Chapter 10 - Scaffolding Systems

Contents

Scaffolding System Safety Requirements

Safety Issues

Setup

- Provide safe access to get on and off work platforms safely.
- Install and dismantle scaffolding systems only under the supervision of a competent person.
- A competent person must inspect the scaffolding systems before each use.
- **DO NOT** use damaged parts that affect the strength of the scaffolding system.
- **DO NOT** alter the scaffolding assembly.
- **DO NOT** erect, use, alter, or move pump jacks within 10 feet of overhead power lines.

Use

- **DO NOT** allow anyone to work on the scaffolding when they are feeling weak, sick, or dizzy.
- **DO NOT** work from any part of the scaffolding system other than the platform.
- **DO NOT** allow employees to work on work platforms covered with snow, ice, or other slippery materials.
- **DO NOT** work on pump jacks in bad weather or high winds unless the competent person decides that doing so is safe.
- **DO NOT** use ladders, boxes, barrels, or other makeshift contraptions to raise your work height.
- **DO NOT** let extra material build up on the platforms.
- **DO NOT** put more weight on a work platform than it is designed to hold.
- Keep work platforms free of debris.
- Keep tools and materials as neat as possible on platforms.

Planking

- Keep the front edge of the platform within 14 inches of the face of the work.
- Extend planks or decking material at least 6 inches over the edges or cleat them to prevent movement. The work platform or planks must not extend more than 12 inches beyond the end supports to prevent tipping when workers are stepping or working.
- Be sure that manufactured planks are the proper size and that they are attached to the frame.
- Wooden planks must be free of large knots.

Guardrails

- Guardrails must be installed on platforms that are more than 10 feet above the ground or floor surface.
- Place the toprail approximately 42 inches above the work platform with a midrail about 21 inches above the work plafform.
- Install toe boards when other workers are below the scaffold.

Control Zones

- A Control Zone must be setup around the house where the scaffolding will be installed.
- An area which extends six (6) feet beyond the ends of the work platform must be marked off with caution tape.
- Control zones must be identified and discussed at the morning Safety Huddle.

Pump Jack System

Pump Jacks can be used in place of extension ladders when installing Styrofoam insulation and siding.

Components

Brackets
Poles
Walk Boards
Safety Rails
End Caps

Phase Specific Tools Needed

Description:	Quantity:
○ Pump Jack Poles w/extensions	3 - 4 per site
○ Pump Jack Brackets	3 - 4 per site
○ 24’ Walk Boards	2 per site
○ 16’ Walk Boards	2 per site
○ End Caps	2 - 4 per site

Critical Issues

- **Blocks must be placed below pump jack poles.**

Check and Oil the Pump Jacks

- Check to ensure there is no damage to the pump jacks. Notify the Habitat Superintendent of any damage.
- Apply 2 to 3 drops of 3-in-1 oil to the bushings on the crank assembly.

Identify Placement for Pump Jacks

- The posts must be positioned such that:
  - The pump jack brackets will be installed into framing lumber.
  - The distance between the posts is approximately two (2) feet less than the walk board to be used.
  - There will be easy access to the walk boards.
  - The work platform can be raised to the height needed without interference.

Install Pump Jack Brackets

Critical Issues

- **Pump Jack brackets must be screwed into the trusses or framing lumber.**
- **Pump Jack brackets must be installed so the walk boards are no more than 14” from the house.**

For roof installation

1. Attach the brackets to the roof under the 3rd course of shingles over a roof truss.
   - Measure back to the first common truss; about 30” from the rake board; and raise the tab of the shingle in the 3rd course.
   - Set the bracket on the roof.
   - Set two (2) 2 ½” screws through the holes in the bracket into the roof trusses.

For installation into the siding

1. Attach bracket to the sheathing on the exterior wall into stud or framing lumber.
   - Set the bracket just below the eave of the roof.
   - Measure back to the first stud; about 16” from the corner.
   - Set (2) 2 ½” screws through the holes in the bracket into the stud.

Install Post Bases

- Under each post, install a plate or mud sill made of dimensional lumber, hardwood or equivalent to level and stabilize the base. Don't use blocks, bricks, or pieces of lumber.
  1. Cut blocks of 2x10s which are about 10” long.
- These will be placed under the pump jack poles to keep them from sinking into the ground.

Set Pump Jack Poles

Critical Issues
➢ **Pump Jack poles must sit on post bases.**

1. Assemble the poles by inserting the top and bottom sections into the coupling until they lock into place.
2. Set an extension ladder within arm’s reach of the pump jack bracket.
3. 2 or 3 volunteers will raise the top end of the pump jack pole up to the pump jack bracket.
4. Another volunteer will climb up to the bracket; slide the pole into the bracket; and secure it in place with the latch.
5. Tighten the screw on the latch until the pole is held snuggly.
6. Position the pole on the post base.
7. Check the pole for plumb. Adjust the location of the post and post base until the pole is plumb.
8. Hold the bottom of the pole in place with four 16d sinkers, 1 on each side of the post.

Set Walk Boards

Critical Issues
➢ **Walk boards must be long enough to extend past the support poles by 12".**

1. Raise all pump jacks to the same level.
2. Using 3 volunteers, move the walk board to the left or right of the end pump jack pole.
3. Slide the walk board over the lower pump jack arms, those between the pump jack poles and the house.
4. Lock the walk board to the pump jacks with the chains.

Set the Safety Boards

1. Set a second walk board across the upper pump jack arms, to be used as a work surface.
2. Attach the work walk board to the pump jacks with the chains.

Install the End Caps

Using the supplied T-wrench, attach one end cap with netting to each end of the walk boards.

Install the safety Netting

Using the supplied T-wrench, attach the clips on the safety netting to the walk board and the work board.

Cordon off the area below the walk boards

Use Caution Tape to mark off an area 6' wider than the ends of the walk boards.

Wall Walker

Setup Instructions

WallWalker Setup and Use Instructions

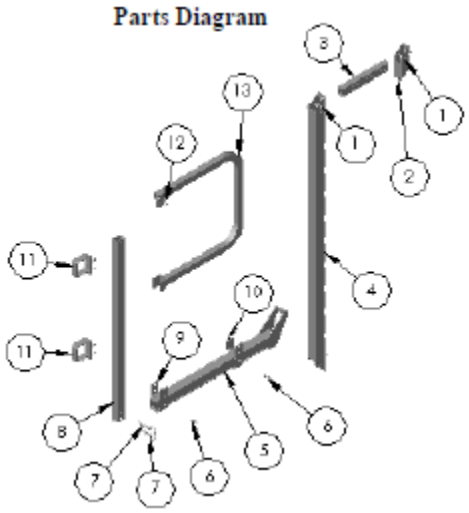
Know your Local, State and Federal Codes

INITIAL ASSEMBLY AND INSPECTION

1. Inspect the WallWalkerTM unit and parts.
2. Ensure that you received all parts shown in the parts diagram.
3. Remove the tab lock pin at the top of the vertical beam so that you may remove the slider tube from the stored shipping position. Insert the slider tube through the rectangular hole at the top of the vertical beam and use the tab lock pin to secure it into place.
   (***Note -this standard slider tube is adjustable from 4" and up to 8" wall thicknesses. A longer slider tube is available for up to 14" wall thicknesses.**)
4. Slide the slider bracket onto the slider tube with the longest side facing the vertical beam and lock into place with the attached tab lock pin at the desired wall width adjustment.
   (***Note – The standard slider bracket extends down the wall approximately 4 inches. A longer slider bracket is available that extends down the wall about 8 inches.**)
5. Adjust the horizontal beam to the desired height by tilting the horizontal beam upward and sliding it to the desired position on the vertical beam. Rotate the horizontal beam so that it is perpendicular to the vertical beam and the stop plate is seated inside one of the adjustment notches on the back of the vertical beam.

Standard Unit

1. Tab lock pin
2. Slider Bracket
3. Slider Tube
4. Vertical beam (8' or 6')
5. Horizontal beam
6. Thumb screw
7. Detent pin
8. Guardrail Post
9. Plank bracket
10. Notched plank bracket
11. Guardrail bracket

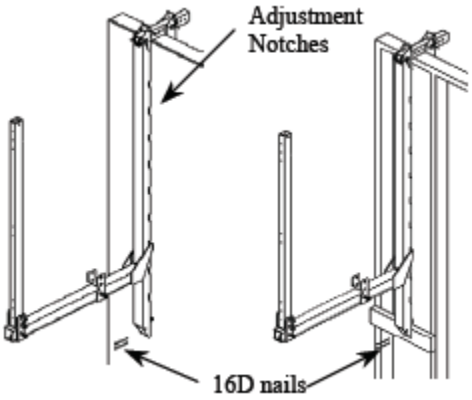


Accessories (sold separately

12. End gate pin
13. End gate

SETUP

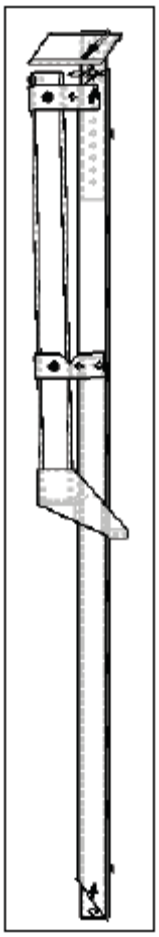
1. Ensure that the wall or structure that will be supporting the WallWalker TM is properly braced.
2. Place the WallWalker so that the base of the slider tube is resting on the top of the wall or opening in the structure. The vertical beam will rest on the sheeted wall, beam or stud. The WallWalkers may be hung on the inside or outside wall.
3. You may secure the base of the WallWalker to the wall or stud through the two holes at the base of the vertical beam. This may be done with 16D nails or comparable fasteners. This will help with undesired movement of the WallWalker while setting the planks or walk boards.
   (***Note – A 2x4 or other acceptable material should be attached to the base of the WallWalkers and rest on at least two studs on a unsheeted wall so that the load may be adequately distributed.**)
4. Place planking that meets OSHA standards onto the horizontal beams of the WallWalkers between the plank brackets. Insert the thumb screws into the threaded inserts on the sides of the plank brackets. Use the plank brackets to secure the planks to the WallWalkers TM. The notched plank bracket should fit over the lip of most aluminum planks and lock the plank down.



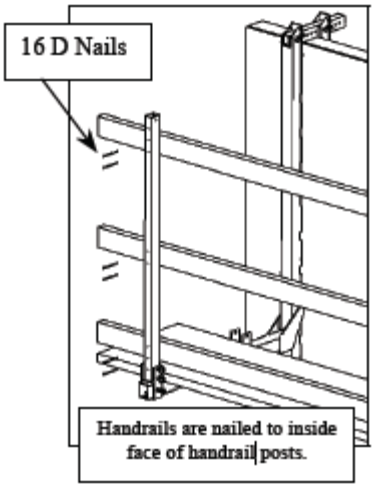
Wallwalkers TM can be installed on sheeted or unsheeted walls and secured with 16D nails at the base.

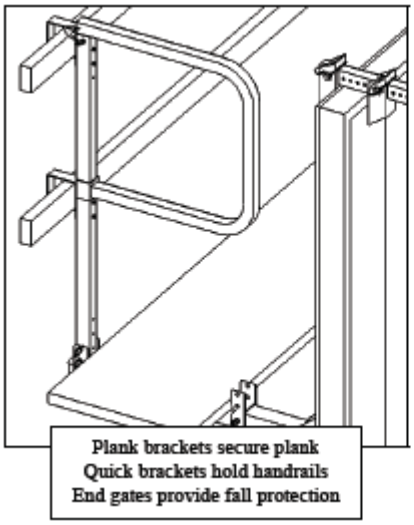
GUARDRAIL INSTALLATION

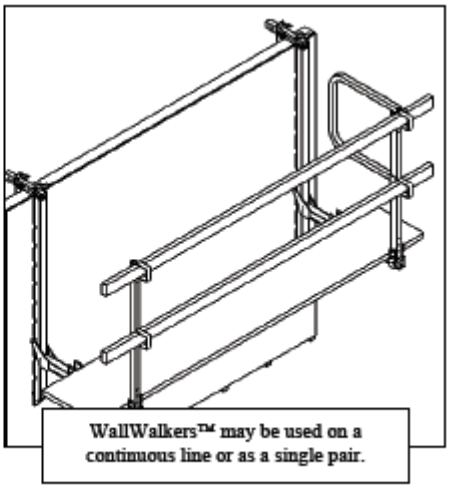
1. Remove the guardrail posts from the storage position at the base of the vertical beam. Use the detent pins (included) to secure the guardrail post to the outer plank bracket.
2. Apply quality 2x4 lumber to the inside of the post with 16D nails to secure top rails, midrails, and toe boards where required.
   (*Note – Quick brackets may be purchased and secured to the guardrail posts for quicker installation of top rails and midrails. End gates may also be purchased to provided fall protection at the end of each WallWalker)



Stored Configuration







****All fall protection and fall restraint systems used in conjunction with the WallWalker, including strength and installation of rails and toe boards must meet all local, state and federal codes.**

STORAGE INSTRUCTIONS

1. Remove guardrail post and slide up inside the base of the vertical beam. Secure it in place with a detent pin.
2. Fold horizontal arm so that it rests next to the vertical beam. The WallWalker may be locked in the folded position by securing the outer plank bracket to the top of the vertical beam with one of the detent pins. The slider tube may store in the top of the vertical beam secured with the same detent pin. The slider bracket remains secured to the slider tube with the tab lock pin.

CAUTION!! Read all instructions and warning labels supplied with the WallWalkers.

Stacker Bracket Hanging Scaffolding

Installation

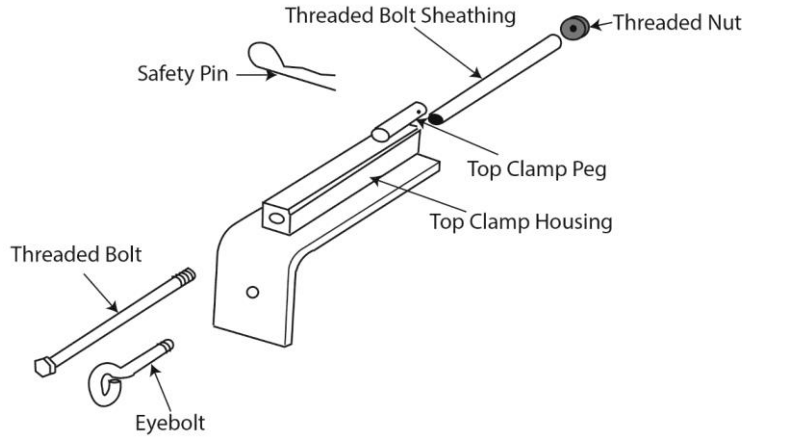
Planning:

1. Review the prints to determine the number and spacing of the scaffolding brackets required.
2. Mark the top plate with the location of the scaffold brackets.
    a. Begin 1 foot from the outside corner of the house and in intervals of 8 feet or less.
    b. Ensure the scaffold brackets are not located over or near the layout marks for the floor joist.
    c. **Support Brackets MUST be placed in intervals of 8 feet or less.**
3. Inspect Stacker Bracket System.
4. Distribute the necessary materials to the marked locations.
    - (1) Support Bracket
    - (1) Top Clamp. Ensure Top Clamp size is matched to wall thickness
    - (1) Guardrail Post
    - (1) 36” - 2x4 Support Brace
    - (4) 10’ - 2x4 rails (Construction Grade)
    - (2) 10’ - 2x10 scaffold planks (Construction Grade)
    - (1) End Rail for every termination point of the system
    - (1) Lowering Strap

Installation:

1. Slide the 36” long 2x4 into the bottom of the Support Bracket and screw in place with a 2 ½” #10 exterior screw, making sure the board will cross three wall studs at selected installation location. Support Bracket might not always be centered on 36” board.
2. Attach all Top Clamps to paired Support Brackets:
    a. Insert Threaded Bolt Sheathing into Top Clamp.
    b. Insert Threaded Bolt through the inside hole of the Threaded Bolt housing and through the Threaded Bolt Sheathing. The bolt must pass from the inside of the Top Clamp to the support bracket side of the Top Clamp.
    c. Align the Top Clamp to the Support Bracket and insert the Top Clamp Peg and Threaded bolt through corresponding Support Bracket holes.
    d. Add Threaded Bolt Nut onto the Threaded Bolt.
    e. Tighten Threaded Bolt until it is fully secured in Support Bracket.
    f. DO NOT insert Safety Pin until after Eyebolt is tightened onto rail (Step 3).

Figure 10.1 – Support Bracket



3. Install Support Brackets and Top Clamp assemblies
    a. Setup an extension ladder at the selected location.
    b. Lift the Support Bracket and Top Clamp assembly and hang over top plate. (Do not carry the assembly up the ladder)
    c. **The Top Clamp MUST lie flush on the top plate. Support Bracket MUST lie flush with Wall.**
    d. Ensure that attached 36” board crosses at least three wall studs. DO NOT nail 36” board to wall.
    e. Turn Top Clamp Eyebolt until it is hand-tight. Use a ratchet to finish tightening until the Eyebolt is 2 full turns past hand-tight. NEVER use an impact wrench with this system.
    f. Insert Top Clamp Safety Pin through hole in Top Clamp Peg inserted through Support Bracket.
    g. Install all remaining Top Clamp and Support Bracket assemblies.
4. Insert Guardrail Posts into designated locations on Support Brackets.
    a. Guardrail Post loops must always face towards the rail on which the Top Clamp and Support Bracket have been installed.
5. Install Scaffold Planking
    a. After the Support Brackets have been installed, move the extension ladder midway between the first set of brackets. Ensure the ladder will not be in the way of installing the planks.
    b. Lift two (2) 10’ 2x10 Scaffolding Planks and set in position across Support Bracket pair.
    c. Ensure that scaffold planks span fully span the Support Bracket pair. Scaffold planks MUST overlap by a minimum of 12”.
    d. All planking and guardrails MUST overlap a minimum of 12”.
    e. Overlapping planking does not need to be secured with fasteners.
6. Install Guardrail Boards
    a. Insert three (3) 10’ 2x4”, 10’ long guardrail boards into corresponding loops on the Guardrail Posts.

   b. Ensure that guardrail boards fully span across both loops. Guardrails must overlap by 12”.
7. Complete entire run on planks and rails. Ensure that lapping planks and rails are installed in a continuous direction. Continuous lapping simplifies the disassembly process.
8. Install End Rails at all system run termination points. Bottom End Rail connector will clip onto Guardrail Post below the middle guardrail loop. Insert top End Rail connector fully into top of Guardrail Post.

Use:

1. No more than 2 volunteers on a section at a time.