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Stage 1- Frame Assembly

Overview

This section covers assembly of the main lift frame, including vertical columns, corner connections,

lift tube installation, and final squareness verification. All hardware must remain hand-tight until frame squareness is confirmed.

1. Vertical Column Assembly

1. Layout all four vertical column assemblies on a flat surface.
2. Assemble each column per the exploded view.

IMPORTANT: Ensure all hydraulic mounting brackets are oriented outward on every column.

NOTE: Do not fully tighten hardware at this stage.

2. Lower Corner Assembly

1. Assemble the lower corner connections at each column base.
2. Install bolts, washers, and nuts per the Master BOM.
3. Confirm all mating surfaces are seated flush and components are correctly oriented.

Leave all fasteners hand-tight.

3. Lift Tube and Spanner Installation (Left Side)

1. Install the lift tube and spanner onto the left-side column assemblies.
2. Align the lift tube with the column brackets.
3. Install hardware and leave hand-tight.

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4. Upper Corner Assembly

1. Assemble the upper corner connections on all four columns.
2. Verify proper alignment and full seating of all components.
3. Leave all hardware loose to allow for final alignment.

5. Frame Squareness Verification

Measure the diagonal distance between opposite corners of the assembled frame.

The frame is square when both diagonal measurements are within $\pm 1/8$ in (3 mm) of each other.

Adjust the frame as required until squareness is achieved.

6. Final Torque

Once squareness has been verified, torque all fasteners to specification:

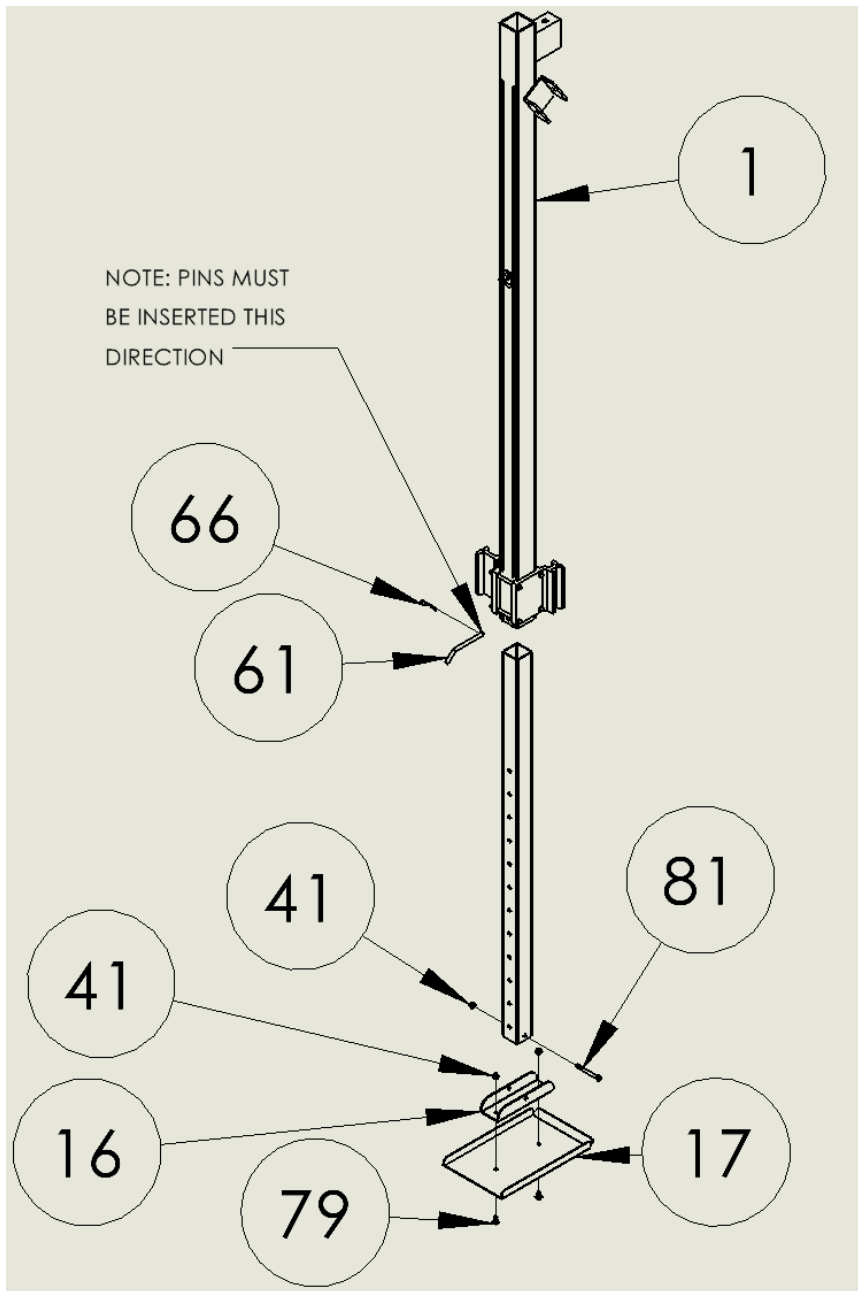
- 1/2 in bolts: 75 ft-lb (102 N·m)
- 3/8 in bolts: 30 ft-lb (41 N·m)

IMPORTANT: Do not torque hardware until frame squareness is confirmed.

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Image -Vertical Column Assembly

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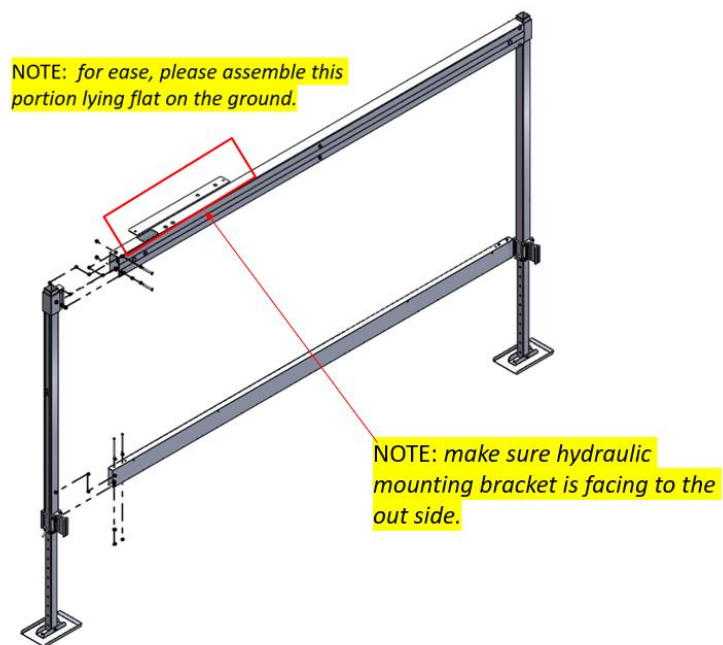
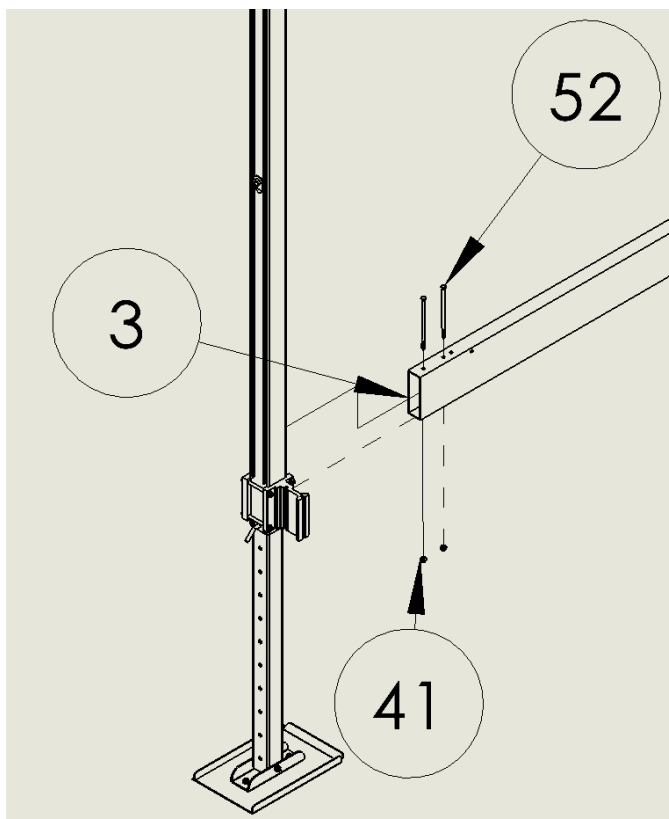


Image -Lower Corner Assembly



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-Upper Corner Assembly-

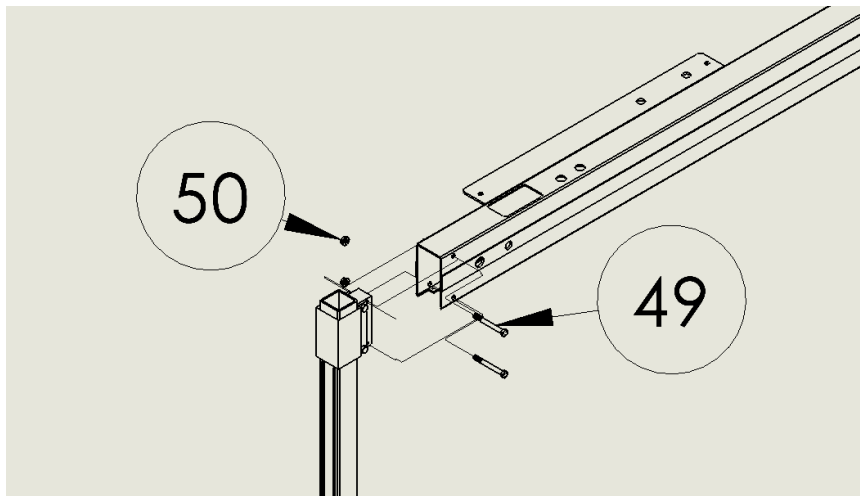
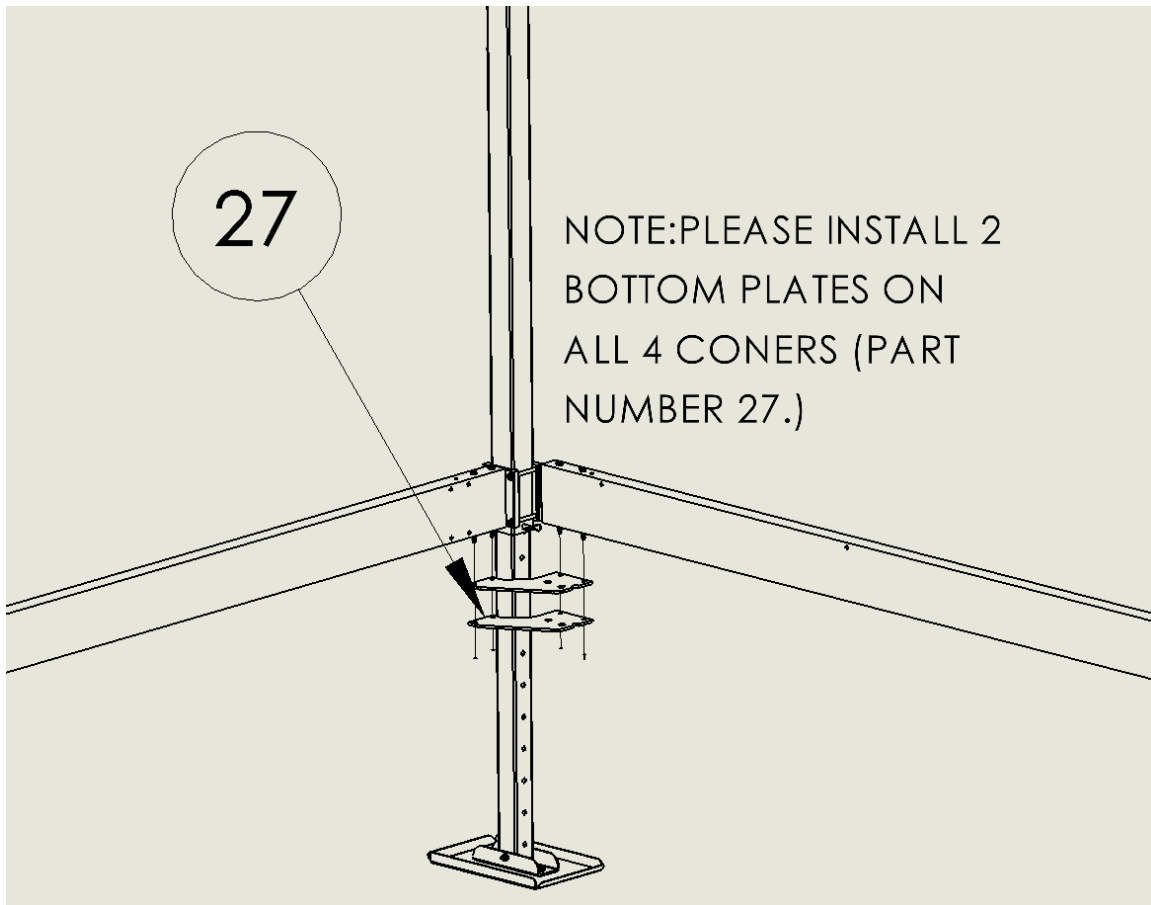


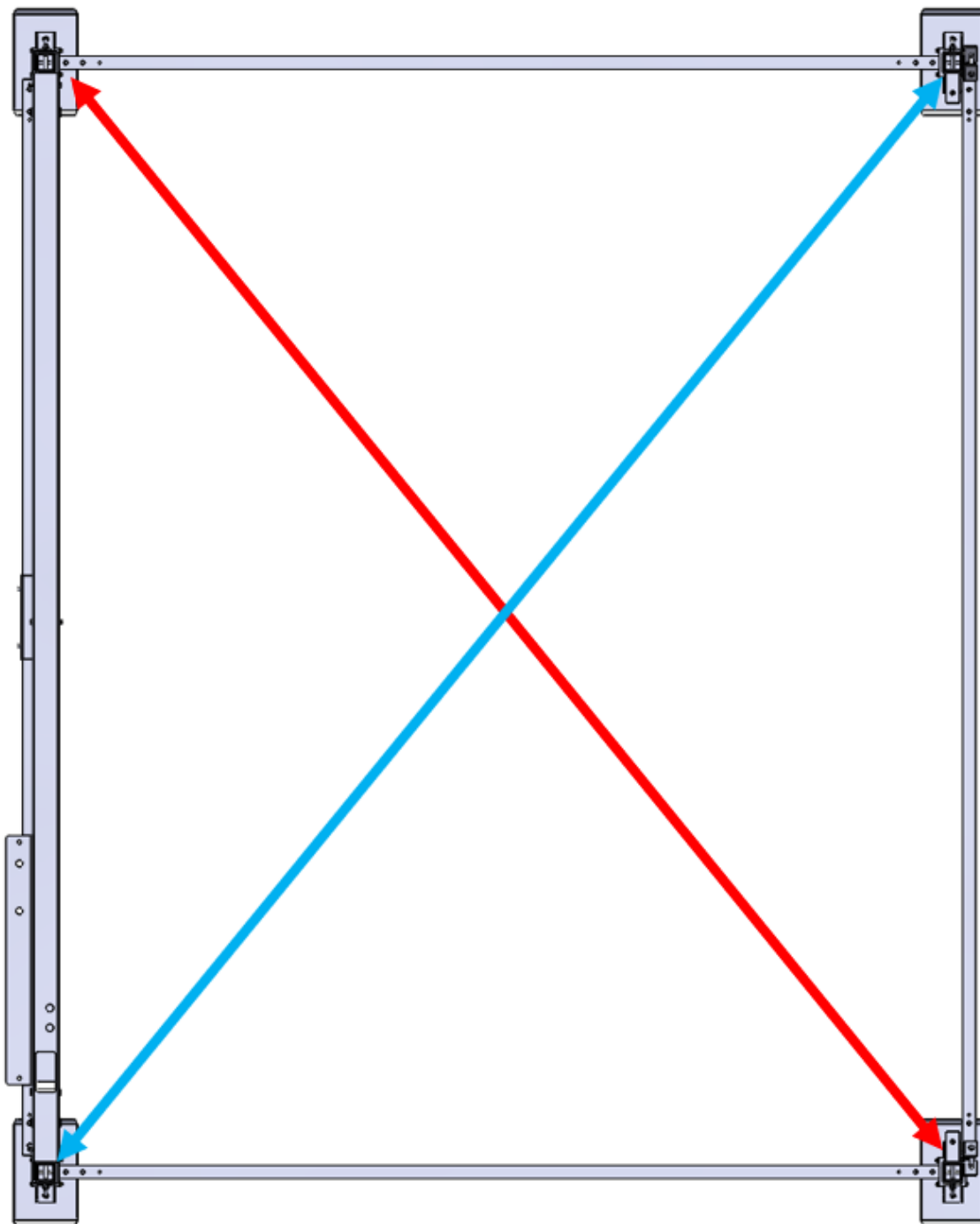
Image -Install corner plates.



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Image -Check Frame Squareness

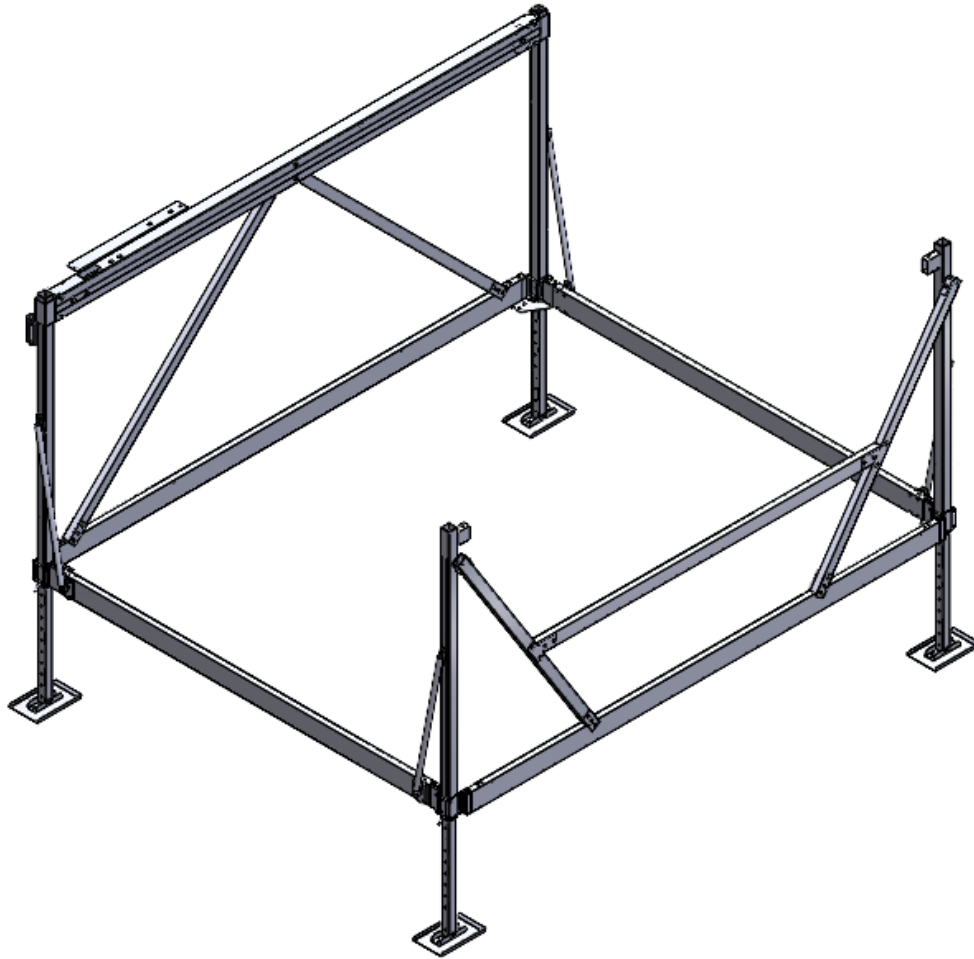


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Image -Completed Frame



Stage 2 - Uprights & Side Brace Assembly

Overview

This section covers installation of all vertical uprights and diagonal and horizontal side braces.

All hardware must remain hand-tight until frame squareness has been verified.

1. Vertical Upright Installation

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1. Install all vertical uprights onto the frame per the exploded view.
2. Verify each upright is plumb before proceeding.
3. Install hardware hand-tight only.

NOTE: Do not torque upright hardware until final alignment is confirmed.

2. Diagonal Side Brace Installation

1. Install diagonal side braces between the lift tube and uprights.
2. Ensure brace orientation matches the exploded view.
3. Install hardware hand-tight.

3. Remaining Side Braces

1. Install remaining horizontal and diagonal side braces.
2. Confirm all braces are fully seated and aligned.
3. Leave all hardware loose to allow for final squareness adjustment.

4. Final Alignment Check

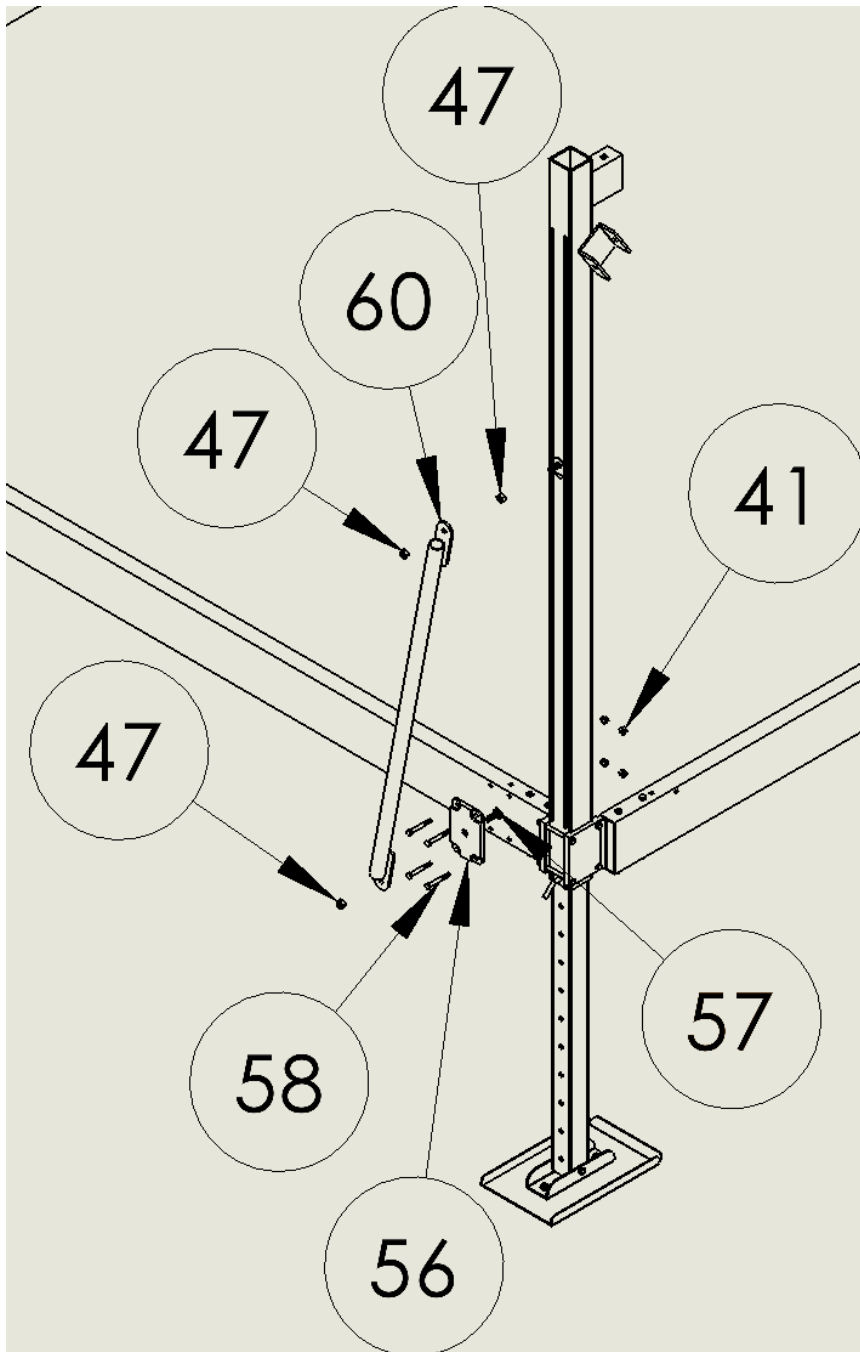
Verify all uprights are plumb and all side braces are aligned without binding.

-Vertical Upright Installation-

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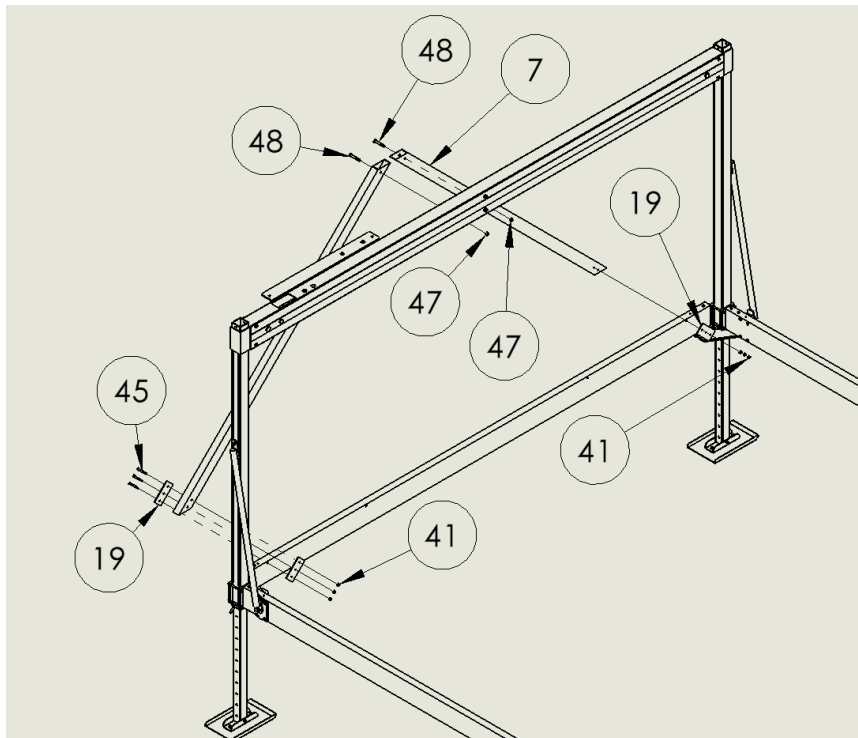
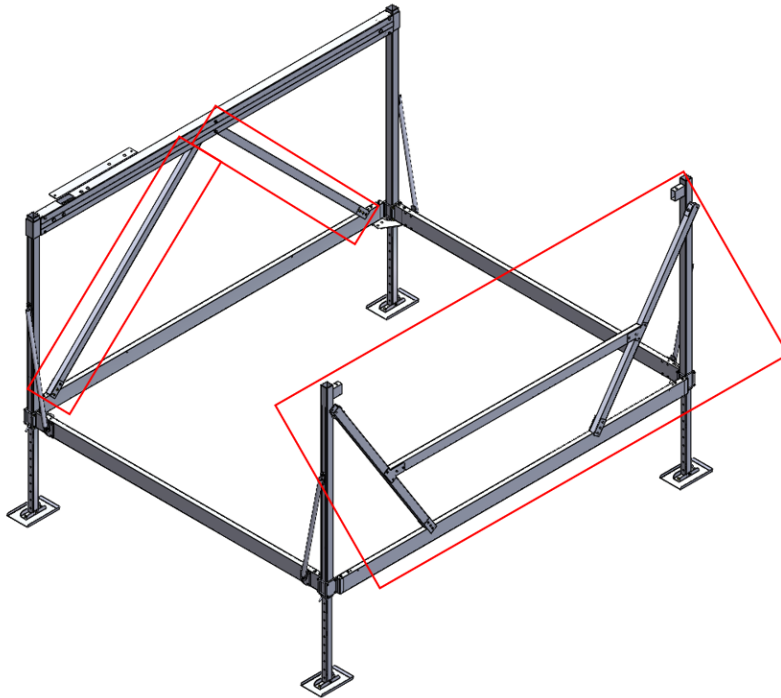




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Image -Diagonal Side Brace Installation

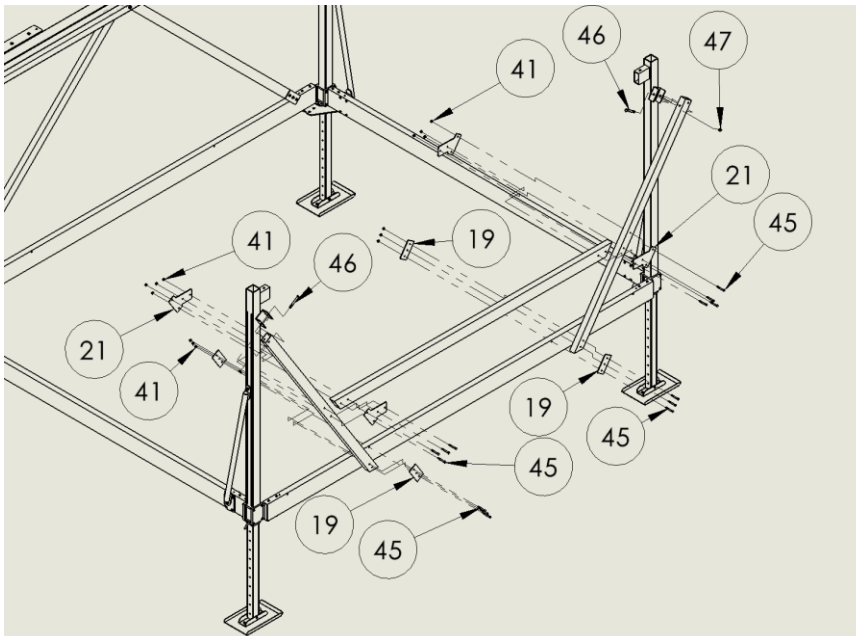
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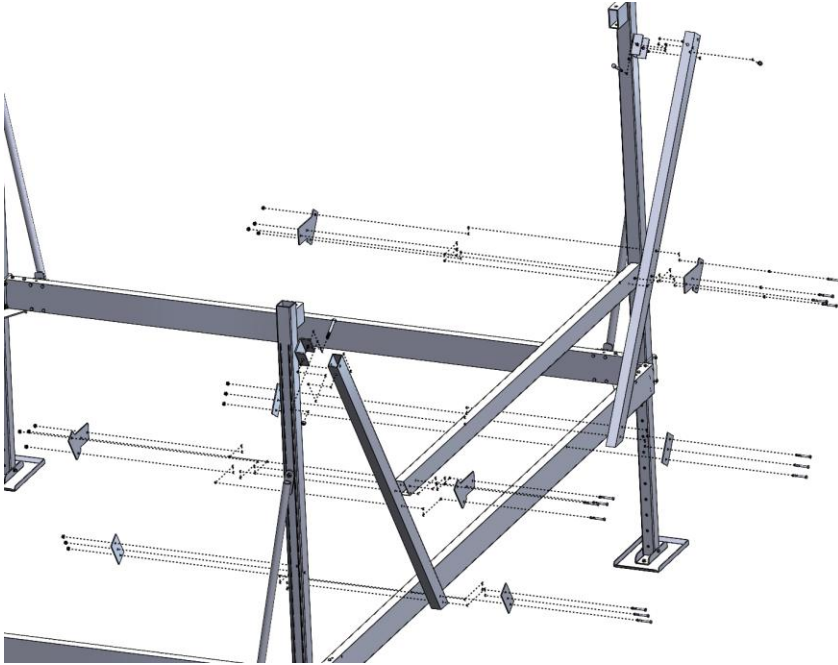
Image -horizontal and diagonal side braces



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Stage 3- Battery Tray & Pump Housing Assembly

5. Hydraulic Connections

1. Connect hydraulic quick-connect fittings.
2. Verify fittings are fully seated and leak-free.

6. Controller & Wiring Installation

1. Install the manual controller where you see fit.
2. Route the wiring harness through the tray opening.
3. Connect harness to the controller.

7. Battery Installation (Recommended 31 series deep cycle)

1. Install the battery into the tray.

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2. Connect red cable to positive (+) terminal.
3. Connect black cable to negative (–) terminal.

NOTE: After battery connection, the controller will power on and cycle through settings.

Verify the display indicates approximately 12 volts during the voltage screen.

8. Functional Check

Confirm the controller powers on and all connections are secure before proceeding.

Image - battery tray kit components



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Image -Hydraulic Line Pre-Routing

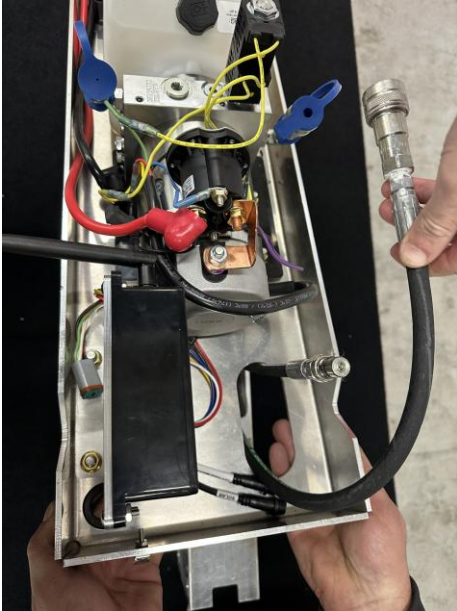


Image -Mounting Bolt Installation



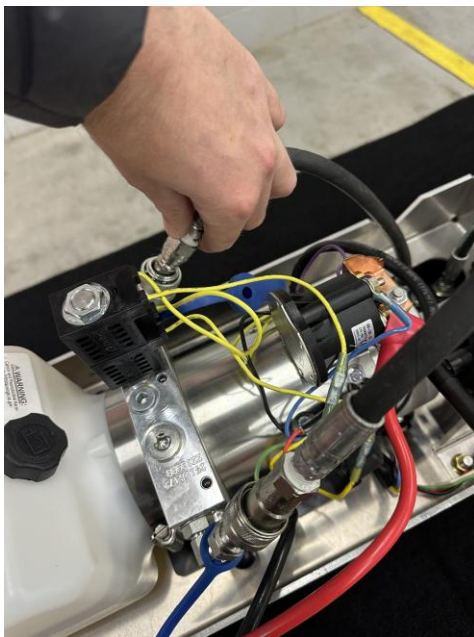
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Image -Hydraulic line hook up

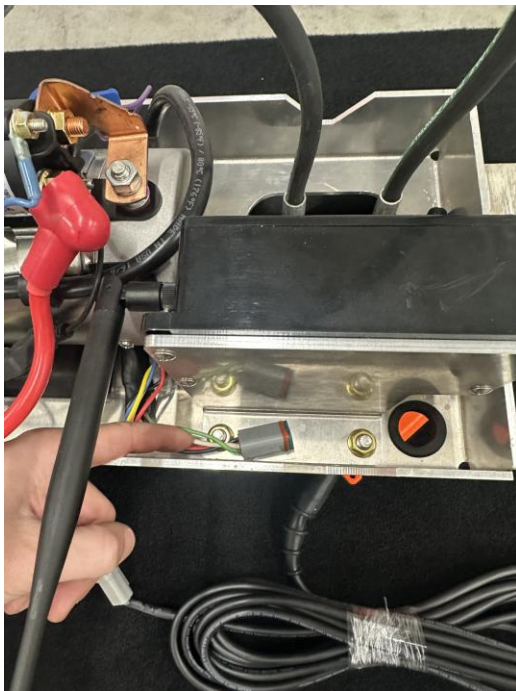


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Image -Controller & Wiring Installation



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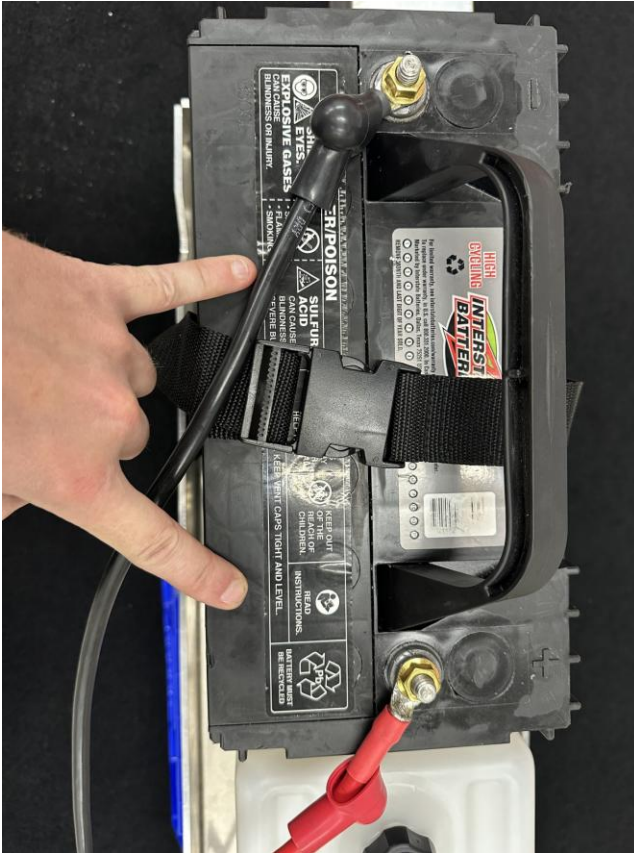




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NOTE: After battery connection, the controller will power on and cycle through settings.

Verify the display indicates approximately 12 volts during the voltage screen.



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Stage 4 – Carriage and Cable Assemblies

Stage 4 – Carriage Installation

Step 1 – Carriage Bolt Preparation

Obtain the carriage bolt package (4x4, 2x4, or equivalent) and lay the (4x4, 2x4, or equivalent) diagonally on all four corners of the frame.

Step 2 – Front and Rear I-Beam Installation

Lay the front and rear I-beams onto the carriage bolts.

IMPORTANT: Ensure beam cables correspond to the non-lift tube side of the frame. Beam cables must have a 6 in cable stud, on non-lift tube side.

Step 3 – Carriage Side Tube Installation

Install the carriage side tubes.

NOTE: Pull beam cables through the top plate split during installation.

Step 3.1 – Beam Cable Routing

Pull beam cables through the top plate split for both front and rear columns. Ensure the top split plate sits on top of the front I-beam.

Leave all carriage hardware hand-tight.

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Image – Step 1: Carriage Bolt Placement



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Image – Step 2: Front and Rear I-Beam Installation



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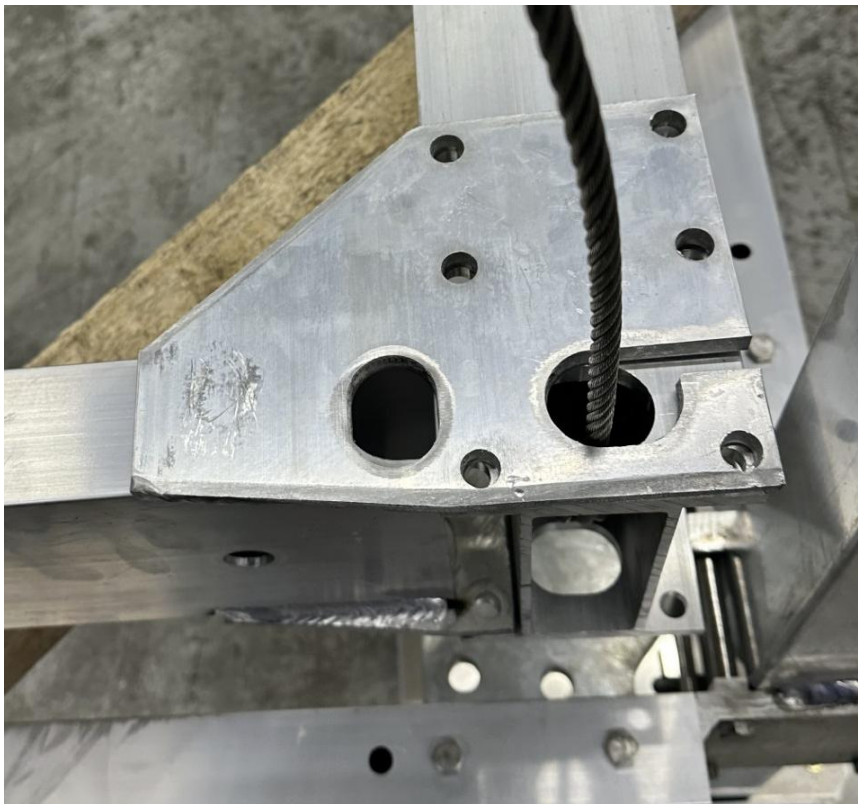
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Image – Step 3: Carriage Side Tube Installation



Image – Step 3.1: Beam Cable Routing Through Top Plate



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Stage 5 – Cable Assemblies

Upward Cable Assembly

Step 1 – Insert beam cable stud through upper column bracket.

Step 2 – Install washer and nut; leave hand-tight.

Step 3 – Install guide plate and align holes.

Step 4 – Install six bolts and nuts using washers where contacting plastic.

Step 5 – Install remaining three bolts and nuts; leave loose. Repeat on rear column.

Side-to-Side Cable Assembly

Step 1 – Pull side-to-side cable through I-beam hole.

Step 2 – Pull cable stud through plate hole.

Step 3 – Fasten nut on back side of plate; leave hand-tight.

Lift Tube Cable Assembly

Step 1 – Install guide plate and align holes.

Step 2 – Drop lift plate onto guide plate and align holes.

Step 3 – Install spacers and bolts.

IMPORTANT: Long spacer front, short spacer rear.

Step 4 – Install second spacer and bolt; leave loose.

Step 5 – Install bolts facing downward; leave loose.

Step 6 – Install bolts facing upward; leave loose.

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Image – Upward Cable Assembly



Image – Side-to-Side Cable Assembly



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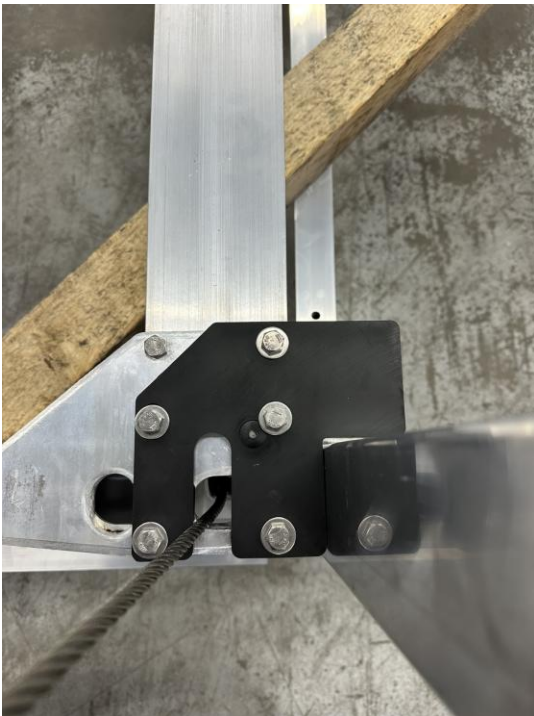
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Image – Cable Assembly



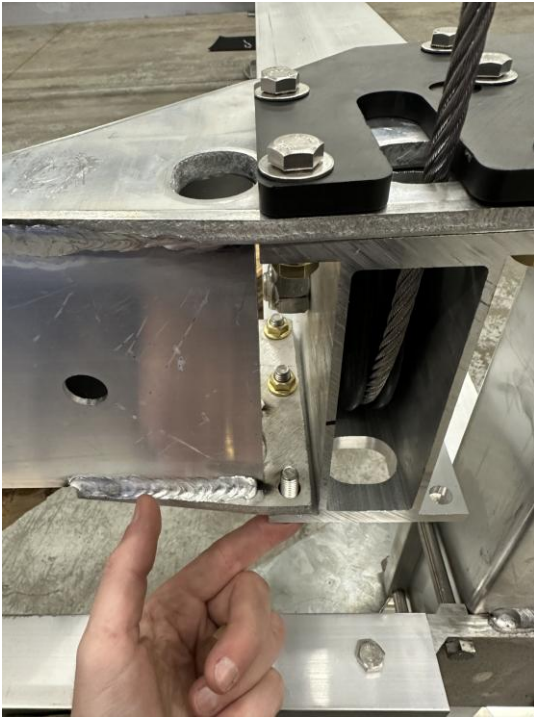
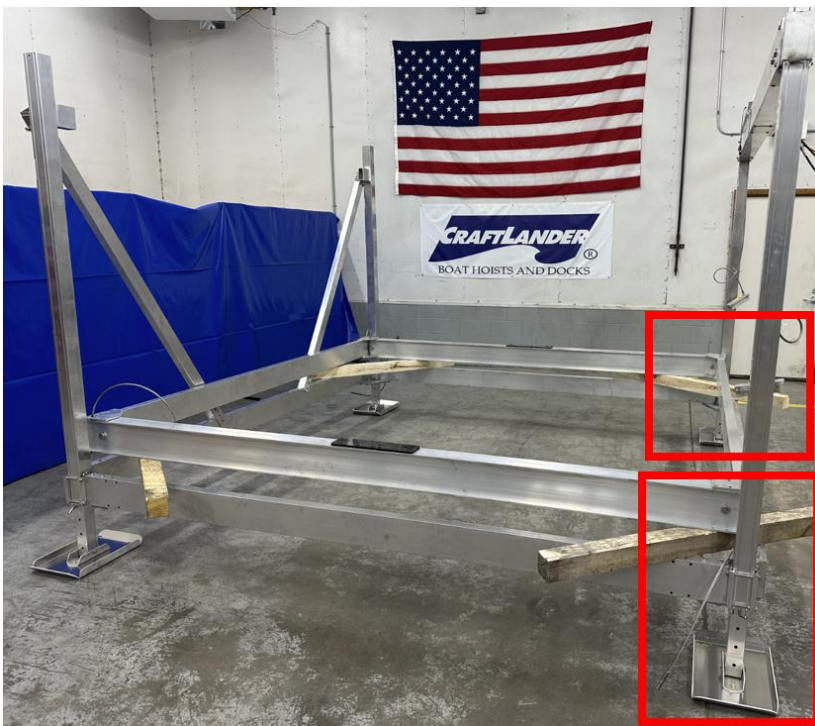
Image – Cable Assembly



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Image – Cable Assembly*Image – Cable Assembly*

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Image – Cable Assembly



Image – Cable Assembly



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Image – Cable Assembly



Image – Lift Tube Cable Assembly



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Image – Lift Tube Cable Assembly

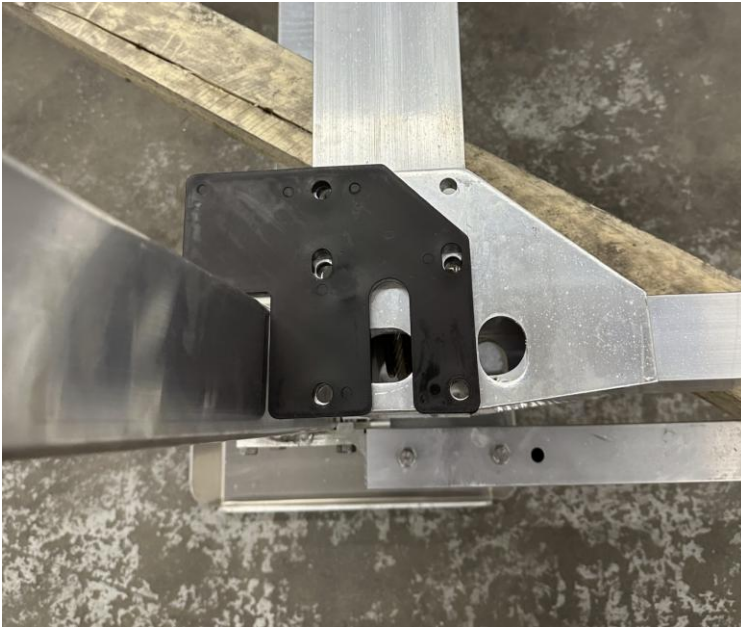


Image – Lift Tube Cable Assembly



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Image – Lift Tube Cable Assembly

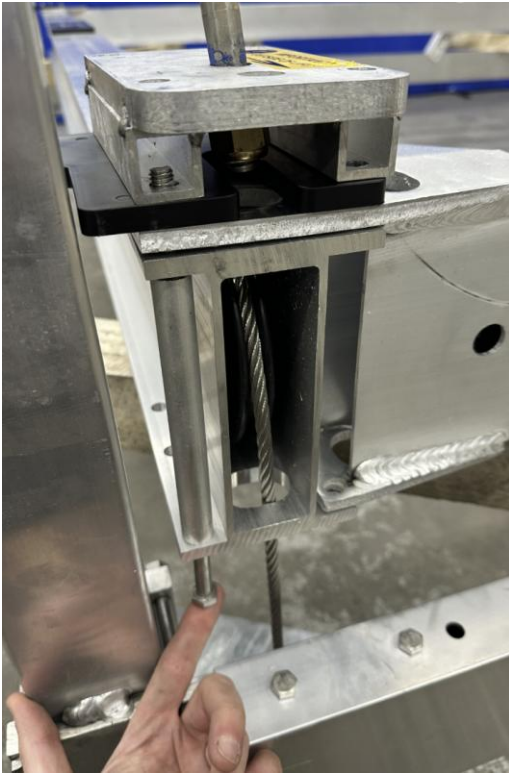
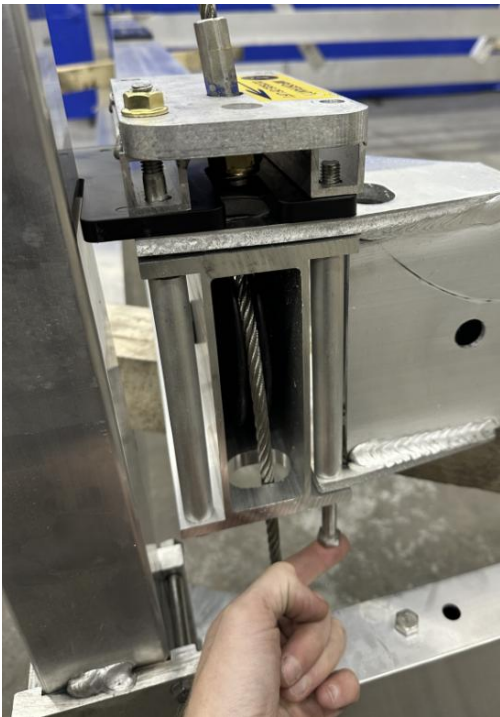


Image – Lift Tube Cable Assembly



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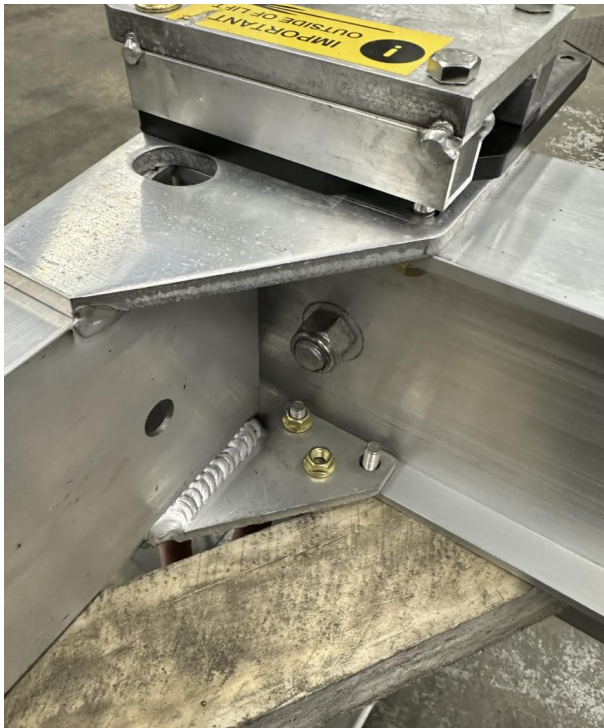
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Image – Lift Tube Cable Assembly



Image – Lift Tube Cable Assembly



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Stage 6 – Final Assembly & Inspection

Overview

This section follows the original final inspection and verification sequence. All systems must be checked and verified prior to placing the lift into service.

1. Structural Frame Verification

- Confirm the frame is square by checking diagonal measurements ($\pm 1/8$ in).
- Verify all columns, uprights, and braces are plumb and aligned.
- Ensure foot plates sit flat and evenly on the ground or lakebed.
- Inspect weldments and joints for visible defects or gaps.

2. Fasteners & Torque Checks

- Verify all 1/2 in frame bolts are torqued to 75 ft-lb (102 N·m).
- Verify all 3/8 in hardware is torqued to 30 ft-lb (41 N·m).
- Ensure proper washers and lock nuts are installed at all locations.

3. Sheave, Cable & Pulley System Inspection

- Confirm correct cable routing with no crossovers or twists.
- Ensure all sheaves rotate freely without binding.
- Verify all pins, bushings, snap rings, and spacers are fully seated.
- Inspect cables for kinks, broken strands, or flattening.

4. Hydraulic System Verification

- Confirm the hydraulic cylinder is mounted securely with proper pin retention.

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- Inspect hoses for proper routing with no chafing or sharp bends.
- Ensure all fittings are fully engaged and leak-free.
- Cycle the lift through a full range of motion and inspect for leaks.

5. Electrical & Control System Check

- Confirm correct battery polarity: red to positive (+), black to negative (–).
- Verify battery voltage is between 12.0–13.5 volts (no load).
- Confirm controller operation and all display modes function correctly.

6. Safety Pins, Locks & Retainers

- Verify all pins, snap rings, and retainers are fully installed.
- Confirm no clips or fasteners are missing or improperly seated.

7. Operational Test

- Fully lower the lift and confirm stability and cable tracking.
- Fully raise the lift and confirm even lift and smooth cylinder motion.
- Hold the lift in the raised position and verify no hydraulic drift.

8. Final Approval

Once all inspection items are complete and verified, the lift is approved for operation.

Record installation date, inspector name, and notes for future reference.

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