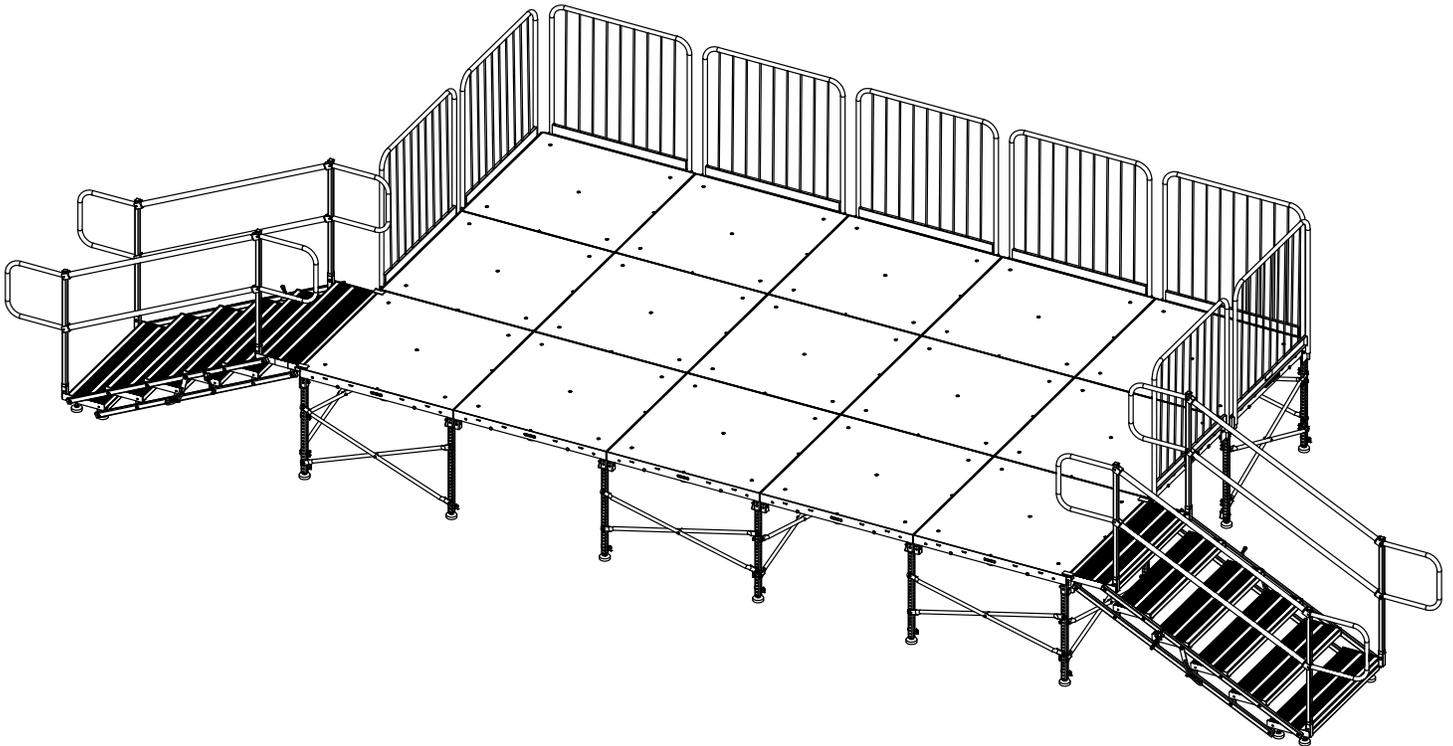


# ST8100

## Multi-Stage - Steel Staging

# Assembly Instructions

All Drawings Are For Illustration Only.

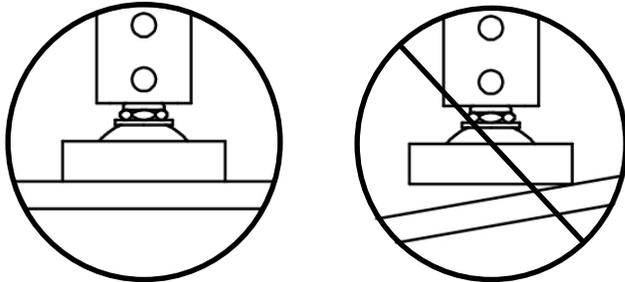


**BILJAX**  
Haulotte 

P/N : LL-204-50  
Last Revision: October 2019

## STEP 1 - SITE PREPARATION

- A) Determine the exact location where the stage will be erected.
- B) For outdoor stages, mudsills are required to distribute the weight (125PSF to 150PSF) on the stage legs. This will prevent the legs from sinking and ease the leveling of the stage.
- C) All base pads and mudsills should be placed only on a horizontal surface.



MAX. HEIGHT	LOAD RATING
6ft-2in	150 PSF
6ft-2in to 16ft-0in	125 PSF

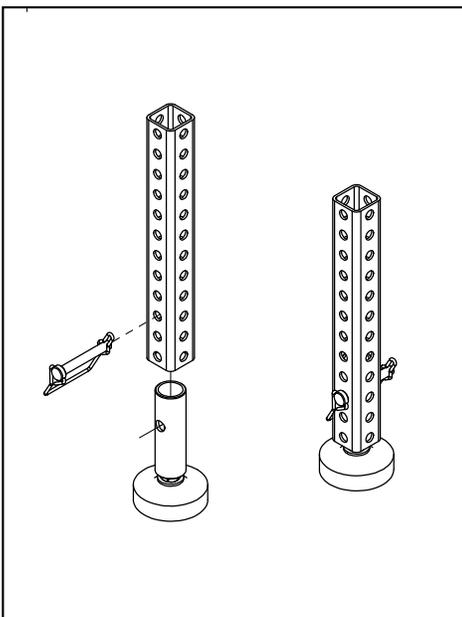
## STEP 2 - LEG ASSEMBLY

The leg sockets on the stage deck fit 1-1/2" sq. stage legs. Use any of the following:

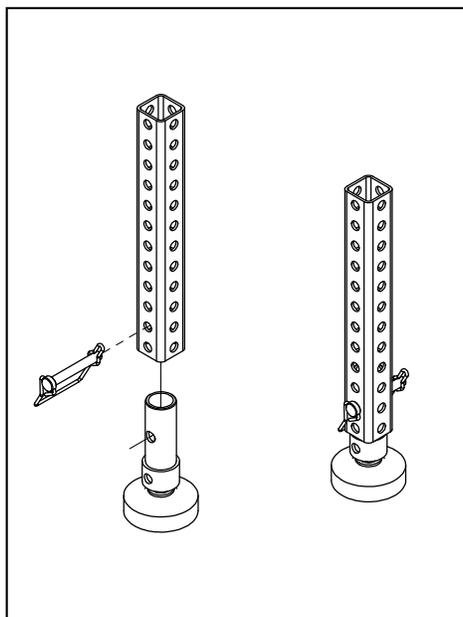
- A) 1-1/2" sq. leg with adjustable base pad. Insert base pad into leg and attach with 2-3/8" snap pin in third hole of leg.
- B) 1-1/2" sq. leg with adjustable base pad with collar. Insert base pad into leg and attach with 2-3/8" snap pin in second hole of leg.
- C) Adjustable legs – Insert adjustable base pad into 1-3/4" sq. leg and attach with 2-3/8" snap pin in third hole of leg. **NOTE: Collar of base pad must be in leg for stability.** Place a 1-1/2" sq. leg inside the 1-3/4" sq. leg and adjust to desired length. Pin together leg tubes with 2-3/8" snap pin. **NOTE: There must be a minimum of a 6" overlap of tubes for stability.**

**NOTE:** Leg length (without base pad) is approximately 3" shorter than desired height of stage.

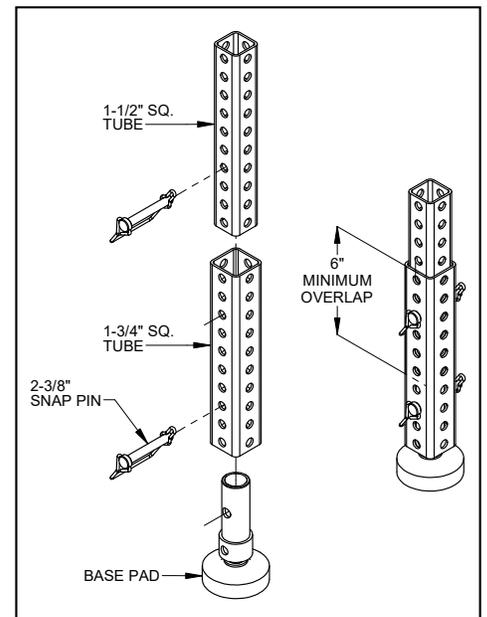
A



B



C



## STEP 3 - ATTACHING LEGS

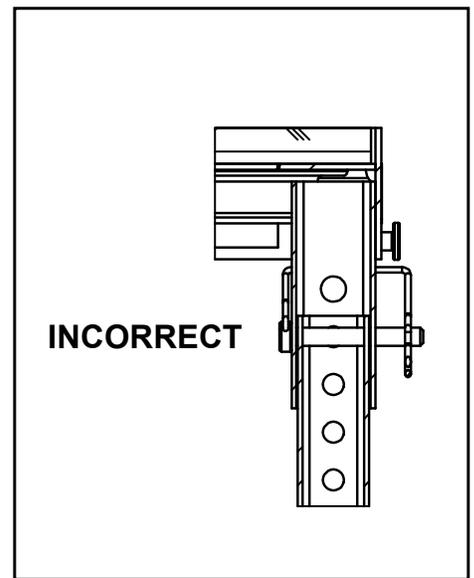
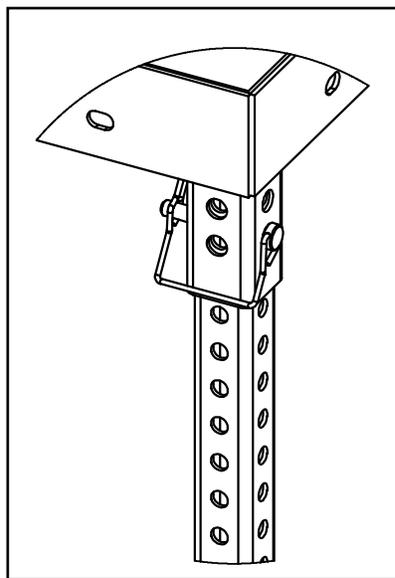
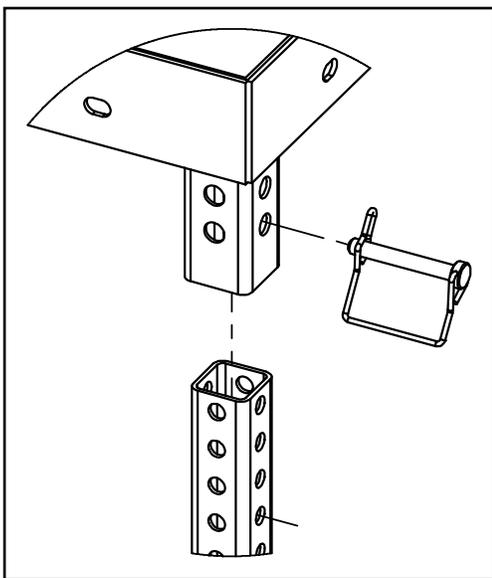
The leg sockets on the stage deck fit 1-1/2" sq. stage legs. Use **only** 1-1/2" sq. legs.

**! WARNING ! – Failure to properly install stage legs could result in serious injury or death.**

- A) Insert a 1-1/2" sq. stage leg in the leg socket so that it touches the bottom of the stage deck. **NOTE:** Leg **must** be FULLY INSERTED.
- B) Attach with 2-3/8" snap pin. The head of the snap pin should face the outside of the deck.

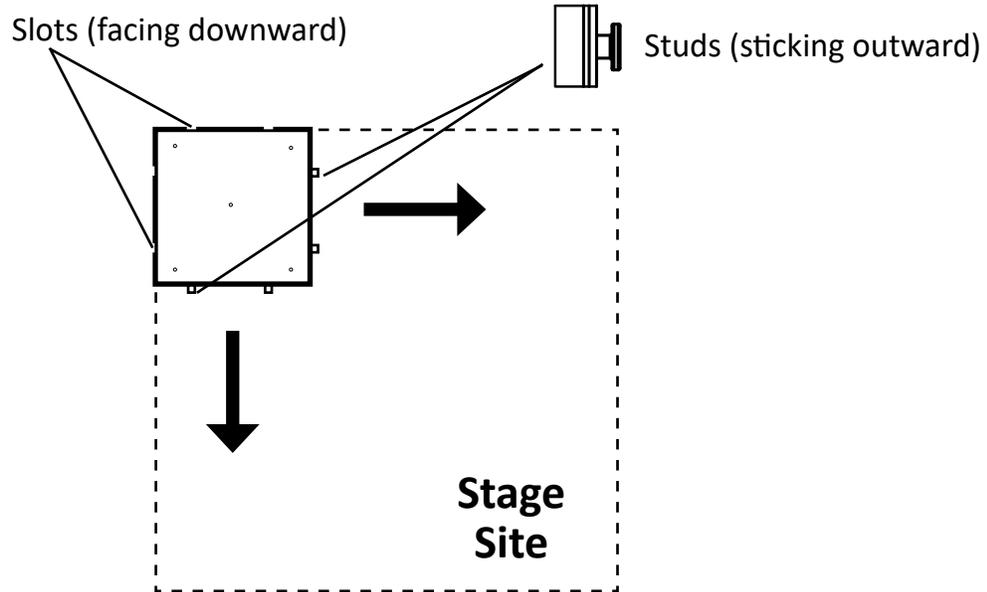
Legs required in all four corner sockets of first stage deck.

A



## STEP 4 - SETTING THE STAGE

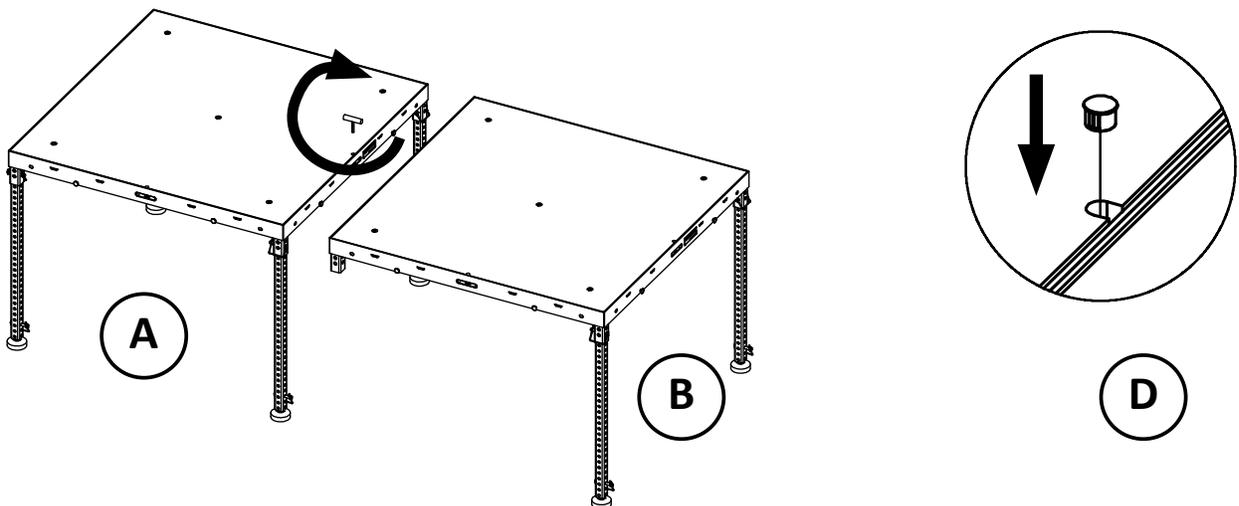
- A) Place the first stage deck (with legs in all four corner sockets) in back corner of stage site.
- B) Align the stage deck so that the studs are toward the inside of the staging site and the slots are toward the outside of the staging site. **NOTE:** When using 4' x 4' decks exclusively, any corner may be used as a starting point. **The sides with studs must always face toward the stage site.**



## STEP 5 - SETTING THE STAGE (continued)

- A) Set the back row of stage decks first.
- B) Insert two legs into each additional stage deck (per Step 3) and attach to previous stage deck by positioning and lowering the slots onto the studs. **NOTE: The sides with studs must always face toward the stage site.**
- C) Insert 5/16" T-Handle hex wrench through the hole in the top of the deck and rotate the cam lock clockwise to lock stages together.
- D) Insert a plastic plug to cover the hole.

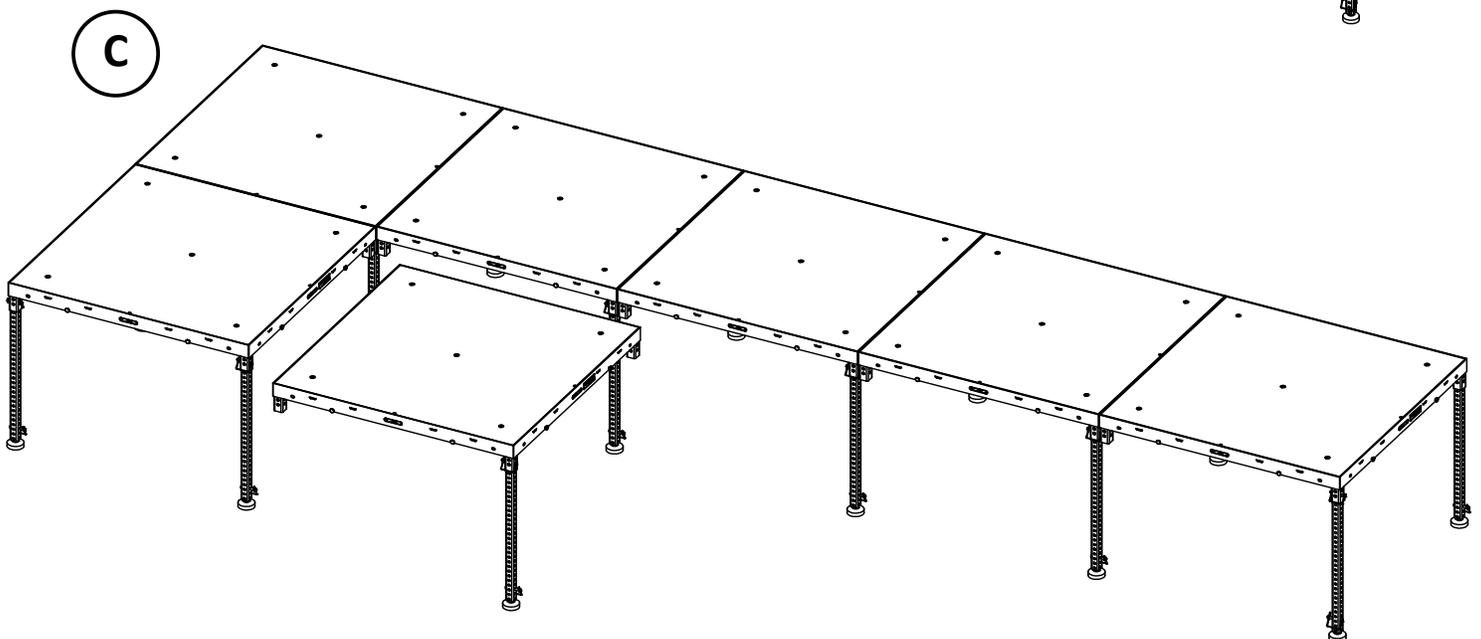
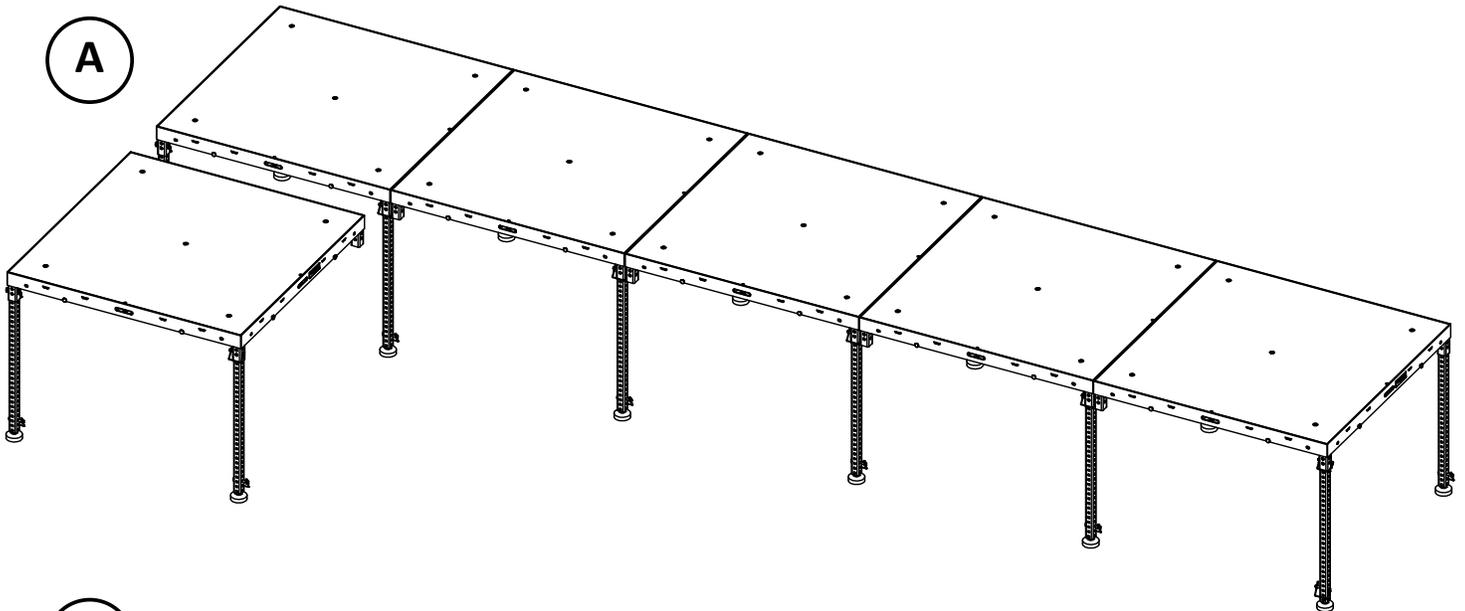
Steps 5C and 5D can be done as you are setting up the stage or when assembly is completed.



## STEP 6 - SETTING THE NEXT ROW

Begin the second row after completing the back row.

- A) Insert two legs into stage deck (per Step 3) and attach to back row stage deck by positioning and lowering the slots onto the studs. **NOTE: The sides with studs must always face toward the stage site.**
- B) Lock stage decks together. See Steps 5C and 5D.
- C) Insert one leg into stage deck (per Step 3) and attach to both adjacent decks by positioning and lowering the slots onto the studs.
- D) Lock stage decks together. See Steps 5C and 5D.
- E) Depending on the size of the stage, determine whether any interior bracing is necessary. Add bracing where needed as rows are built. See Step 7 for Bracing.
- F) Repeat Steps 6C and 6D to finish row.
- G) Repeat Step 6 until desired stage size is complete.

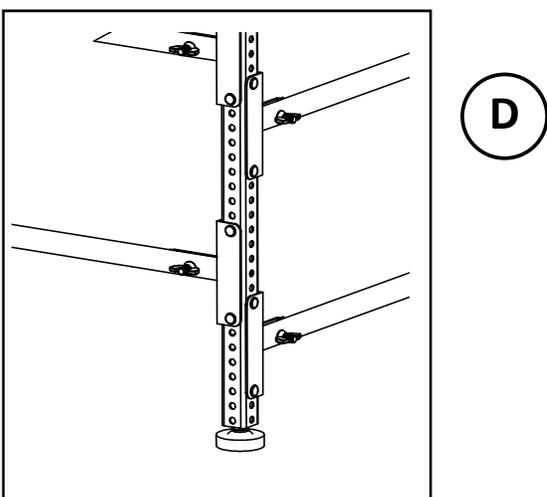
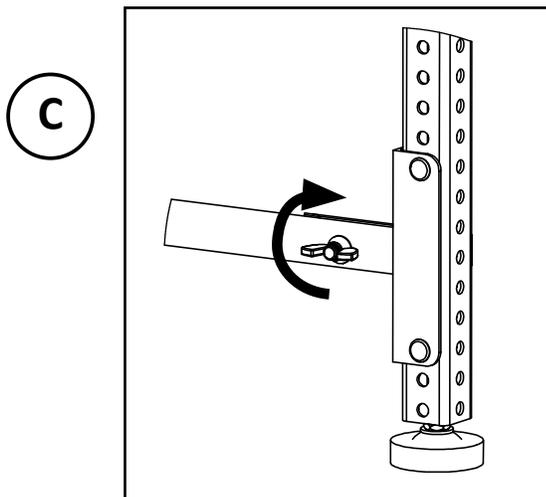
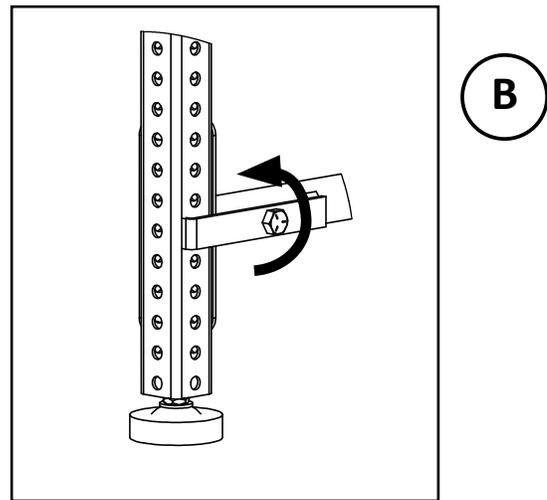
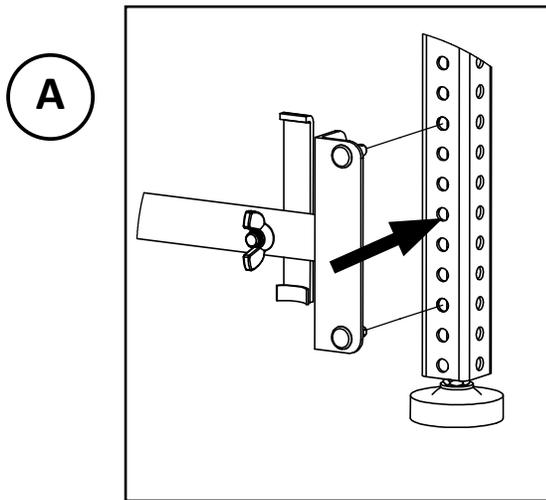


## STEP 7 - BRACING

Bracing is required on stages with a height greater than 30". Brace each corner and every third bay along each side. Internal braces should be placed in different rows than perimeter bracing to increase stability. Users may choose either horizontal or diagonal bracing. Follow the instructions below for the chosen bracing method.

### Horizontal Bracing

- A) Determine what brace to use. A starter brace will connect two legs in the same deck. A continuous brace will connect a leg in one deck to a leg in the adjacent deck. Insert brace pins into stage legs.
- B) Turn bracket until it is perpendicular with the stage leg. Bracket lip should rest flush against the outer edge of the stage leg.
- C) Tighten the wing nut on the front of the horizontal brace to secure the bracket. Use two braces per bay and three braces per bay for heights greater than 48". Spacing between braces is a maximum of 24" and a minimum of 12".
- D) A common leg **must** be braced in two directions. Depending on the height of stage, adjacent braces may overlap **one** hole. Bracket lip should rest against the stage leg and **not** the adjacent brace.
- E) Repeat Steps until all bracing is thoroughly attached.

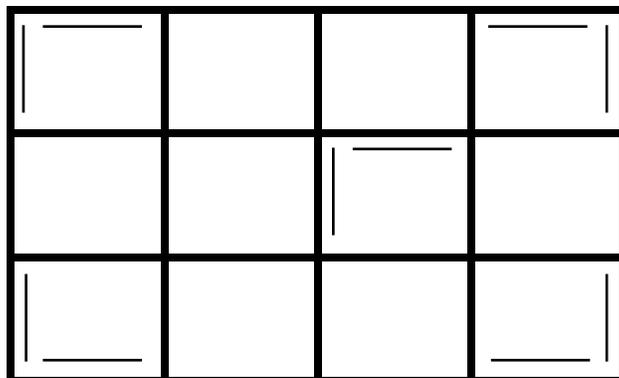
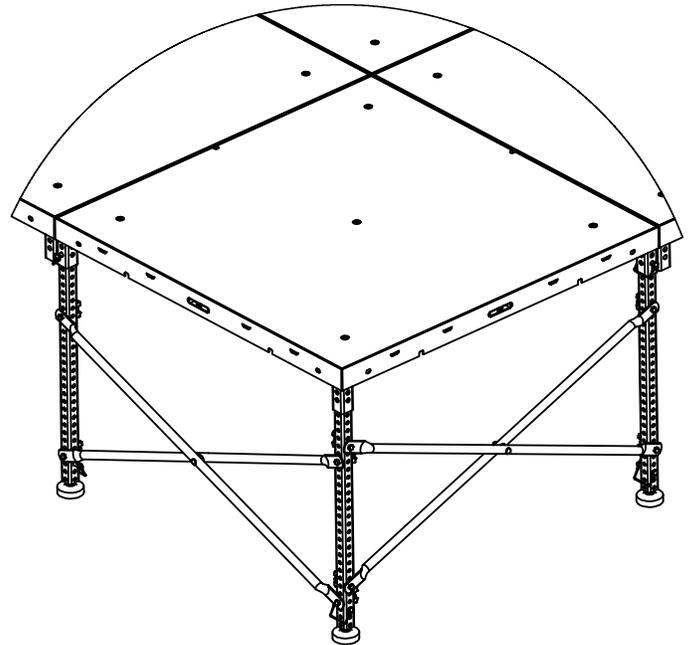
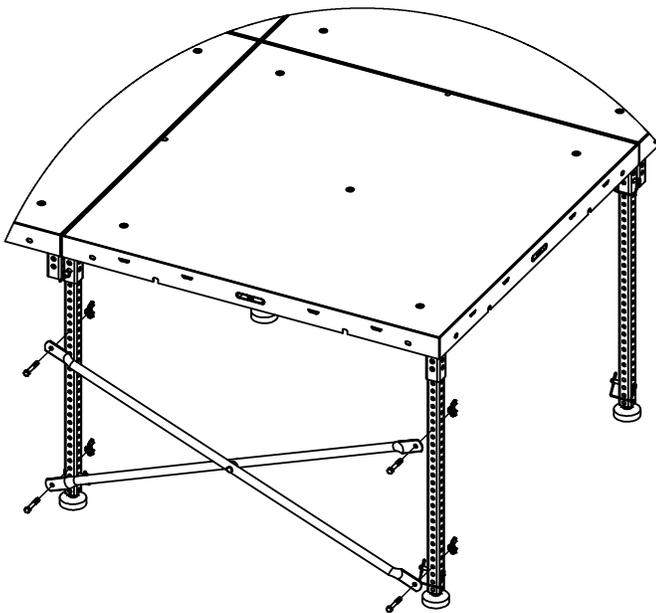


## STEP 7 - BRACING (continued)

### Diagonal Bracing

- A) A common leg **must** be braced in two directions. Position braces on leg height to maintain equal brace spacing. The bolt spacing of the diagonal braces will be: 12" with legs at 48" center line or 18" with legs at 46" center line.
- B) Attach brace with four 3/8" x 2-1/2" hex bolts and wing nuts.
- C) Use two braces per bay for heights greater than 48". If an adjustable leg is used, at least one of the braces should span the connection between the 1-1/2" leg and 1-3/4" sleeve.
- D) Repeat Steps until all bracing is thoroughly attached.

A



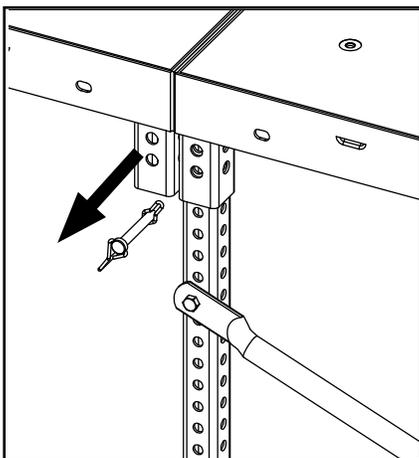
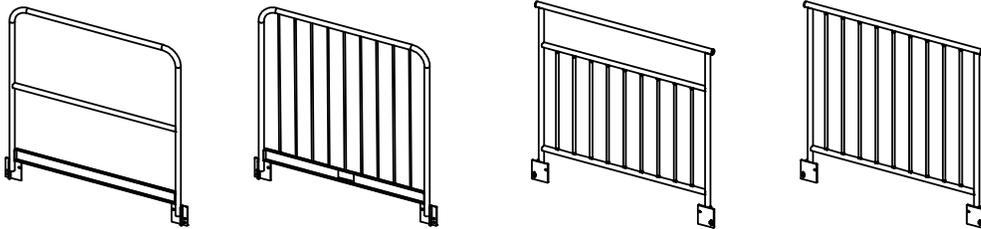
## STEP 8 - ATTACHING GUARD RAILS (if necessary)

Bil-Jax recommends guard rails on the stage when the stage height exceeds 24”.

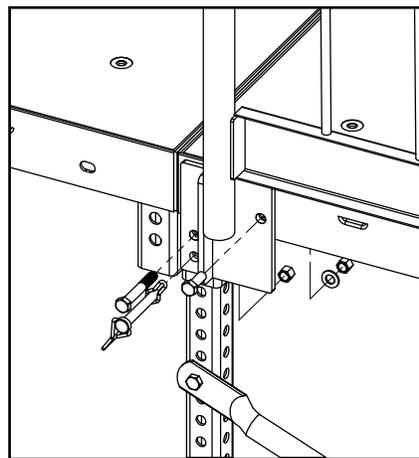
Section 1015 of the International Building Code (IBC) **requires** the use of guard rails with vertical posts no greater than 4” apart when the stage height exceeds 30”.

- A) Determine which side(s) need guard rails. If snap pin used to attach leg is accessible, temporarily remove it.
- B) Place guard rail against side of deck. Reattach snap pin through hole in guard rail mount plate.
- C) Insert  $3/8" \times 2-1/2"$  bolt through other hole in guard rail mount plate and stage deck leg socket. Attach and tighten the hex nut. **Note: Bolt is required. Snap pin alone is insufficient.**
- D) Insert  $3/8" \times 1"$  bolt through other hole in guard rail mount plate and side plate of stage deck. Attach washer and tighten the hex nut.
- E) Where guard rails meet at a corner, snap pin used to attach leg is completely removed.
- F) Repeat Step 8 until all guard rails are attached.

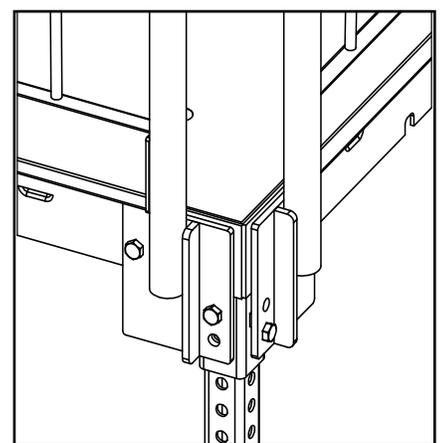
**! WARNING !** – Failure to correctly install guard rails could result in serious injury or death. Verify that each guard rail is properly installed and hex nuts are tightened.



A



B C D



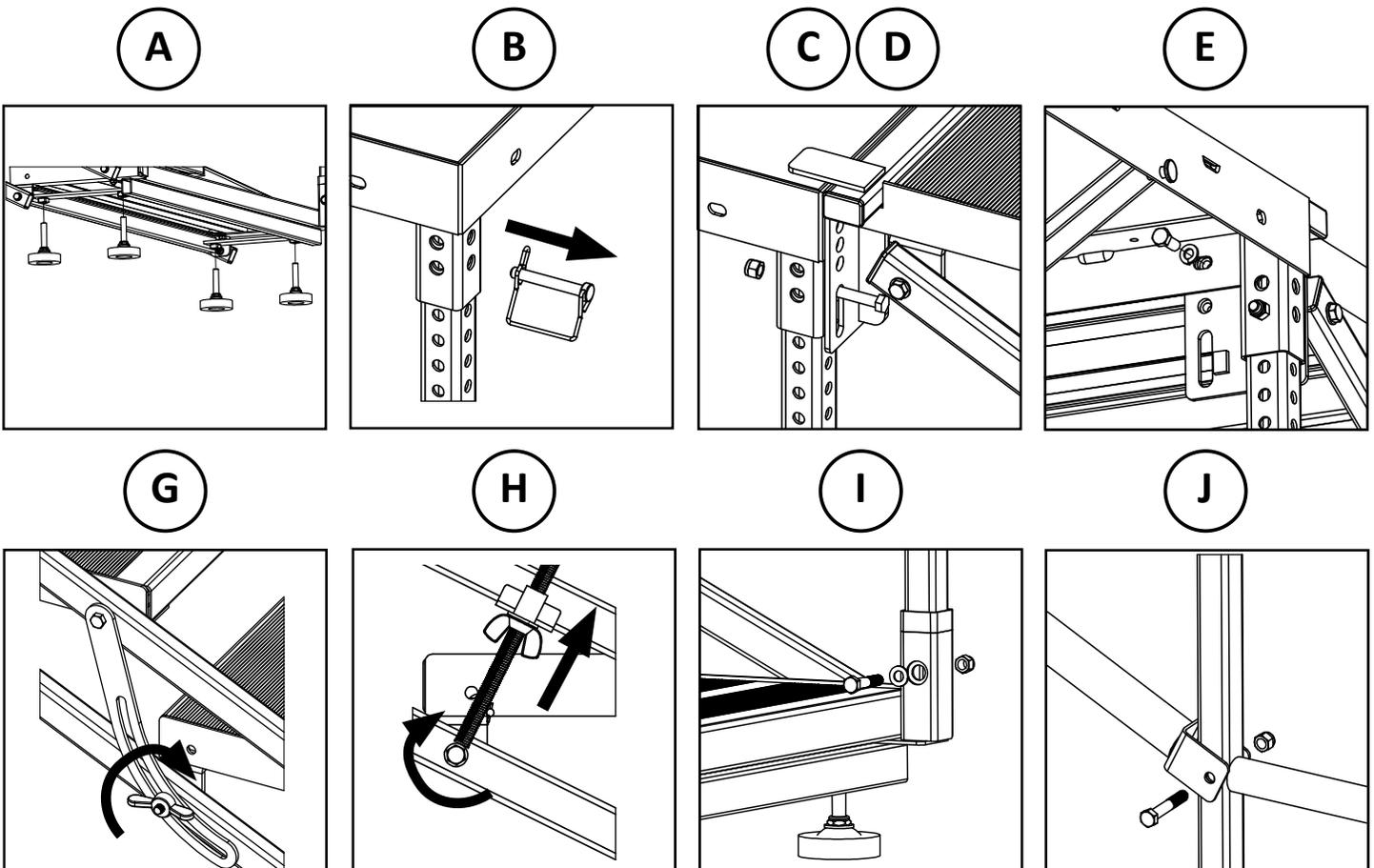
E

## STEP 9 - ATTACHING ULTRA-STAIR UNIT

The Bil-Jax Ultra-Stair Units come in a range of sizes that can adjust to stage heights of 12" to 70".

- A) Screw in foot pads in bottom of lower step.
- B) Determine where the stairs are to be attached. Remove snap pin used to attach leg.
- C) Place stairs against side of deck and allow the two tabs to rest on top of stage deck.
- D) Insert  $3/8"$  x  $2-3/4"$  bolt through hole in stair mount plate and stage deck leg socket each side. Attach and tighten the hex nuts.
- E) From underside of stage deck, insert  $3/8"$  x  $1"$  bolt with lock washer through slot in stage side plate into threaded block on stair mount plate.
- F) Lower the stairs so the foot pads touch the ground. Adjust foot pads so the height of bottom step matches rise of other steps.
- G) Tighten wing nut on slotted lock bar on each side of stairs.
- H) On each side of stairs, rotate threaded lock bar perpendicular to stair stringer tubes. Rotate wing nut so that the saddle weldment is pressed tight against upper stringer tube.
- I) Insert hand rail post into step socket. Attach with washer,  $3/8"$  x  $2"$  bolt and lock nut.
- J) Place hand rail so it straddles post. Attach with  $3/8"$  x  $2-1/4"$  bolt and lock nut. Repeat on each end for all four hand rails.

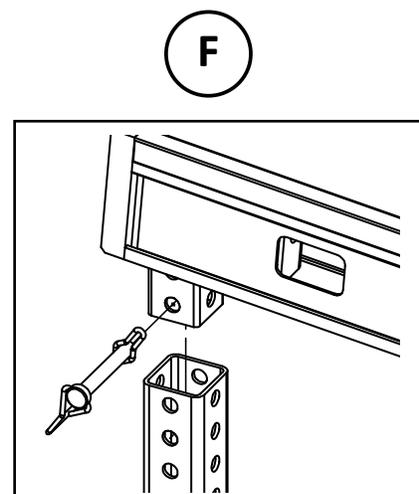
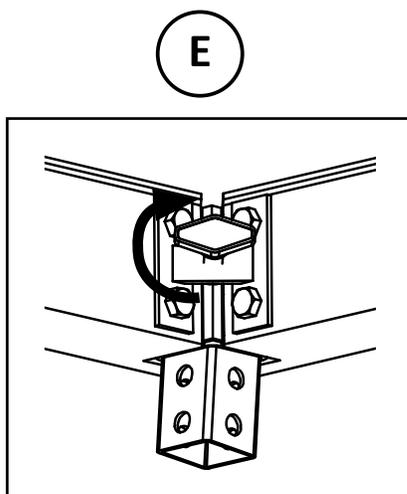
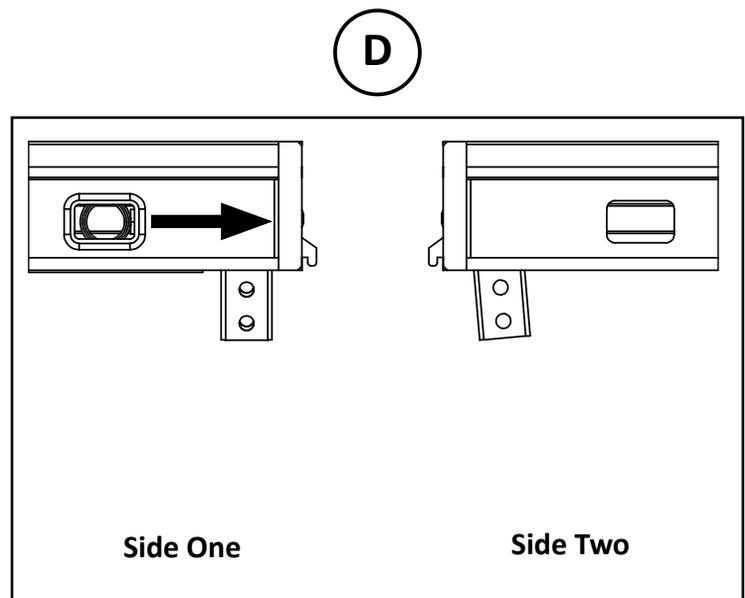
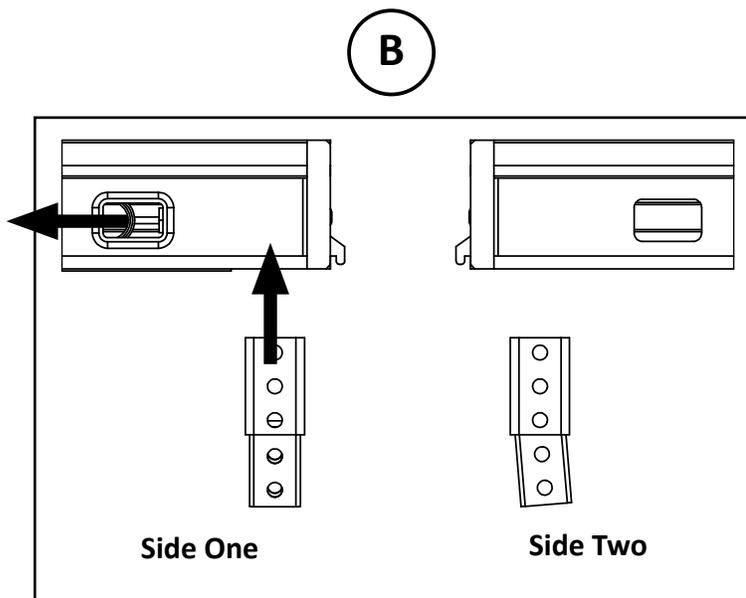
**! WARNING !** – Failure to correctly install stairs could result in serious injury or death. Verify that all nuts on lock bars are tightened.



## STEP 10 - INSTALLING FREE STANDING RAMP

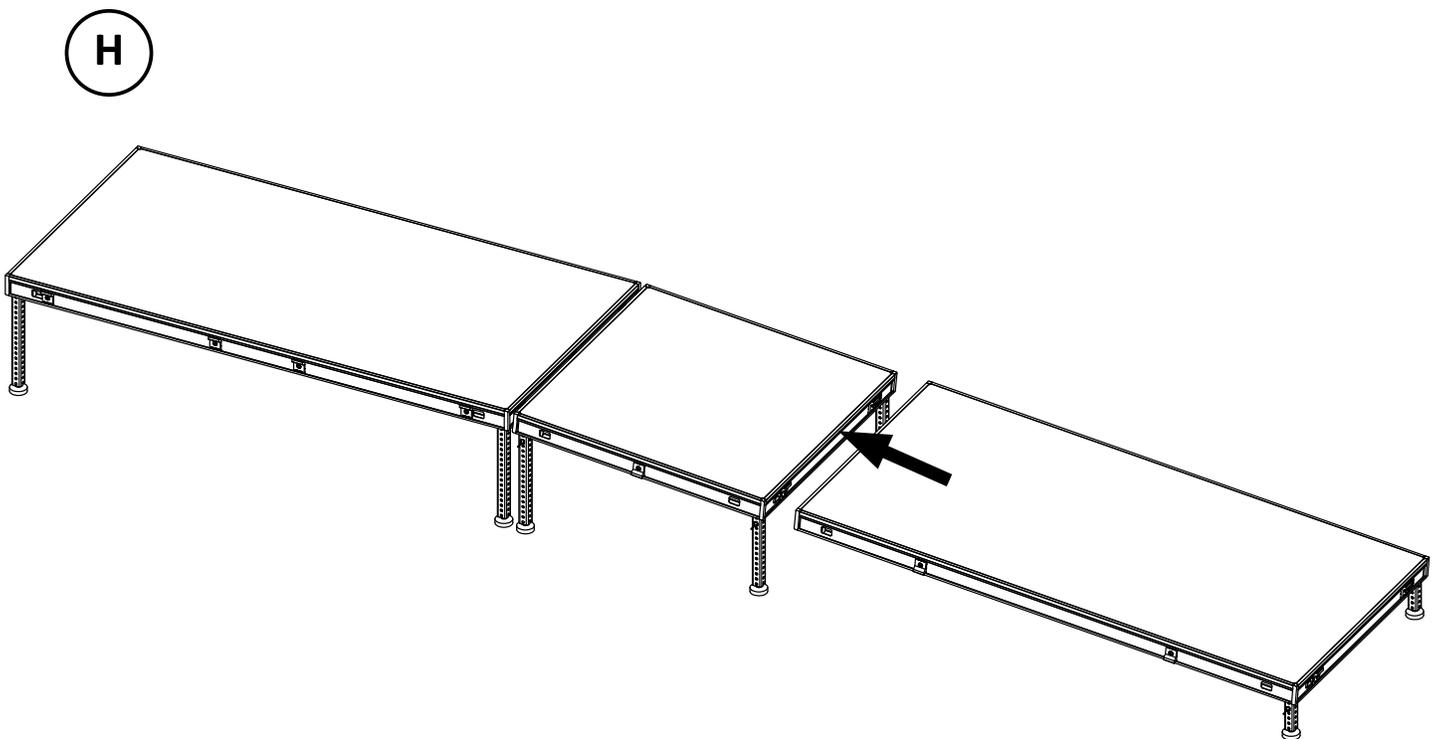
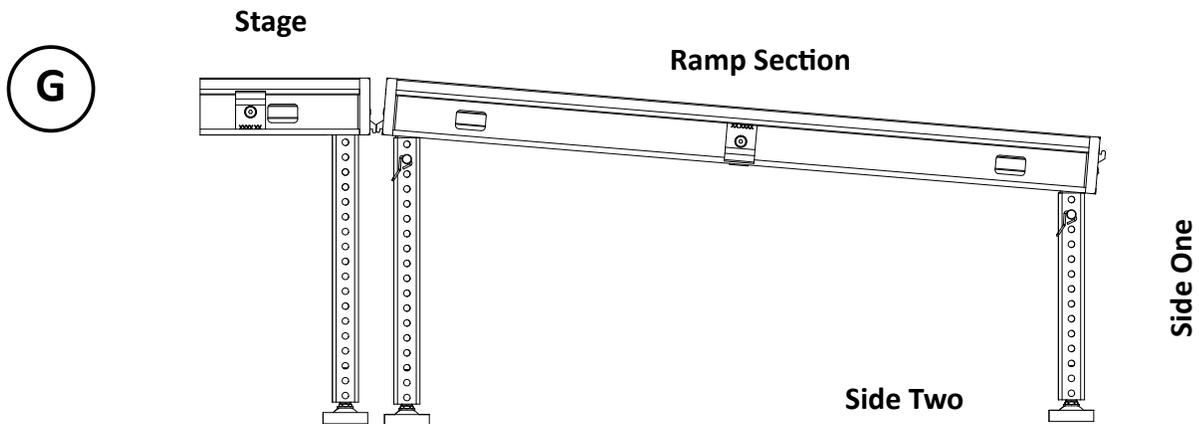
A ramp should be installed at a 1" of rise to 12" of run. The height of a run is limited to 30" maximum before a landing is required. Determine the size and location of ramp. Example: a 24" tall stage will require a 24' long ramp.

- A) Start at top of ramp. Determine amount of decks required. If a 4' x 4' deck is required, begin with it. Example: 24" tall stage = 4' deck + 8' deck + 8' deck + 4' starter ramp.
- B) Pull and hold pin in the unlocked position.
- C) Fully insert a ramp leg adapter in the leg socket so that it touches the bottom of the stage deck.
- D) Release pin to lock leg in place.
- E) Tighten the leg socket wing bolt at each corner socket (underside of stage) where a leg is installed.
- F) Attach 1-3/4" sq. leg to ramp adapter with 2-3/8" snap pin. Leg length (without base pad) is approximately 6" shorter than desired height of ramp at leg position.



## STEP 10 - INSTALLING FREE STANDING RAMP (continued)

- G) Place deck with four legs against stage. **NOTE: Downward facing side rail hooks must be against stage and upward facing side rail hooks must be at lower end of ramp.**
- H) Insert two legs into stage deck (per Steps 10B – 10F) and attach to previous stage ramp deck by inserting the downward facing rail hook into the stage deck channel and lowering onto the upward facing rail hooks.

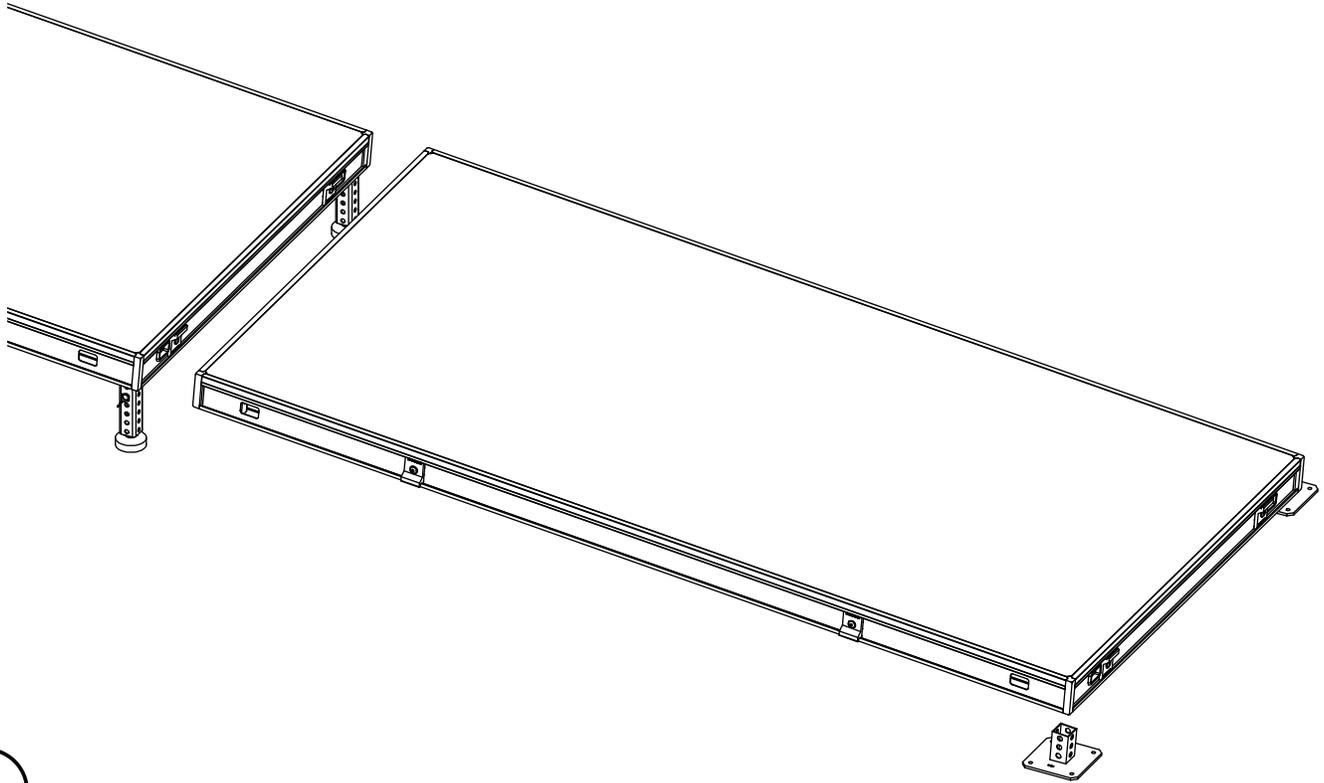


## STEP 10 - INSTALLING FREE STANDING RAMP (continued)

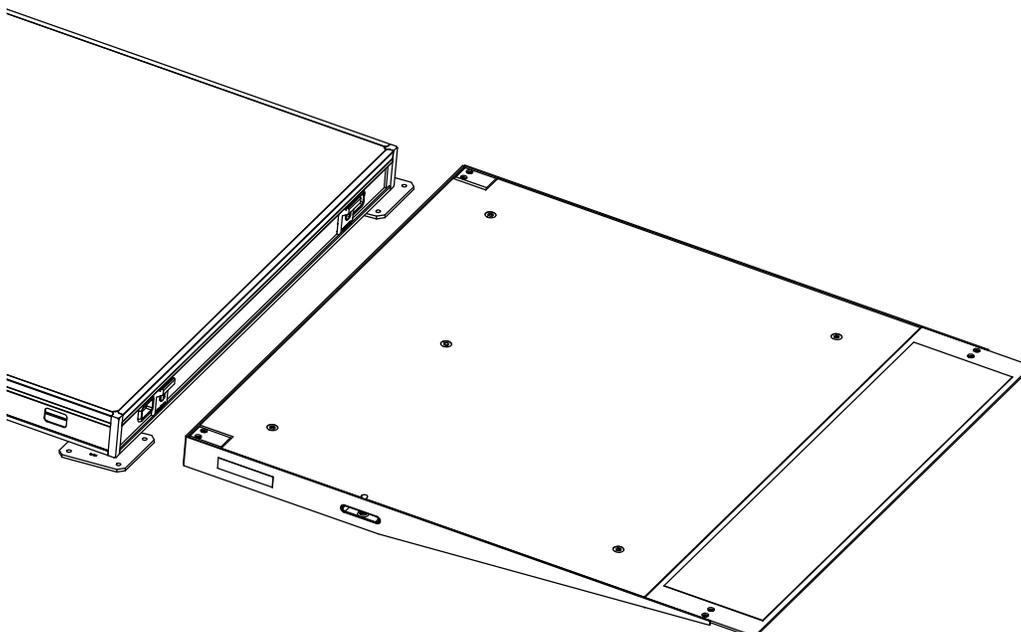
- I) The last ramp stage deck will be approximately 4" above ground level and will require ramp base plates instead of leg adapters and legs.
- J) To complete ramp, place ramp end on upward facing rail hooks of previous ramp.

Note: If a wider ramp is desired, follow instructions but simply attach a second row of stage decks side by side for each step as assembly proceeds.

I



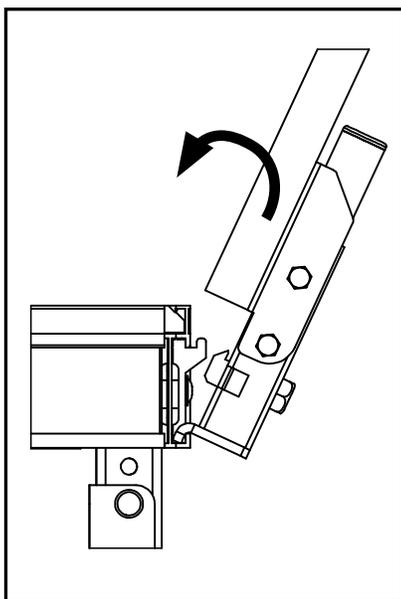
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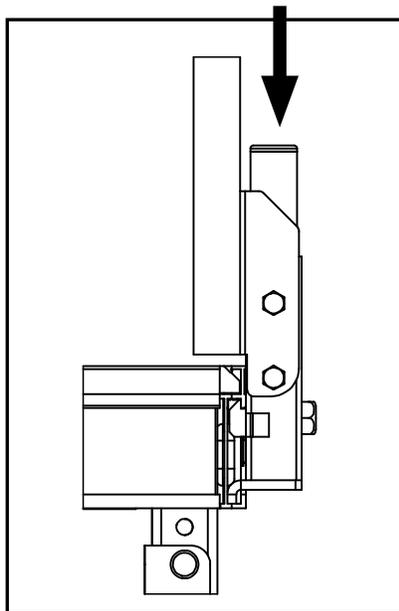
## STEP 11 - ATTACHING RAMP GUARD RAILS

- A) Start at top of ramp. Set the lower lip of the two guard rail locks inside the stage deck channel along the sides of the stage deck ramp.
- B) Pivot guard rail toward the ramp until there is a “click” sound. This fully seats the T-Lock within the stage deck channel. Press down on plunger if necessary to seat T-Lock.
- C) Tighten the hex nut on each lock to fully secure guard rail.
- D) The ramp end requires a special guard rail. Attach with four washers and 3/8” x 1” bolts.

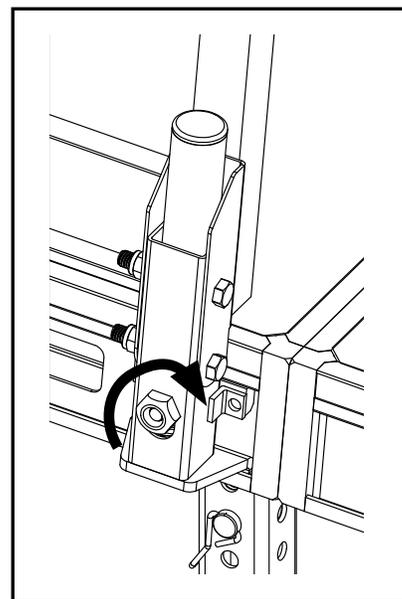
**! WARNING ! – Failure to correctly install guard rails could result in serious injury or death. Verify that each T-Lock is fully seated inside the stage deck channel and hex nut is tightened.**



A

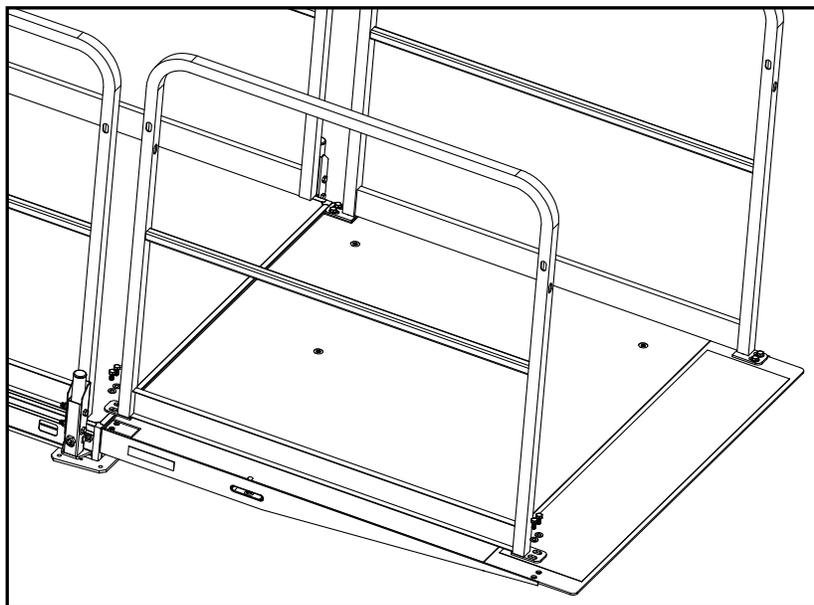


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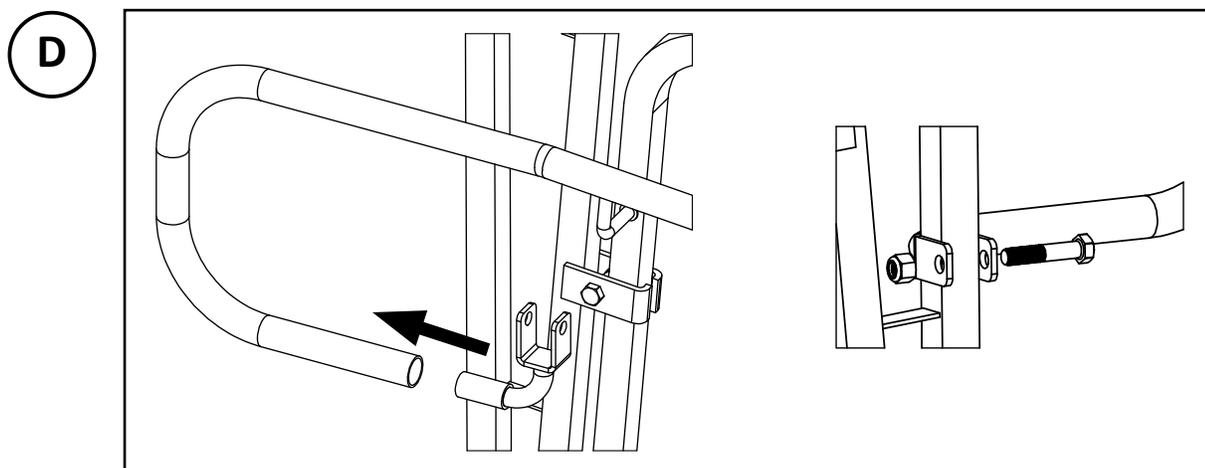
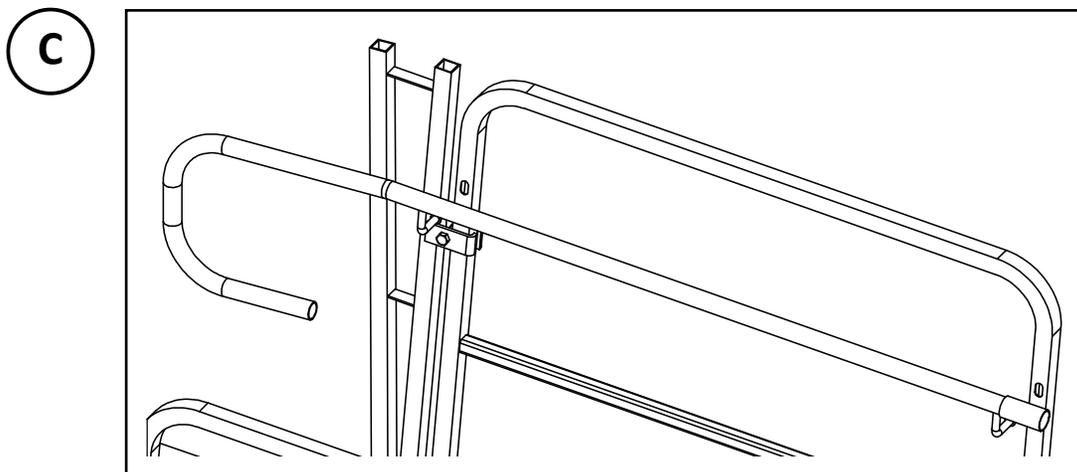
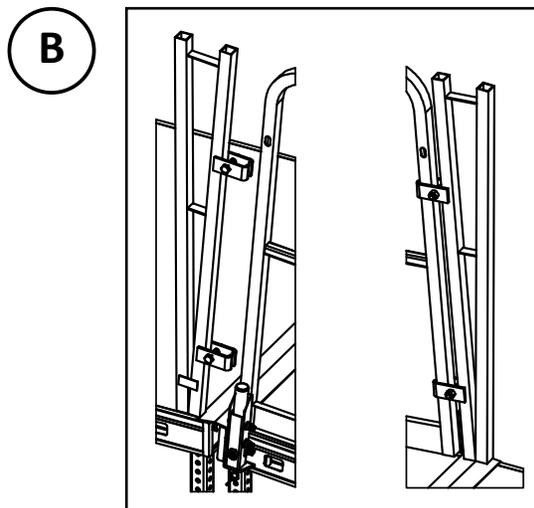
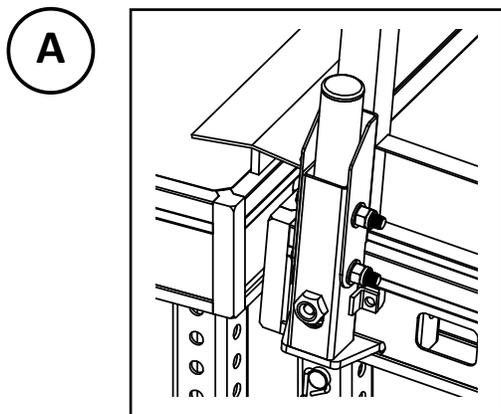
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## STEP 12 - INSTALLING RAMP HAND RAILS

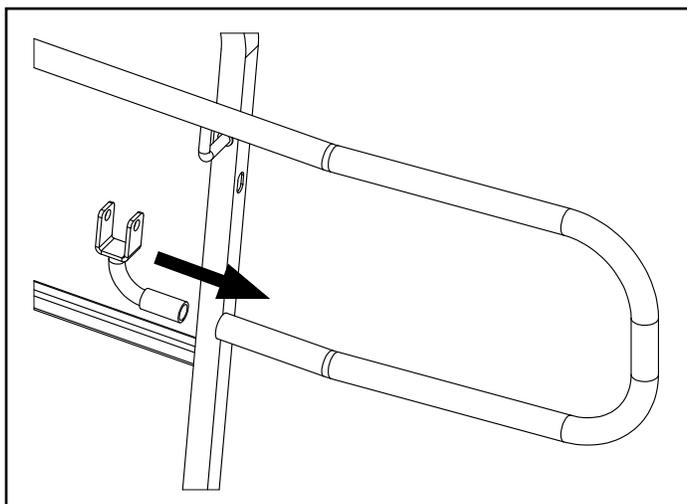
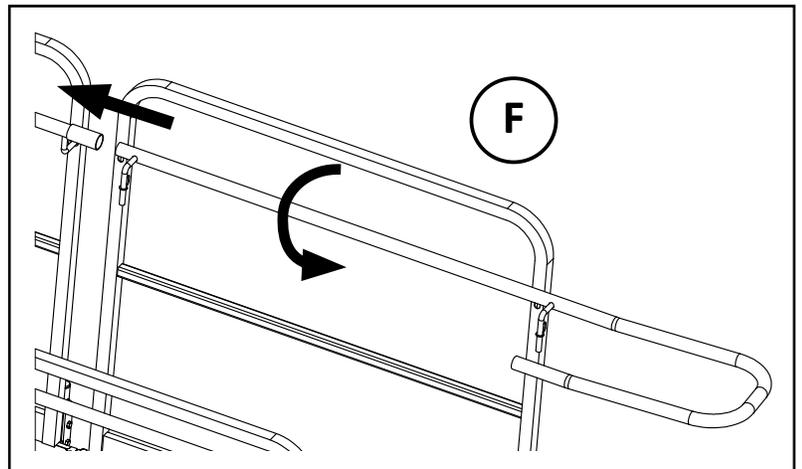
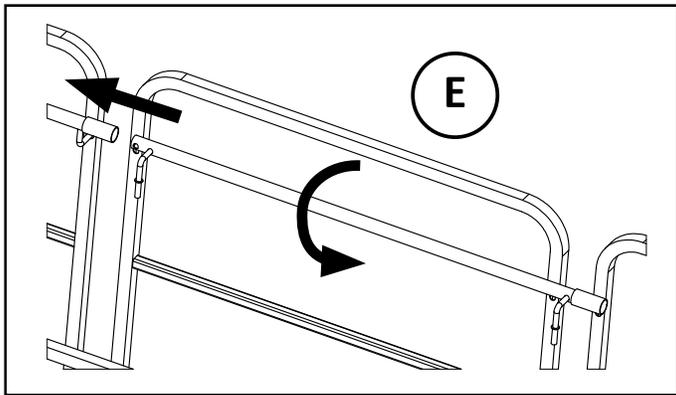
- A) Start at top of ramp. Insert ramp filler plate in gap between stage and ramp.
- B) Attach filler guard rails at top of ramp by placing clamps around guard rail leg and tightening hex nuts.
- C) Attach upper hand rails by placing L-bolts into slots of guard rail. Attach hex nuts. Do not tighten so adjustments can be made as assembled.
- D) Insert end of hand rail support return into end of upper hand rail and rotate so the saddle is around tube of filler guard rail. Insert bolt and attach and tighten hex nut.



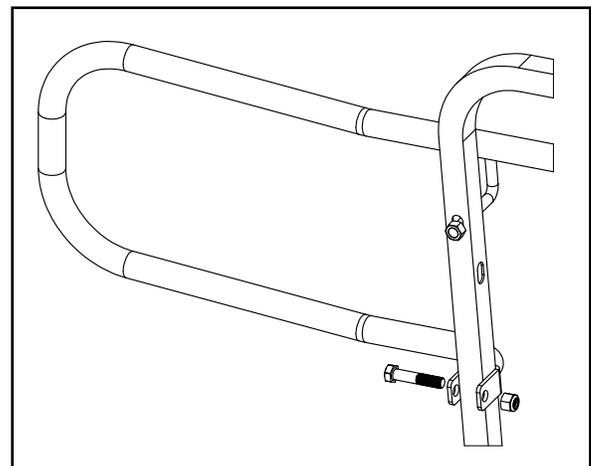
## STEP 12 - INSTALLING RAMP HAND RAILS (continued)

- E) Insert 4' hand rail tube into end of upper hand rail and rotate so the L-bolts are in the slots of guard rail. Loosely attach hex nuts. Repeat until reaching ramp end guard rail.
- F) Insert lower hand rail into 4' hand rail tube and rotate so the L-bolts are in the slots of ramp end guard rail. Loosely attach hex nuts.
- G) Insert end of hand rail support return into end of lower hand rail and rotate so the saddle is around tube of guard rail. Insert bolt and attach and tighten hex nut.
- H) Repeat steps for hand rails on other side of ramp.
- I) **Thoroughly tighten all hex nuts.**

**! WARNING ! – Failure to correctly install hand rails could result in serious injury or death. Verify that all hex nuts are tightened.**



**G**



# **ST8100**

**Multi-Stage - Steel Staging**

## **Assembly Instructions**



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