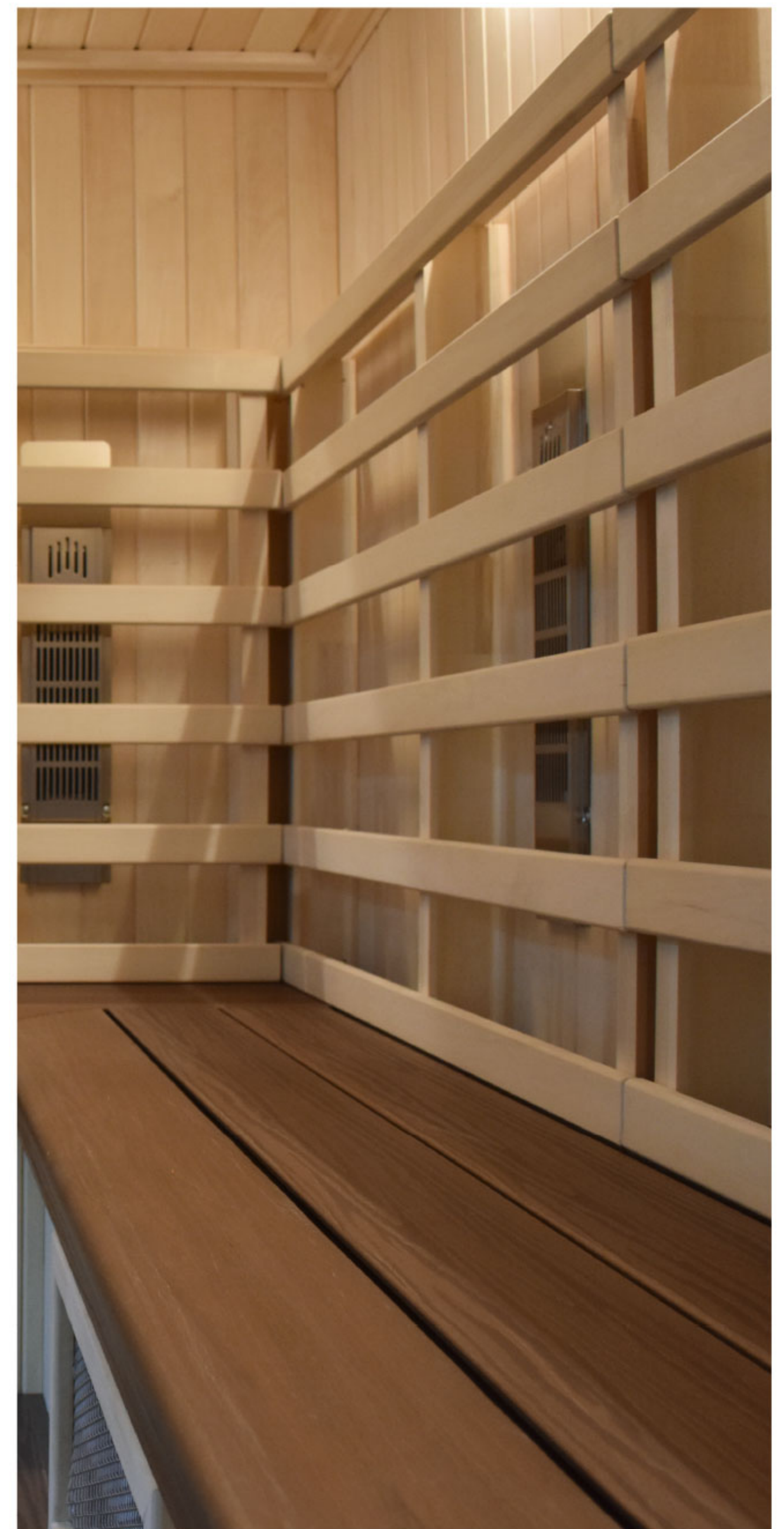


Sauna System Benching

The following instruction manual will assist you with the installation of your virtually maintenance free sauna benching.



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SAFETY

- Protective safety equipment is always recommended, e.g., eye wear, safety boots.

TOOLS AND HARDWARE REQUIRED (NOT INCLUDED)

- Standard woodworking tools are recommended for installations:
- Miter saw with coarse blade (24 teeth or less carbide blade recommended) or handsaw
- Measuring tape
- Drill and drill bits
- Screwdriver (Phillips or square drive)
- Rubber mallet (non-marking)
- #8 screws (1- 5/8", 2" and 3")
- Rotary tool with spiral bit
- *Wing-clips (3/16" spacing) or Ultra Clips (1/4" spacing)*

ATTENTION!

**STOP & READ THIS SECTION BEFORE YOU START!
FAILURE TO FOLLOW THESE STEPS WILL VOID
YOUR WARRANTY**

DO read this entire installation guide before beginning installation.

DO remove the protective plastic and inspect for defects and proper color before installation (*once installed color variance will not be covered under warranty*).

DO Refer to the Expansion/Contraction chart on page 4 for proper spacing on expansion and contraction.

DO Pre-drill slotted holes (sized to accommodate the appropriate expansion/contraction) when installing cladding and bull nose to allow for lateral movement. Failure to pre-drill slotted holes may cause the fascia/bull nose to crack and will not be covered under warranty.

DO Ensure there is enough space between the board and any lumber to allow for expansion/contraction. **(REFER TO FIG. 6)**

DO NOT Use petroleum based products on the boards i.e. solvents, suntan lotion, bug spray, bubble solution, harsh cleaners and rubber backed mats which may discolor the bench.

DO NOT share clip fasteners if butting boards end-to-end.

DO NOT use nails to fasten boards. Only screws are to be used.

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COLOR VARIATION

- Slight color variations may exist within your purchased set of flat and bull nose boards.

STORAGE & HANDLING

- Carefully remove when unloading, do not dump.
- Do not drag boards against abrasive surfaces.
- Store with the face side up.
- Do not use petroleum based products on the boards. i.e. suntan lotion, bug spray or rubber backed mats.

BOARD WEIGHT

- Flat board 1.15 lbs/ft
- Bull nose board 1.40 lbs/ft

INSTALLATION TIPS FOR EXPANSION/CONTRACTION

Because of the amount of expansion/contraction that occurs on the material, you must consider current and expected temperature ranges when building the sauna benches:

- Leave proper expansion/contraction spaces at the ends of all boards.
(REFER TO CHART ON NEXT PAGE)
- Always **toe screw** each board or bull nose trim in the approximate middle with a single #8 x 2" deck screw. Pre-drill before installing screw. This will fix the board to the lumber and allow the board to expand equally on either end.
- Bull nose trim must be installed with screws along its entire length, the **pre-drilled holes must be slotted** to accommodate expansion and contraction, especially closer to the ends of the length. Alternately, cladding can be trimmed into two 6' sections and mitre cut to eliminate the need for slotted holes along the length of the cladding. The amount of contraction from the installation temperature can also be looked up from the expansion/contraction tables on the next page.

UNDERSTANDING EXPANSION AND CONTRACTION

Flat boards, bull nose boards, and fascia cladding expand in length with rising temperatures and contract or shorten in length with falling temperatures. This expansion and contraction only occurs lengthwise not across the width.

HOW MUCH WILL YOUR MATERIAL EXPAND AND CONTRACT?

This depends on the length of the material and the expected temperature variations in room. See the Expansion/Contraction Chart for typical lengths of 12', 16', and 20'.

Warning: *Do not only look up the current temperature. You must also consider the expected temperature ranges during the room's use.*

Expansion/Contraction Chart Example:

*Temperature at time of installation: 70°F
Maximum Expected Temperature: 110°F (= 40° change)
Length of board being used: 20 feet*

Looking up the expansion for a 40°F temperature range on a 20' board gives an expansion of 3/8" on each end of the board. Therefore you must leave a 3/8" gap between the ends of the boards and any fixed structure. If two 20' boards meet end-to-end, then you must leave a gap of twice the size (3/8" x 2 or 3/4" in this example) to allow for expansion of both boards. This chart can also be used to look up the contraction of the board to predict the maximum gap that will occur in the coldest temperature.

Note: *The charts include any difference between air temperature and board temperature due to room temperature variation.*

USER GUIDE SAUNA SYSTEM BENCHING (CONT.)

**FAHRENHEIT EXPANSION/
CONTRACTION CHART**

Expected Maximum Rise in Room Temperature (°F)	BOARD LENGTH		
	12'	16'	20'
	Expected Expansion on Board End*		
+30°F	3/16"	1/4"	5/16"
+40°F	1/4"	5/16"	3/8"
+50°F	1/4"	3/8"	7/16"
+60°F	5/16"	3/8"	1/2"
+70°F	5/16"	7/16"	9/16"
+80°F	3/8"	1/2"	5/8"
+90°F	3/8"	1/2"	11/16"
+100°F	7/16"	9/16"	11/16"

**CELSIUS EXPANSION/
CONTRACTION CHART**

Expected Maximum Rise in Room Temperature (°F)	BOARD LENGTH		
	12'	16'	20'
	Expected Expansion on Board End*		
+10°F	3/16"	1/4"	5/16"
+20°F	1/4"	5/16"	3/8"
+30°F	5/16"	3/8"	1/2"
+40°F	5/16"	7/16"	9/16"
+50°F	3/8"	1/2"	11/16"

** Notes: For expansion values near cooler areas of the room, if boards will be butted end-to-end, we recommend using breaker boards in the installation and/or shorter board lengths*

The values shown are the expansions that will occur equally and on BOTH ENDS of a board that is toe screwed with a single screw in the middle of the board length. The expansion on the two ends of a board will be different if the toe screw is not placed in the approximate middle of the board.

CUTTING AND DRILLING MATERIAL

Cutting and drilling material is different from cutting wood. Standard woodworking tools are recommended, but in order to avoid melting the plastic during cutting, drilling, etc., we recommend the following as a starting point:

- Table saws, circular saws, and miter saws should be equipped with carbide blades with coarse teeth; 24 teeth or less. Make sure saw comes to full speed before you start cutting. All cuts should be made quickly, rather than slowly. As a rough guideline, a miter saw can cleanly cut through a deck board in less than one second.
- Wax or cooking spray can be used on the blade for a clean cut.
- Jigsaws can be used, but coarse blades and slower blade speeds are recommended as a starting point. A jigsaw that is equipped with an orbital cutting action may reduce heat buildup that causes melting.
- Drilling should be done at slower RPM speeds to prevent melting. Forstner bits work well for large holes.
- Slotted holes are often required to allow for expansion and contraction, especially on the fascia cladding or the bull nose trim.
- A rotary tool with a spiral bit is easier and faster at slotting holes than using a drill with a standard drill bit.
- Material can be filed by hand if required. Power sanders (belt or random orbital) will melt the material.
- Wood chisels can be used with the material.

USER GUIDE SAUNA SYSTEM BENCHING (CONT.)

INSTALL BOARDS

- Cut board to required length and lay the board behind the bull nose against the existing row of clip fasteners. Refer to the expansion/contraction section to determine the proper gap required for your installation.

Note: *Cut all boards at the same temperature to ensure a consistent gap.*

- Attach or toe screw the board to the lumber substructure with a single #8 x 2" screw in the approximate middle of the board. Pre-drill into the board's lower lip at a 45° angle prior to installing screw.
(REFER TO FIG. 1)
- Do not use excessive force to push board into existing row of clip fasteners. Hand or leg force (or rubber mallet) is Recommended. The use of board bending tools or "Bowrench" are not recommended as this may cause too much friction as they can easily apply excessive sideways force on the board.
(REFER TO FIG. 2)
- Install clip fasteners. All Wing-clips should be installed with the white line on the Wing-clips facing away from the board. Clips are not directional.
(REFER TO FIG. 3)
- Repeat as required.
(REFER TO FIG. 4)

INSTALL LAST BOARD

- Insert edge of last board under remaining row of clips.
- In the event you are unable to fit a final row of clips against your substructure pre-drill and screw board into lumber from top surface. Attach the board with screws spaced 36" apart. To avoid complications from expansion/contraction slot all holes, except the center hole.
(REFER TO FIG. 5)

USER GUIDE SAUNA SYSTEM BENCHING (CONT.)

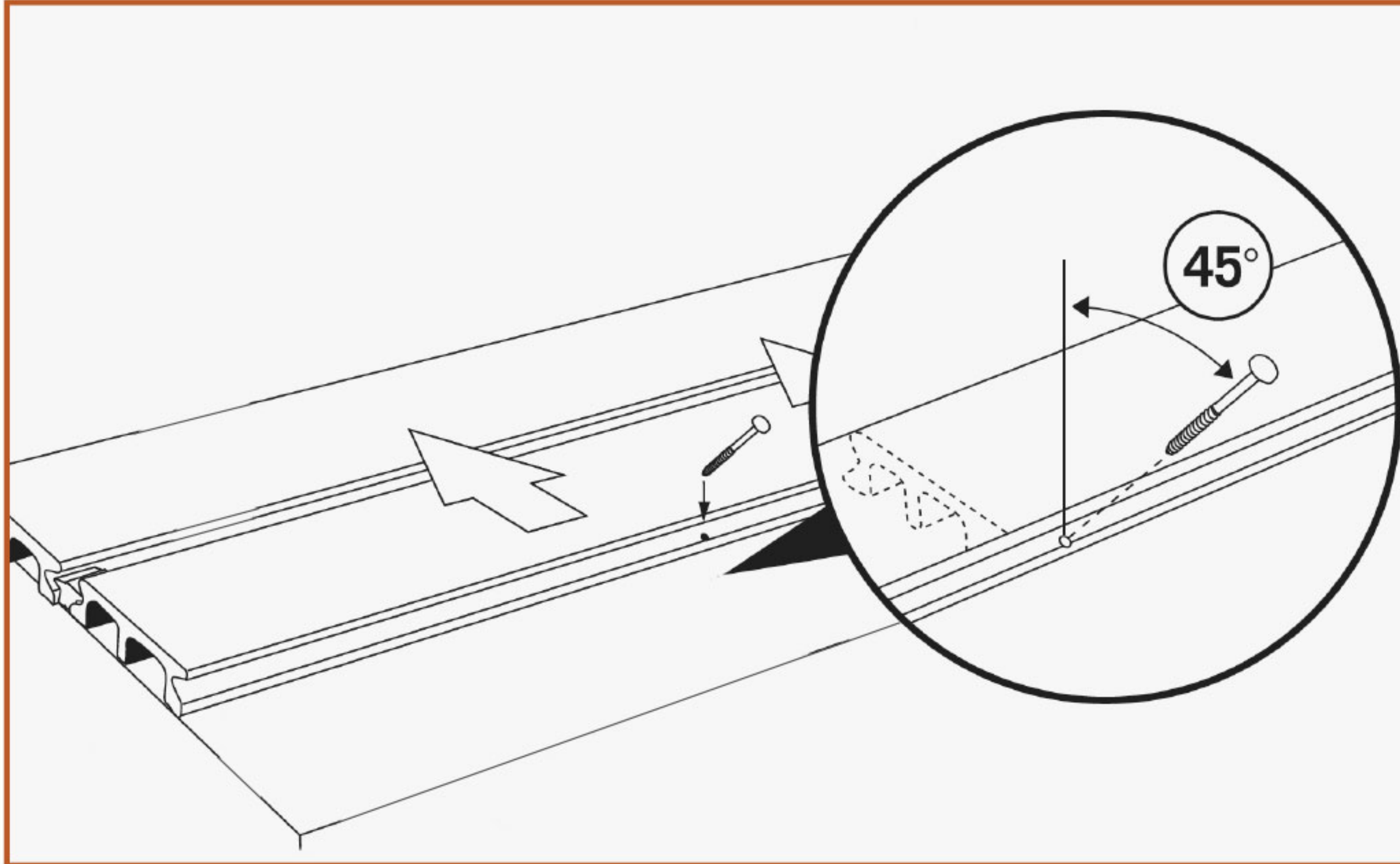


Figure 1

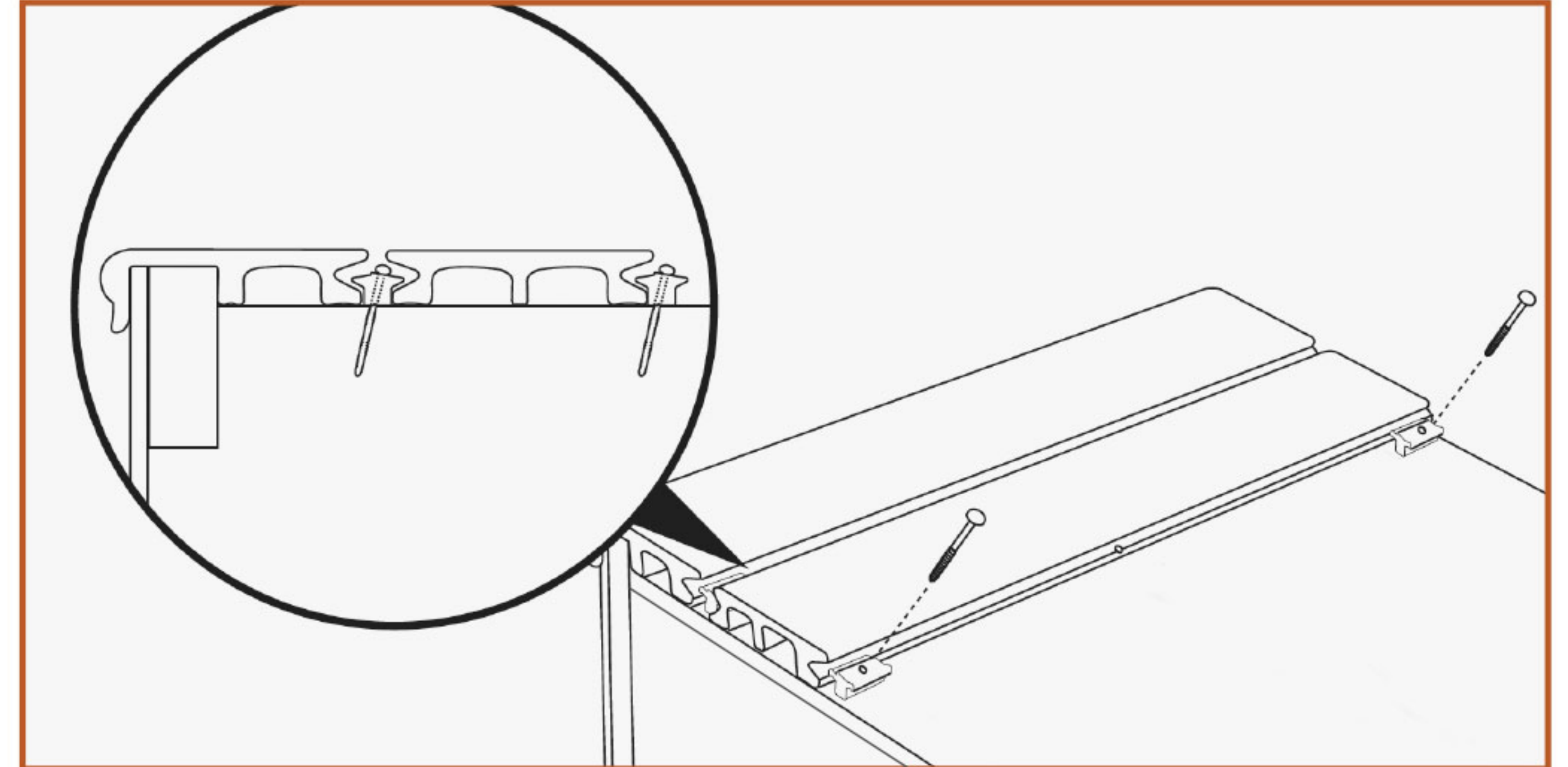


Figure 3

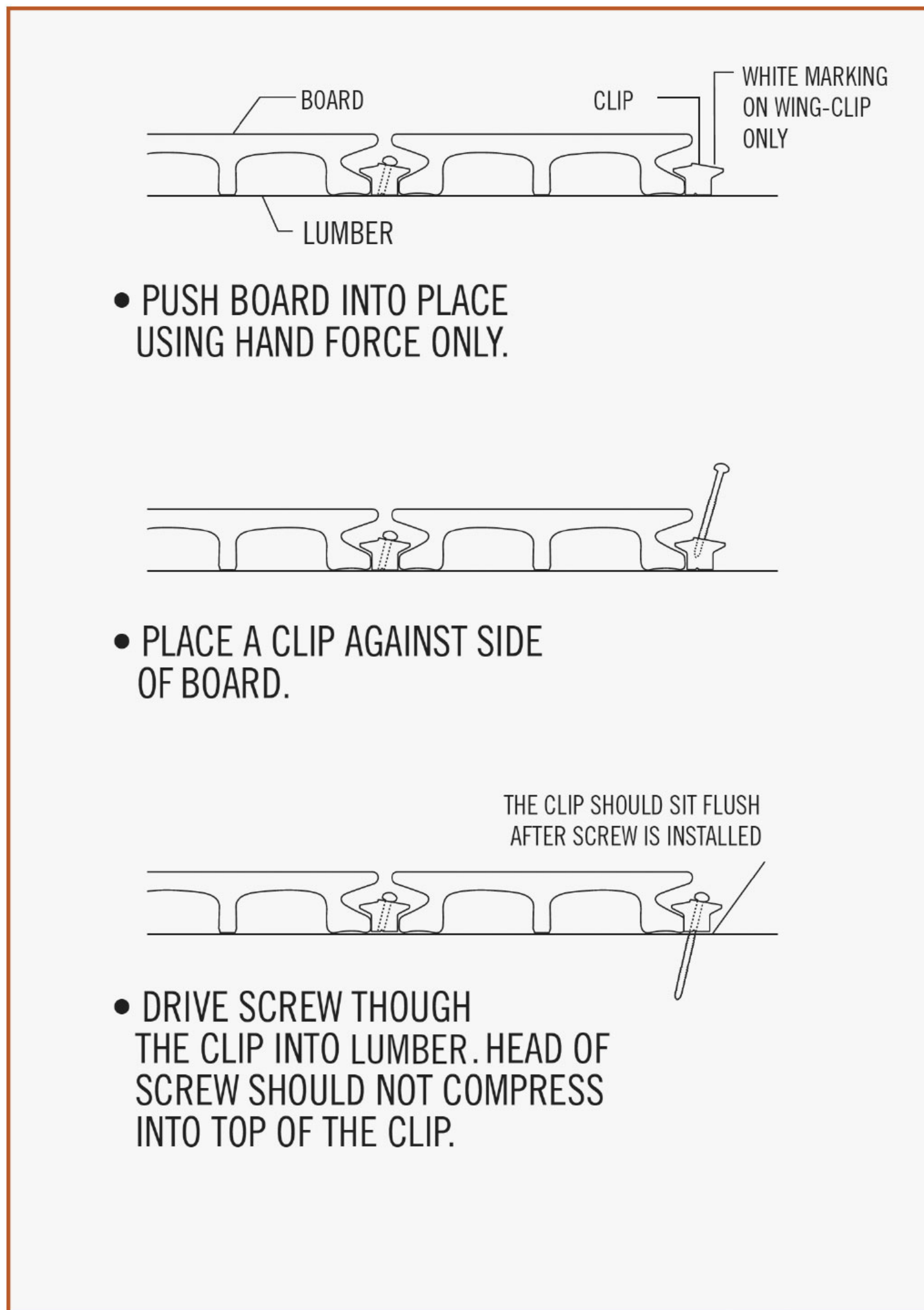


Figure 2

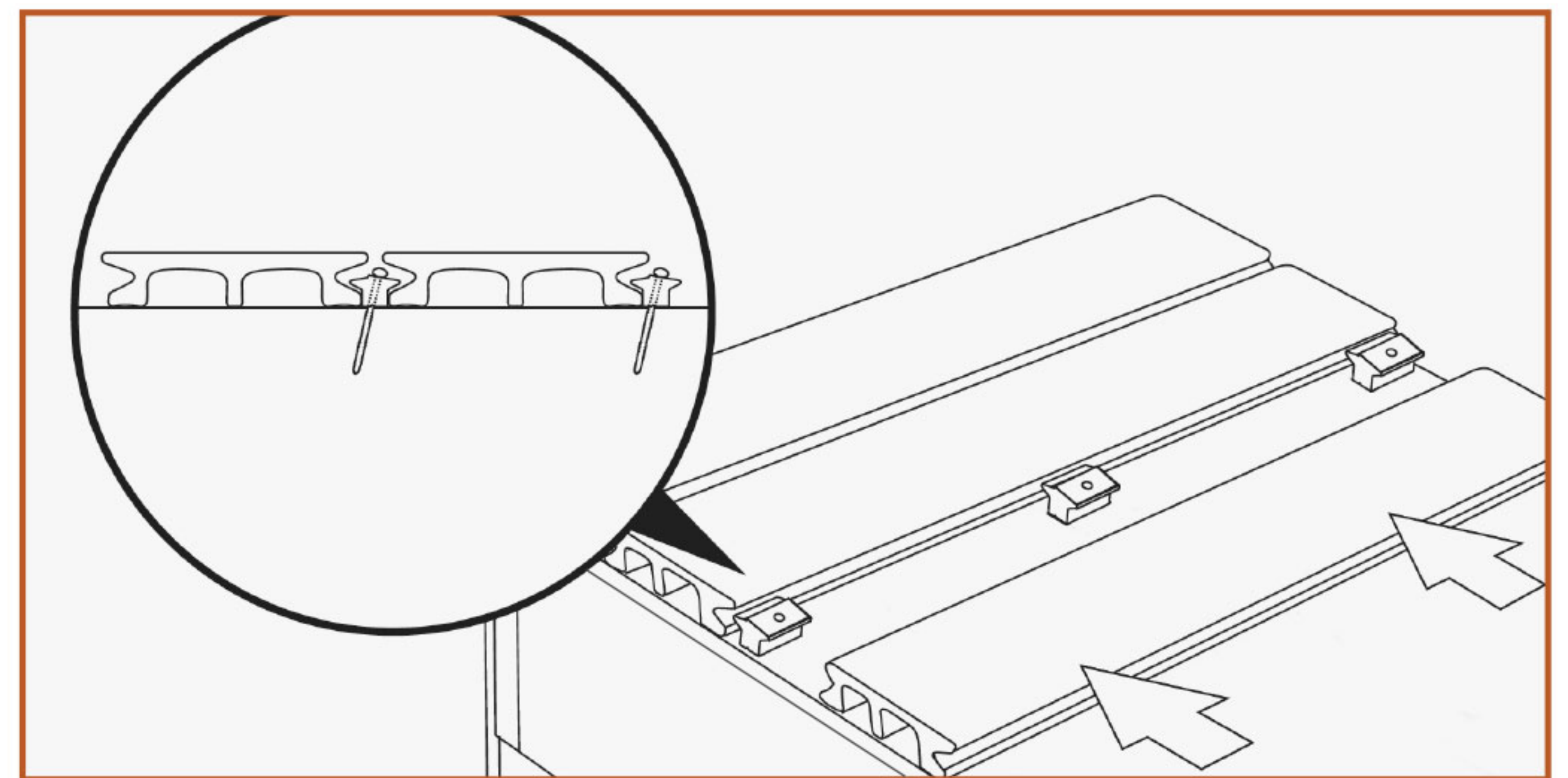


Figure 4

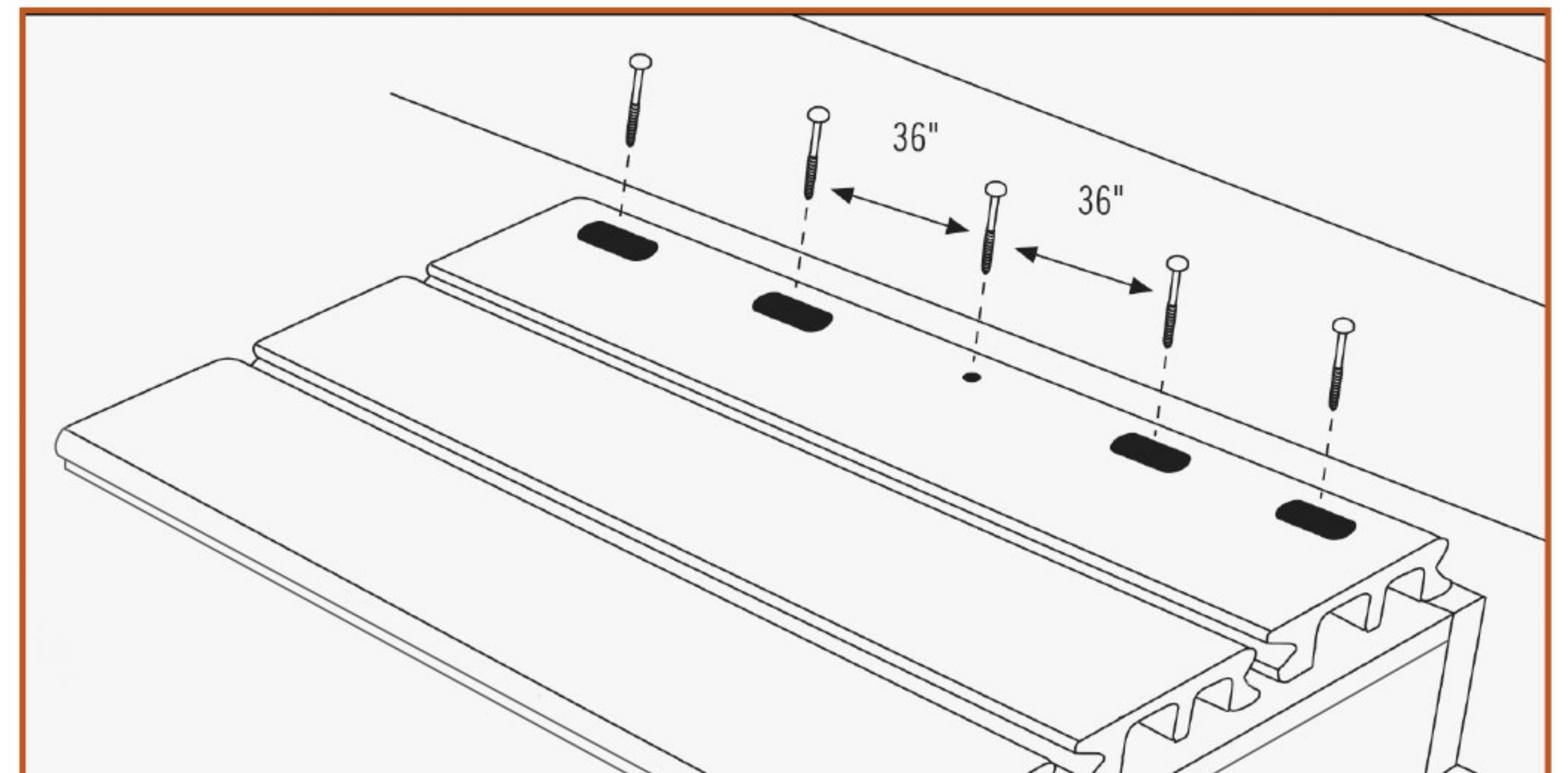


Figure 5

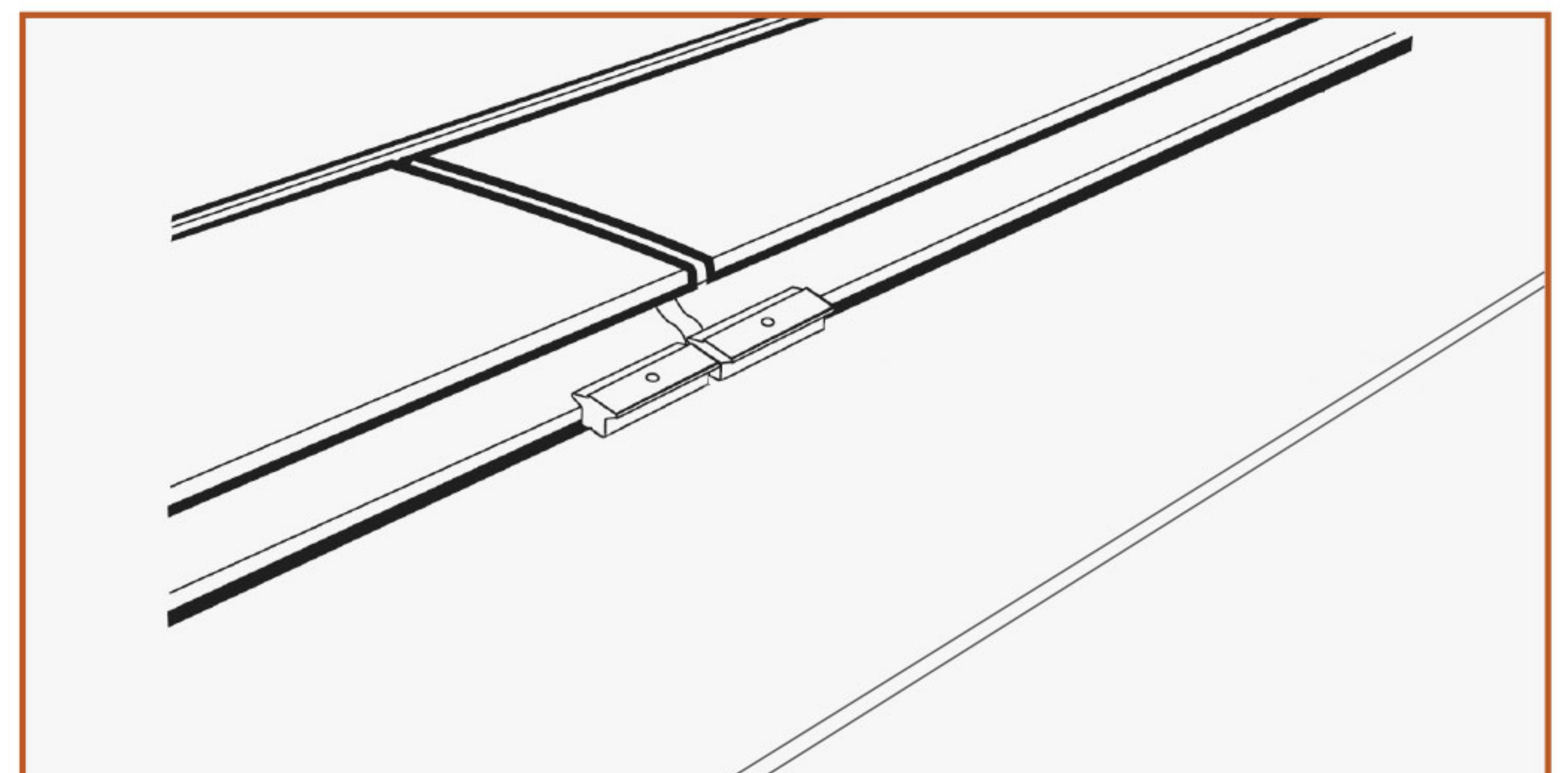


Figure 6

USER GUIDE SAUNA SYSTEM BENCHING (CONT.)

CLIP INSTALLATION TIPS

- The screw should be tightened only enough to fully seat the clip onto the lumber. The head of the screw should not compress into the top of the clip, but should simply hold the clip down onto the lumber.
- If using a cordless drill with a clutch, set the clutch to a low torque setting that will not deform the clip upon tightening of the screw. Over tightening the screw may prevent full insertion of the next board, leaving a slightly larger gap between boards.

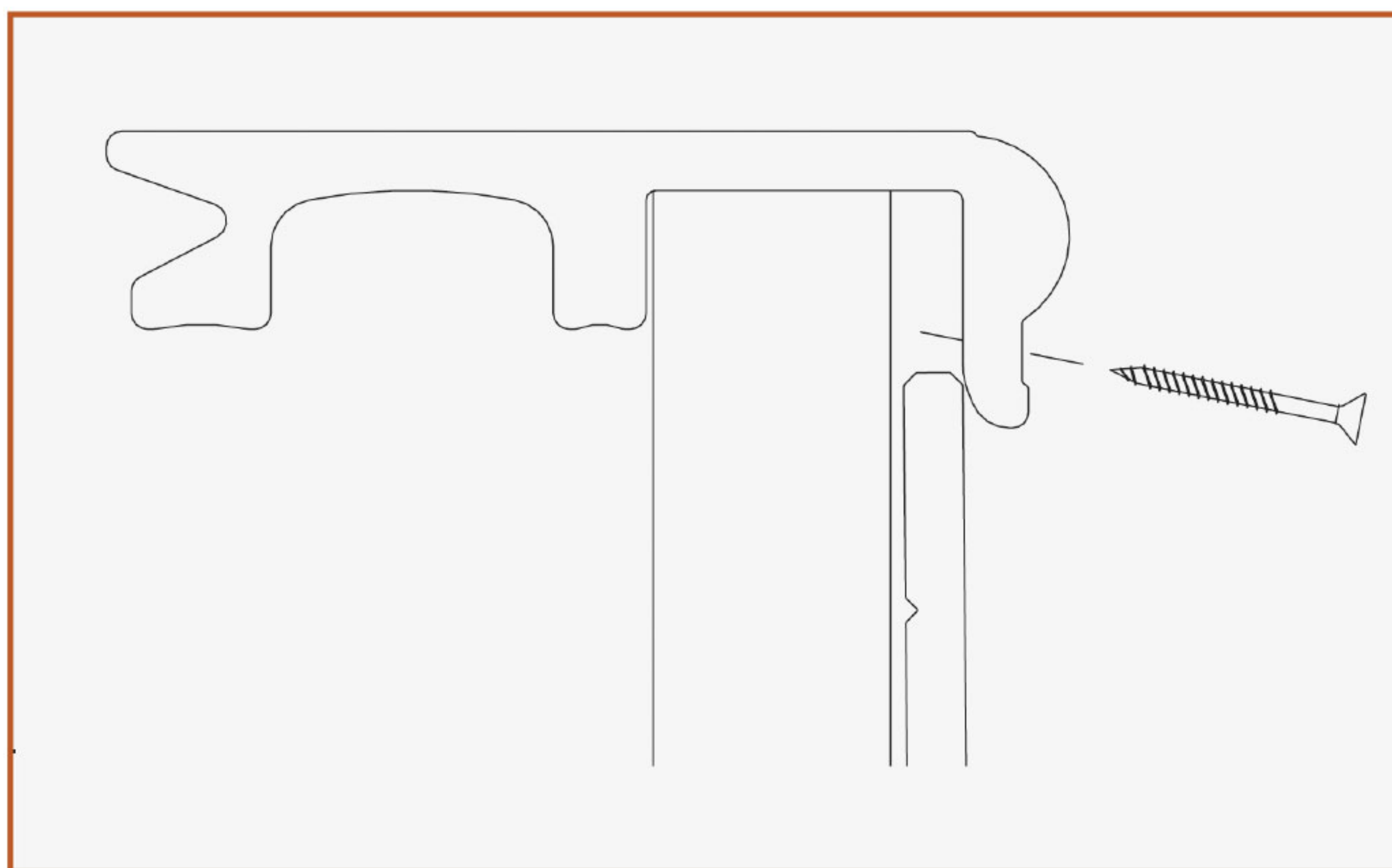


Figure 7

ATTACH BULL NOSE TO TRIM

- Pre-drill holes every 24" into the lower lip of the bull nose and through the fascia cladding. Using a rotary tool with a spiral bit, enlarge all pre-drilled holes in the bull nose lip, into slots to allow for expansion and contraction, especially near the ends of the bull nose length. If necessary, use the expansion/contraction charts to look up the predicted expansion and contraction.
- Drive #8 x 2" screws into the bull nose lip. Tighten screws just until the head of the screw contacts the bull nose lip, and before the screw pulls the bull nose lip towards the lumber. **(REFER TO FIG. 7/8)**

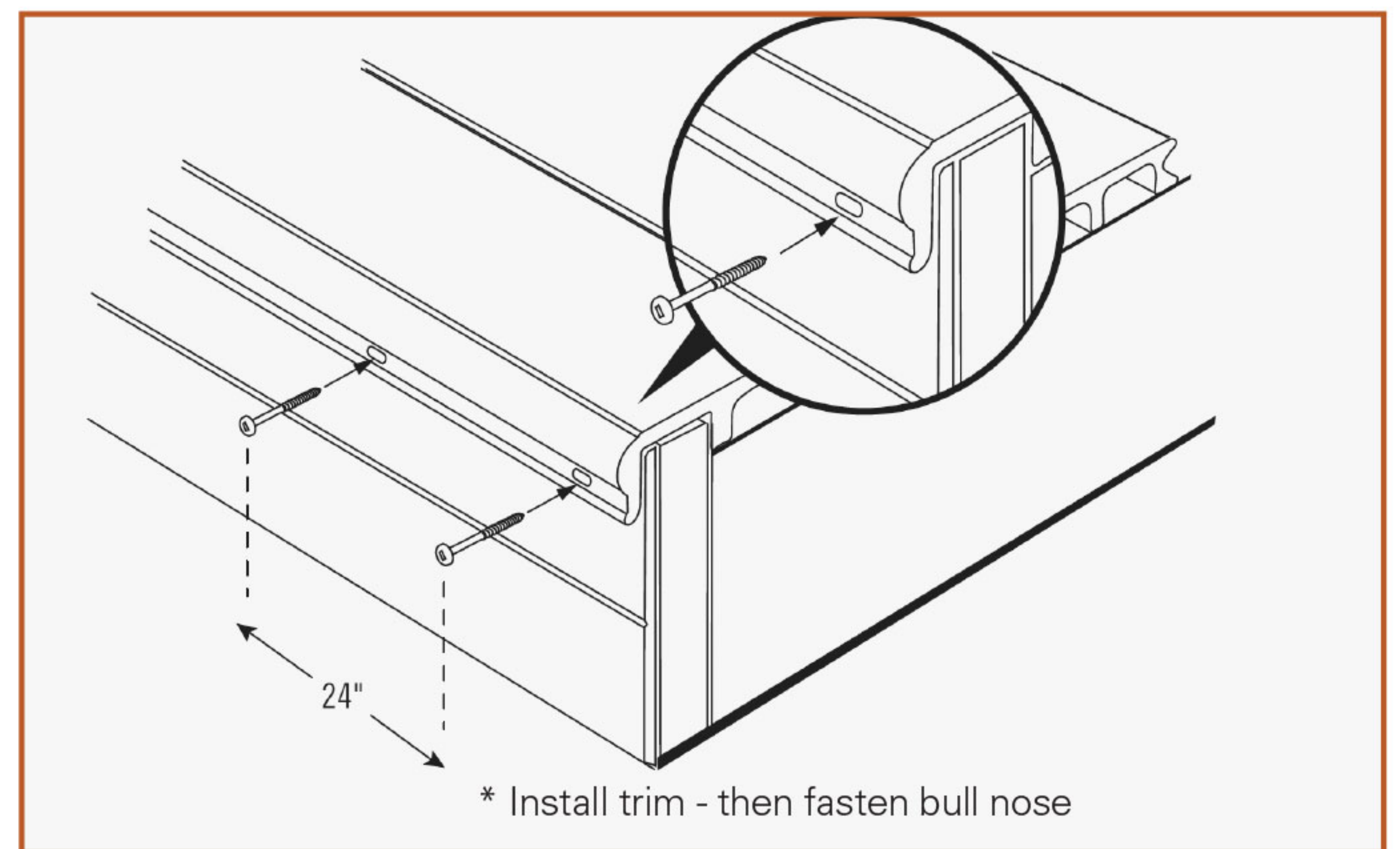


Figure 8

HOW TO CARE FOR YOUR BENCHES

- Avoid the use of petroleum based products on the boards. i.e. suntan lotion, bug spray or bubble solution.
- For a more thorough cleaning use a rag and a mild dish detergent to clean.