

Instruction Manual



Assembly Introduction Step 0

Thank you for choosing to purchase this Helios Design Front End Loader! There is a step by step video tutorial available on YouTube that also steps through the assembly of this loader. If you have problems or questions that aren't answered in this assembly manual, please don't hesitate to contact Helios Design Company for support.

Installation Notes:

- 1) Don't worry, you can't mess it up! If you assemble something incorrectly, simply remove the nuts/bolts and change it.
- 2) Carriage bolt heads (square) will always be installed in square holes.
- 3) The majority of the bolts in the assembly are 3/8-16 Carriage bolts and there are only (3) different lengths. 1.0", 3.5" and 4.5".
- 4) Remove the mower deck for installation to gain better access to the underside of the tractor.

Tools Needed:

- 7/16" wrench and/or socket (for 1/4" bolts)
- 9/16" wrench and/or socket (for 3/8" bolts)
- 11/16" wrench and/or socket (for 7/16" bolts)
- 3/4" wrench and/or socket (for 1/2" bolts)
- 1-1/8" wrench and/or socket (3/4" nuts)
- (2) 6" clamps
- 5/16" Allen wrench
- 5/32" Allen wrench (1/4" Flat head screws in bucket)

Instruction Manual

Left Hand Frame Assembly Step 1

LEFT HAND FRAME ASSEMBLY			
ITEM #	QTY	PART NUMBER	DESCRIPTION
1	2	F15300	FRAME PLATE
2	4	F15302	BUMPER ANGLE BRACKET
3	2	F15303	SQUARE HOLE BUSHING
4	2	F15301	ROUND HOLE BUSHING
5	2	F15304	BOLT HEAD SPACER
6	1	F15341	HOSE CLAMP
7	2	F15344	Ø3/4 OD X 2.75 SPACER TUBE
8	5	F15345	Ø3/4 OD X 3.25 SPACER TUBE
9	1	F15350	HELIOS DESIGN CO LOGO
10	20	P15202	3/8-16 X 1.00 CARRIAGE BOLT
11	7	P15203	3/8-16 x 4.50 CARRIAGE BOLT
12	27	P15207	3/8-16 FLANGE LOCKNUT

1) The Left and Right hand Frame assemblies are nearly identical except the bolts are installed in opposite directions and the hose clamps are in different locations.

2) Set Frame Plates (item #1) vertically and install:

- A. 3/8-16 x 4.50" Carriage Bolts (item #9)
- B. Ø3/4 OD x 3.25 Spacer Tubes (item # 7)
- C. 3/8-16 Flange Locknuts (item # 10)
- D. Bolt Head Spacers (item # 4)
- E. Hose Clamps (item # 5)

3) Do not fully tighten any bolts / nuts in this assembly at this time. After the sub-assemblies are installed on the tractor and the pivot pins are aligned, you'll tighten all of bolts / nuts.

4) After the majority of the Frame Assembly has been constructed, install:

- A. Bumper Angle Brackets (item # 2)
- B. 3/8-16 x 1.00 Carriage Bolts (item # 8)
- C. 3/8-16 Flange Locknuts (item # 10)

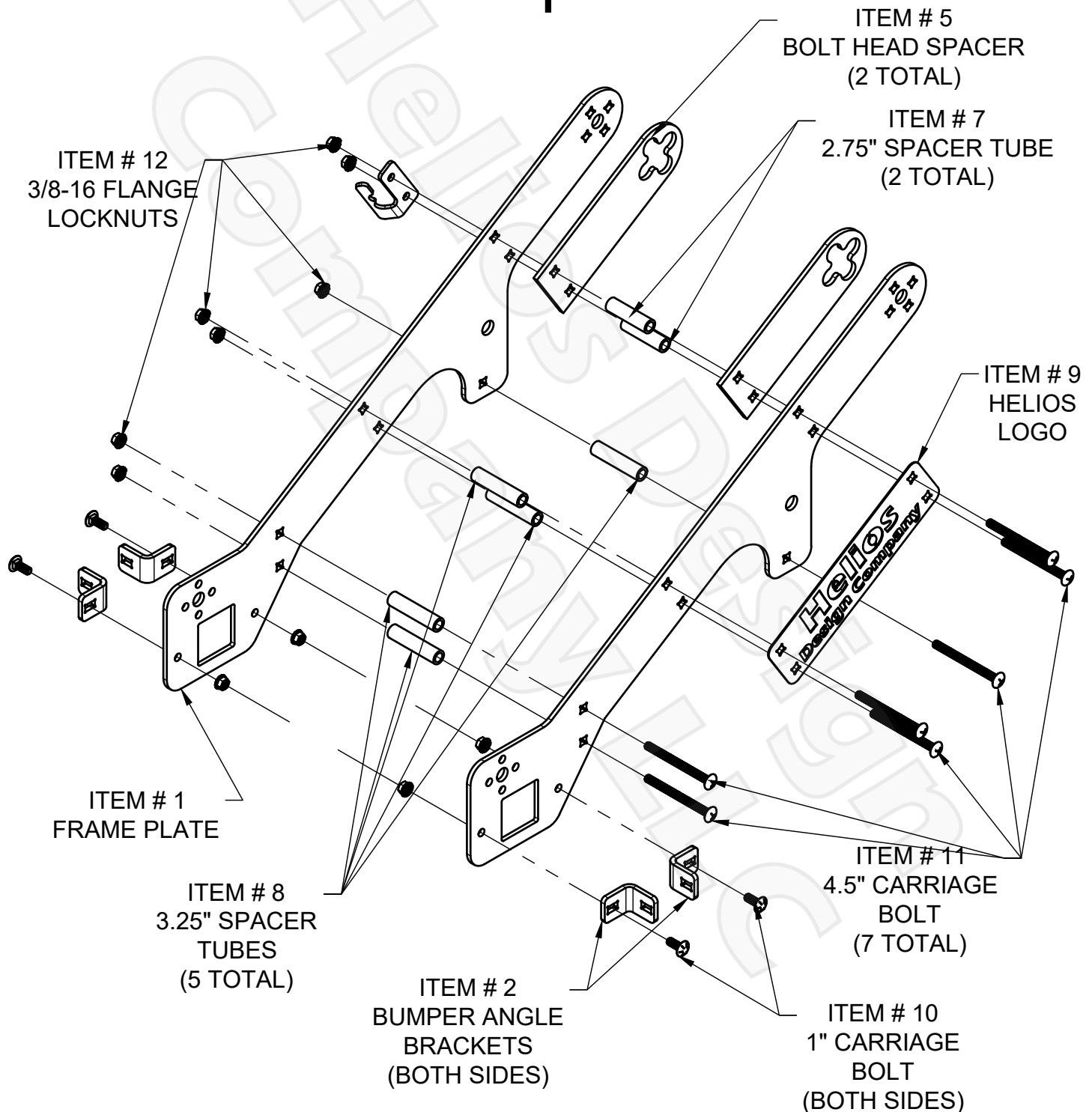
5) Install Pivot Bushings:

- A. Round Hole Bushings (item # 11)
- B Square Hole Bushings (item # 3)
- C. 3/8-16 x 1.00 Carriage Bolts (item # 8)
- D. 3/8-16 Flange Locknuts (item # 10)

Instruction Manual

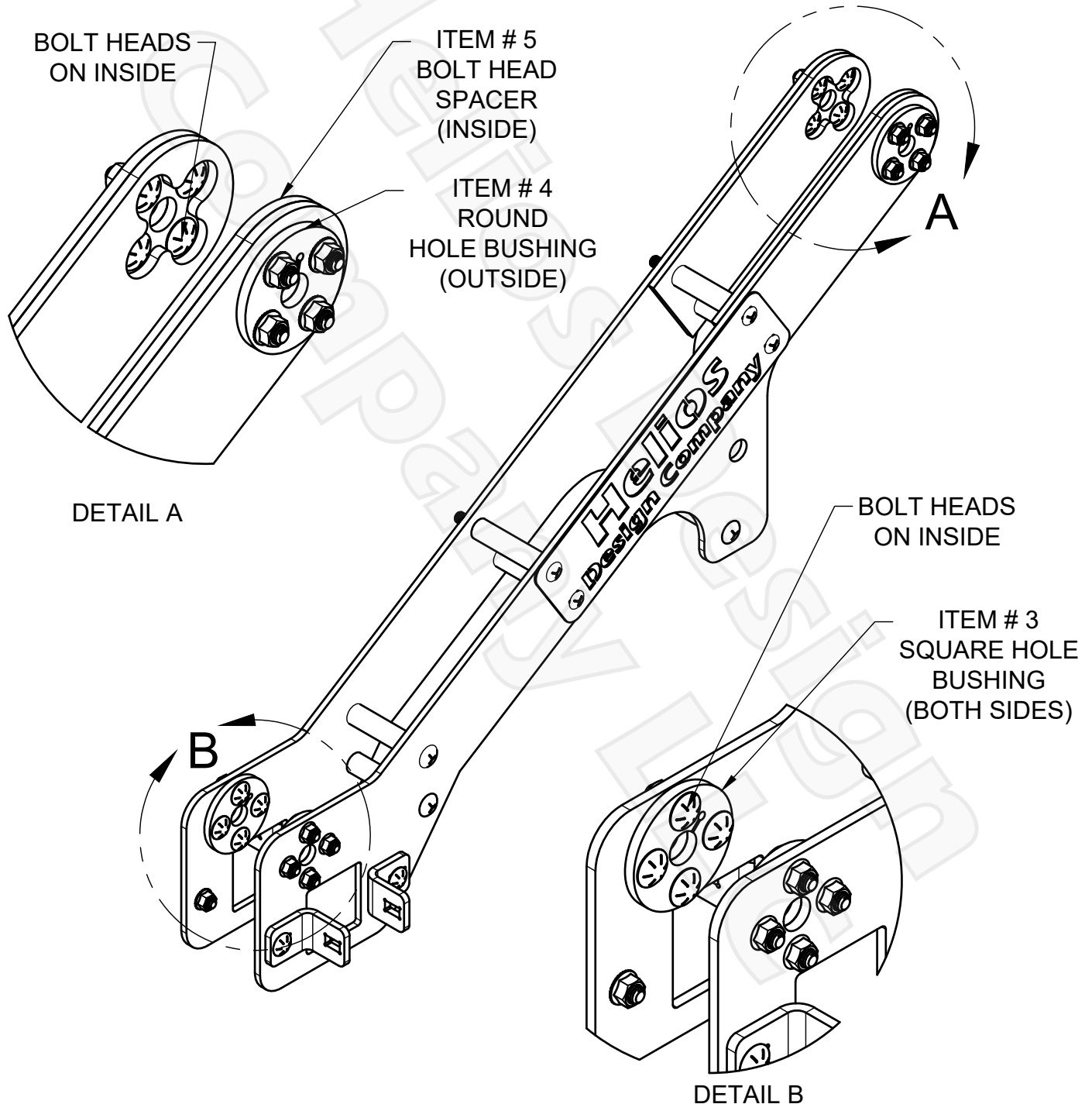
Left Hand Frame Assembly

Step 1



Instruction Manual

Left Hand Frame Assembly Step 1



Instruction Manual

Right Hand Frame Assembly Step 2

LEFT HAND FRAME ASSEMBLY			
ITEM #	QTY	PART NUMBER	DESCRIPTION
1	2	F15300	FRAME PLATE
2	4	F15302	BUMPER ANGLE BRACKET
3	2	F15303	SQUARE HOLE BUSHING
4	2	F15320	ROUND HOLE BUSHING
5	2	F15304	BOLT HEAD SPACER
6	1	F15341	HOSE CLAMP
7	2	F15344	Ø3/4 OD X 2.75 SPACER TUBE
8	5	F15345	Ø3/4 OD X 3.25 SPACER TUBE
9	1	F15350	HELIOS DESIGN CO LOGO
10	20	P15202	3/8-16 X 1.00 CARRIAGE BOLT
11	7	P15203	3/8-16 x 4.50 CARRIAGE BOLT
12	27	P15207	3/8-16 FLANGE LOCKNUT

1) The Left and Right hand Frame assemblies are nearly identical except the bolts are installed in opposite directions and the hose clamps are in different locations.

2) Set Frame Plates (item #1) vertically and install:

- A. 3/8-16 x 4.50" Carriage Bolts (item #9)
- B. Ø3/4 OD x 3.25 Spacer Tubes (item # 7)
- C. 3/8-16 Flange Locknuts (item # 10)
- D. Bolt Head Spacers (item # 4)
- E. Hose Clamps (item # 5)

3) Do not fully tighten any bolts / nuts in this assembly at this time. After the sub-assemblies are installed on the tractor and the pivot pins are aligned, you'll tighten all of bolts / nuts.

4) After the majority of the Frame Assembly has been constructed, install:

- A. Bumper Angle Brackets (item # 2)
- B. 3/8-16 x 1.00 Carriage Bolts (item # 8)
- C. 3/8-16 Flange Locknuts (item # 10)

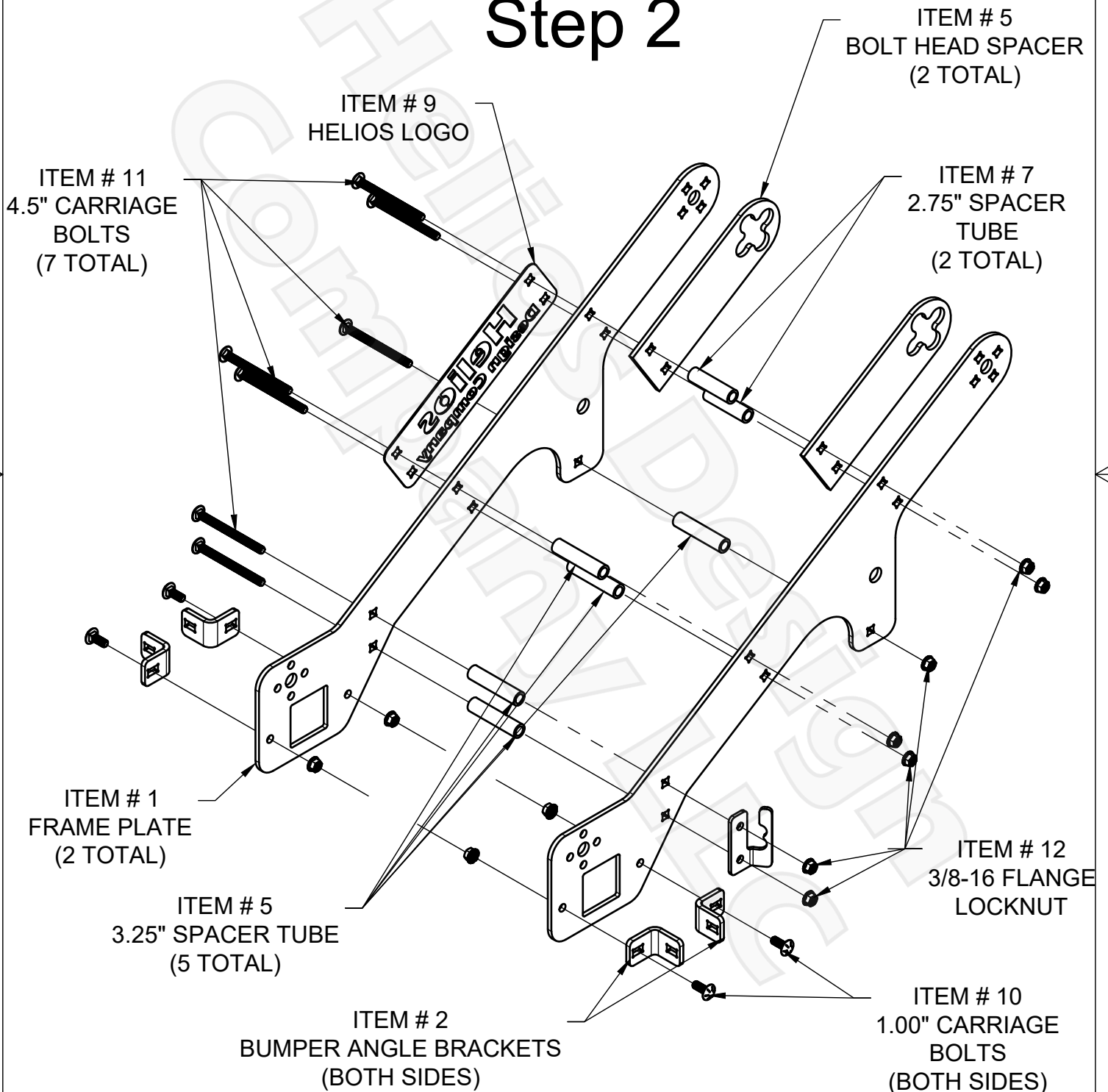
5) Install Pivot Bushings:

- A. Round Hole Bushings (item # 11)
- B Square Hole Bushings (item # 3)
- C. 3/8-16 x 1.00 Carriage Bolts (item # 8)
- D. 3/8-16 Flange Locknuts (item # 10)

Instruction Manual

Right Hand Frame Assembly

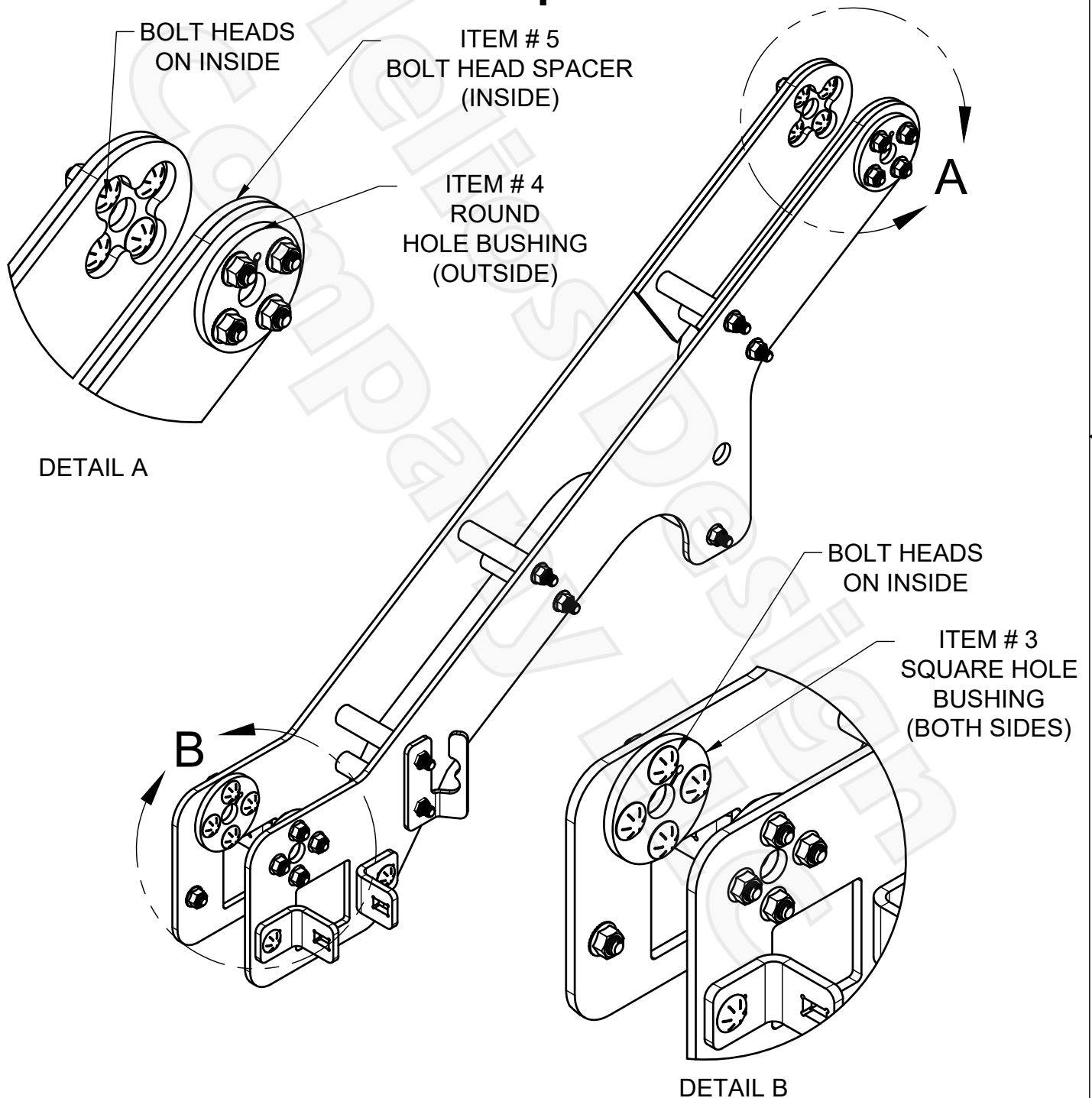
Step 2



Instruction Manual

Right Hand Frame Assembly

Step 2



PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE
SOLE PROPERTY OF HELIOS DESIGN COMPANY LLC. ANY
REPRODUCTION IN PART OR WHOLE WITHOUT
PERMISSION IS PROHIBITED.

Helios Design Company

SHEET 3/3
REV

Instruction Manual



Left Hand Arm Assembly Step 3

RIGHT HAND FRAME SUB ASSEMBLY			
ITEM #	QTY	PART NUMBER	DESCRIPTION
1	6	F15301	ROUND HOLE BUSHING
2	2	F15303	SQUARE HOLE BUSHING
3	4	F15304	BOLT HEAD SPACER
4	2	F15309	ARM PLATE TOP
5	2	F15310	ARM PLATE BOTTOM
6	1	F15335	BRACE LH
7	1	F15341	HOSE CLAMP
8	6	F15343	.75 OD X 2.25 SPACER TUBE
9	8	F15342	.75 OD X 1.75 SPACER TUBE
10	32	P15202	3/8-16 X 1.00 CARRIAGE BOLT
11	2	P15203	3/8-16 X 4.50 CARRIAGE BOLT
12	12	P15204	3/8-16 X 3.50 CARRIAGE BOLT
13	46	P15207	3/8-16 FLANGE LOCKNUT

1) The Left and Right hand Arm assemblies are nearly identical except the bolts are installed in opposite directions and the hose clamps are in different locations.

2) Set Frame Plates (item #4 and #5) vertically and install:

- A. 3/8-16 x 3.50" Carriage Bolts (item #12)
- B. Ø3/4 OD x 1.75 Spacer Tubes (item # 9)
- C. 3/8-16 Flange Locknuts (item # 13)

3) Do not fully tighten any bolts / nuts in this assembly at this time. After the sub-assemblies are installed on the tractor and the pivot pins are aligned, you'll tighten all of bolts / nuts.

4) Install the rest of the parts per the diagram.

5) The RH and LH Braces are mirrored parts and need to be installed on the correct side. Reference diagram.

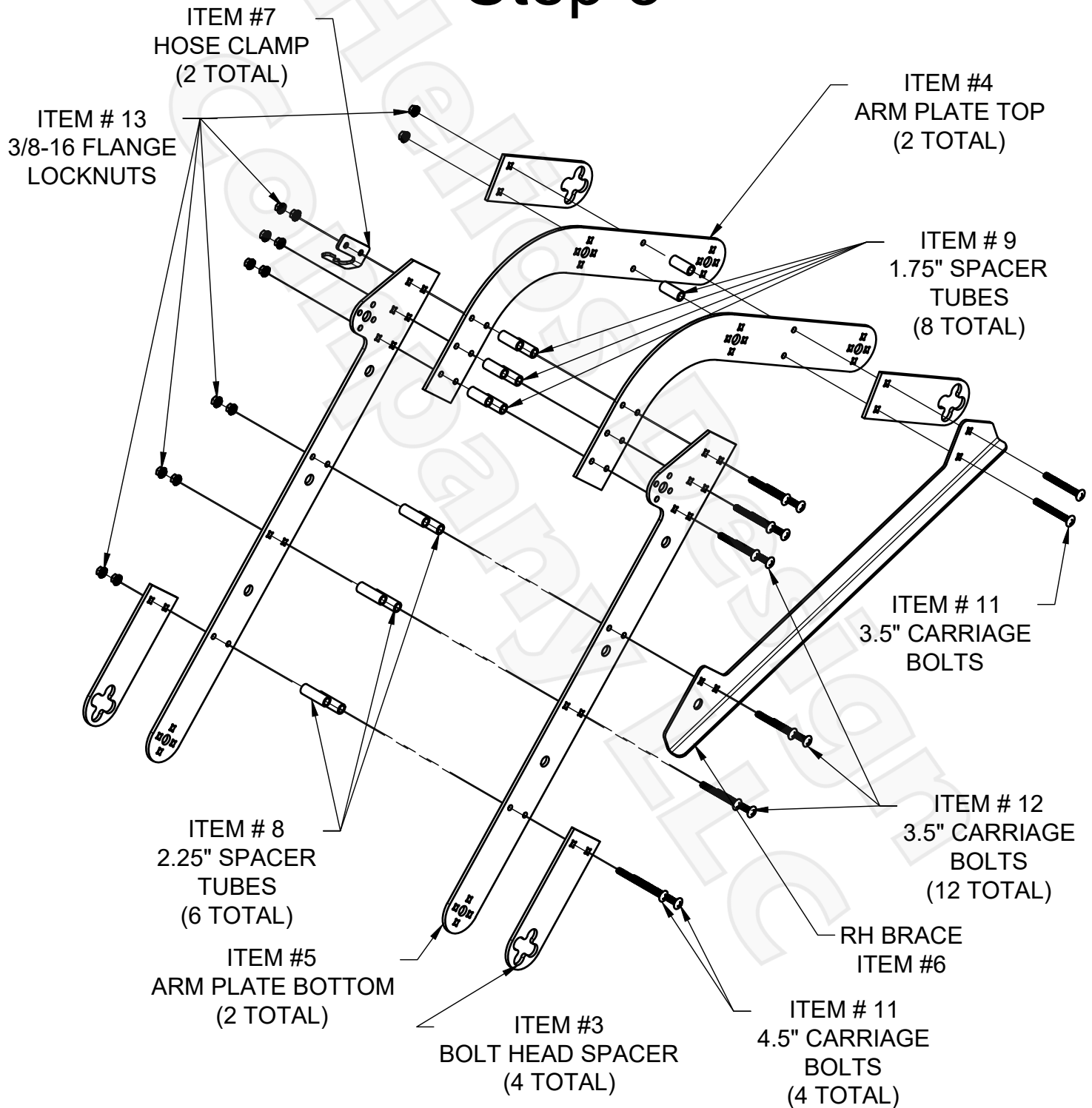
6) There are (2) different lengths of Spacer Tubes. The 2.25" Spacer Tubes are installed between the Arm Bottom Plates and the 1.75" Spacer Tubes are installed between the Arm Top Plates.

Instruction Manual



Left Hand Arm Assembly

Step 3



PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE
SOLE PROPERTY OF HELIOS DESIGN COMPANY LLC. ANY
REPRODUCTION IN PART OR WHOLE WITHOUT
PERMISSION IS PROHIBITED.

Helios Design Company

SHEET	REV
2/3	

Instruction Manual

Left Hand Arm Assembly



Step 3

ITEM # 1
ROUND HOLE BUSHINGS
(OUTSIDE)

BOLT HEADS
ON INSIDE

DETAIL A

ITEM # 1
ROUND HOLE BUSHINGS
(INSIDE)

BOLT HEADS
ON OUTSIDE

BOLT HEADS
ON INSIDE

ITEM # 2
SQUARE HOLE
BUSHINGS
(INSIDE)

DETAIL B

B

A

ITEM # 1
ROUND HOLE
BUSHINGS
(INSIDE)

BOLT HEADS
ON OUTSIDE

DETAIL C

C

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE
SOLE PROPERTY OF HELIOS DESIGN COMPANY LLC. ANY
REPRODUCTION IN PART OR WHOLE WITHOUT
PERMISSION IS PROHIBITED.

Helios Design Company

SHEET

REV

3/3

Instruction Manual

Right Hand Arm Assembly Step 4

RIGHT HAND FRAME SUB ASSEMBLY			
ITEM #	QTY	PART NUMBER	DESCRIPTION
1	6	F15301	ROUND HOLE BUSHING
2	2	F15303	SQUARE HOLE BUSHING
3	4	F15304	BOLT HEAD SPACER
4	2	F15309	ARM PLATE TOP
5	2	F15310	ARM PLATE BOTTOM
6	1	F15335	BRACE RH
7	6	F15343	.75 OD X 2.25 SPACER TUBE
8	8	F15342	.75 OD X 1.75 SPACER TUBE
9	32	P15202	3/8-16 X 1.00 CARRIAGE BOLT
10	2	P15203	3/8-16 X 4.50 CARRIAGE BOLT
11	12	P15204	3/8-16 X 3.50 CARRIAGE BOLT
12	46	P15207	3/8-16 FLANGE LOCKNUT

1) The Left and Right hand Arm assemblies are nearly identical except the bolts are installed in opposite directions and the hose clamps are in different locations.

2) Set Frame Plates (item #4 and #5) vertically and install:

A. 3/8-16 x 3.50" Carriage Bolts (item #12)

B. Ø3/4 OD x 1.75 Spacer Tubes (item # 9)

C. 3/8-16 Flange Locknuts (item # 13)

3) Do not fully tighten any bolts / nuts in this assembly at this time. After the sub-assemblies are installed on the tractor and the pivot pins are aligned, you'll tighten all of bolts / nuts.

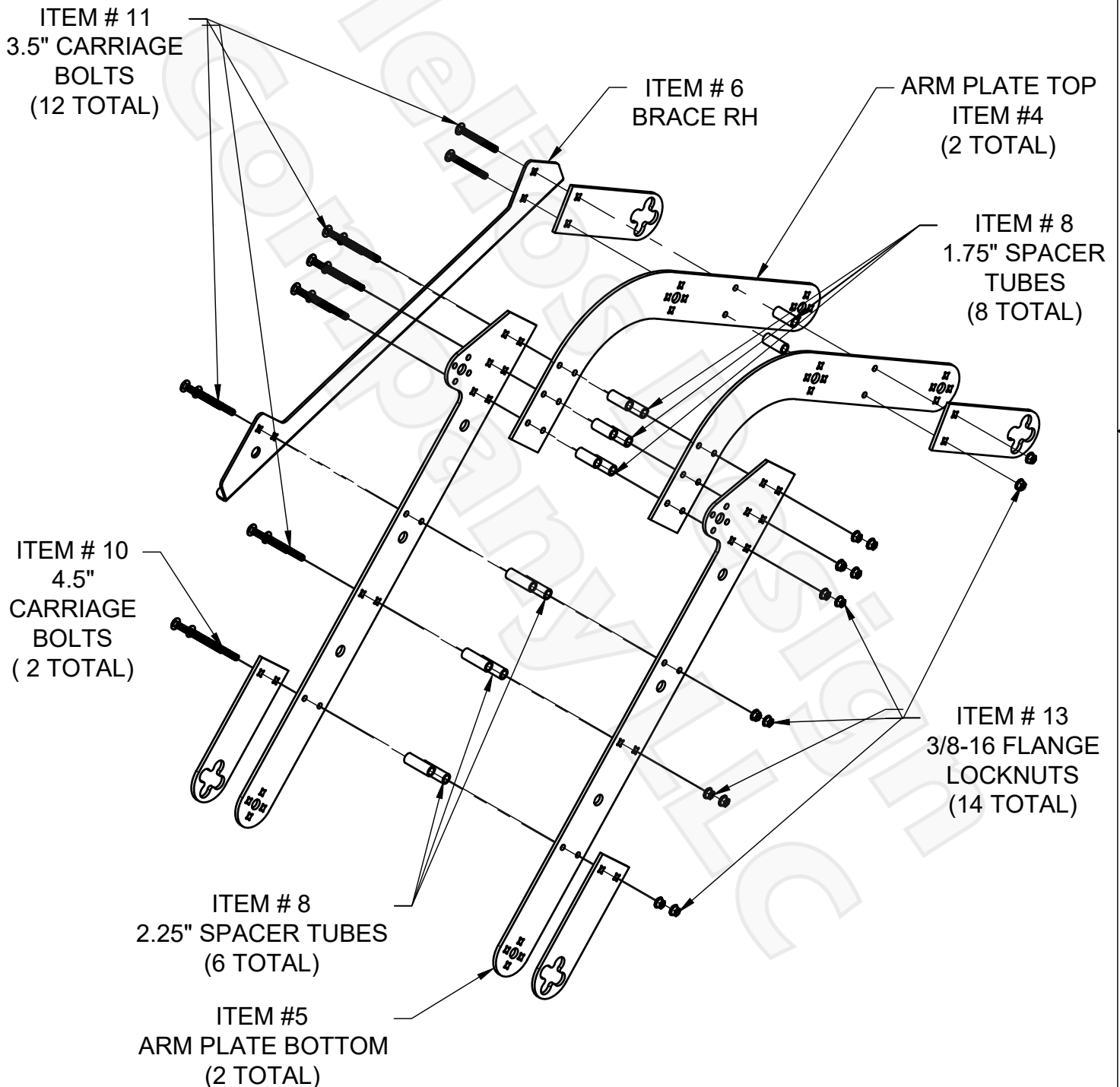
4) Install the rest of the parts per the diagram.

5) The RH and LH Braces are mirrored parts and need to be installed on the correct side. Reference diagram.

6) There are (2) different lengths of Spacer Tubes. The 2.25" Spacer Tubes are installed between the Arm Bottom Plates and the 1.75" Spacer Tubes are installed between the Arm Top Plates.

Instruction Manual

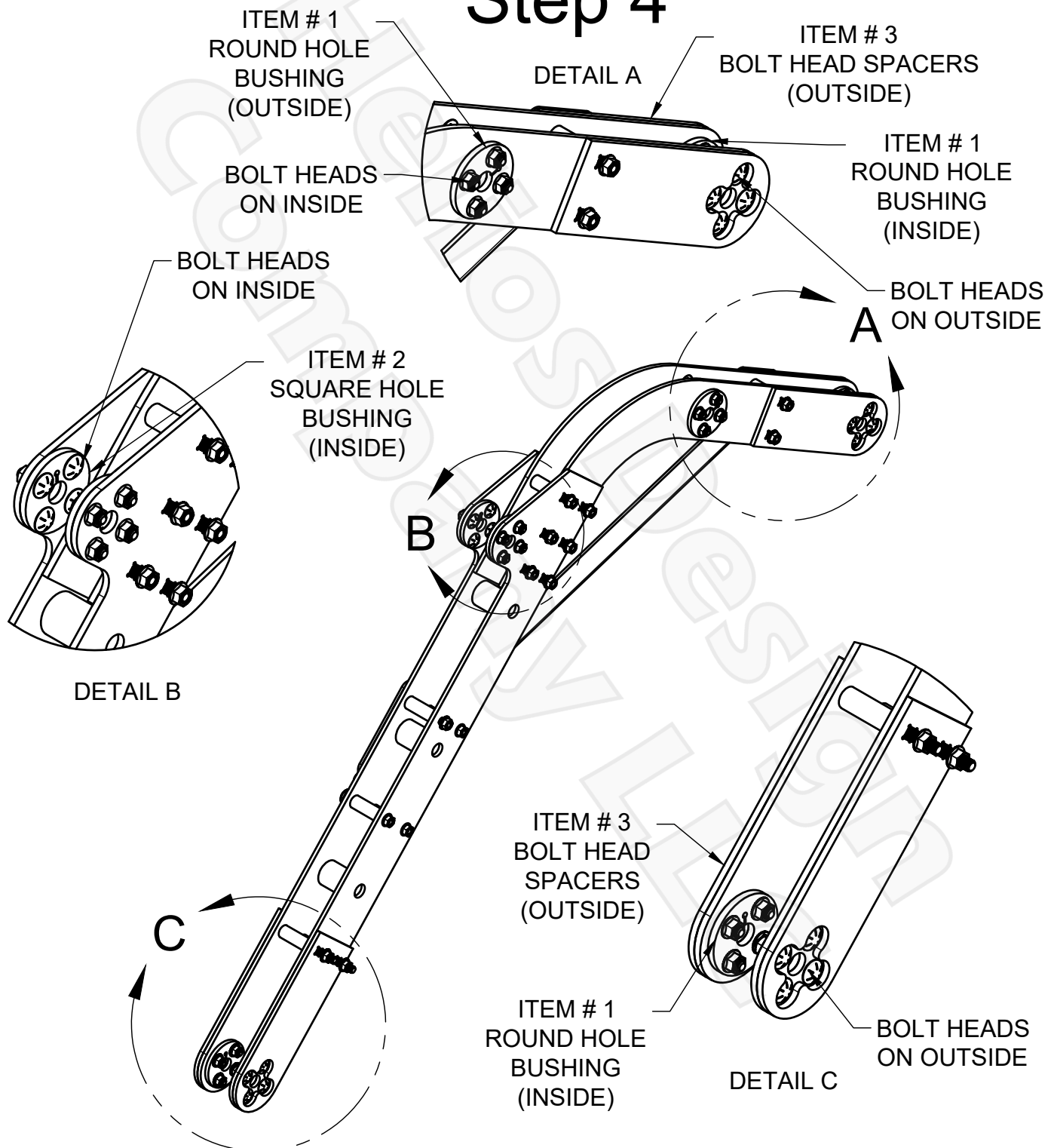
Right Hand Arm Assembly Step 4



Instruction Manual **HDC**

Right Hand Arm Assembly

Step 4



Instruction Manual



Left Hand Bucket Pivot Step 5

Quantity: 2

LEFT HAND BUCKET PIVOT			
ITEM #	QTY	PART #	DESCRIPTION
1	1	F15301	ROUND HOLE BUSHING
2	1	F15330	BUCKET SPACER PLATE
3	1	F15333	BUCKET PIVOT
4	8	P15202	3/8-16 X 1.00 CARRIAGE BOLT
5	8	P15207	3/8-16 FLANGE LOCKNUT

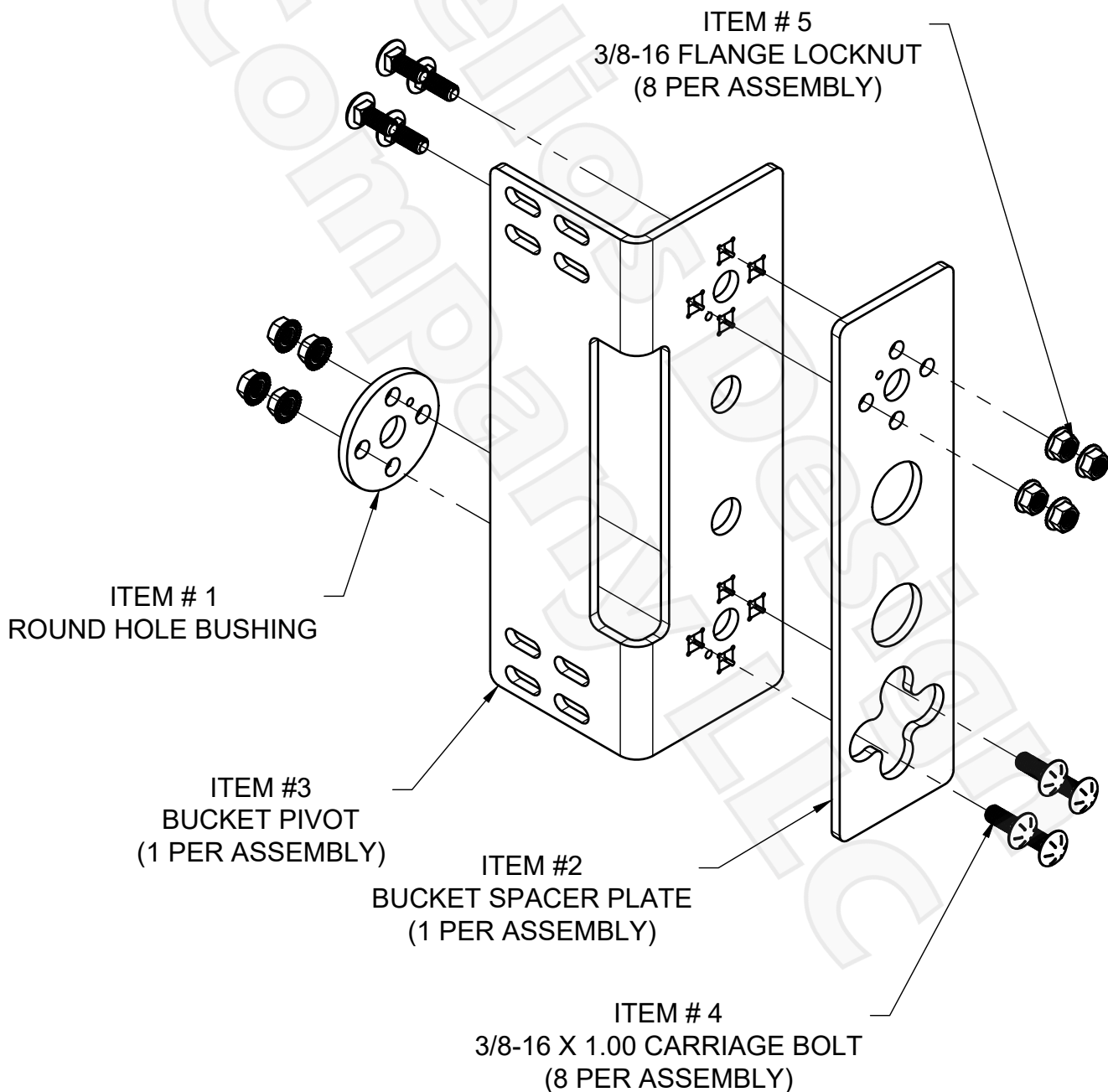
- 1) The Left and Right hand Bucket Pivot assemblies use the exact same parts, but they are mirrored versions of each other.
- 2) The orientation of these assemblies on the loader can be a little confusing, so it would be best to label them "LH" and "RH" as you are assembling them.
- 3) Set Bucket Pivots (item #3) on a work bench and install:
 - A. Bucket Spacer Plate (item #2)
 - B. Round Hole Bushing (item #1)
 - C. 3/8-16 x 1.00 Carriage Bolts (item # 4)
 - D. 3/8-16 Flange Locknuts (item # 5)
- 4) Do not fully tighten any bolts / nuts in this assembly at this time. After the sub-assemblies are installed on the tractor and the pivot pins are aligned, you'll tighten all of bolts / nuts.
- 5) Set the completed assemblies aside for now.

Instruction Manual



Left Hand Bucket Pivot Step 5

Quantity: 2



Instruction Manual



Right Hand Bucket Pivot Step 6

Quantity: 2

LEFT HAND BUCKET PIVOT			
ITEM #	QTY	PART #	DESCRIPTION
1	1	F15301	ROUND HOLE BUSHING
2	1	F15330	BUCKET SPACER PLATE
3	1	F15333	BUCKET PIVOT
4	8	P15202	3/8-16 X 1.00 CARRIAGE BOLT
5	8	P15207	3/8-16 FLANGE LOCKNUT

- 1) The Left and Right hand Bucket Pivot assemblies use the exact same parts, but they are mirrored versions of each other.
- 2) The orientation of these assemblies on the loader can be a little confusing, so it would be best to label them "LH" and "RH" as you are assembling them.
- 3) Set Bucket Pivots (item #3) on a work bench and install:
 - A. Bucket Spacer Plate (item #2)
 - B. Round Hole Bushing (item #1)
 - C. 3/8-16 x 1.00 Carriage Bolts (item # 4)
 - D. 3/8-16 Flange Locknuts (item # 5)
- 4) Do not fully tighten any bolts / nuts in this assembly at this time. After the sub-assemblies are installed on the tractor and the pivot pins are aligned, you'll tighten all of bolts / nuts.
- 5) Set the completed assemblies aside for now.

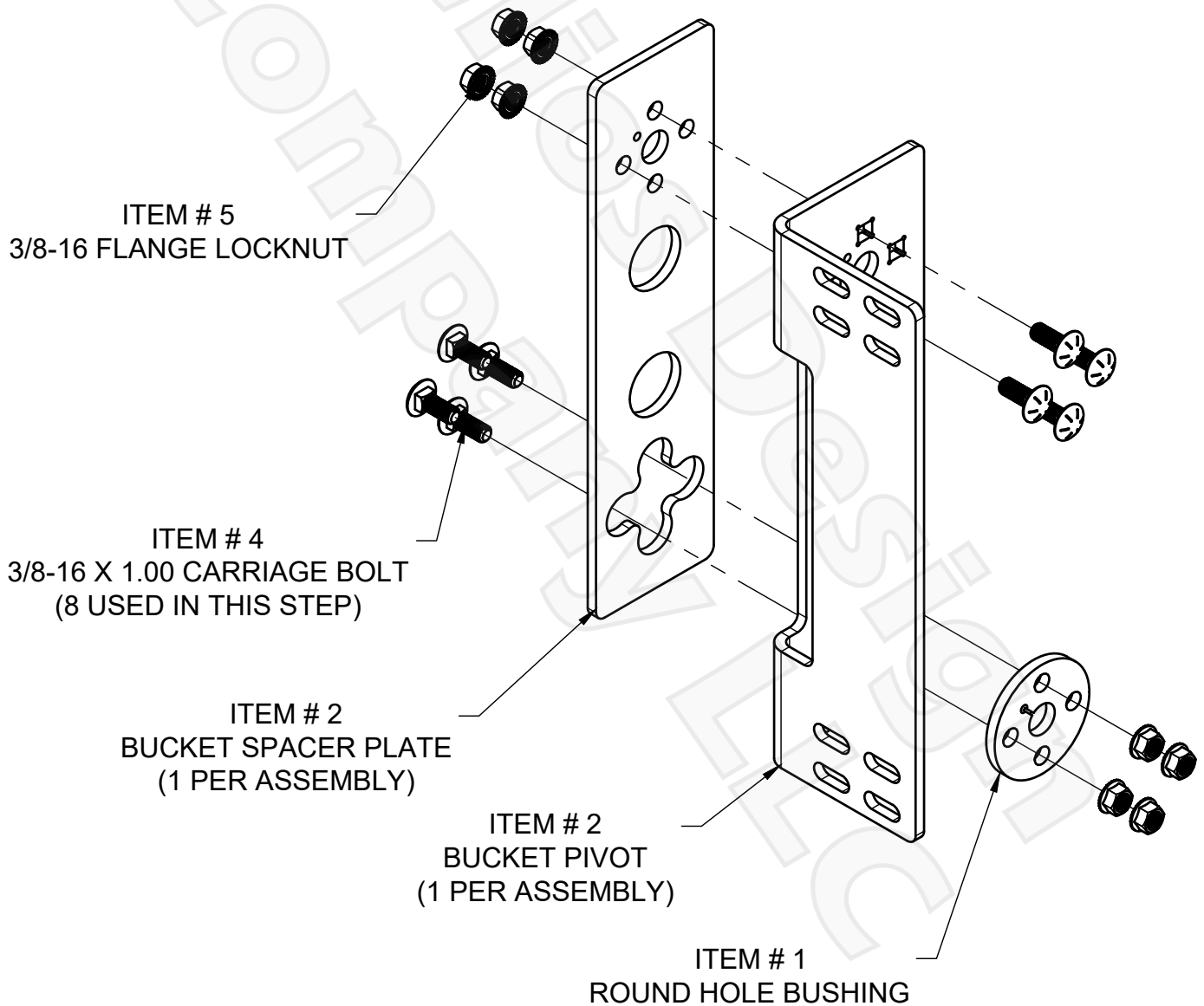
Instruction Manual



Right Hand Bucket Pivot

Step 6

Quantity: 2



Instruction Manual



Bumper Mount Assembly Step 7

BUMPER MOUNT ASSEMBLY			
ITEM #	QTY	PART #	DESCRIPTION
1	4	F15308	BUMPER HOLDER
2	8	P15202	3/8-16 X 1.00 CARRIAGE BOLT
3	4	P15206	1/2-13 X 1.50 BUTTON HEAD
4	8	P15207	3/8-16 FLANGE LOCKNUT
5	4	P15210	1/2-13 FLANGE LOCKNUT

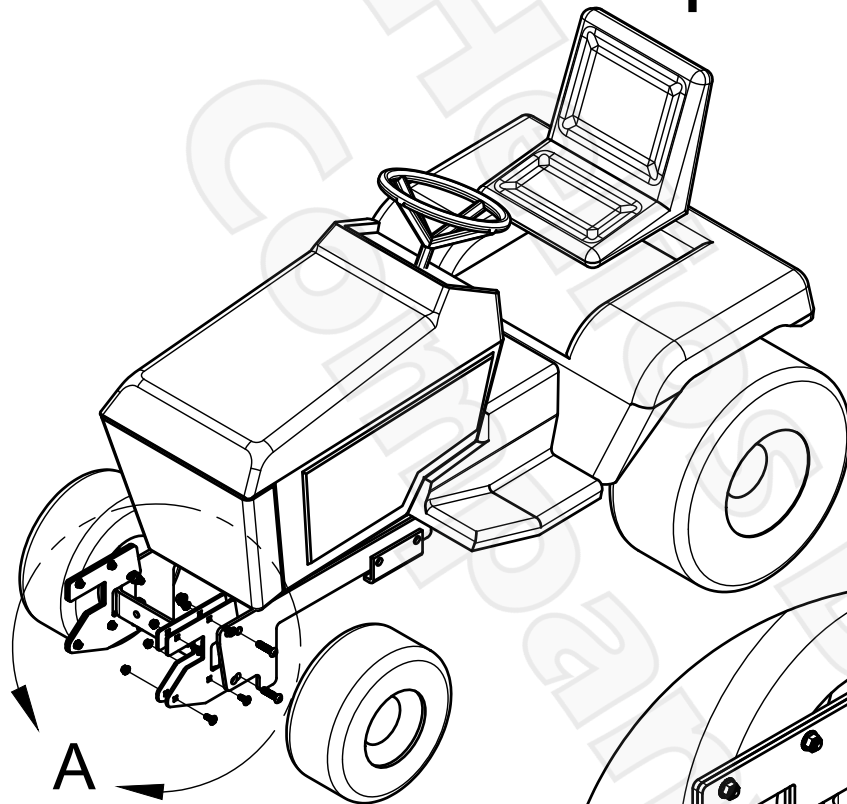
- 1) It's recommended to remove mower deck for installation. It's not absolutely critical, but it will make installation much easier.
- 2) Align Bumper Holder plates and install:
 - A. 3/8-16 x 1.00 Carriage Bolts
 - B. 3/8-16 Flange Locknuts
- 3) Fully tighten 3/8-16 x 1.00 Carriage Bolts to 25 ft.-lbs.
- 4) On each side of the John Deere front bumper, install Bumper Holders on the **INSIDE** of the frame rails using:
 - A. 1/2-13 x 1.75 Button Head bolts
 - B. 1/2-13 Flange Locknuts
- 5) When the Bumper plates are square to the frame and even side to side, fully tighten the 1/2-13 Button Heads to 60 ft.-lbs.

Instruction Manual



Bumper Mount Assembly

Step 7



ITEM #5
1/2-13 FLANGE LOCKNUT
(2 PER SIDE)

DETAIL A

ITEM #1
BUMPER HOLDER
(4 TOTAL)

ITEM #4
3/8-16 FLANGE LOCKNUT

ITEM #2
3/8-16 X 1.00 CARRIAGE BOLTS
(4 PER SIDE)

ITEM #3
1/2-13 X 1.50 BUTTON HEAD
(2 PER SIDE)

Instruction Manual



Anchor Installation

Step 8

ANCHOR MOUNT ASSEMBLY			
ITEM #	QTY	PART #	DESCRIPTION
1	1	F15324	ANCHOR ASSEMBLY RH
2	1	F15325	ANCHOR ASSEMBLY LH
3	2	F15326	ANCHOR PLATE TOP
4	2	P15213	7/16-14 X 1.75 CARRIAGE BOLT
5	14	P15214	7/16-14 FLANGE LOCKNUT
6	4	P15215	7/16-14 X 1.25 CARRIAGE BOLT
7	2	F15340	7/16-14 X 16.00 THREADED ROD

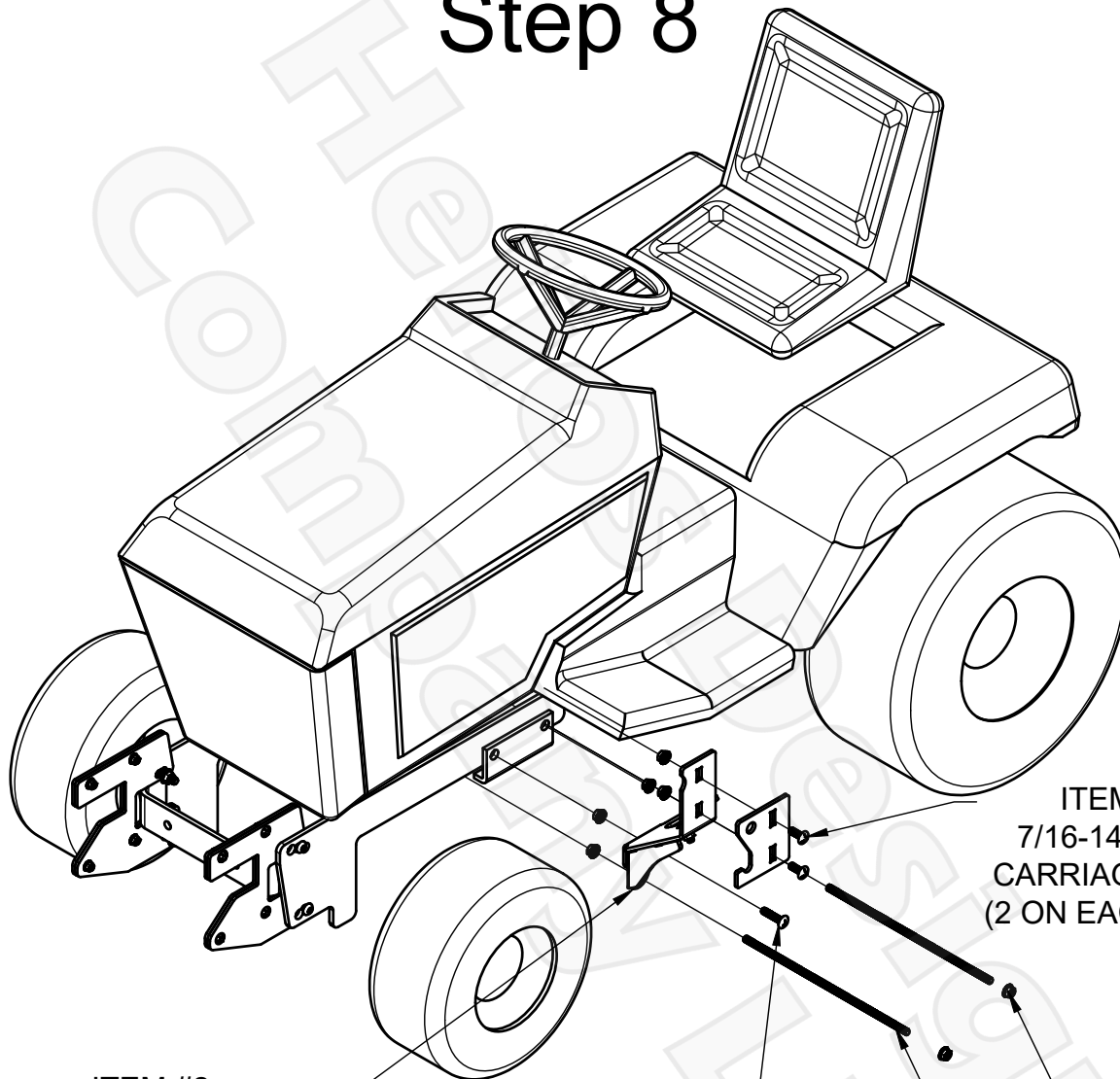
- 1) It's **highly** recommended that you remove the mower deck before installation.
- 2) 7/16" nuts and bolts are only used in this step of the assembly and nowhere else.
- 3) Remove existing John Deere Angle Bracket bolted to the fram rail.
- 3) Hold the Anchor Assembly LH in place on the outside of the John Deere frame rail and install the fasteners below on both sides of the tractor.
 - A. 7/16-14 x 2.0 Carriage bolt
 - B. 7/16-14 Flange Locknuts
- 4) **Do not fully tighten any bolts / nuts in this assembly step at this time. After the sub-assemblies are installed on the tractor and the pivot pins are aligned, you'll tighten all of bolts / nuts.**
- 5) Repeat for the Anchor Assembly RH
- 6) Run the 7/16-14 x 16.00" threaded rods through the Anchor assemblies and the tractor frame rails. Install 7/16-14 Flange Locknuts on the inside and outside of the frame rails.
- 7) Install 7/16" X 16.00" threaded rods through the bottom hole in the Anchor Assemblies. Install 7/16-14 Flange Locknuts on the inside and outside of the Anchor Assembly plates.

Instruction Manual



Anchor Installation

Step 8



ITEM #2
ANCHOR ASSEMBLY LH

ITEM #6
7/16-14 X 2.0 CARRIAGE BOLT
(1 ON EACH SIDE)

ITEM #9
7/16-14 THREADED ROD
(2 TOTAL)

ITEM #7
7/16-14 FLANGE LOCKNUT
(ALL NUTS IN THIS STEP)

ITEM #6
7/16-14 X 1.25
CARRIAGE BOLT
(2 ON EACH SIDE)

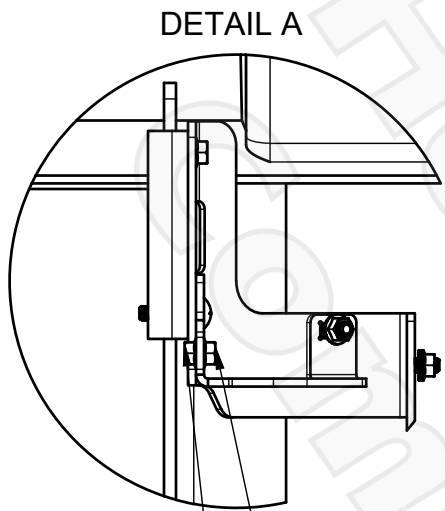
Instruction Manual



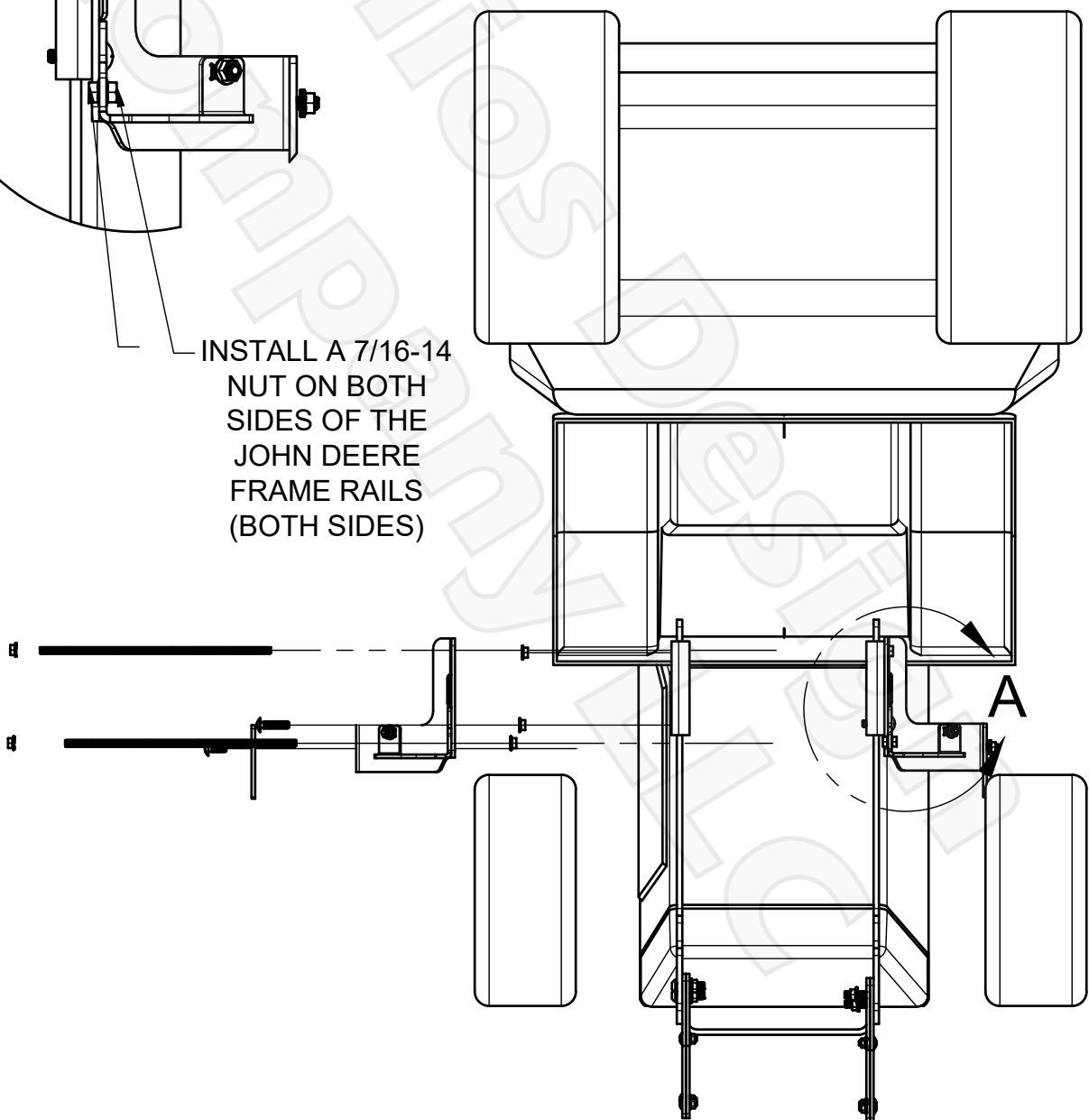
Anchor Installation

Step 8

BOTTOM OF TRACTOR SHOWN



INSTALL A 7/16-14 NUT ON BOTH SIDES OF THE JOHN DEERE FRAME RAILS (BOTH SIDES)



Instruction Manual



Bumper Assembly Step 9

BUMPER ASSEMBLY			
ITEM #	QTY	PART #	DESCRIPTION
1	4	F15305	ALIGNMENT PLATE
2	1	F15311	BUMPER CROSS BEAM 36"
3	1	W15401	WELDMENT - STAND TUBE
4	4	P15203	3/8-16 X 4.50 CARRIAGE BOLT
5	4	P15207	3/8-16 FLANGE LOCKNUT

- 1) Using a tape measure Center 36" Bumper Cross Beam between bumper mounts
- 2) Slide Stand Tube Weldment over Bumper Cross Beam and align with (4) holes
- 3) Install Alignment Plates on the top and bottom of the Stand Tube Weldment, leaving about 1/8" gap between plates and Bumper Mount Plates. When you are installing the loader, you'll want a little lateral freedom to be able to drive into it.
- 4) Install 4.50" Carriage Bolts and nuts. Torque 3/8-16 bolts to 25 ft.-lbs.

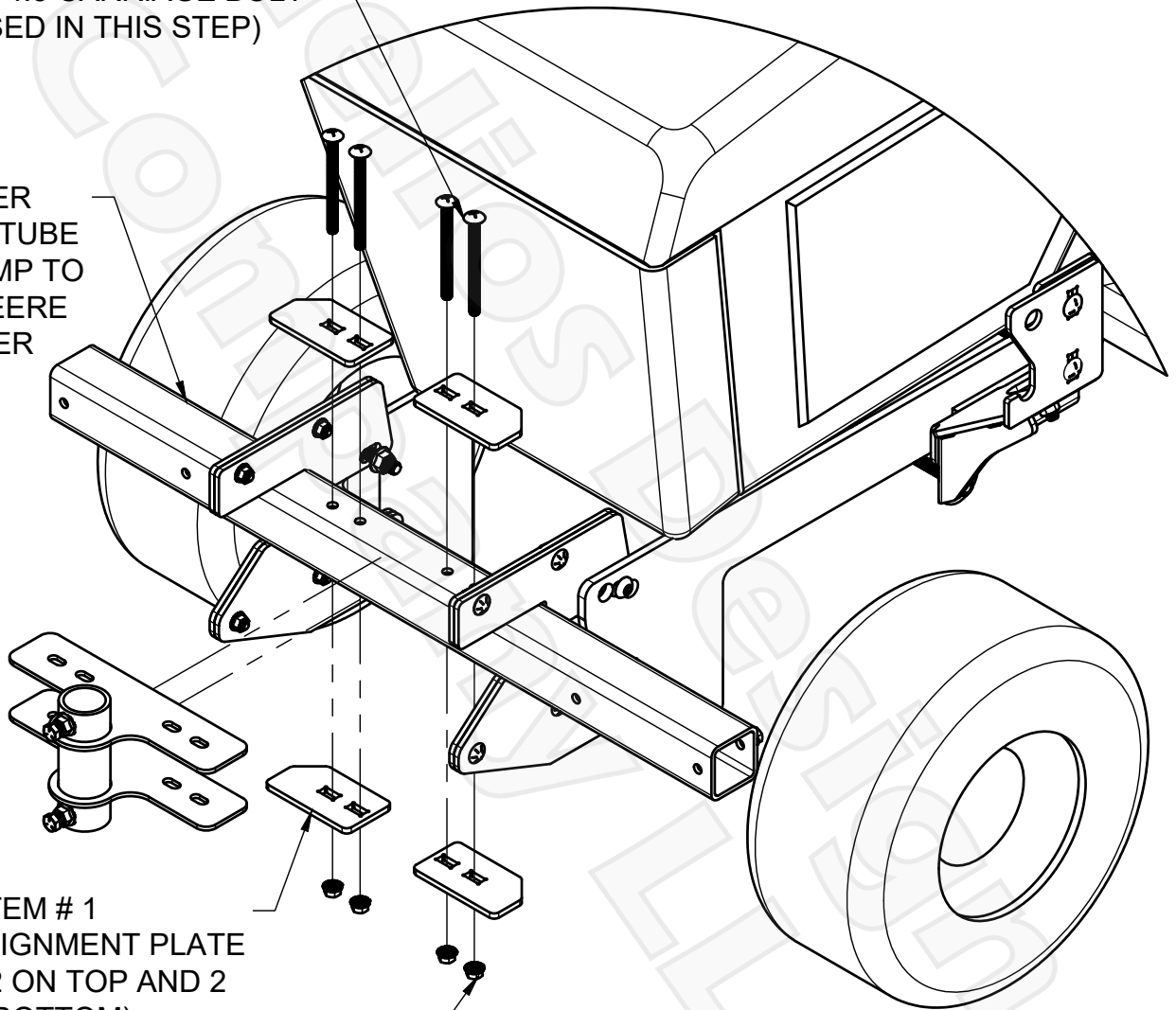
Instruction Manual



Bumper Assembly Step 9

ITEM # 4
3/8-16 X 4.5 CARRIAGE BOLT
(4 USED IN THIS STEP)

CENTER
BUMPER TUBE
AND CLAMP TO
JOHN DEERE
BUMPER



ITEM # 1
BUMPER ALIGNMENT PLATE
(INSTALL 2 ON TOP AND 2
ON BOTTOM)

ITEM # 5
3/8-16 FLANGE LOCKNUT
(4 USED IN THIS STEP)

Instruction Manual



Tube Jack Assembly Step 10

BUMPER ASSEMBLY			
ITEM #	QTY	PART #	DESCRIPTION
1	1	W15402	WELDMENT - THREADED ROD TUBE
2	1	P15209	3/4-10 SWIVEL LEVELING MOUNT
3	2	P15221	3/4-10 STANDARD NUT
4	2	P15223	7/16-14 X 1.00 HEX HEAD SCREW

- 1) Drop Threaded Rod Tube Weldment into the Tube Stand from the top.
- 2) Snug 7/16-14 x 1.00 Hex Head Screws to hold Rod Tube in place
- 3) Install 3/4-10 Leveling foot on the bottom of the threaded rod.
- 4) Use (2) wrenches to turn 3/4-10 Standard Nuts in opposite directions to jam them and prevent them from loosening. Tighten 3/4-10 nuts to 60 ft.-lbs.

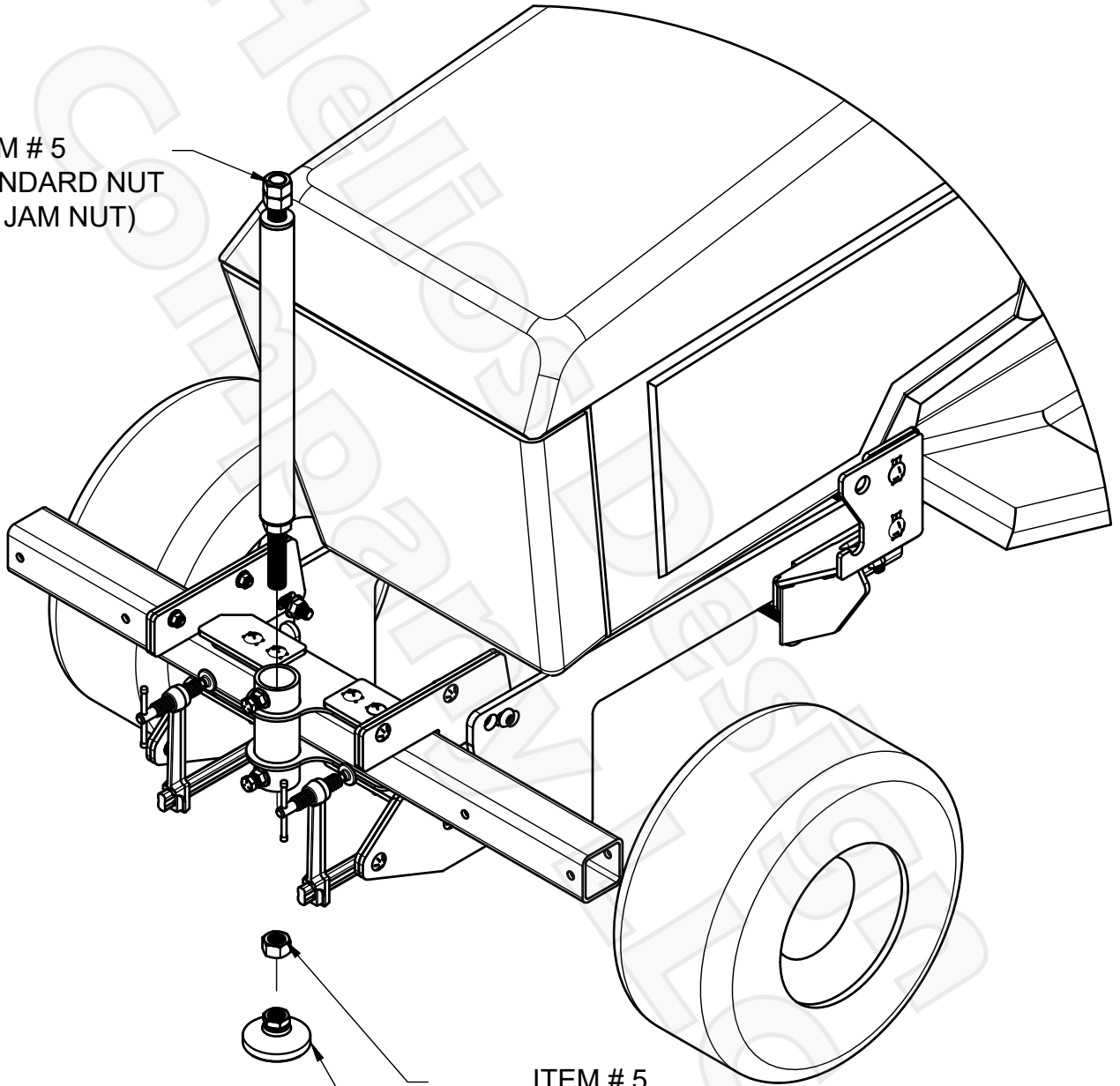
Instruction Manual



Tube Jack Assembly

Step 10

ITEM # 5
3/4-10 STANDARD NUT
(USE AS JAM NUT)



ITEM # 5
3/4-10 STANDARD NUT
(USE AS JAM NUT)

ITEM # 4
3/4-10 SWIVEL LEVELING MOUNT

Instruction Manual



Frame Installation Step 11

FRAME INSTALLATION			
ITEM #	QTY	PART #	DESCRIPTION
1	4	P15204	3/8-16 X 3.5 CARRIAGE BOLT
2	4	P15207	3/8-16 FLANGE LOCKNUT
3	4	P15212	HAIRPIN COTTER PIN
4	2	F15338	3/4 X5.00 PIVOT PIN

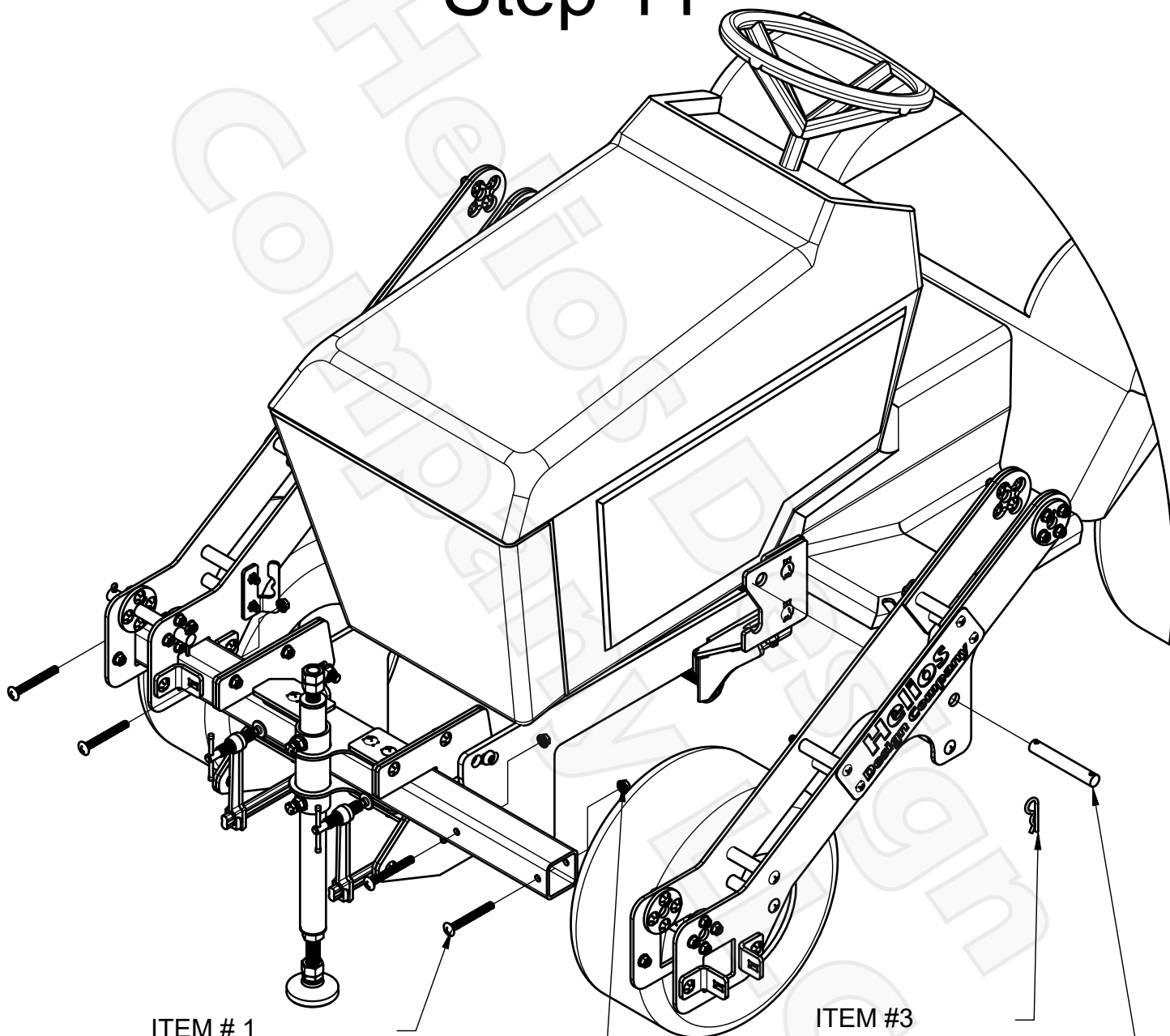
- 1) Slide each frame assembly onto the Bumper Cross Beam.
- 2) Install 3/8-16 x 3.50" Carriage Bolts and Nuts through the Bumper Angle Brackets and through the Bumper Beam, but do not tighten at this time.
- 3) Place 6" clamps on bumper beam, holding bumper beam tight to the John Deere bumper bar.
- 4) Using the slots in the right and left anchor assemblies, manipulate the anchor assemblies until the 6" pivot pin slides freely into position.
- 5) Install the 3/4 x 5.00" Pivot Pins on both sides of the assembly.
- 6) When both 5.00" pins engage the anchor assembly,
 - A. Tighten the 7/16-14 nuts in the anchor assemblies to 45 ft.-lbs
- 7) Do not tighten 3/8-16 nuts at this time.

Instruction Manual

HDC

Frame Installation

Step 11



ITEM # 1
3/8-16 X 3.50 CARRIAGE BOLT
(4 TOTAL)

ITEM # 2
3/8-16 FLANGE LOCKNUT
(4 TOTAL)

ITEM # 3
HAIRPIN COTTER PINS
(4 USED IN THIS STEP)

ITEM # 4
Ø3/4 - 5.00 PIVOT PIN
(BOTH SIDES)

Instruction Manual



Arm Installation Step 12

ARM INSTALL			
ITEM #	QTY	PART #	DESCRIPTION
1	2	F15338	3/4" X 6.00 PIVOT PIN
2	4	P15212	STRAIGHT COTTER PIN

- 1) Lift the Left Hand and Right Hand loader arm into position and thread 3/4 x 6.5 pivot pins through bushings.
- 2) Install Hairpin Cotter Pins in both sides of pivot pins.
- 3) Do not fully tighten any bolts / nuts in this assembly at this time. After the sub-assemblies are installed on the tractor and the pivot pins are aligned, you'll tighten all of bolts / nuts.

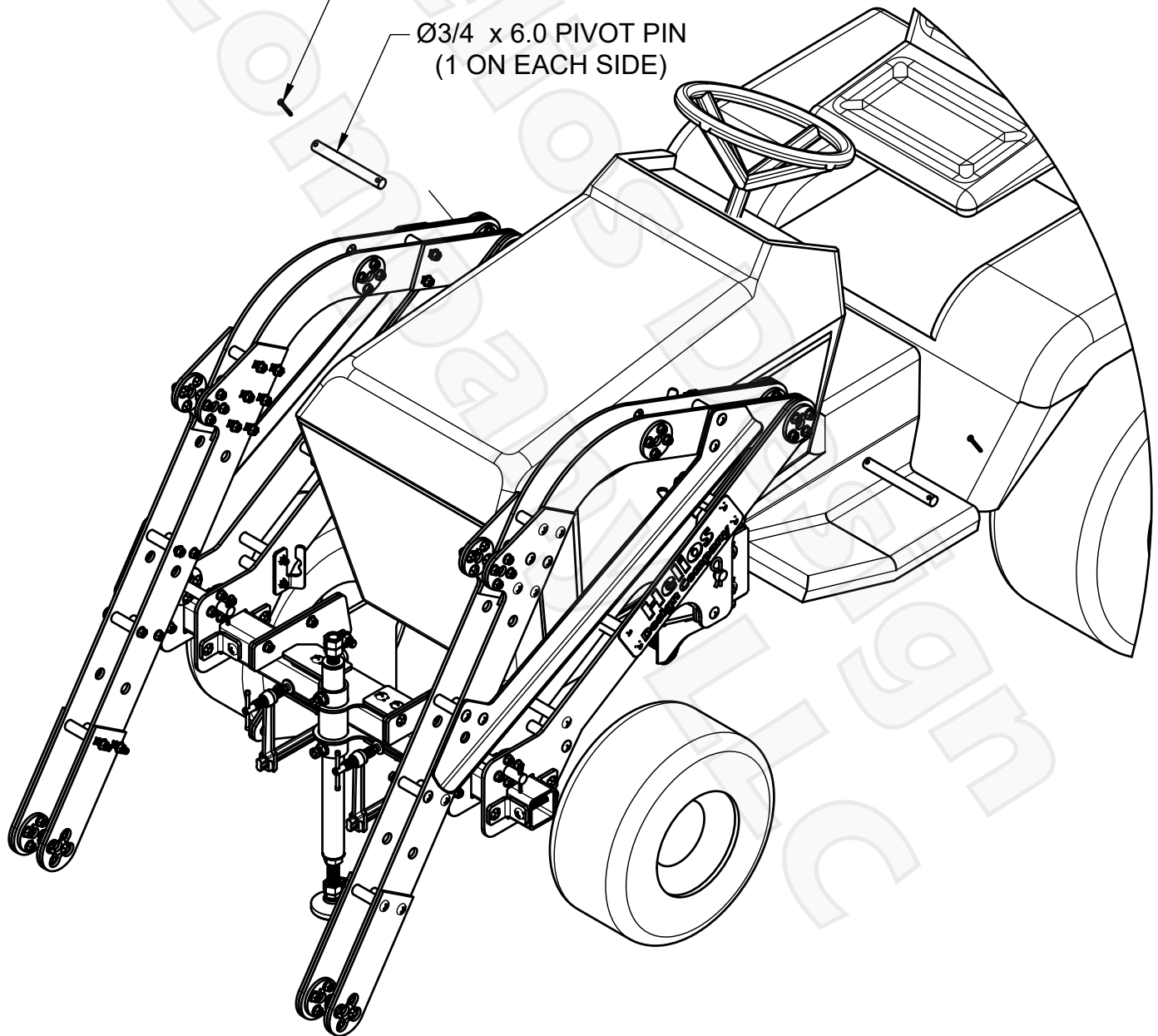
Instruction Manual



Arm Installation Step 12

STRAIGHT COTTER PIN
(2 ON EACH SIDE)

Ø3/4 x 6.0 PIVOT PIN
(1 ON EACH SIDE)



PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE
SOLE PROPERTY OF HELIOS DESIGN COMPANY LLC. ANY
REPRODUCTION IN PART OR WHOLE WITHOUT
PERMISSION IS PROHIBITED.

Helios Design Company

SHEET 2/2
REV

Instruction Manual



Cylinder Installation Step 13

CYLINDER INSTALLATION			
ITEM #	QTY	PART #	DESCRIPTION
1	4	F15348	3/4" X 5.0 PIVOT PIN
2	2	F15338	3/4" X 6.0 PIVOT PIN
3	12	P15212	STRAIGHT COTTER PIN
4	4	WTG 1.5X16	1.5" X 16" HYDRAULIC CYLINDER

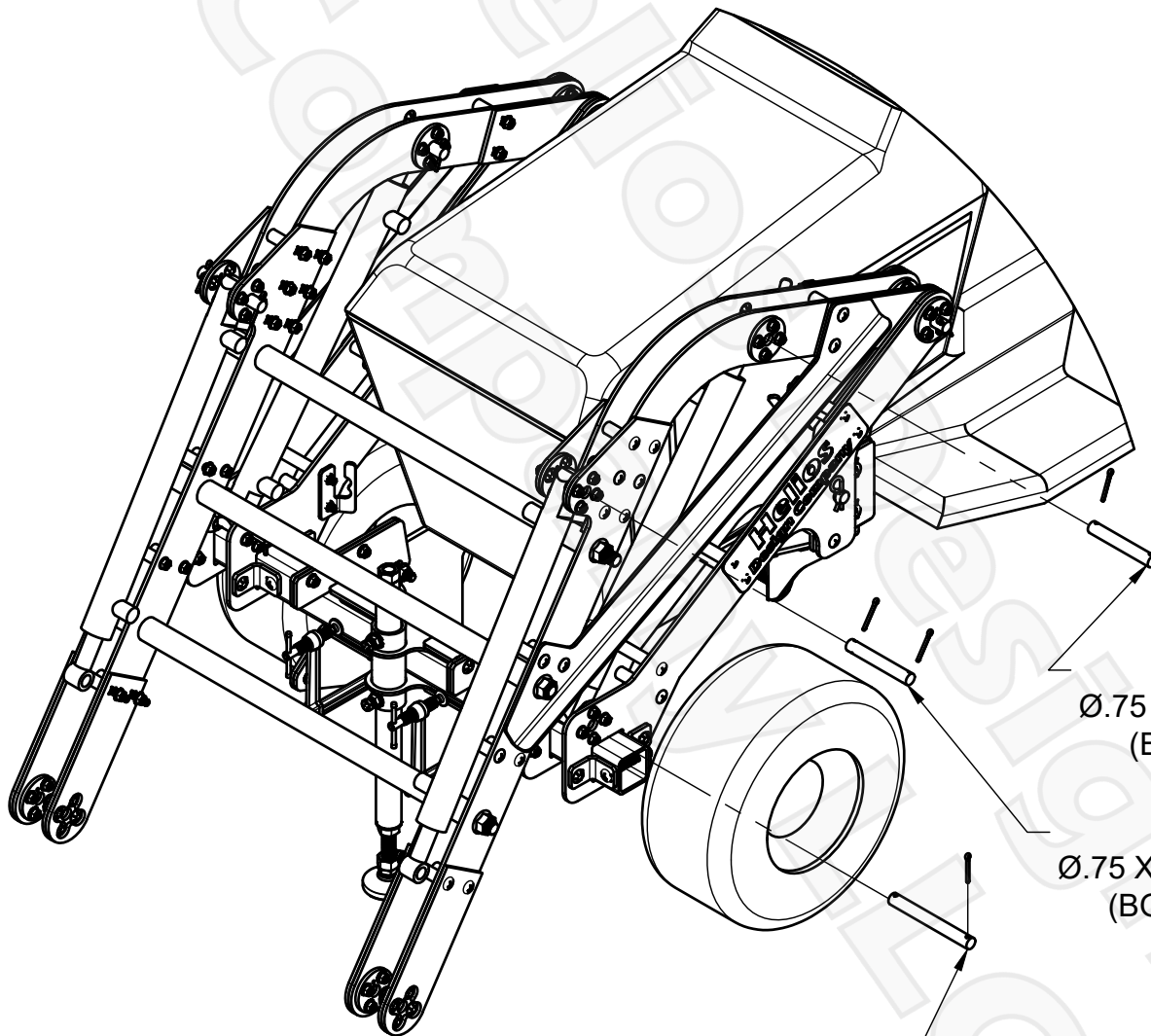
- 1) Install hydraulic cylinders.
 - A. The Body of the Arm lift cylinders should be towards the floor
 - B. The Body of the Bucket lift cylinders should be towards the ceiling
 - C. The hydraulic cylinder ports should all be facing inwards.

- 3) Install Cotter Pins in both ends of Pivot Pins.

Instruction Manual



Cylinder Installation Step 13



ITEM #1
Ø.75 X 5.0 PIVOT PIN
(BOTH SIDES)

ITEM #1
Ø.75 X 5.0 PIVOT PIN
(BOTH SIDES)

ITEM #2
Ø3/4 x 6.0 PIVOT PIN
(BOTH SIDES)

Instruction Manual



Arm Crossbar Installation Step 14

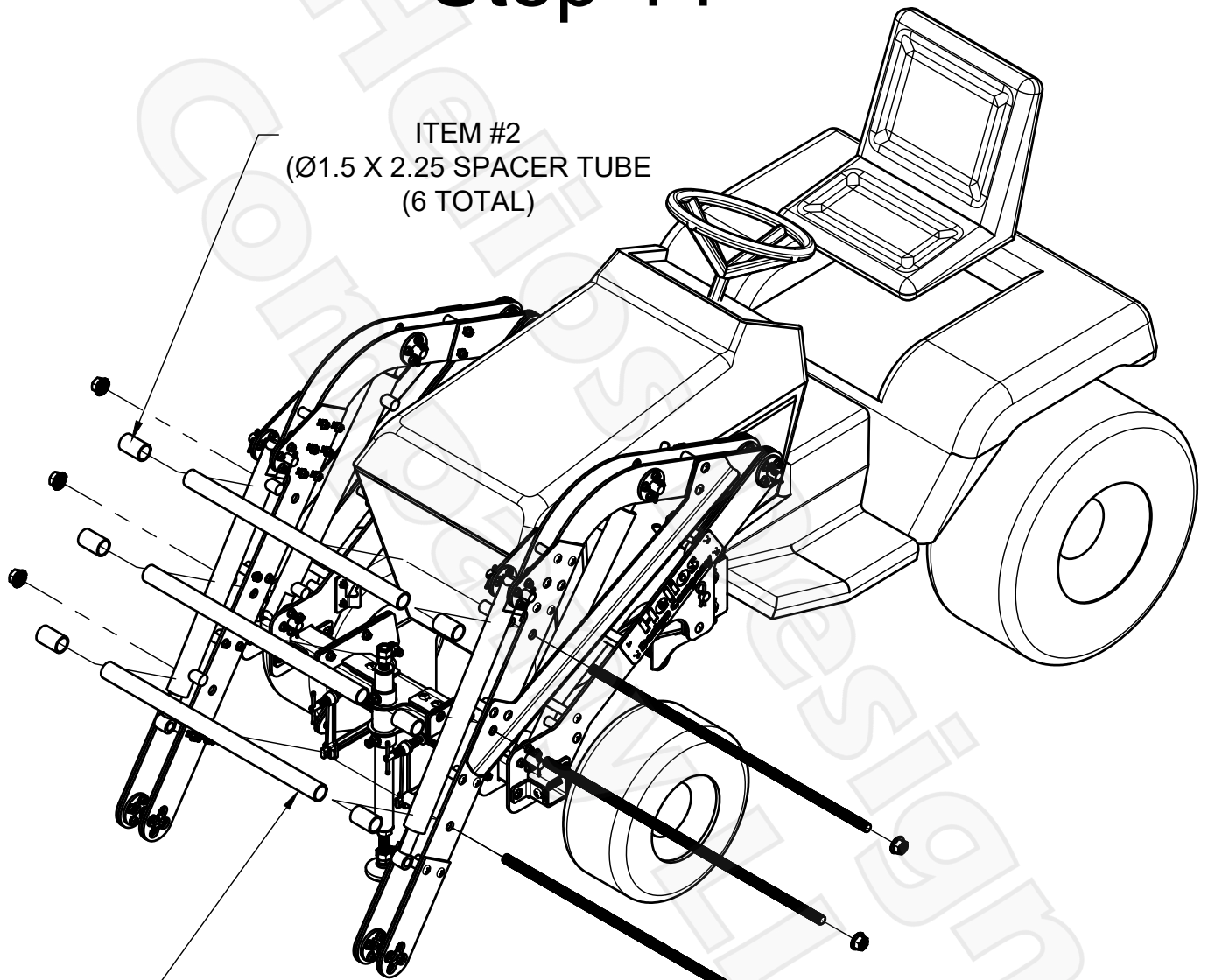
ARM CROSSBAR INSTALL			
ITEM #	QTY	PART #	DESCRIPTION
1	3	F15337	3/4-10 X 33.50 THREADED ROD
2	6	F15346	1.5 OD X 2.25 SPACER TUBE
3	3	F15347	1.50 OD X 25.125 SPACER TUBE
4	6	P15209	3/4-10 FLANGE LOCKNUT

- 1) Install the 3/4-10 x 33.50 threaded rods through:
 - A. The outer arm plate
 - B. Through a 2.25" Spacer Tube
 - C. Through the inner arm plate
 - D. Through a 22.125" Spacer tube
 - E. Through the opposite side inner arm plate
 - F. Through another 2.25" Spacer Tube
 - G. Through The opposite side outer arm plate.
- 2) Center 3/4-10 threaded rod between loader arms and install 3/4-10 Flange Locknut
- 3) Repeat two more times for remaining crossbars and install 3/4-10 Flange Locknuts
- 4) Tighten 3/4-10 Flange Locknuts to 200 ft. lbs.
- 5) At this time, these Crossbars and the Anchors are the only componts that have been tightened. Shift the loader assembly around until it is centered on the tractor.

Instruction Manual



Arm Crossbar Installation Step 14



ITEM #2
Ø1.5 X 2.25 SPACER TUBE
(6 TOTAL)

ITEM #3
Ø1.5 X 25.125 SPACER TUBE
(3 TOTAL)

ITEM #1
3/4-10 X 33.50 THREADED ROD
(3 TOTAL)

ITEM #4
3/4-10 FLANGE LOCKNUT
(6 TOTAL)

Instruction Manual



Bucket Pivot Assembly Step 15

BUCKET INSTALLATION			
ITEM #	QTY	PART #	DESCRIPTION
1	4	F15338	3/4 X 6.0 PIVOT PIN
2	8	P15212	STRAIGHT COTTER PIN
3	2	N/A	RIGHT HAND PIVOT ASSEMBLY
4	2	N/A	LEFT HAND PIVOT ASSEMBLY

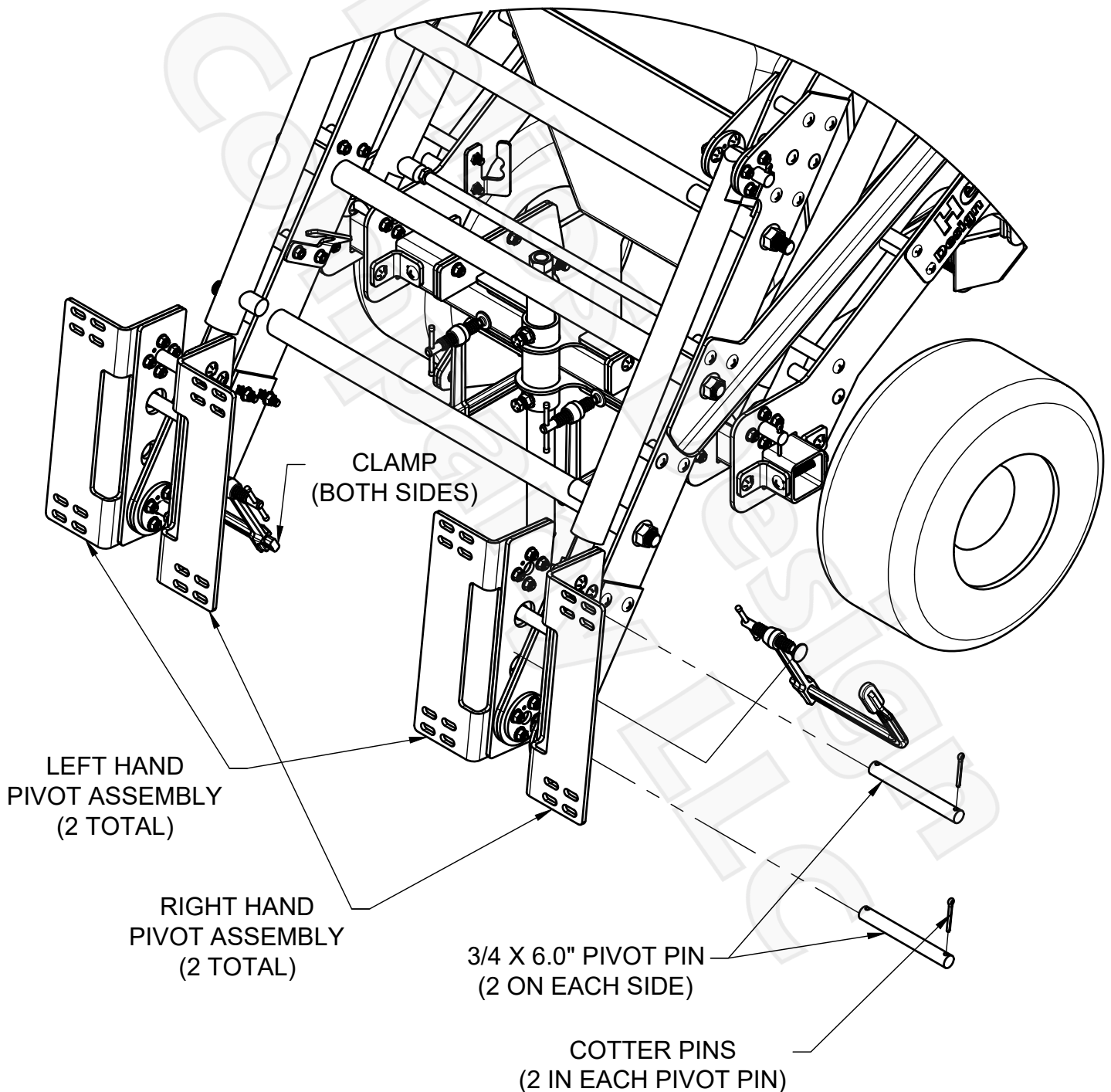
- 1) Grab a Left Hand Pivot Assembly and Right Hand Pivot Assembly
- 2) Orientate Pivot Assemblies as shown and install 3/4 x 6.5" pivot pin in the lower pivot. This will hold the assemblies in position short term
- 3) Install clamps on back of Pivot Assemblies, clamping the pivot assemblies to the arm and holding them vertically.
- 4) Install upper 3/4 x 6.5" Pivot Pin and Cotter Pins
- 5) Repeat exact same sequence on opposite loader arm.
- 6) Keep clamps in position until after the Bucket Mount Plates have been installed and the nuts have been tightened.

Instruction Manual



Bucket Pivot Assembly

Step 15



Instruction Manual



Bucket Mount Assembly Step 16

BUCKET MOUNT PLATE ASSEMBLY			
ITEM #	QTY	PART #	DESCRIPTION
1	2	F15332	BUCKET MOUNT PLATE FRONT
2	2	F15331	BUCKET MOUNT PLATE REAR
3	32	P15207	3/8-16 FLANGE LOCKNUT
4	32	P15219	3/8-16 FLAT HEAD BOLT

1) Install the upper Bucket Mount Plate Front and Bucket Mount Plate Rear onto the Bucket Pivots using:

- A. 3/8-16 Flat Head Bolts
- B. 3/8-16 Flange Locknuts

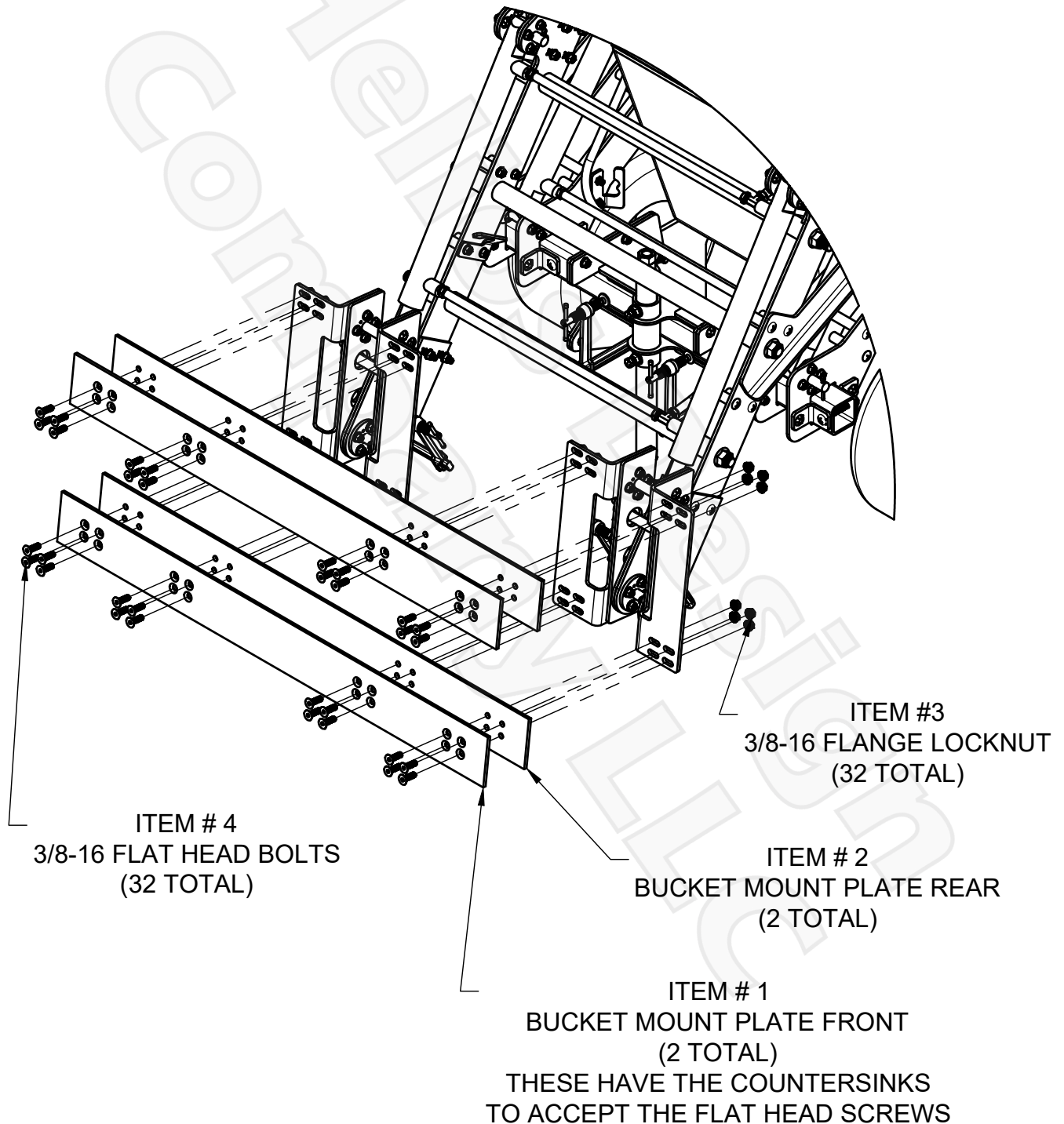
2) Repeat the process for the lower Bucket Mount plate

3) Do not fully tighten any bolts / nuts in this assembly at this time. After the sub-assemblies are installed on the tractor and the pivot pins are aligned, you'll tighten all of bolts / nuts.

Instruction Manual

Bucket Mount Assembly

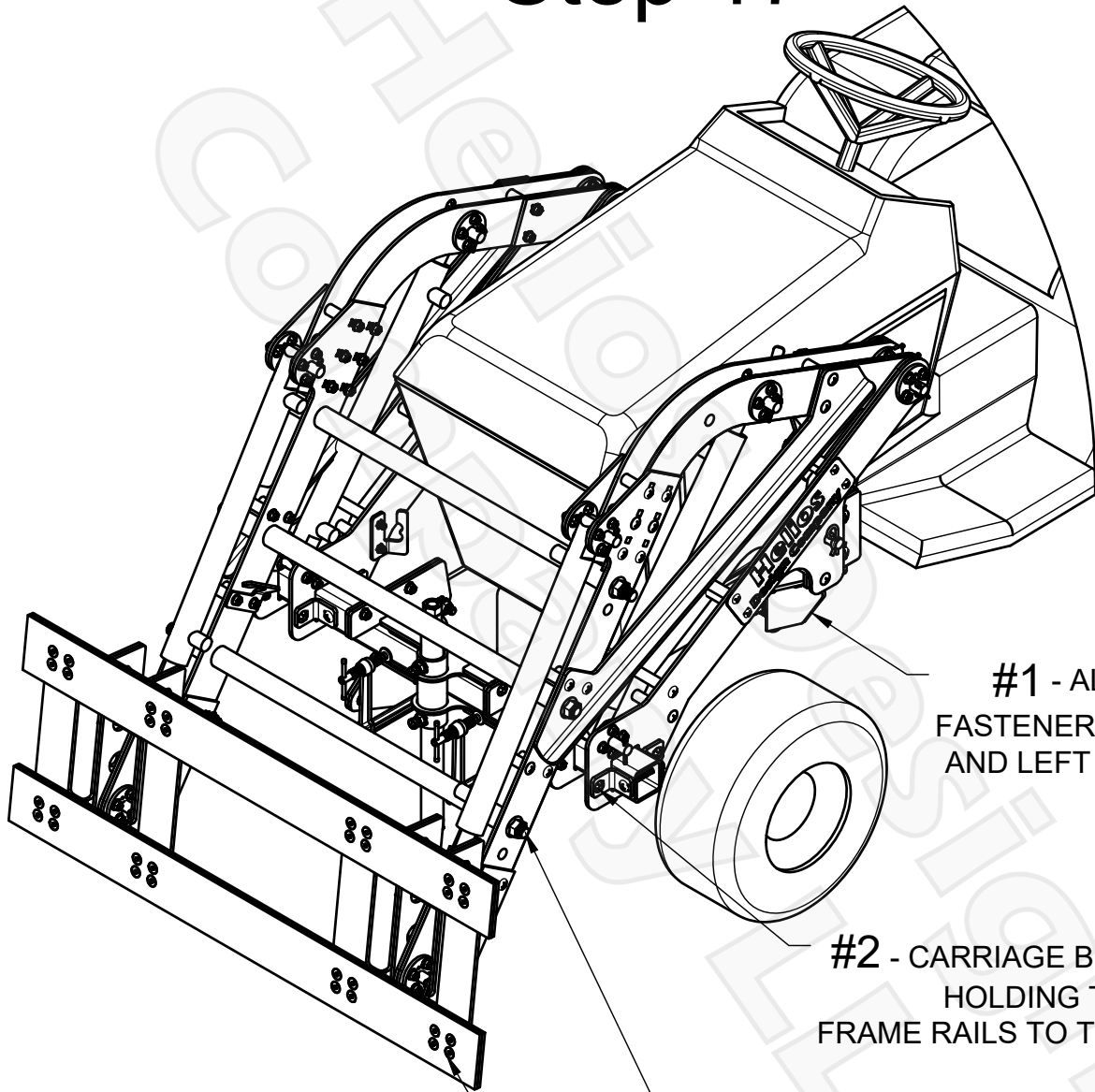
Step 16



Instruction Manual

Tightening Sequence

Step 17



#1 - ALL 7/16"
FASTENERS IN RIGHT
AND LEFT ANCHORS

#2 - CARRIAGE BOLTS/NUTS
HOLDING THE
FRAME RAILS TO THE BUMPER

#3 - 3/4" NUTS ON ARM CROSSBARS
(SHOULD HAVE BEEN DONE IN STEP 14)

#4 - FLAT HEAD BOLTS/NUTS IN
BUCKET MOUNT PLATE

#5 - ALL THE REST.
GO WILD, HAVE FUN!

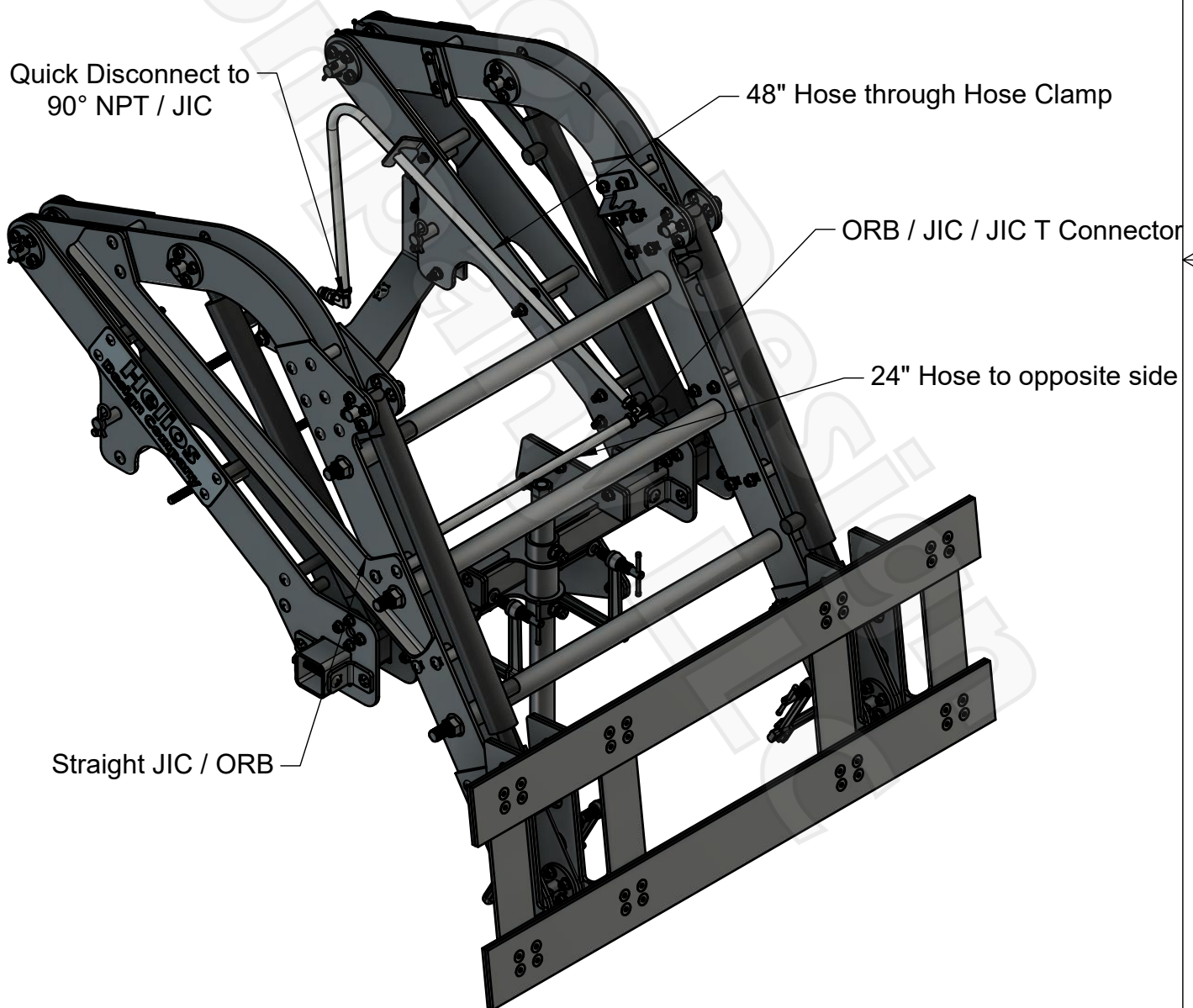
Instruction Manual



Hydraulic Hose Installation

Step 18

Arm Raise - Labeled with White
Connect to Lower Right hydraulic Port
(When viewing from the front of the tractor)



PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE
SOLE PROPERTY OF HELIOS DESIGN COMPANY LLC. ANY
REPRODUCTION IN PART OR WHOLE WITHOUT
PERMISSION IS PROHIBITED.

Helios Design Company

SHEET 1/4
REV

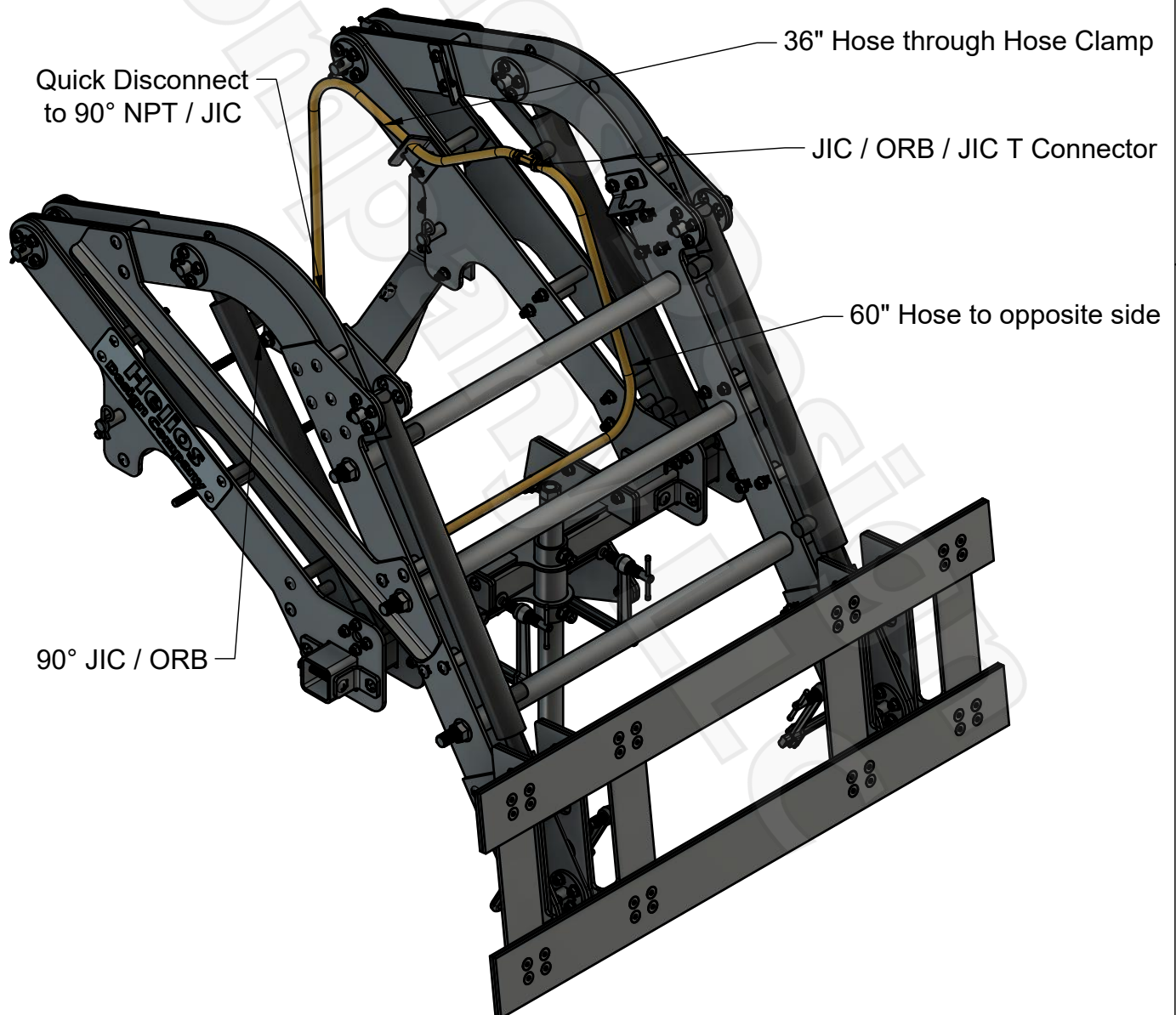
Instruction Manual

Hydraulic Hose Installation

Step 18

Arm Lower - Labeled with Yellow Connect to Lower Left hydraulic Port

(When viewing from the front of the tractor)

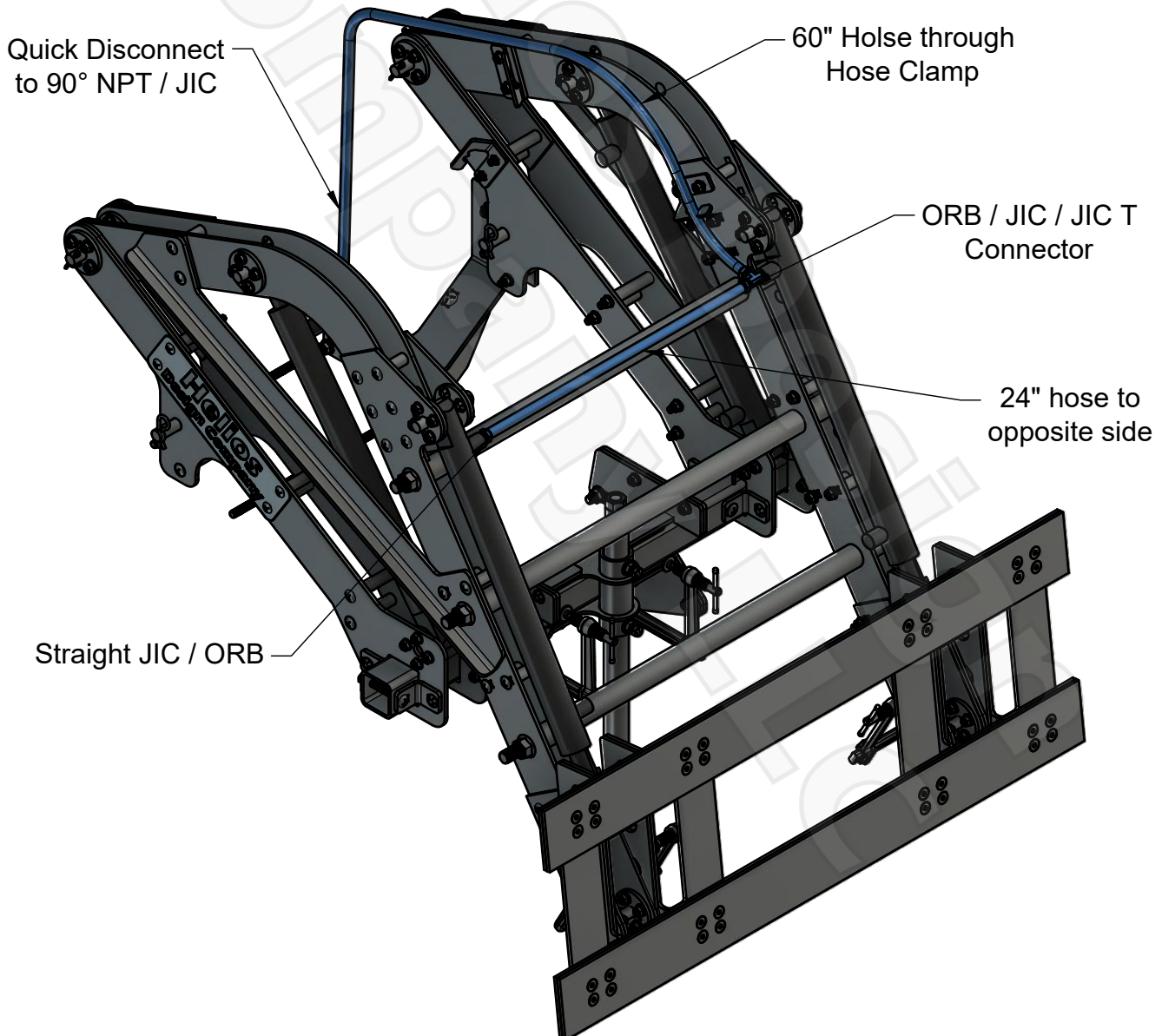


Instruction Manual

Hydraulic Hose Installation

Step 18

Bucket Extend - Labeled with Blue
Connect to Upper Left hydraulic Port
(When viewing from the front of the tractor)

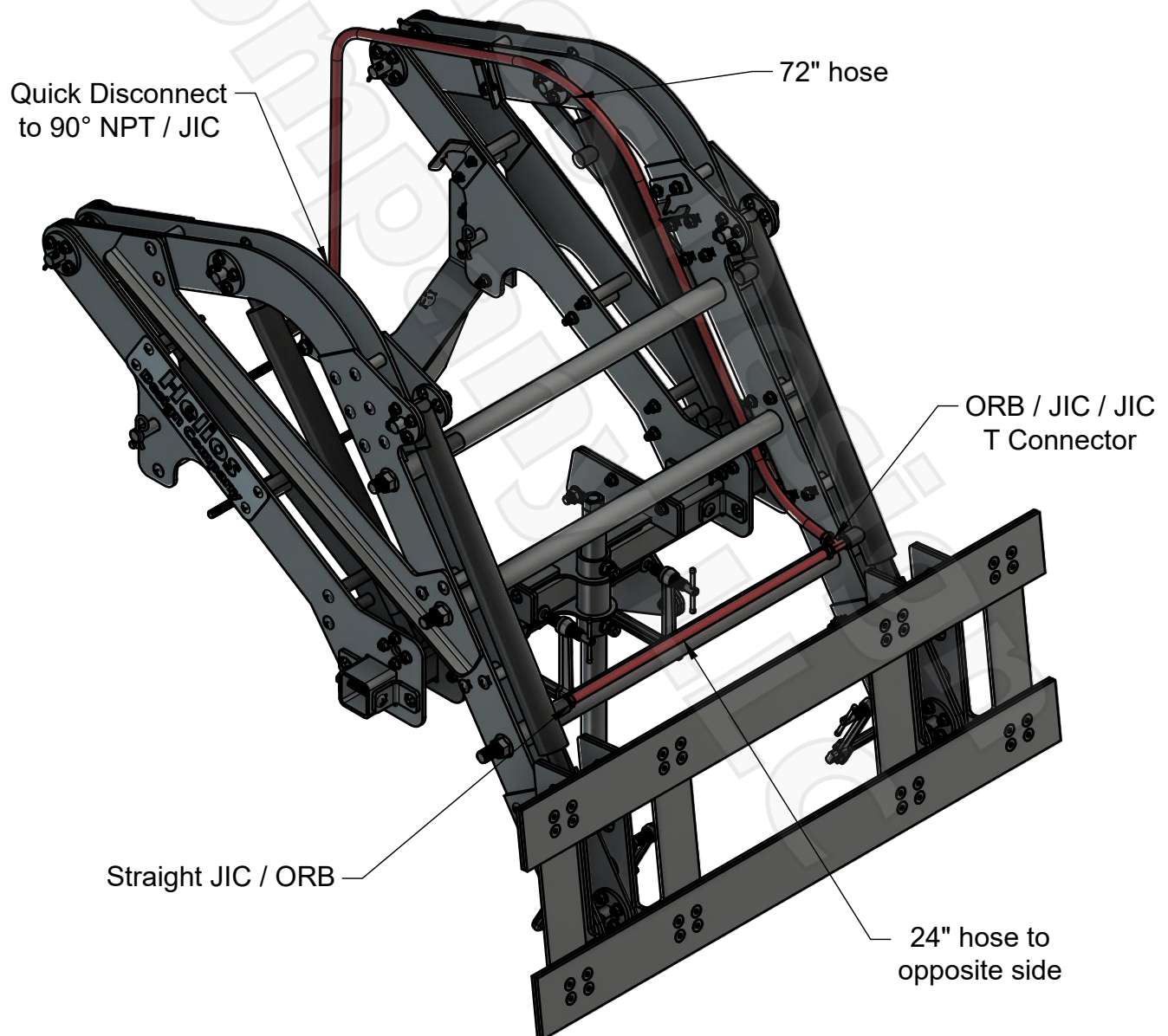


Instruction Manual

Hydraulic Hose Installation

Step 18

Bucket Retract - Labeled with Red
Connect to Upper Right hydraulic Port
(When viewing from the front of the tractor)



Instruction Manual



Bucket Assembly 1 Step 19

BUCKET ASSEMBLY 1			
ITEM #	QTY	PART NUMBER	DESCRIPTION
1	5	F15307	BUCKET LATCH
2	2	F15318	BUCKET LATCH END
3	10	F15319	BUCKET SECURING PLATE
4	1	F15320	BUCKET BASE
5	1	F15323	SCRAPER BLADE
6	27	P15208	1/4-20 FLANGE LOCKNUT
7	20	P15217	1/4-20 X .625 CARRIAGE BOLT
8	7	P15218	1/4-20 FLAT HEAD BOLT

1) Place Bucket Base plate on a work bench.

NOTE: The Bucket Base has additional holes along the front side to mount the Scraper Blade

2) Lift up Bucket Base slightly to insert Bucket Latch Ends and Bucket Latches.

3) Insert Bucket Securing Plates into the Bucket Latch slots.

NOTE: The slots are tapered, so it's best to insert them into the larger side of the taper, then tap them down towards the smaller end of the taper to snug them up

4) Insert 1/2-20 x .625 Carriage Bolts from the bottom and secure them with 1/2-20 Flange Locknuts

5) Repeat Process until all Carriage bolts are installed.

6) Do not fully tighten any bolts / nuts in this assembly at this time. After the Back Plate is installed, you'll tighten all of bolts / nuts.

7) Be Sure install:

A. All (5) Bucket Latches

B. (2) Bucket Latch Ends

They are much more difficult to install after the Bucket Back has been put into place.

8) Install Scraper blade on the bottom of the Bucket Base with the chamfered holes facing the floor and install:

A. 1/4-20 Flat Head bolts

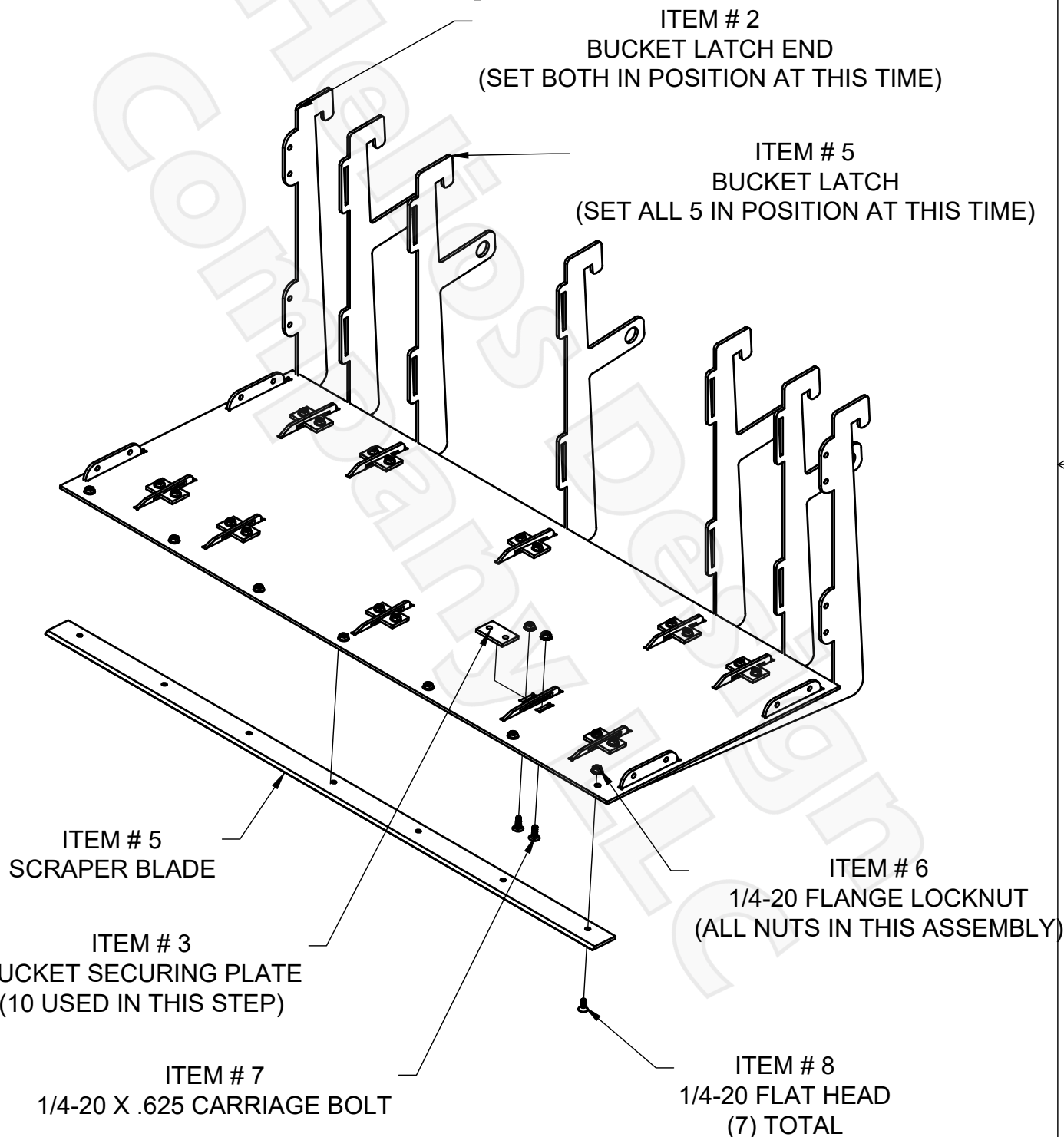
B. 1/4-20 Flange Locknuts

Instruction Manual



Bucket Assembly 1

Step 19



PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE
SOLE PROPERTY OF HELIOS DESIGN COMPANY LLC. ANY
REPRODUCTION IN PART OR WHOLE WITHOUT
PERMISSION IS PROHIBITED.

Helios Design Company

SHEET	REV
2/2	

Instruction Manual



Bucket Assembly 2 Step 20

BUCKET ASSEMBLY 1			
ITEM #	QTY	PART NUMBER	DESCRIPTION
1	10	F15319	BUCKET SECURING PLATE
2	2	F15322	BUCKET SIDE
3	36	P15208	1/4-20 FLANGE LOCKNUT
4	36	P15217	1/4-20 X .625 CARRIAGE BOLT

- 1) Place Bucket Back plate on the Bucket assembly.
- 2) Insert Bucket Securing Plates into the Bucket Latch slots.
NOTE: The slots are tapered, so it's best to insert them into the larger side of the taper, then tap them down towards the smaller end of the taper to snug them up
- 4) Insert 1/2-20 x .625 Carriage Bolts from the bottom and secure them with 1/2-20 Flange Locknuts
- 5) Repeat Process until all Carriage bolts are installed.
- 8) Install Bucket Sides as shown using:
 - A. 1/4-20 Carriage bolts
 - B. 1/4-20 Flange Locknuts

NOTE: They can only be installed in one direction, so if the holes don't line up, rotate/flip the Bucket Side Plate.

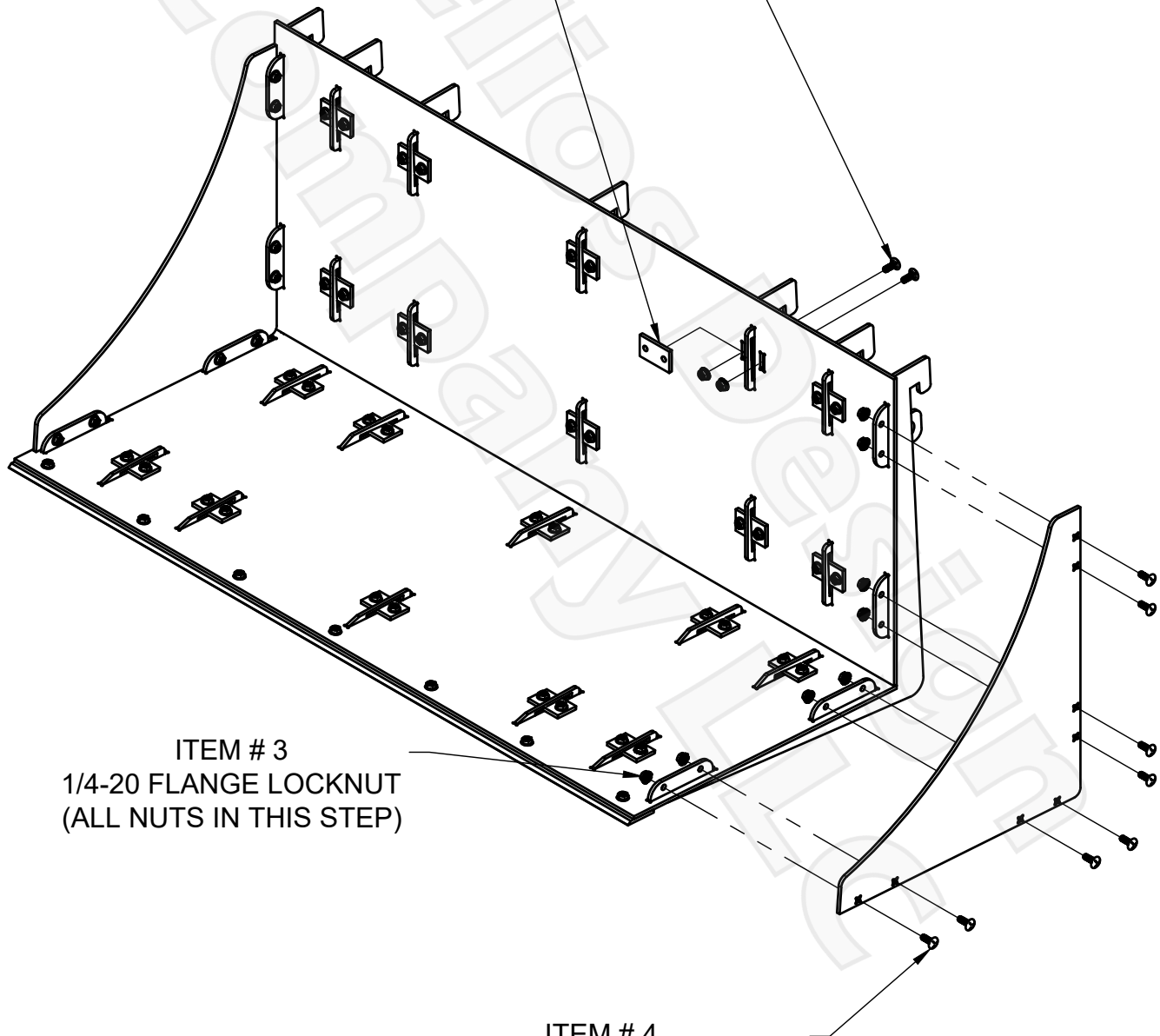
Instruction Manual



Bucket Assembly 2 Step 20

ITEM # 1
BUCKET SECURING PLATE
(10 IN THIS STEP)

ITEM # 4
1/4-20 X .75 CARRIAGE BOLT
(ALL BOLTS IN THIS STEP)



ITEM # 3
1/4-20 FLANGE LOCKNUT
(ALL NUTS IN THIS STEP)

ITEM # 4
1/4-20 X .625 CARRIAGE BOLT
(ALL BOLTS IN THIS STEP)

Instruction Manual



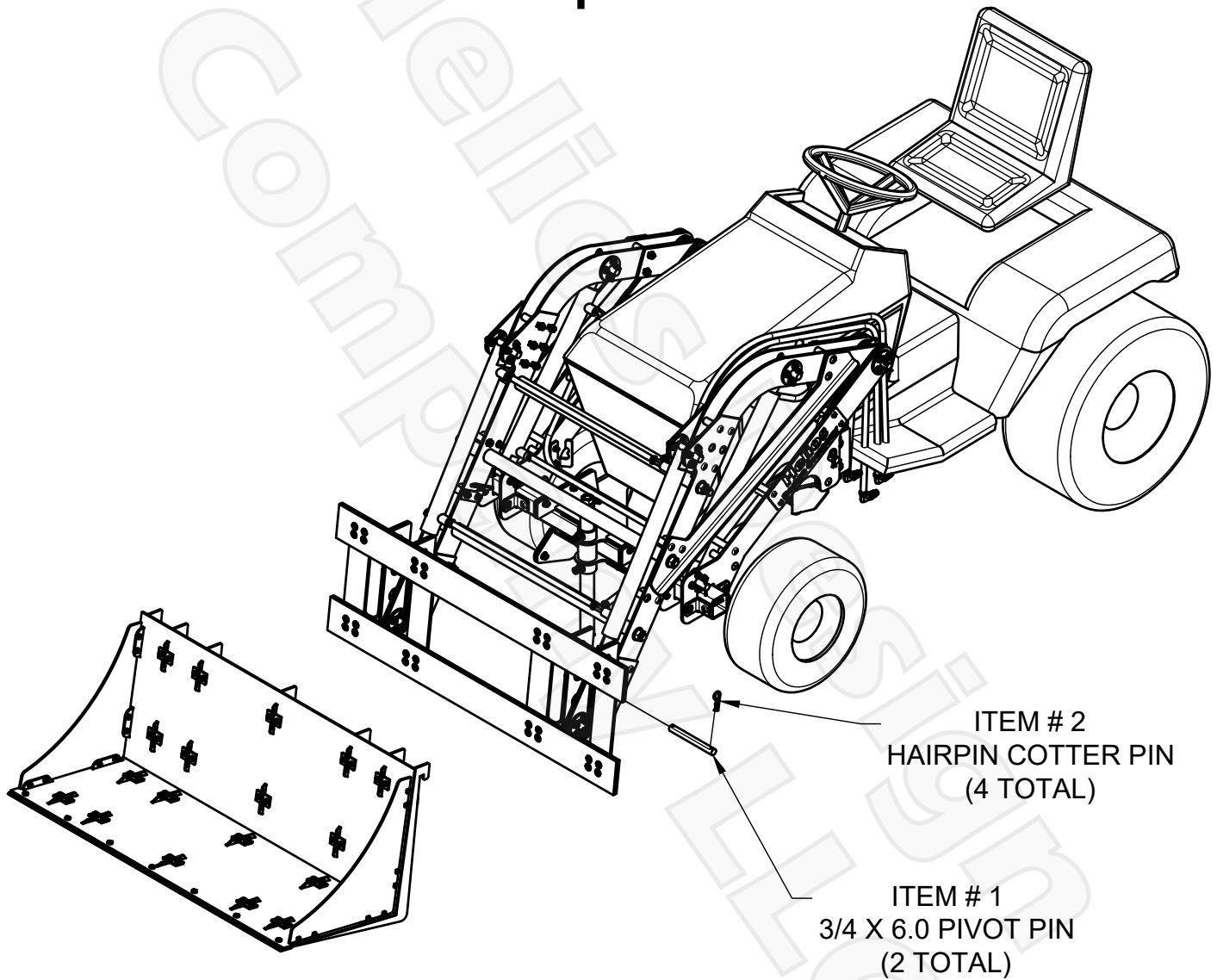
Bucket Installation Step 21

BUCKET INSTALLATION			
ITEM #	QTY	PART #	DESCRIPTION
1	2	F15338	3/4 X 6.0 PIVOT PIN
2	4	P15212	HAIRPIN COTTER PIN

Instruction Manual



Bucket Installation Step 21



PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE
SOLE PROPERTY OF HELIOS DESIGN COMPANY LLC. ANY
REPRODUCTION IN PART OR WHOLE WITHOUT
PERMISSION IS PROHIBITED.

Helios Design Company

SHEET	REV
2/2	