DIVERSIFIED
FALL PROTECTION

P20 Portable Truss Kit
Installation Manual



IMPORTANT
This manual shall be retained by the site owner for the service life of the system.
Installation shall be performed by qualified personnel only.

Effective Date: 7/6/2026

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1. SCOPE

This manual provides step-by-step assembly instructions for the P20 Portable Truss Kit. Instructions for use, user training, inspection, maintenance, fall protection compliance, and system capacity are provided in separate documents. Use this manual to assemble the P20 Portable Truss using the supplied components and hardware.

2. SYSTEM OVERVIEW

2.1. Assembly Overview

The P20 Portable Truss Kit is assembled from a weighted base, column, kickers, knee brace, arm, truss, trolley, end stops, SRL, D-rings, and retrieval rope/tagline. The assembly sequence keeps major connections loose until alignment is complete and then tightens the system in the required order.

2.2. System Limitations

- Do not:
  - Modify approved components.
  - Substitute unapproved hardware or materials.
  - Assemble the system in a manner not shown in this manual.

3. ASSEMBLY SAFETY REQUIREMENTS

3.1. General Safety Requirements

- Support and control all heavy or unstable components during assembly, including the base, ballast block, column, kickers, knee brace, arm, truss, and SRL.
- Keep hands, feet, and body parts clear of pinch points while aligning components and installing hardware.
- Use equipment and handling methods rated for the component weight being moved or positioned.
- Keep personnel clear of the swing path of loose or temporarily supported components until they are fastened.
- Stop assembly if site conditions, missing hardware, damaged components, or unstable components prevent the step from being completed as shown.

4. BEFORE YOU START

4.1. Site and Parts Check

- Verify the ground surface meets the following conditions before assembling the P20 system:
  - Surface shall be firm, stable, and compacted.
  - Surface shall be reasonably level, with a maximum slope of 5° (8.8%).
  - Do not install on:
    - Soft or yielding soil
    - Mud
    - Uncompacted fill
    - Frozen ground
    - Areas subject to settlement or erosion

- Confirm the base location has enough clearance for the base, column, arm, truss, lifting equipment, and installer access.
- Verify the base is oriented with the arm side facing the work area before installing ballast.
- Verify all required P20 components are present before assembly.
- Verify supplied hardware sizes match the installation steps before beginning work.
- Confirm torque wrenches are available for the required torque values listed in the installation references.

Note: Do not begin assembly if required components or hardware are missing, damaged, or cannot be identified.

5. TOOLS AND MATERIALS

5.1. Installer Provided Tools

- Wrenches and sockets for 1/2”, 9/16”, and 3/4” hardware.
- Manual click-type torque wrenches, 35–45 ft-lb and 350–425 ft-lb ranges.
- Level or plumb reference.
- Tape measure.
- Drill.
- 7/32” drill bit.
- Marker, scribe, or center punch.
- Driver or socket for 1/4-14 hex washer self-drilling screws.
- Rated lifting equipment.
- Tag lines.

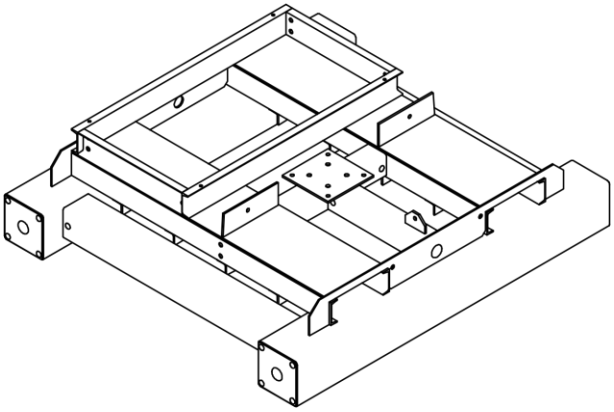
5.2. Optional Equipment

- Telehandler, crane, forklift, or other powered lifting equipment.
- Torque multiplier or high-capacity manual torque wrench.
- Laser level or digital level.
- Blocking, cribbing, or temporary support equipment.

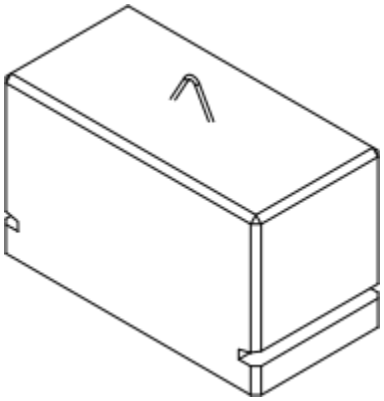
5.3. Illustrated Parts List

Use the Illustrated Parts List to identify the components and hardware supplied for the P20 Portable Truss before assembly and as parts are called out in the installation steps.

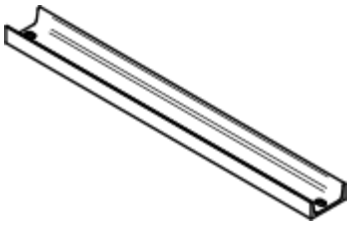
5.3.1. Primary Components



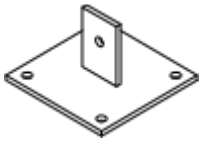
3600
P20 Base x1



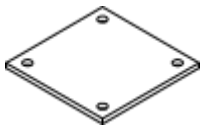
1507192
P20 Ballast Block x1



4080
P20 Ballast Clamp x2



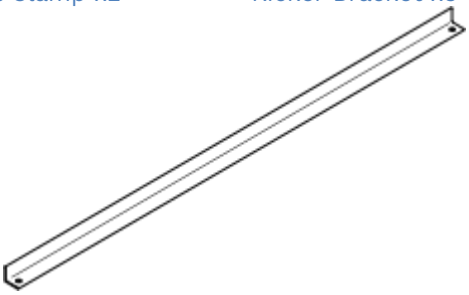
1510064
Kicker Bracket x3



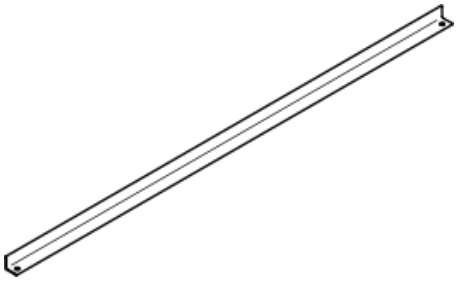
1510065
Backer Plate x1



1510055
P20 Column x1

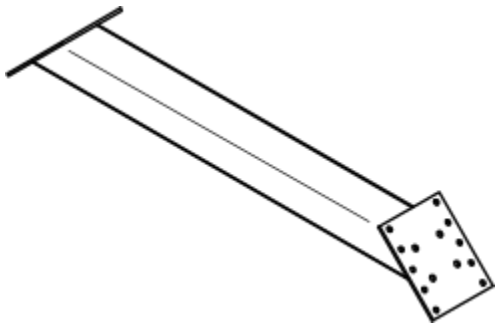


5709
Short Brace x4

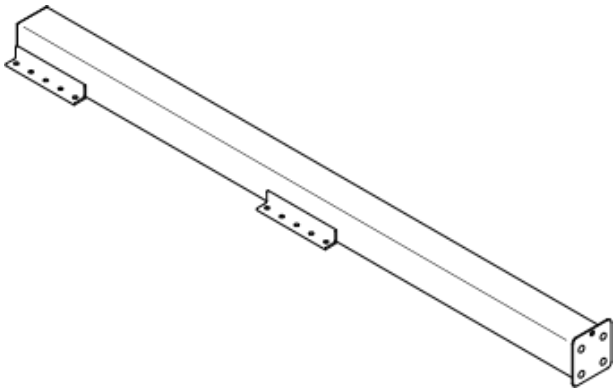


5708
Long Brace x2

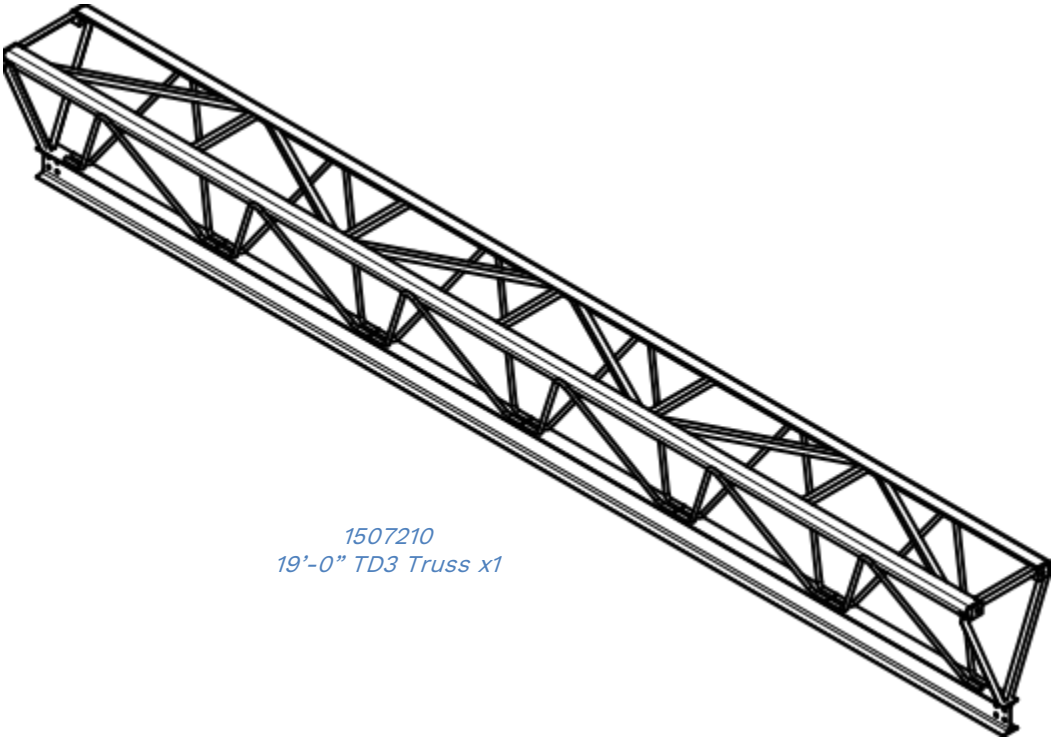
5.3.2. Primary Components (cont.)



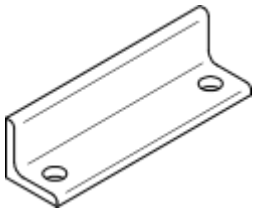
5715
Knee Brace x1



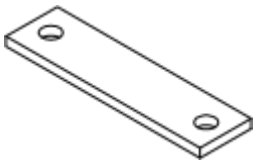
5702
P20 Arm x1



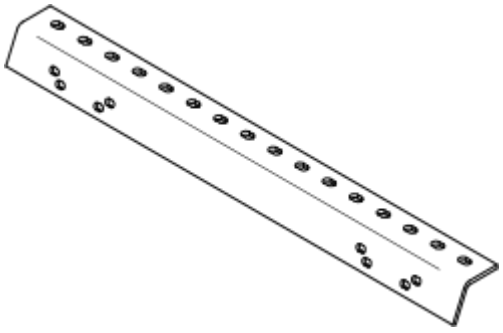
1507210
19’-0” TD3 Truss x1



1507489
P Unit Arm Bracket x2

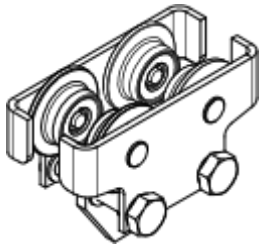


1507490
P Unit Bracket Bar x2

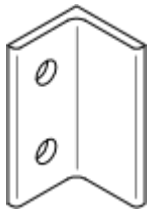


5013
Bent Plate x2

5.3.3. Trolley Components and Soft Goods



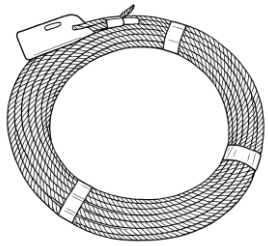
2502
Trolley x1



1507049
End Stop x4



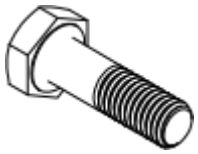
63310-00A
Lanyard x1



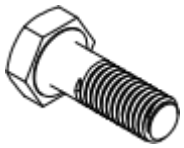
505230
95 ft Retrieval Rope / Tagline x1

Additional components such as a harness and suspension trauma straps may be included with kit but are not a part of the P20 Portable Truss Assembly.

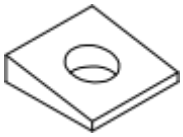
5.3.4. Hardware



19634
1/2" x 1-3/4" Bolt x4



19633
1/2" x 1-1/2" Bolt x8



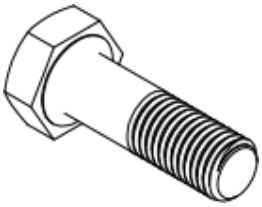
33875
1/2" Beveled Washer x4



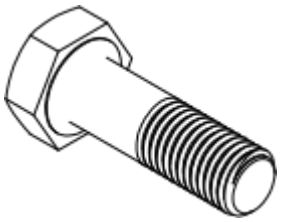
0156022
1/2" Flat Washer x4



36753
1/2" Nut x12



19691
3/4" x 2-1/4" Bolt x30



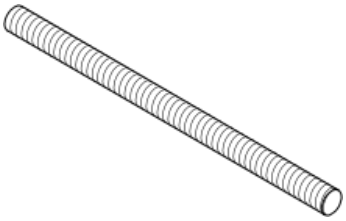
19692
3/4" x 2-1/2" Bolt x10



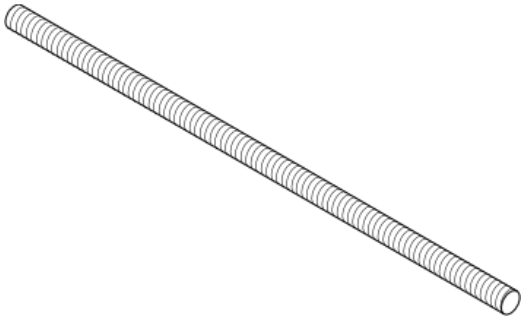
0156028
3/4" Flat Washer x76



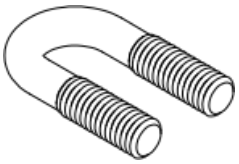
36757
3/4" Nut x80



1510063
3/4" x 12" Threaded Rod x8



1507491
3/4" x 20" Threaded Rod x4



10180-13215
9/16" U-bolt x8



11494738
9/16" Flat Washer x16



10180-13161
9/16" Lock Washer x16



36711
9/16" Nut x16



3076T35
D-Ring x2

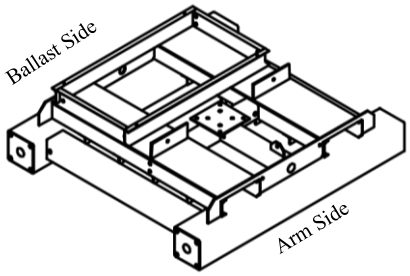


32048
¼-14 x 1-1/2" Hex Washer Self-Drilling Screw x4

6. INSTALLATION INSTRUCTIONS

6.1. Set the Base

- Set the base on level ground at the required installation location, with the arm side facing the work area.

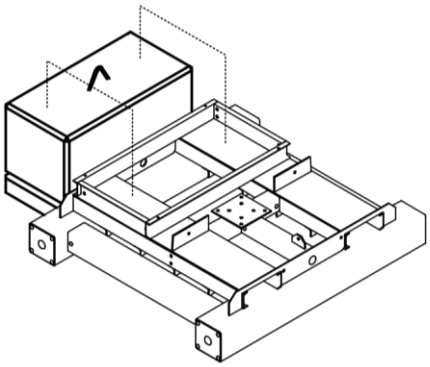


Note: Before continuing, confirm the base is properly oriented and sits evenly on the supporting surface without rocking or bridging depressions.

CAUTION The base weighs approximately 2,300 lb. Support and control the base during lifting and positioning. Keep hands and feet clear.

6.2. Install the Ballast Block

- Place the ballast block into the ballast block cradle of the base and seat it fully.



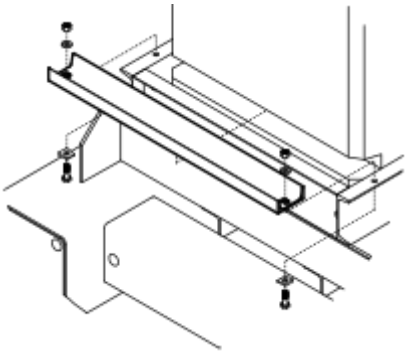
CAUTION The ballast block weighs approximately 5,600 lb. Support and control the ballast block during lifting and positioning. Keep hands and feet clear.

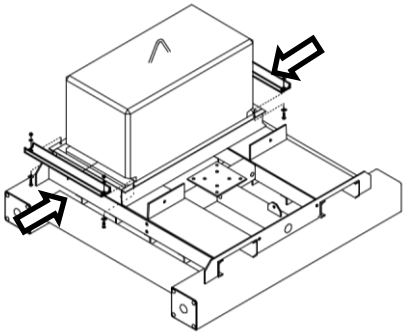
6.3. Secure the Ballast

- Install the ballast clamps and install the bolts.
- Snug-tighten the bolts by hand first to seat the beveled washers and align them with the groove in the ballast block.
- Final-tighten using a torque wrench.

Note: Confirm the ballast clamps capture the ballast block at the cradle.

Reference: Use 1/2” x 1-3/4” bolts with 1/2” beveled washers, 1/2” flat washers, and 1/2” nuts. Torque to 35–45 ft-lb.



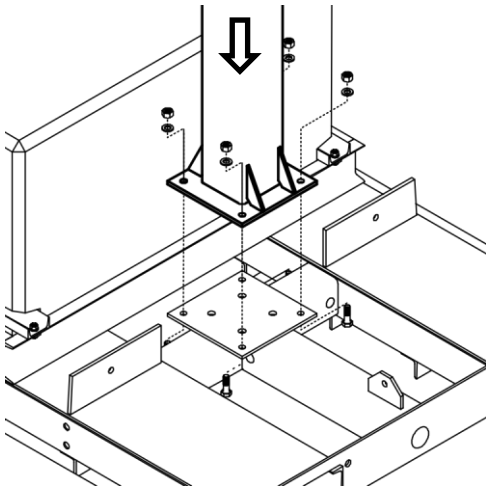


6.4. Install the Column

- Install the column and hand-tighten the mounting bolts to hold the column in position.

Note: Do not final-tighten the column mounting bolts at this time.

Reference: Use 3/4” x 2-1/2” bolts with 3/4” flat washers and 3/4” nuts.



CAUTION

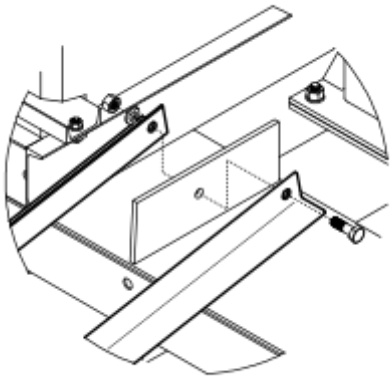
Column weight is approximately 1,020 lb. Support and control the column during lifting and positioning. Keep hands and feet clear.

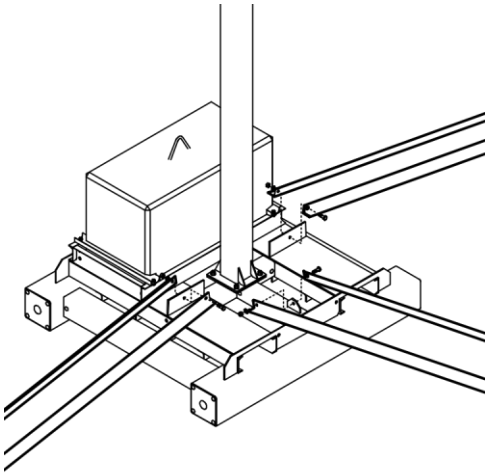
6.5. Attach the Kickers to the Base

- Build two short kickers using two matching short braces each.
- Build one long kicker using the long braces. The long kicker goes on the arm side of the base.
- Attach each kicker to the base and install the bolts.
- Hand-tighten the bolts so the kickers can rotate for alignment.

Note: Do not final-tighten the kicker bolts at this time.

Reference: Use 3/4” x 2-1/2” bolts with 3/4” flat washers and 3/4” nuts.



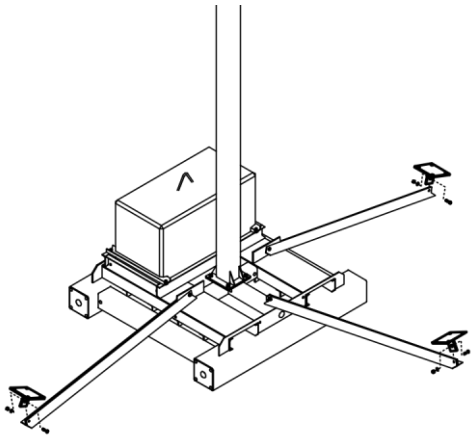


6.6. Attach the Kicker Mounting Plates

- Attach the mounting plates to the top of the kickers and hand-tighten the bolts.

Note: Do not final-tighten the mounting plate bolts at this time. The mounting plates must remain adjustable for alignment at the column connection.

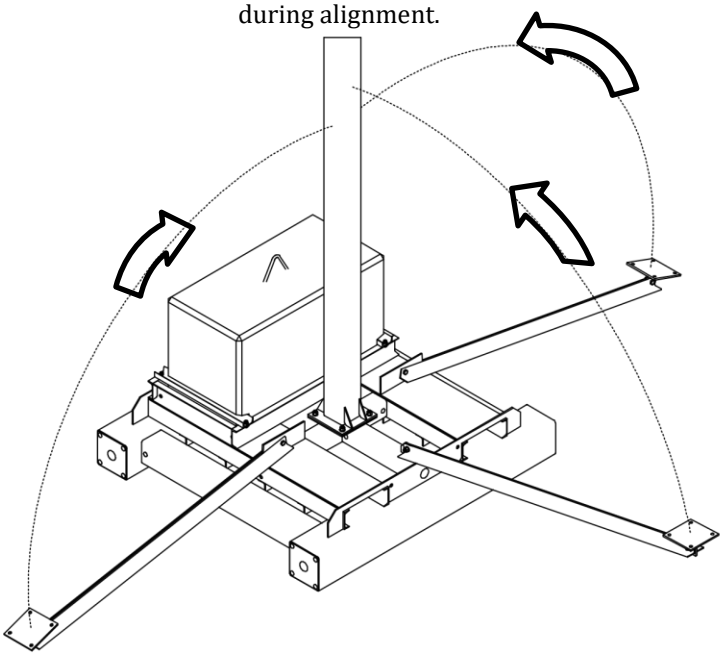
Reference: Use 3/4” x 2-1/4” bolts with 3/4” flat washers and 3/4” nuts.

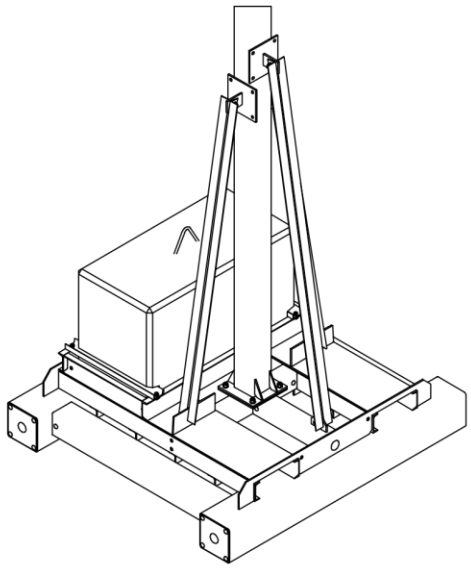


6.7. Position the Kickers at the Column

- Raise the two short kickers against the column.
- Raise the long kicker against the column on the arm side of the base.
- Place each mounting plate flat against the column.

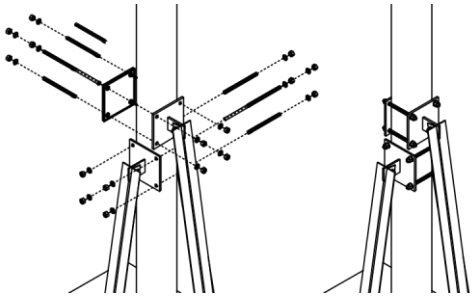
CAUTION The kickers are not yet connected to the column. Maintain control of the kickers until the kickers are fastened to the column. Do not place hands or body parts between the kickers, mounting plates, and column. Keep personnel clear of the potential swing path during alignment.





6.8. Install the Kicker All-Thread

- Install four threaded rods through the mounting plates of the two opposing short kickers.
- Install four threaded rods through the long kicker mounting plate and capture plate. Position the capture plate against the ballast side of the column.
- Install the washers and nuts.
- Hand-tighten the hardware to hold all kicker connections in position.

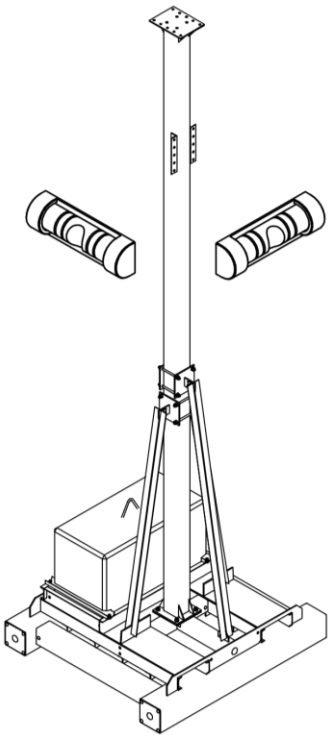


Note: Do not fully tighten the threaded rods at this time.

Reference: Use 3/4” x 12” threaded rods with 3/4” flat washers and 3/4” nuts.

6.9. Level and Lock the Column

- Verify the column is level in both directions.
- Loosen the column mounting bolts as needed to adjust the column position.
- When the column is level, fully tighten the kicker all-thread hardware to lock the column in position.



NOTICE

Verify the column is level before tightening the kicker all-thread hardware.

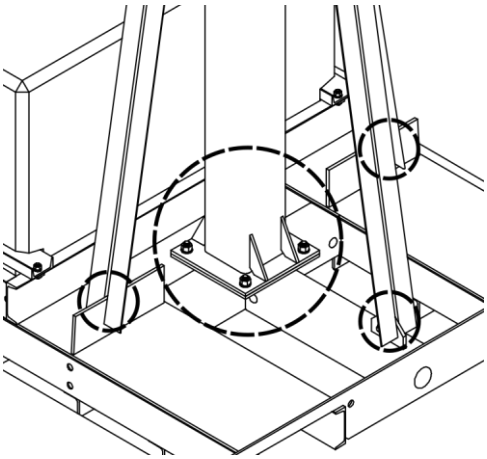
Once tightened, adjustment of the column position will require loosening the kicker connections. Verify the column remains level after tightening.

Reference: Torque kicker 3/4” all-thread hardware to 350–425 ft-lb.

6.10. Final-Tighten the Base Frame

- Tighten the kicker bolts.
- Tighten the column mounting bolts.

Reference: Torque 3/4” hardware to 350–425 ft-lb.



6.11. Install the Knee Brace

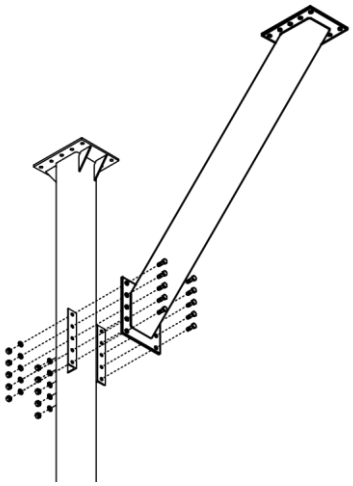
- Install the knee brace at the column connection.
- Hand-tighten the bolts.

CAUTION

Knee brace weight is approximately 256 lb. Support and control the knee brace during lifting and positioning. Keep hands and feet clear.

Note: Do not final-tighten the knee brace bolts at this time.

Reference: Use 3/4” x 2-1/4” bolts with 3/4” flat washers and 3/4” nuts.



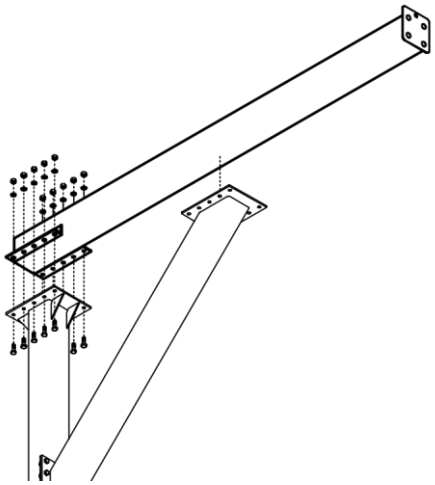
6.12. Install the Arm at the Column

- Install the arm at the column connection and install the bolts.
- Hand-tighten the bolts.

CAUTION Arm weight is approximately 370 lb. Support and control the arm during lifting and positioning. Keep hands and feet clear

Note: Leave the arm connection bolts loose until the knee brace connection is made.

Reference: Use 3/4” x 2-1/4” bolts with 3/4” flat washers and 3/4” nuts.

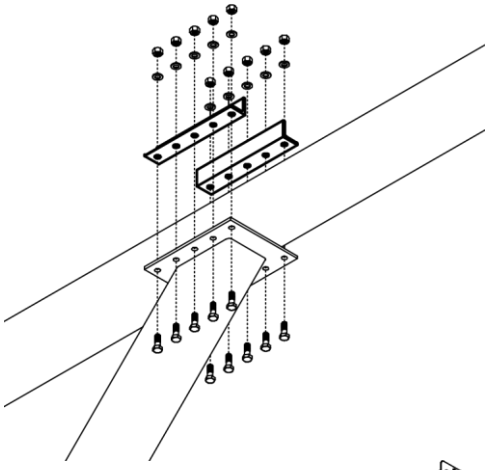


6.13. Connect the Arm to the Knee Brace

- Install the knee-brace-to-arm connection and install the bolts.
- Hand-tighten the bolts.

Note: Loosen the column-side knee-brace bolts if needed to complete the connection.

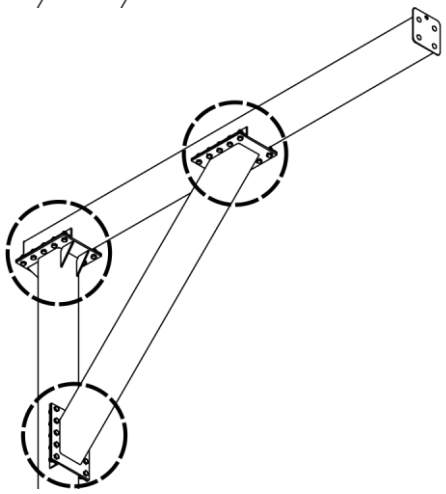
Reference: Use 3/4” x 2-1/4” bolts with 3/4” flat washers and 3/4” nuts.



6.14. Final-Tighten the Arm and Knee Brace

- Tighten the arm connection.
- Tighten the knee-brace-to-arm connection.
- Tighten the knee-brace-to-column connection.

Reference: Torque 3/4” hardware to 350–425 ft-lb.



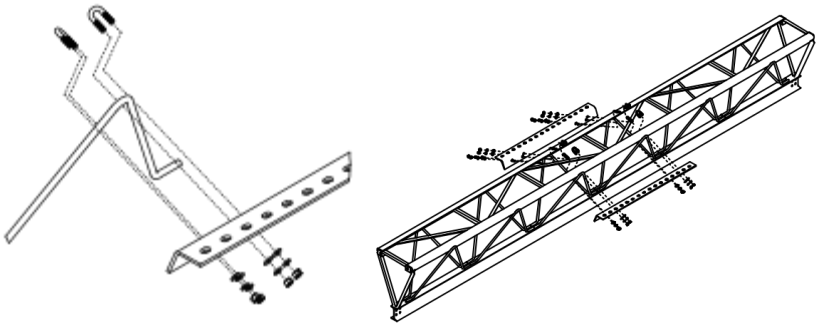
6.15. Install the Bent Plates to the Truss

- Install the bent plates to the lattice bars at the center of the truss.
- Install the U-bolts around the lattice bars and into the bent plates.
- Tighten the hardware.

NOTICE Align the bent plates with the center of the truss before tightening the hardware. Misalignment of the bent plates may prevent proper fit-up at the arm connection.

Note: Tighten the U-bolts using a manual click-type torque wrench. Do not use an impact wrench.

Reference: Use 9/16” U-bolts with 9/16” flat washers, 9/16” lock washers, and 9/16” nuts. Torque to 35–40 ft-lb.

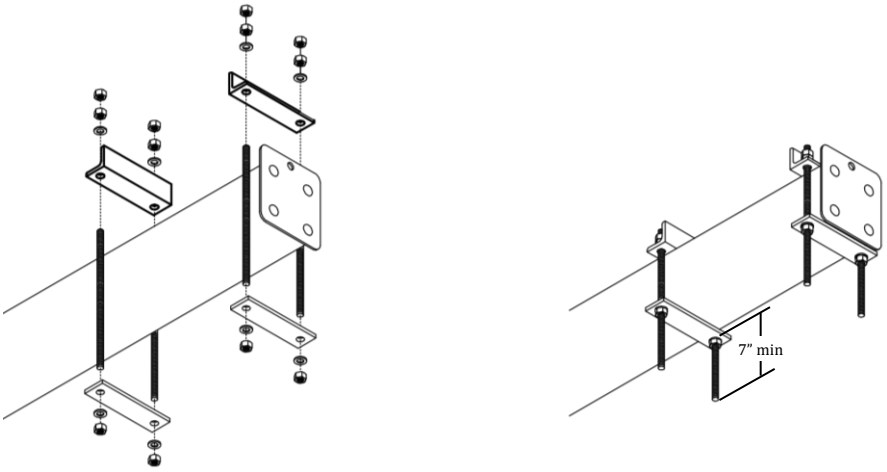


6.16. Install the Arm All-Thread

- Install the all-thread through the P-unit arm brackets and P-unit bracket bars on the arm. Leave the arm brackets and bracket bars loose enough to adjust during truss fit-up.

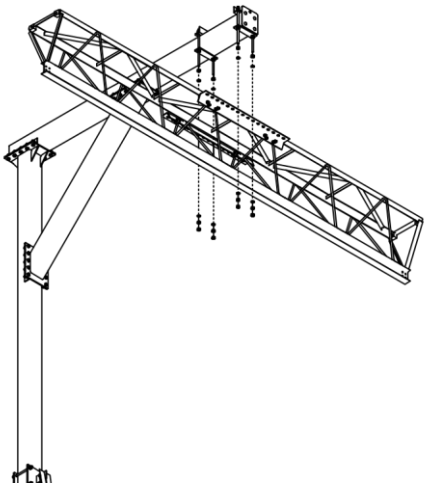
Reference: Use 3/4” x 20” threaded rods with 3/4” flat washers and 3/4” nuts.

Note: Leave the P-unit arm brackets and bracket bars loose until the truss-to-arm connection is complete. Do not torque this hardware in this step. Provide a minimum 7” projection below the P-Unit bracket bar and a minimum of 2 threads above the top nut.



6.17. Connect the Truss to the Arm

- Lift the truss assembly into position and center the truss assembly on the arm.
- Working on one side at a time, adjust the loose arm bracket and bracket bar as needed and guide the all-thread through the holes in the bent plate.
- Install the washers and nuts on that side before fitting the opposite side.
- After both sides are connected and the truss is centered on the arm, tighten the hardware.



CAUTION

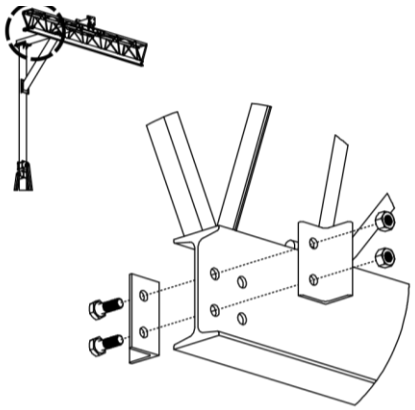
Truss assembly weight is approximately 610 lb. Support and control the truss during lifting and positioning. Keep hands and feet clear.

Reference: Torque 3/4” hardware to 350–425 ft-lb.

6.18. Install the First End Stop

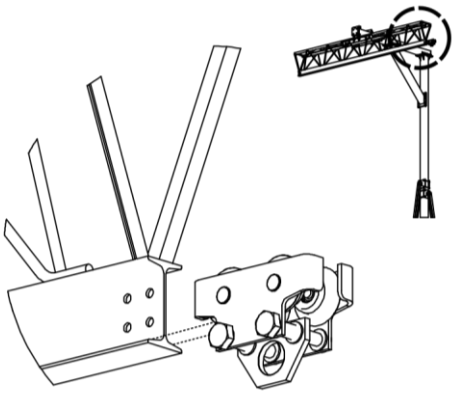
- Install two end stop brackets on one end of the truss, one on each side of the beam web, and tighten the hardware.
- Leave the opposite end of the truss open for trolley installation.

Reference: Use 1/2” x 1-1/2” bolts with 1/2” nuts.



6.19. Install the Trolley

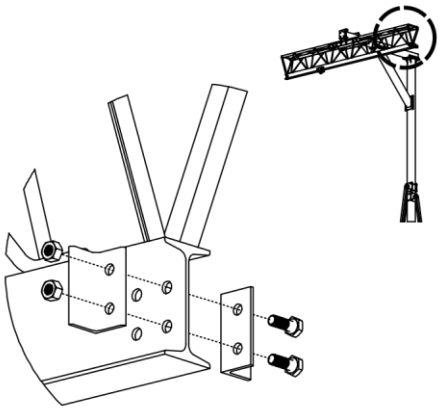
- Install the trolley onto the truss beam with the wheels positioned on each side of the beam web.
- Slide the trolley onto the beam flange from the open end of the truss.



6.20. Install the Second End Stop

- Install the remaining two end stop brackets on the opposite end of the truss, one on each side of the beam web.
- Tighten the hardware.

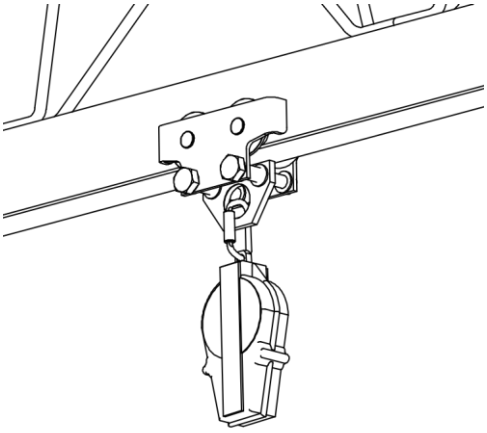
Reference: Use 1/2” x 1-1/2” bolts with 1/2” nuts.



6.21. Attach the SRL

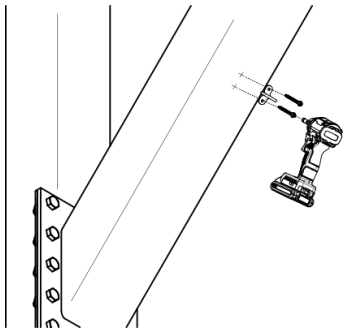
- Attach the SRL to the trolley using the SRL carabiner.

Note: Verify the SRL carabiner is fully closed and locked before proceeding.



6.22. Mount the Upper D-Ring

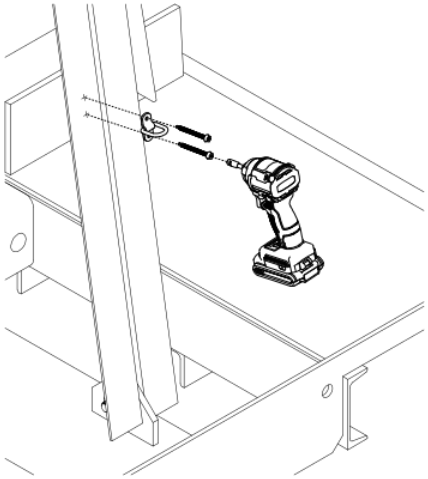
- Position the upper D-ring at the bottom of the knee brace so the retrieval rope/tagline will run straight down toward the lower D-ring.
- Use the D-ring bracket as a template and scribe the hole locations at the mounting location.
- Drill 7/32” pilot holes at the scribed locations.
- Install the D-ring bracket using the self-tapping screws.
- Confirm the upper D-ring is secure before routing the rope.



Reference: Use ¼-14 x 1-1/2” hex washer self-drilling screws.

6.23. Mount the Lower D-Ring

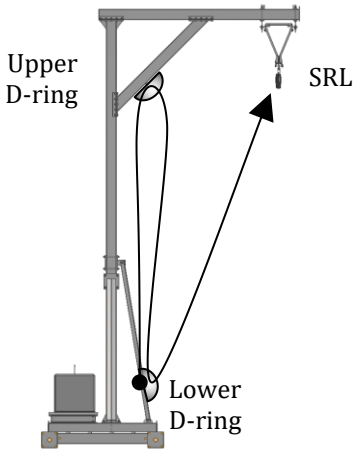
- Position the lower D-ring on the face of the long kicker within reach and align it below the upper D-ring so the retrieval rope/tagline will run in a straight vertical path between the two D-rings.
- Use the D-ring bracket as a template and scribe the hole locations on the long kicker.
- Drill 7/32” pilot holes at the scribed locations.
- Install the D-ring bracket using the self-tapping screws.
- Confirm the lower D-ring is secure before routing the rope.



Reference: Use ¼-14 x 1-1/2” hex washer self-drilling screws.

6.24. Route the Retrieval Rope

- Route the retrieval rope/tagline through the lower D-ring.
- Route the rope up through and around the upper D-ring.
- Bring the rope back down through the lower D-ring.
- Bring the rope over to the SRL connection point.



6.25. Connect the Rope to the SRL

- Connect the retrieval rope/tagline to the SRL connection point so the rope can raise and lower the SRL connection.

6.26. Set Rope Slack

- Adjust the rope slack so the SRL connection can travel between the stored position and the user connection height.
- Pull the front side of the rope down to lower the SRL connection.
- Pull the back side of the rope down to raise the SRL connection.

Note: Confirm the rope moves freely through both D-rings and does not twist, rub, bind, or hang into the work area.

7. ASSEMBLY COMPLETION CHECK

Check Item	Acceptance Check	Correct if Deficient
Base and Ballast	☐ Base is level and oriented with arm side facing the work area. ☐ Ballast block is seated in the ballast block cradle.	✓ Correct base orientation, level condition, or ballast seating before proceeding. ✓ Retorque or correct ballast clamps as required.
Frame Connections	☐ Column is level in both directions. ☐ Kickers, knee brace, arm, and truss are aligned and fully connected. ☐ Final-tighten and torque steps have been completed where required.	✓ Correct alignment before continuing. ✓ Tighten, torque, or reinstall incomplete connections as required. ✓ Do not proceed to use until all incomplete connections are corrected.
Trolley, End Stops, and SRL	☐ Two end stop brackets are installed at each end of the truss beam, one on each side of the beam web. ☐ Trolley is installed on the beam flange and captured between the end stops. ☐ SRL is attached to the trolley and carabiner is fully closed and locked.	✓ Correct end stop, trolley, or SRL attachment before proceeding. ✓ Do not proceed if the trolley is not captured between both end stops. ✓ Verify SRL carabiner is closed and locked before completing assembly.
D-Rings and Retrieval Rope / Tagline	☐ Upper and lower D-rings are secure and aligned with the retrieval rope/tagline path. ☐ Retrieval rope/tagline is routed through the lower D-ring, through and around the upper D-ring, back through the lower D-ring, and connected to the SRL connection point. ☐ Pulling the front side of the rope lowers the SRL connection. ☐ Pulling the back side of the rope raises the SRL connection. ☐ Rope moves freely through both D-rings without twisting, rubbing, binding, or hanging into the work area.	✓ Correct D-ring alignment or attachment before releasing the system for use. ✓ Re-route the retrieval rope/tagline if it is twisted, crossed, rubbing, or binding. ✓ Adjust rope slack so the SRL connection travels between the stored position and user connection height. ✓ Do not release the system for use until the rope operates freely and the SRL connection raises and lowers correctly.