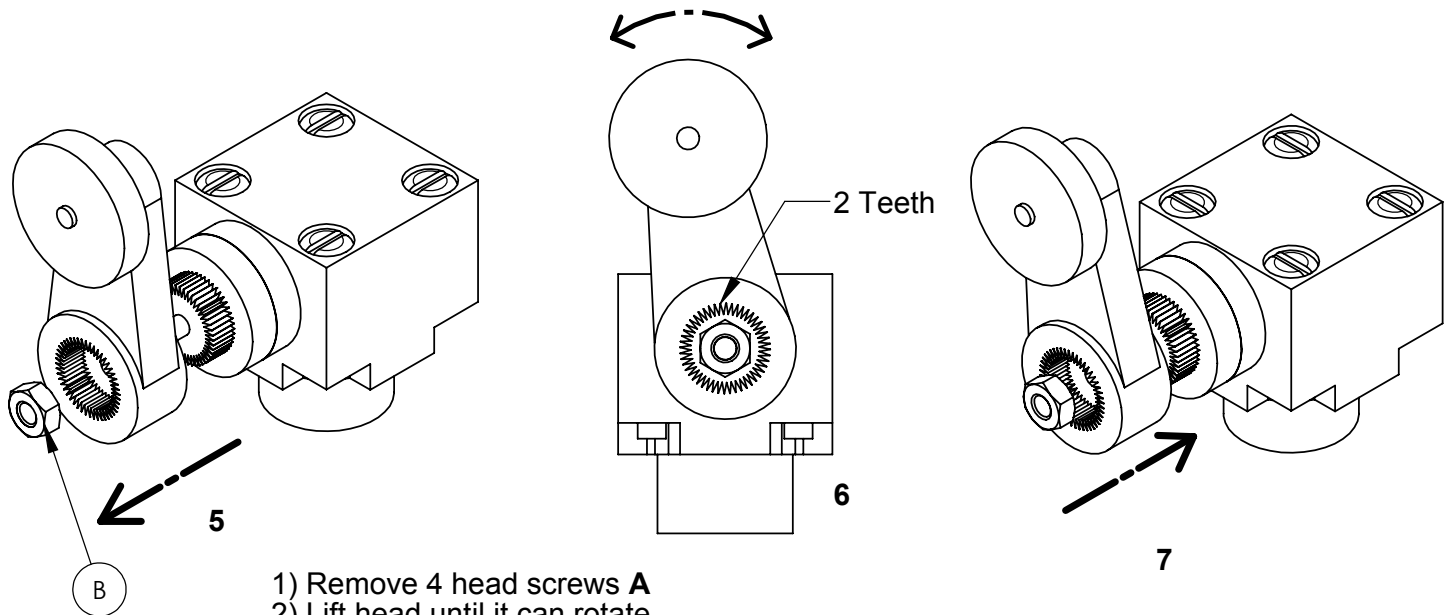
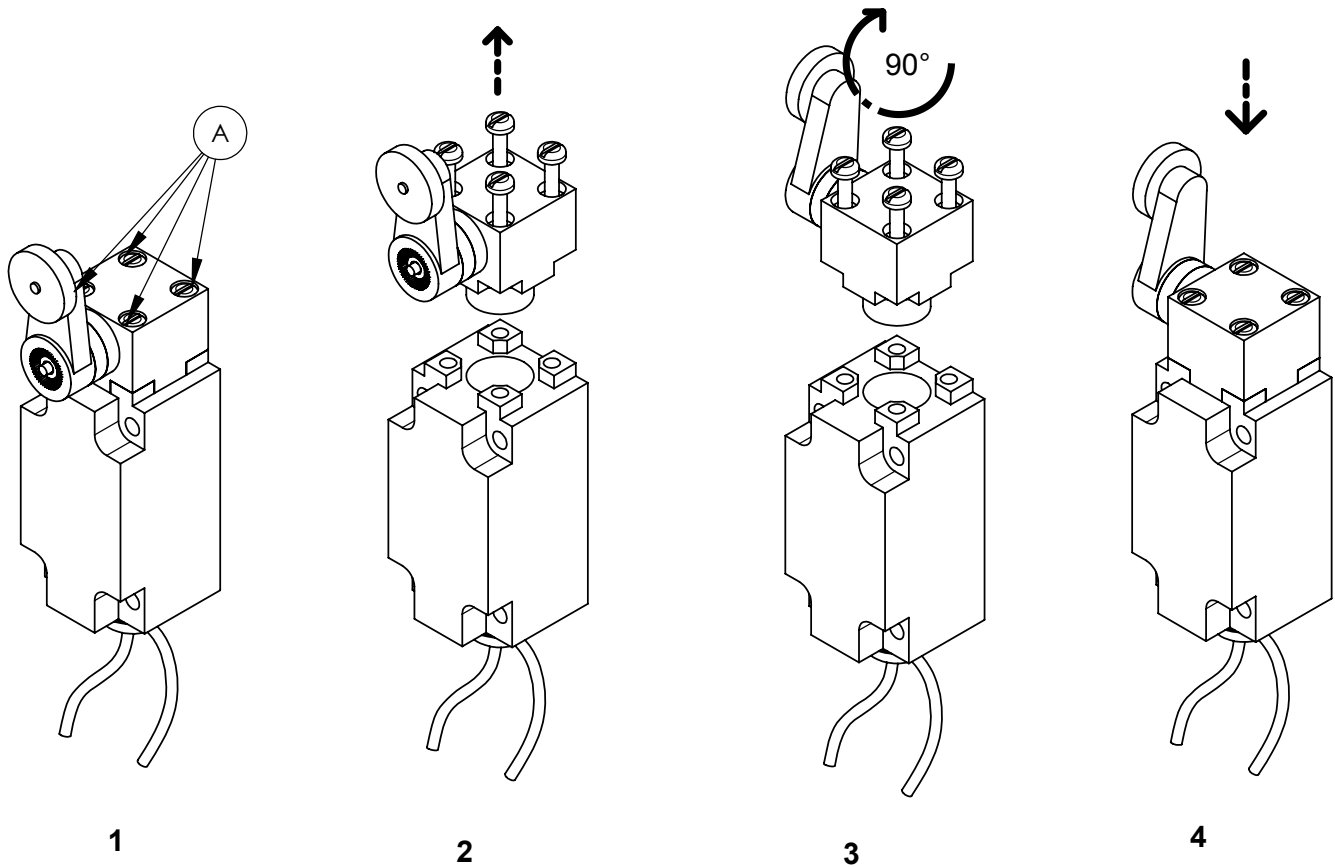
CAUTION

Do not put stop disc more than 33cm from the end of the depth control rod. If it is too high it can damage hoses or contact the cylinder and bend the depth control rod. Final position can be set when performing final field set up adjustments.



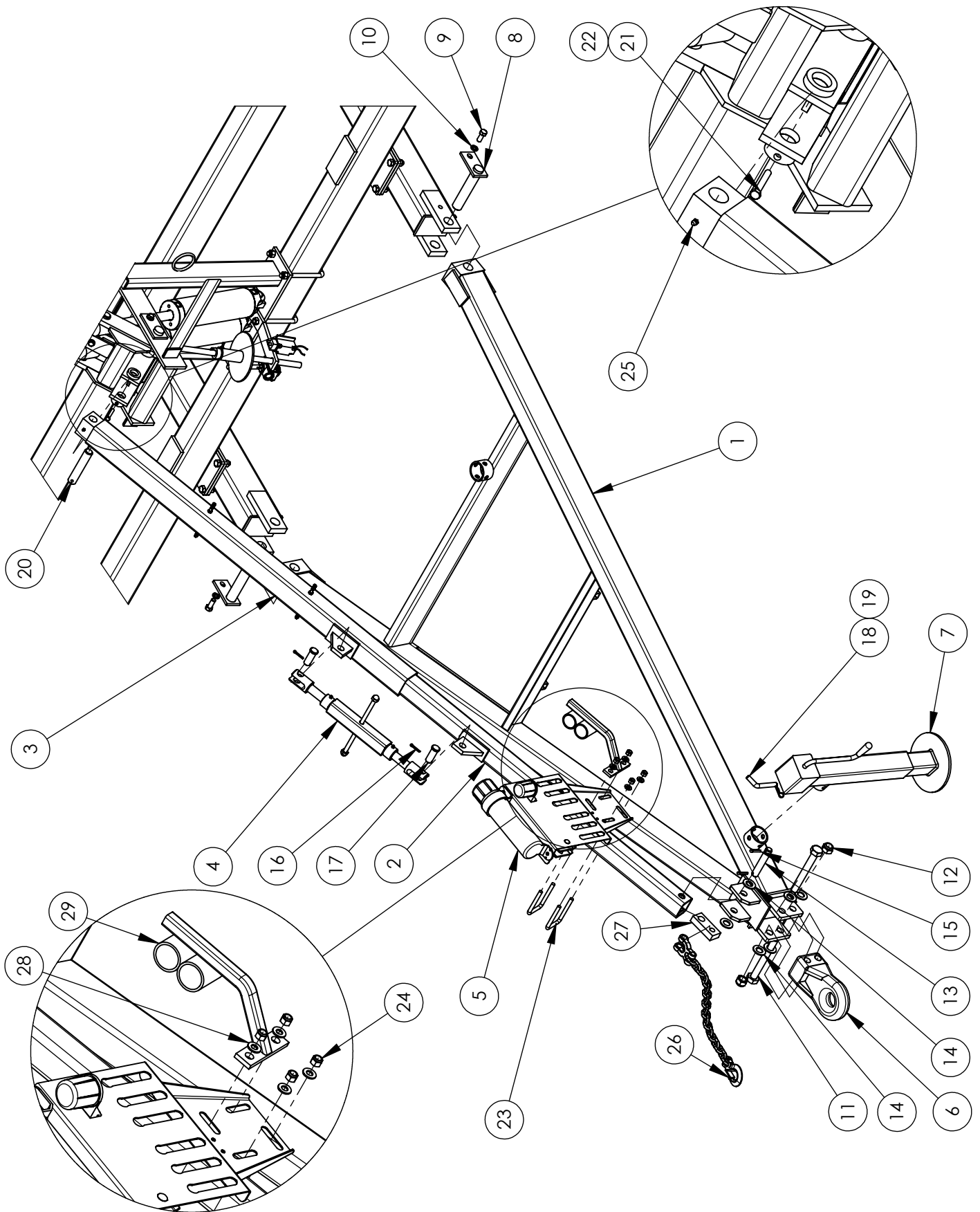
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Limit Switch Offset Instructions



- 1) Remove 4 head screws **A**
- 2) Lift head until it can rotate
- 3) Rotate head 90° clockwise
- 4) Insert screws
- 5) Loosen/Remove nut **B** on arm until it rotates freely
- 6) Rotate arm 2 teeth clockwise or counter-clockwise from straight up (this will direct the arm in the direction it should go when it contacts the disc preventing it from moving in the wrong direction and coliding)
- 7) Tighten nut on arm

Tongue Installation



Tongue Installation

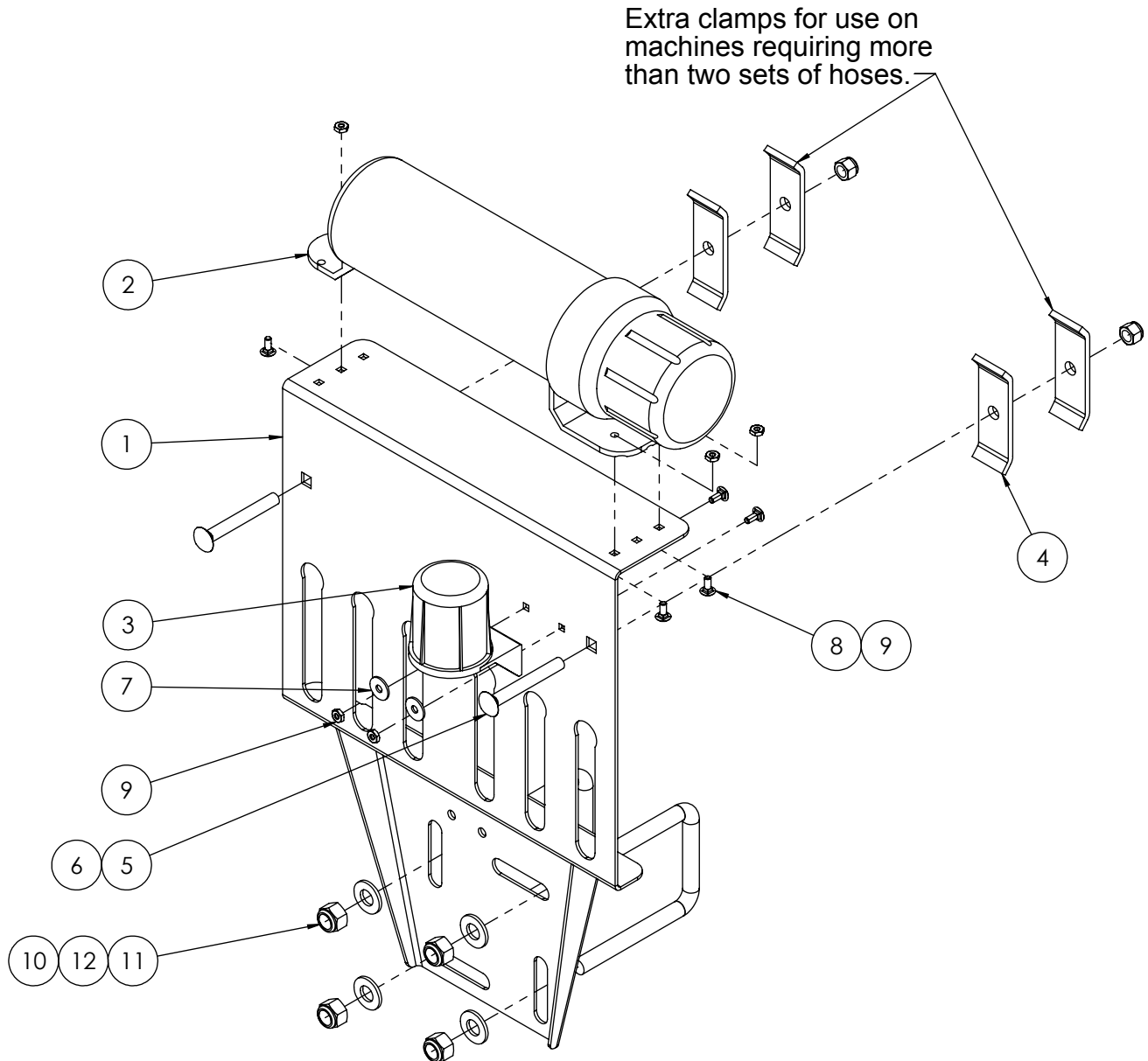
ITEM	QTY	PART NO.	DESCRIPTION
1	1	2225C	550-570-580 CAST CLEVIS TONGUE
2	1	A60041	570-580-860-870-9700 INNER TELESCOPE
3	1	A60052	580 OUTER TELESCOPE - 62" TUBE 1 1/4" HOLE
4	1	A50010	TURNBUCKLE
5	1	A60096A	TELESCOPE MOUNT HOSE HOLDER ASSEMBLY
6	1	PPI-42XL	CAT 4 CAST IRON HITCH
7	1	GJ8002	8000 LB TONGUE JACK
8	2	GPSPEC24080	1 1/2" x 8 1/4" LG. WING HINGE PIN
9	2	B1015	5/8 X 1 1/2" PLATED BOLT
10	2	BL10	5/8" LOCKWASHER
11	2	B1680H	1" x 8" NC HEX BOLT GR. 8
12	2	BN16L	1-8 NC NYLOCK NUT
13	1	GP1600512A05	PIN 1" DIA. x 5 1/2" LG. - 2 HOLES
14	6	BF16S	1" SAE WASHER
15	2	BSC0515	5/16" x 1 1/2" COTTER PIN
16	2	BSC0415	1/4" x 1 1/2" COTTER PIN
17	2	GP1600258H04	PIN 1" DIA. x 2 5/8" LG. WITH HEAD
18	1	GP10004L03	L-PIN 5/8" DIA. x 4" LG.
19	1	GHP11	#11 HAIR PIN
20	1	GP2000612B06	1 1/4" x 6 1/2" LG. PIN - 1 HOLE
21	1	B0625	3/8"NC x 2 1/2" LG. HEX BOLT
22	1	BN06L	3/8"-16NC LOCK NUT
23	2	BU0830	1/2" x 3" x 4 1/2" U-BOLT
24	4	BN08L	1/2" NYLOCK NUT NC
25	1	GF641	1/4"-28NF GREASE FITTING
26	1	GJ35K48	35,000 LB SAFETY CHAIN - 48" LG.
27	1	L01063	35,000 LB SAFETY CHAIN ADAPTOR
28	4	BF08HS	1/2" HARD STRUCTURAL FLAT WASHER
+ 29	1	A60117	CASE DRAIN/MONITOR PLUG HOLDER

+ Used on air seeders

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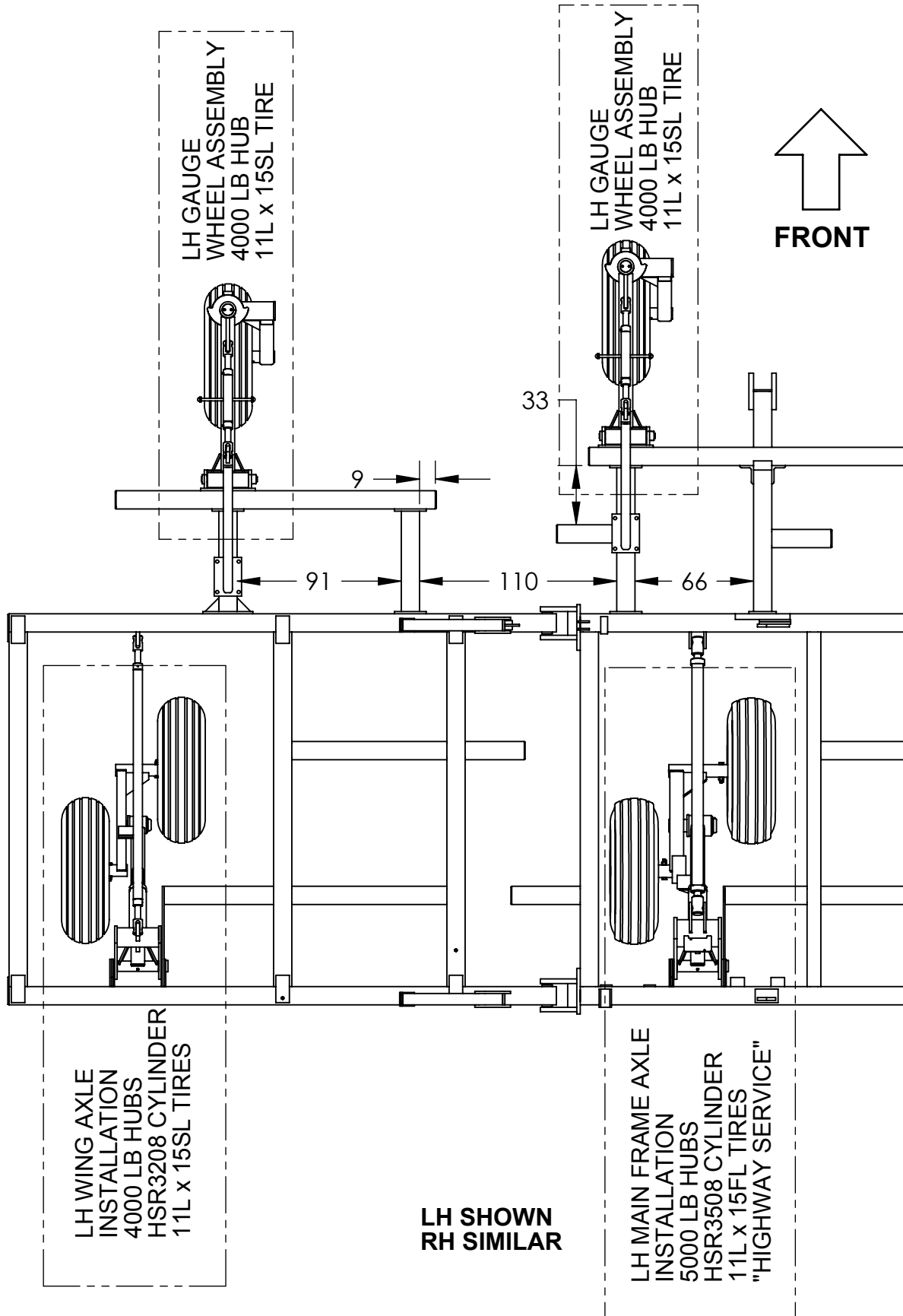
Telescope Mount Hose Holder

ITEM	QTY	PART NO.	DESCRIPTION
1	1	A60096	TELESCOPE MOUNT HOSE HOLDER
2	1	G106	HD OPERATORS MANUAL HOLDER
3	1	GL11750	LIGHT PLUG HOLDER - PLASTIC
4	4	P0160B	HOSE CLAMP 4"
5	2	BC0630	3/8"NC x 3" LG. CARRIAGE BOLT
6	2	BN06L	3/8"-16NC LOCK NUT
7	2	BF04	1/4" FLATWASHER
8	5	BC0205	10-24 x 1/2" A307A LOW CARBON ZINC CARRIAGE BOLT
9	5	BN02	#10-24 HEX NUT
10	2	BU0830	1/2" x 3" x 4 1/4" U-BOLT
11	4	BN08L	1/2" NYLOCK NUT NC
12	4	BF08HS	1/2" HARD STRUCTURAL FLAT WASHER



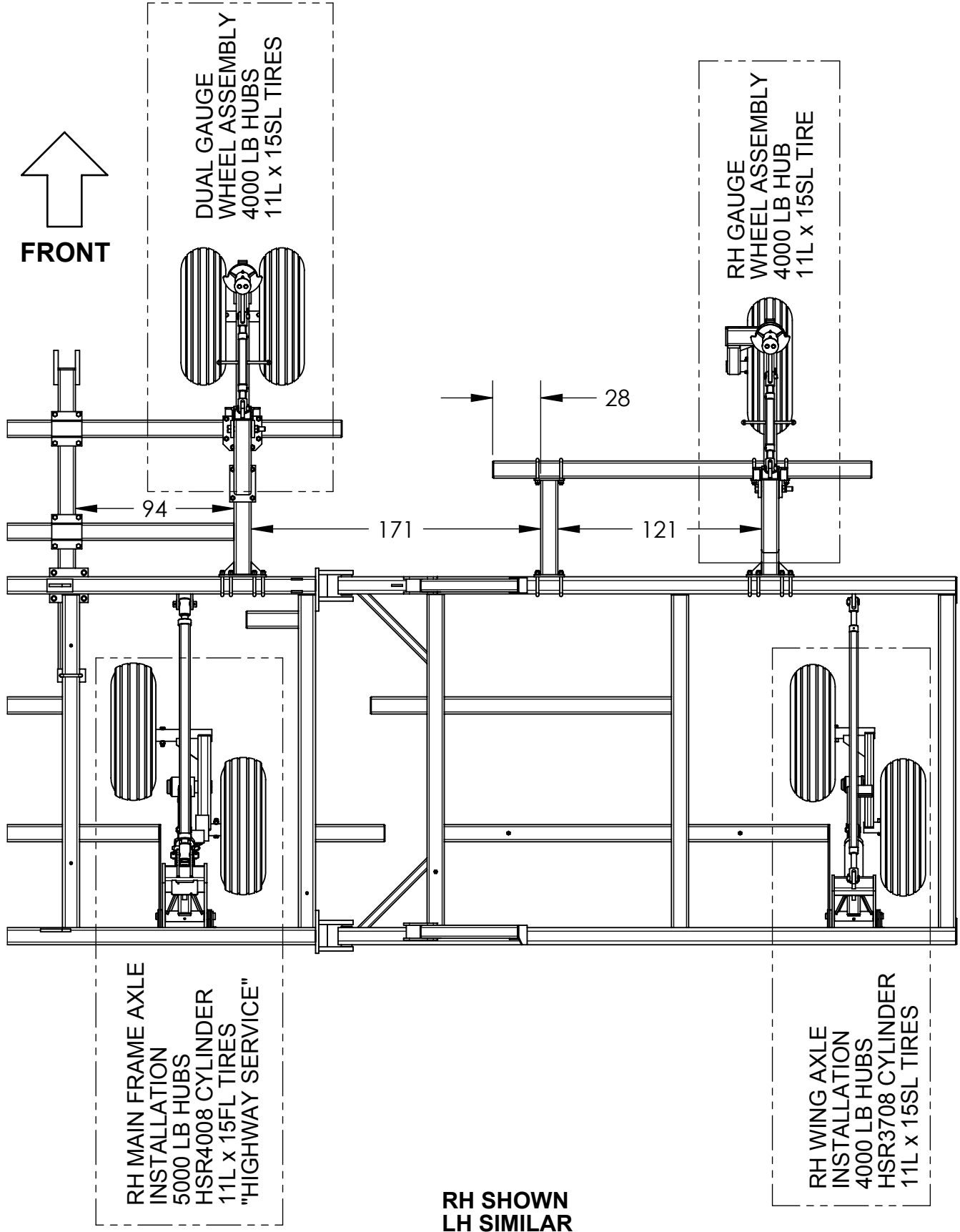
30ft Wheel and Axle Layout

DIMENSIONS ARE IN CM

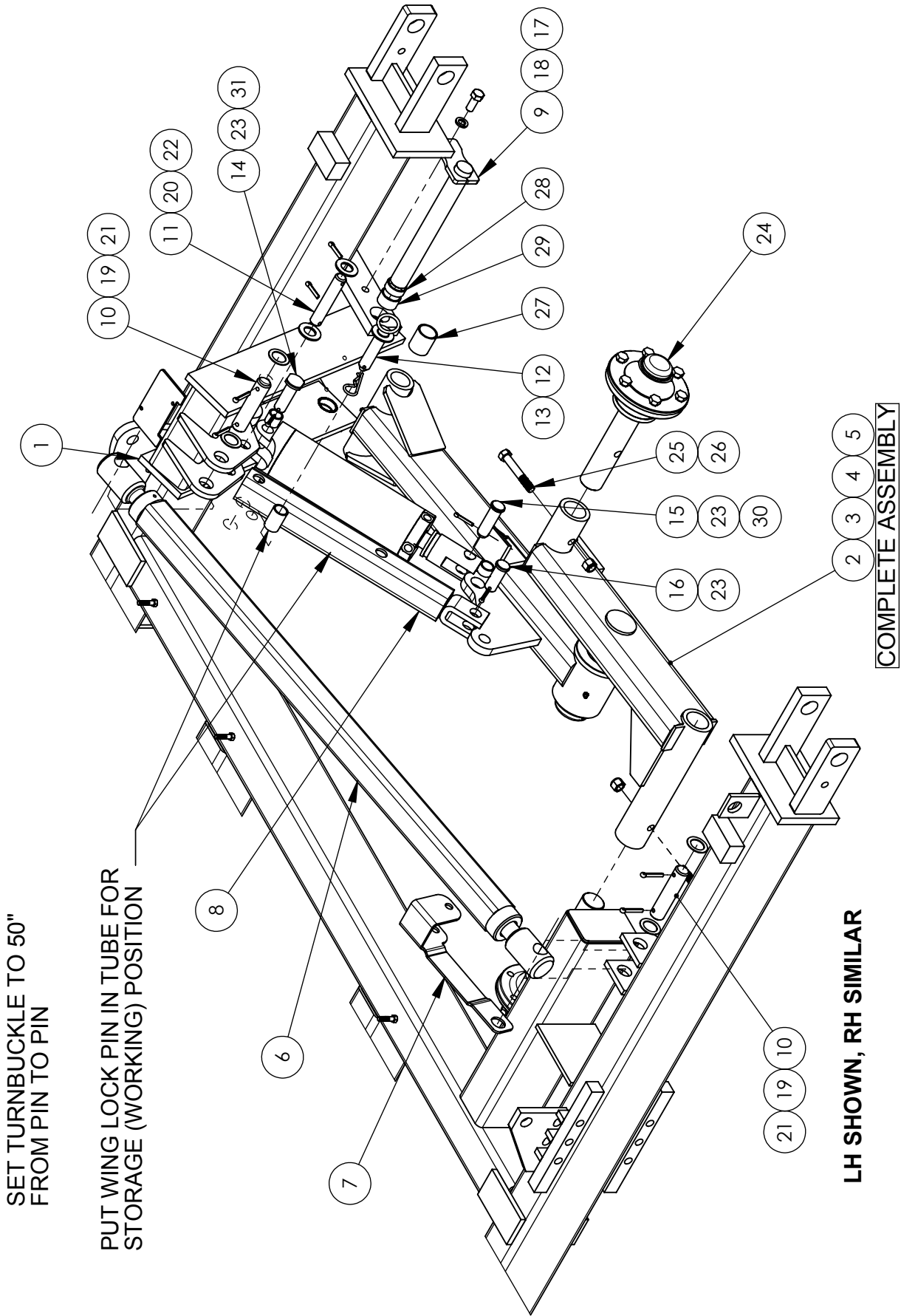


40ft Wheel and Axle Layout

DIMENSIONS ARE IN CM



Main Frame Axle Installation 30ft



Main Frame Axle Installation 30ft

	ITEM	QTY	PART NO.	DESCRIPTION
	1	2	C10013	MAIN FRAME TOWER
S-TINE USE C00136L&R	2	1	C00136L	8000 LB S-TINE AXLE ASSEMBLY - LH
	3	1	C00136R	8000 LB S-TINE AXLE ASSEMBLY - RH
C-SHANK USE C5540L&R	4	1	C5540L	8000 LB AXLE ASSEMBLY - LH
	5	1	C5540R	8000 LB AXLE ASSEMBLY - RH
	6	2	A60031	2 1/2" TURNBUCKLE 50" TUBE
	7	2	C10716	2 1/2" TURNBUCKLE LOCK
	8	2	C50010	TRANSPORT LOCK ASSEMBLY
	9	2	GPH2401312F	1 1/2" x 13 7/8" LG. AXLE PIN - HARDENED
	10	4	GP2000512A05	1 1/4" x 5 1/2" PIN - 2 HOLES
	11	2	GP1600512A05	PIN 1" DIA. x 5 1/2" LG. - 2 HOLES
	12	2	GP1600414C04	1" x 4 1/4" RING & WASHER PIN
	13	2	GHP9	#9 HAIR PIN
	14	2	GPHF1600314H04	1" x 3 1/4" SHOULDER PIN HARDENED W/FLATS
	15	2	GP1600314H04	PIN 1" DIA. x 3 1/4" LG. WITH HEAD
	16	2	GP1600258H04	PIN 1" DIA. x 2 5/8" LG. WITH HEAD
	17	2	B1015	5/8 X 1 1/2" PLATED BOLT
	18	2	BL10	5/8" LOCKWASHER
	19	8	GM30	1 1/4" MACHINE BUSHING
	20	4	BF16S	1" SAE WASHER
	21	8	BSC0520	5/16" x 2" COTTER PIN
	22	4	BSC0515	5/16" x 1 1/2" COTTER PIN
	23	6	BSC0415	1/4" x 1 1/2" COTTER PIN
	24	4	GW5000A	5000 LB HUB AND SPINDLE ASSEMBLY
	25	4	B1040	5/8"NC x 4" LG. HEX BOLT
	26	4	BN10L	5/8" NYLOCK NUT NC
	27	2	GBB175150200	1 3/4" x 1 1/2" x 2" LG. HARD BUSHING
	28	2	GBB175150062	1 3/4" x 1 1/2" x 5/8" LG. HARD BUSHING
	29	2	GBB175150100	1 3/4" x 1 1/2" x 1" LG. HARD BUSHING
	30	2	GBB125100075	1 1/4" x 1" x 3/4" LG. HARD BUSHING
	31	2	GBB125100100	1 1/4" x 1" x 1" LG. HARD BUSHING



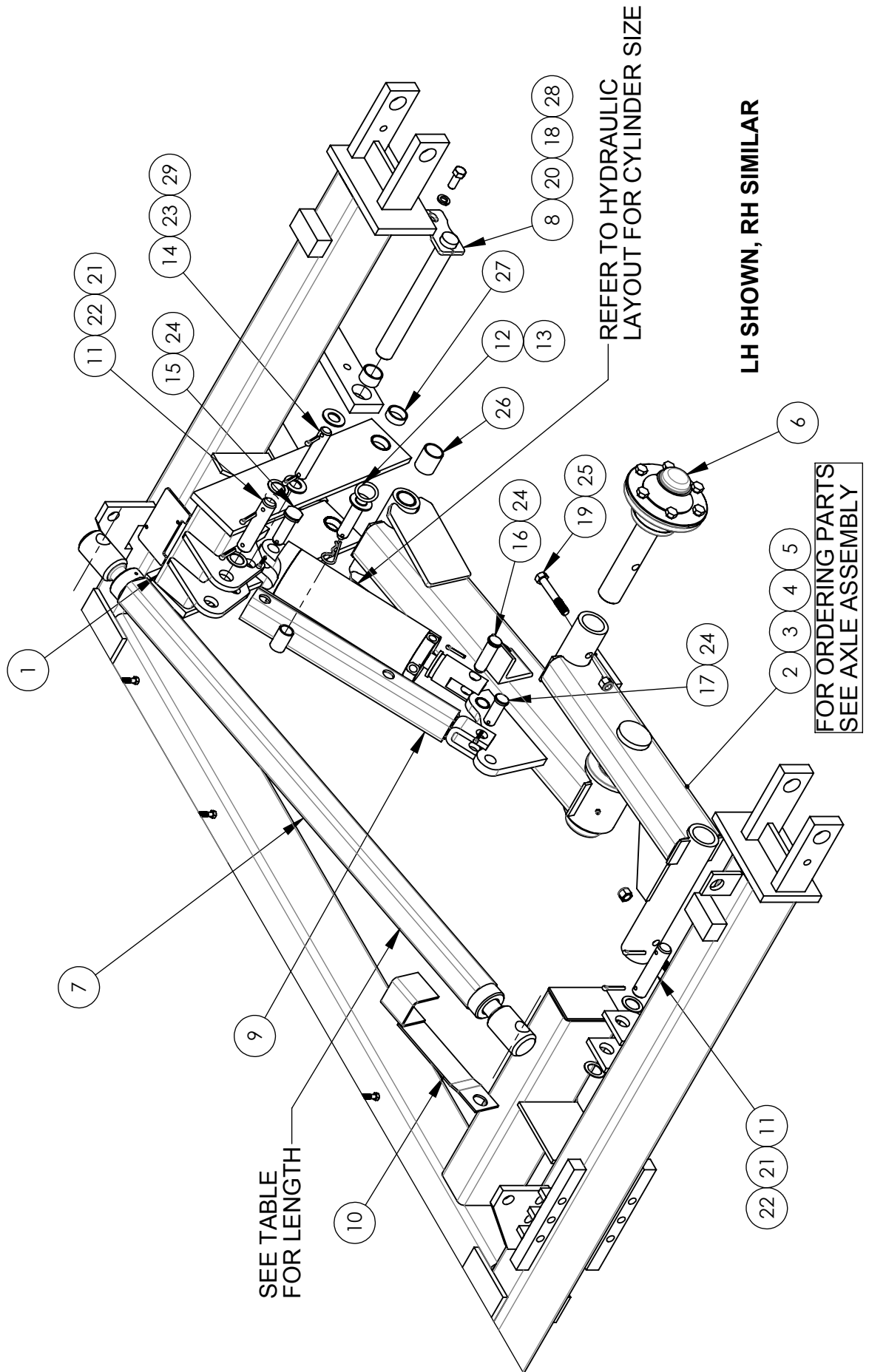
CAUTION

Connect hoses and charge lift axle cylinders with fluid following the procedure in the axle lift hydraulics section of this manual before connecting rod ends of the cylinders.

CHECK: wheel nuts/lugs for proper tightness (check decal for specs)

Main Frame Axle Installation 40ft

TOWER BRACE REFERENCE TABLE				
MACHINE	SIZE	PART #	DESCRIPTION	INITIAL SETTING
580 MAINFRAME	40'	A60031	50" TUBE LENGTH	63" PIN TO PIN LENGTH
550 C-SHANK	38' - 40'	A60036	53" TUBE LENGTH	65" PIN TO PIN LENGTH
550 S-TINE	38' - 40'			



Main Frame Axle Installation 40ft

ITEM NO.	QTY	PART NUMBER	DESCRIPTION
1	2	C10013	MAIN FRAME TOWER
2	1	C00139L	10,000 LB S-TINE MAIN AXLE ASSEMBLY - LH
3	1	C00139R	10,000 LB S-TINE MAIN AXLE ASSEMBLY - RH
4	1	C00130L	10000 LB AXLE ASSEMBLY - LH
5	1	C00130R	10000 LB AXLE ASSEMBLY - RH
6	4	GW5000A	5000 LB HUB AND SPINDLE ASSEMBLY
7	1	SEE TABLE ON PREVIOUS PAGE	
8	2	GPH2401312F	1 1/2" x 13 7/8" LG. AXLE PIN - HARDENED
9	2	C50010	TRANSPORT LOCK ASSEMBLY
10	2	C10716	570 MAINFRAME TURNBUCKLE LOCK
11	4	GP2000512A05	1 1/4" x 5 1/2" PIN - 2 HOLES
12	2	GP1600414C04	RING & WASHER WING LOCK PIN
13	2	GHP9	#9 HAIR PIN
14	2	GP1600512A05	PIN 1" DIA. x 5 1/2" LG. - 2 HOLES
15	2	GPHF1600314H04	1" x 3 1/4" SHOULDER PIN HARDENED W/FLATS
16	2	GP1600314H04	PIN 1" DIA. x 3 1/4" LG. WITH HEAD
17	2	GP1600258H04	PIN 1" DIA. x 2 5/8" LG. WITH HEAD
18	2	B1015	5/8 X 1 1/2" PLATED BOLT
19	4	B1040	5/8"NC x 4" LG. HEX BOLT
20	2	BL10	5/8" LOCKWASHER
21	8	GM30	1 1/4" MACHINE BUSHING
22	8	BSC0520	5/16" x 2" COTTER PIN
23	4	BSC0515	5/16" x 1 1/2" COTTER PIN
24	6	BSC0415	1/4" x 1 1/2" COTTER PIN
25	4	BN10L	5/8" NYLOCK NUT NC
26	4	GBB175150200	1 3/4" x 1 1/2" x 2" LG. HARD BUSHING
27	2	GBB175150062	1 3/4" x 1 1/2" x 5/8" LG. HARD BUSHING
28	4	GBB175150100	1 3/4" x 1 1/2" x 1" LG. HARD BUSHING
29	4	BF16S	1" SAE WASHER



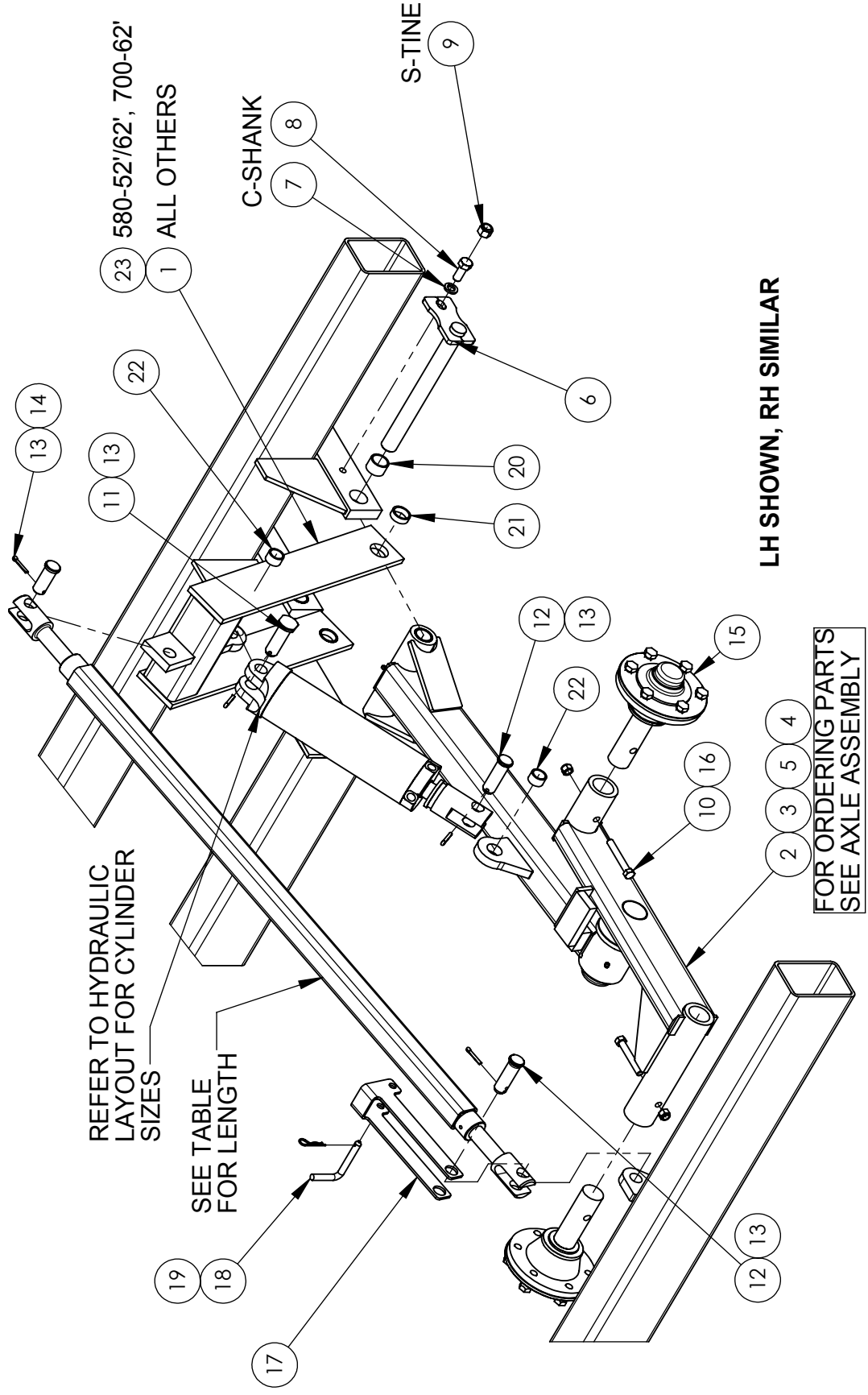
CAUTION

Connect hoses and charge lift axle cylinders with fluid following the procedure in the axle lift hydraulics section of this manual before connecting rod ends of the cylinders.

CAUTION: Torque lug nuts according to decal on axle tower or tire torque page in manual.

Wing Axle Installation 30-40ft

TURNBUCKLE REFERENCE TABLE			INITIAL SETTING
MACHINE	PART #	DESCRIPTION	
450 SINGLE FOLD WING	A60025	51 1/2" TUBE LENGTH	65 1/2" PIN TO PIN
700 SINGLE FOLD WING AND SECONDARY WING			
580 SINGLE FOLD WING AND SECONDARY WING	A60020	54" TUBE LENGTH	67" PIN TO PIN
550 S-TINE SINGLE FOLD WING, PRIMARY WING, AND SECONDARY WING			
699 30ft S-TINE SINGLE FOLD WING			
700 44ft-50ft 2PCS S-TINE SECONDARY WINGS			
550 C-SHANK SINGLE FOLD WING, PRIMARY WING, AND SECONDARY WING			



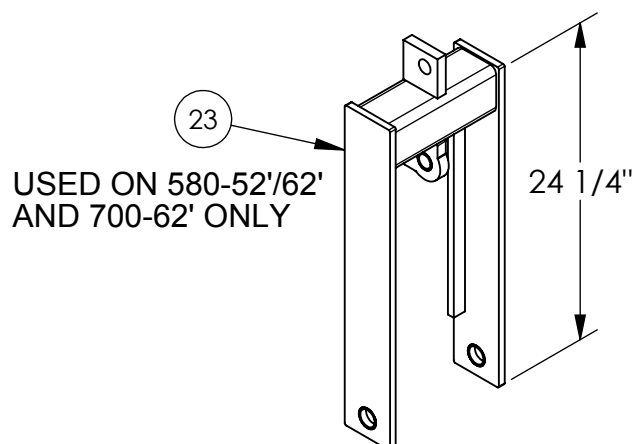
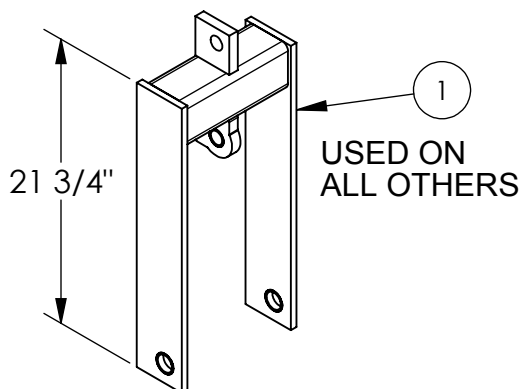
Wing Axle Installation 30-40ft

	ITEM	QTY	PART NO.	DESCRIPTION
	1	2	C4547B	TOWER,450/550/570 WING
C-SHANK USE C4550WL&WR	2	1	C4540WL	5000 LB WING AXLE ASSEMBLY - LH
	3	1	C4540WR	5000 LB WING AXLE ASSEMBLY - RH
S-TINE USE C00132WL&WR	4	1	C00132WL	5000 LB S-TINE WING AXLE ASSEMBLY - LH
	5	1	C00132WR	5000 LB S-TINE WING AXLE ASSEMBLY - RH
	6	2	GPH2001314F	1 1/4" x 13 1/2" LG. AXLE PIN - HARDENED
C-SHANK	7	2	BL10	5/8" LOCKWASHER
	8	2	B1015	5/8 X 1 1/2" PLATED BOLT
S-TINE	9	2	BN10L	5/8" NYLOCK NUT NC
	10	4	B0835	1/2 X 3 1/2" BOLT
	11	2	GPHF1600314H04	1" x 3 1/4" SHOULDER PIN HARDENED W/FLATS
	12	4	GP1600314H04	PIN 1" DIA. x 3 1/4" LG. WITH HEAD
	13	8	BSC0415	1/4" x 1 1/2" COTTER PIN
	14	2	GP1600258H04	PIN 1" DIA. x 2 5/8" LG. WITH HEAD
	15	4	GW4000A	4000 LB HUB AND SPINDLE ASSEMBLY
	16	4	BN08L	1/2" NYLOCK NUT NC
	17	2	FL00051	LIGHT TURNBUCKLE LOCK
	18	2	GP0800312L03	1/2" x 3 1/2" PARKING STAND PIN
	19	2	GHP11	#11 HAIR PIN
	20	2	GBB150125100	1 1/2" x 1 1/4" x 1" LG. HARD BUSHING
	21	2	GBB150125050	1 1/2" x 1 1/4" x 1/2" LG. HARD BUSHING
	22	4	GBB125100075	1 1/4" x 1" x 3/4" LG. HARD BUSHING
	23	2	T00388	62' SECONDARY WING AXLE TOWER

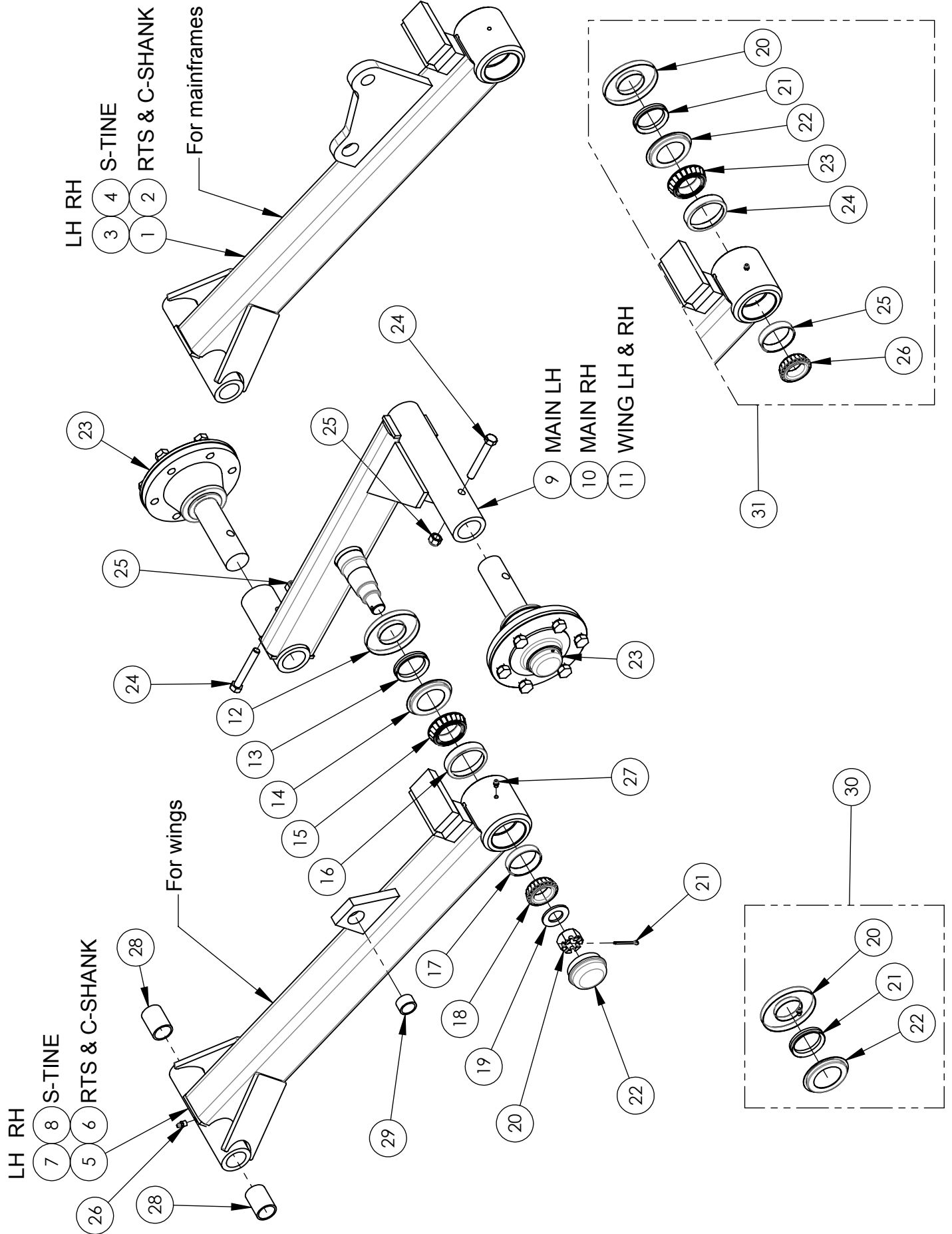


CAUTION

Connect hoses and charge lift axle cylinders with fluid following the procedure in the hydraulics installation before connecting rod ends of the cylinders.

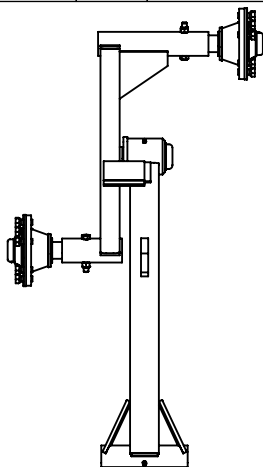


5000lb Tandem Axle Assembly

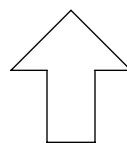


5000lb Tandem Axle Assembly

ITEM NO.	QTY	PART NUMBER	DESCRIPTION
1	1	C4542L	5000 LB MAIN UPRIGHT AXLE - LH
2	1	C4542R	5000 LB MAIN UPRIGHT AXLE - RH
3	1	C00135L	5000 LB S-TINE MAIN UPRIGHT AXLE - LH
4	1	C00135R	5000 LB S-TINE MAIN UPRIGHT AXLE - RH
5	1	C4542WL	5000 LB WING UPRIGHT AXLE - LH
6	1	C4542WR	5000 LB WING UPRIGHT AXLE - RH
7	1	C00133WL	5000 LB S-TINE WING UPRIGHT AXLE - LH
8	1	C00133WR	5000 LB S-TINE WING UPRIGHT AXLE - RH
9	1	C4541L	5000 LB MAIN WALKING BEAM - LH
10	1	C4541R	5000 LB MAIN WALKING BEAM - RH
11	1	C4541	5000 LB WALKING BEAM FOR WINGS
12	1	GW5110VW	5000 LB V-SEAL GRASS WRAP GUARD
13	1	GW5110VS	5000 LB V-SEAL
14	1	GW5110VC	5000 LB SEAL COUNTERFACE
15	1	GB603049	5000/5500 LB INNER CONE
16	1	GB603011	5000/5500 LB INNER CUP
17	1	GB48510	5000/5500 LB OUTER CUP, 3000 LB INNER CUP
18	1	GB48548	5000/5500 LB OUTER CONE, 3000 LB INNER CONE
19	1	BF16-9	1" HARD SAE FLAT WASHER GR.9 PLATED
20	1	BN16S	1" SLOTTED HEX NUT
21	1	BSC0317	3/16" x 2" COTTER PIN
22	1	GW5112	5000/5500 LB DUST CAP
23	2	GW4000A	4000 LB HUB AND SPINDLE ASSEMBLY
24	2	B0835	1/2 X 3 1/2" BOLT
25	2	BN08L	1/2" NYLOCK NUT NC
26	1	GF1610	1/8" NPT GREASE FITTING
27	1	GF641	1/4"-28NF GREASE FITTING
28	2	GBB150125200	1 1/2" x 1 1/4" x 2" LG. HARD BUSHING
29	1	GBB125100075	1 1/4" x 1" x 3/4" LG. HARD BUSHING
30	1	GW5110V	5000 LB V-SEAL KIT
31	1	GW5111V	5000 LB BEARING WITH V-SEAL KIT

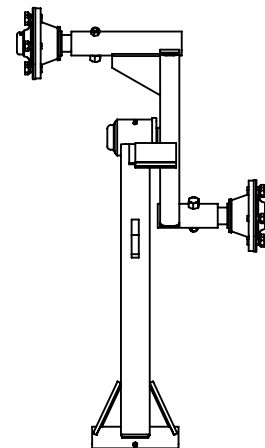


**LH AXLE
ASSEMBLY**



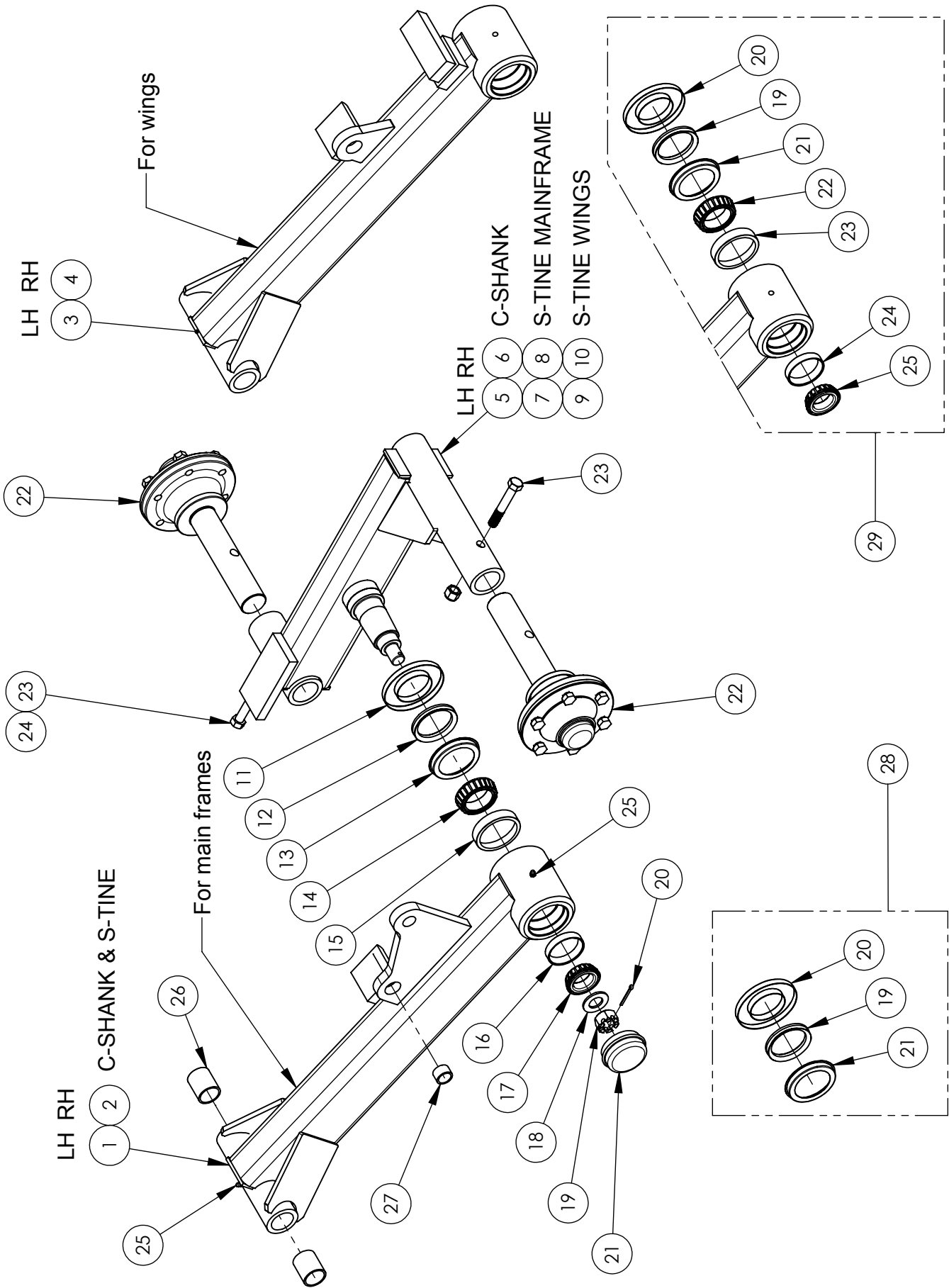
FRONT

Note: on some
cultivators, LH and RH
axles are installed on
opposite sides
SEE AXLE LAYOUT



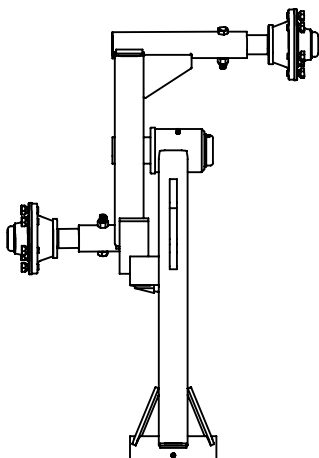
**RH AXLE
ASSEMBLY**

8000lb Tandem Axle Assembly

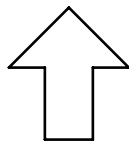


8000lb Tandem Axle Assembly

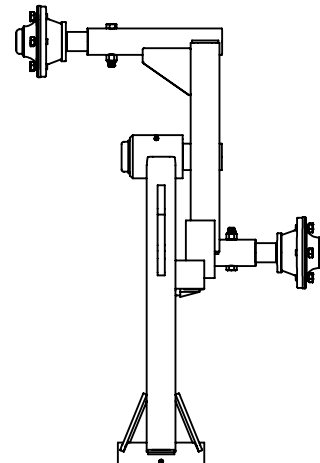
ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	C5542L	8000 LB UPRIGHT BEAM - LH
2	1	C5542R	8000 LB UPRIGHT BEAM - RH
3	1	C5542WL	8000 LB WING UPRIGHT BEAM - LH
4	1	C5542WR	8000 LB WING UPRIGHT BEAM - RH
5	1	C5541L	8000 LB WALKING BEAM - LH
6	1	C5541R	8000 LB WALKING BEAM - RH
7	1	C00137L	8000 LB S-TINE AXLE MAIN WALKING BEAM - LH
8	1	C00137R	8000 LB S-TINE AXLE MAIN WALKING BEAM - RH
9	1	C5541WL	8000 LB WALKING BEAM - WING LH
10	1	C5541WR	8000 LB WALKING BEAM - WING RH
11	1	GW8110VW	8000 LB V-SEAL GRASS WRAP GUARD
12	1	GW8110VS	8000 LB V-SEAL
13	1	GW8110VC	8000 LB V-SEAL COUNTERFACE
14	1	GB506849	8000 INNER CONE
15	1	GB506810	8000 INNER CUP
16	1	GB501310	8000 OUTER CUP
17	1	GB501349	8000 OUTER CONE
18	1	GW8108	1" SPINDLE WASHER
19	1	BN16SF	1" NF SLOTTED HEX NUT
20	1	BSC0317	3/16" x 1 3/4" COTTER PIN
21	1	GW8112	8000 DUST CAP
22	2	GW5000A	5000 LB HUB AND SPINDLE ASSEMBLY
23	2	B1040	5/8"NC x 4" LG. HEX BOLT
24	2	BN10L	5/8" NYLOCK NUT NC
25	2	GF1610	1/8" NPT GREASE FITTING
26	2	GBB175150200	1 3/4" x 1 1/2" x 2" LG. HARD BUSHING
27	1	GBB125100075	1 1/4" x 1" x 3/4" LG. HARD BUSHING
28	1	GW8110V	8000 LB V-SEAL KIT
29	1	GW8111V	8000 LB BEARING WITH V-SEAL KIT



**LH AXLE
ASSEMBLY**

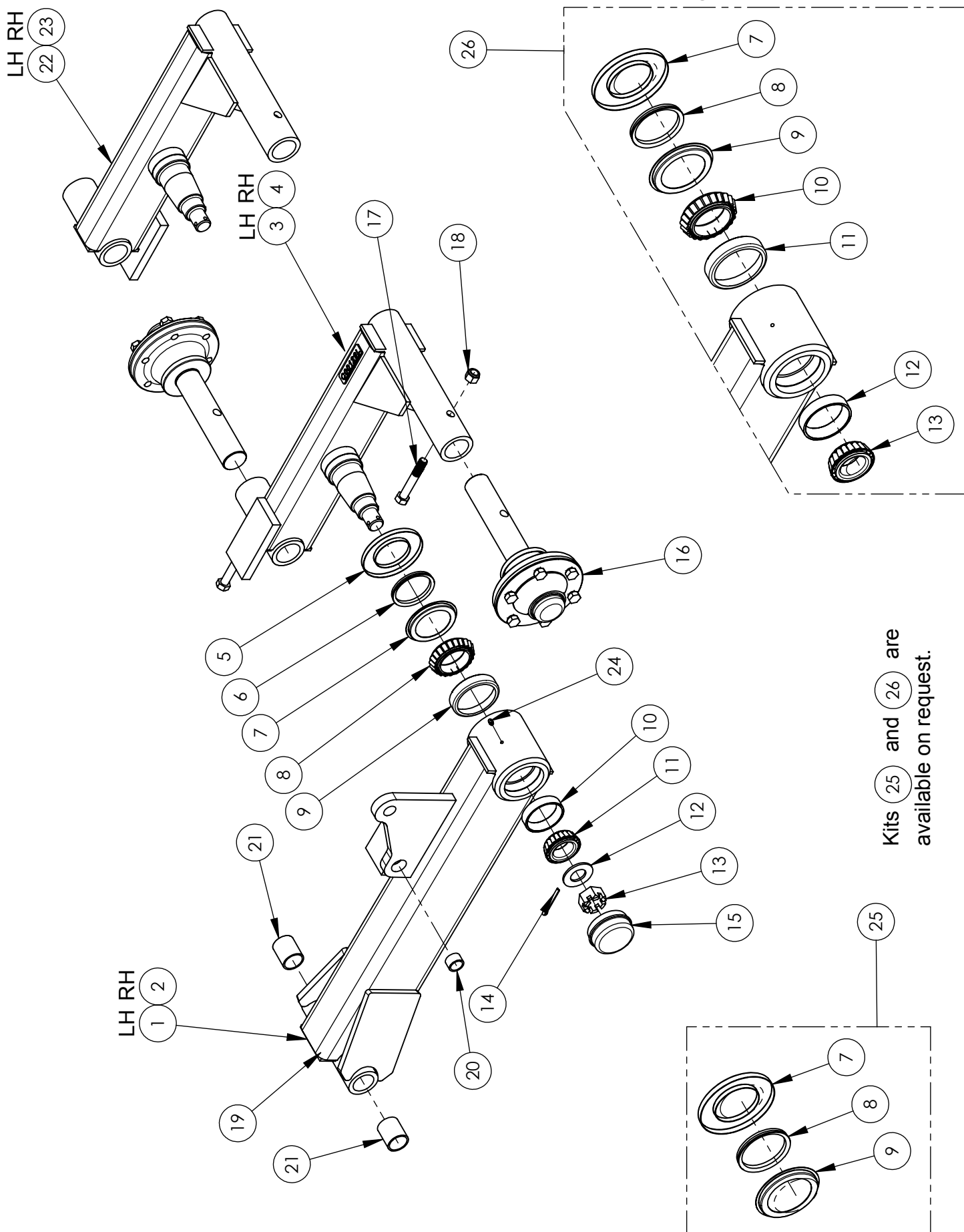


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**RH AXLE
ASSEMBLY**

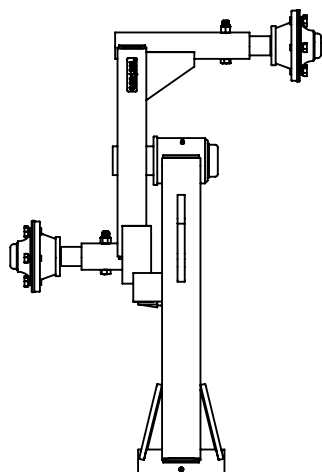
10000lb Tandem Axle Assembly



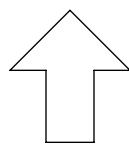
Kits 25 and 26 are available on request.

10000lb Tandem Axle Assembly

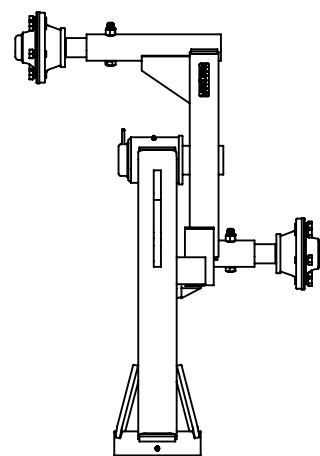
ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	C7042L	10000 LB UPRIGHT BEAM - LH
2	1	C7042R	10000 LB UPRIGHT BEAM - RH
3	1	C00129L	10,000 LB WALKING BEAM WITH 5,000LB HUB SLEEVES - LH
4	1	C00129R	10,000 LB WALKING BEAM WITH 5,000LB HUB
5	1	GW12110VW	10000/12000 LB GRASS WRAP GUARD
6	1	GW12110VS	10000/12000 LB V-SEAL
7	1	GW12110VC	10000/12000 LB COUNTERFACE
8	1	GB28995	12000 LB CONE, 10000 LB INNER CONE
9	1	GB28921	12000 LB CUP, 10000 LB INNER CUP
10	1	GB255204	10000 LB OUTER CUP
11	1	GB255814	10000 LB OUTER CONE
12	1	BF20S	1 1/4" SAE WASHER
13	1	BN20SF	1 1/4"NF SLOTTED HEX NUT
14	1	BSC0425	1/4" x 2 1/2" COTTER PIN
15	1	GW9112	10,000 LB DUST CAP
16	2	GW5000A	5000 LB HUB AND SPINDLE ASSEMBLY
17	2	B1040	5/8"NC x 4" LG. HEX BOLT
18	2	BN10L	5/8" NYLOCK NUT NC
19	1	GF1610	1/8" NPT GREASE FITTING
20	1	GBB125100075	1 1/4" x 1" x 3/4" LG. HARD BUSHING
21	2	GBB175150200	1 3/4" x 1 1/2" x 2" LG. HARD BUSHING
22	1	C00140L	10,000LB S-TINE MAIN WALKING BEAM - LH
23	1	C00140R	10,000 LB S-TINE WALKING BEAM - RH
24	1	GF641	1/4"-28NF GREASE FITTING
25	1	GW12110V	10000/12000 LB V-SEAL KIT
26	1	GW9111V	10000 LB BEARING WITH V-SEAL KIT



**LH AXLE
ASSEMBLY**

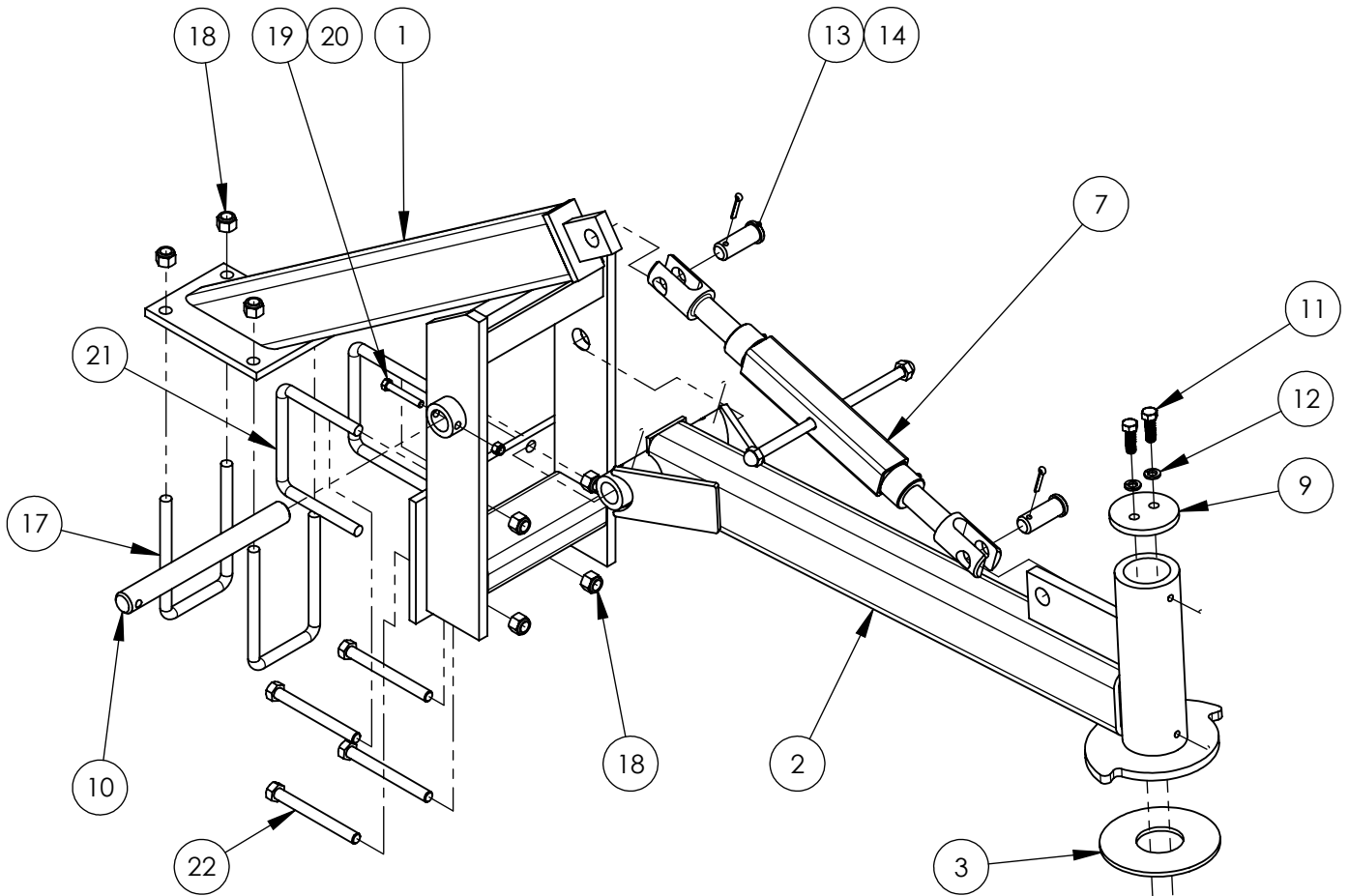


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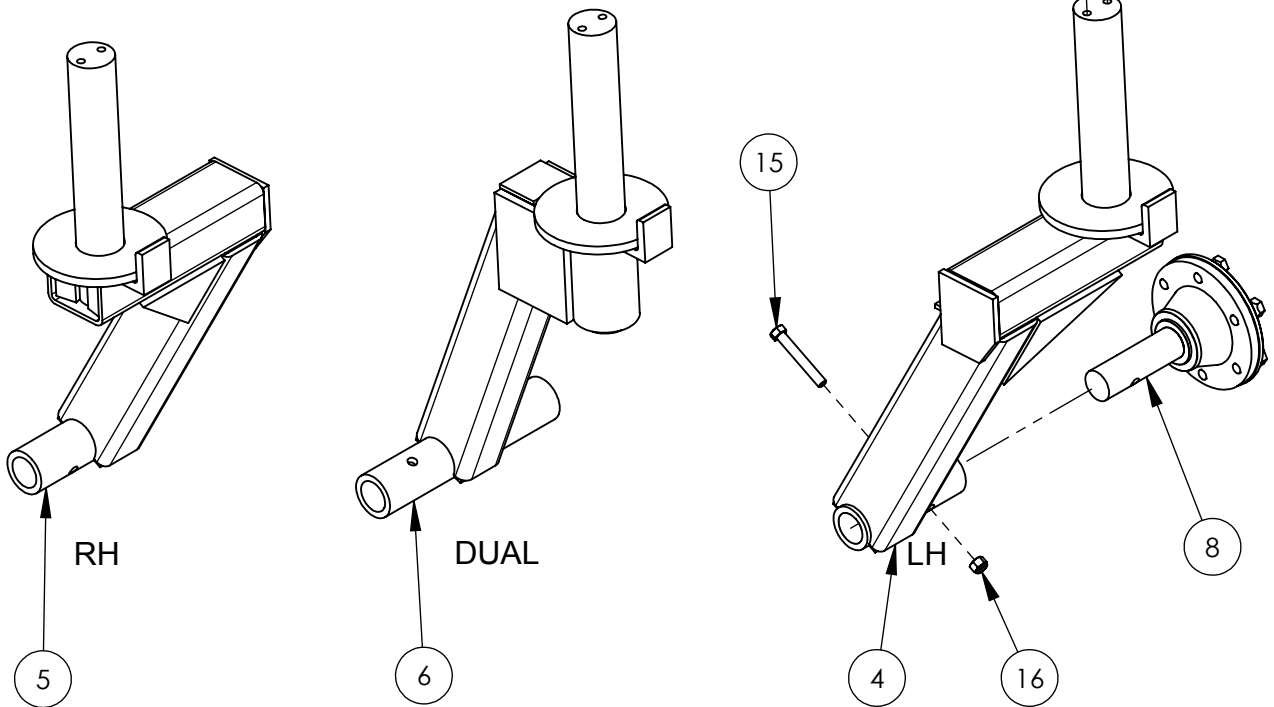


**RH AXLE
ASSEMBLY**

Land Hugger Gauge Wheel Assembly & Parts

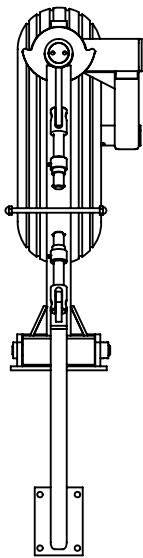


Use u-bolts (22) when straddling welded extension.
 Use bolts (23) when straddling bolt-in extension.

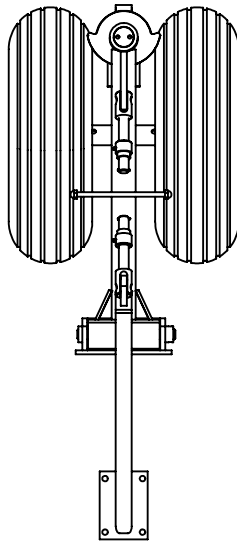


Land Hugger Gauge Wheel Assembly & Parts

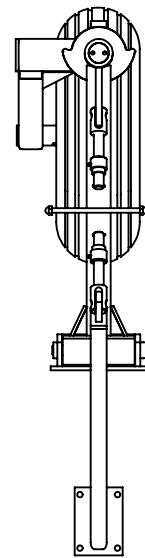
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	C10707	GAUGE WHEEL MOUNT
2	1	C10708	LAND HUGGER GAUGE WHEEL
3	1	T00314	6 1/2" OD x 2 9/16" ID x 1/4" UHMW WASHER
4	1	T00151	WING BOGEY WHEEL - LH
5	1	T00152	WING BOGEY WHEEL - RH
6	1	T00158	A-S MAIN BOGEY WHEEL
7	1	A50010	TURNBUCKLE
8	1	GW4000A	4000 LB HUB AND SPINDLE ASSEMBLY
9	1	FL00037	3/8 X 3 3/4" BOGEY WHEEL CAP
10	1	GP2001214B07	1 1/4" DIA. x 12 1/4" LG 1 HOLE PIN
11	2	B0815	1/2 X 1 1/2" GR. 5 PLATED BOLT
12	2	BL08	1/2" SPRING WASHER
13	2	GP1600258H04	PIN 1" DIA. x 2 5/8" LG. WITH HEAD
14	2	BSC0415	1/4" x 1 1/2" COTTER PIN
15	1	B0835	1/2 X 3 1/2" BOLT
16	1	BN08L	1/2" NYLOCK NUT NC
17	2	BU1046	U-BOLT 5/8" x 4" x 7 1/2" LG.
18	8	BN10L	5/8" NYLOCK NUT NC
19	1	B0625	3/8"NC x 2 1/2" LG. HEX BOLT
20	1	BN06L	3/8"-16NC LOCK NUT
21	2	BU1061	U-BOLT 5/8" x 6" x 5 1/2"
22	4	B1060	5/8"NC x 6" LG. HEX BOLT



LH GAUGE WHEEL

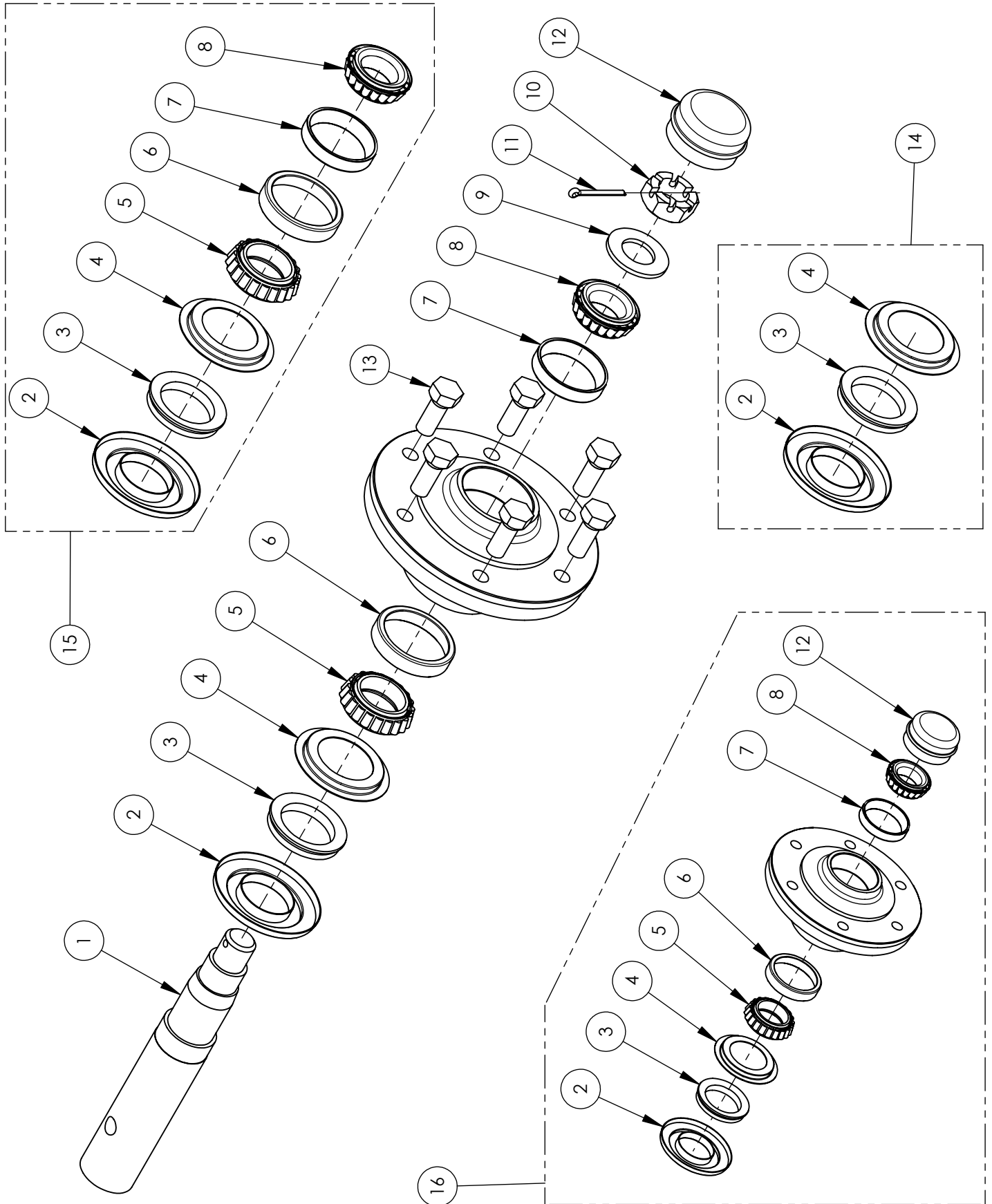


DUAL GAUGE WHEEL



RH GAUGE WHEEL

4000lb Hub and Spindle Assembly

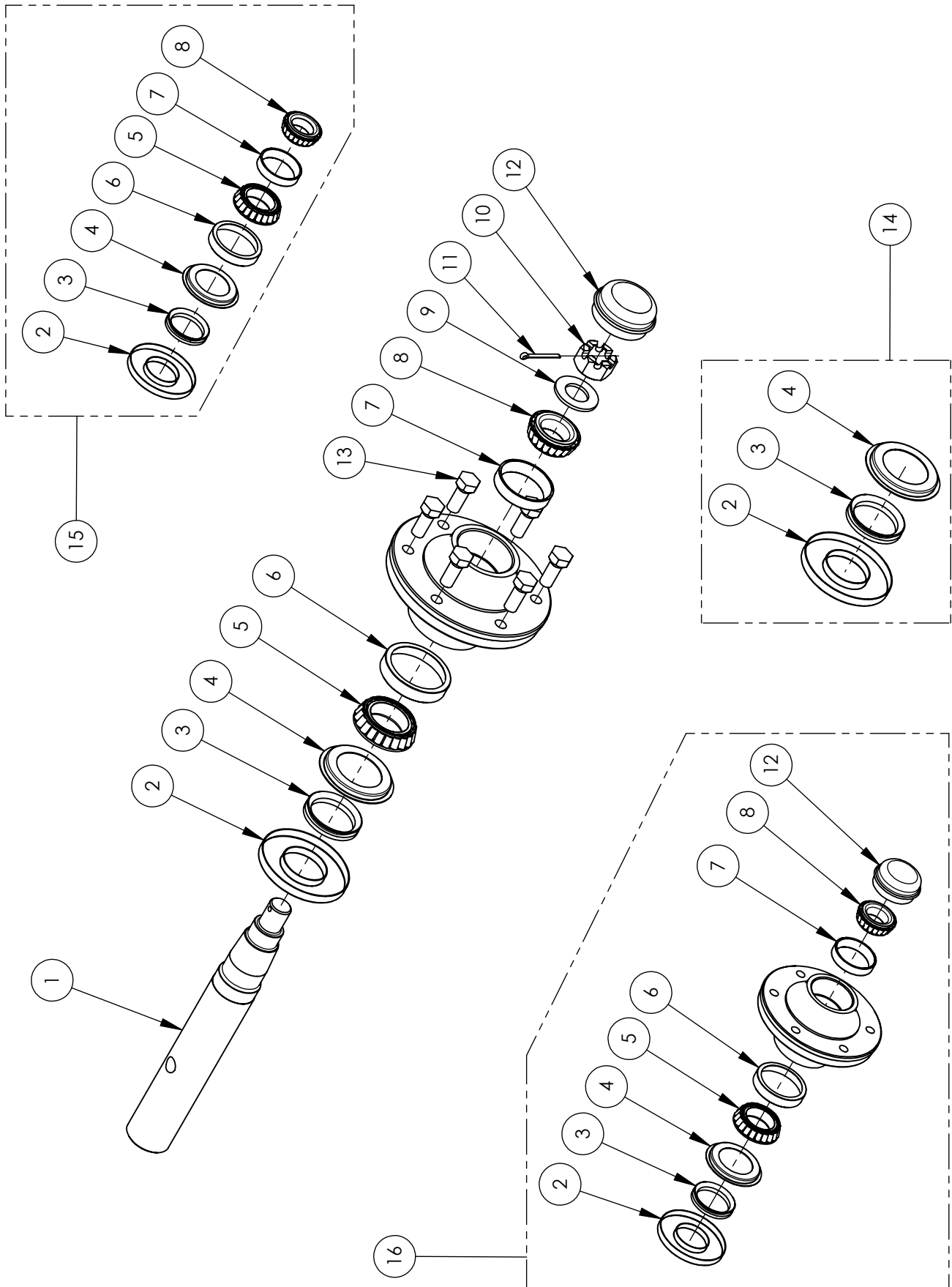


4000lb Hub and Spindle Assembly

ITEM	QTY	PART NO.	DESCRIPTION
1	1	GW4010	4000 LB SPINDLE - 10" LG.
2	1	GW4110VW	4000 LB GRASS WRAP
3	1	GW4110VS	4000 LB V-SEAL
4	1	GW4110VC	4000 LB SEAL COUNTER FACE
5	1	GB29749	4000 LB INNER CONE
6	1	GB29710	4000 LB INNER CUP
7	1	GB67010	4000 LB OUTER CUP
8	1	GB67049	4000 LB OUTER CONE
9	1	BF16-9	1" HARD SAE FLAT WASHER GR.9 PLATED
10	1	BN16JS	1"-14NF SLOTTED JAM NUT
11	1	BSC0317	3/16" x 1 3/4" COTTER PIN
12	1	GW4112	4000 LB DUST CAP
13	6	BW0912	9/16"-18 x 1 1/4" WHEEL BOLT
14	1	GW4110V	4000 LB V-SEAL KIT
15	1	GW4111V	4000LB BEARING WITH V-SEAL KIT
16	1	GW4000B	4000 LB HUB WITH BEARINGS, SEAL, & DUST CAP

Complete assembly available as part number GW4000A (includes hub, spindle, bearings, seals, dust cap, and hardware).

5000lb Hub and Spindle Assembly

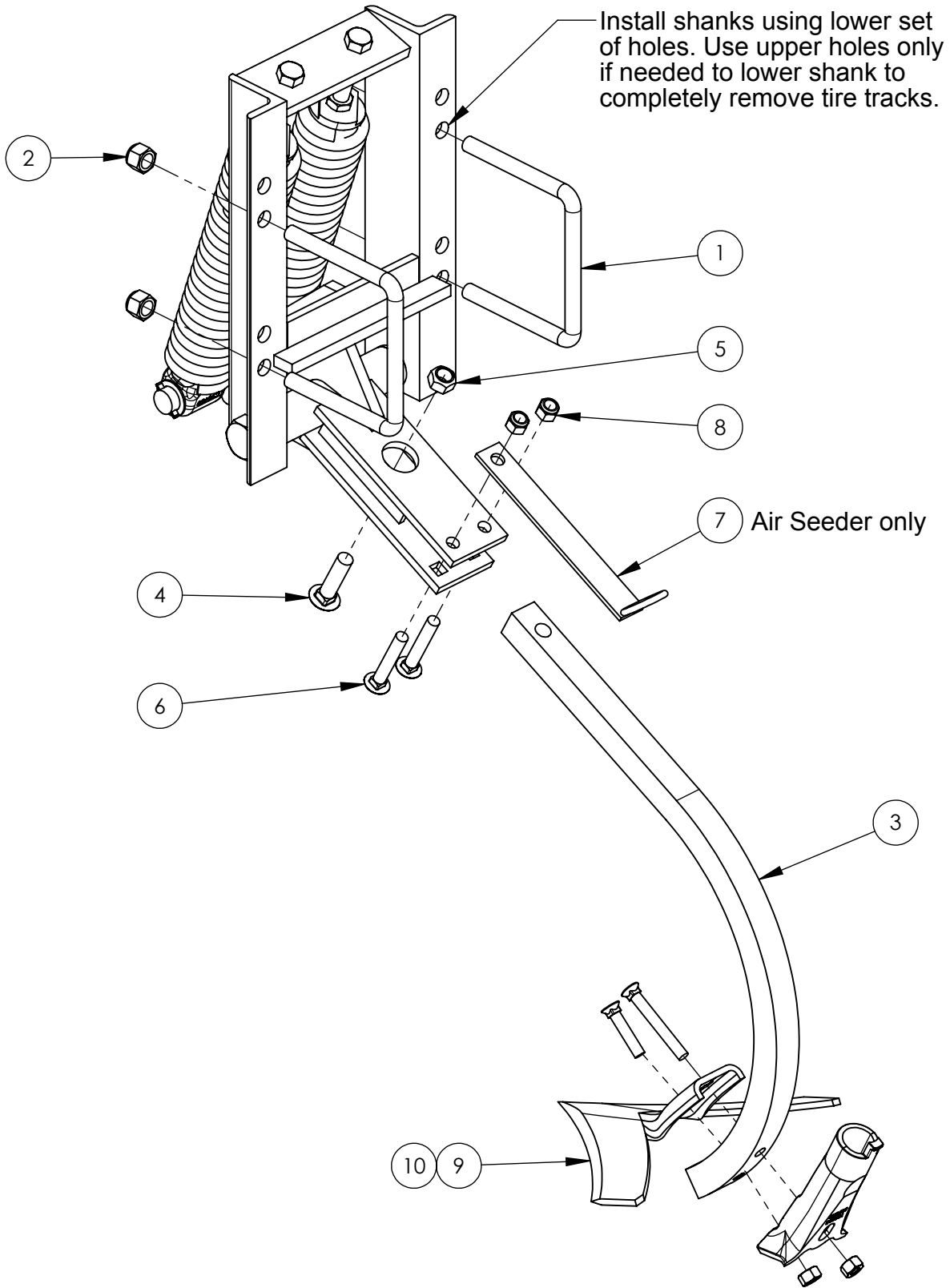


5000lb Hub and Spindle Assembly

ITEM	QTY	PART NO.	DESCRIPTION
1	1	GW5014	5000 LB SPINDLE-14 IN. LG
2	1	GW5110VW	5000 LB V-SEAL GRASS WRAP GUARD
3	1	GW5110VS	5000 LB V-SEAL
4	1	GW5110VC	5000 LB SEAL COUNTERFACE
5	1	GB603049	5000/5500 LB INNER CONE
6	1	GB603011	5000/5500 LB INNER CUP
7	1	GB48510	5000/5500 LB OUTER CUP, 3000 LB INNER CUP
8	1	GB48548	5000/5500 LB OUTER CONE, 3000 LB INNER CONE
9	1	BF16-9	1" HARD SAE FLAT WASHER GR.9 PLATED
10	1	BN16SF	1" NF SLOTTED HEX NUT
11	1	BSC0317	3/16" x 1 3/4" COTTER PIN
12	1	GW5112	5000/5500 LB DUST CAP
13	6	BW0912	9/16"-18 x 1 1/4" WHEEL BOLT
14	1	GW5110V	5000 LB V-SEAL KIT
15	1	GW5111V	5000 LB BEARING WITH V-SEAL KIT
16	1	GW5000B	5000 LB HUB WITH BEARINGS, SEAL, & DUST CAP

Complete assembly available as part number GW5000A (includes hub, spindle, bearings, seals, dust cap, and hardware).

Shank Assembly and Parts



Shank Assembly and Parts

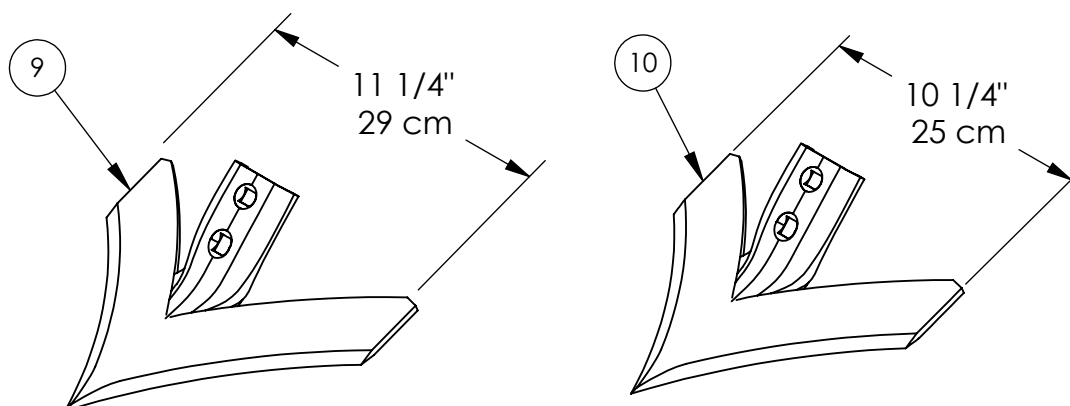
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	BU1061	U-BOLT 5/8" x 6" x 5 1/2"
2	4	BN10L	5/8" NYLOCK NUT NC
3	1	CT5297	C-SHANK: MODIFIED RS5222
4	1	BC1025	5/8 X 2 1/2" CARRIAGE BOLT GR. 5
5	1	BN10S	5/8" NC STOVER LOCK NUT
6	2	BC0830	1/2 X 3" CARRIAGE BOLT GR.5
7	1	T00432	1" SHANK HOSE HOLDER - 2007
8	2	BN08L	1/2" NYLOCK NUT NC
9	1	CT5115	11 1/4" SWEEP x 7.5mm THICK
10	1	CT5109	10 1/4" SWEEP x 7.5 mm THICK

Shank head assembly is preassembled at the factory. See shank head parts drawing for replacement parts for shank head.

1. Insert shank leaf (3) into shank head. Retain leaf with 5/8" x 2 1/2" carriage bolt (4) and 5/8" crimp nut (5). Place 1/2" x 3" carriage bolts (6) on either side of leaf and retain with 1/2" lock nuts (8). When used as air seeder, place 1" hose holder (7) over one bolt before the lock nut.

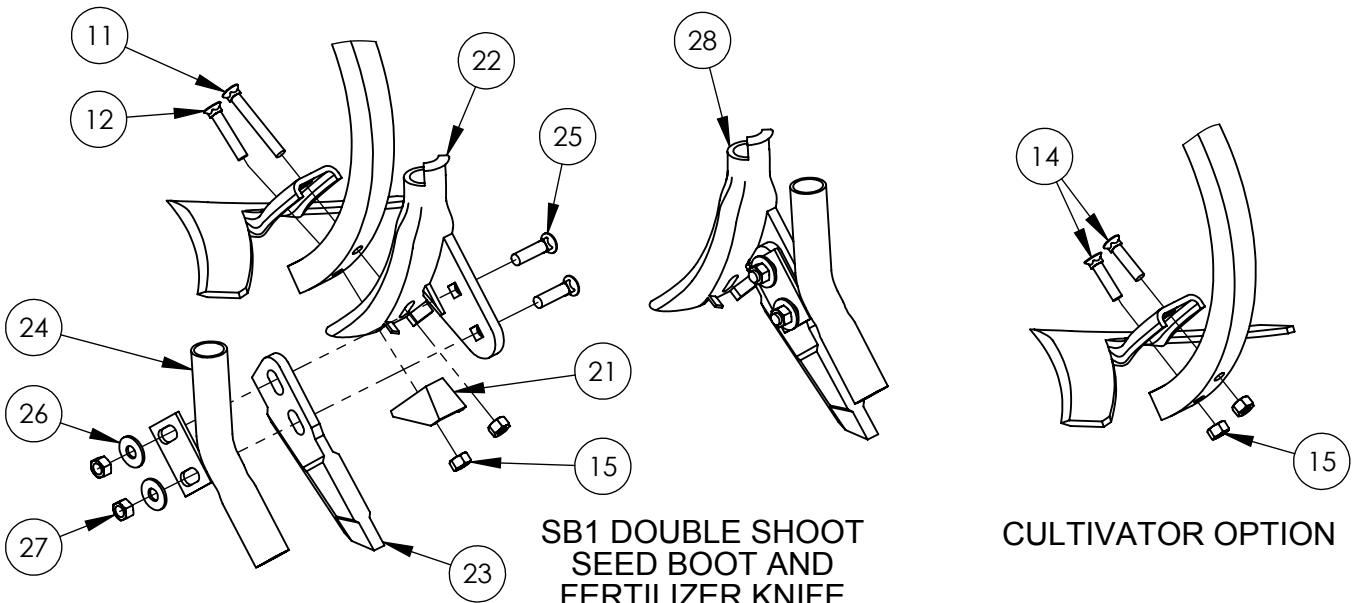
2. Attach sweep (9 or 10) to front of shank and seed boot (if equipped as air seeder) to rear of shank. See following page for seed boot options and bolts.

3. Mount shanks on frame using 5/8" x 6" x 5 1/2" u-bolts (1) and 5/8" lock nuts (2). See shank layout drawing for shank mounting locations.



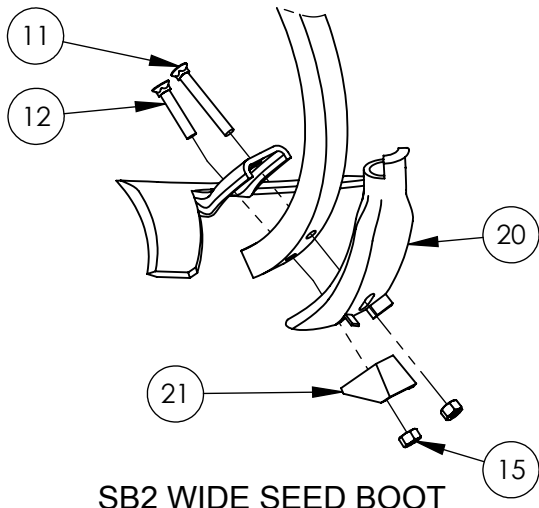
Seed Boot Options

ITEM NO.	QTY.	PART NO.	DESCRIPTION
11	1	BP0735	7/16"-14NC x 3 1/2" PLOW BOLT
12	1	BP0725	7/16"-14NC x 2 1/2" PLOW BOLT
13	1	BP0722	7/16"-14NC x 2 1/4" PLOW BOLT
14	2	BP0720	7/16"-14NC x 2" PLOW BOLT
15	2	BN07H	7/16"NC HEAVY HEX NUT
16	1	T00005	SB3 AIR SEEDER SEED BOOT
20	1	T00114	SB2 SEED BOOT
21	1	T00115	SBS2 WIDE SEED BOOT SPREADER
22	1	T00116	SB1 SEED BOOT
23	1	T00585	K3 FERTILIZER KNIFE
24	1	T00586	P20 DRY FERTILIZER TUBE
25	2	BP0820	1/2"NC x 2" PLOW BOLT GR. 5
26	2	BF08	1/2" FLATWASHER
27	2	BN08	1/2" HEX NUT NC
28	1	T00469	SB1 DOUBLE SHOOT - COMPLETE ASSEMBLY

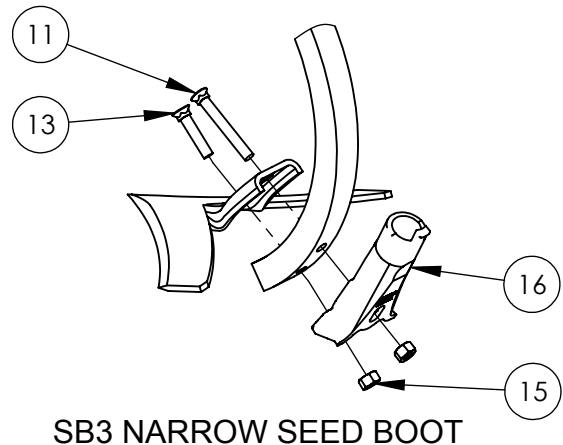


SB1 DOUBLE SHOOT SEED BOOT AND FERTILIZER KNIFE ASSEMBLY

CULTIVATOR OPTION



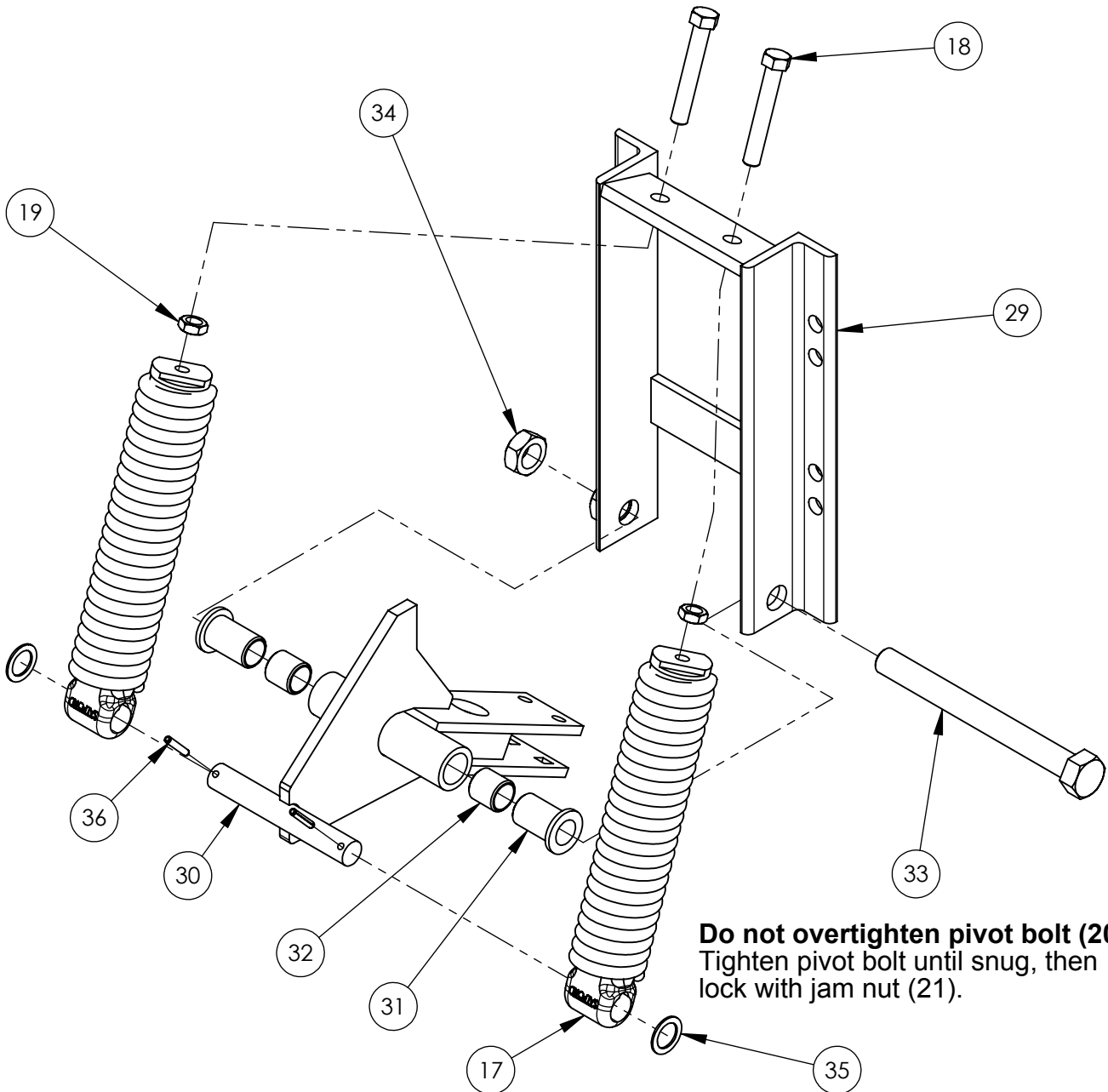
SB2 WIDE SEED BOOT



SB3 NARROW SEED BOOT

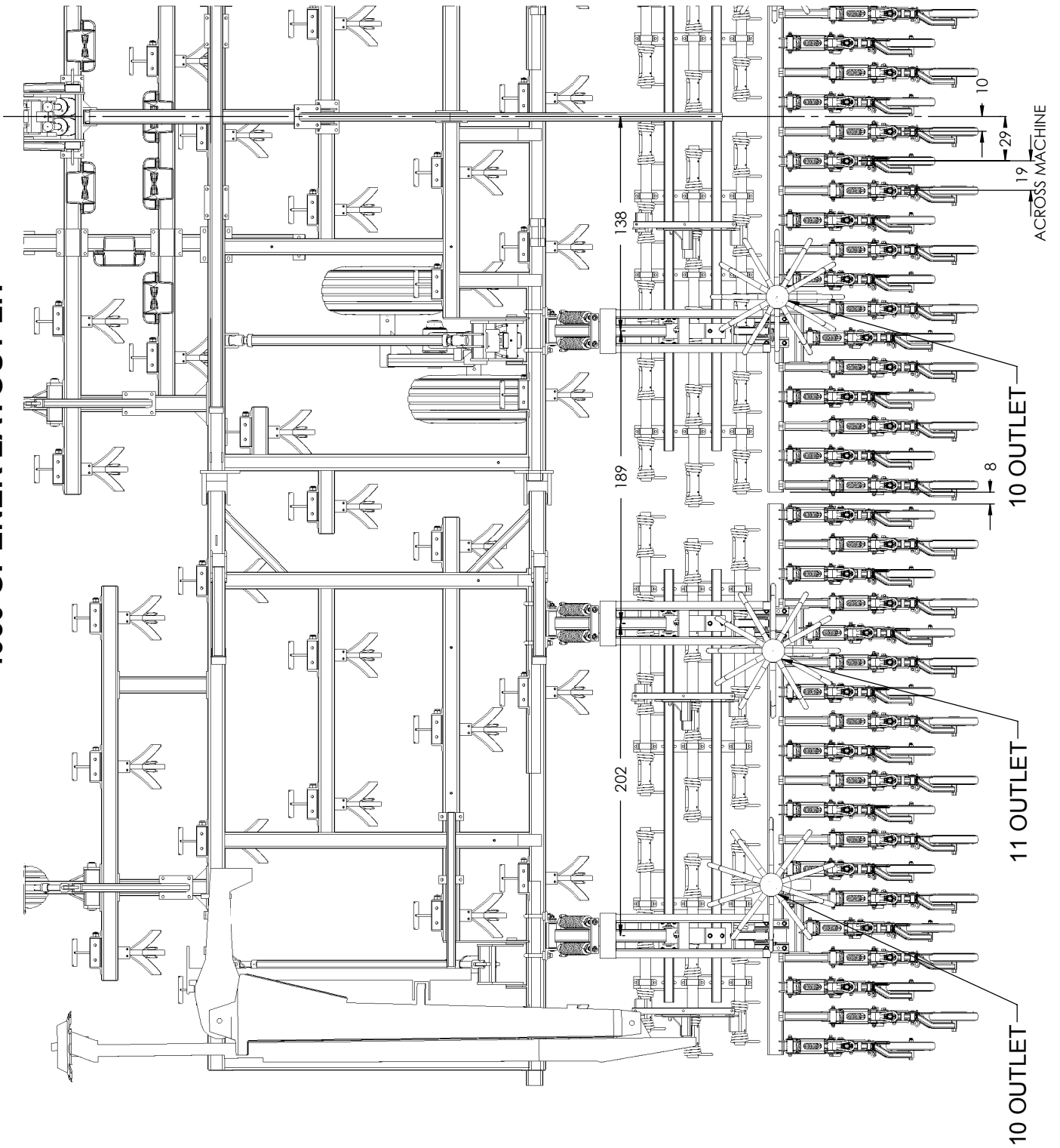
Shank Head Parts

ITEM NO.	QTY.	PART NO.	DESCRIPTION
17	2	GSE0824A	1/2" RESET SPRING 24 TOTAL COILS W/ PLUGS
18	2	B1040TH	5/8" X 4" FULL THREAD HEX BOLT GR.5
19	2	BN10J	5/8"NC JAM NUT GR. 5
29	1	C90128	OUTER DOUBLE SPRING C-SHANK WELDMENT
30	1	C90127	INNER C-SHANK WELDMENT
31	2	A60018	NYLATRON SHOULDER BUSHING
32	2	A60017	1 1/4 OD-1 ID X 1 1/4 LONG BUSHING
33	1	B16100	HEX BOLT 1" NC x 10" LG. GR. 5
34	1	BN16J	1"NC JAM NUT
35	2	GM26	1" MACHINE BUSHING
36	2	BSR0415	1/4 X 1 1/2" ROLL PIN

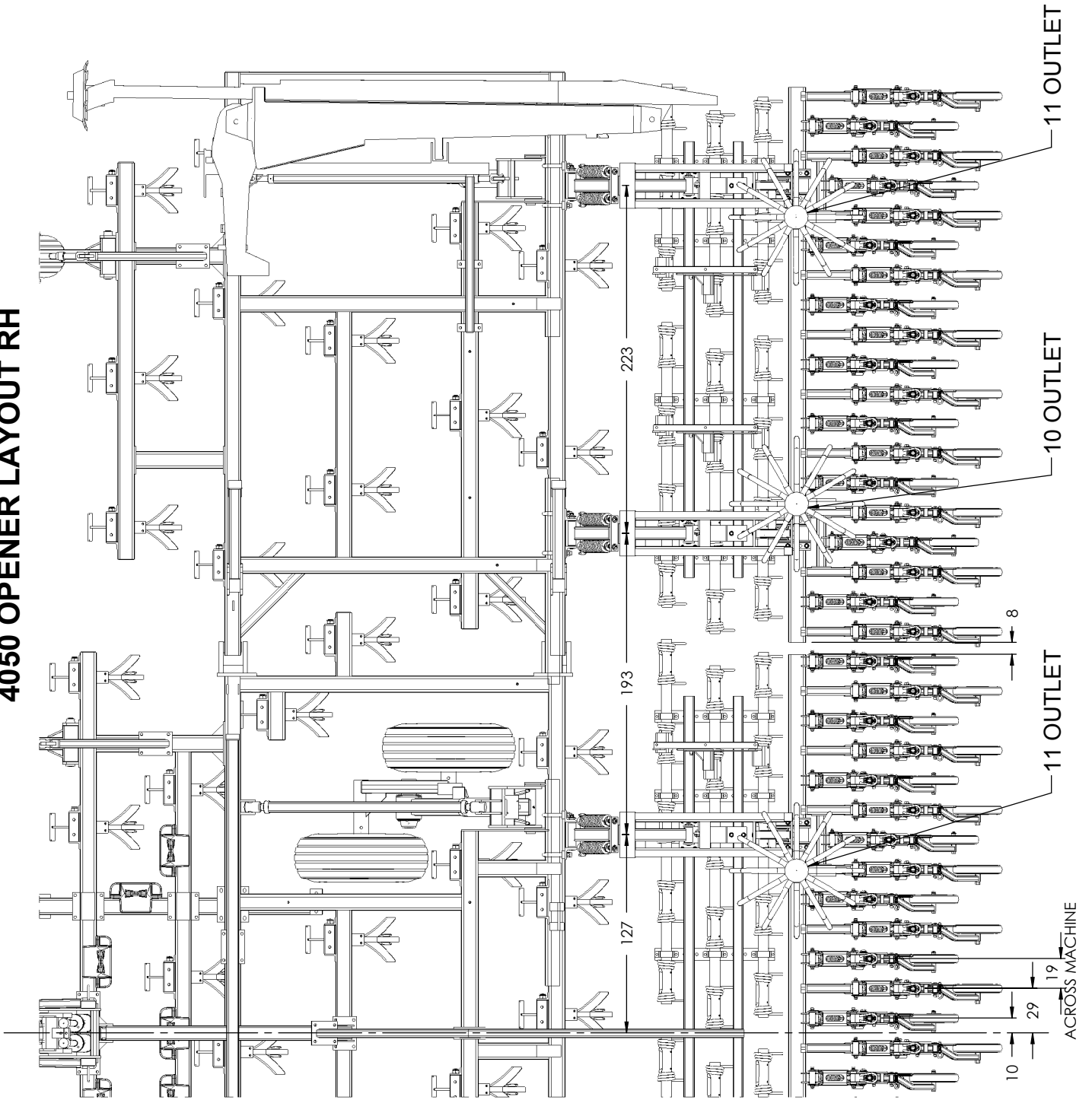


Do not overtighten pivot bolt (20).
Tighten pivot bolt until snug, then lock with jam nut (21).

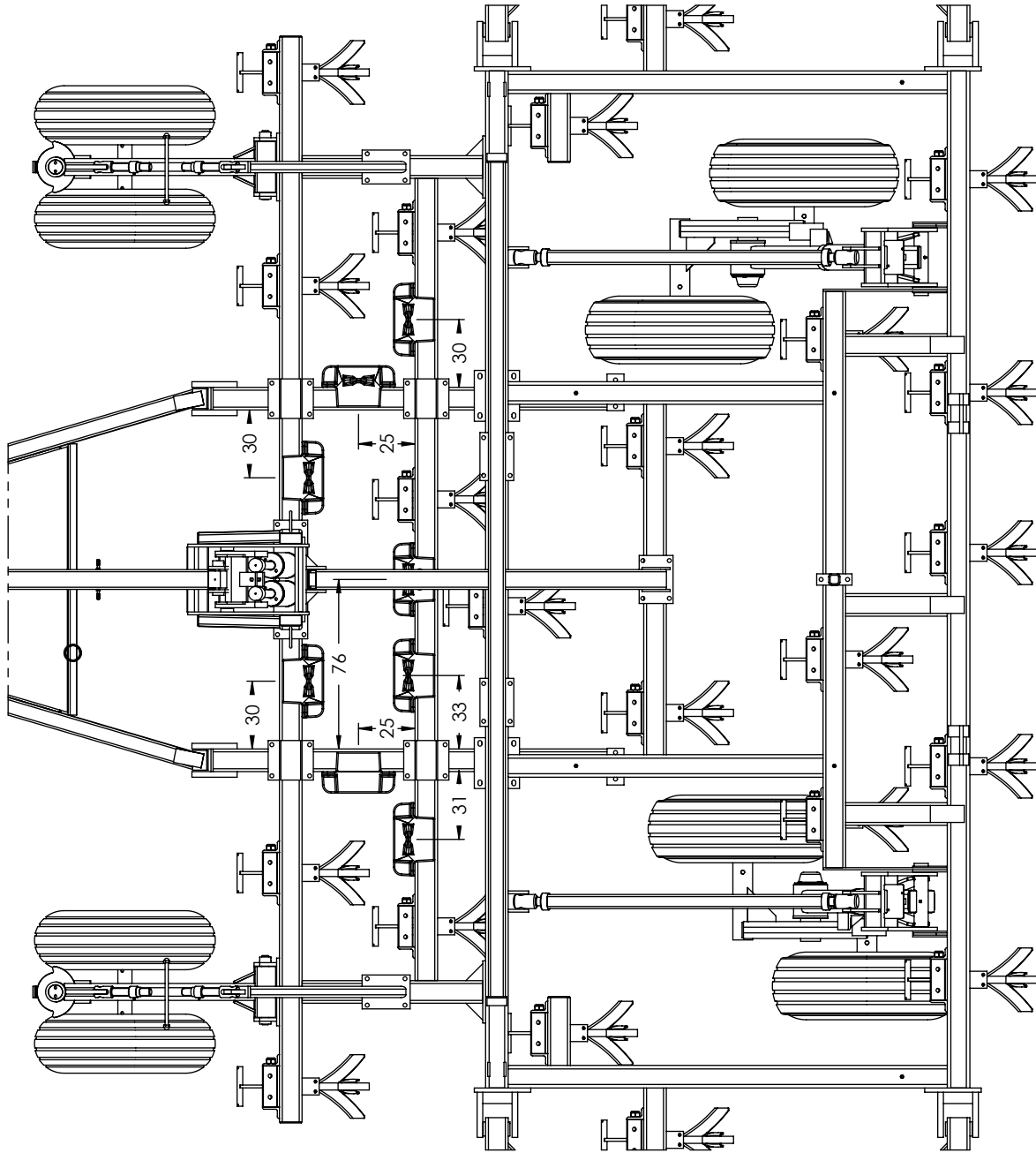
4050 OPENER LAYOUT LH



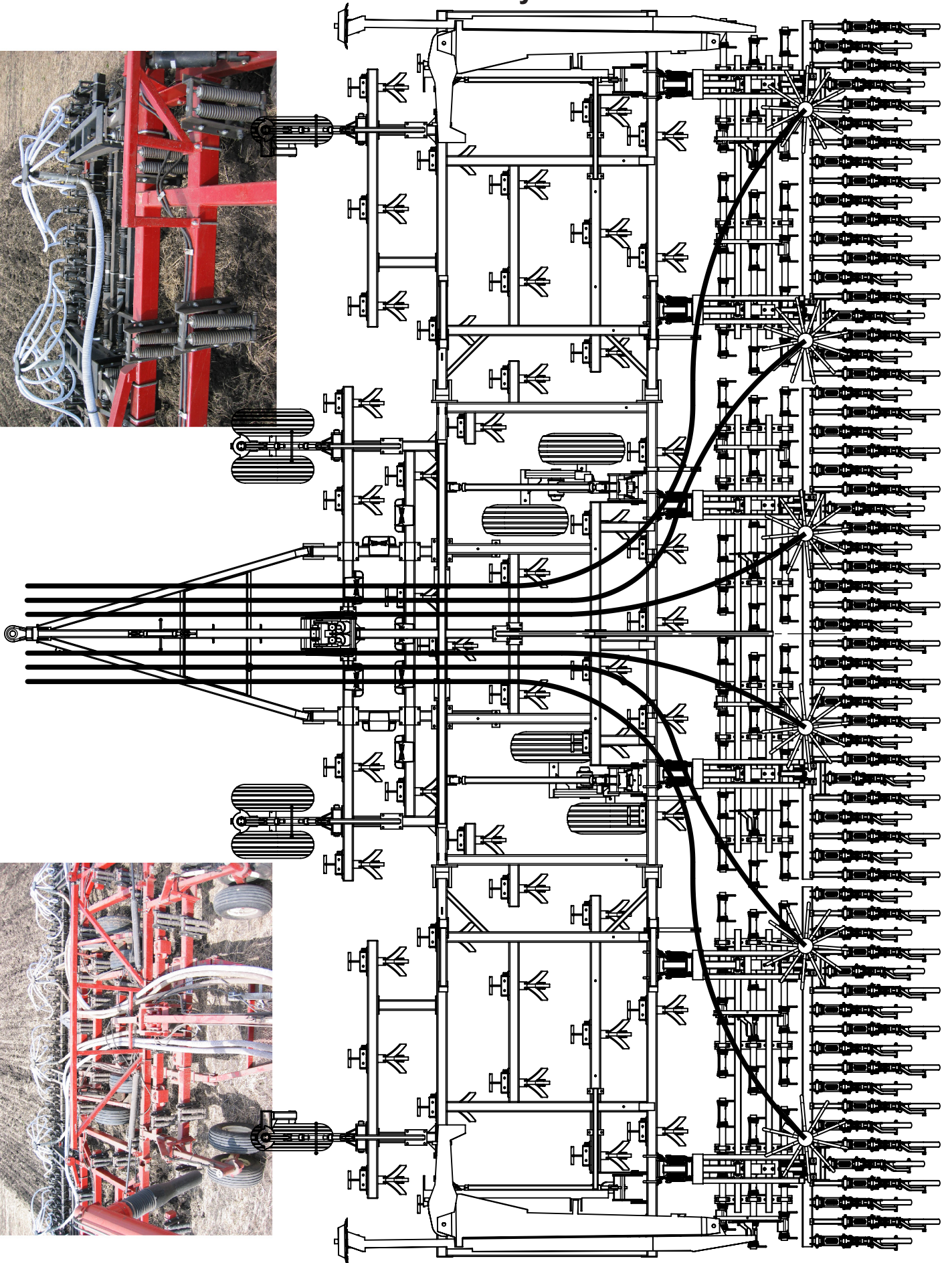
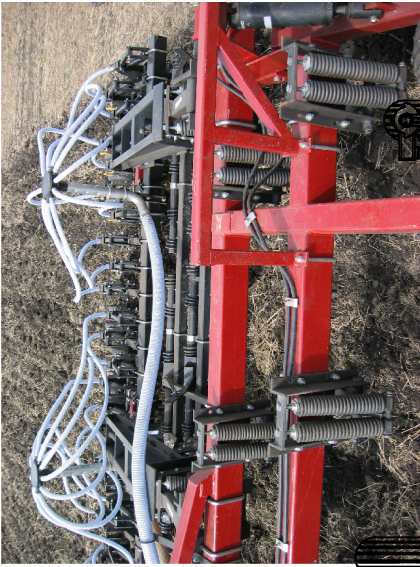
4050 OPENER LAYOUT RH



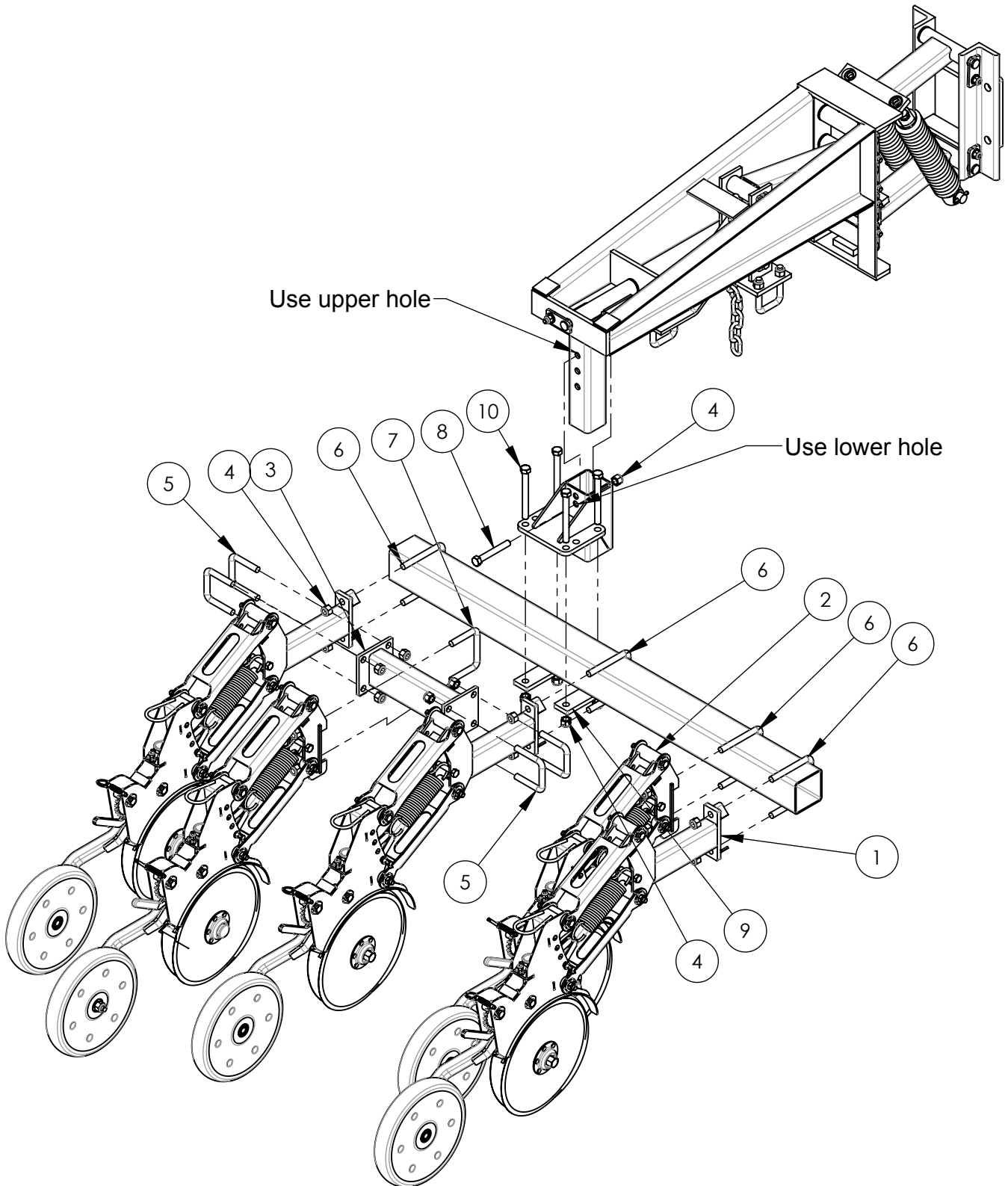
4050 W/OPENER WEIGHT LAYOUT



Hose Layout 40ft

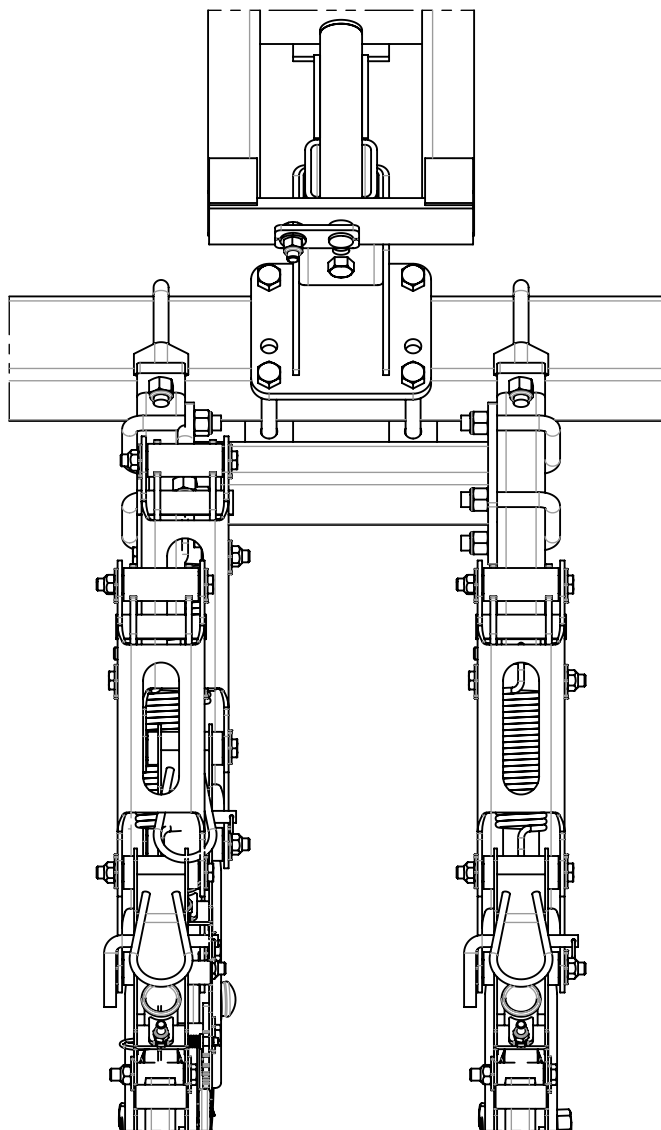


Opener Installation

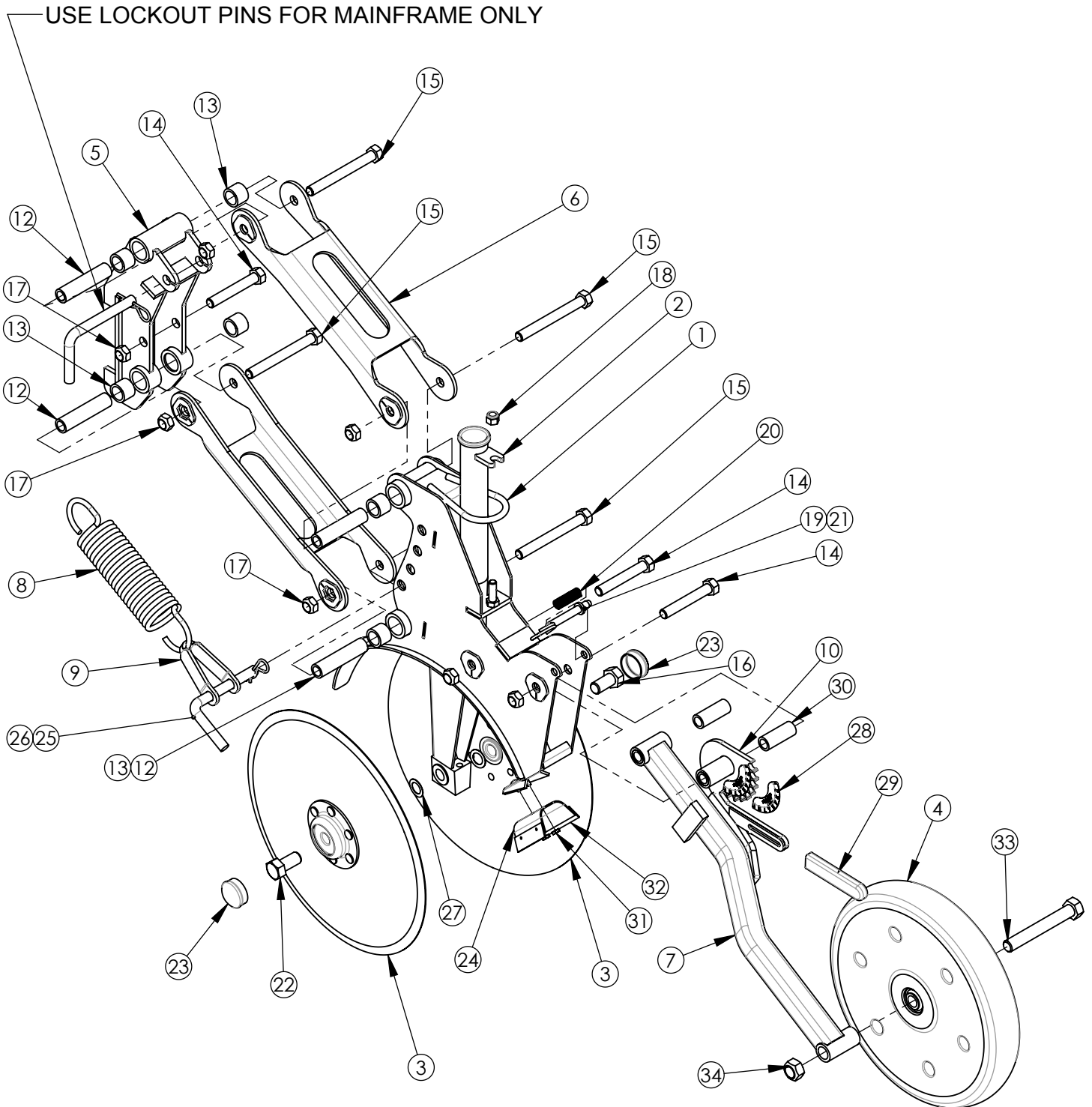


Opener Installation

ITEM NO.	PART NUMBER	DESCRIPTION
1	T01159	SALFORD LONG NARROW OPENER
2	T01160	SALFORD SHORT NARROW OPENER
3	T01185	NARROW OPENER OFFSET BRACKET
4	BN10L	5/8" NYLOCK NUT NC
5	BU1035	U-BOLT 5/8" x 3" x 3 1/2"
6	BU1040	5/8 x 4 x 5-1/2" U-BOLT
7	BU1042	5/8" x 4" x 3 1/2" U-BOLT
8	B1045	5/8 x 4-1/2" BOLT
9	L00231	STRAP 1/2x2x 6 1/4
10	B1060	5/8"NC x 6" LG. HEX BOLT

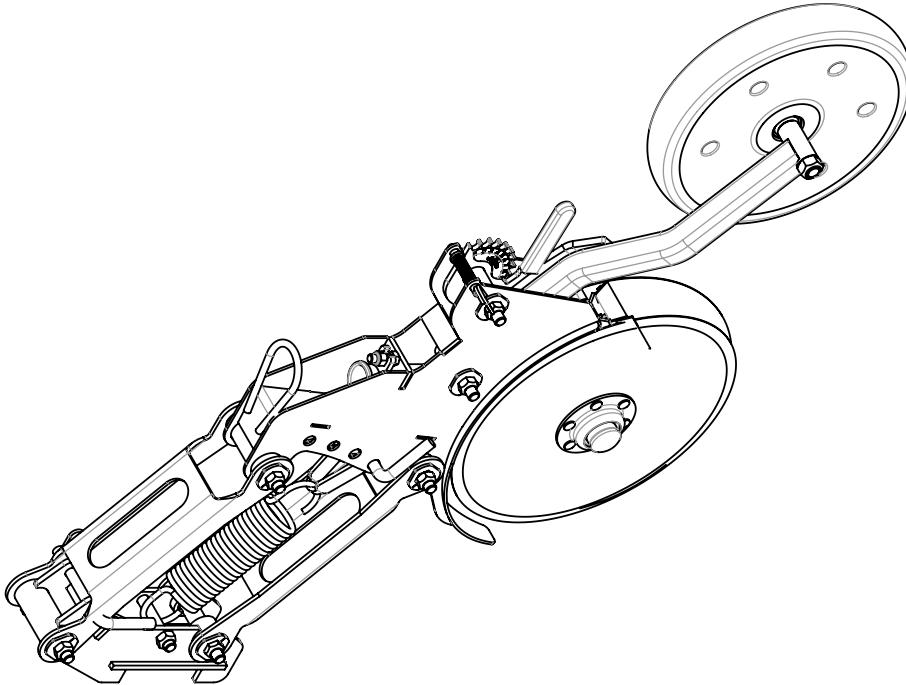


Narrow Short Opener Assembly

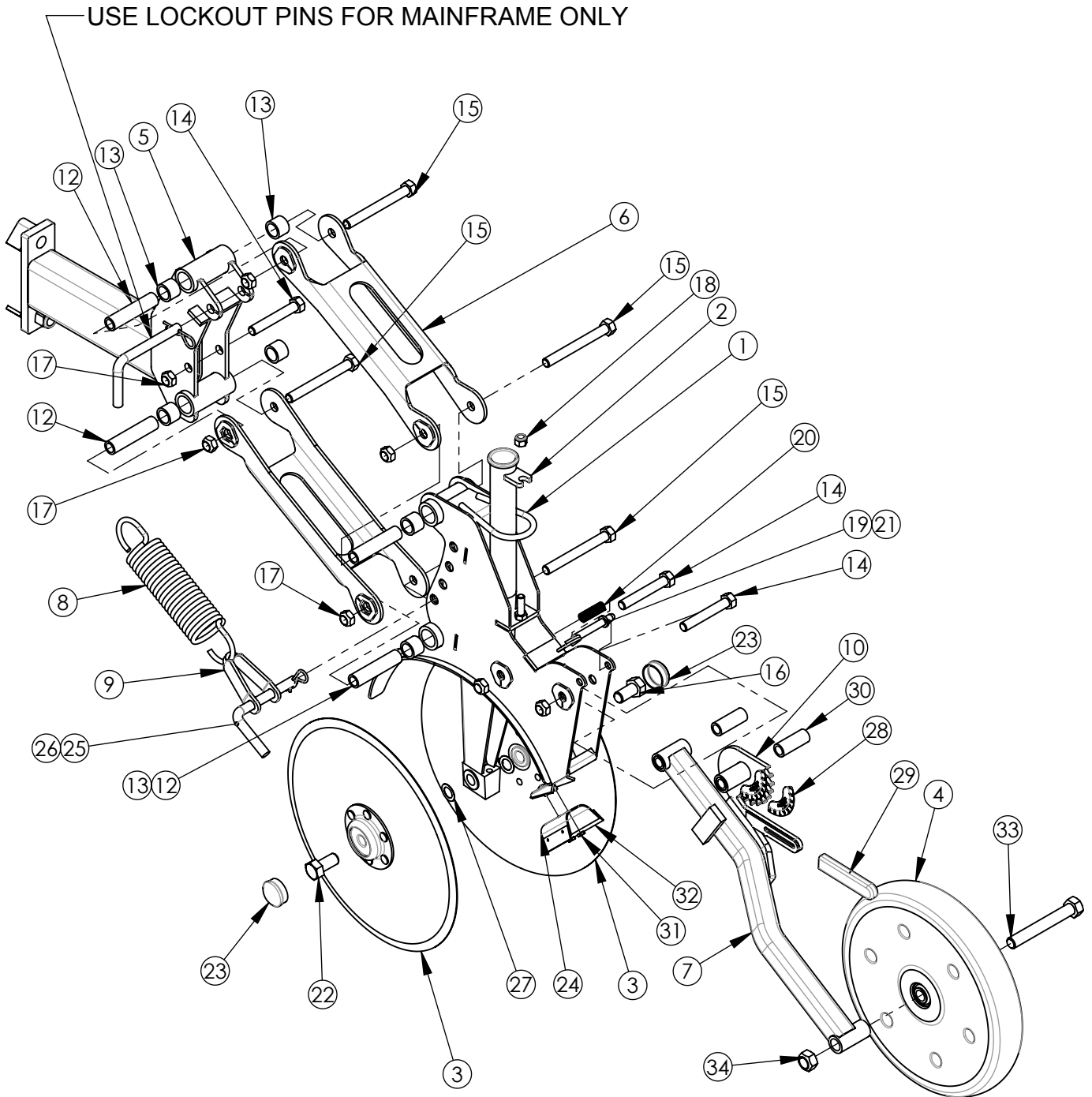


Narrow Short Opener Assembly

T01160		DESCRIPTION
ITEM NO.	QTY.	PART NUMBER
1	1	T01153
2	1	T01135
3	2	CT5013530
4	1	T01115
5	1	T01143
6	2	T01334
7	1	T01140
8	1	R0035
9	1	FL00847
10	1	T01144
11	1	BN10L
12	4	ZD071208
13	8	GBB100075075
14	3	B0832ST
15	4	B0845
16	1	B1012
17	7	BN08S
18	1	BN06L
19	1	T01149
20	1	GSC0114
21	1	JM4003-C
22	1	B1012L
23	2	CT5013530AA
24	1	T01175
25	2	T01180
26	2	GHP11
27	2	GM10
28	1	GD1200
29	1	T00728
30	2	R0030
31	2	BN02
32	2	FL00859
33	1	B1045
34	1	BN10S

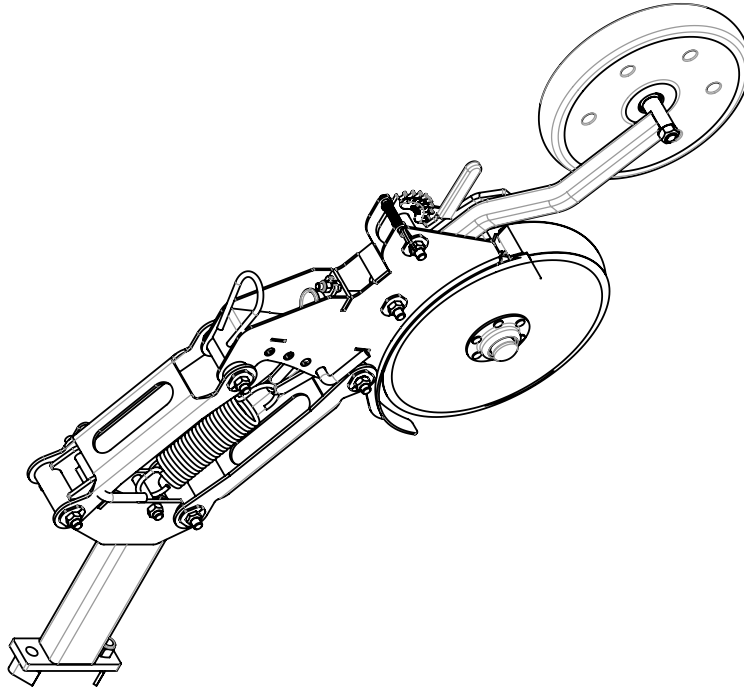


Narrow Long Opener Assembly

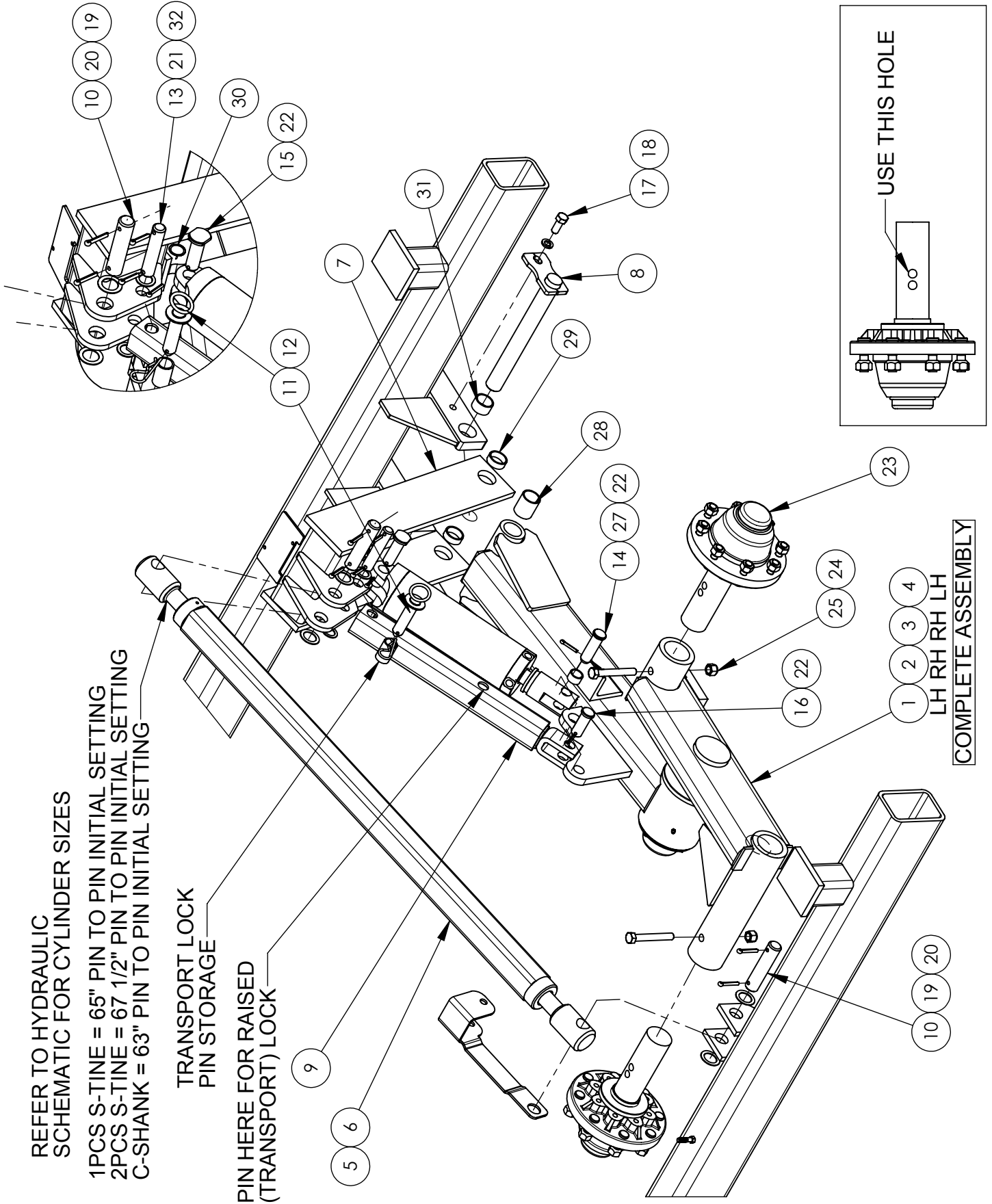


Narrow Long Opener Assembly

T01159		PART NUMBER	DESCRIPTION
ITEM NO.	QTY.		
1	1	T01153	LIGHT OPENER MAIN BODY WELDMENT
2	1	T01135	LIGHT OPENER SEED TUBE
3	2	CT5013530	13.5" x 3MM RIVETED BEARING BLADE
4	1	T01115	2" x 13" Dia. PRESS WHEEL
5	1	T01158	LIGHT OPENER LONG HEAD WELDMENT
6	2	T01334	LIGHT OPENER PARALLEL LINK WELDMENT
7	1	T01140	LIGHT OPENER PRESS WHEEL ARM WELDMENT
8	1	R0035	2" x 10" HOLLOW ARM SPRING
9	1	FL00847	LIGHT DISC OPENER SPRING CLIP
10	1	T01144	REAR PACKER WHEEL ADJUSTER
11	1	BN10L	5/8" NYLOCK NUT NC
12	4	ZD071208	OPENER PARALLEL LINK BUSHING
13	8	GBB100075075	1" x 3/4" x 3/4" LG. HARD BUSHING
14	3	B0832ST	1/2"-13NC x 3 1/4" SHORT THREAD BOLT
15	4	B0845	1/2"NC x 4 1/2" LG. HEX BOLT GR. 5
16	1	B1012	5/8" x 1 1/4" LG HEX BOLT GR. 5 PLATED
17	7	BN08S	1/2"-13NC STOVER LOCK NUT
18	1	BN06L	3/8"-16NC LOCK NUT
19	1	T01149	LIGHT OPENER DEPTH ADJUSTMENT LATCH/PIN
20	1	GSC0114	.040 WIRE x 14 COIL SPRING LIGHT OPENER LATCH
21	1	JM4003-C	LATCH RING
22	1	B1012L	5/8"NC x 1 1/4" LH HEX BOLT
23	2	CT5013530AA	HUB CAP FOR NARROW OPENER BLADE
24	1	T01175	NARROW OPENER POLYURETHANE SCRAPER
25	2	T01180	1/2" x 7 1/4" BLANK LENGTH L-PIN
26	2	GHP11	#11 HAIR PIN
27	2	GM10	5/8" ID x 1" OD x .020 THICK SHIM
28	1	GD1200	DISC OPENER DEPTH WHEEL SCALE
29	1	T00728	OPENER PACKER WHEEL HANDLE
30	2	R0030	NYLON BUSHING 3/4" OD x 1/2" ID x 1.94 LG.
31	2	BN02	#10-24 HEX NUT
32	2	FL00859	OPENER INNER SCRAPER BLADE
33	1	B1045	5/8 x 4-1/2" BOLT
34	1	BN10S	5/8" NC STOVER LOCK NUT



14,000LB Main Axle Installation for Disc Opener Machines



14,000LB Main Axle Installation for Disc Opener Machines

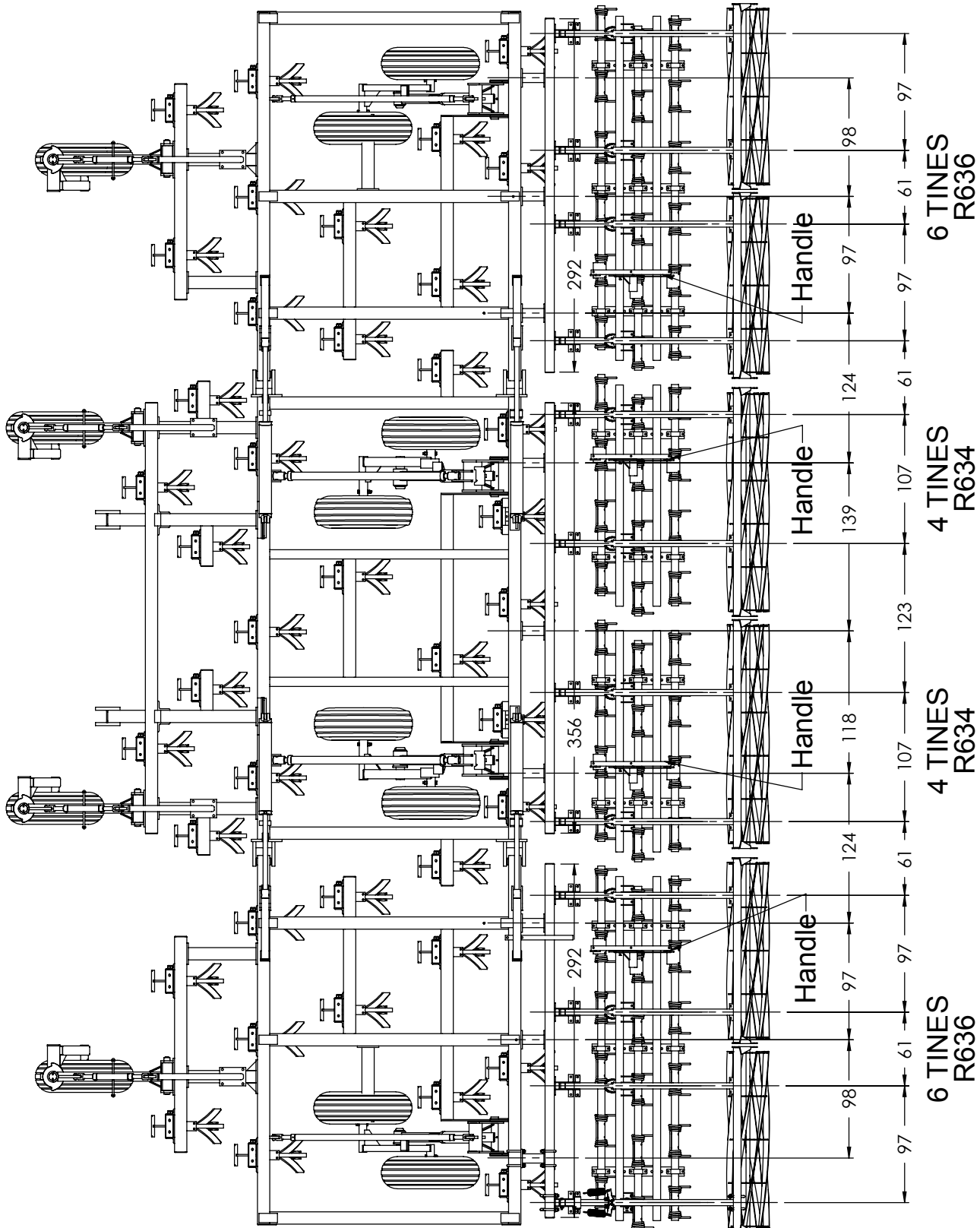
	ITEM	QTY	PART NUMBER	DESCRIPTION
S-TINE USE C00138L&R	1	1	C00138L	14,000 LB TANDEM AXLE ASSEMBLY
	2	1	C00138R	14,000 LB TANDEM AXLE ASSEMBLY RH
C-SHANK USE C00112L&R	3	1	C00112R	14,000 LB TANDEM AXLE ASSEMBLY RH
	4	1	C00112L	14,000 LB TANDEM AXLE ASSEMBLY
S-TINE	5	2	A60036	2 1/2" TURNBUCKLE 53" TUBE
C-SHANK	6	2	A60031	2 1/2" TURNBUCKLE 50" TUBE
	7	2	C10013	MAIN FRAME TOWER
	8	2	GPH2401312F	1 1/2" x 13 7/8" LG. AXLE PIN - HARDENED
	9	2	C50010	TRANSPORT LOCK ASSEMBLY
	10	4	GP2000512A05	1 1/4" x 5 1/2" PIN - 2 HOLES
	11	2	GP1600414C04	1" x 4 1/4" RING & WASHER PIN
	12	2	GHP9	#9 HAIR PIN
	13	2	GP16005A05	PIN 1" DIA. x 5" LG. - 2 HOLES
	14	2	GP1600314H04	PIN 1" DIA. x 3 1/4" LG. WITH HEAD
	15	2	GPHF1600314H04	1" x 3 1/4" SHOULDER PIN HARDENED W/FLATS
	16	2	GP1600258H04	PIN 1" DIA. x 2 5/8" LG. WITH HEAD
	17	2	B1015	5/8 X 1 1/2" PLATED BOLT
	18	2	BL10	5/8" LOCKWASHER
	19	8	GM30	1 1/4" MACHINE BUSHING
	20	8	BSC0520	5/16" x 2" COTTER PIN
	21	4	BSC0515	5/16" x 1 1/2" COTTER PIN
	22	6	BSC0415	1/4" x 1 1/2" COTTER PIN
	23	4	GW8000A	8000 lb GREASABLE HUB AND 14" SPINDLE ASSY
	24	4	B1045	5/8 x 4-1/2" BOLT
	25	4	BN10L	5/8" NYLOCK NUT NC
	26	2	C10716	2 1/2" TURNBUCKLE LOCK
	27	2	GBB125100075	1 1/4" x 1" x 3/4" LG. HARD BUSHING
	28	4	GBB175150200	1 3/4" x 1 1/2" x 2" LG. HARD BUSHING
	29	4	GBB175150062	1 3/4" x 1 1/2" x 5/8" LG. HARD BUSHING
	30	2	GBB125100100	1 1/4" x 1" x 1" LG. HARD BUSHING
	31	4	GBB175150100	1 3/4" x 1 1/2" x 1" LG. HARD BUSHING
	32	4	GM26	1" MACHINE BUSHING

Note: quantities shown are for complete main frame axle installation - both LH and RH.

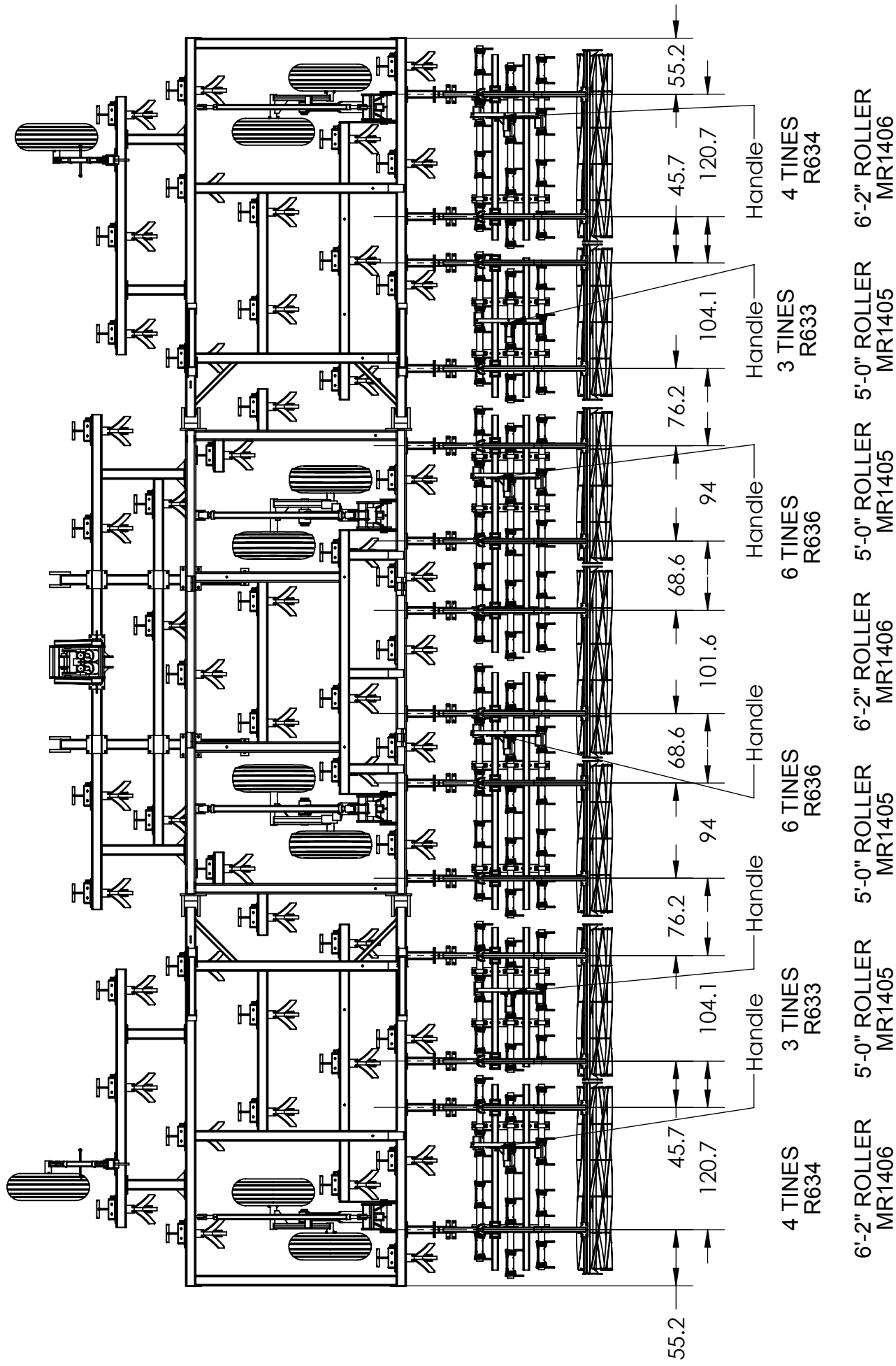


CAUTION

Connect hoses and charge lift axle cylinders with fluid following the procedure in the axle lift hydraulics section of this manual before connecting rod ends of the cylinders and the transport locks.

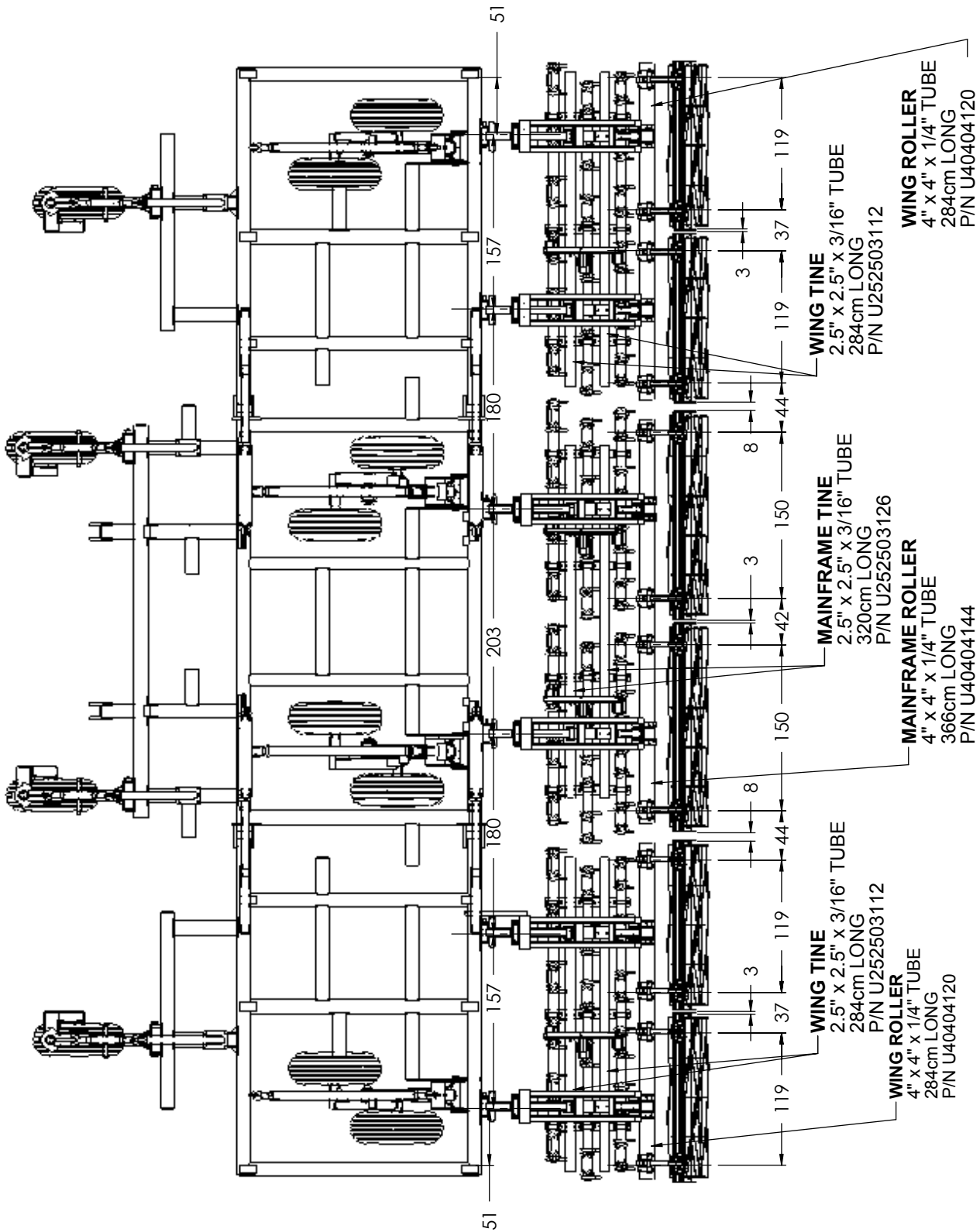


2010 580-30' HARROW LAYOUT
 Dimensions in cm
 5'-0" ROLLER 5'-0" ROLLER 6'-2" ROLLER 6'-2" ROLLER
 MR1405 MR1405 MR1406 MR1406
 6 TINES 4 TINES 4 TINES 6 TINES
 R636 R634 R634 R636



2010 580-40' HARROW LAYOUT

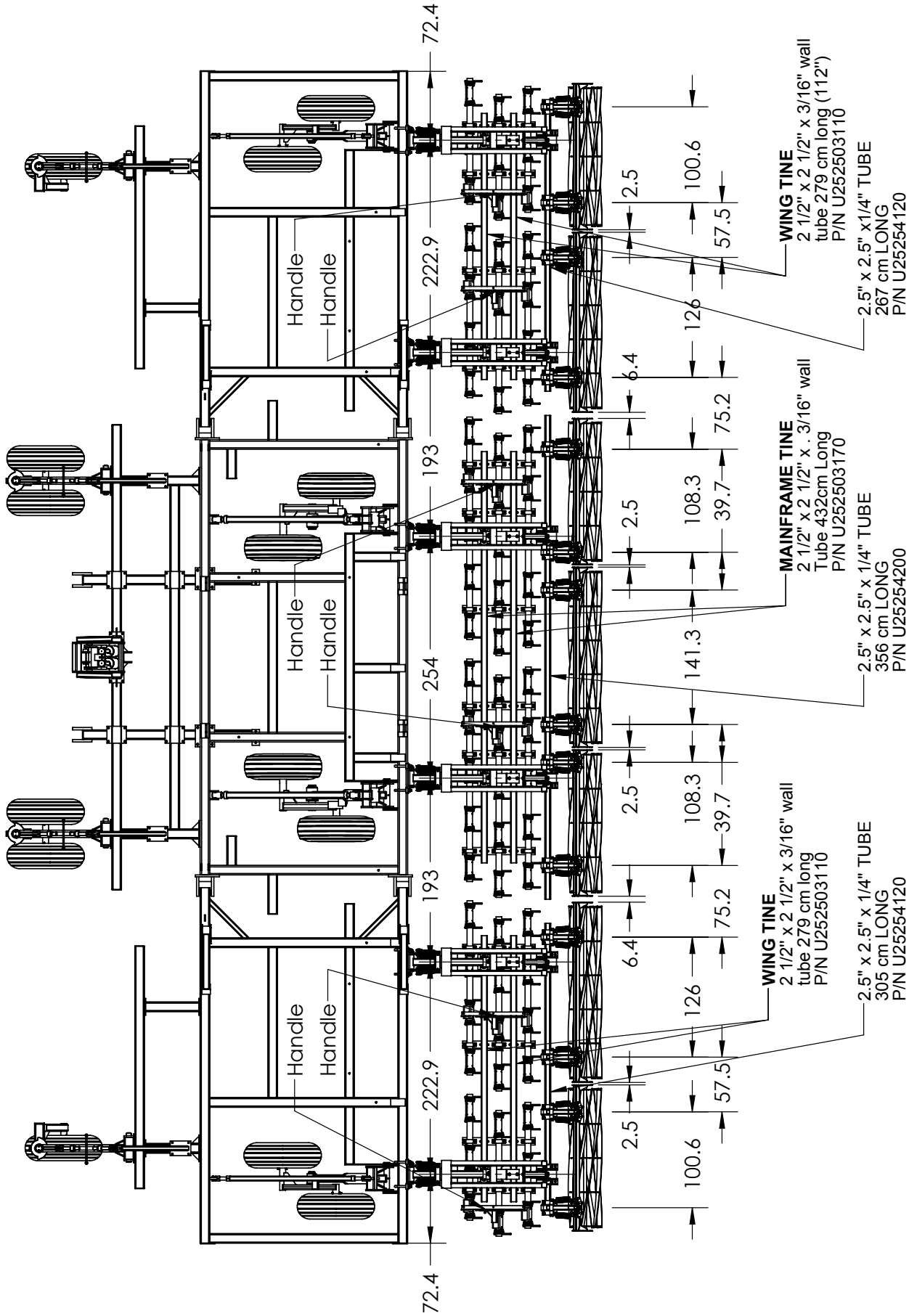
Dimensions in cm



6 TINES 4 TINES 6 TINES
 5'0" ROLLER 5'0" ROLLER 6'2" ROLLER 5'0" ROLLER 5'0" ROLLER 5'0" ROLLER

2010 3040 AIR SEEDER HARROW LAYOUT

Dimensions in cm



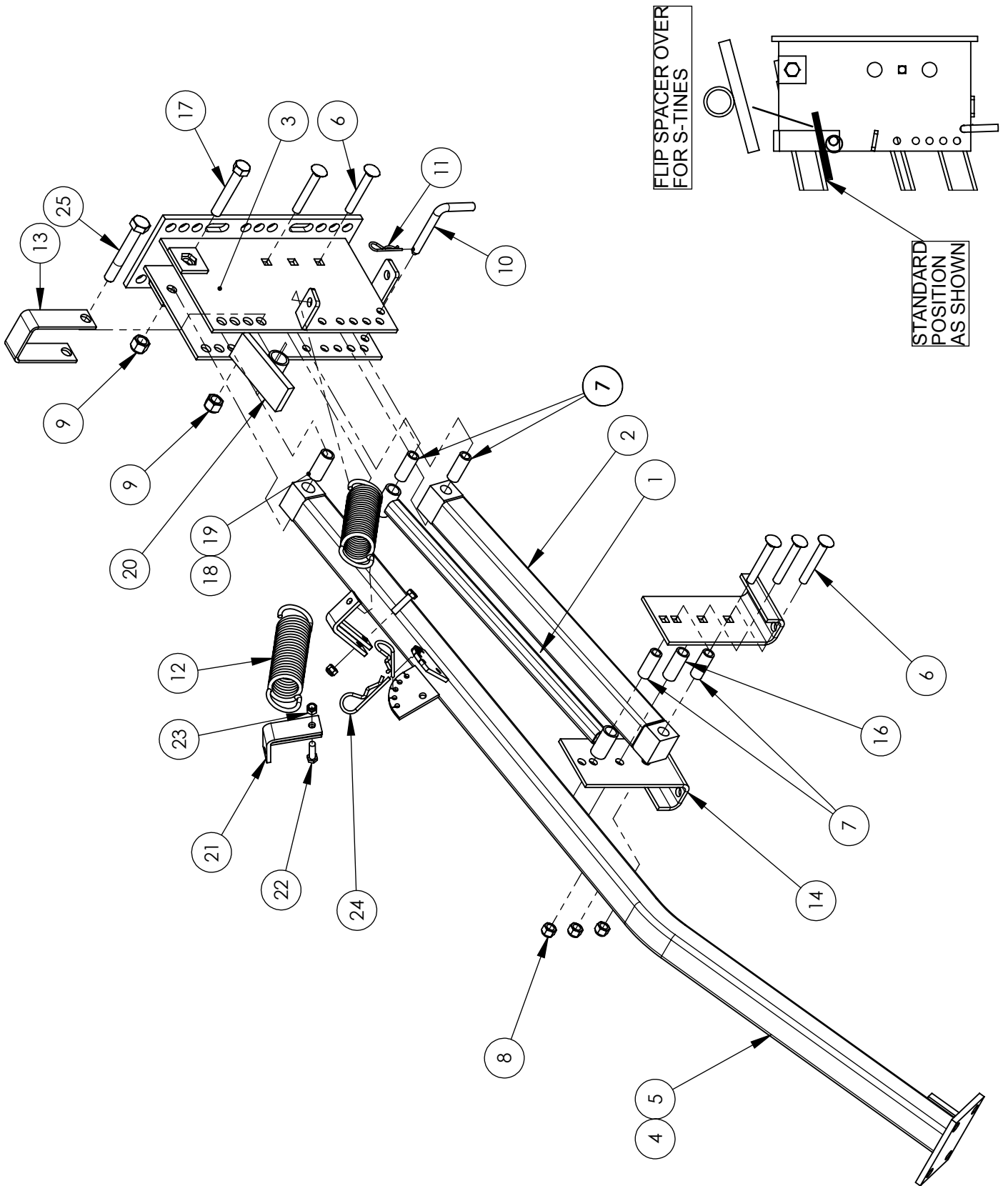
7 TINES
R637

10 TINES
R6310

7 TINES
R637

2010 580-40' AIR SEEDER HARROW LAYOUT
Dimensions in cm

Harrow Arm Assembly



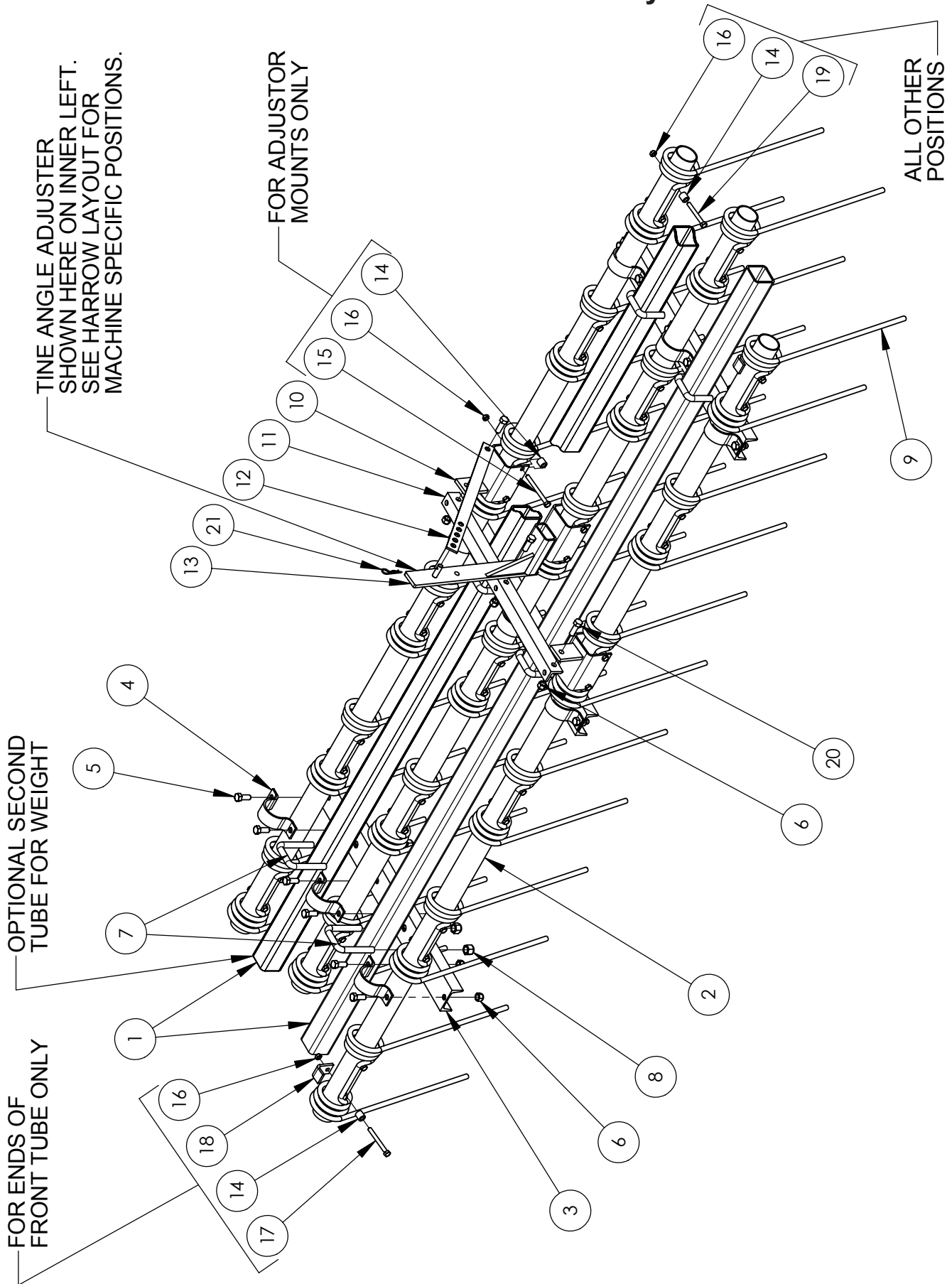
Harrow Arm Assembly

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	R30012	PARALLEL LINKAGE BAR
2	1	R30006	PARALLEL LINKAGE ARM
3	1	R80099	HEAD,SALFORD HARROW FOR 5/8" UPPER PIVOT BOLT
4	1	R80100	62" HARROW ARM FOR 5/8" PIVOT AND U-BOLTS
5	1	R80100A	62" HARROW ARM W/ KIT (REPLACES RB1125)
6	5	BC0835H	1/2" X 13NC X 3-1/2" LG. CARRIAGE BOLT GR. 5 SHORT THREAD
7	4	R0030	NYLON BUSHING 3/4" OD x 1/2" ID x 1.94 LG.
8	5	BN08L	1/2" NYLOCK NUT NC
9	2	BN10L	5/8" NYLOCK NUT NC
10	1	GP0800312L03	1/2" x 3 1/2" PARKING STAND PIN
11	1	GHP11	#11 HAIR PIN
12	2	R0035	2" x 10" HARROW ARM SPRING
+ +	13	R80128	ROLLER ARM STOP BRACKET (LONG)
	14	R80037L	TINE SECTION UPRIGHT PLATE LEFT
	15	R80037R	TINE SECTION UPRIGHT PLATE RIGHT
	16	R0028	STEEL HEAD SPACER 2 1/8" LG.
	17	B1037ST	5/8" - 11NC X 3 3/4" SHORT THREAD BOLT
	18	R80098	7/8"OD NYLATRON BUSHING
	19	R80106	7/8"OD - 0.520"ID NYLATRON ROD
	20	R80096	HARROW ARM SPACER
	21	RB0021	TIGHTENER,SINGLE SPRING
	22	B0615	3/8" X 1 1/2" LG. GRADE 5
	23	BN06L	3/8"-16NC LOCK NUT
	24	GHP9	#9 HAIR PIN
	25	B1045	5/8 x 4 1/2" HEX BOLT GR 5

NOTES:

+ + USE R80130 FOR S-TINE CULTIVATORS

Tine Harrow Assembly



Tine Harrow Assembly

1/2" - 3 TINE HARROW ASSEMBLY PART NO. R633

ITEM NO.	PART NO.	DESCRIPTION
1	U252503054	TUBE 2 1/2 x 2 1/2 x 3/16"W x 54" LG.
2	R6063	TINE PIPE FOR 1/2" (3-TINE)

1/2" - 4 TINE HARROW ASSEMBLY PART NO. R634

ITEM NO.	PART NO.	DESCRIPTION
1	U252503072	TUBE 2 1/2 x 2 1/2 x 3/16"W x 72" LG.
2	R6064	TINE PIPE FOR 1/2" (4-TINE)

1/2" - 5 TINE HARROW ASSEMBLY PART NO. R635

ITEM NO.	PART NO.	DESCRIPTION
1	U252503092	TUBE 2 1/2 x 2 1/2 x 3/16"W x 92" LG.
2	R6065	TINE PIPE FOR 1/2" (5-TINE)

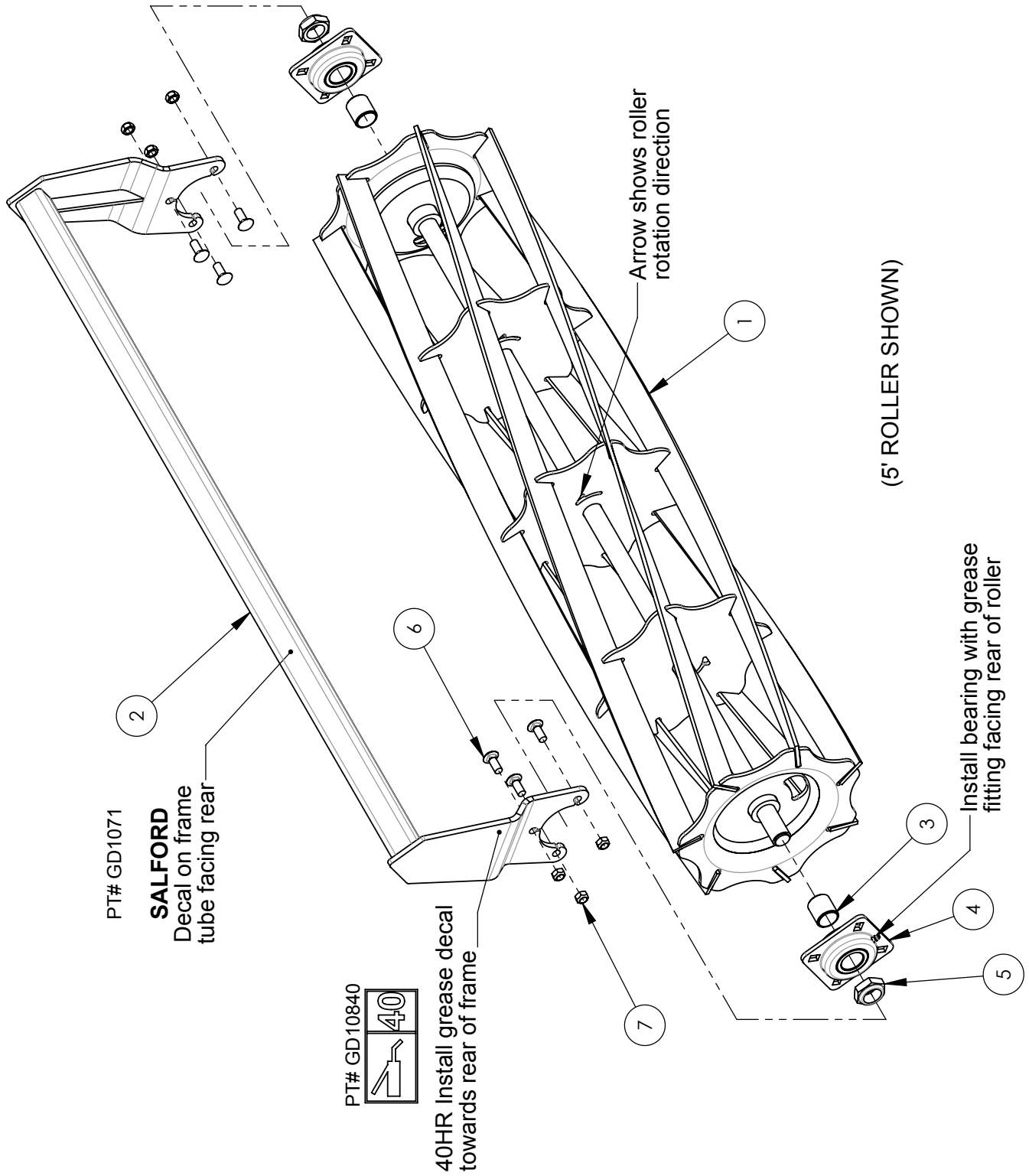
1/2" - 6 TINE HARROW ASSEMBLY PART NO. R636

ITEM NO.	PART NO.	DESCRIPTION
1	U252503112	TUBE 2 1/2 x 2 1/2 x 3/16"W x 112" LG.
2	R6066	TINE PIPE FOR 1/2" (6-TINE)

COMMON PARTS

ITEM NO.	PART NO.	DESCRIPTION
3	R30002	1/2" TINE TUBE CONNECTOR
4	R30011	CLAMP BRACKET
5	B0812	1/2 X 1 1/4" BOLT
6	BN08L	1/2" NYLOCK NUT NC
7	BU1025	U-BOLT 5/8" x 2 1/2" x 4"
8	BN10L	5/8" NYLOCK NUT NC
9	R60000	1/2" WIRE - 20" DBL LEG SPRING TINE
10	R30007	ADJUSTING BRACKET WELDMENT
11	R30005	1/2" TINE 3 BAR ADJUST CONNECTOR
12	R30010	ADJUSTING BAR HD 3 BAR TINE
13	R30008	ADJUSTING BRACKET HANDLE WELDMENT
14	R9063	.75 OD x .438 ID X 3/4 LONG SPACER
15	B0640	3/8"NC x 4" LG. HEX BOLT
16	BN06S	3/8"-16NC STOVER LOCK NUT
17	B0635	3/8"NC x 3 1/2" LG. HEX BOLT
18	R30015	LIGHT SAVER BRACKET
19	B0630	3/8"NC x 3" HEX BOLT
20	B0815	1/2" x 1 1/2" HEX BOLT
21	GHP11	#11 HAIR PIN

14" Roller Harrow Assembly



14" Roller Harrow Assembly**14" ROLLER HARROW ASSEMBLY - 3' 0" (91.4) LONG**

COMPLETE ASSEMBLY PART NO. MR80143(L/R)

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	R80147R	3' ROLLER ONLY RIGHT HAND SPIRAL, 14" DIA.
2	1	R80137-3	3' ROLLER FRAME FOR 14" ROLLER
3	2	A60099	1 1/4" x 1 1/2" x 1 19/32"LG BUSHING
4	2	GB491-B	1 1/2" BEARING COMPLETE
5	2	BN20JL	1 1/4"NC JAM LOCK NUT
6	6	BC0812H	CARRIAGE BOLT 1/2"NC x 1 1/4" LG. GR. 5
7	6	BN08S	1/2"-13NC STOVER LOCK NUT

14" ROLLER HARROW ASSEMBLY - 4' 0" (121.9) LONG

COMPLETE ASSEMBLY PART NO. MR80144(L/R)

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	R80148R	4' ROLLER ONLY RIGHT HAND SPIRAL, 14" DIA.
2	1	R80137-4	4' ROLLER FRAME FOR 14" ROLLER
3	2	A60099	1 1/4" x 1 1/2" x 1 19/32"LG BUSHING
4	2	GB491-B	1 1/2" BEARING COMPLETE
5	2	BN20JL	1 1/4"NC JAM LOCK NUT
6	6	BC0812H	CARRIAGE BOLT 1/2"NC x 1 1/4" LG. GR. 5
7	6	BN08S	1/2"-13NC STOVER LOCK NUT

14" ROLLER HARROW ASSEMBLY - 5' 0" (152.4) LONG

COMPLETE ASSEMBLY PART NO. MR80145(L/R)

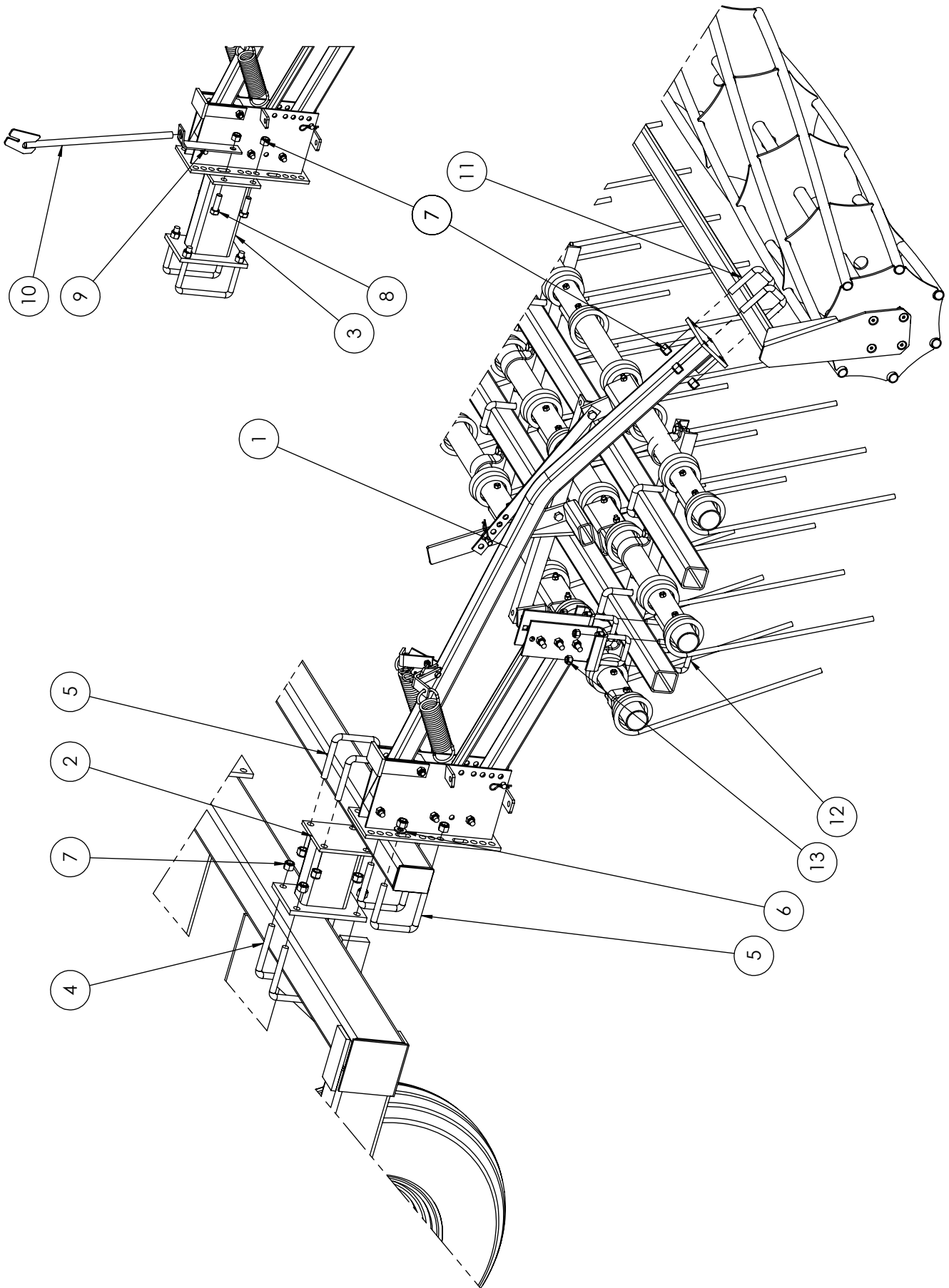
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	R80149R	5' ROLLER ONLY RIGHT HAND SPIRAL, 14" DIA.
2	1	R80137-5	5' ROLLER FRAME FOR 14" ROLLER
3	2	A60099	1 1/4" x 1 1/2" x 1 19/32"LG BUSHING
4	2	GB491-B	1 1/2" BEARING COMPLETE
5	2	BN20JL	1 1/4"NC JAM LOCK NUT
6	6	BC0812H	CARRIAGE BOLT 1/2"NC x 1 1/4" LG. GR. 5
7	6	BN08S	1/2"-13NC STOVER LOCK NUT

14" ROLLER HARROW ASSEMBLY - 6' 2" (187.9) LONG

COMPLETE ASSEMBLY PART NO. MR80146(L/R)

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	R80150R	6'2" ROLLER ONLY RIGHT HAND SPIRAL, 14" DIA.
2	1	R80137-6	6'2" ROLLER FRAME FOR 14" ROLLER
3	2	A60099	1 1/4" x 1 1/2" x 1 19/32"LG BUSHING
4	2	GB491-B	1 1/2" BEARING COMPLETE
5	2	BN20JL	1 1/4"NC JAM LOCK NUT
6	6	BC0812H	CARRIAGE BOLT 1/2"NC x 1 1/4" LG. GR. 5
7	6	BN08S	1/2"-13NC STOVER LOCK NUT

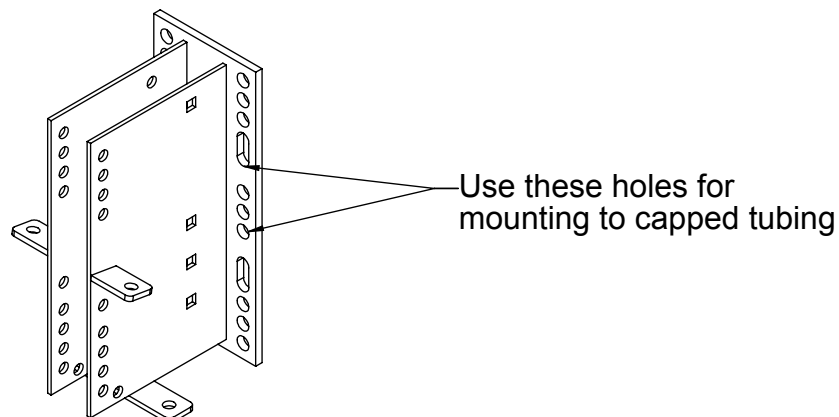
Harrow Installation



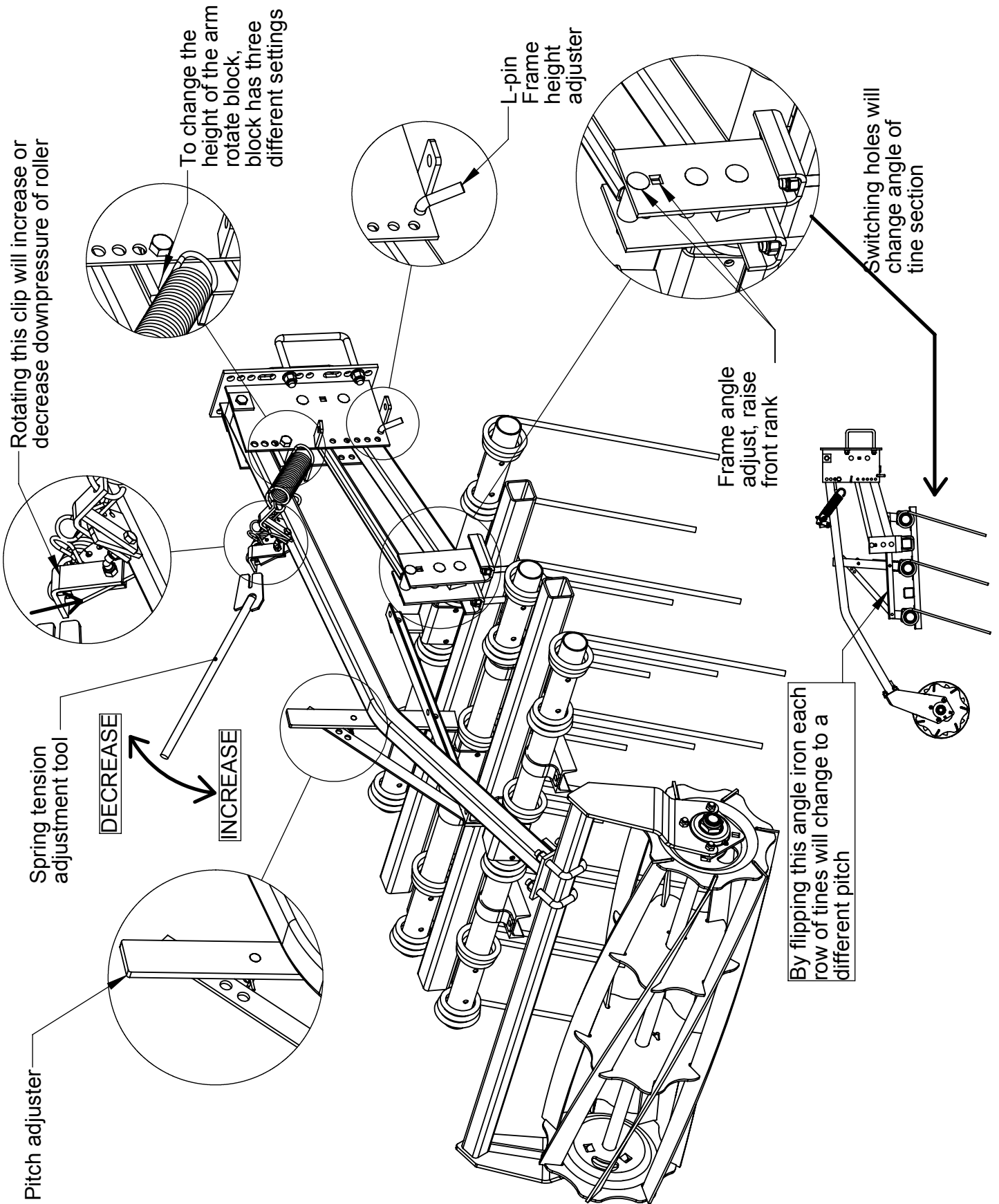
Harrow Installation

ITEM NO.	PART NO.	DESCRIPTION
1	RB1091	62" HARROW ARM ASSEMBLY
2	T00732	HARROW ARM EXTENSION 7 7/8" LG
3	R80034	10" EXTENSION
4	BU1061	U-BOLT 5/8" x 6" x 5 1/2"
5	BU1043	U-BOLT 5/8" x 4" x 4 1/2"
6	BF10HS	5/8" HARD STRUCTURAL FLAT WASHER
7	BN10L	5/8" NYLOCK NUT NC
8	B1020	5/8 X 2" BOLT GR. 5 PLATED
9	RB0026	HOLDER,HARROW TOOL
10	RB0025	TOOL,HARROW TIGHTENER
11	BU1020	5/8" x 2 x 3 1/2" U-BOLT
12	BU0825	1/2" x 2 1/2 x 3 1/2 U-BOLT
13	BN08L	1/2" NYLOCK NUT NC

1. Install 7 7/8" extensions (2) and 10" extensions (3) following centerline spacing on harrow layouts. Retain extensions with 5/8" x 6" x 5 1/2" u-bolts (4) and 5/8" locknuts (7).
2. Install capped tube to extensions with 5/8" x 4" x 4 1/2" u-bolts (5) and 5/8" locknuts (7). Dimensions found on harrow layout.
3. Attach harrow arm assemblies (1) to capped tubing with 5/8" x 4" x 4 1/2" u-bolts (5) and 5/8" locknuts (7) and to 10" extensions with 5/8" x 2" bolts (8) and 5/8" locknuts (7). Mount harrow arm tool holder (9) between plate and nut on leftmost head on the main frame. Harrow tool (10) sits in holder.
4. Assemble tine harrows as shown in tine harrow parts drawings
5. Mount tine harrow assemblies to arm assemblies with 1/2" x 2 1/2" x 3 1/2" u-bolts (12) and 1/2" locknuts (13). See harrow layouts for tine assembly part numbers and locations.
6. Mount rollers to arm assemblies with 5/8" x 2" x 3 1/2" u-bolts (11) and 5/8" locknuts (7). See harrow layouts for roller assembly part numbers and locations. Leave 3-4" between rollers on wings and rollers on main frame, and leave 1-2" between all other rollers.

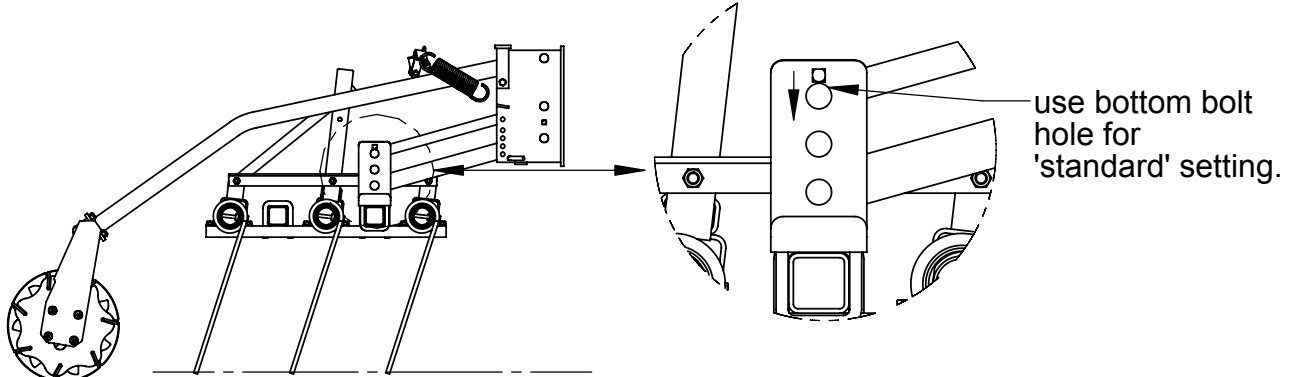


Harrow Settings

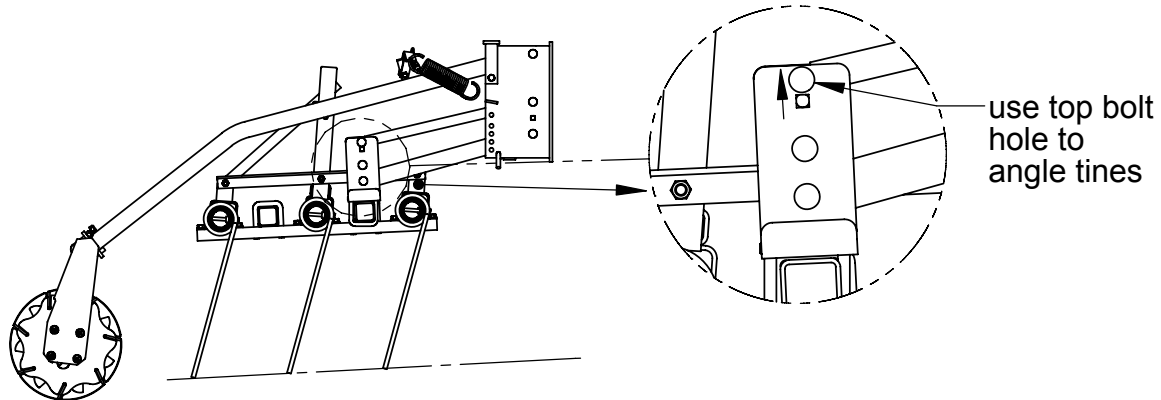


Harrow Angle Settings

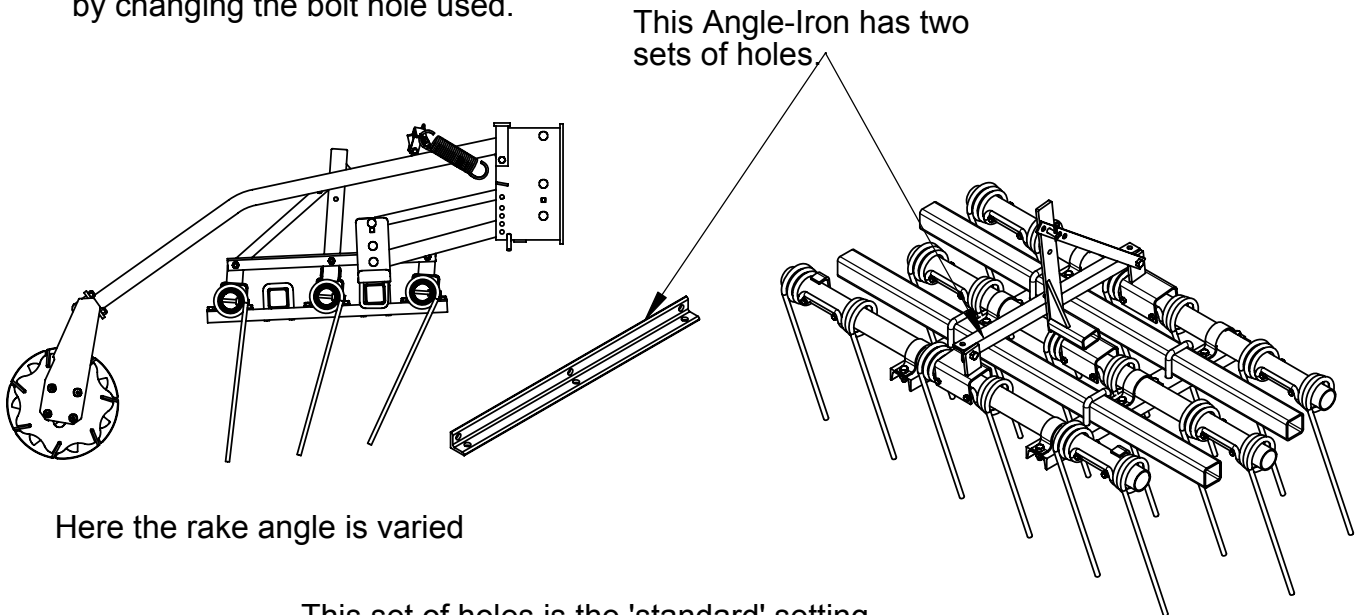
For better trash flow, the tines are adjustable at 2 places:



Shown here is the 'standard' setting

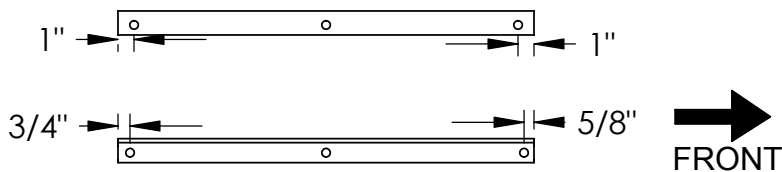


Here the tine section is angled by changing the bolt hole used.

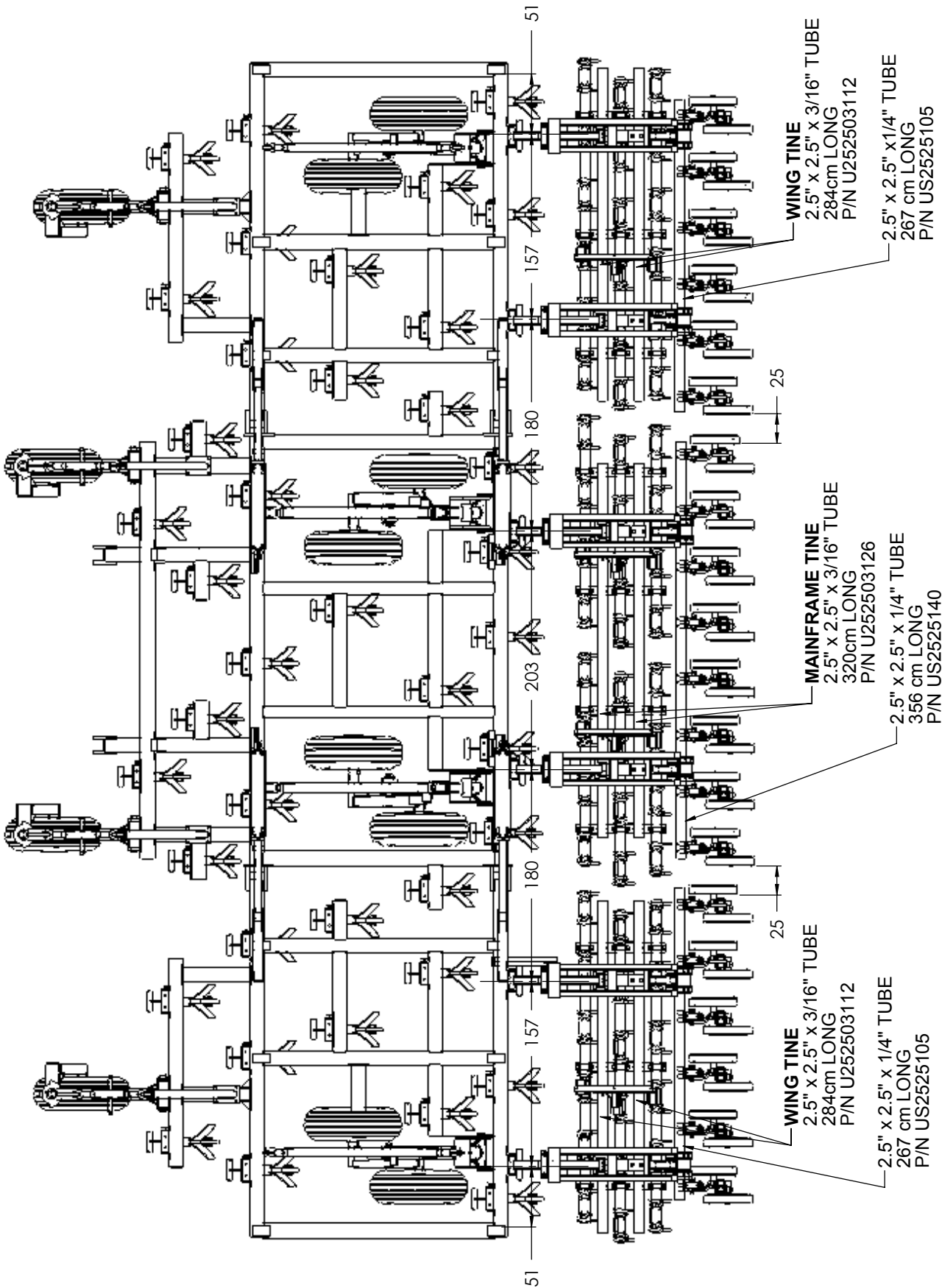


Here the rake angle is varied

This set of holes is the 'standard' setting.



Using this set of holes will vary the rake angle as shown above.



6 TINES
R636

4 TINES
R634

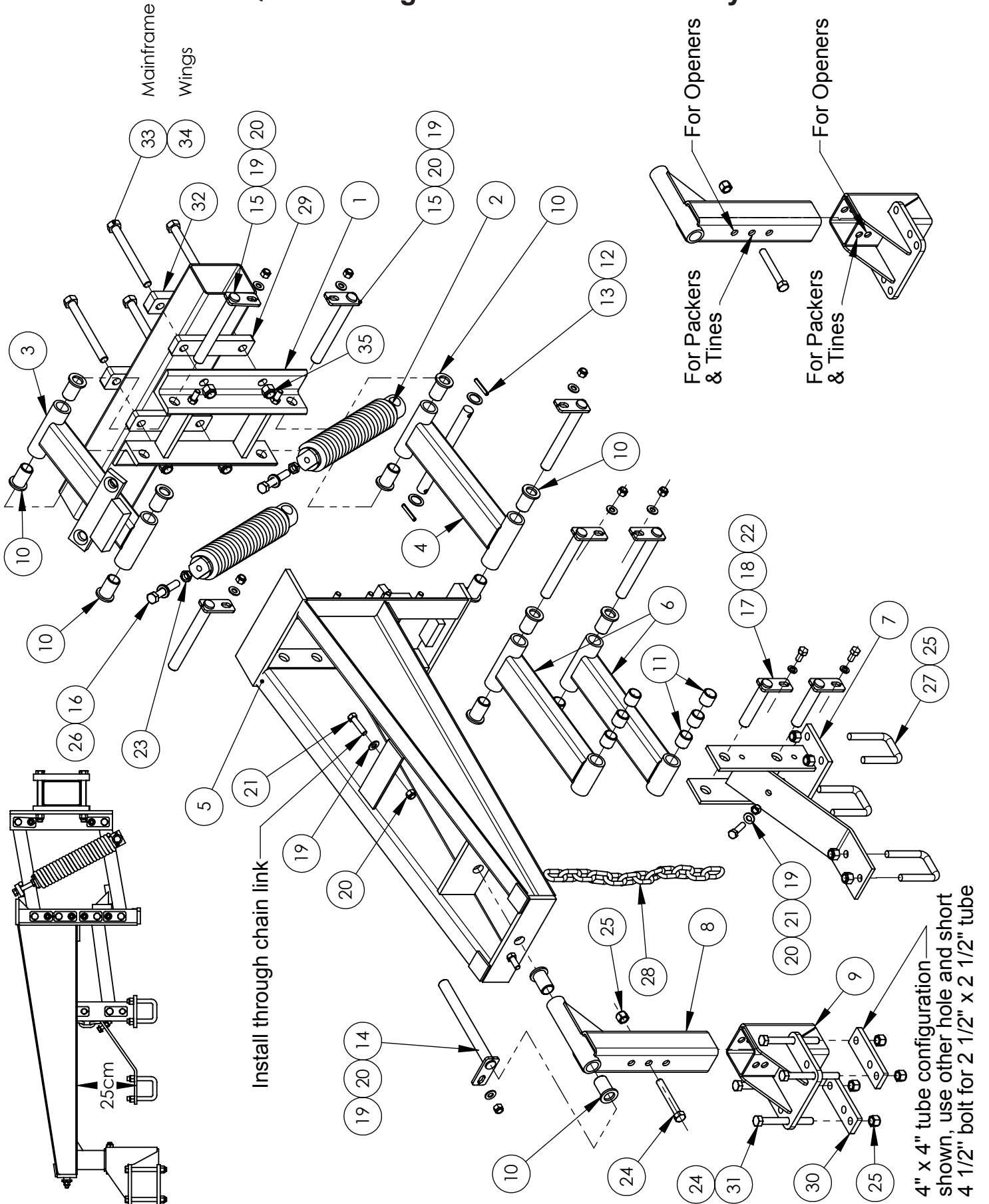
4 TINES
R634

6 TINES
R636

2010 3040 HARROW AND PACKER LAYOUT

Dimensions in cm

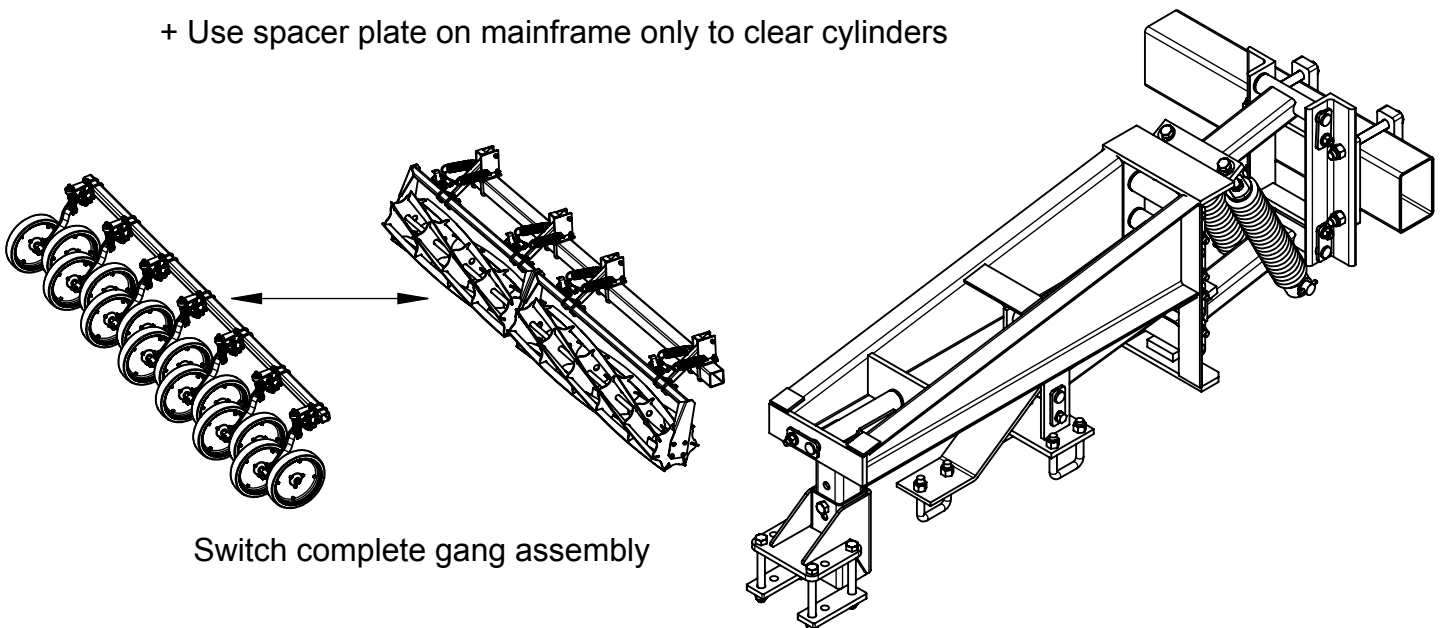
Quick Change Harrow Arm Assembly



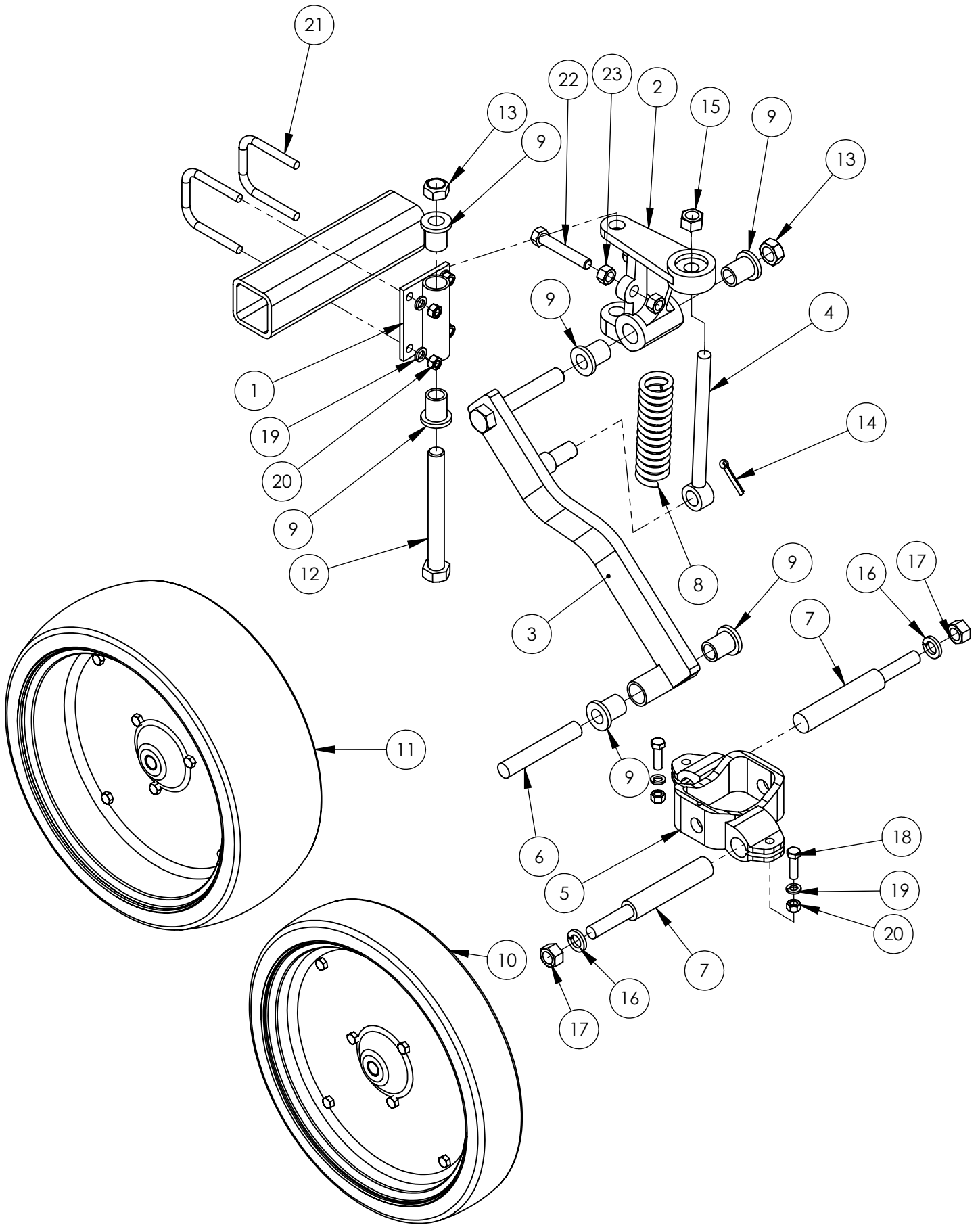
Quick Change Harrow Arm Assembly

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	R80043	A/S MAIN HARROW MOUNT
2	2	P1357B	9/16" COULTERSPRING ASSEMBLY
3	1	R80039	A/S MAIN UPPER PARALLEL ARM
4	1	R80044	A/S LOWER MAIN PARALLEL ARM
5	1	R80038	A/S HARROW REAR ATTACHMENT HANGER
6	2	R80040	A/S TINE HARROW PARALLEL ARM
7	1	R80042	A/S TINE HARROW BRACKET
8	1	R80041	INSIDE TELESCOPE A/S REAR HARROW MOUNT
9	1	R80082	OUTSIDE TELESCOPE. A/S PACKER MOUNT
10	14	A60018	NYLATRON SHOULDER BUSHING
11	6	A60017	1 1/4 OD-1 ID X 1 1/4 LONG BUSHING
12	2	GM26	1" MACHINE BUSHING
13	2	BSR0520	5/16 x 2" ROLL PIN
14	1	T00058	PIVOT PIN
15	6	GPSPEC16085	1" PLATE PIN. 8-1/2" LG
16	2	B1040T	5/8 x 4" TAP BOLT GR. 2
17	2	GPSPEC16055	1" x 5-1/2" PLATE PIN
18	2	B0810	1/2" x 1" HEX BOLT
19	9	BF08HS	1/2" HARD STRUCTURAL FLAT WASHER
20	9	BN08L	1/2" NYLOCK NUT NC
21	2	B0820	1/2"NC x 2" LG. HEX BOLT
22	2	BL08	1/2" SPRING WASHER
23	2	BN10J	5/8"NC JAM NUT GR. 5
24	3	B1045	5/8 x 4-1/2" BOLT
25	11	BN10L	5/8" NYLOCK NUT NC
26	2	P1160	RESET SPRING BOLT PIVOT WASHER
27	3	BU1025	U-BOLT 5/8" x 2 1/2" x 4"
28	1	GCL08	1/2" PASSING LINK CHAIN. 18" LONG
+ 29	2	L00648	3/4" x 2" x 8 3/4" SPACER PLATE
30	2	L00231	STRAP 1/2" x 2" x 6 1/4"
31	4	B1060	5/8"NC x 6" LG. HEX BOLT
32	2	FL00943	1" x 2" 44w PULL-UP PLATE
33	4	B1275	3/4" NC x 7 1/2" HEX BOLT GR.5 PLATED
34	4	B1265	3/4"NC x 6 1/2" LG. HEX BOLT GR. 5
35	4	BN12L	3/4" NC NYLOCK NUT

+ Use spacer plate on mainframe only to clear cylinders

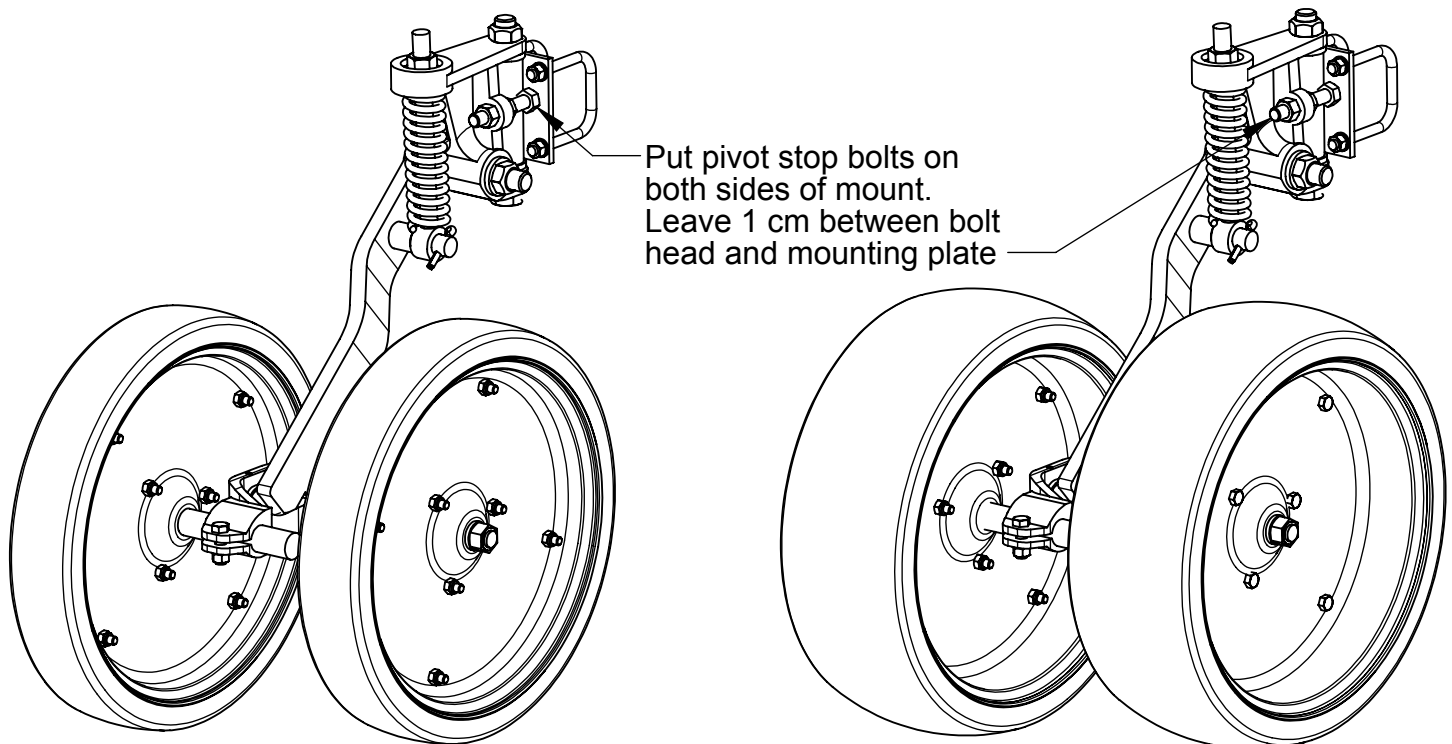


Packer Assembly



Packer Assembly

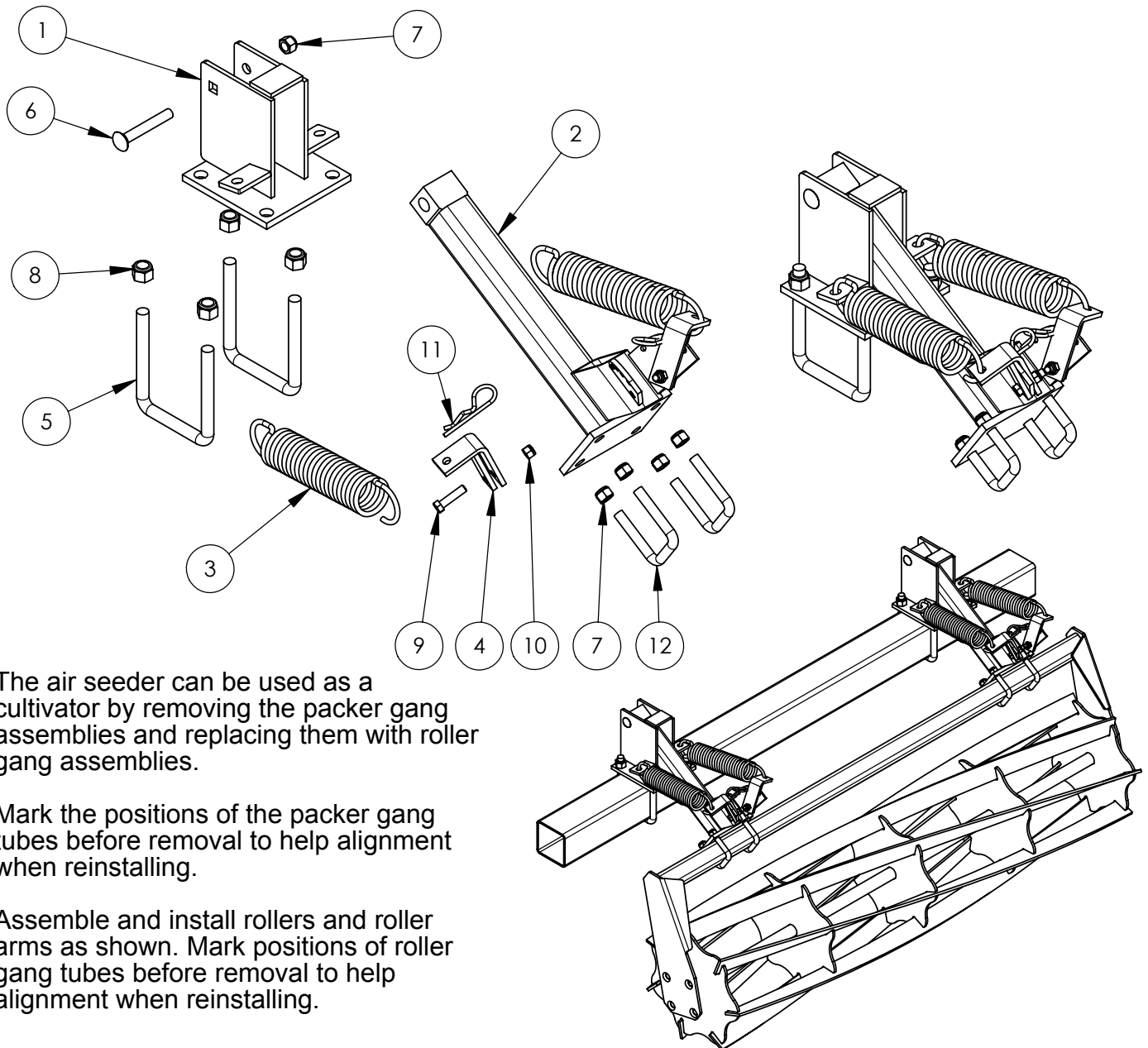
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	T00411A	PIVOT MOUNT
2	1	T00411B	SWIVEL BRACKET
3	1	T00411C	PACKER LEG
4	1	T00411D	SPRING ROD
5	1	T00411E	TANDEM MOUNT
6	1	T00411F	TANDEM AXLE
7	2	T00411G	PACKER AXLE
8	1	T00411H	SPRING
9	6	T00411J	BUSHING 3/4
10	2	T00411K	K-HART 3 x 16" PACKER WHEEL
11	2	T00412	K-HART 6 x 16" PACKER WHEEL
12	1	B1265	3/4"NC x 6 1/2" LG. HEX BOLT GR. 5
13	2	BN12SH	5/8" UNC STOVER LOCK NUT GR. 8
14	1	BSC0415	1/4" x 1 1/2" COTTER PIN
15	1	BN10RL	5/8" NC HEX NUT GR.8
16	2	BL10	5/8" LOCKWASHER
17	2	BN10	5/8" NC HEX NUT GR.5
18	2	B0612H	3/8" X 1 1/4" LG. BOLT GR.5
19	6	BL06	3/8" LOCK WASHER
20	6	BN06	3/8" LOCKNUT
21	2	BU0625	3/8 x 2-1/2 x 3 1/2" UBOLT
22	2	B0830	1/2"NC x 3" HEX BOLT
23	4	BN08	1/2" HEX NUT NC
24	1	U2525023	TUBE 2 1/2" x 2 1/2" x 1/4"W x 23" LG.



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Quick Change Roller Harrow Arm Assembly

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	R80045	ROLLER HARROW MOUNT
2	1	R80046	ROLLER HARROW ARM
3	2	R0035	2" x 10" HARROW ARM SPRING
4	2	RB0021	TIGHTENER, SINGLE SPRING
5	2	BU1040	5/8 x 4 x 5-1/2" U-BOLT
6	1	BC0835H	1/2" X 13NC X 3-1/2" LG. CARRIAGE BOLT GR. 5
7	5	BN08L	1/2" NYLOCK NUT NC
8	4	BN10L	5/8" NYLOCK NUT NC
9	2	B0615	3/8" NC 1 1/2" HEX BOLT GR.5
10	2	BN06L	3/8"-16NC LOCK NUT
11	2	GHP9	#9 HAIR PIN
12	2	BU0820	1/2" x 2 x 3 U-BOLT



The air seeder can be used as a cultivator by removing the packer gang assemblies and replacing them with roller gang assemblies.

Mark the positions of the packer gang tubes before removal to help alignment when reinstalling.

Assemble and install rollers and roller arms as shown. Mark positions of roller gang tubes before removal to help alignment when reinstalling.

Air Distribution System Installation

AIR TOWER INSTALLATION

Mount air towers to frame at locations shown in layout, using provided hardware.



Mount main frame air towers to outermost beams of main frame on extensions provided (see layout). Ensure extension will not contact tire when machine is fully lowered.



Mount wing air towers to middle beams of wing (see layout).

2.5" (64mm) hoses

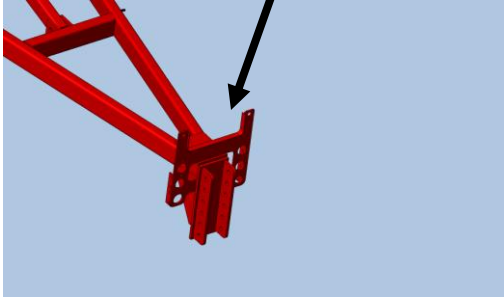
4 lengths of 2.5" (64 mm) hose are required for 4050 air seeder. Cut and install hoses between bulkhead connection on air tank and air distribution towers on air seeder frame.

See the appropriate section on the following pages for 2.5" hose routing for "tow between" air tanks and "tow behind" air tanks.

Air Distribution System Installation

2.5" (64mm) Hose Installation

"Tow behind" air tanks - Route hoses through channel on rear of tow hitch.



"Tow between" air tanks - Mount chain sling hose holder on telescope using 1/2" x 5 1/2" bolts.



Route 2.5" hoses from bulkhead connection on tank to air towers ("tow behind" shown, "tow between" similar).



Mount 2.5" hose holders on rear of frame. See layout for locations.

Leave some loop at wing joints so hose won't kink when folding wings.

Air Distribution System Installation

1" (25mm) hose installation

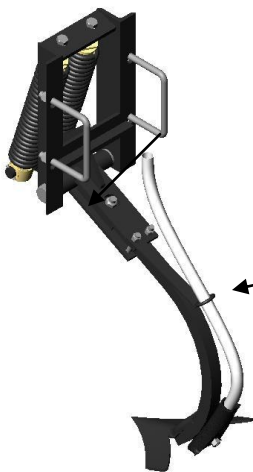
Cut 1" (25 mm) hose to 10' (305 cm) lengths. 50 lengths are required for the 4050 air seeder.



Mount 1" hose holders on front beam of wing and 5th bar extension. See layout for locations.

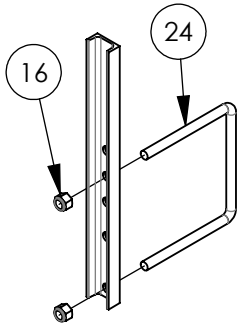


Route hoses without tight corners, kinks, and no droops, hose must flow constantly downwards. Use 1" hose clamps at connection to air towers.

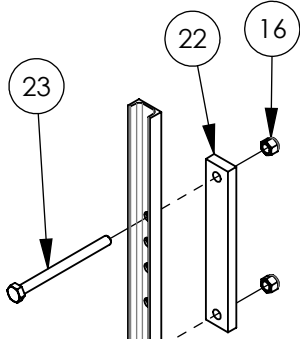


Route hose through holder on rear of shank and into seed boots.

Air Distribution System Assembly

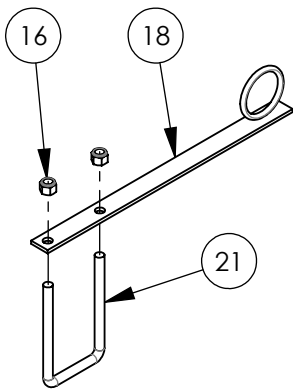


520-30' FRAME MOUNTING

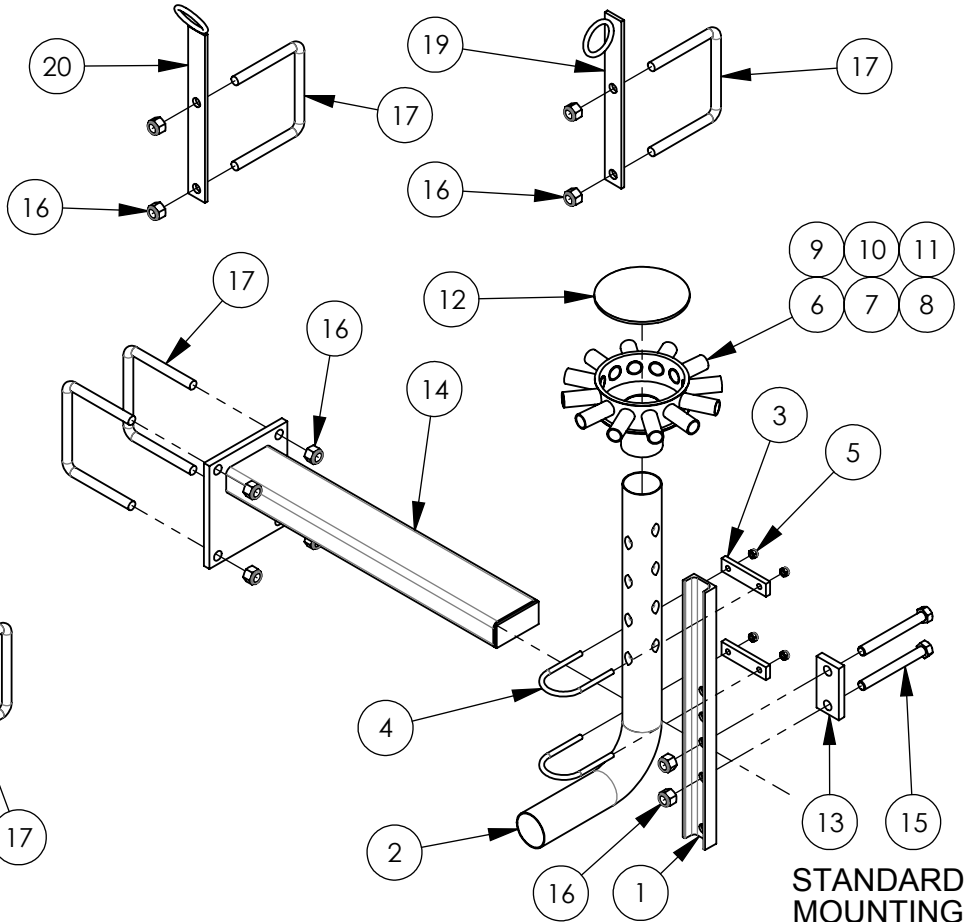


520-40' FRAME MOUNTING

ITEM NO.	PART NO.	DESCRIPTION
1	T00438	SECONDARY RISER MOUNT
2	T00031	AIR SEEDER RISER
3	L00660	3/8" x 1" x 4" BOLTING PLATE
4	BUR052545	5/16 x 2 1/2 x 4 1/2" ROUND U-BOLT
5	BN05L	5/16" LOCK NUT
6	T00440	SECONDARY HEAD - 8 OUTLET
7	T00441	SECONDARY HEAD - 9 OUTLET
8	T00398	SECONDARY HEAD - 10 OUTLET
9	T00435	SECONDARY HEAD - 11 OUTLET
10	T00032	SECONDARY HEAD - 12 OUTLET
11	T00333	SECONDARY HEAD - 13 OUTLET
12	T00036	SECONDARY HEAD CAP - RUBBER
13	L00664	1/2" x 2" x 4" BOLTING PLATE
14	T00323	AIR SEEDER MAIN TOWER BASE
15	B1055	5/8 x 5-1/2" BOLT
16	BN10L	5/8" NYLOCK NUT NC
17	BU1061	U-BOLT 5/8" x 6" x 5 1/2"
18	T00342	AIR SEEDER FRAME 2 1/2" HOSE GUIDE
19	T00334	AIR SEEDER 1" HOSE HOLDER
20	T00335	1" AIR SEEDER HOSE HOLDER
21	BU1046	U-BOLT 5/8" x 4" x 7 1/2" LG.
22	L00886	3/4" x 2" x 12 1/2" PULL-UP PLATE
23	B1080	5/8"NC x 8" HEX BOLT GR. 5
24	BU1081	U-BOLT 5/8" x 8" x 7 1/2"

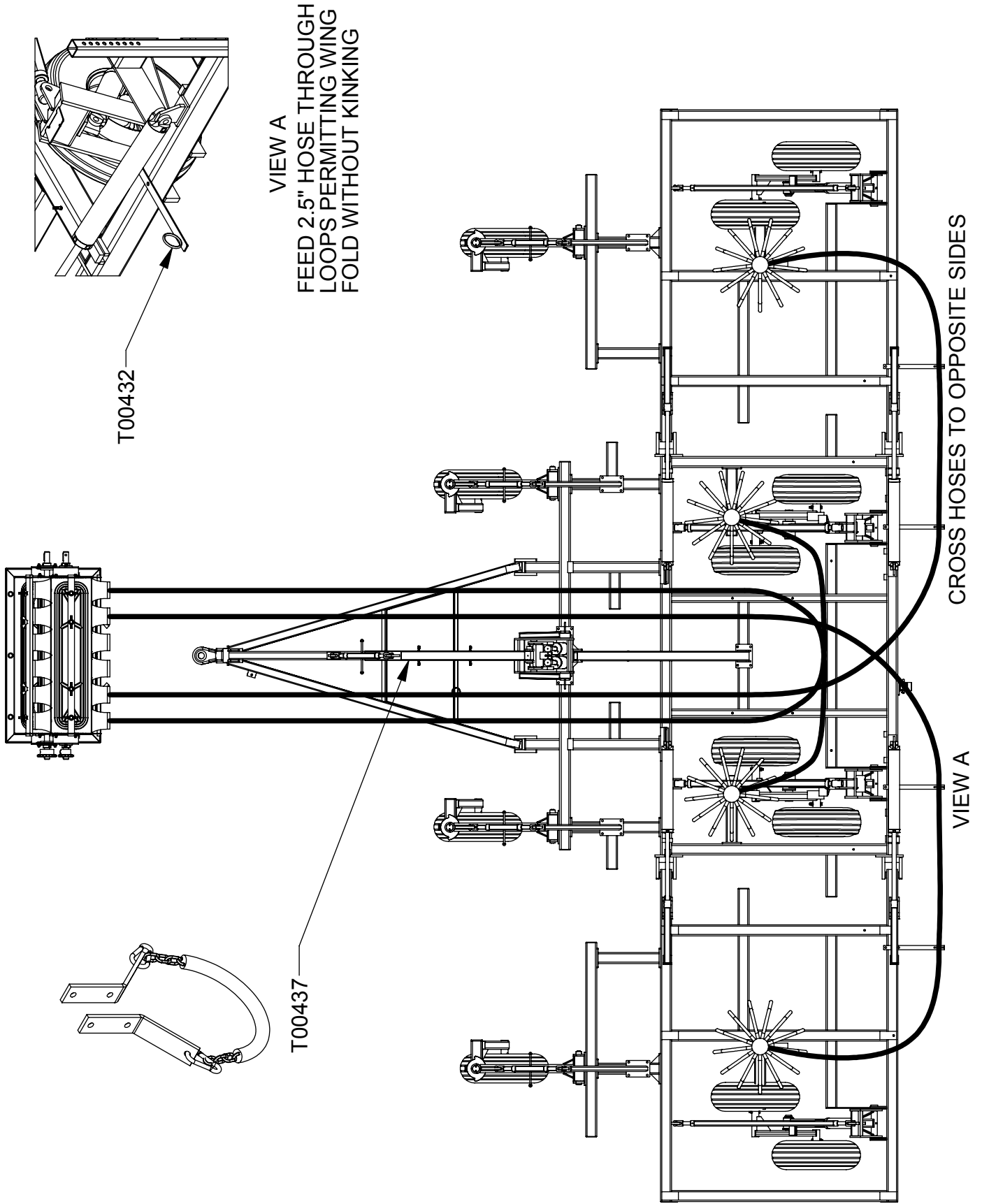


ALTERNATE MOUNTING

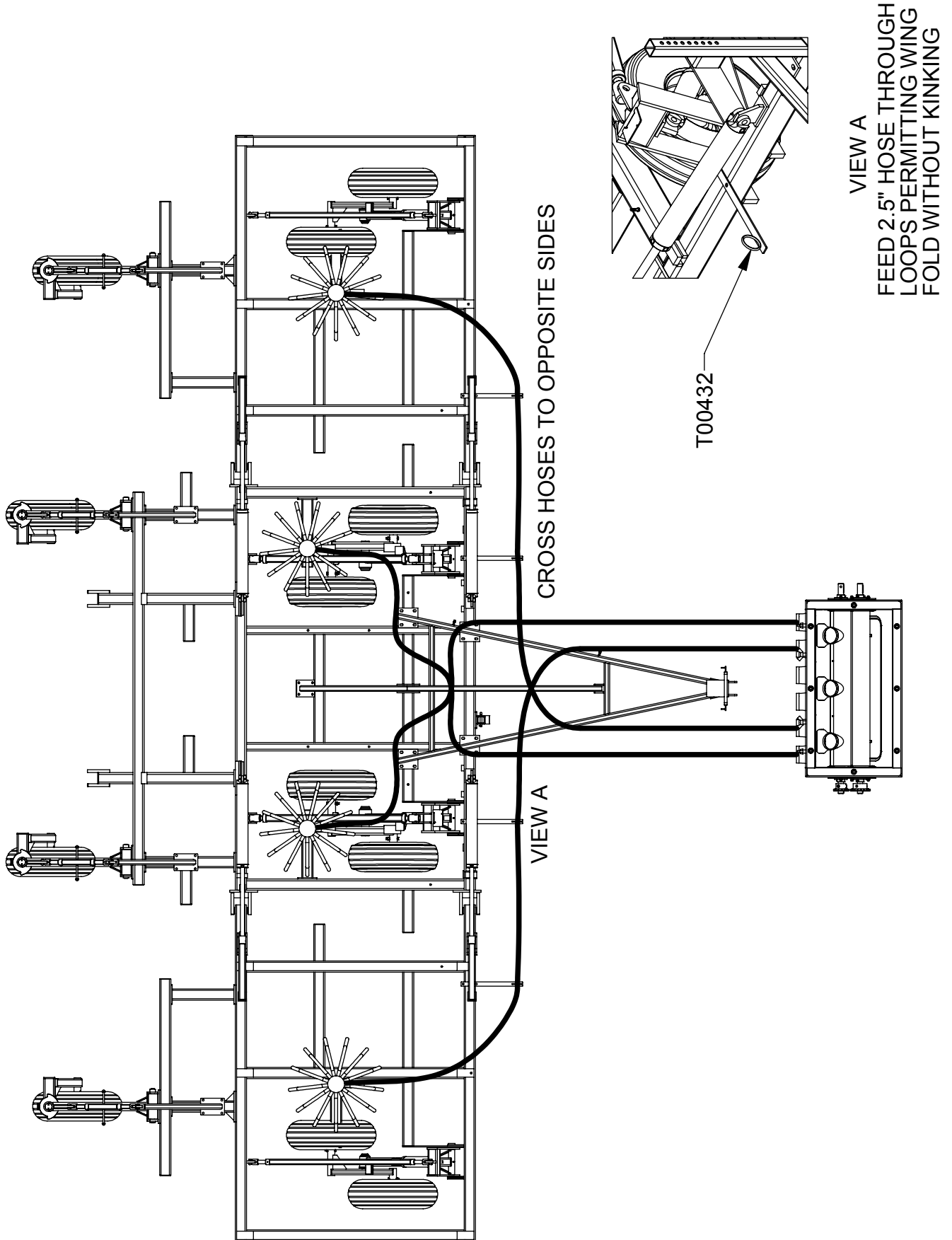


STANDARD MOUNTING

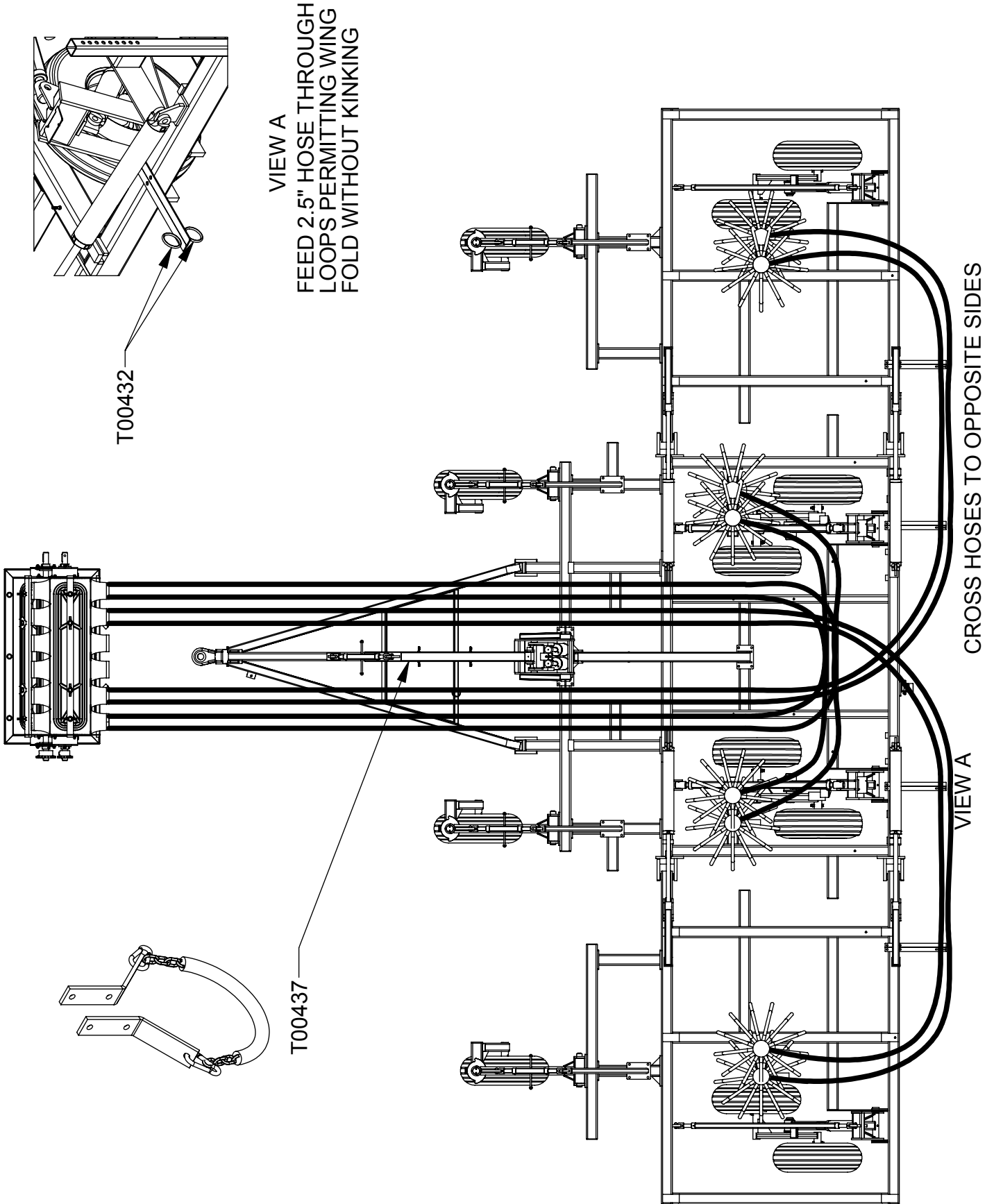
2.5" (64mm) Single Shoot Hose Routing - Tow Between Air Cart



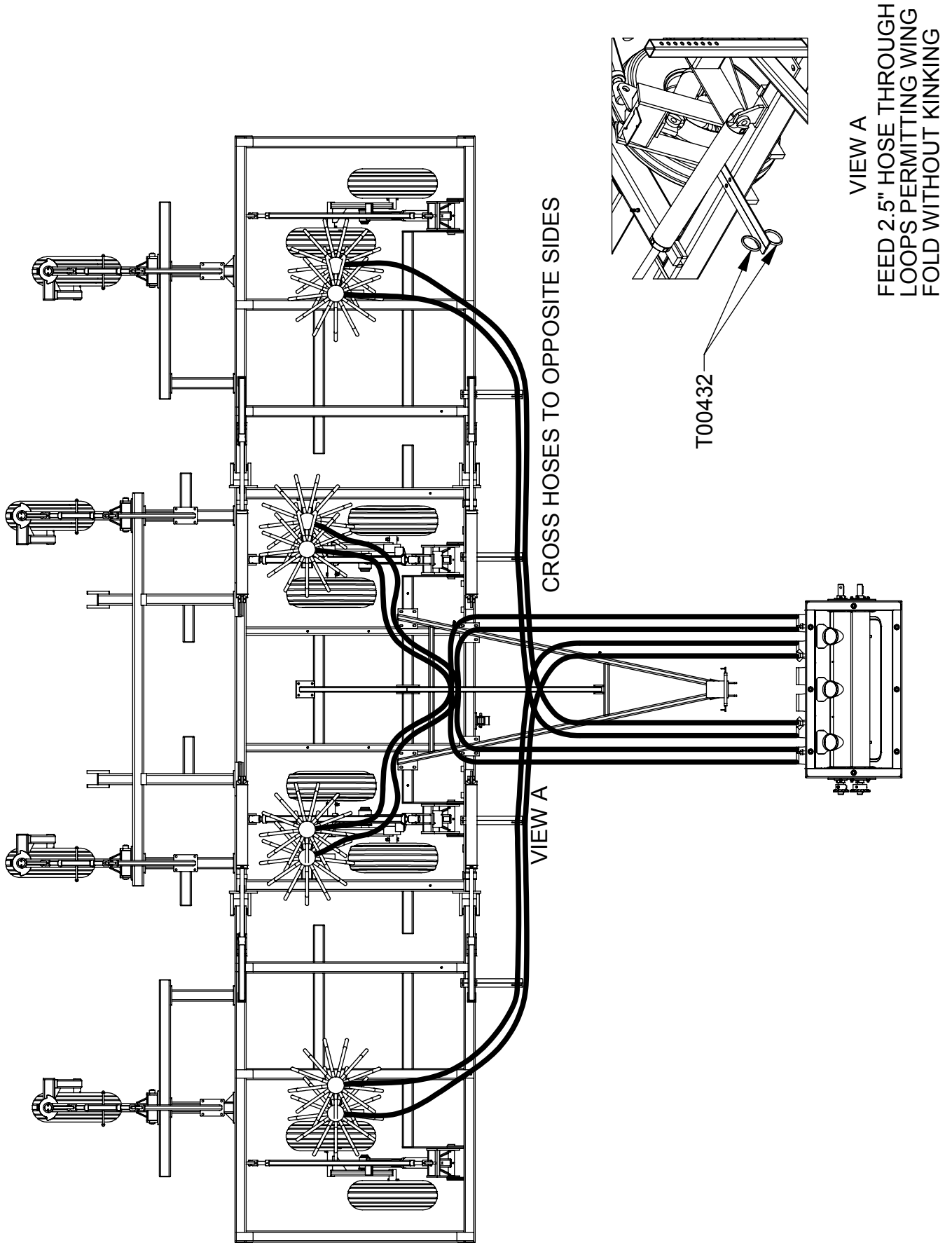
2.5" (64mm) Single Shoot Hose Routing - Tow Behind Air Cart



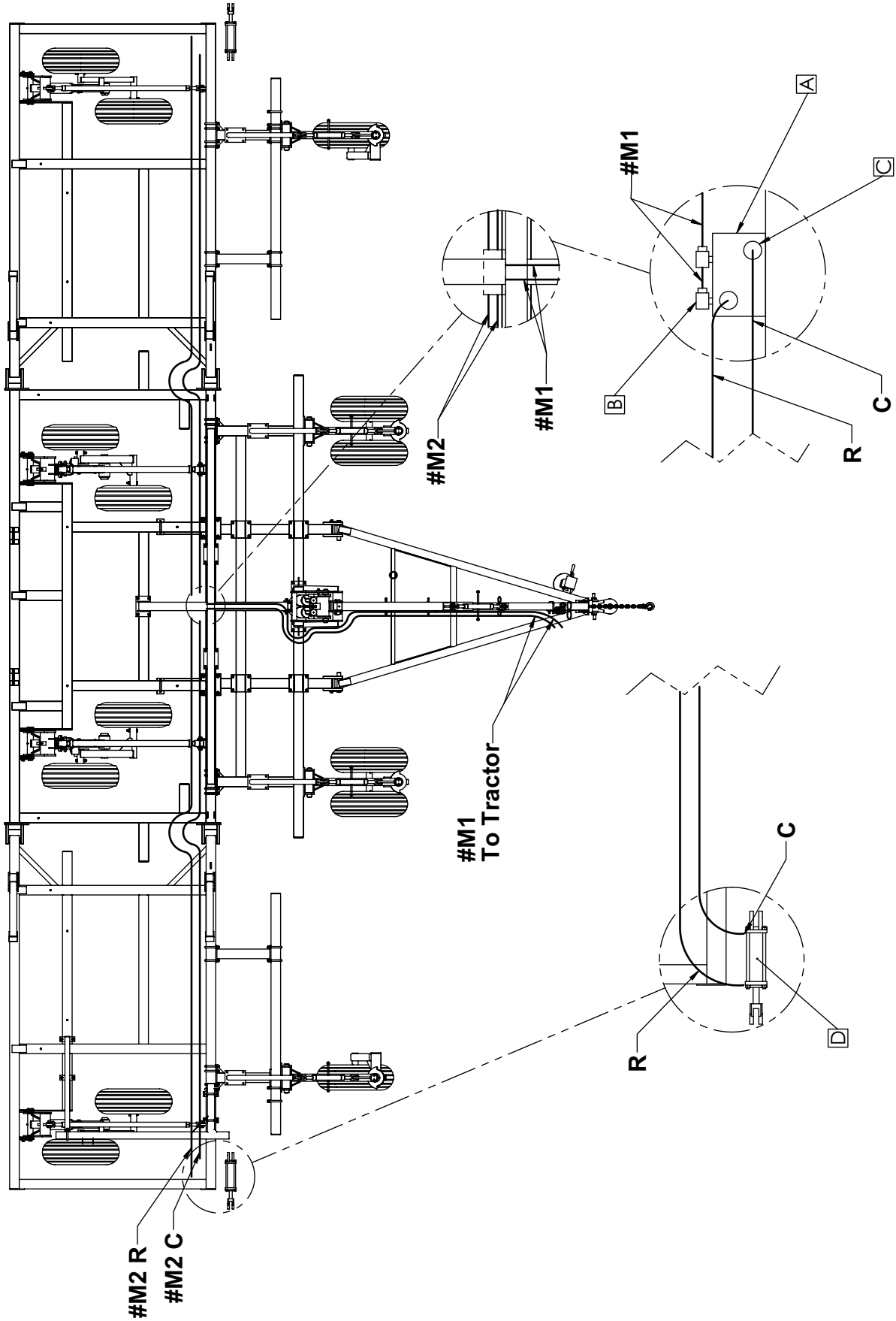
2.5" (64mm) Double Shoot Hose Routing - Tow Between Air Cart



2.5" (64mm) Double Shoot Hose Routing - Tow Behind Air Cart



Marker Hydraulics

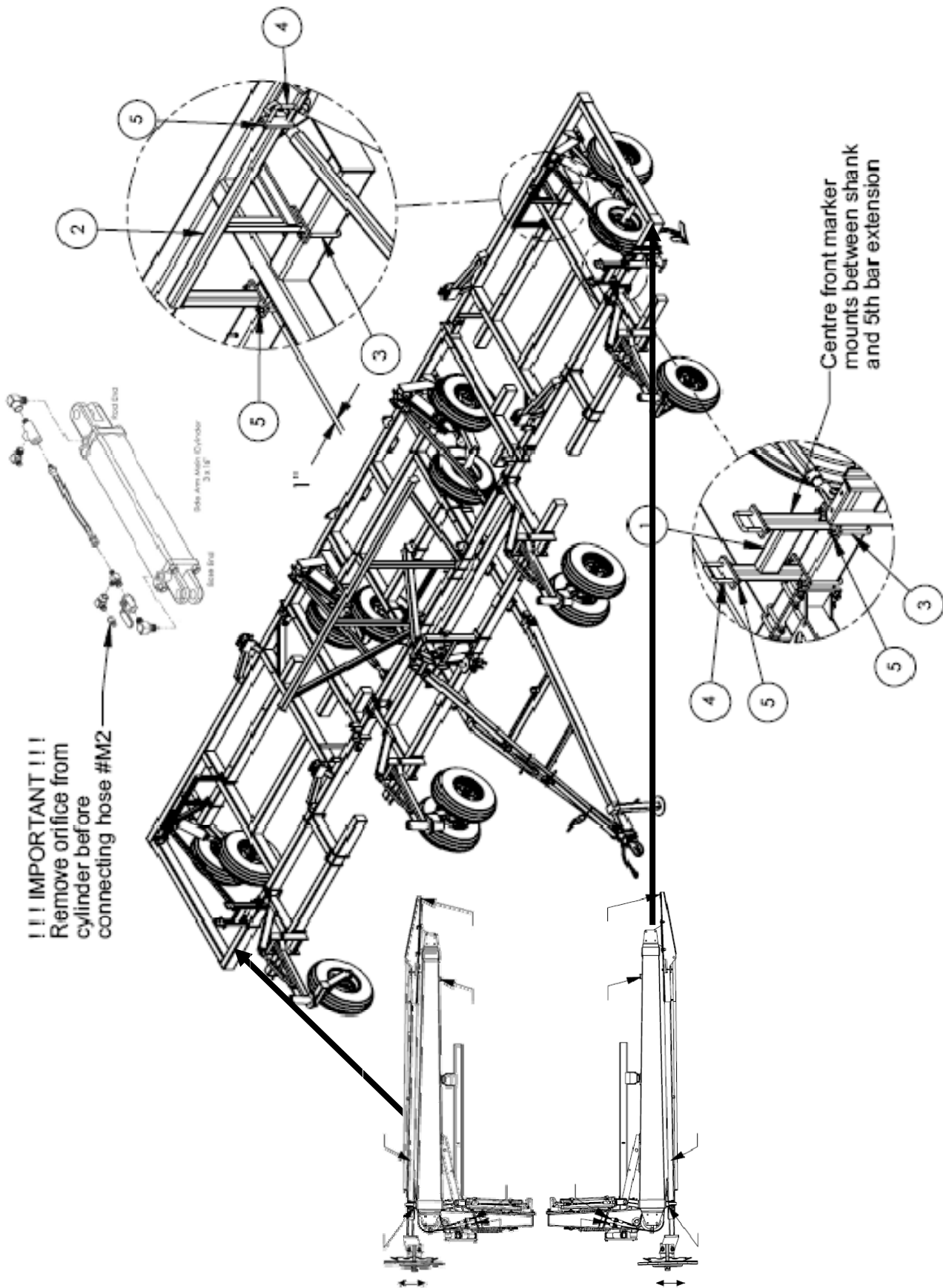


Marker Hydraulics

LABEL	QTY	LENGTH (m)	ENDS
#M1	2	6.3	1/2"NPT --- -06jic
#M2	4	7.0	-06jic --- -06jic

ITEM	QTY	PART NO.	DESCRIPTION
A	1	T00353	HAUKAAS SEQUENCING VALVE
B	2	T00025A	ELBOW - 1/2"ORB x 9/16" JIC
C	4	T00025B	SPECIAL C Fitting x 9/16" JIC (HYD 2481)
D	2	T00025C	SIDE ARM CYLINDER (3 x 16")

Marker Assembly Installation



T00025 – MODEL 246 HAUKAAS SIDE ARM MARKER

Marker Assembly Installation

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	T00063	FRONT MARKER SUPPORT
2	2	T00064	REAR MARKER SUPPORT
3	9	BU1046	U-BOLT 5/8" x 4" x 7 1/2" LG.
4	6	BU1030	U-BOLT 5/8" x 3" x 4 1/2"
5	30	BN10L	5/8" NYLOCK NUT NC
6	2	H80104P	1/2" NPT MALE PIONEER COUPLER

HOSE #	QTY.	LENGTH (m)	FROM	TO
M1	2	6.3	TRACTOR	SEQUENCING VALVE
M2	4	6.6	SEQUENCING VALVE	MARKER CYLINDERS

1. Install front marker mounts (1) on front beam of wings. Centre mounts between shank and 5th bar extensions as shown. Retain mount with 5/8" x 4" x 7 1/2" u-bolts (3) and 5/8" locknuts (5).
 2. Install rear marker mounts (2) on stub beam of wings so there is 1" between inner mounting plate and middle wing tube. Retain mount with 5/8" x 4" x 7 1/2" u-bolts (3) and 5/8" locknuts (5).
 3. Assemble markers following instructions in Haukaas manual. Note that markers are distinguished by an "L" and "R" on the serial number tag for left and right markers. Attach markers to mounts with 5/8" x 3" x 4 1/2" u-bolts (4) and 5/8" locknuts (5).
 4. Mount sequencing valve and bracket to the middle of the main frame front beam with 5/8" x 4" x 7 1/2" u-bolt (3) and 5/8" locknuts (5).
 5. Route hoses #M1 from tractor to sequencing valve. Connect hoses to sequencing valve as instructed in Haukaas manual. Place male Pioneer couplers (6) on hose ends. Place 2 blue tie wrap on end of marker extend hose and 1 blue tie wrap on marker retract hose for easy identification when connecting hoses to tractor.
 6. Route hoses #M2 from sequencing valve to marker cylinders. Connect hoses to sequencing valve as instructed in Haukaas manual. Route hoses along front beam of main frame and wing, and tie wrap hoses to shank u-bolts.
- !!! IMPORTANT !!!** Remove orifice from base ends of marker lift cylinders before connecting #M2 hoses.
7. Test markers and make any necessary adjustments following the instructions in the Haukaas manual.

WARNING: Do not test the markers inside a building. They fold out approximately 20' to the side or up if machine is folded.

Wait until you move the air seeder outside to an open area before testing.

Watch out for overhead power lines.

8. After the markers are mounted tighten all U-bolts securely. If the U-bolts are not tight the marker will want to whip when being used in the field. After the first 20 hours of use, retighten all U-bolts.

9. Attach the disc assembly to the **BOTTOM SIDE** of the third stage arm with the disc guard on top using the $\frac{1}{2}$ x $1\frac{3}{4}$ " carriage bolts.

On certain implements the disc blade may come in contact with parts on the drill when the marker is folded in. This can be overcome in most cases by removing the third stage arm, flipping it over and reinstalling it. The bracket welded on the end of the third stage arm has an offset which allows for some adjustment.

The angle of the disc blade can be adjusted by loosening the $\frac{1}{2}$ " carriage bolts. Adjust the disc angle to the degree that a legible mark is made and that there is just enough resistance to keep the marker from bouncing back and forth.

10. **Remove steel band from marker!! Failure to do so will cause damage!**

Route the hydraulic hoses and install sequencing valve (if required) at this time. The sequencing valve should be located in the approximate location of where the left side of the implements hitch attaches to its centre frame. In the hose package, information is given as to which hoses go where.

11. **IMPORTANT: Before extending marker...**

MAKE SURE that all moving parts of the implement have **adequate travel space** with the implement both in the ground and raised out of the ground. It is also important at this time to make sure that the marker clears all obstructions (shanks, hoses, etc.) when the marker is folded in and extended out. **Have someone watching!**

12. Extend the marker.

13. Loosen the set screws on the second stage arm ($2\frac{1}{2}$ x $2\frac{1}{2}$ " tube) and extend the third stage arm (2x2" tube) out to its proper length.

NOTE: We recommend that the excess 2x2" tube which is not being used, (behind the last set screw) be cut off to reduce the weight of the marker.

NOTE: On some Model 136 markers going on smaller width implements you will be required to cut at least 24" off the inside end of the third stage arm in order to make the marker go small enough.

When re-tightening the set screws make sure the third stage arm is properly seated inside the second stage arm. (After the first day of use re-tighten)

14. With the marker extended out to its proper length place a bathroom scale under the disc. By adjusting the eye bolts on the counter balance springs, place about 50 lbs of weight on the disc. (This is a good place to start. You may want, in some conditions, to increase the weight to get a better mark.)

15. IMPORTANT! Retract the marker slowly!

Adjust the second stage arm so that it fits to the high side of the cradle (in between the 3" wheels) when it is folded in. To make an adjustment loosen the ½" carriage bolts at the elbow and "over lift" the arm up to about the center of the top wheel. Re-tighten the carriage bolts. The second stage arm should the drop down to fit in between the (2) 3" wheels.

16. Fold up the implement. **Have someone watching!** Take great care in folding up your implement into transport for the first time. Make sure the markers do not come in contact with any obstructions or with each other. We suggest that for the first time folding into transport only bring up one wing at a time.

Do everything SLOWLY! If you have a five section implement watch out for your manifold towers. You may want to block the wing the first time you fold just to make sure that you will have enough clearance. Some five fold implements have what we call "the point of no return" when folding for transport. It is at this point when the wing lift cylinders stop pulling and start pushing and unless you are careful the wing may continue to fold without you being able to stop it.

When one wing is fully folded have a look to make sure that none of the marker is past the half way mark. If everything looks good then fold the implement into transport.

17. When the markers are completely mounted check all bolts for being tight.

ADJUSTMENT INFORMATION

NOTE: It is important that all of the adjustments on the marker are maintained at all times. The adjustments are as follows.

1. The speed of the markers as noted below.
2. The cable tension as noted below.
3. The second stage arm must ride high in between the 3" wheels. To adjust there are 4 or 8 bolts at the elbow where the second stage arm attaches to the sprocket assembly.
4. The single 3" wheel on the large tapered tube must ride high and inside its cage on the marker sub-frame. To adjust height there are 4 bolts where the main frame attaches to the sub-frame. To bring the wheel farther into the cage the 4 bolts where the

sub-frame. (see pg. 12.) To bring the wheel farther into the cage the 4 bolts where the cylinder attaches to the main frame will need to be adjusted. (see pg. 11.)

5. The weight of the marker on the disc blade can be adjusted with the eye bolts attached to the springs. 50 lbs is a good place to start.

MARKER FOLDING SPEED

The speed of the markers folding in and out not only effect the cables but also everything else with the markers. If when folding the markers in, the second stage arm hits the rubber bumper on the large tapered tube so hard that it bounces back out of the 3" wheels before finally coming into position, the markers are moving too fast. We recommend 10 to 12 seconds to fold the markers in on our models 136, 246, 286.

The speed of the marker is regulated by an orifice fitting located on the elbow at the base port end of the cylinder. To speed up the markers you can turn the oil flow from the tractor up, or drill out the orifice to 1/16". If a Shoemaker Sequencing valve (gold in colour) is being used the orifices are to be removed and the speed of the marker is to be regulated by the flow screws on the valve.

CABLES (See pg. 12.)

After a period of time the cables on the SIDE ARM will stretch and require adjustment. Inside each marker there are two cables. When the marker is folded up the cable on the inside towards the implement is referred to as the inside cable. The other cable is referred to as the outside cable. It is normal when the marker is completely extended or retracted to have one cable inside the tube tight and the other cable somewhat relaxed. A cable should never be so loose that it could fall out of the groove of the large pulley.

The purpose of the inside cable is to extend and hold out the second stage arm when the marker is folding out. If you have problems with the 5/16 x 2" shear bolt breaking on this cable, it could be one of four things:

- 1) Markers extending too fast
- 2) The inside cable is being tightened to tight
- 3) Cable is too loose allowing marker to bounce back and forth
- 4) Backing the implement up with the marker extended.

To check for proper tension on the inside cable do the following. With the tractor hydraulics, extend the marker fully. By hand, pull the disc assembly forward. By doing this you will open a gap between the angle iron assembly of the second stage arm and the back stop on the large tapered tube. It will depend on the length of your marker how much force will be required to open the gap. However, in general terms it should take effort on your part to open the gap. If the inside cable is too tight the shear bolt will let go. (Stand clear of cable ends).

To tighten the inside cable you will have to retract the marker. Only in this position will the inside cable become loose enough to adjust. Extend the marker and check again. If the inside cable is too loose the marker disc may bounce back and forth while marking.

The outside cables purpose is to retract and hold the second stage arm against the rubber bumper. If you have problems with the 5/16 x 2" shear bolt on this cable, breaking, it is probably one of following things:

- 1) Markers retracting too fast
- 2) The outside cable is being over-tightened
- 3) Can be the result of the hydraulic cylinder retracting prematurely or not having the marker fully extended while marking in the field.
- 4) Stopping the marker as it is folding out and folding it back in a severe motion.
- 5) Too much weight on the disc blade may cause shear bolts to break when beginning to fold markers up.
- 6) The half-link plates that attach the cable to roller chain may over time oblong their 5/16" holes resulting in only one end of the shear bolt holding.

To check for proper tension on the outside cable; with the tractor hydraulics, retract the marker fully. Grab the second stage arm of the marker near the two 3" wheels. Begin to pull the arm out of its holder. Depending on the size of marker, with proper adjustment this should take 30-40lbs of pressure to achieve. If the outside cable is too tight the shear bolt will let go. (Stand clear of cable ends).

When Cables have had to be replaced for any reason follow the following steps for proper adjustment:

Step #1:

- a) Begin adjustments with marker in the retracted position.
- b) Place marked tooth of sprocket between 2nd & 3rd roller of the #80 roller chain.
- c) Place both cable adjusting bolts in the holder.
- d) Tighten the outside cable bolt finger tight.
- e) Tighten inside cable adjusting bolt until 2nd stage arm pulls away from rubber bumper.
- f) Extend marker and tighten outside cable bolt finger tight.

Step #2:

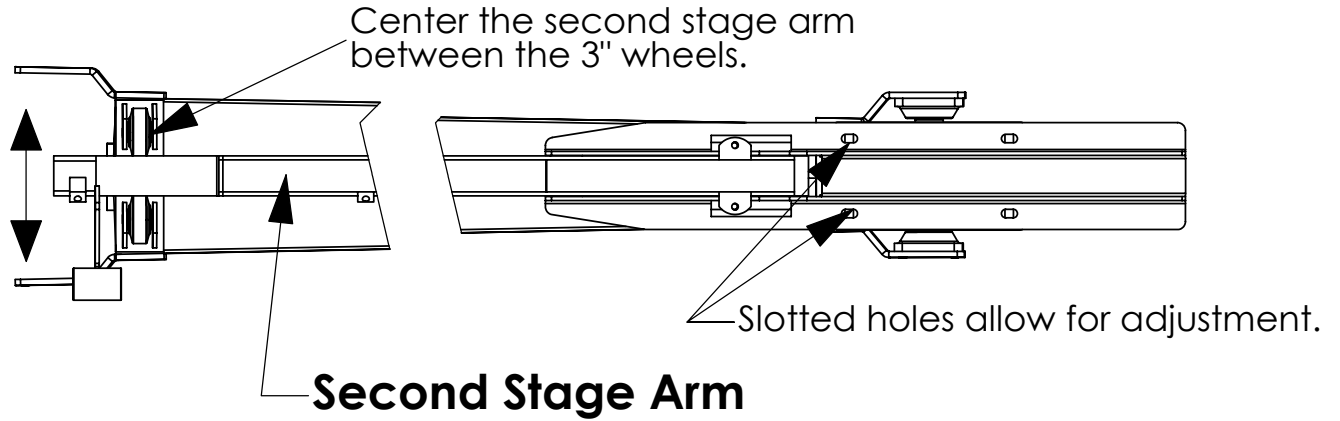
- a) Retract the marker; it should take approximately 30 lbs of pull to move the 2nd stage arm away from the rubber bumper. To adjust: extend marker part way out (until cable is loose) and adjust the outside cable bolt. Recheck.
- b) Extend marker SLOWLY! At the exact moment the rear of the 2nd stage arm touches the stop on the large tube, make a mark on the ground at the location of the disc. When the hydraulic cylinder is fully extended the disc should still move another 12 to 14 inches ahead of that mark.

To adjust: retract marker part way in (until cable is loose) and adjust the inside cable bolt. Recheck.

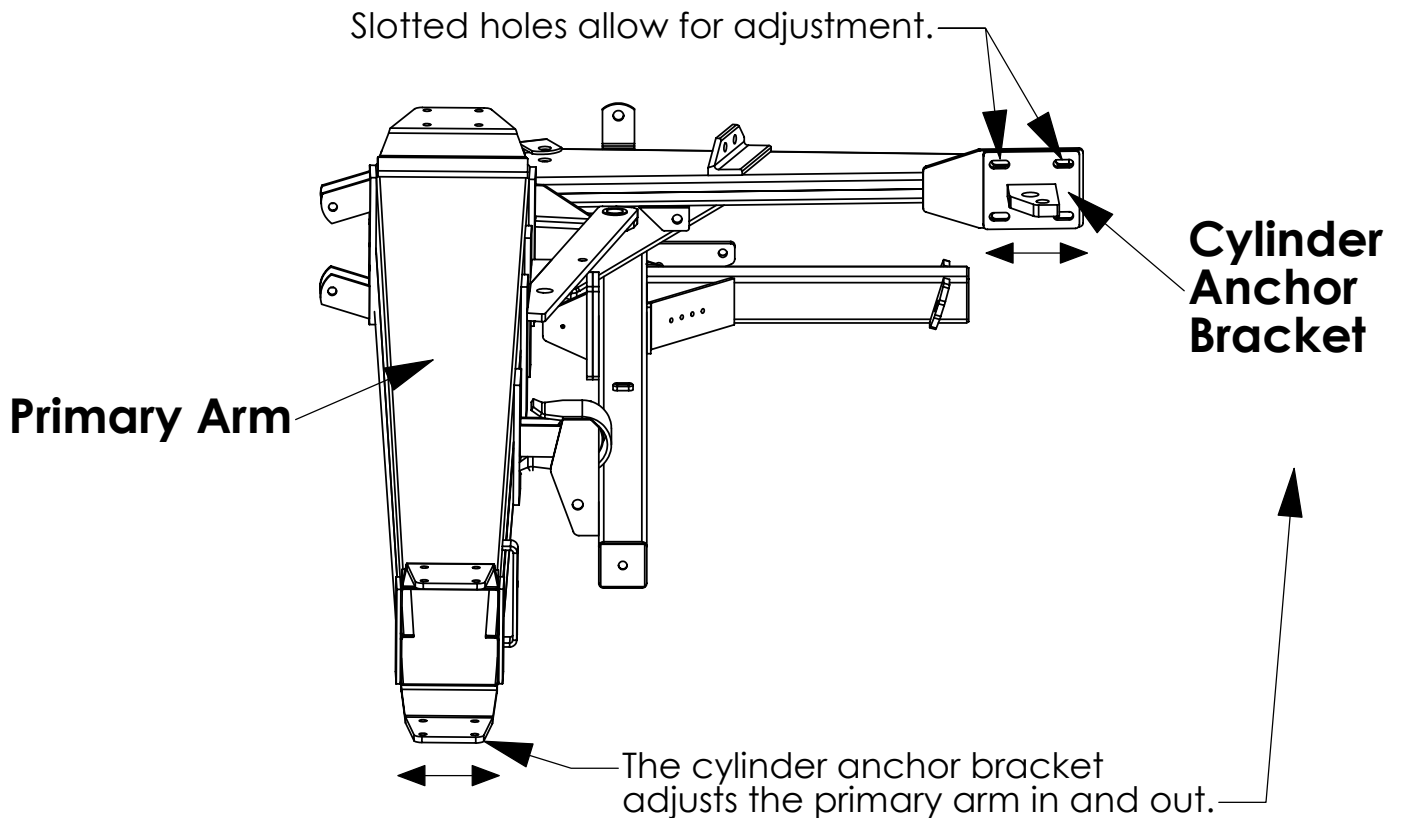
NOTE: Step #2 will have to be repeated a few times.

When the cable adjustments are completed one cable will be tight while the other may be somewhat loose (and vice versa). This is normal.

Second Stage Arm Height Adjustment

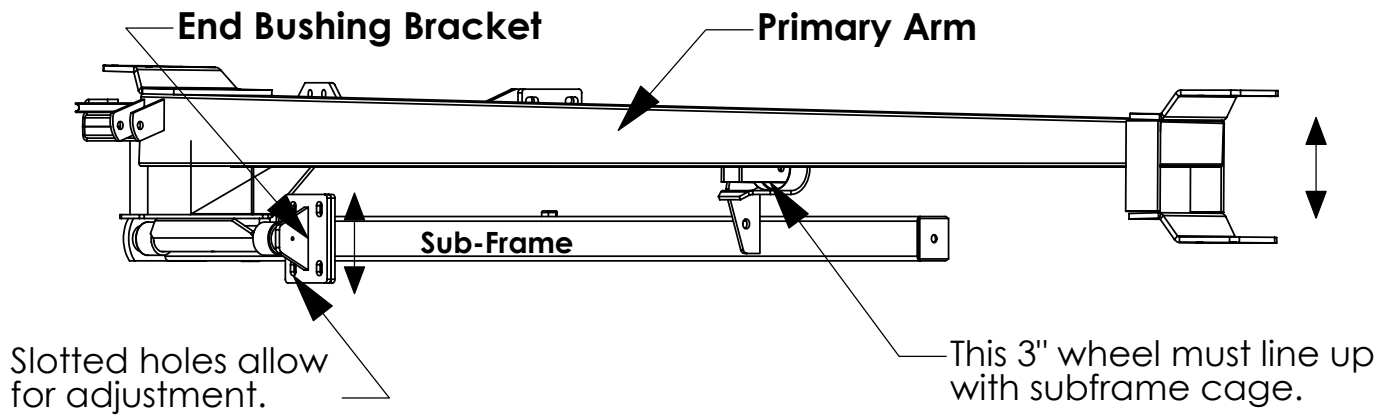


Primary Arm In and Out Adjustment

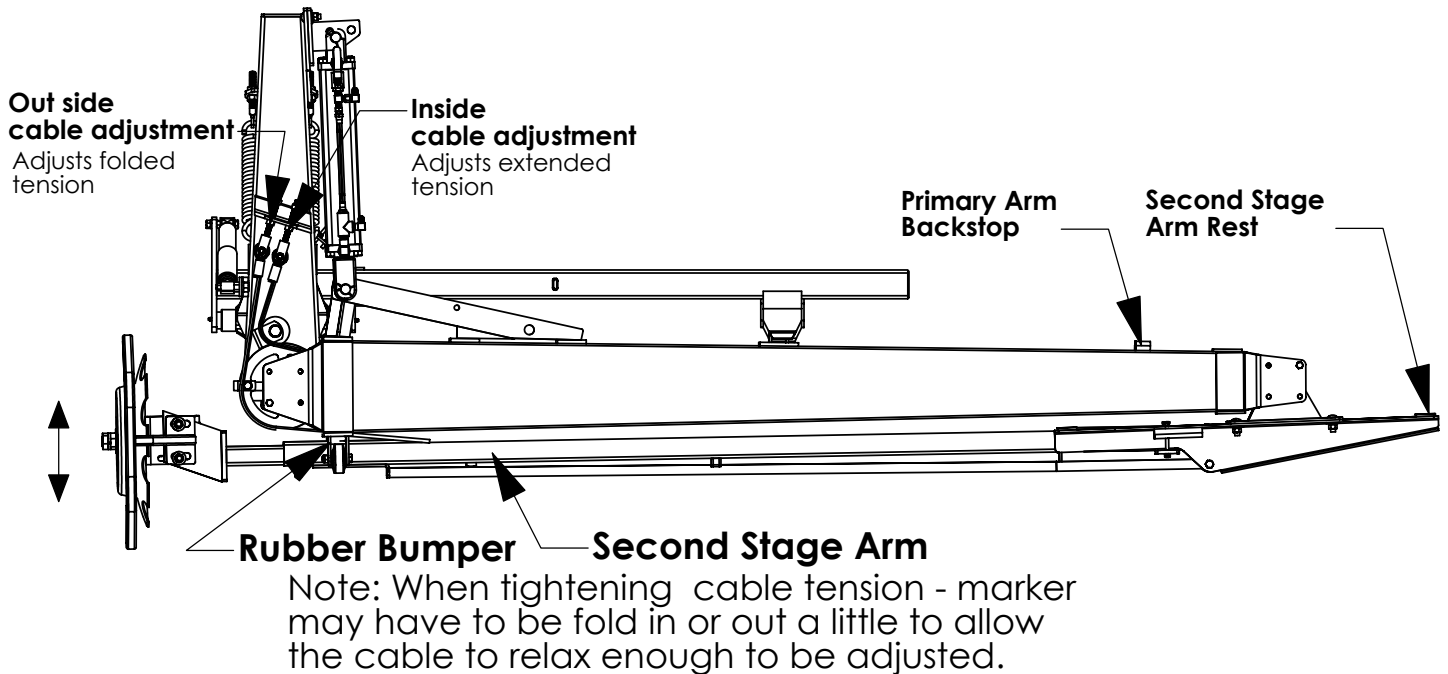


It is VERY IMPORTANT that the primary arm's 3" wheel is held in the wheel cage when folded in. If for some reason this comes out of adjustment Fix Immediately!

Primary Arm Up and Down Adjustment

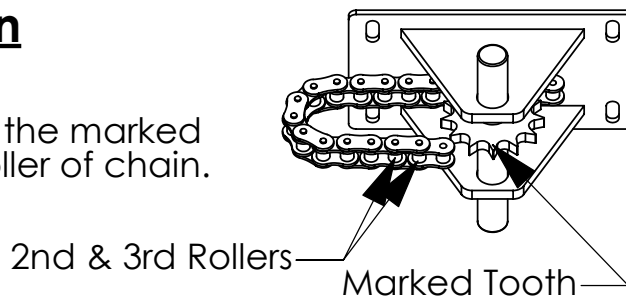


Cable Adjustments



Timing Roller Chain

With the marker folded - place the marked tooth between the 2nd & 3rd roller of chain.



OPERATING PROCEDURES

1. Read all decals affixed to the marker before operating.
2. The HAUKAAS SIDE ARM comes with its own hydraulic oil flow shut off valve (ball valve) for your safety. (see pg. 19) Closing the ball valve before folding the implement for transport will eliminate the possibility of accidental opening of the marker during transport.
 - A) On three fold implements accidental opening during transport may result in having the marker come in contact with overhead power lines.
 - B) On five folds, opening of the markers in the transport position will result in extensive damage to the SIDE ARM and also to the implement! It has been known for markers to creep open when left overnight in the transport position. To prevent this the ball valve must be shut off.

3. Before even going to the field:

Set the sensitivity of the hydraulic control (on the tractor) that operates the markers. On the newer tractors it is a simple adjustment to regulate the détente pressure setting so that when the operator pushes the hydraulic lever ahead to extend the marker, the lever will stay in the forward position without being held until the marker is fully extended and returns to the neutral position without assistance. With the lever staying in the forward or back position without having to be held, the operator is free to complete the rest of the procedures that are required when coming to the end of the field. (i.e. Raise the implement out of the ground, disengage the land wheel, etc.)

Every operator will after time develop his own system or procedure of operating the markers in the field. The following are some of our recommendations:

- A) It is our opinion that adjusting the marker length so that the disc marks to the center of the tractor on the next pass is best.
- B) A helpful aid to your markers is to place a pinstripe down the center of your tractor hood. The pinstripe will help you line up your tractor easier and keep it lined up.
- C) When you come to the end of the field bring the marker in just as you begin to turn. The marker will always be to the inside of the turn and if done right the marking disc will almost pivot in one spot and then raise into position.
- D) Don't make a practice of retracting the marker on extremely rough ground. The last 25% of the markers travel to the closed position is not cushioned by the counter balance springs. Severe stress is placed on the marker in such conditions and the second stage arm may have trouble lining up to enter in between the two wheels.
- E) Never fold the markers out while turning! The marker on the outside of a turn is moving quickly through rough head lands. We strongly suggest being fully around the corner of the end of the field before extending the marker. Folding the markers out while turning on the rough head lands will cause damage to the markers!
- F) If the implement is sliding sideways when working in hills it works very well if the operator instead of lining up with center of hood looks back and lines up the center shank of the implement on the mark.
- G) On extremely hilly conditions or on land with drainage ditches caution must be used not to "top out" the marker. The marker can be over elevated and damage to the marker will result.

TROUBLE SHOOTING

- If you are having trouble **getting a legible mark** try adjusting the angle of the blade along with adding more weight. More weight can be added to your blade by adjusting the counter balance springs on the main frame of the marker. Depending on your implement and the size of the marker, different size springs are available from your dealer.

- If you are having problems with your **marker bouncing back and forth** in the field you will need to check the angle on your disc blade. Having too much angle on your blade will cause this problem. Adjust your blade to have just enough resistance against it to keep it from bouncing.

- If you are having problems **getting enough weight on the disc** you may want to try other springs that are available from your dealer.

- After some use the **cables may stretch** and need to be tightened. (See pg. 9&12.)

- Any **cable shear bolt problems** are generally a result of the hydraulic cylinder not being fully extended in the working position.

- If your **second stage arm begins to “creep” out of its holder** while you are driving down the field it could be one of two things. This could be a hydraulic problem meaning that your valve is not holding properly and it is letting the marker creep out. It could also be a cable adjustment problem. Your outside cable must be tight enough to hold this arm in place when the cylinder is fully retracted. This problem is extremely hard on the markers and must be dealt with. If this continues on a regular basis contact your dealer as soon as possible.

- If the second stage arm **shear bolts (5/16 x 3-1/2") are breaking** it could be:
 - a) Too much weight on the marking disc.
 - b) Too much angle on the disc blade or the disc assembly was improperly installed .
(It must be attached to the bottom of the third stage arm.)
 - c) The inside cable may be too loose.

- If the **disc angle keeps coming out of adjustment,** make sure you have a flat washer and a lockwasher over the slotted holes on the disc guard. You can also place a small amount of dirt between the disc assembly and the third stage to help hold it in place.

DAILY MAINTENANCE

A small amount of daily maintenance will add years of life to your SIDE ARM markers.

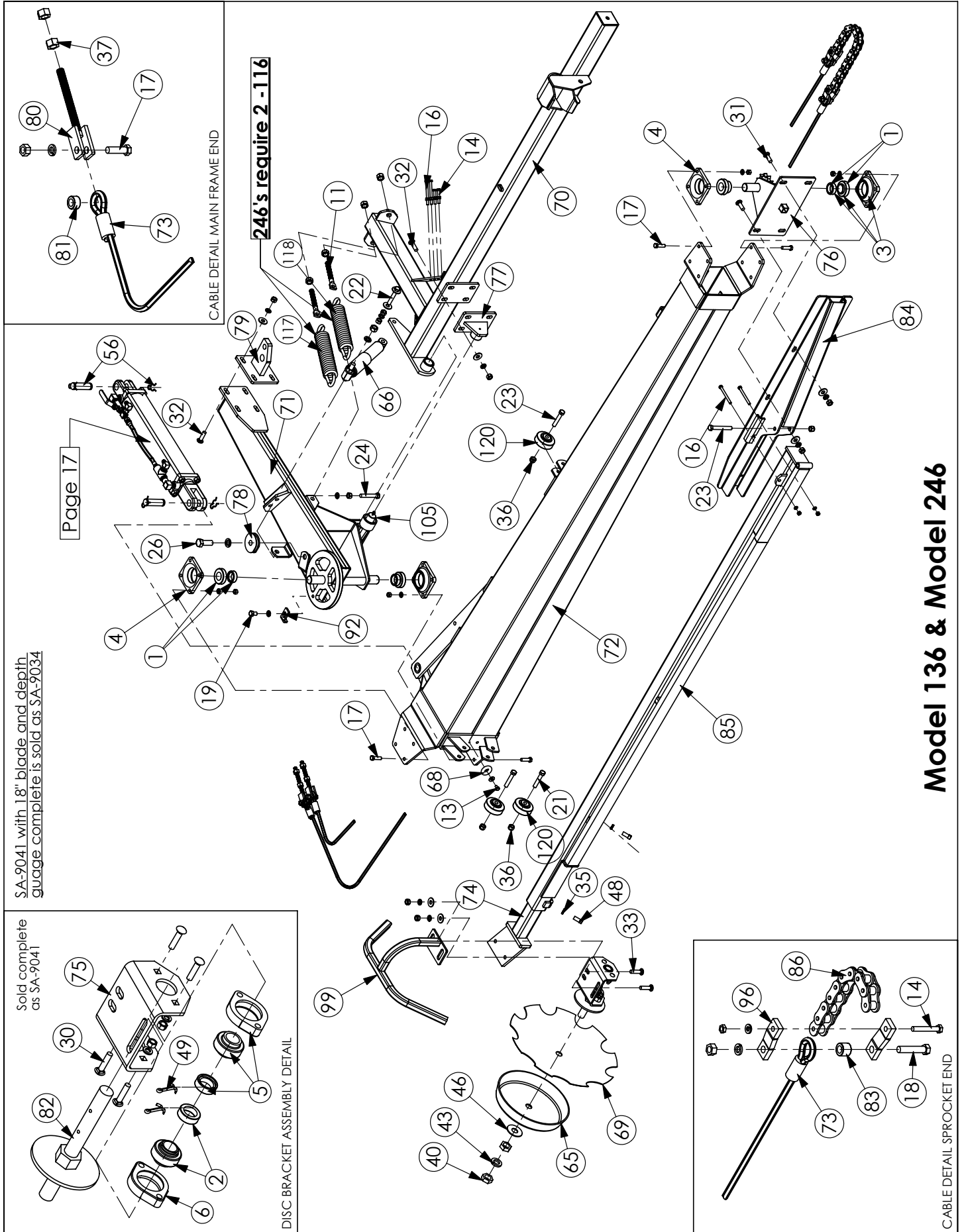
1. Grease the grease points. (2 on the small markers and 8 on the large.)
2. Visual check of the marker in general.
 - Cable tension
 - Second stage arm riding high in its cradle between the 3" wheels. (see pg. 11.)
 - Check that no bolts are working loose

YEARLY MAINTENANCE

A small amount of yearly maintenance will add years of life to your SIDE ARM markers.

(The best time to do this is just before you put the implement away for the season.)

- Look entire marker over for any breakage or extensive wear.
- Make sure the single wheel of the primary arm is lining up properly with its cradle on the sub-frame. (see pictures)
- Make sure the second stage arm is riding high in its cradle between the 3" wheels. (pg. 11)
- Oil the roller chain.
- Remove shear bolts on the second stage arm and open. Grease the tube top and bottom the prevent rusting shut.
- Paint up all the scratch marks.



Model 136 & Model 246

SA-9041 with 18" blade and depth gauge complete is sold as SA-9034

Sold complete as SA-9041

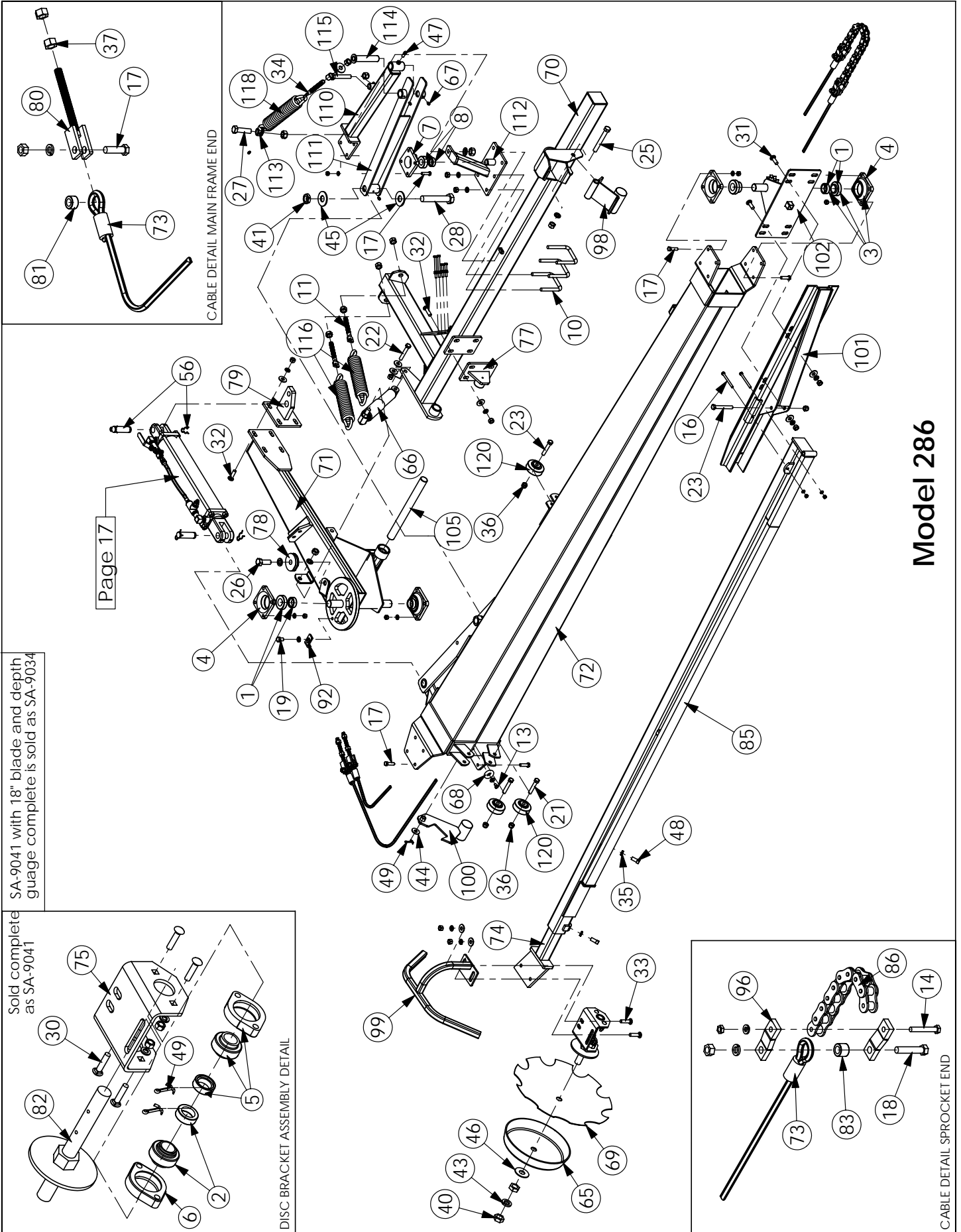
246's require 2-116

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DISC BRACKET ASSEMBLY DETAIL

CABLE DETAIL MAIN FRAME END

CABLE DETAIL SPROCKET END



Model 286

SA-9041 with 18" blade and depth guage complete is sold as SA-9034

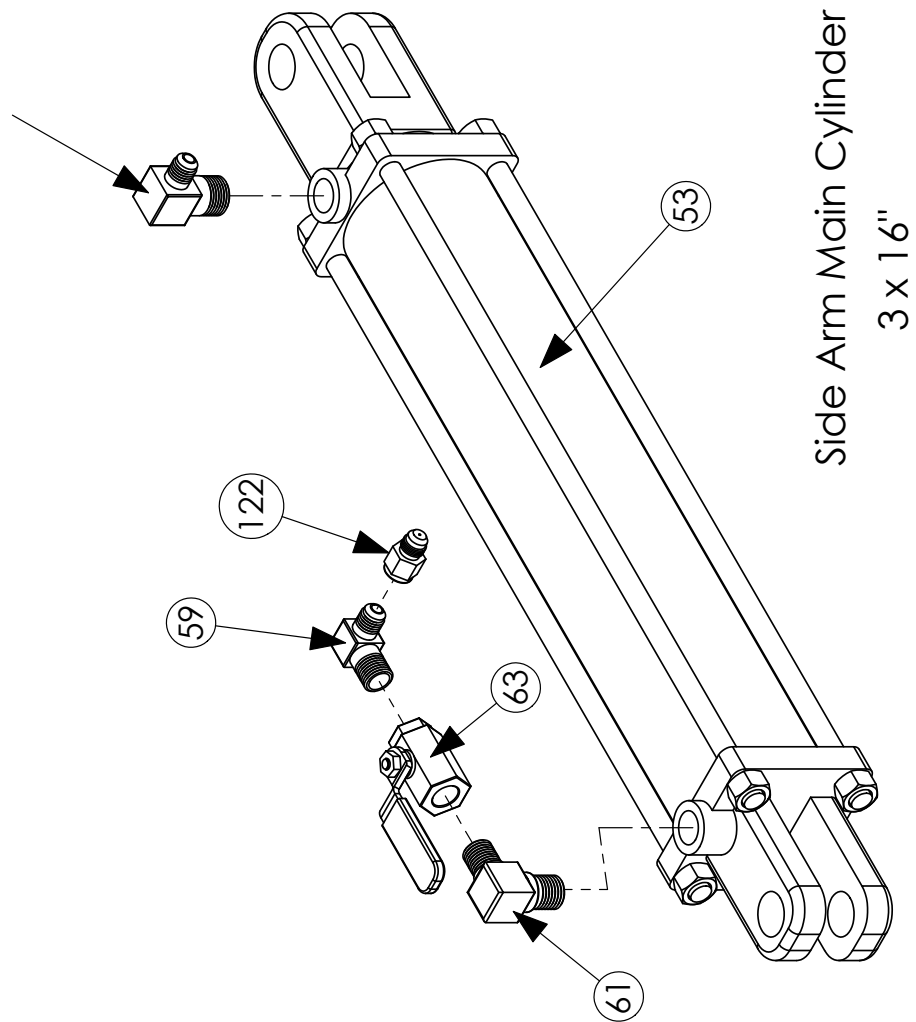
Sold complete as SA-9041

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CABLE DETAIL MAIN FRAME END

DISC BRACKET ASSEMBLY DETAIL

CABLE DETAIL SPROCKET END



HAUKAAS FIELD MARKERS

THE FOLLOWING PARTS CORRESPOND WITH THE DRAWINGS ON THE PREVIOUS PAGES

Drw #	Part #	Description
1	BRG-2207	1-1/4" BEARING with LOCKING COLLAR
2	BRG-2209	1" BEARING with LOCKING COLLAR (for 2-BOLT)
3	BRG-2450	1-1/4" BEARING & HOUSING COMPLETE
4	BRG-2463	1-1/4" BEARING HOUSING ONLY
5	BRG-2476	1" BEARING & HOUSING COMPLETE (2 BLT)
6	BRG-2486	1" BEARING HOUSING ONLY (2 BLT)
7	BRG-2866	1" BEARING HOUSING ONLY (4 BOLT)
8	BRG-2867	1" BEARING with LOCKING COLLAR (for 4 BOLT)
9	FNS-02290	5/8" U-BOLT FOR 4x4" SQ. TUBE
10	FNS-02357	1/2" U-BOLT FOR 3x3" SQ. TUBE
11	FNS-02392	5/8-11x6" I-BOLT (4" THREAD)
12	FNS-02531	3/8"x16x3/8" SETSCREW
13	FNS-110B5PC	5/16 x 1/2" GR. 5 HEX BOLT
14	FNS-112-5PC	5/16x2" GR. 5 HEX BOLT
15	FNS-112-8PC	5/16x2" GR. 8 HEX BOLT
16	FNS-113B5PC	5/16x3-1/2" GR. 5 SHEAR BOLT
17	FNS-131B5PC	7/16x1-1/2" GR. 5 SHEAR BOLT
18	FNS-132-5PC	7/16x2" GR. 5 HEX BOLT PLT
19	FNS-140C5PC	1/2 x 3/4" GR. 5 HEX BOLT
20	FNS-141-5PC	1/2 x 1" GR. 5 HEX BOLT
21	FNS-142C5PC	1/2x2-3/4" GR. 5 HEX BOLT
22	FNS-143-5PC	1/2 x 3" GR. 5 HEX BOLT
23	FNS-143C8PC	1/2x3-3/4" GR. 8 HEX BOLT
24	FNS-144B5PC	1/2x4-1/2" STOP BOLT
25	FNS-165B5PC	5/8x5-1/2" GR. 5 HEX BOLT
26	FNS-172-5PC	3/4 x 2" GR. 5 HEX BOLT
27	FNS-172C5PC	3/4x2-3/4" GR. 5 HEX BOLT
28	FNS-195B5PC	1" x 5-1/2" GR. 5 HEX BOLT
29	FNS-197-5PC	1" x 7" GR. 5 HEX BOLT
30	FNS-221B5PC	3/8x1-1/2" GR. 5 CARRIAGE BOLT
31	FNS-241A5PC	1/2x1-1/4" GR. 5 CARRIAGE BOLT
32	FNS-241B5PC	1/2x1-1/2" GR. 5 CARRIAGE BOLT
33	FNS-241C5PC	1/2x1-3/4" GR. 5 CARRIAGE BOLT
34	FNS-3685PC	5/8"x8"NC GR. 5 SPADE BLT
35	FNS-54JPC	1/2"- 13 NC JAM NUT
36	FNS-54LPC	1/2"- 13 NC NYLON LOCKNUT
37	FNS-54RPC	1/2"-13 NC HEX NUT
38	FNS-57LPC	3/4"- NC NYLON LOCKNUT
39	FNS-57SPC	3/4"-10 STOVER NUT
40	FNS-59JPC	1" - 8 JAM NUT PLT
41	FNS-59RPC	1"-8 HEX NUT PLT
42	FNS-59SPC	1"-8 STOVER NUT PL
43	FNS-69RP	1" LOCK WASHER PLT
44	FNS-74RP	1/2" FLAT WASHER PLT
45	FNS-79NP	1" FLAT WASHER SAE
46	FNS-79RP	1" FLAT WASHER PLT
47	FNS-82CC	3/8x3/4" SQ HD SET SCREW
48	FNS-8A41BPC	1/2 x1-1/2"SQ HD SET SCREW
49	FNS-8CB-1BP	3/16 x 1-1/2 COTTER-PIN
50	FNS-96SLN	5/8" STOVER LOCK NUT

HAUKAAS FIELD MARKERS

THE FOLLOWING PARTS CORRESPOND WITH THE DRAWINGS ON THE PREVIOUS PAGES

51	HP-9JF026	1/4"HOSEx26" 9/16" FEMALE JIC
52	HP-9JF032	1/4"HOSEx32" 9/16" FEMALE JIC
53	HYD-2368	HYDRAULIC CYLINDER
54	HYD-2515	9/16"JIC MxFxF TEE
55	HYD-2516	1/4"MALE NPT->9/16"MALE JIC 90 DEG ELBOW
56	HYD-2528	CYLINDER PIN KIT
57	HYD-2888	1/2"MALE NPT->3/8"FEMALE NPT 90 DEG ELBOW
58	HYD-2890	1-1/2"x4" HYDRAULIC CYLINDER (3000PSI)
59	HYD-25010606	9/16" 18 MJIC to 3/8" MNPT 90 DEG
60	HYD-2892	3/8"MALE NPT->#6MALE JIC TEE
61	HYD-2893	1/2"MALE NPT->3/8"MALE NPT 90 DEG ELBOW
62	HYD-2894	1/4"x11-1/2" HOSE 1/4"MALE NPT->#6FEMALE JIC 9/16"-18
63	HYD-2895	3/8" BALL VALVE
64	HYD-2896	PILOT OPERATED CHECK VALVE
65	MIS-2192	NYLON DEPTH GAUGE
66	MIS-2195	SHOCK ABSORBER
67	MIS-2325	GF641 GREASE ZIRK
68	MIS-2362	RUBBER BUMPER PAD
69	MIS-2526	18" NOTCHED DISC BLADE
70	SA-8051L	SMALL SUB-FRAME LEFT 136,246,286
70	SA-8051R	SMALL SUB-FRAME RIGHT 136,246,286
71	SA-8052L	SMALL MAIN FRAME LEFT 136,246,286
71	SA-8052R	SMALL MAIN FRAME RIGHT 136,246,286
72	SA-8053/136L	PRIMARY ARM 136 LEFT
72	SA-8053/136R	PRIMARY ARM 136 RIGHT
72	SA-8053/246L	PRIMARY ARM 246 LEFT
72	SA-8053/246R	PRIMARY ARM 246 RIGHT
72	SA-8053/286L	PRIMARY ARM 286 LEFT
72	SA-8053/286R	PRIMARY ARM 286 RIGHT
73	SA-8054/136	136 CABLE 88" OVERALL
73	SA-8054/246	246 CABLE 112" OVERALL
73	SA-8054/286	286 CABLE 124" OVERALL
73	SA-8054/356	356 CABLE 134" OVERALL
73	SA-8054/466	466 CABLE 158" OVERALL
74	SA-8055	THIRD STAGE ARM
75	SA-8056	DISC ASSEMBLY BRACKET
76	SA-8057	SMALL SPROCKET ASSEMBLY (4 HOLE) 136,246
77	SA-8065	END BUSHING BRACKET ASSEMBLY
78	SA-8066	3" CABLE PULLEY
79	SA-8067	HYDRAULIC CYLINDER ANCHOR BRACKET
80	SA-8069	CABLE CLEVIS BOLTS
81	SA-8082	CABLE/CLEVIS BUSHING (1/2")
82	SA-8084	DISC AXLE
83	SA-8085	1/2 LINK BUSHING 11/16"
84	SA-8086	SMALL ANGLE IRON ASSEMBLY (4 HOLE) 136,246
85	SA-8087/136	136 2ND STAGE ARM TUBE ASSEMBLY
85	SA-8087/246	246 2ND STAGE ARM TUBE ASSEMBLY
85	SA-8087/286	286 2ND STAGE ARM TUBE ASSEMBLY
86	CHN-2537	#80 ROLLER CHAIN (18 PINS-20" LONG)
87	SA-8104/356L	PRIMARY ARM 356 LEFT
87	SA-8104/356R	PRIMARY ARM 356 RIGHT
87	SA-8104/466L	PRIMARY ARM 466 LEFT
87	SA-8104/466R	PRIMARY ARM 466 RIGHT

HAUKAAS FIELD MARKERS

THE FOLLOWING PARTS CORRESPOND WITH THE DRAWINGS ON THE PREVIOUS PAGES

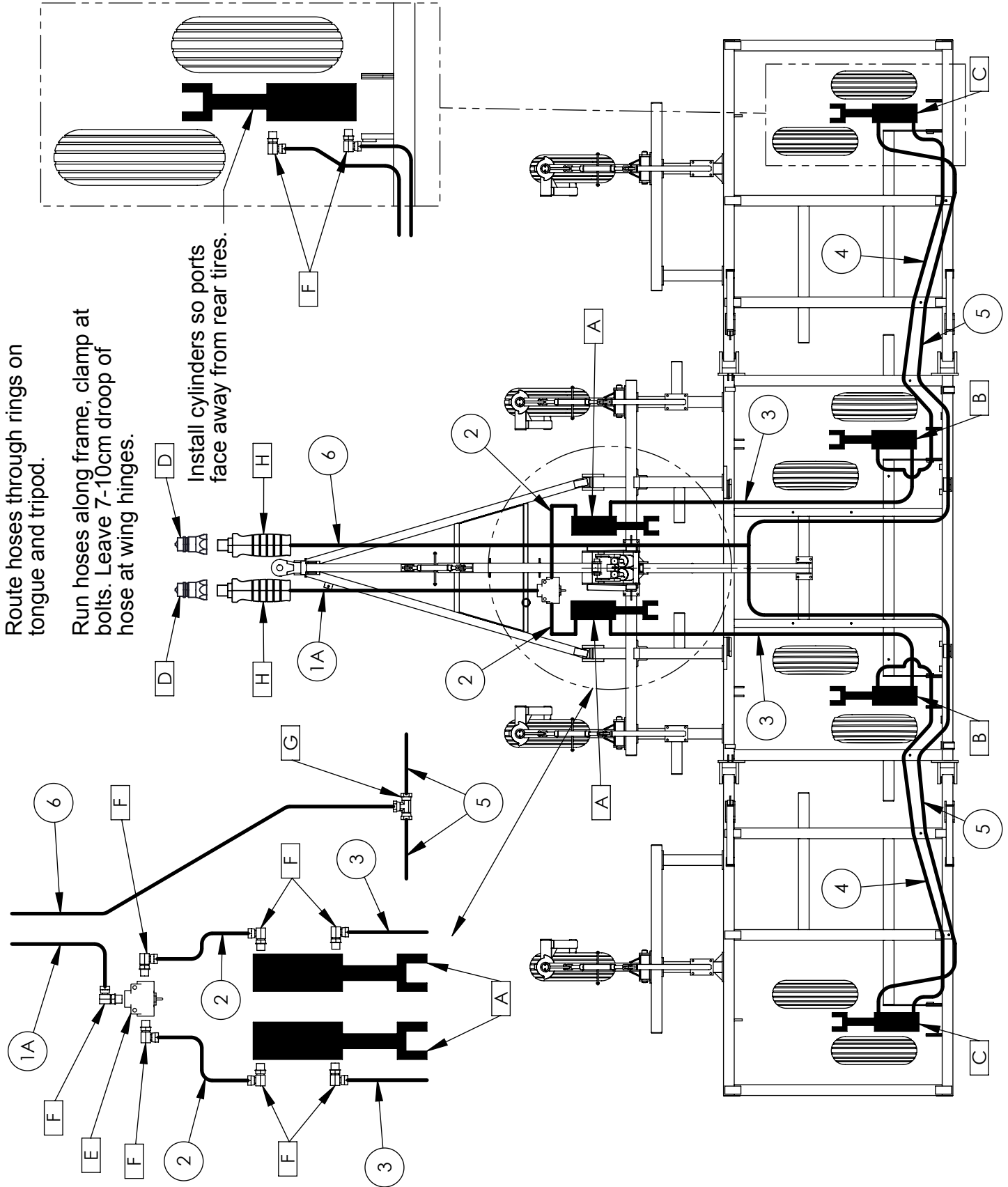
88	SA-8109L	END BUSHING BRACKET ASSEMBLY LEFT
88	SA-8109R	END BUSHING BRACKET ASSEMBLY RIGHT
89	SA-8118/356	356 2ND STAGE ARM TUBE ASSEMBLY
89	SA-8118/466	466 2ND STAGE ARM TUBE ASSEMBLY
90	SA-8182	STABILIZER SPRING ANCHOR RING
91	SA-8183	STABILIZER SPRING LIFT BOLT/BUSHING
92	SA-8184	CABLE CLIP
93	SA-8195	LG ANGLE IRON ASSEMBLY (8 HOLE)
94	SA-8196	LG SPROCKET ASSEMBLY (8 HOLE)
95	SA-8218	3/8 EXTENDED 1/2 LINK 356/466 no hdwe (2 links/pk)
96	SA-8219	3/8" HALF LINK 136-286 no hardware (2 links/pk)
97	SA-8221	STABILIZER ARM PIVOT ASSEMBLY
98	SA-8222	TUBE LOCK LATCH 136 TO 286
99	SA-8223	1" SQUARE TUBE DISC GUARD
100	SA-8224	AUTO-LOCK LATCH
101	SA-8335	SM ANGLE IRON ASSEMBLY (8 HOLE) 286
102	SA-8336	SM SPROCKET ASSEMBLY (8 HOLE) 286
103	SA-8337L	466 MAIN FRAME LEFT
103	SA-8337R	466 MAIN FRAME RIGHT
104	SA-8338L	LARGE SUB-FRAME LEFT
104	SA-8338R	LARGE SUB-FRAME RIGHT
105	SA-8339	MAIN FRAME SHAFT (1-1/4" COLD ROLLED 14" LONG)
106	SA-8340	STABILIZER ARM ASSEMBLY
107	SA-8381	SL-HYD LIFT BRACKET 466
108	SA-8385	TUBE LOCK LATCH 356,466
109	SA-8400	8x1.25x8MM SET SCREW 3/64" ORIFICE
110	SA-8417L	SM STABILIZER TUBE ARM LEFT ASSEMBLY
110	SA-8417R	SM STABILIZER TUBE ARM RIGHT ASSEMBLY
111	SA-8418	SM STABILIZER WEB ARM ASSEMBLY
112	SA-8419L	SM STAB ARM PEDESTAL 286 LEFT
112	SA-8419R	SM STAB ARM PEDESTAL 286 RIGHT
113	SA-8420	SM STABILIZER ARM SPRING/ANCHOR ASSEMBLY
114	SA-8421	SM STABILIZER CENTRE PIN ASSEMBLY
115	SA-8422	STAB/I-BOLT HOLDER
116	SPR-2173	LARGE CB SPRING
117	SPR-2315	SMALL CB SPRING
118	SPR-2395	MEDIUM CB SPRING
119	SPR-2498	X-LARGE CB SPRING
120	WHL-2172	3" NYLON WHEEL
121	HYD-65000606	9/16 MJ - 9/16 FJS 90 DEG SWIVEL
122	HYD-24060606.047	ORIFICE IN 9/16 JIC F-M ADAPTER
123	HYD-2494	9/16#6JICM-1/2#8 NPTM 90 2501-0608

Reference Chart for Springs

Part #		Model 136	Model 246	Model 286	Model 356	Model 466	Overall Length (in)	Wire Dia (in)	Active Coils
SPR-2315	SM	1					13 7/8	.362	27
SPR-2395	MED	1		1			13	.406	23.5
SPR-2173	LG		2	2	3	1	13 1/8	.437	21.5
SPR-2498	X-LG					2	13 1/4	.500	18.5
SPR-2394	Weight Equalizer Spring WEK								

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Axle Lift Hydraulics 30-40ft



Axle Lift Hydraulics 30-40ft

HARDWARE	ITEM	QTY	PART NO.	DESCRIPTION
	A	2	HSR35095	3 1/2" BORE x 9 1/2" STROKE REPHASING HYD. CYLINDER
	B	2	HSR3508	3 1/2" BORE x 8" STROKE REPHASING HYD. CYLINDER
	C	2	HSR3208	3 1/4" BORE x 8" STROKE REPHASING HYD. CYLINDER
	D	2	H80104P	1/2" M NPT PIONEER TIP
	E	1	HPMSC10	STROKE CONTROL VALVE
	F	15	H951586	-08 ORB TO -06 NPT SWIVEL ELBOW
	G	1	H956666	-06 NPT ALL SWIVEL TEE
	H	1	HG-PT22E22R21R	PAIR OF RED EXTEND/RETRACT PLASTI HOSE GRIPS WITH 1/2" NPT MALE/FEMALE FITTING

HOSE	LABEL	QTY	30' LENGTH (cm)	40' LENGTH (cm)	FROM	TO
	1A	1	526	526	TRACTOR	STROKE CONTROL VALVE
	2	2	53	53	STROKE CONTROL VALVE	HSR35095 BASE
	3	2	480	500	HSR35095 ROD	HSR3508 BASE
	4	2	427	544	HSR3508 ROD	HSR3208 BASE
	5	2	747	892	HSR3208 ROD	RETURN TEE
	6	1	632	632	RETURN TEE	TRACTOR

CHARGING THE CIRCUIT

ATTENTION On hard ground, do not retract cylinders all the way while tongue is hitched to tractor. The tractor drawbar can be **bent** upwards.

Connect only the Barrel end of the cylinders until the circuit has been charged.

1. Be sure that all cylinders can extend completely without striking anything. Prop with blocks if necessary.
2. Connect Tractor.
3. Extend cylinders and hold lever for 2-3 minutes. This will purge the air from the circuit. (The lift cylinders have a port that allows oil to pass when completely extended.)
4. The circuit is now free from air. Install Rod end Pins. Connect tongue telescope.

Whenever air could have entered the cylinders, repeat above steps to purge circuit.

Test wing fold and adjust hose droop at wings if necessary.

Identify the lift hose ends with red tie wraps for quick hookup to tractor.

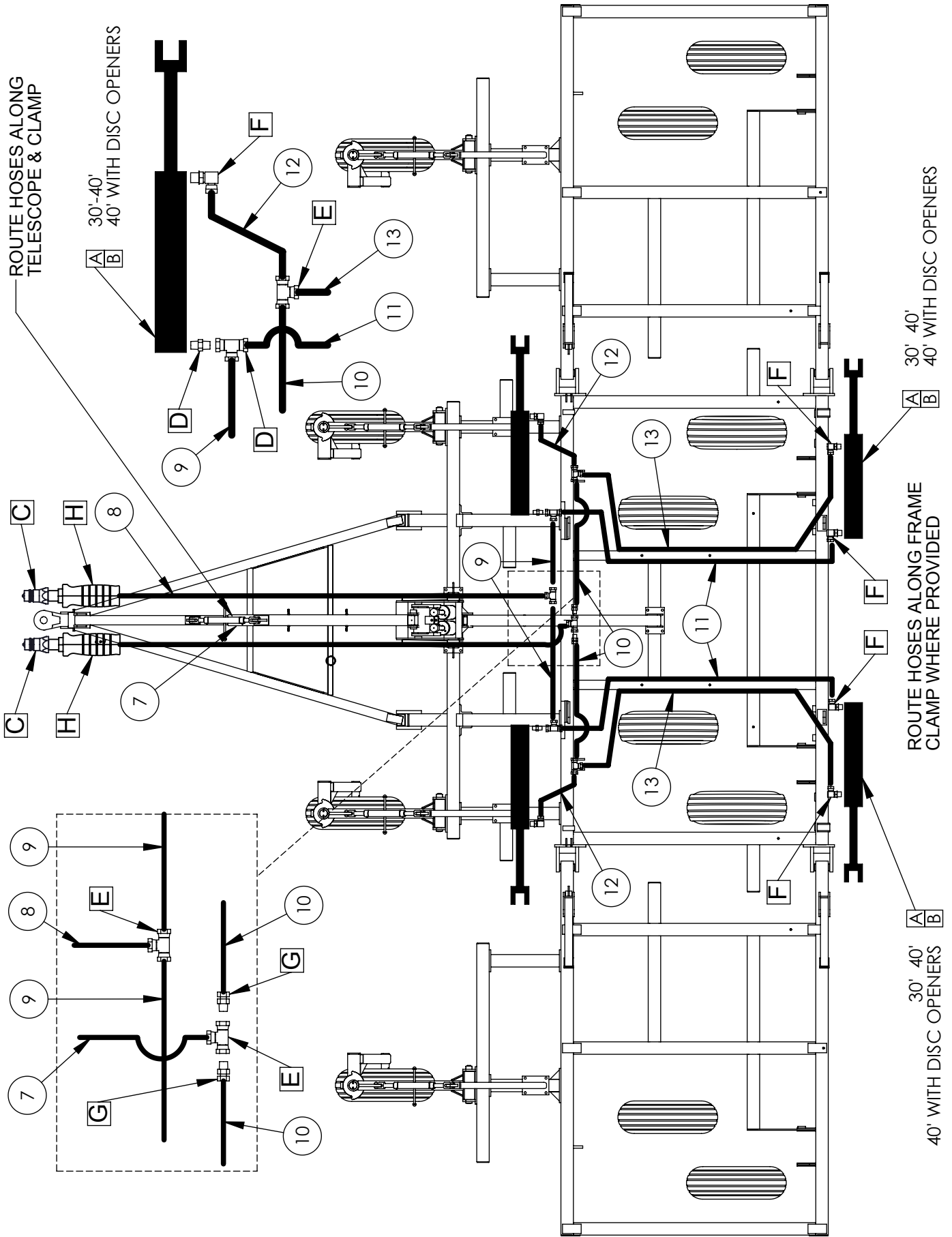


ROUTE HOSES
BEHIND TOWER



LEAVE A 7-10cm DROOP OF
HOSE AT WING HINGES

Wing Lift Hydraulics 30-40ft



ROUTE HOSES ALONG TELESCOPE & CLAMP

A 30'-40'
B 40' WITH DISC OPENERS

A 30' 40'
B 40' WITH DISC OPENERS

ROUTE HOSES ALONG FRAME CLAMP WHERE PROVIDED

A 30' 40'
B 40' WITH DISC OPENERS

Wing Lift Hydraulics 30-40ft

HARDWARE	ITEM	QTY	PART NO.	DESCRIPTION
	A	4	HS3524	3 1/2 BORE x 24" STROKE HYD. CYLINDER
	B	4	HS4036	4 BORE x 36" STROKE HYD. CYLINDER
	C	2	H80104P	1/2" NPT PIONEER COUPLER
	D	2	H915066	NIPPLE -06ORB TO -06M NPT
	E	6	H956666	TEE -06F NPT ALL SWIVEL
	F	6	H951586	ELBOW -08 ORB TO -06F SWIVEL NPT
	G	2	H1404668	0.08 RESTRICTOR -06M NPT TO -06F SWIVEL
	H	1	HG-PT24E24R21R	PAIR OF GREEN/GREEN GREY HOSE GRIPS

HOSE	LABEL	QTY.	30' LENGTH (cm)	40' LENGTH (cm)	FROM	TO
	7	1	632	632	TRACTOR	TEE
	8	1	632	632	TRACTOR	TEE
	9	2	107	114	TEE	FRONT BARREL TEE
	10	2	76	114	TEE	FRONT ROD TEE
	11	2	259	237	FRONT BARREL TEE	REAR BARREL
	12	2	107	114	FRONT ROD TEE	FRONT ROD
	13	2	305	298	FRONT ROD TEE	REAR ROD

CHARGING FOLD CYLINDERS

Do not connect the cylinder rod until system has been charged with oil.

1. Prop up the cylinder with a block of wood (fig 1). Check to see that the rod will extend completely without striking anything.
2. Connect tractor (note: check to see that all cylinders extend and retract in sync. If one goes backwards, check the plumbing.)
3. Extend cylinders completely, hold lever for 30 sec. as air exits cylinder.
4. Retract cylinder completely, hold lever for 30 sec. as air exits.
5. Repeat steps 3&4 three times.
6. Install cylinder pins. Be sure washers are installed correctly (see fold cylinder parts page).

Air in the wing cylinder will cause wings to fall to the ground!!!

Whenever air could have entered the cylinders, repeat the process above to purge circuit.

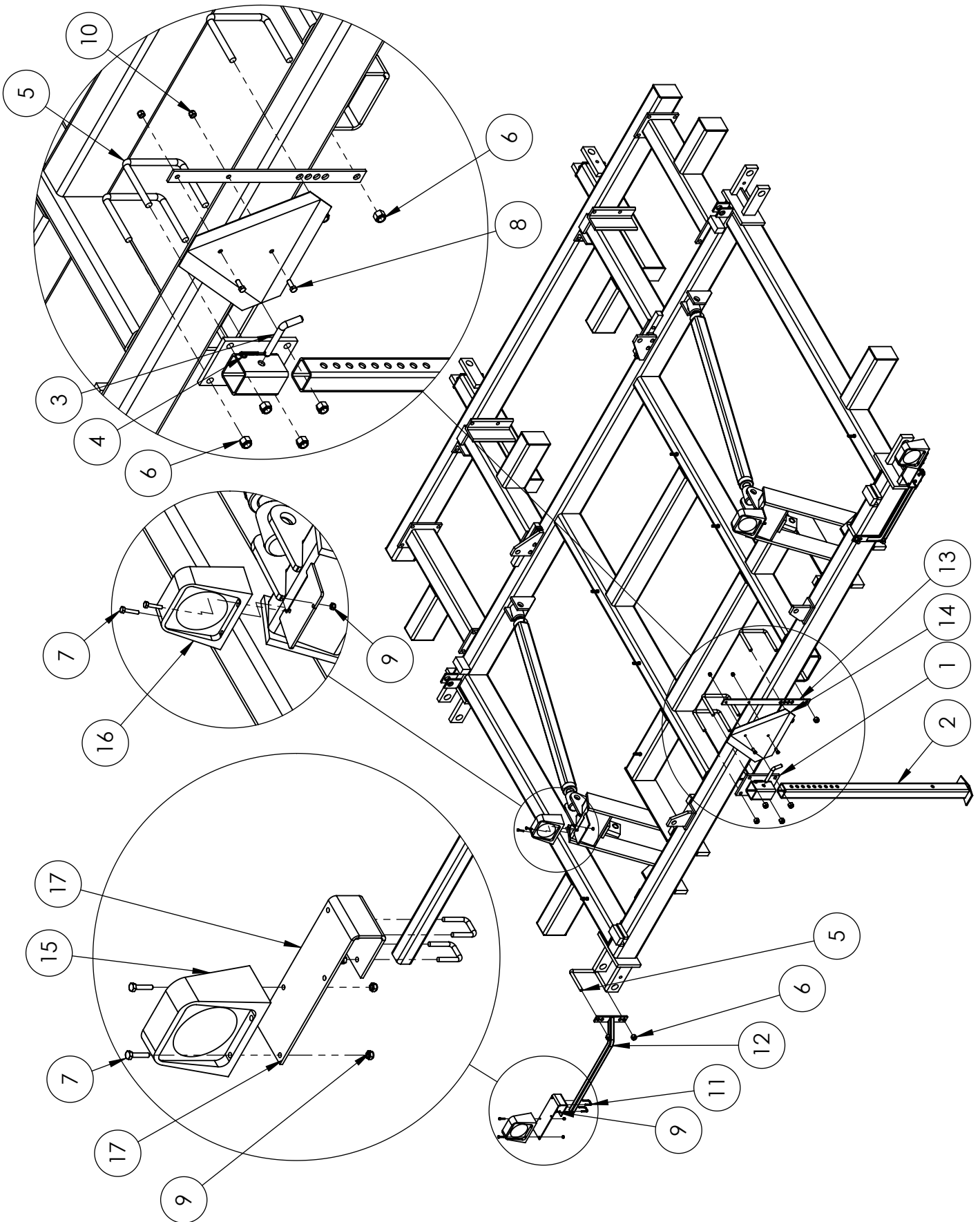
ALWAYS UNFOLD WINGS before working on hydraulics!!! Never work on a lift system with the wings folded

Identify the fold hose ends with green grips for quick hookup to tractor.



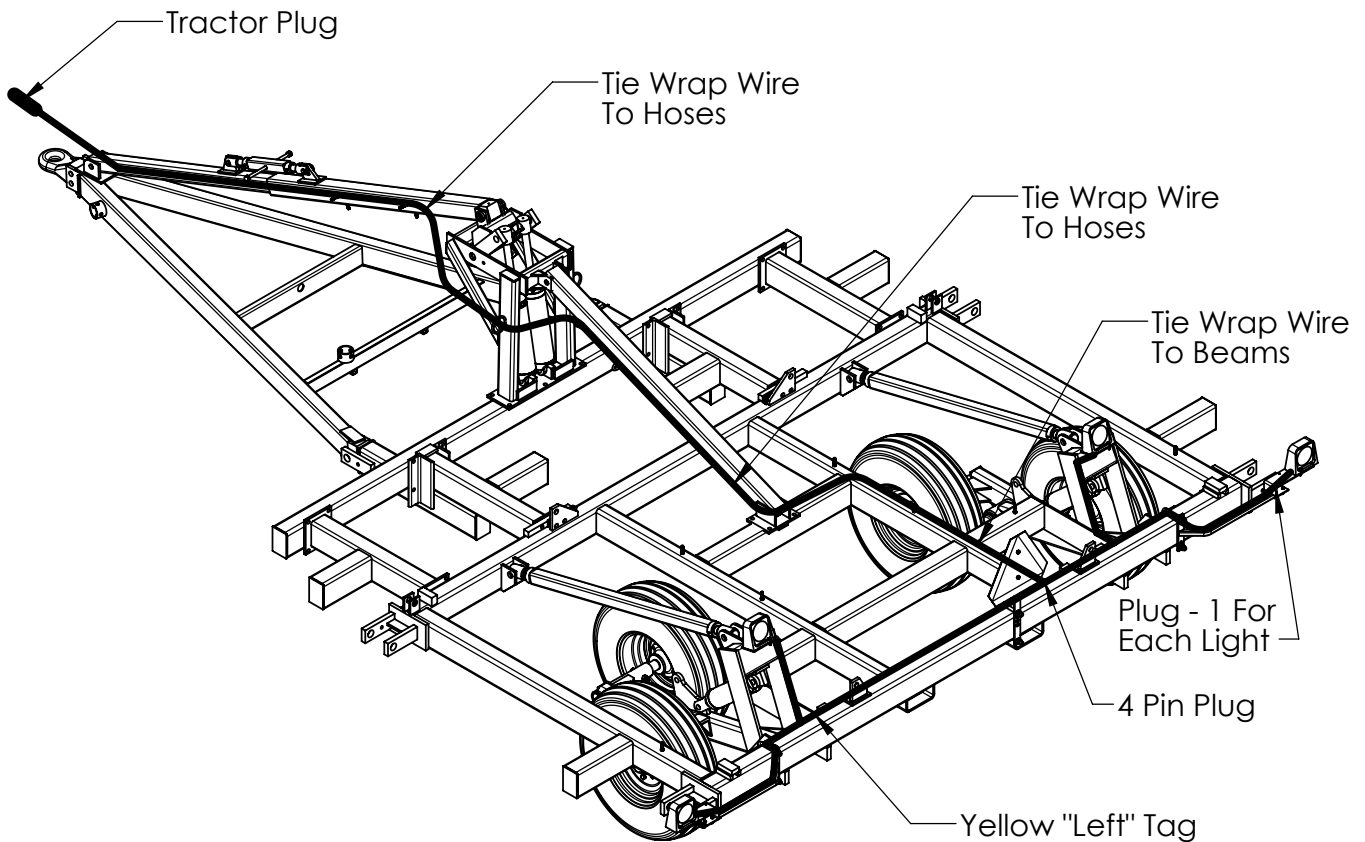
Fig 1. When charging the circuit, prop up cylinder with block of wood. Be sure the rod can extend freely without striking anything.

Lights & SMV Install 30-40ft

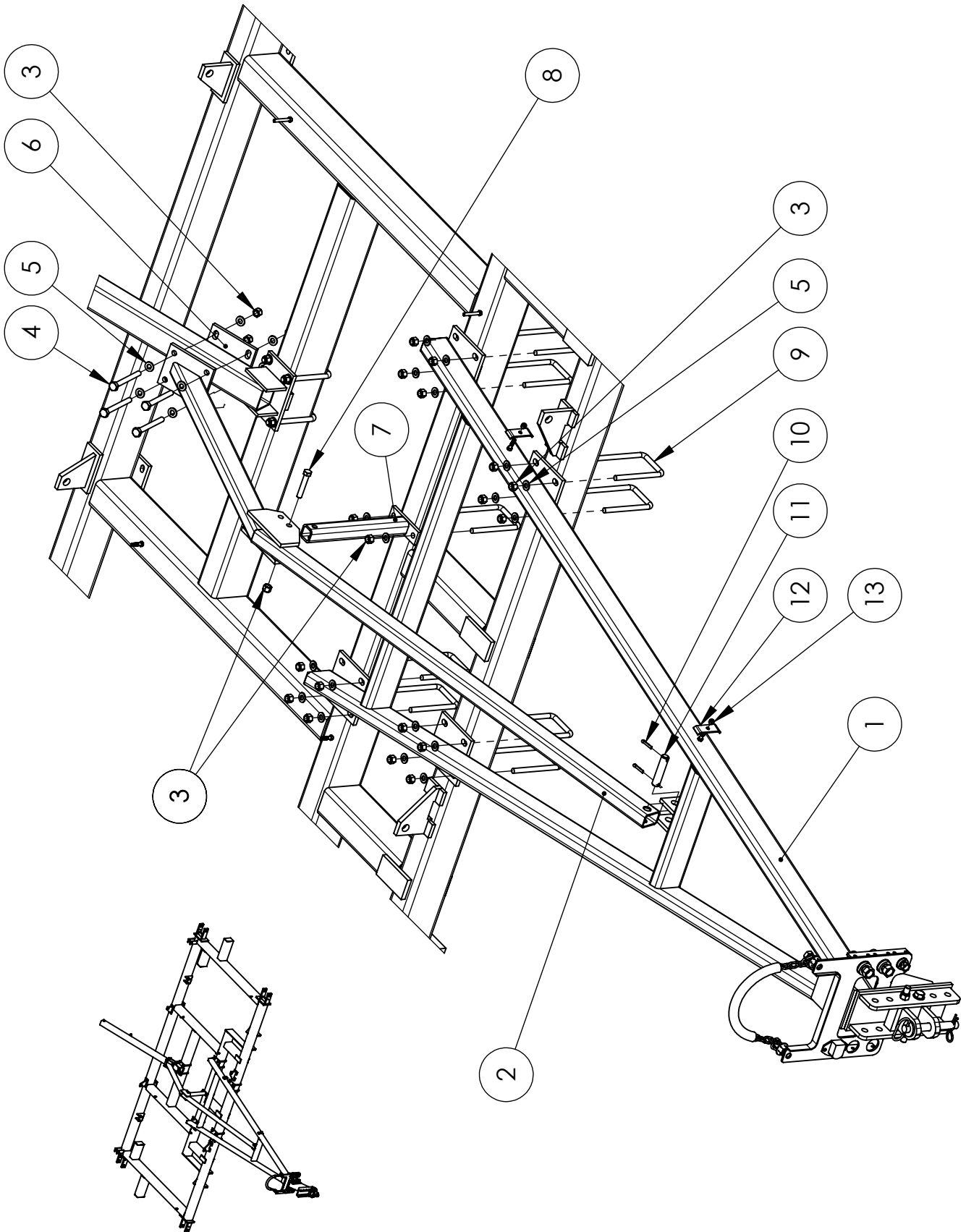


Lights & SMV Install 30-40ft

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	C5507	REAR PARKING STAND MOUNT FOR 6" BEAM
2	1	C5508	550 PARKING STAND
3	1	GP10004L03	L-PIN 5/8" DIA. x 4" LG.
4	1	GHP11	#11 HAIR PIN
5	5	BU1061	U-BOLT 5/8" x 6" x 5 1/2"
6	10	BN10L	5/8" NYLOCK NUT NC
7	8	B0412	1/4" NC x 1 1/2" HEX BOLT
8	2	B0610	3/8" X 1" LG. GRADE 5
9	16	BN04L	1/4" LOCK NUT
10	2	BN06L	3/8"-16NC LOCK NUT
11	4	BU0410	1/4 x 1 1/2" U-BOLT
12	2	A60054	LIGHT BRACKET (LONG)
13	1	C1011	SMV MOUNTING BRACKET
14	1	GAP103NS	SMV SIGN
15	2	GL767762-AA	ORANGE LIGHT
16	2	GL767762-R	RED LIGHT
17	2	L00425	OUTSIDE LIGHT MOUNTING PLATE



Tow Hitch Installation

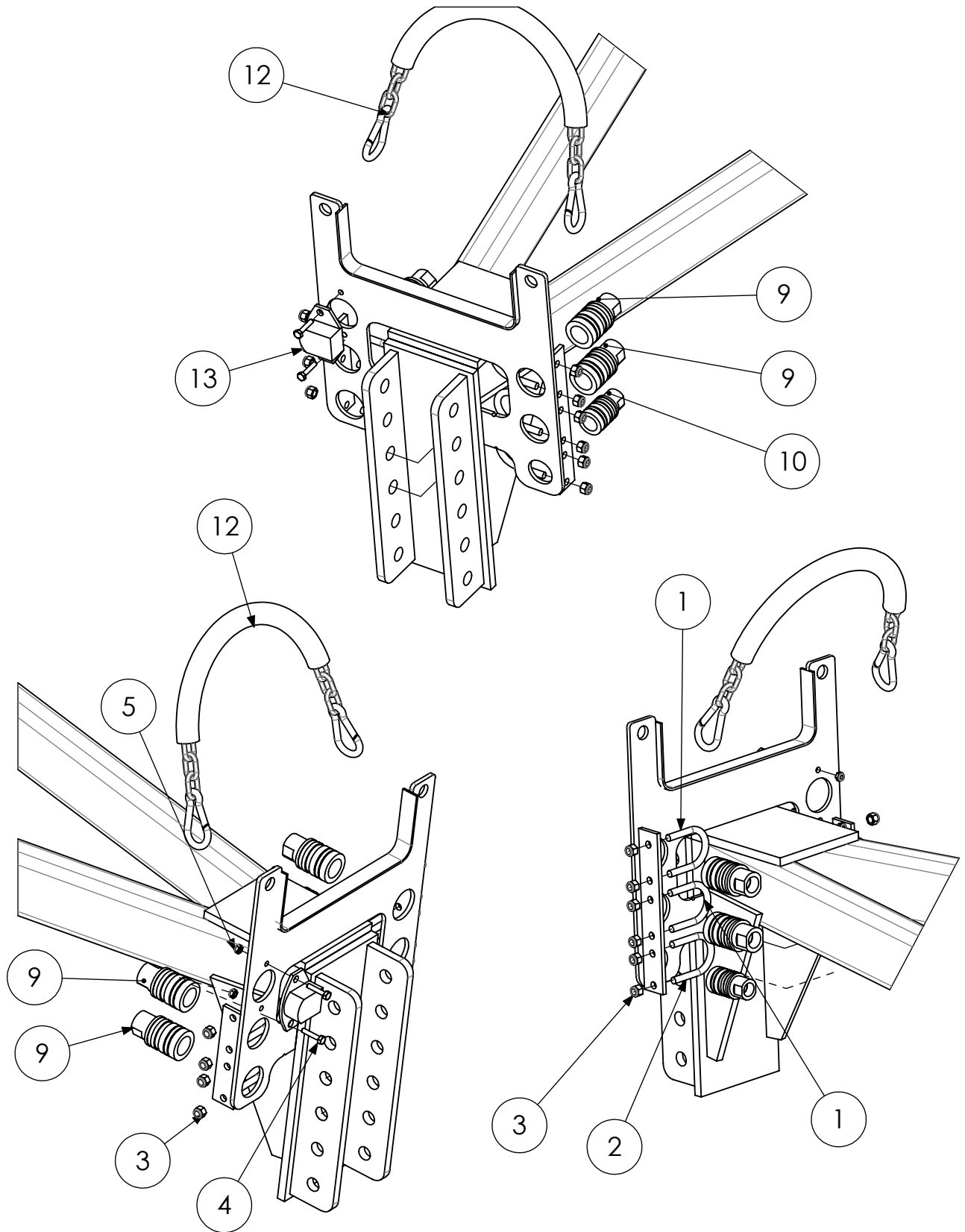


Tow Hitch Installation

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	T00595	2008.5 AIR SEEDER TOW HITCH
2	1	T00433	AIR SEEDER TOW HITCH BRACE
3	23	BN10L	5/8" NYLOCK NUT NC
4	4	B1060	5/8 x 6" HEX BOLT GR 5
5	26	BF10HS	5/8" HARD STRUCTURAL FLAT WASHER
6	1	L00067	1/2" x 6" x 7" PULL UP PLATE
7	1	T00439	TOW HITCH BRACE UPRIGHT
8	1	B1040	5/8" x 3 1/2" UNC HEX BOLT
9	9	BU1046	U-BOLT 5/8" x 4" x 7 1/2" LG.
10	2	BSC0515	5/16" x 1 1/2" COTTER PIN
11	1	GP1600412A05	1" DIA. x 4 1/2" LG, 2 HOLE PIN
12	2	P0160B	HOSE CLAMP 4"
13	2	BN06L	3/8"-16NC LOCK NUT

1. Install tow hitch frame (1) on rear of main frame. Attach with 5/8" x 4" x 7 1/2" u-bolt (9), 5/8" structural washer (4), and 5/8" lock nut (2). Centre tow hitch on frame before tightening bolts.
2. Attach tow hitch brace (2) to tow hitch with 1" x 4 1/2" pin (11) and 5/16" x 1 1/2" cotter pins (10). Attach brace upright (7) to frame with 5/8" x 4" x 7 1/2" u-bolt (9) and 5/8" lock nuts (3) and to brace with 5/8" x 4" hex bolt (8) and 5/8" lock nut (3). Attach brace to tripod brace with 5/8" x 6" hex bolts (4), 5/8" washers (5), pull-up plate (6), 5/8" washers (5), and 5/8" lock nuts (3).
3. Loosely install 4" hose clamp (12) and 3/8" lock nuts (13) onto side of tow hitch. Do not tighten until hoses are added later during assembly.

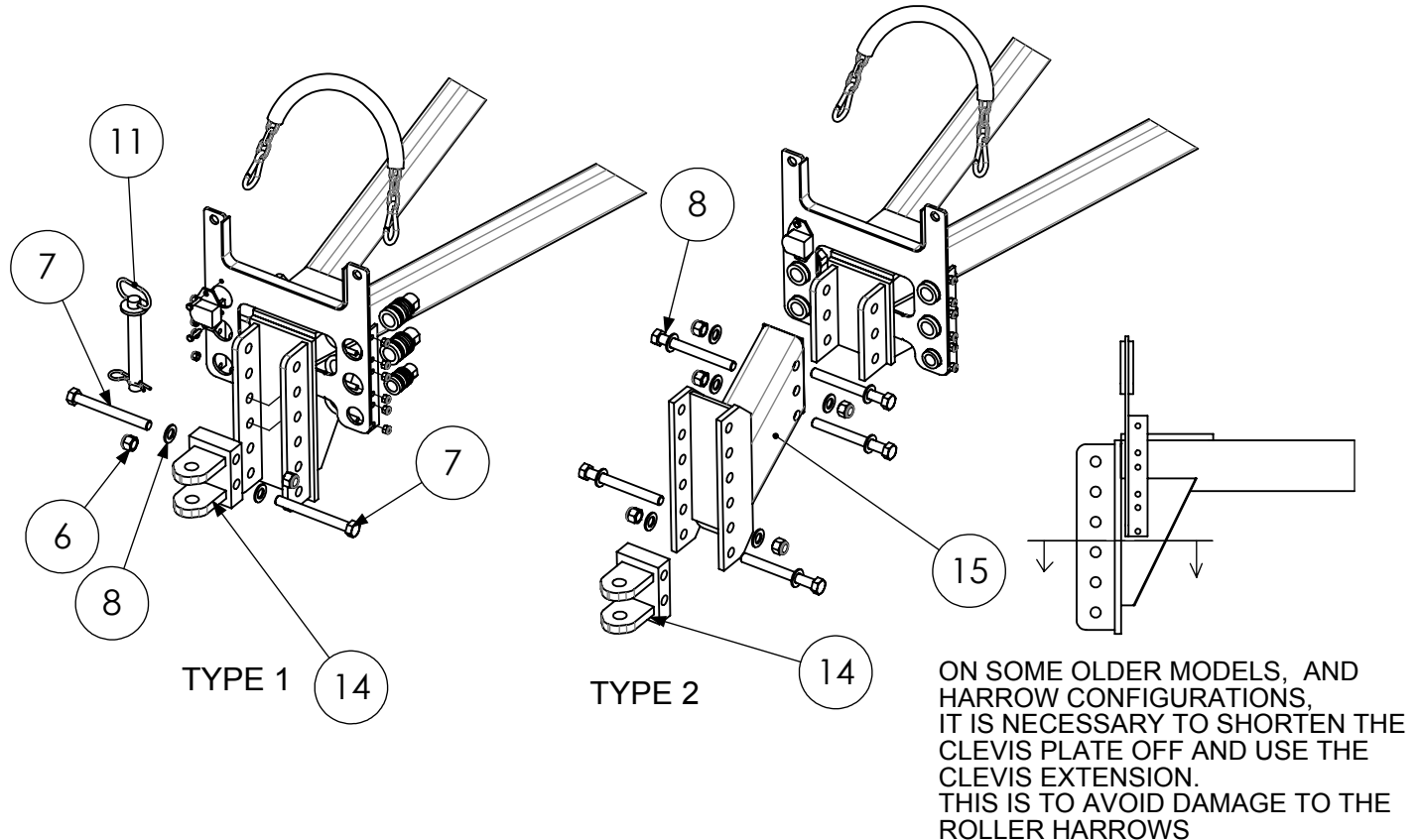
Tow Hitch Installation



Tow Hitch Installation

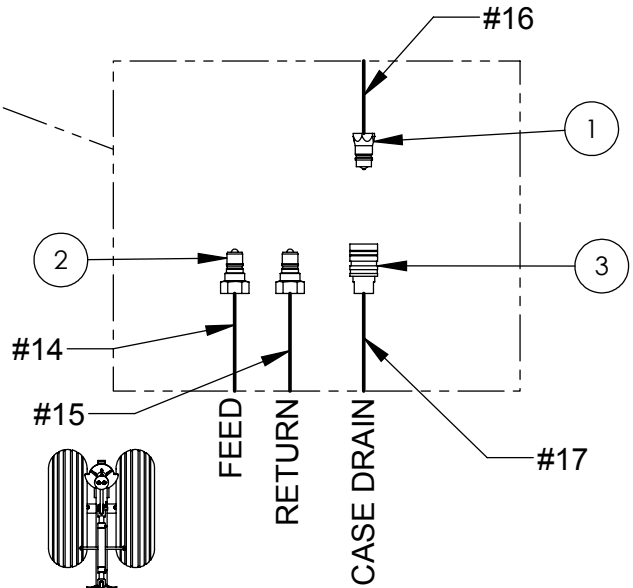
ITEM NO.	QTY	PART NUMBER	DESCRIPTION	
1	4	BUR0620258	U-BOLT ROUND 3/8" x 2" x 2 5/8"	
2	1	BUR061727	U-BOLT ROUND 3/8" x 1 3/4" x 2 3/4"	
3	10	BN06L	3/8"-16NC LOCK NUT	
4	2	B0412	1/4" NC x 1 1/2" HEX BOLT	
5	2	BN04L	1/4" LOCK NUT	
6	5	BN12L	3/4" NC NYLOCK NUT	
7	5	B1270	3/4 x 7" BOLT	
8	10	BF12HS	3/4" HARD STRUCTURAL WASHER	
2 PCS STANDARD 4 PCS FOR DOUBLE-SHOOT	9	4	H6601	3/4" NPT PIONEER FEMALE COUPLER
	10	1	H42504P	-08 NPT PIONEER FEMALE COUPLER
	11	1	GP1600614C03	1" x 6 1/4" ORANGE HITCH PIN
	12	1	T00664	AIR HOSE CHAIN WITH CLIPS
	13	1	A60088	PETERSON ELECTRIC CONNECTOR
	14	2	T00498	TOW HITCH CLEVIS
USE WITH TYPE 2 ONLY	15	1	T00622	CLEVIS EXTENSION ADAPTER

NOTE:
USE FITTING BRACKETS TO RETAIN COUPLERS AS WELL AS U-BOLTS.

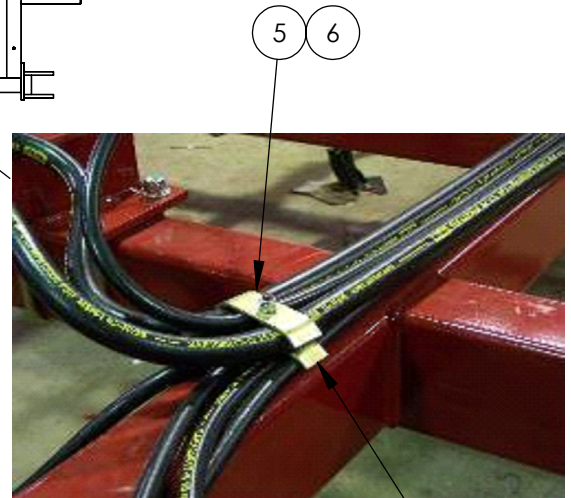
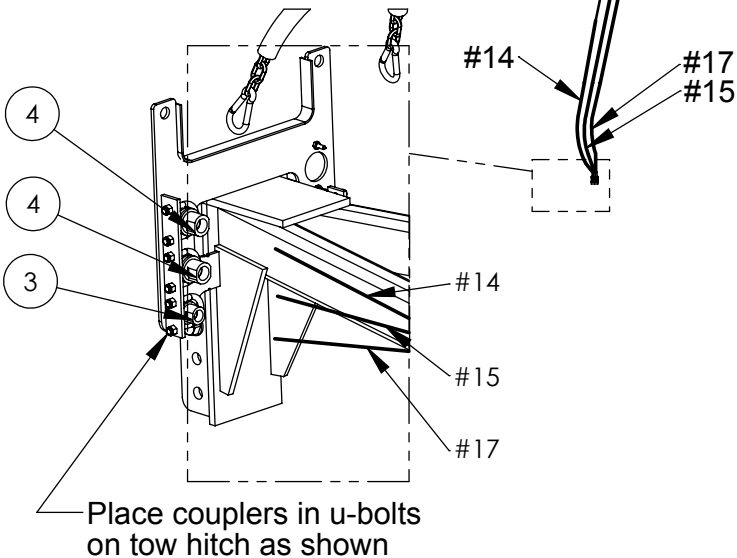


Tow Hitch Installation

Route hoses through rings and clamps on telescope, tripod, and tripod brace



Note reversal of male and female fittings on case drain hose



Double stack hoses and clamps along frame rail - wing and axle lift hoses on bottom, tow hitch hoses on top

Tow Hitch Installation

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	H80104P	1/2" NPT MALE PIONEER COUPLER
2	2	H8010-5	3/4" NPT PIONEER MALE TIP TO FIT 1/2"
3	2	H42504P	1/2" NPT PIONEER FEMALE COUPLER
4	2	H6601	3/4" NPT PIONEER FEMALE COUPLER
5	4	PO160B	HOSE CLAMP 4"
6	4	BN06L	3/8"NC LOCK NUT

HOSE #	QTY.	LENGTH (m)	FROM	TO
14	1	13.5	TRACTOR	TOW HITCH (FAN FEED)
15	1	13.5	TOW HITCH (FAN RETURN)	TRACTOR
16	1	0.9	MALE COUPLER	TRACTOR HYD. TANK (CASE DRAIN)
17	1	13.5	TOW HITCH (FAN CASE DRAIN)	FEMALE COUPLER

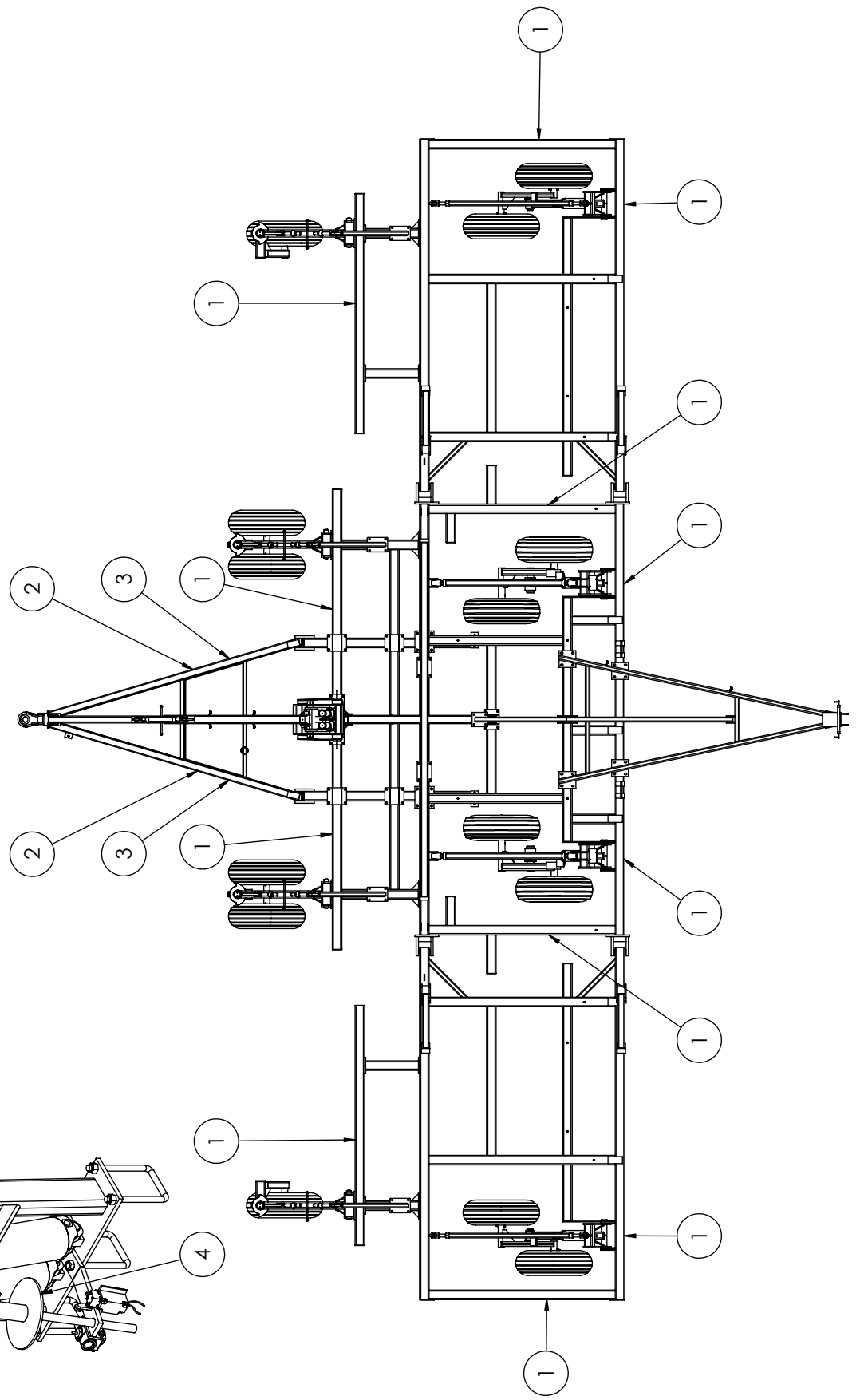
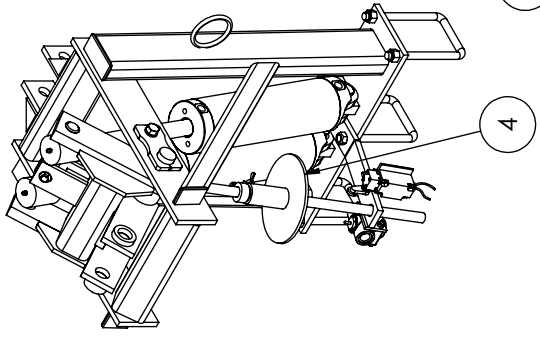
Route tow hitch hoses as shown through rings and clamps on hose holder, telescope, tripod, tripod brace, main frame, and tow hitch. Hoses will be double stacked on the main frame, with the wing and axle lift hoses on the bottom and the tow hitch hoses on the top. Retain each layer of hoses with 4" hose clamps and 3/8" locknuts.

Hose #16 is installed on the tractor. This hose must be connected to the case drain line or hydraulic tank on the tractor. **Do not run air seeder fan with this hose disconnected or the fan motor will be damaged.** Additional fittings may be required to connect this hose to the tractor.

Note the reversal of male and female fittings on the case drain hose to ensure the case drain is properly connected.

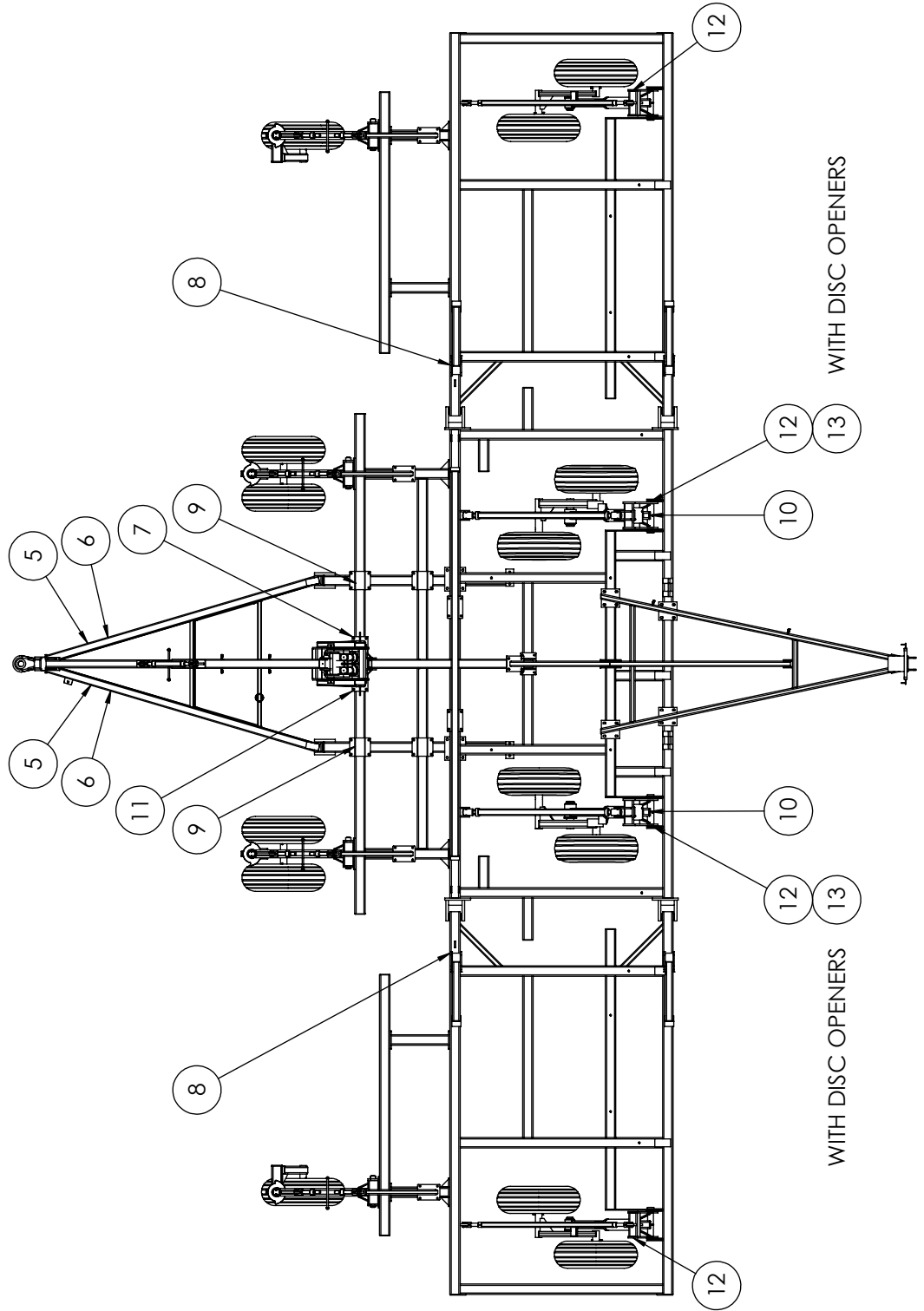
Decal Layout 30-40ft

ITEM NO	QTY	PART NO	DESCRIPTION
1	12	GD100	SALFORD DECAL LARGE w/BLACK BORDER (4" HIGH X 16" LONG)
2	2	GD102	WWW.SALFORD.DECAL
3	2	GD1821	MODEL 580 DECAL
4	1	GD109	DEPTH CONTROL DECAL



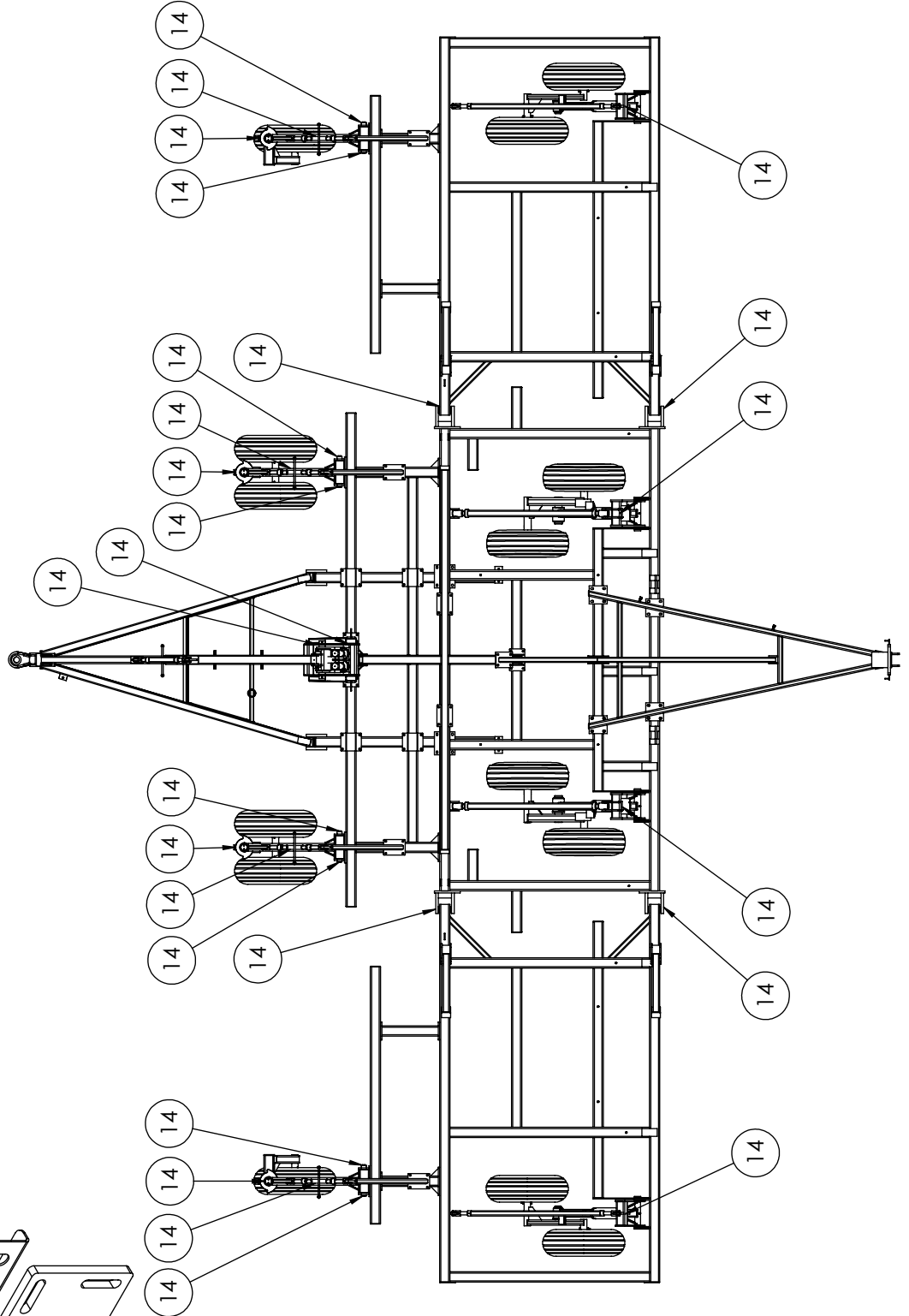
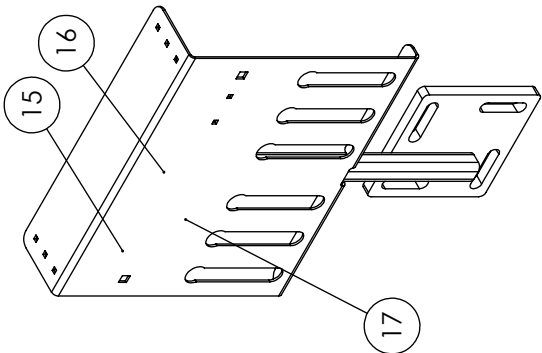
Decal Layout 30-40ft

ITEM NO	QTY	PART NO	DESCRIPTION
5	2	GDSW2	USE PROPER TOOLS AND READ MANUAL DECAL
6	2	GDT3	DANGER STICKER FOR CRUSHING HAZARD "HITCHING IMPLEMENT TO TRACTOR POINT"
7	1	GD112	ATTENTION LUBRICATE DECAL
8	2	GD144	WING LOCK DECAL -570
9	2	GDSW200	WARNING STICKER, OVERHEAD CRUSHING HAZARD "SHOWS WING FALLING ON PERSON"
10	2	GD111	DANGER-STAND CLEAR DECAL
11	1	GD110	WARNING DON'T LIFT DECAL
12	4	GD193	CAUTION - 11L X 15 TIRE DECAL
13	2	GD194	CAUTION - 12L X 15 TIRE DECAL



Decal Layout 30-40ft

ITEM NO	QTY	PART NO	DESCRIPTION
14	2	GD10840	GREASE EVERY 40 HOURS DECAL
15	1	GDSW4	SAFE OPERATION DECAL
16	1	GDSW700	WARNING STICKER, ALTERNATE HIGH PRESSURE FLUID HAZARD STICKER
17	1	GD210	HOSE IDENTIFICATION DECAL



Decal Legend 30-40ft



GD100 (1)



GD102 (2)



GD1821 (3)



GD109 (4)



GDSW2 (5)



GDT3 (6)



GD112 (7)



GD144 (8)



GDSW200 (9)



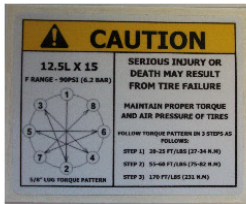
GD111 (10)



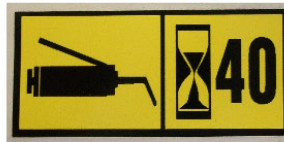
GD110 (11)



GD193 (12)



GD194 (13)



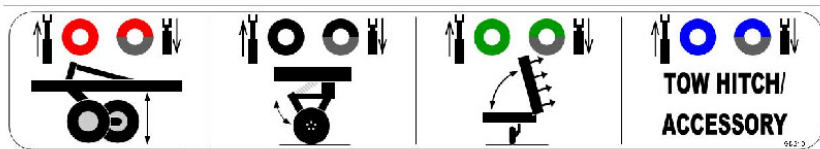
GD10840 (14)



GDSW4 (15)



GDSW700 (16)



GD210 (17)



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