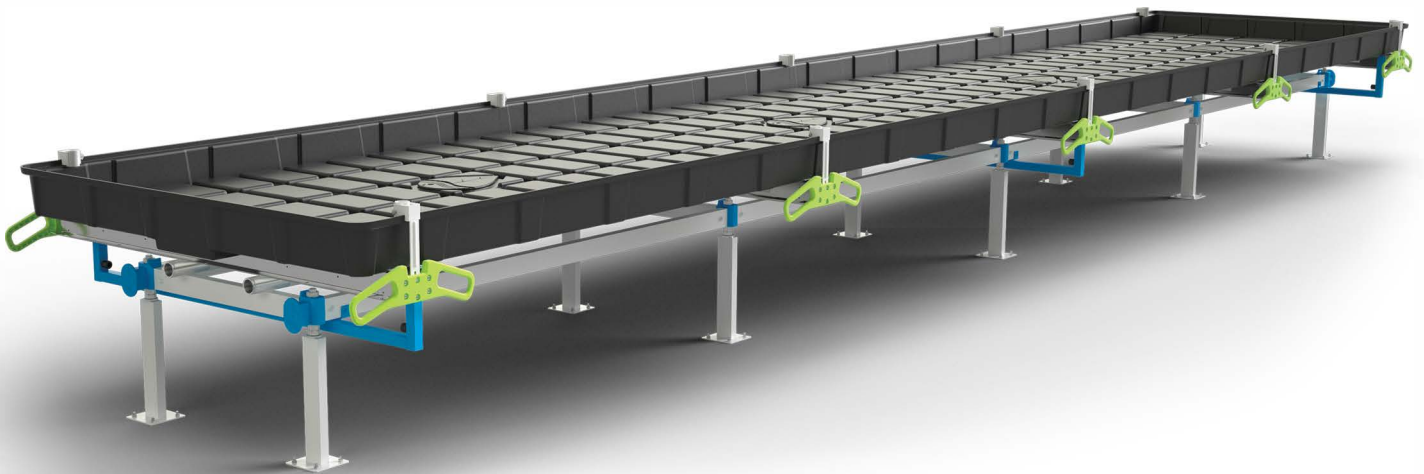




BOTANICARE®

SLIDE BENCH ASSEMBLY INSTRUCTIONS



Before You Get Started

Please take the time to read all the assembly instructions before attempting to assemble your Botanicare® Slide Bench.

These instructions show assembly of an 18' bench as an example. All steps apply for benches of different lengths.

Revision 6.2
HGC117004

Important Safety Precautions

Read and follow all warnings and instructions before using the Botanicare® Slide Bench. Failure to heed direction could lead to serious personal injury, damage to the Slide Bench, or property damage.

- The Slide Bench must always be placed on and anchored to a concrete surface that is level and void of any large cracks. Failure to do so could result in the bench tipping over unexpectedly.
- Use approved anchors as defined in this document.
- Do not load the Slide Bench with more than 25 pounds per square foot.
- Do not climb on or in the Slide Bench or Trays.
- All steps in this assembly procedure must be completed prior to using the bench.
- Keep fingers and hands away from the rollers. The table rollers can cause injury.
- Keep fingers and hands away from the anti-tip brackets. Do not use the brackets to move the bench. Fingers or hands can be caught between the bracket and the frame causing injury.
- Do not extend threaded shafts more than the maximum spacing defined.
- Do not drill anchors into post tension slabs.
- Never move the bench with People or Equipment in between the benches as this could cause injury to personnel or damage to Equipment.

Before using BOND THREE Lap Tray Sealant Adhesive, carefully read and follow all warnings and directions for use, on package and in instructions.

Tools Needed

The following tools & supplies are required to complete this assembly of the slide bench.

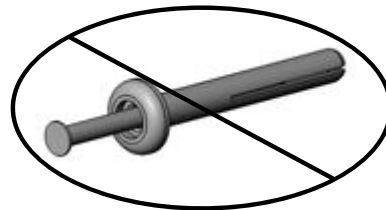
- Cordless Drill with clutch
- Hammer Drill
- Tape Measure
- String Line or Layout Laser
- Chalk Line
- Level
- Hammer or Mallet
- Combination Wrench or 15/16" Box Wrench
- 3/8" Magnetic Nut Driver Drill Bit
- 5/16" Magnetic Nut Driver Drill Bit
- 1/4" Masonry Drill Bit
- Rubbing Alcohol
- Clean Cloth Rags
- Caulk Gun
- 1 3/8" Step Drill Bit

Anchors Not Included

Installation of the bench systems will require 1/4" x 2 1/4" wedge style concrete anchors. Installation of the anchors should follow the anchor manufacturer's recommendations.



Acceptable wedge style anchor



Setting the Drill Clutch

CAUTION: Overtightening screws using a drill can result in stripping the threads in aluminum parts.

- Every drill is different, use caution until familiarity with the drills capabilities.
- Use the lowest setting on the drill clutch that will install the screws.
- A higher torque may be required to initially cut the threads, reduce torque for final tightening.
- After installing, hand tightening will help prevent stripping threads.

NOTE: There is a repair kit available should a screw strip out a hole.

Tips & Clarifications

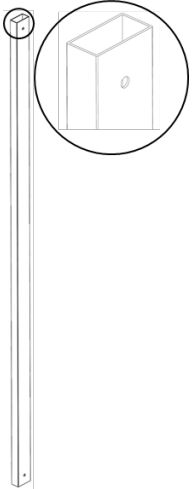
Please take the time to read this section, it may help prevent a lot of un-necessary work.

- The last section (opposite of the Drain end) of all benches are shorter than all other sections. For benches in 5' lengths these parts are shorter and may not be obvious. Set aside these shorter parts so they don't get used on long sections
- Some parts reference 12", 20" or 30". This dimension is the bench height, not the part lengths.
- The threaded rod for the 12" high bench has the nut located nearly in the middle. Make sure you insert the correct end in the leg otherwise the slope adjustment cannot be properly set.

Hardware

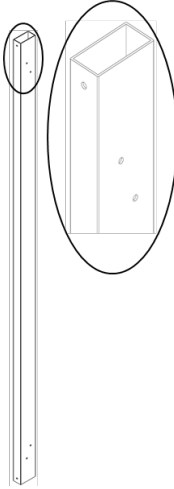
Drain Kit & Middle Kit Section Tubes

(A) Frame Tube



(MS3292)
58.5"

(B) Table Tube



(MS3295)
57"

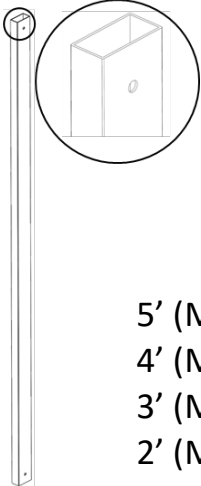
(C) Roller Tube



(MS3294)
56"

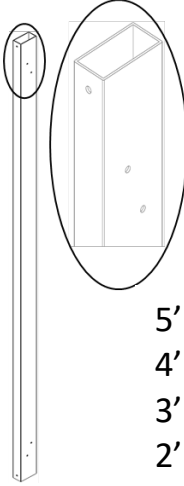
End Kit Section Tubes

(D) Frame Tube



5' (MS3286) 52.5"
4' (MS3806) 40.5"
3' (MS3807) 28.5"
2' (MS3808) 16.5"

(E) Table Tube

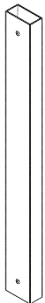
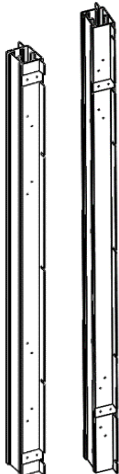
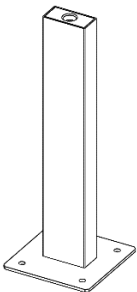
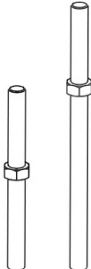
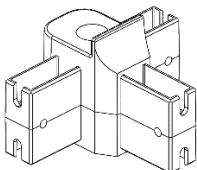
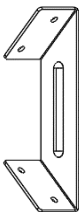
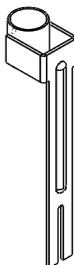
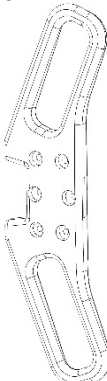
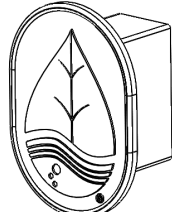


5' (MS3290) 51"
4' (MS3809) 39"
3' (MS3810) 27"
2' (MS3821) 15"

(F) Roller Tube



5' (MS3288) 50"
4' (MS3822) 38"
3' (MS3823) 26"
2' (MS3824) 14"

(G) - Arch Tube  (MS3257)	(H) Anti-Tip Frame  (MS3300)	(I) Guide Bracket  (MS3301)	(J) Table Extrusion  4' (MS3296) 5' (MS3431)	(K) Frame Leg  12" (MS3258) 20" (MS3283) 30" (MS3285)
(L) Threaded Rod  12" (MS3282) 20", 30" (MS3284)	(M) Frame Connector  (MS3281)	(N) Corner Bracket  (MS3289)	(O) Trellis Bracket  (MS3783)	(P) Roller Ends  (MS3287)
(Q) Roller Connector  (MS3293)	(R) Handle  (MC2081)	(S) Roller Spacer  (MC2082)	(T) Frame Emblem  (MS3531)	

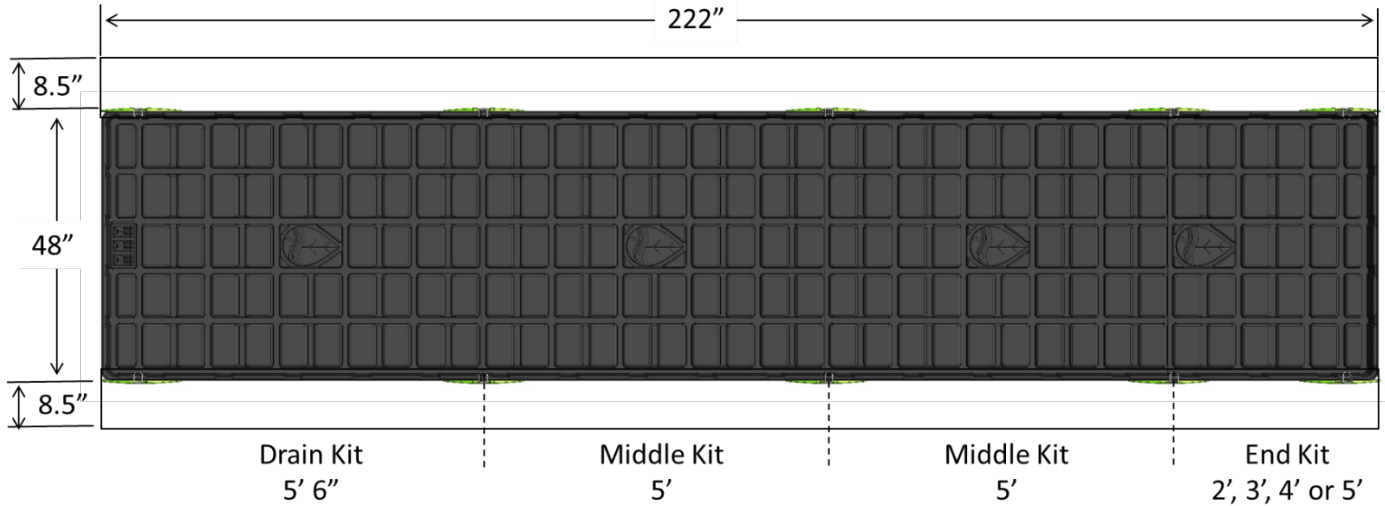
(U) Drain Tray 4' (706009) 5' (706663)	(V) Middle Tray 4' (706012) 5' (706667)	(W) End Tray 4' x 5'L (706010) 5' x 5'L (706668)	(W) End Tray 4' x 4'L (706162) 5' x 4'L (706165)	(W) End Tray 4' x 3'L (706163) 5' x 3'L (706166)
(W) End Tray 4' x 2'L (706164) 5' x 2'L (706167)	(X) Drain Screen (708573)	3/4" Bulkhead Drain Fitting (708552)	1" Bulkhead Drain Fitting (708558)	Bond Three Adhesive (706016)
(Y) Bump Stop (MC2085)	(Z) 1" Square Tube Cap (MC2083)	(AA) 5/8" Hole Plug (MC2084)	5/8"-11 Hex Nut (MS3255)	5/8" Flat Washer (MS3256)
1/4"-20 x 3/8" Flanged Hex Head Screw (MS3271)	10-32 x 1" Thread Cutting Hex Head Screw (MS3299)	10-32 x 1/2" Thread Cutting Hex Head Screw (MS3291)	10-16 x 1/2" Self-Drilling Screw (MS3260)	10-24 x 1/2" Thumb Screw (MS3298)

Assembly hardware and small components are provided in packages. The following table provides the package part number, the components in the package and their quantities.

SKU	Description	Quantity
LC3165	Arch Screw Package	
MS3271	SCREW - HEX HD, FLNG, 1/4"-20 UNC X 3/8"	4
MS3255	NUT-HEX, 5/8"-11 UNC-2B	4
MS3256	Wshr, 11/16" ID	4
LC3166	Tube Screw Package	
MS3271	SCREW, HEX HD, FLANGE, 1/4"-20 UN x 0.375"	9
MS3291	SCREW, HEX HD, 10-32 X .5IN, THREAD-CUTTING	52
LC3167	Extrusion Screw Package	
MS3298	SCREW, THUMB, 10-32X.5IN	2
MS3299	SCREW, HEX HD, 10-32 X 1IN, THREAD-CUTTING	13
LC3168	Anti-Tip Screw Package	
MS3299	SCREW, HEX HD, 10-32 X 1IN, THREAD-CUTTING	4
MS3291	SCREW, HEX HD, 10-32 X .5IN, THREAD-CUTTING	2
MS3260	SCREW, HEX HD, 10-16X0.5IN, SELF-DRILLING	2
MC2083	PLUG, TUBE, 1X1	4
MC2084	PLUG, .625DIA	4
MC2085	SPRING, COMPRESSION RUBBER	2

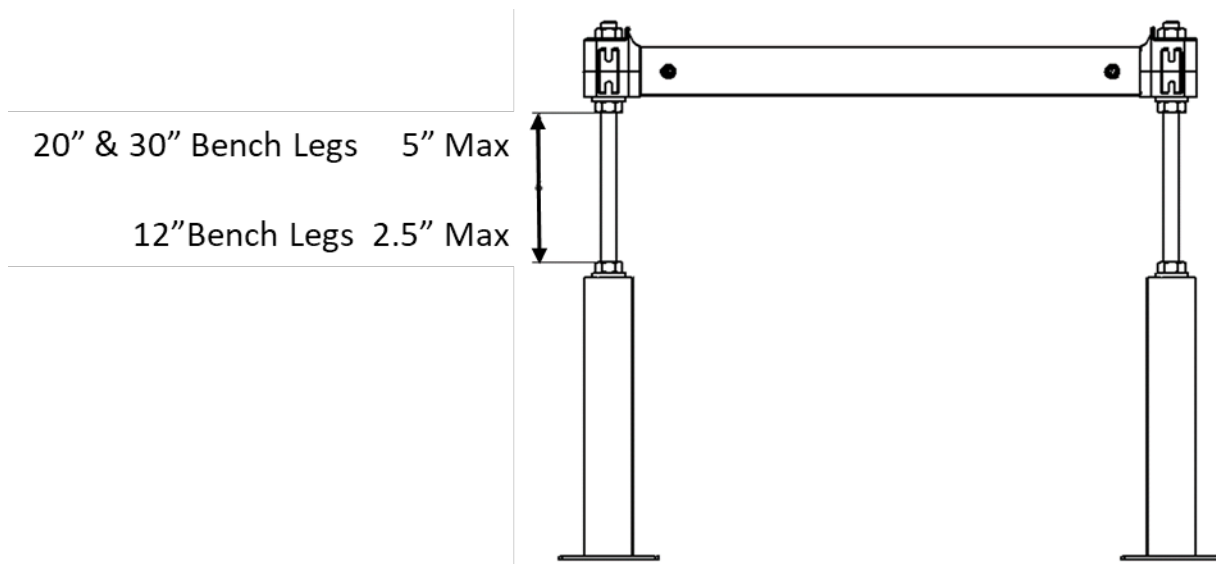
Basic Bench Dimensions

As an example, a 18 foot bench is 48 inches wide by 222 inches long. The bench table top allows for plus or minus 8.5 inches of travel (or movement) side to side, measured from the center position, or 17 inches total travel from the left stop to the right stop.



Maximum Threaded Rod Extension

Warning: Do not extend the threaded rods too far from the legs. Doing so may result in the failure of the bench resulting in equipment damage and injury.



Bench Assembly and Installation

Step 1. Multi-Bench Room Layout

Use the room layout calculator tool to determine the quantity, position, spacing and desired room aisle widths between and around the benches.

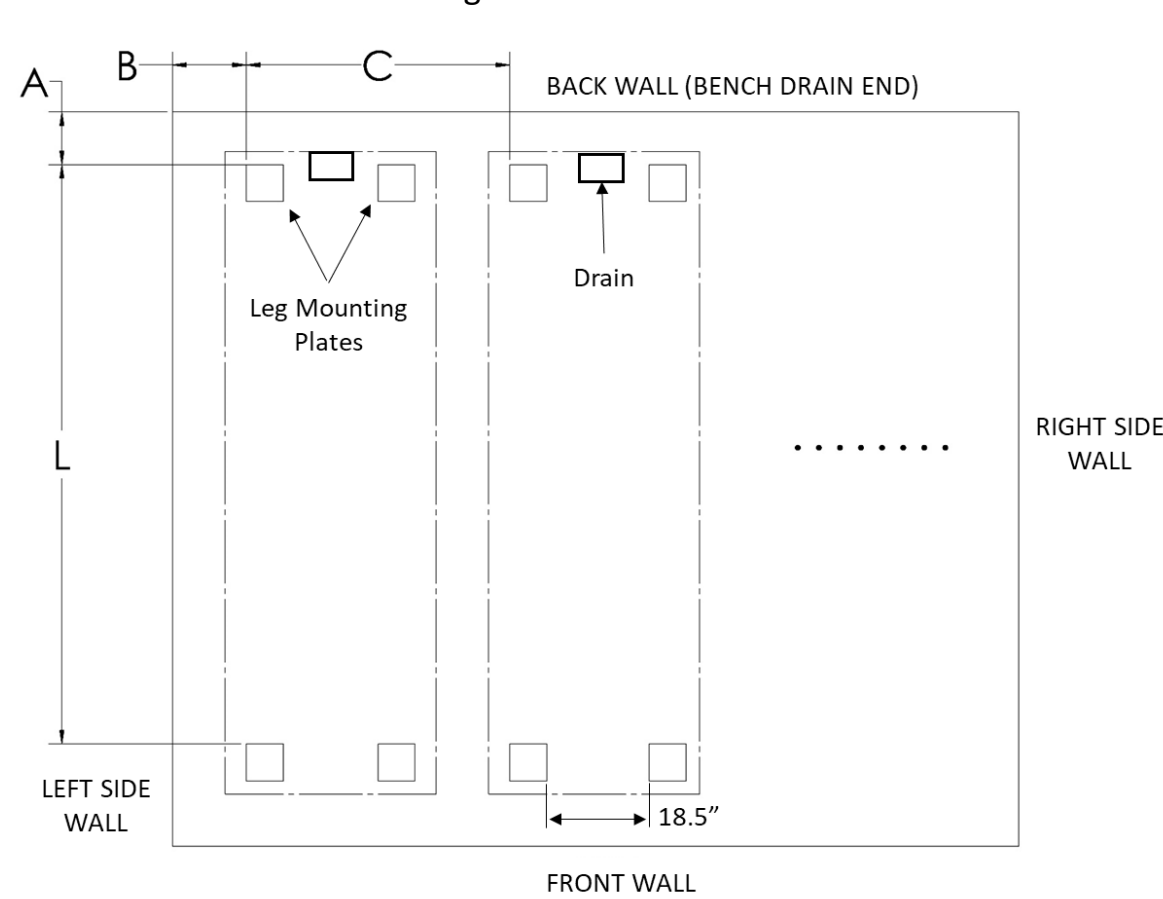
Let us help, visit growmod.botanicare.com and request a personalized layout.

ALWAYS layout the entire room prior to assembly of hardware

NOTE: Precise layout of the room prior to the assembly of any benches will help in achieving the desired spacing around and between the benches. Always verify layouts are square by checking the diagonal distance. Do not rely on the walls being straight or square.

Room Orientation

These instructions will use the following room orientation.



Determine layout distances

A. Drain Tray to Wall Spacing

Enter desired spacing here + 5 1/8" = **Distance A**

B. Left Side Tray to Wall Minimum Spacing
(When bench is slid towards the wall)

Enter desired minimal spacing here + _____ = **Distance B**

4' bench add 19 1/4"
5' bench add 25 1/4"

C. Bench to Bench Spacing
(17" aisle minimum)

Enter desired aisle width here + _____ = **Distance C**

4' bench to 4' bench spacing add 31"
4' bench to 5' bench spacing add 37"
5' bench to 5' bench spacing add 43"

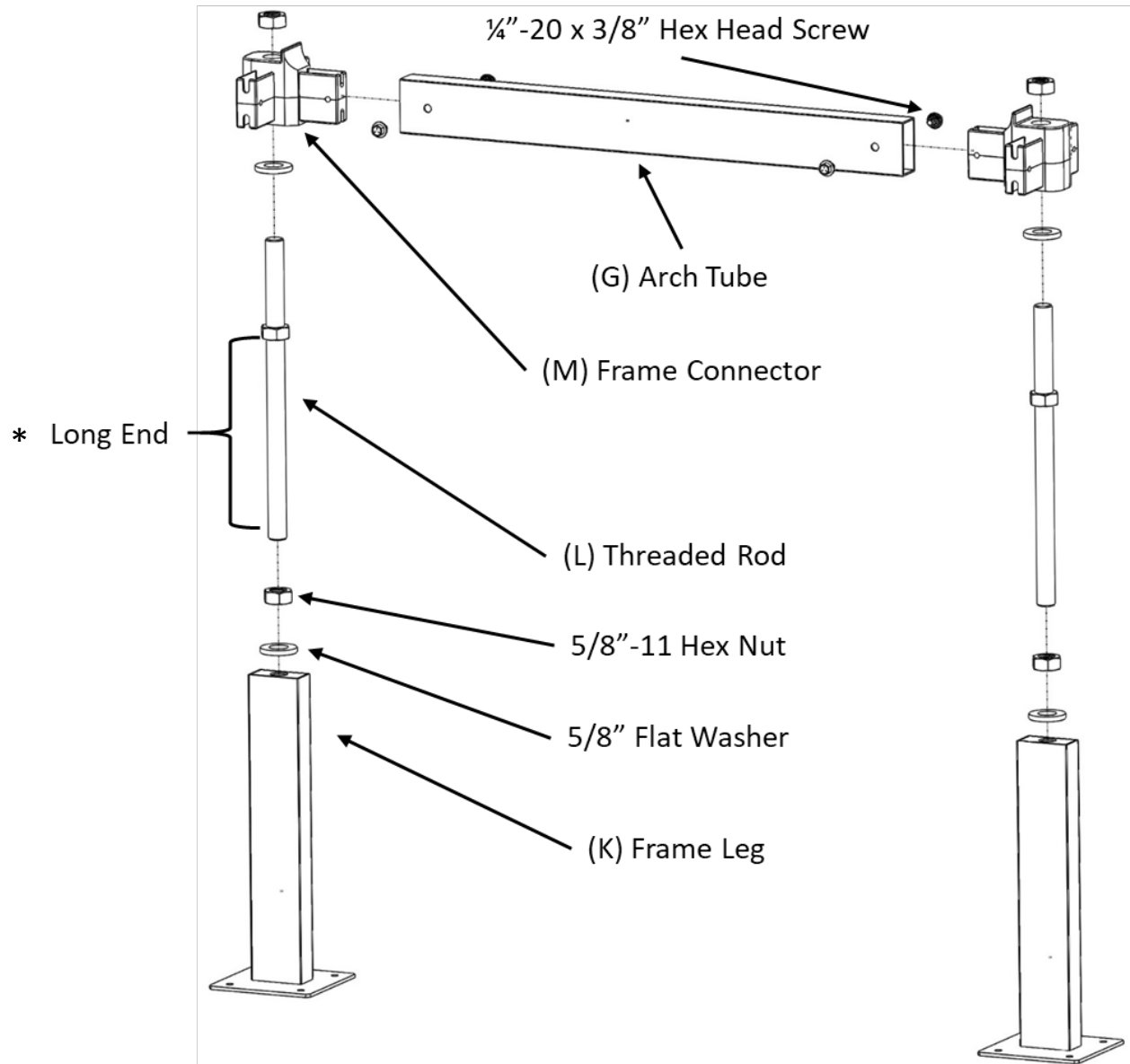
D. Distance "L" from Arch 1 leg mounting plate to the last arch mounting plate. Select from **Appendix B** based on the nominal bench length.

Distance L

- E. Distance A from the back wall; snap a chalk line along the back wall from left to right.
- F. Distance B from the left wall; snap a chalk line along the left wall from back to front.
- G. Distance C from the line created in step F, snap a parallel chalk line from back to front.
Repeat as necessary based on the number of benches in the room.

NOTE: Arches are nominally 60" from arch to arch. The last arch opposite the drain end is a short section. The short section can be 54", 42", 30" or 18" apart depending on the overall length of the bench.

Step 2. Arch Assembly

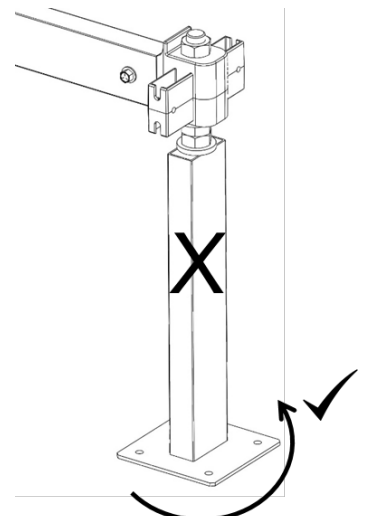


NOTE: If the bench is to include slope use the tables provided in Appendix A to assemble each arch with appropriate height.

TIP: Label each arch with the arch number.

TIP: Snug threaded rod nuts to prevent movement of hardware.

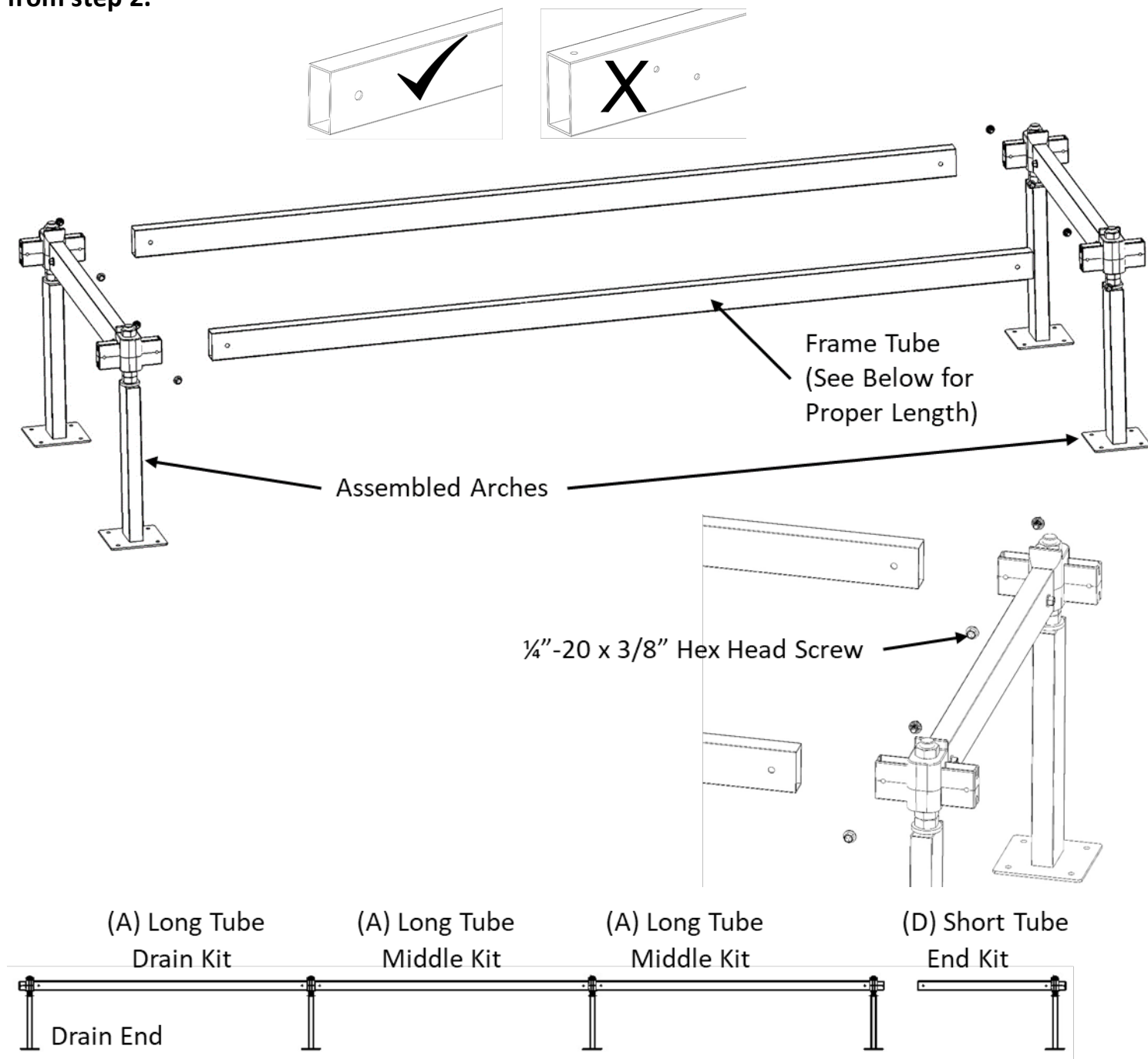
***TIP:** Make sure the long length of the threaded rod is inserted properly for 12" high benches



Step 3. Frame Assembly

NOTE: Assemble the frame in roughly the final position that it will be located in the room.

NOTE: Start with the end of the bench where the drain will be located. This will be Arch 1 from step 2.



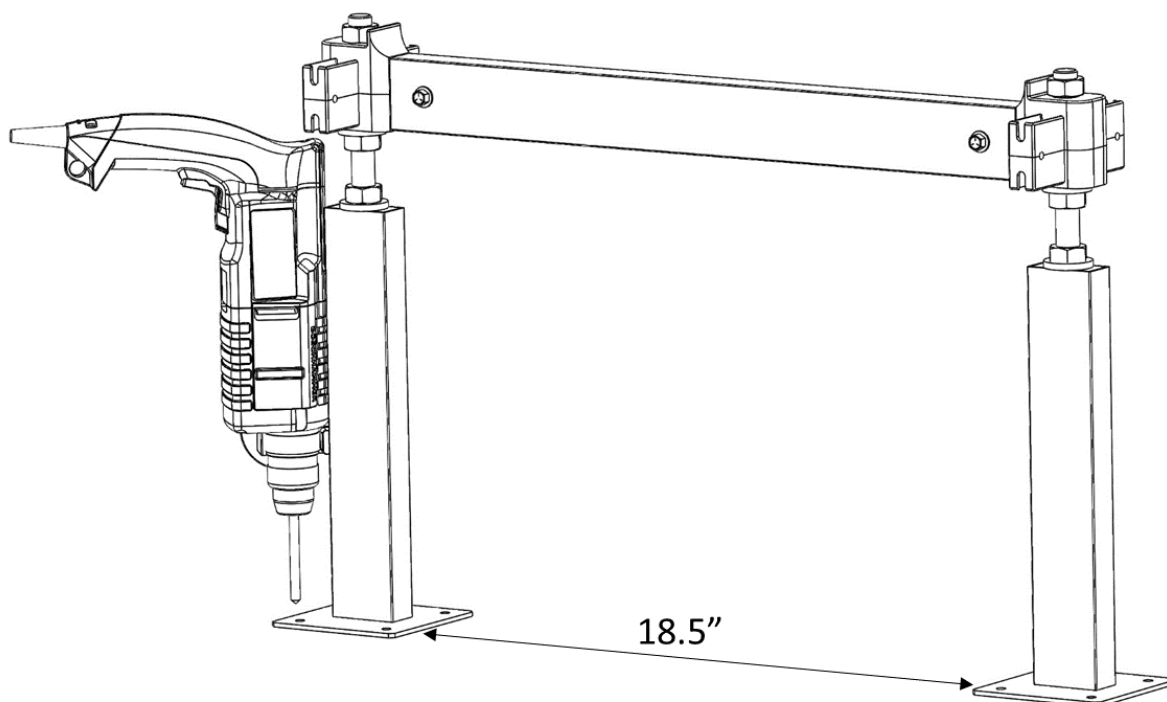
NOTE: The short section is always at the end opposite the Drain End

Step 4. Anchor Frame

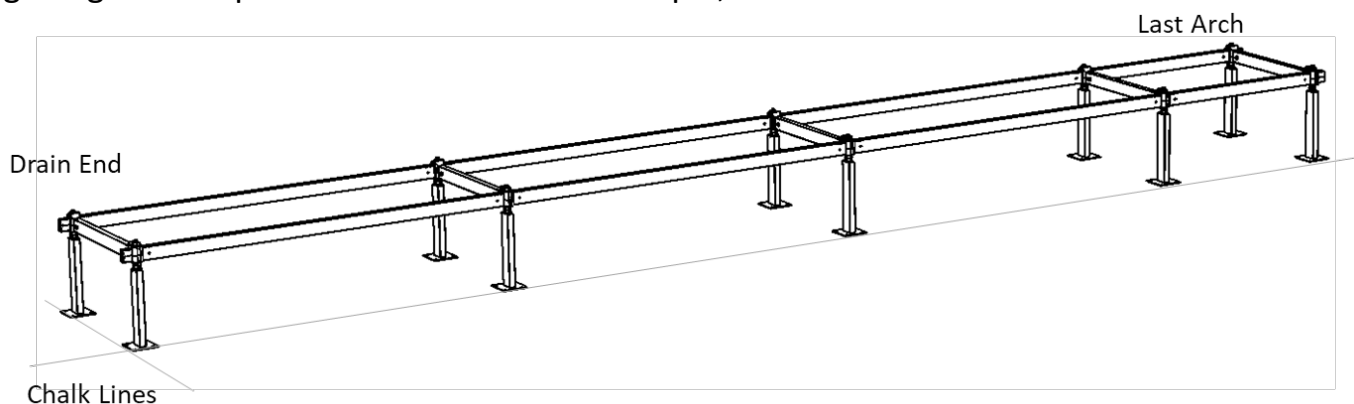
NOTE: Follow anchor manufacturer's instruction to properly drill and install anchors.

CAUTION: All leg-mounting locations must have the anchors installed and properly tightened to prevent damage to the bench or a failure of a component that could lead to injury to personnel.

CAUTION: Do not drill into post tension slabs.

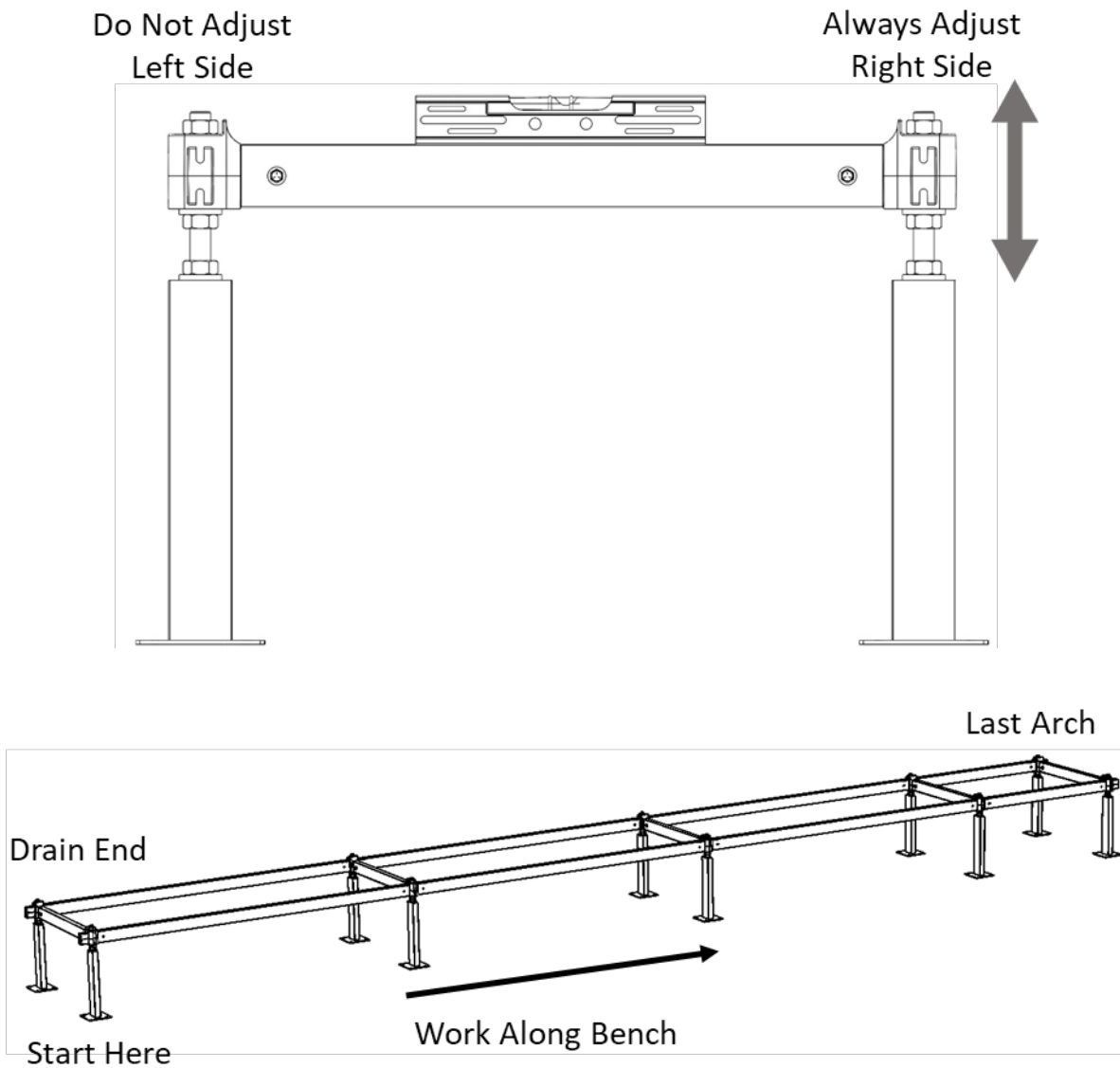


Align edge of footplates to chalk lines from Step 1, drill and install anchors



Step 5. Level Frame

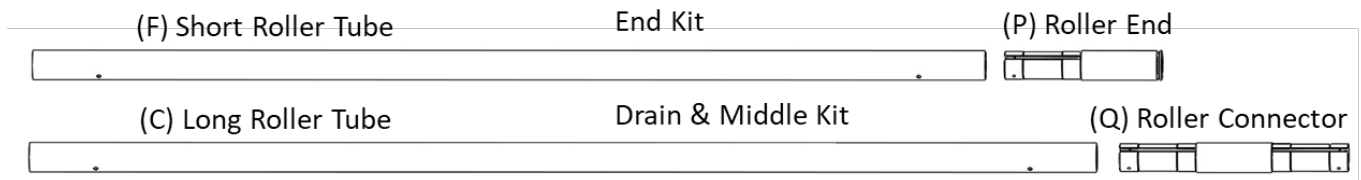
Level each arch from side to side so the table doesn't roll to the low side.



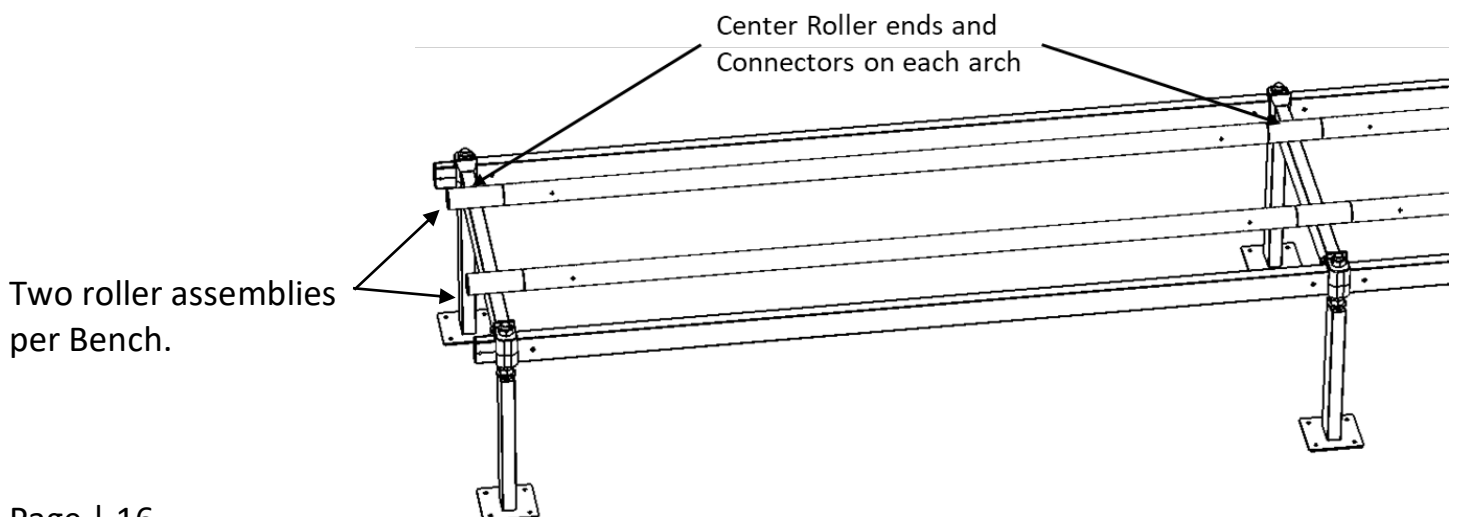
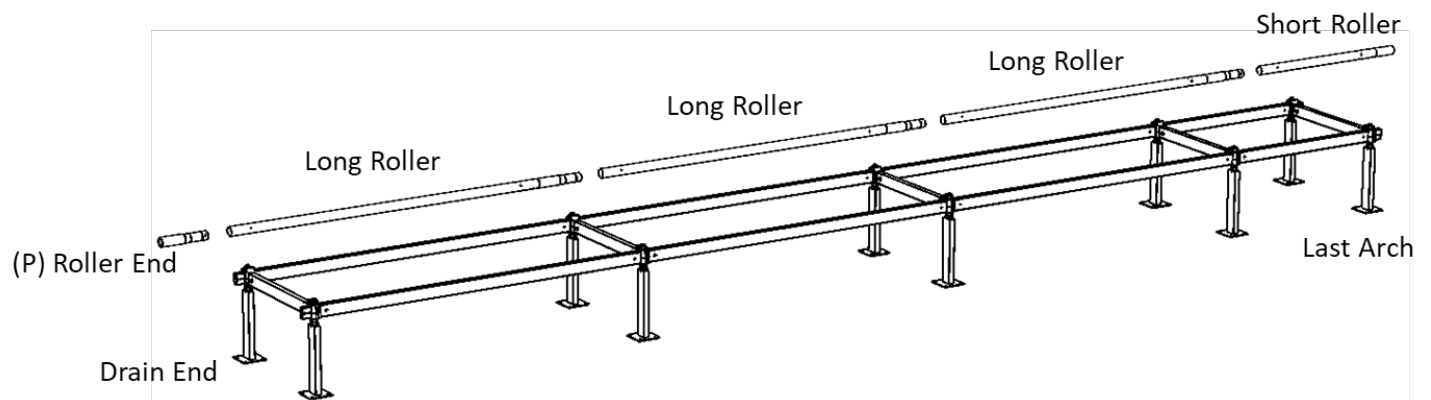
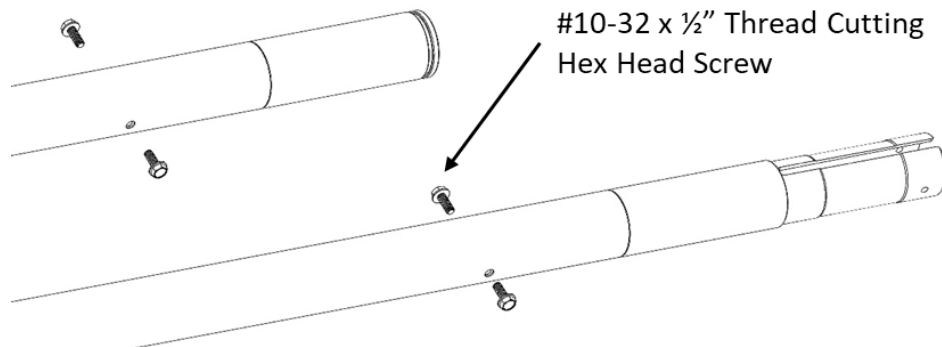
Tighten top and bottom Hex Nuts after leveling each arch.

Step 6. Roller Tube Assembly

NOTE: All short roller tubes get one (1) roller end, all long roller tubes get one (1) roller connector on one end.

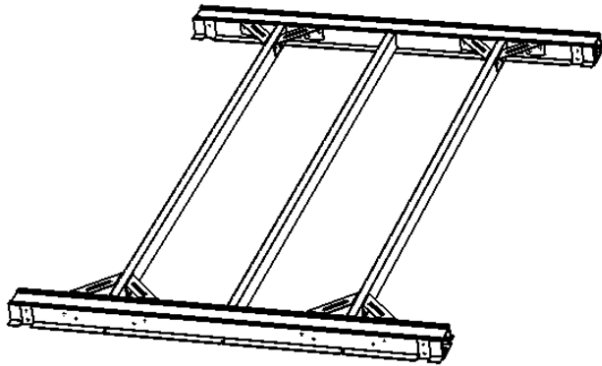


CAUTION: Do not overtighten screws as this will cause the threads to strip out of the rollers



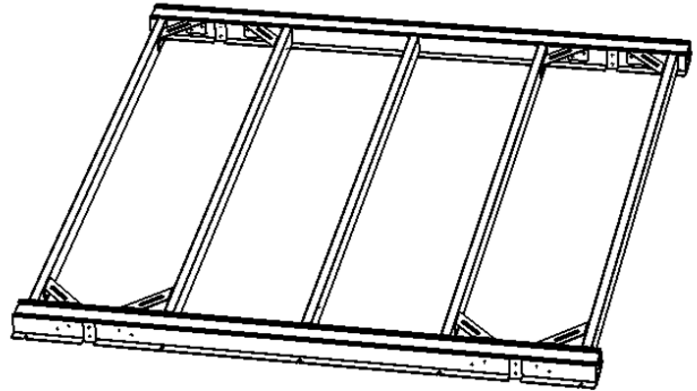
Step 7 Table Assembly

NOTE: The 5' wide table sections require additional support tubes. See image below for reference.



4' Wide Table Section

Skip to Page 18



5' Wide Table Section

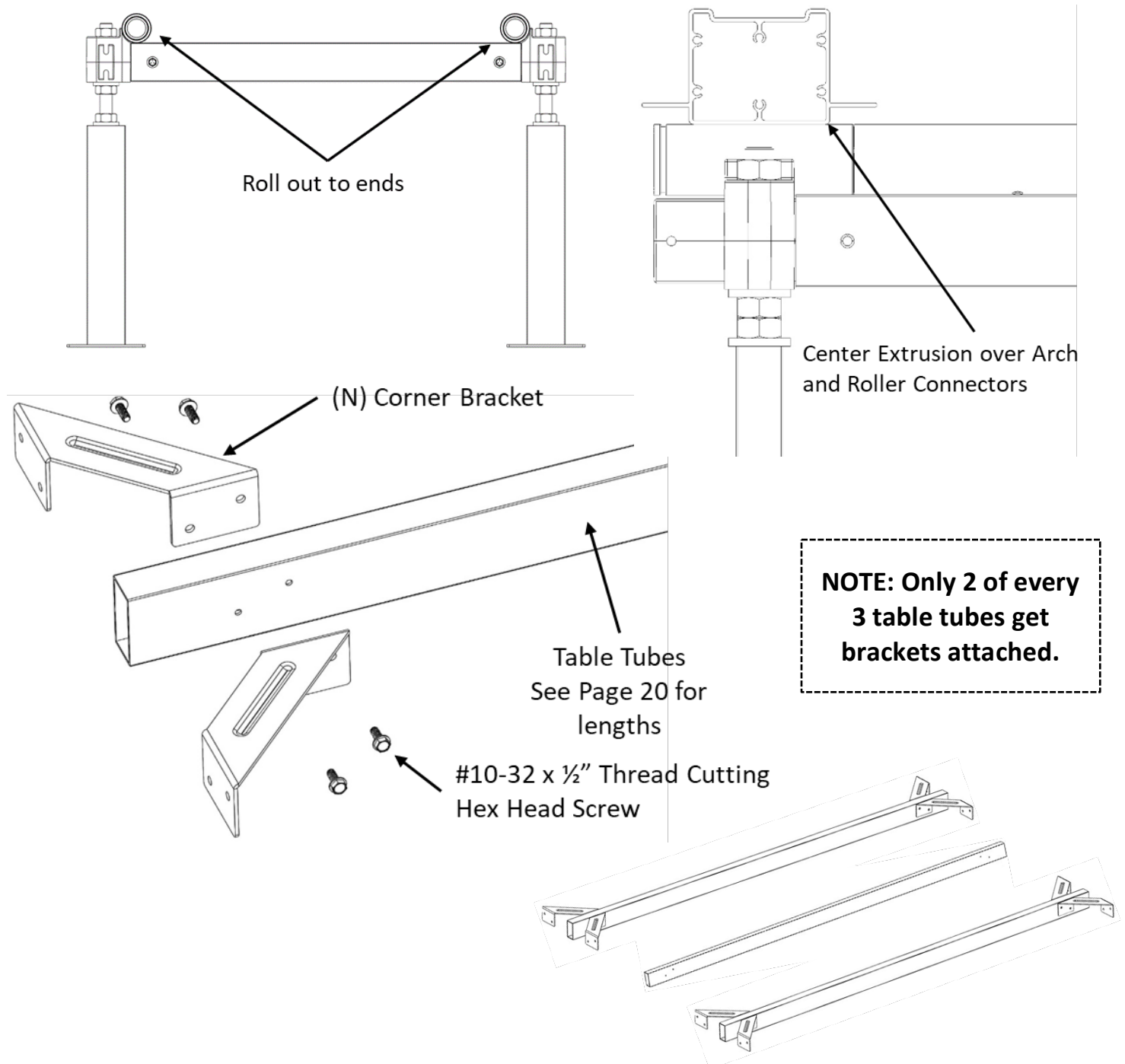
Skip to Page 21

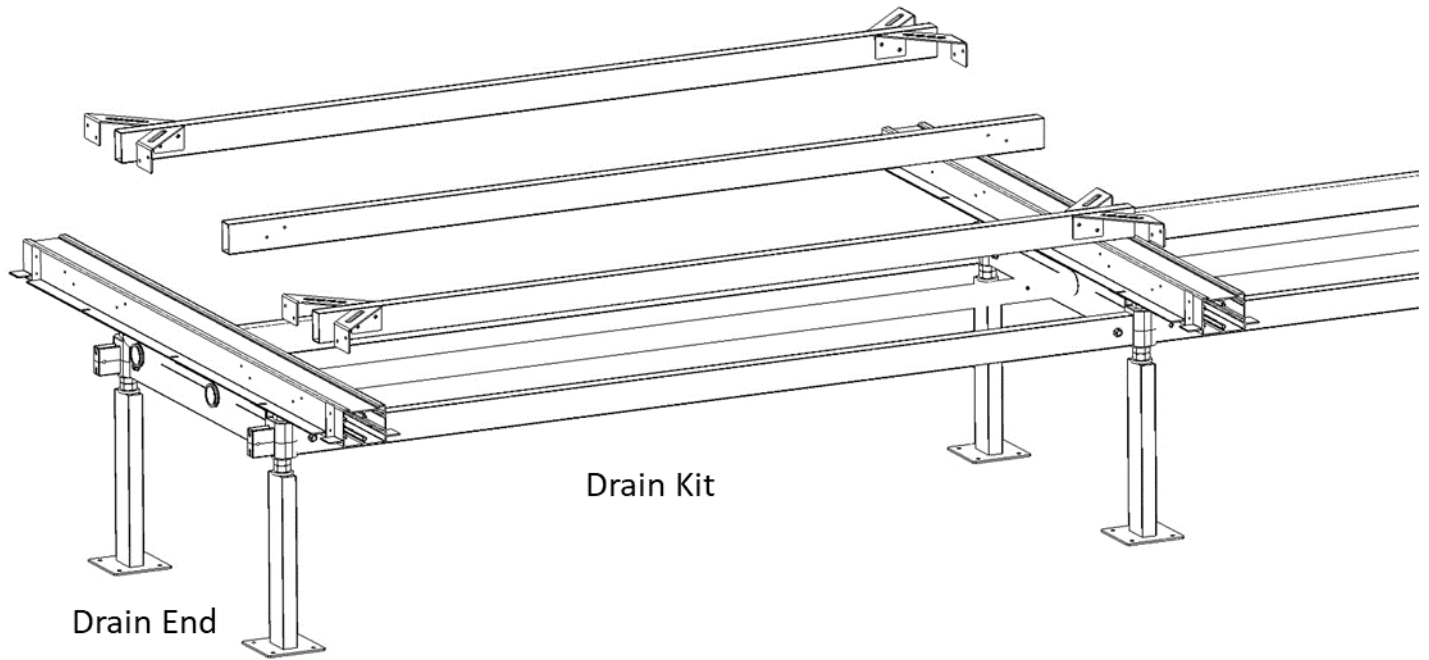
Step 7a. Table Assembly (4' Wide Bench Only)

NOTE: for 5' wide benches skip to Step 7b.

Assemble the tabletop in sections as you continue to work down the length of the bench.

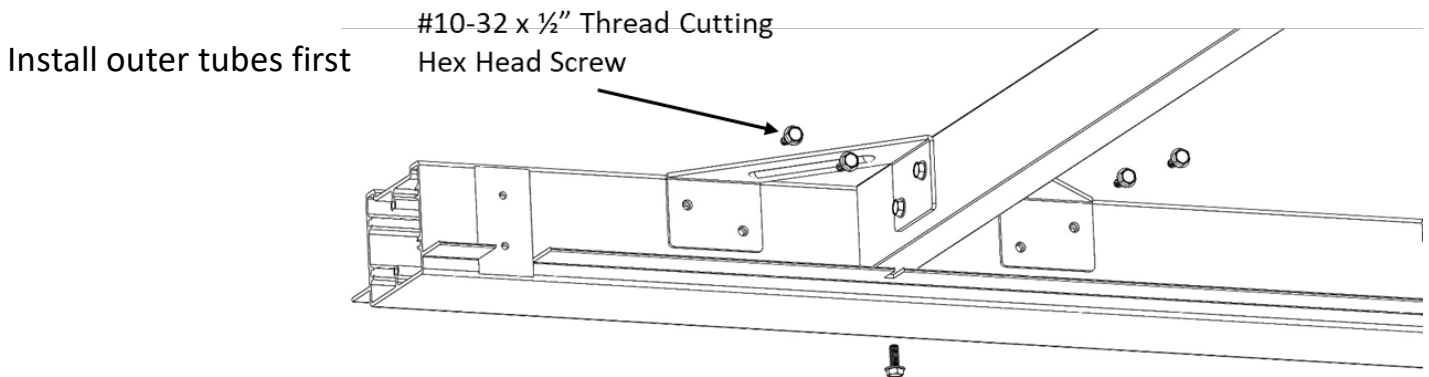
CAUTION: Roll each roller assembly to the appropriate outside stop to provide a stable platform for assembly of the table.



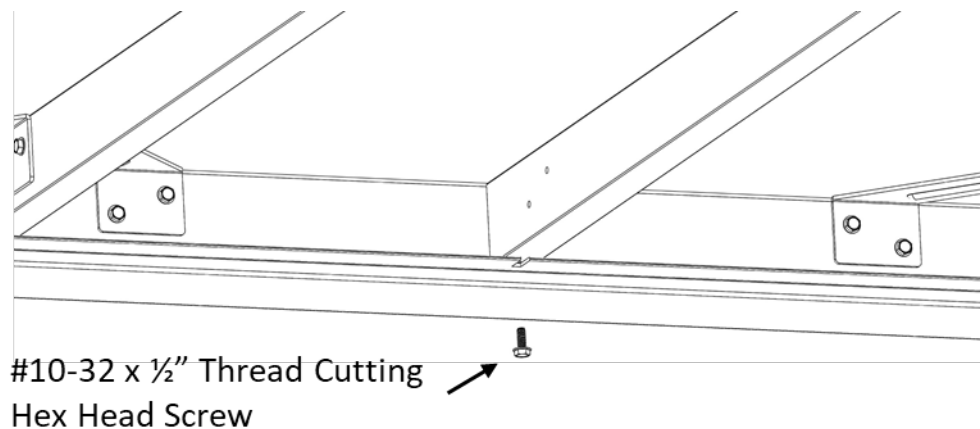


CAUTION: Do not overtighten screws as this will cause the threads to strip out.

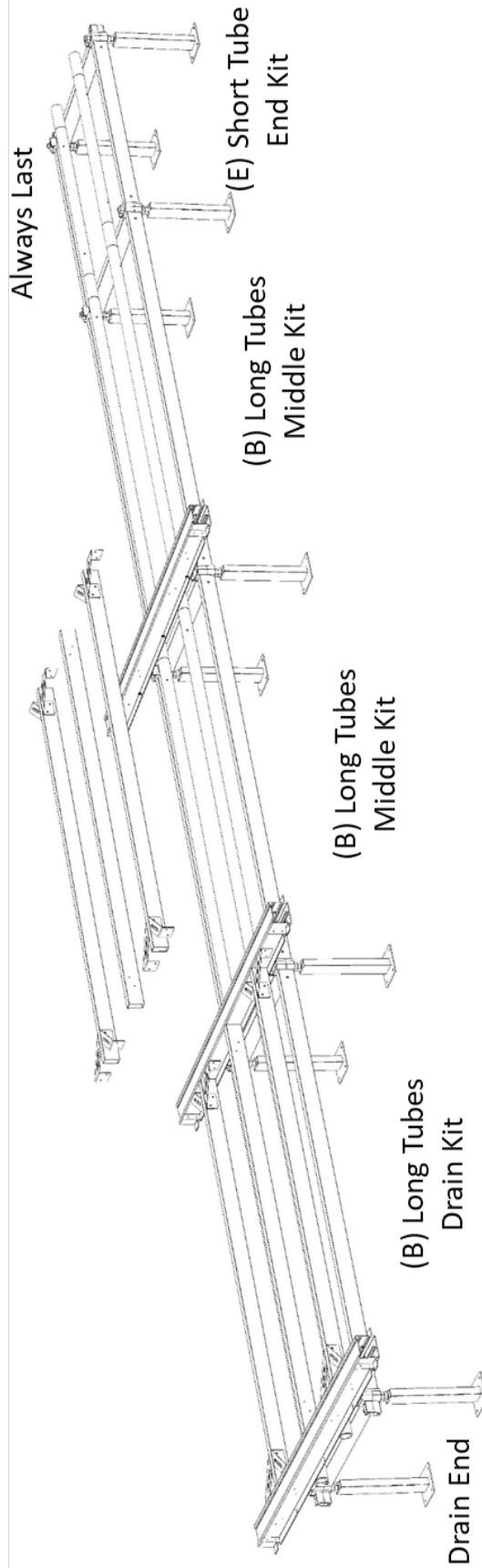
NOTE: Install bottom screws last for a better fit between tubes and extrusion.



Install Middle Tube after outer tubes



Assemble next 5' section

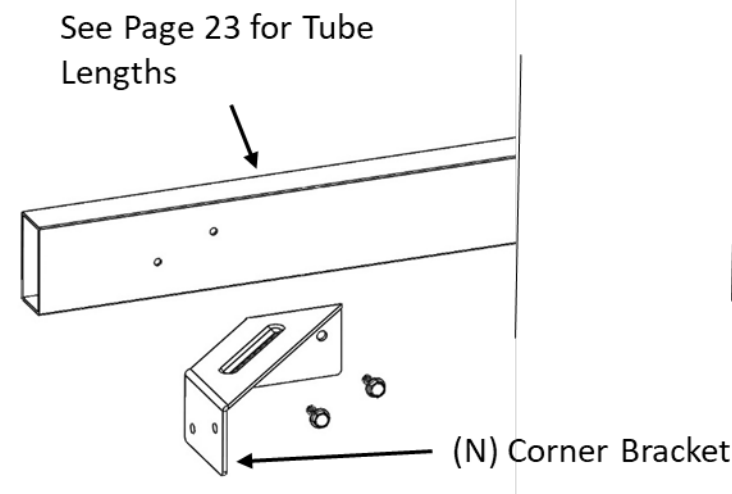
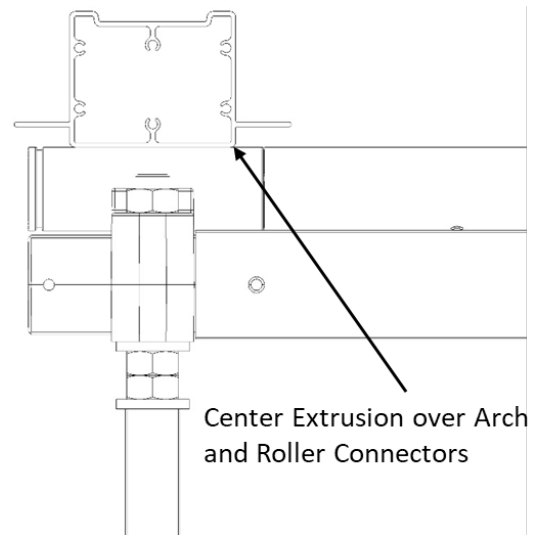
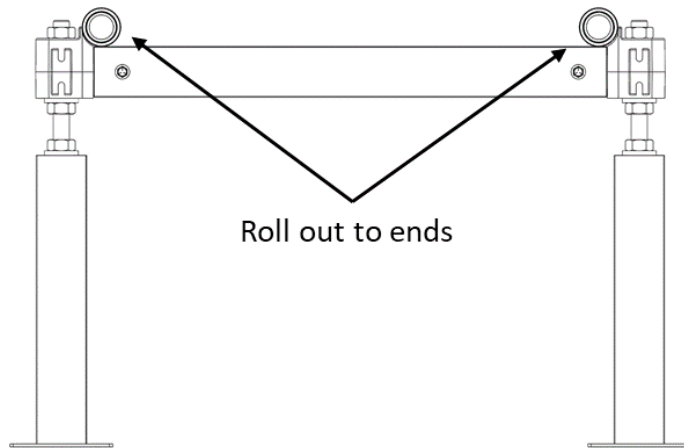


CAUTION: The table is only resting on the rollers and if moved off center or if weight is placed on one side the table could tip off the rollers and frame causing damage or injury.

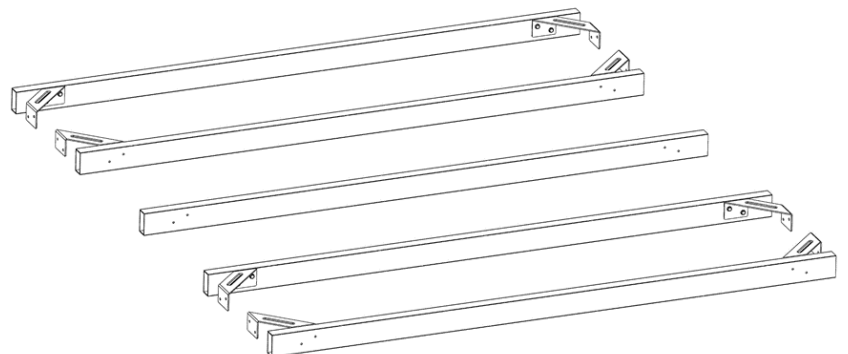
Step 7b. Table Assembly (5' Wide Bench Only)

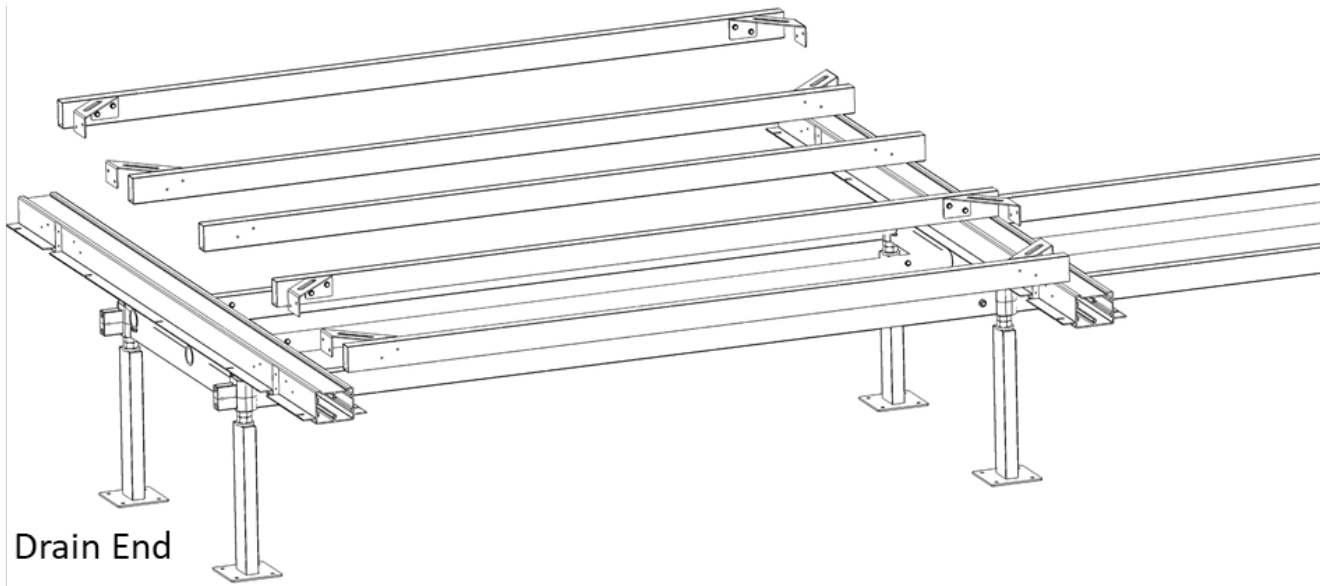
Assemble the tabletop in sections as you continue to work down the length of the bench.

CAUTION: Roll each roller assembly to the appropriate outside stop to provide a stable platform for assembly of the table.



NOTE: Only 4 of every 5 table tubes get brackets attached.

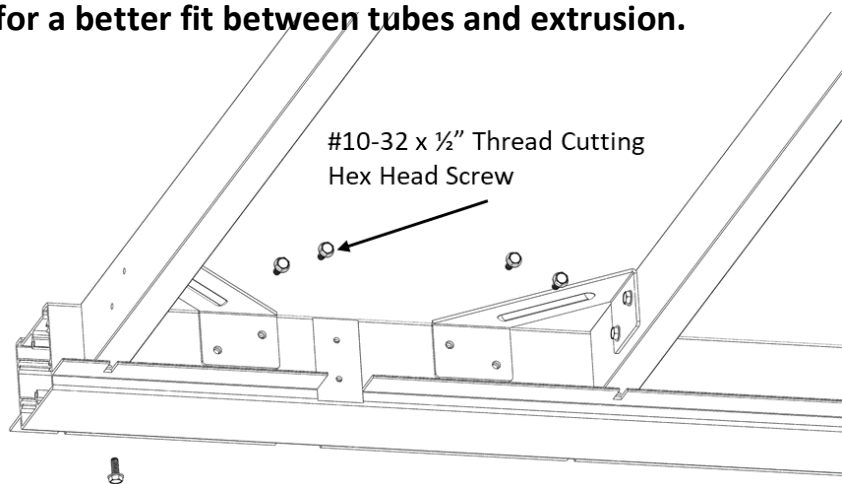




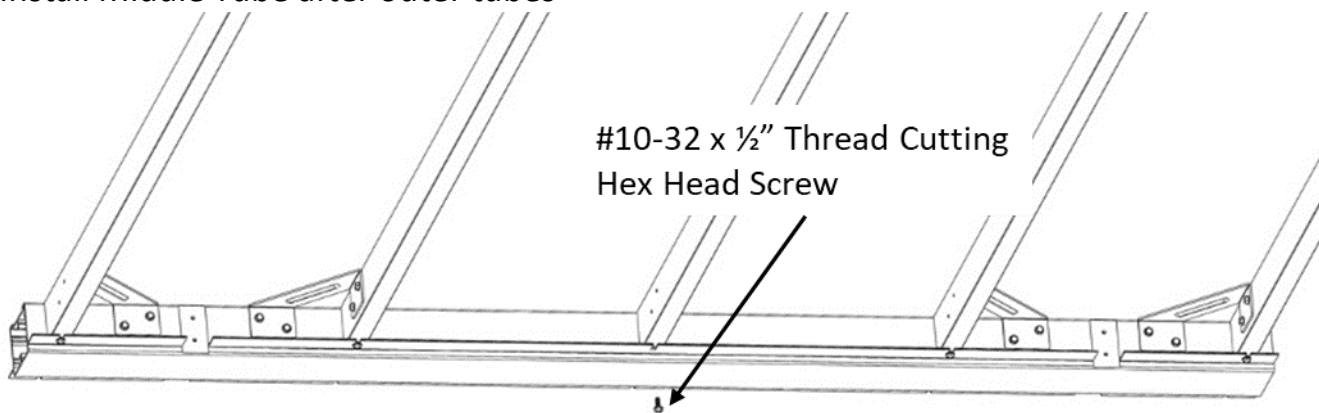
CAUTION: Do not overtighten screws as this will cause the threads to strip out.

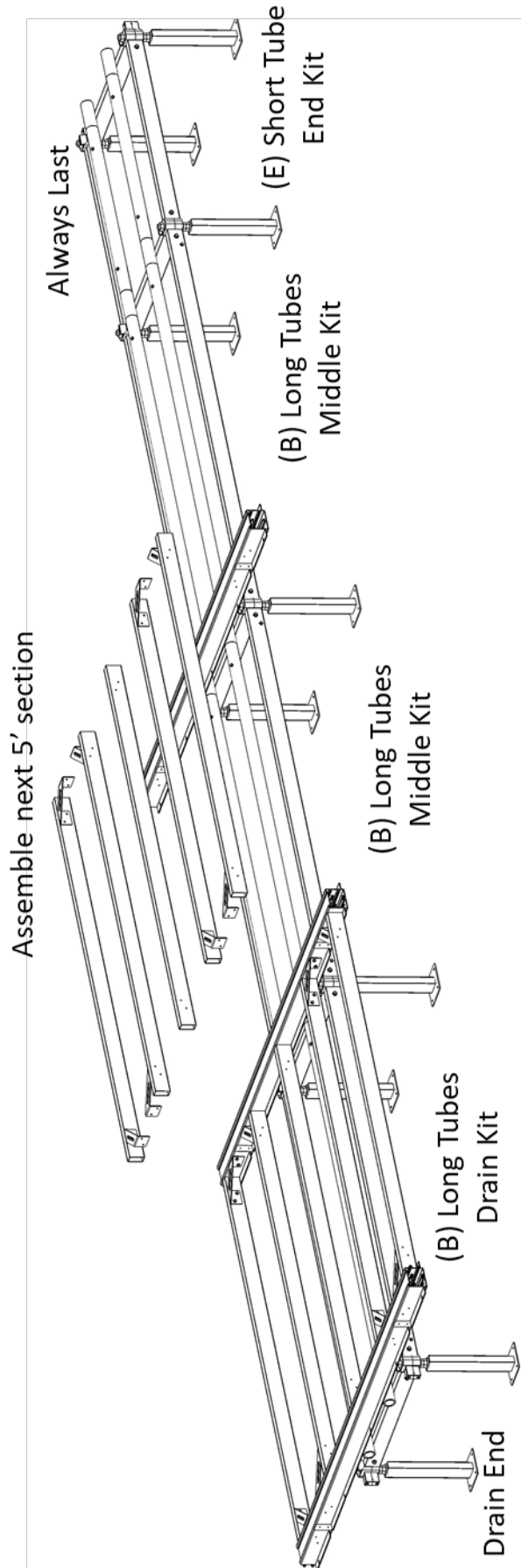
NOTE: Install bottom screws last for a better fit between tubes and extrusion.

Install outer tubes first



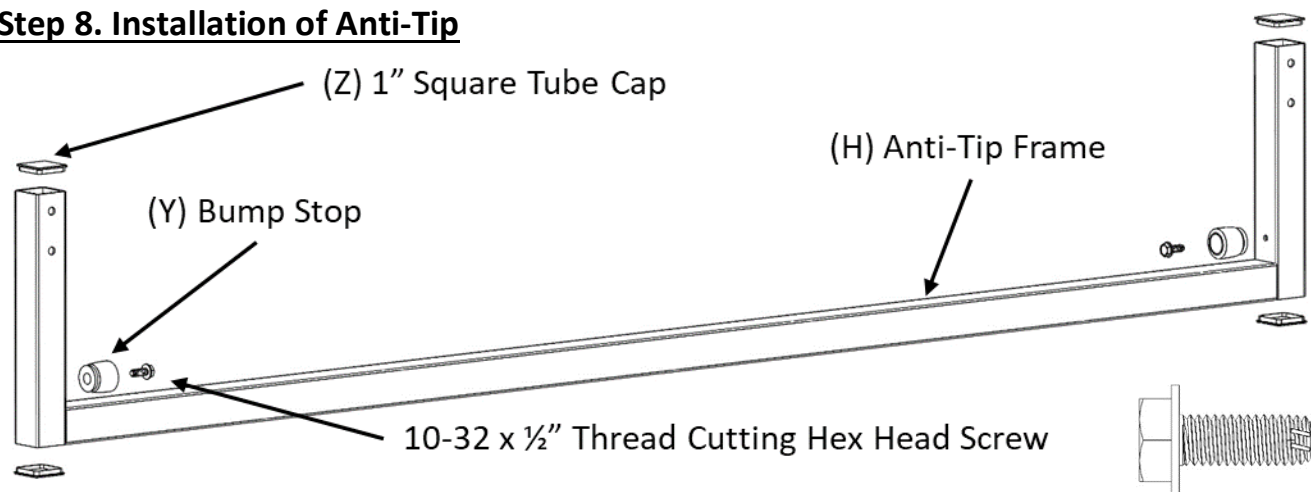
Install Middle Tube after outer tubes



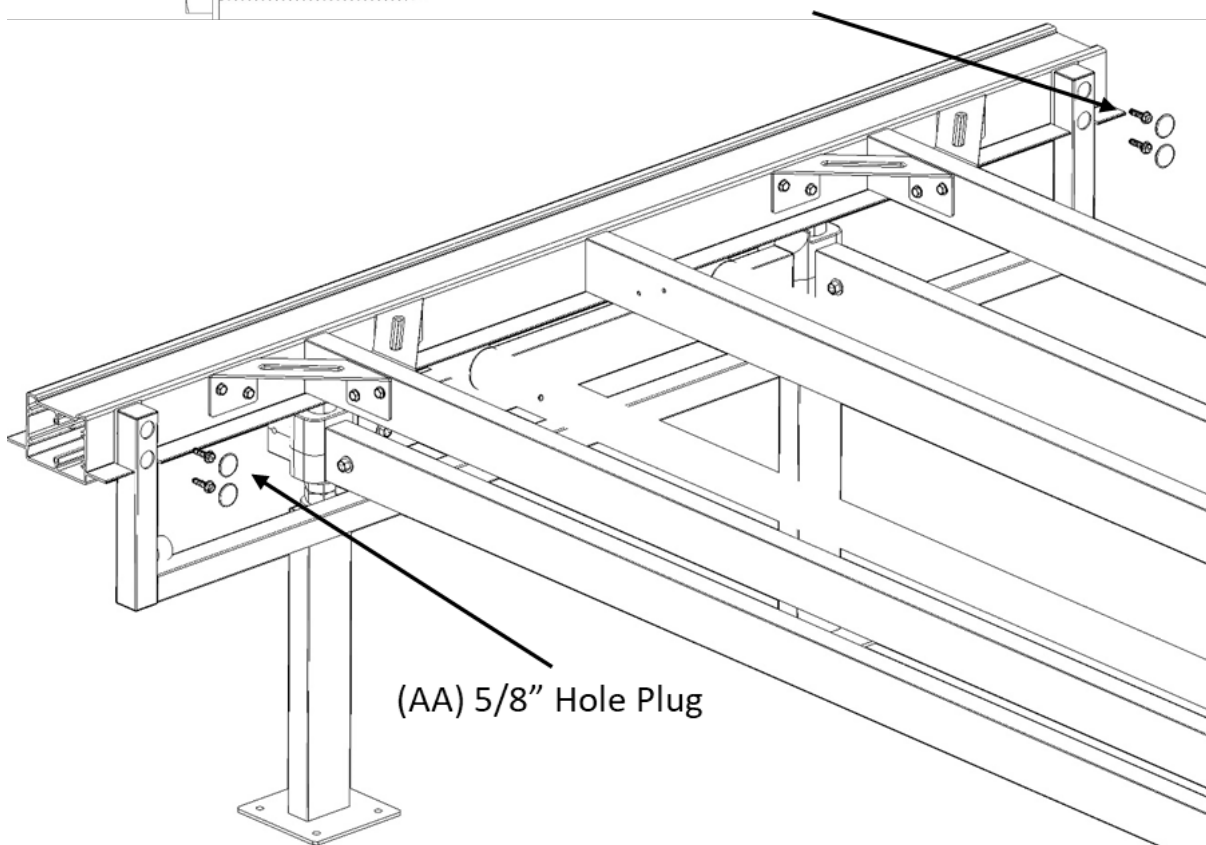


CAUTION: The table is only resting on the rollers and if moved off center or if weight is placed on one side the table could tip off the rollers and frame causing damage or injury.

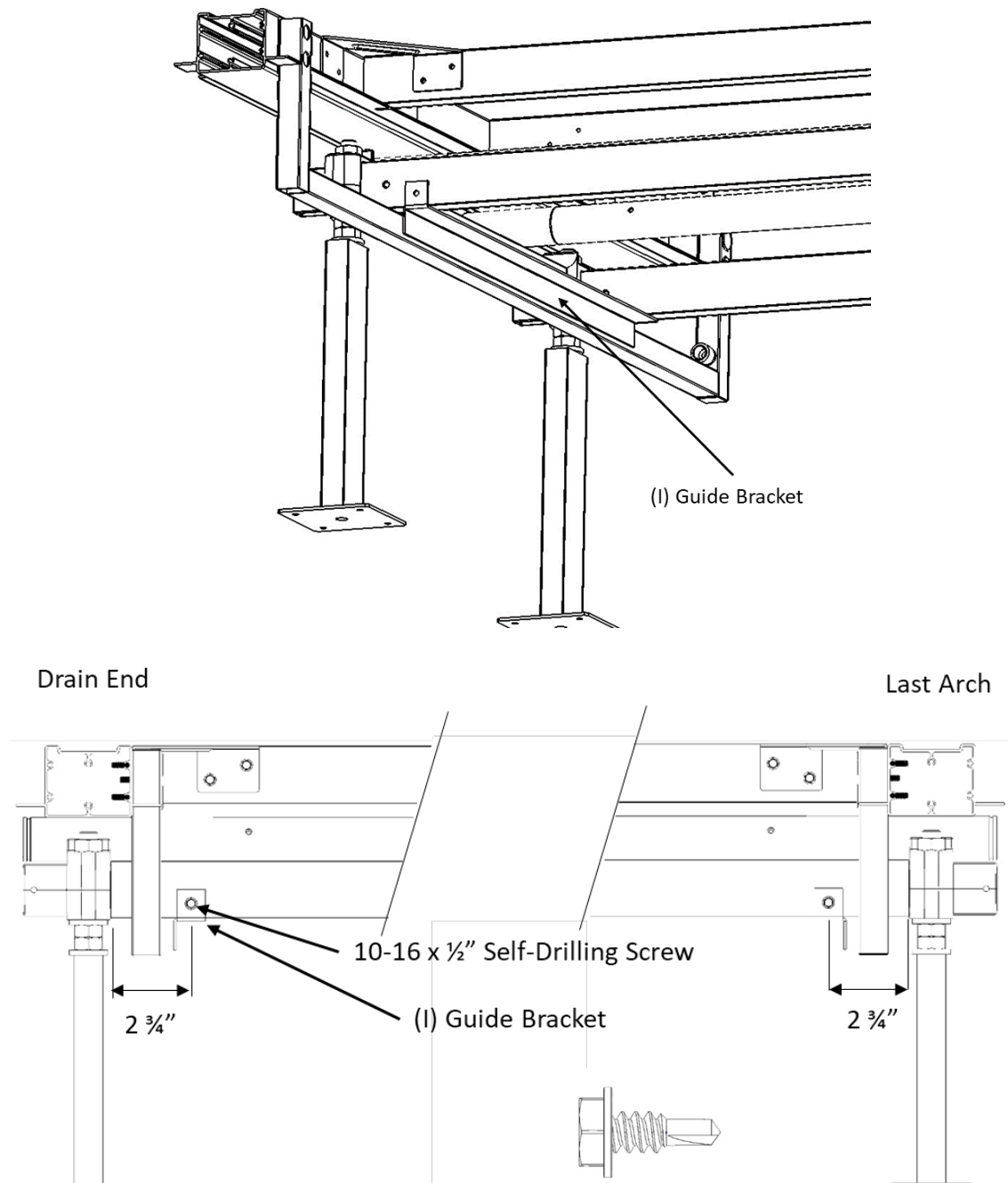
Step 8. Installation of Anti-Tip



10-32 x 1" Thread Cutting Hex Head Screw

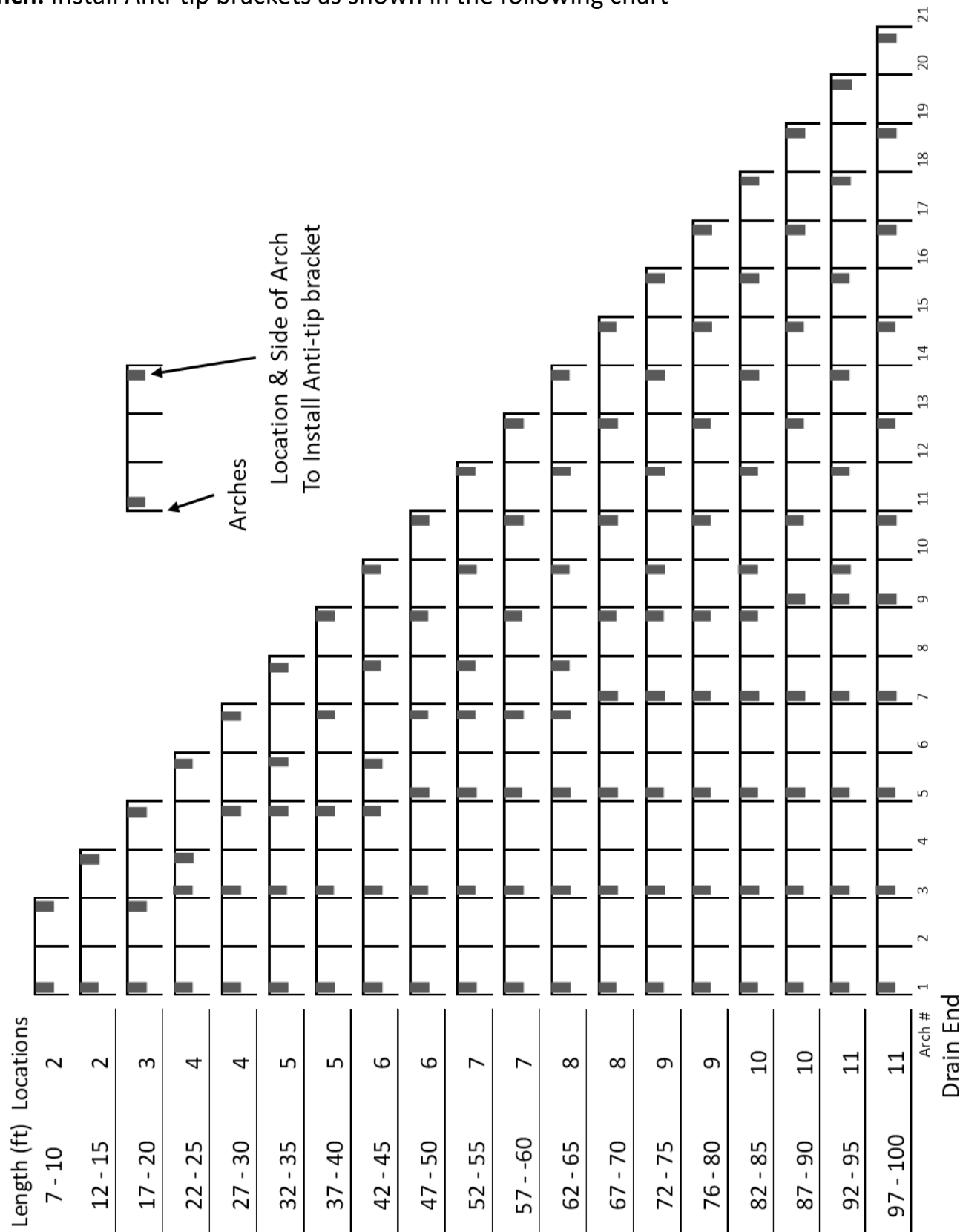


NOTE: The guide bracket prevents the table from walking downhill over time due to the bench rolling back and forth.

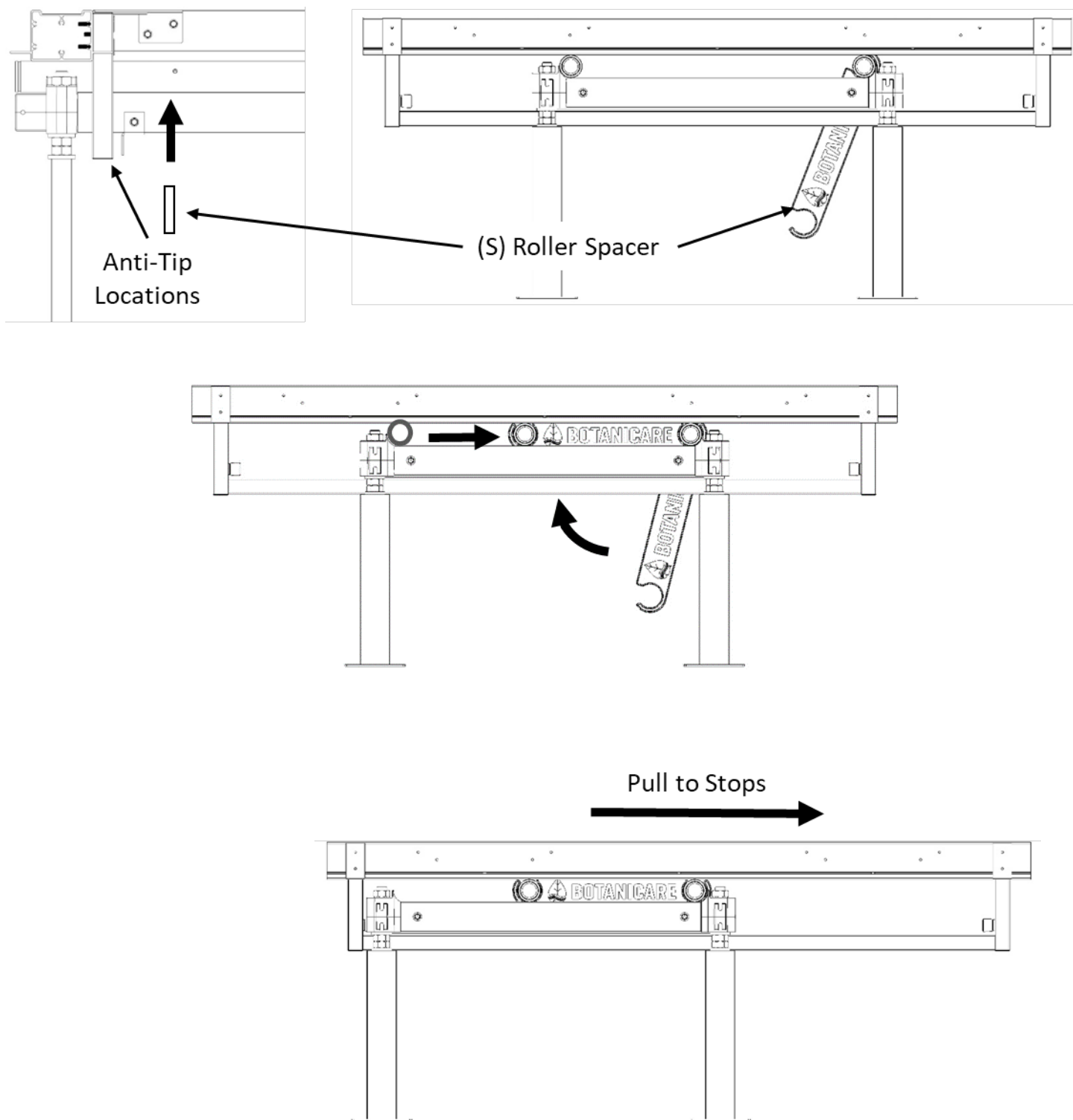


5' Bench: DO NOT use the following chart, Install Anti-tip bracket at every arch location.

4' Bench: Install Anti-tip brackets as shown in the following chart

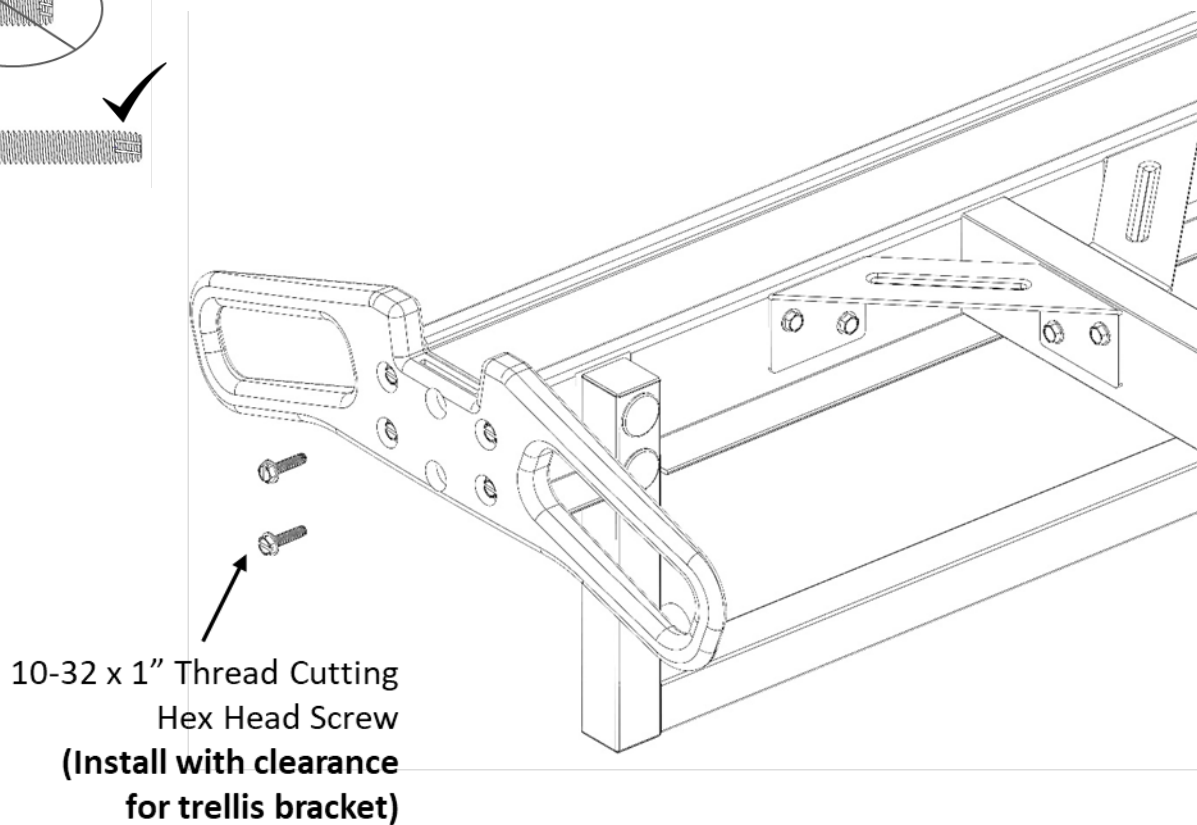
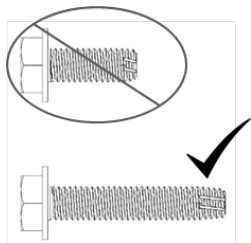
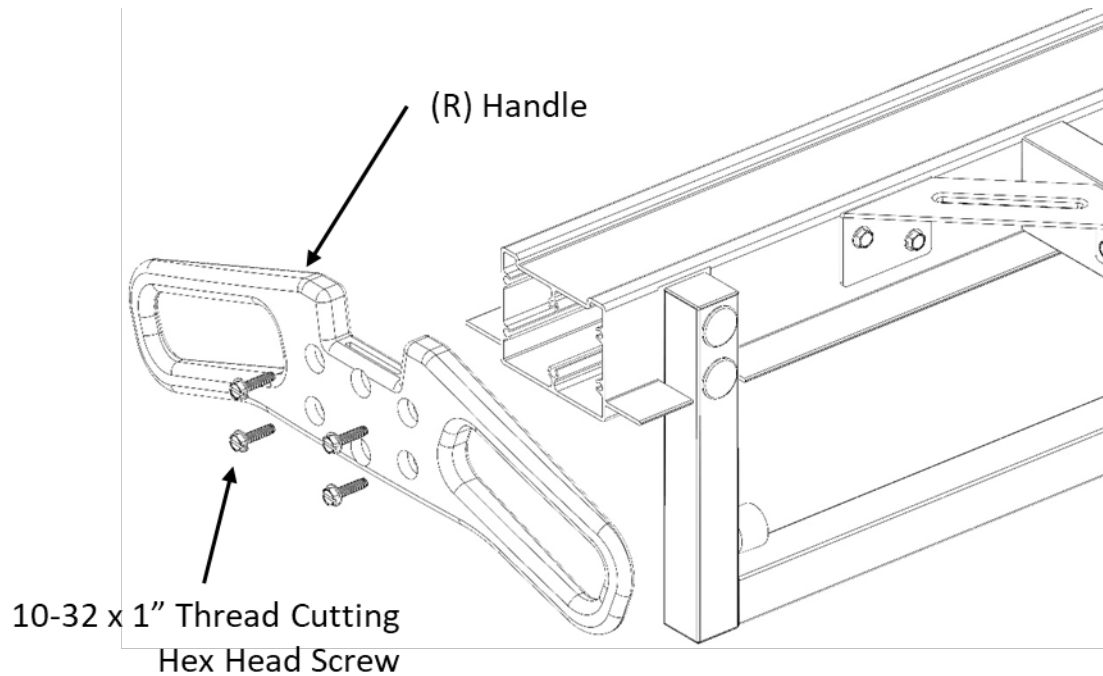


Step 9. Installation of Roller Spacers



Test movement, adjust as necessary.

Step 10. Installation of Pull Handles



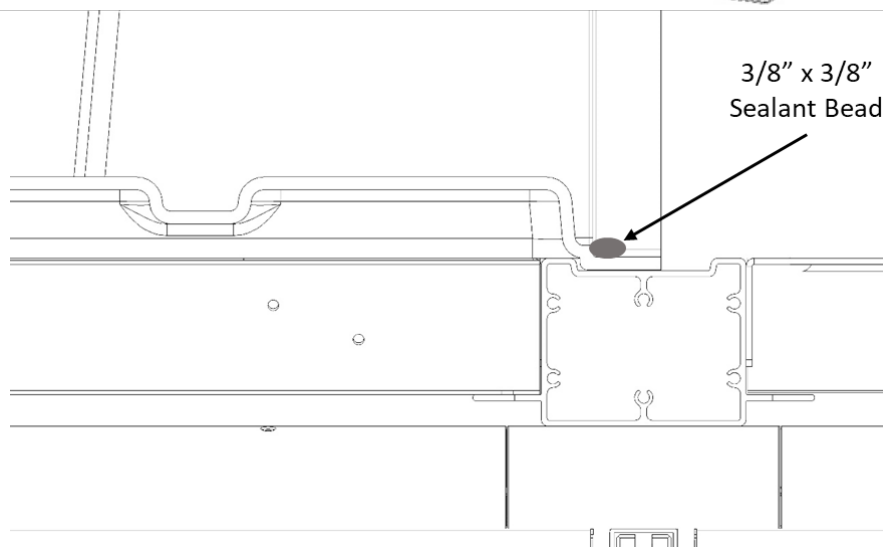
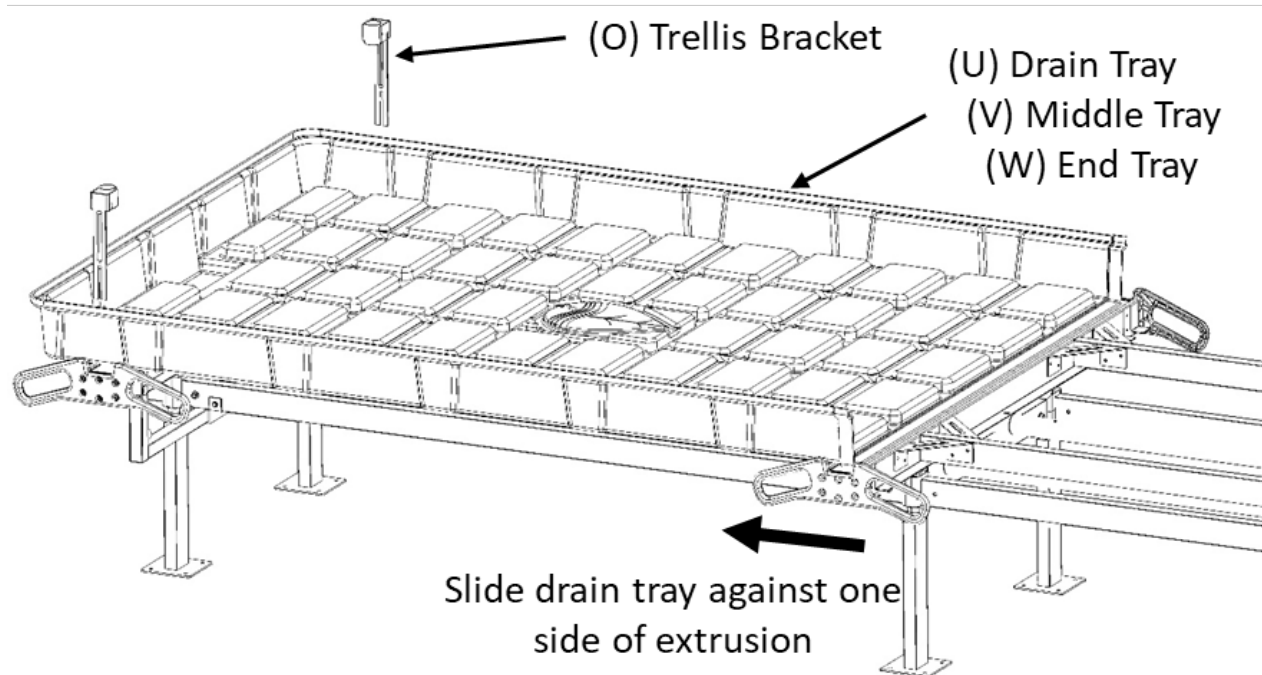
Step 11. Tray Assembly

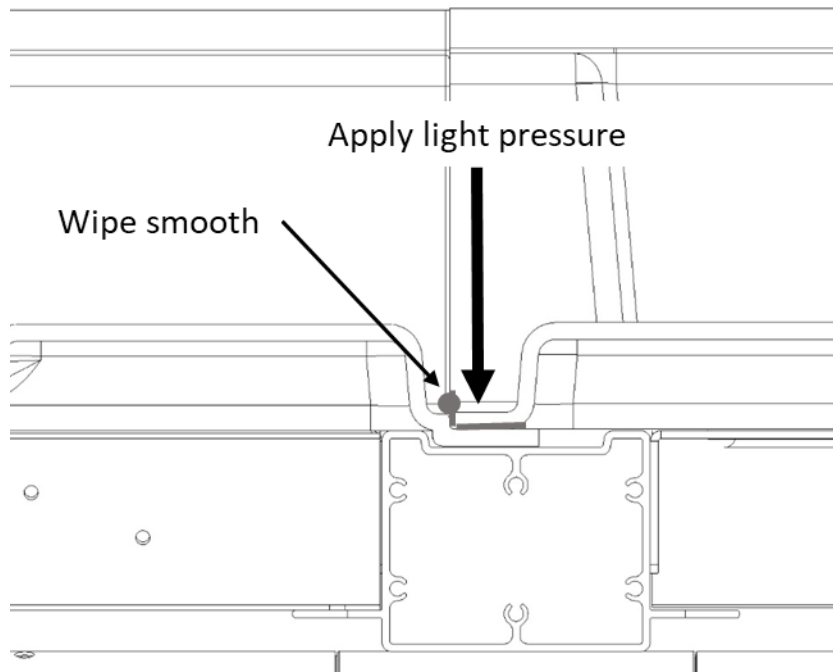
TIP: Dry fit all trays on the table to make sure all seams fall into the recess in the table extrusions.

Clean all bonding surfaces using Isopropyl Alcohol and clean clothes.

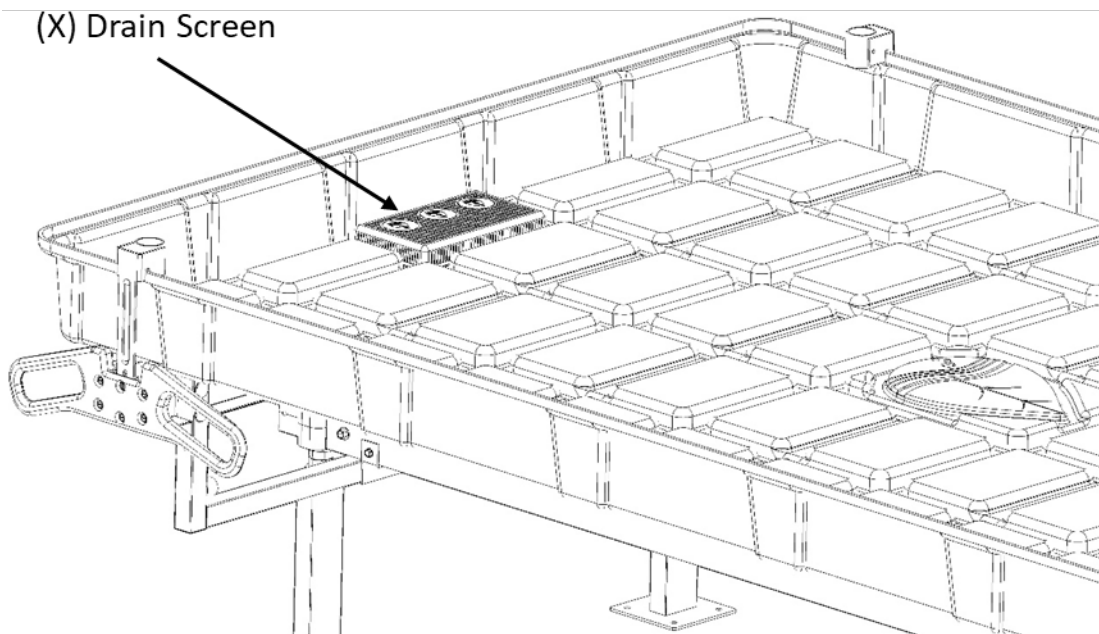
Before using **BOND THREE** Lap Tray Sealant Adhesive, carefully read and follow all warnings and directions for use, on package and in instructions.

TIP: Beginning with Arch 1, install trellis brackets. Bond tray seam and install trellis bracket to help keep trays aligned and the tray joints held tightly.

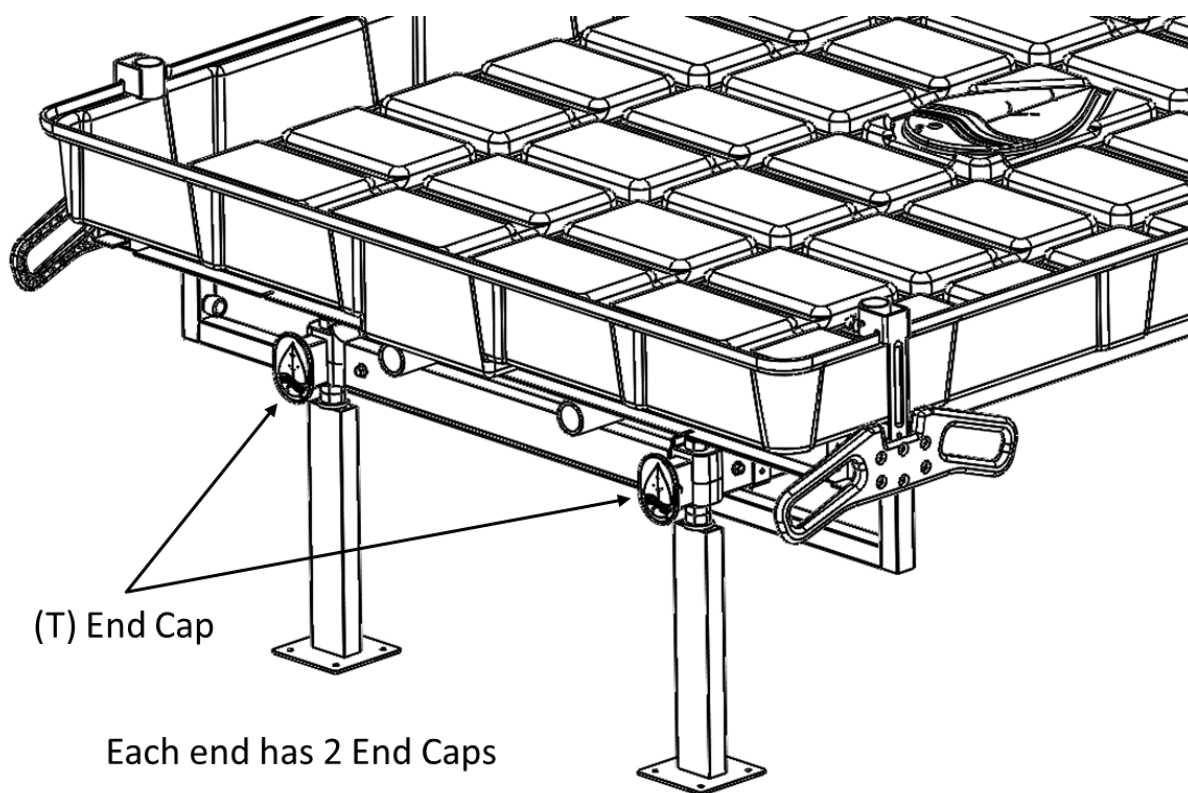
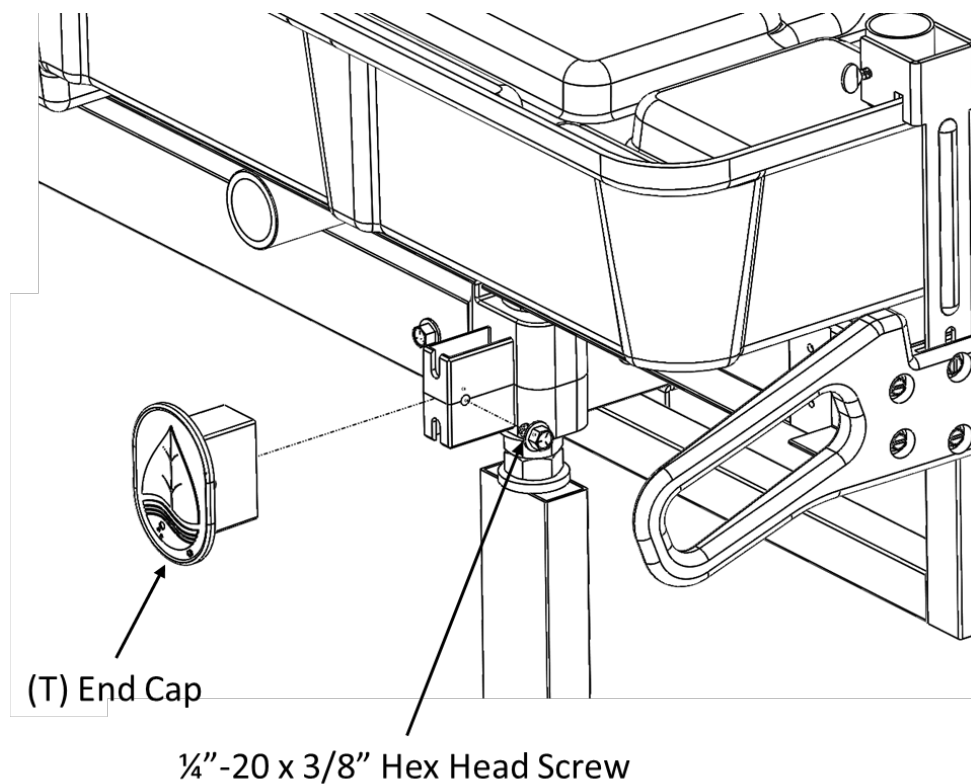




CAUTION: Complete all tray adjustments within 15 minutes of applying sealant. After 15 minutes, do not move or handle trays for 24 hours.



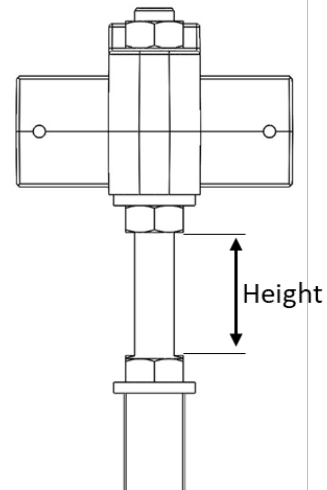
Step 12. End Caps



Maintenance

Appendix A

If the assembled bench is to include slope for faster drainage use the table provided to assemble each arch with appropriate height.



20" & 30" Benches, Arch Height Adjustment Distance for Slope																
Nominal Bench Length (feet)																
Arch #	7	8	9	10	12	13	14	15	17	18	19	20	22	23	24	25
1 (Drain)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8
3	7/8	1	1 1/8	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
4					1 1/2	1 5/8	1 3/4	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8
5									2 1/8	2 1/4	2 3/8	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
6													2 3/4	2 7/8	3	3 1/8
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20																
21																

20" & 30" Benches, Arch Height Adjustment Distance for Slope															
Nominal Bench Length (feet)															
Arch #	27	28	29	30	32	33	34	35	37	38	39	40	42	43	44
1 (Drain)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	9/16	9/16	9/16
3	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/8	1 1/8	1 1/8
4	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	1 11/16	1 11/16	1 11/16
5	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/4	2 1/4	2 1/4
6	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	3 1/8	2 3/4	2 3/4	2 3/4
7	3 3/8	3 1/2	3 5/8	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	3 3/4	3 5/16	3 5/16	3 5/16
8					4	4 1/8	4 1/4	4 3/8	4 3/8	4 3/8	4 3/8	4 3/8	3 7/8	3 7/8	3 7/8
9									4 5/8	4 3/4	4 7/8	5	4 7/16	4 7/16	4 7/16
10													4 11/16	4 3/4	4 7/8
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															

20" & 30" Benches, Arch Height Adjustment Distance for Slope													
Nominal Bench Length (feet)													
Arch #	45	47	48	49	50	52	53	54	55	57	58	59	
1 (Drain)	0	0	0	0	0	0	0	0	0	0	0	0	
2	9/16	1/2	1/2	1/2	1/2	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16
3	1 1/8	1	1	1	1	15/16	15/16	15/16	15/16	13/16	13/16	13/16	13/16
4	1 11/16	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8	1 3/8	1 3/8	1 3/8	1 1/4	1 1/4	1 1/4	1 1/4
5	2 1/4	2	2	2	2	1 13/16	1 13/16	1 13/16	1 13/16	1 11/16	1 11/16	1 11/16	1 11/16
6	2 3/4	2 1/2	2 1/2	2 1/2	2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/16	2 1/16	2 1/16	2 1/16
7	3 5/16	3	3	3	3	2 3/4	2 3/4	2 3/4	2 3/4	2 1/2	2 1/2	2 1/2	2 1/2
8	3 7/8	3 1/2	3 1/2	3 1/2	3 1/2	3 3/16	3 3/16	3 3/16	3 3/16	2 15/16	2 15/16	2 15/16	2 15/16
9	4 7/16	4	4	4	4	3 5/8	3 5/8	3 5/8	3 5/8	3 5/16	3 5/16	3 5/16	3 5/16
10	5	4 1/2	4 1/2	4 1/2	4 1/2	4 1/16	4 1/16	4 1/16	4 1/16	3 3/4	3 3/4	3 3/4	3 3/4
11		4 11/16	4 13/16	4 7/8	5	4 9/16	4 9/16	4 9/16	4 9/16	4 3/16	4 3/16	4 3/16	4 3/16
12						4 3/4	4 13/16	4 15/16	5	4 9/16	4 9/16	4 9/16	4 9/16
13										4 3/4	4 13/16	4 15/16	4 15/16
14													
15													
16													
17													
18													
19													
20													
21													

20" & 30" Benches, Arch Height Adjustment Distance for Slope												
Nominal Bench Length (feet)												
Arch #	60	62	63	64	65	67	68	69	70	72	73	
Adjustment Height (inches)	1 (Drain)	0	0	0	0	0	0	0	0	0	0	0
	2	7/16	3/8	3/8	3/8	3/8	3/8	3/8	3/8	5/16	5/16	
	3	13/16	3/4	3/4	3/4	3/4	11/16	11/16	11/16	11/16	11/16	
	4	1 1/4	1 1/8	1 1/8	1 1/8	1 1/8	1 1/16	1 1/16	1 1/16	1 1/16	1	1
	5	1 11/16	1 9/16	1 9/16	1 9/16	1 9/16	1 7/16	1 7/16	1 7/16	1 7/16	1 5/16	1 5/16
	6	2 1/16	1 15/16	1 15/16	1 15/16	1 15/16	1 13/16	1 13/16	1 13/16	1 13/16	1 11/16	1 11/16
	7	2 1/2	2 5/16	2 5/16	2 5/16	2 5/16	2 1/8	2 1/8	2 1/8	2 1/8	2	2
	8	2 15/16	2 11/16	2 11/16	2 11/16	2 11/16	2 1/2	2 1/2	2 1/2	2 1/2	2 5/16	2 5/16
	9	3 5/16	3 1/16	3 1/16	3 1/16	3 1/16	2 7/8	2 7/8	2 7/8	2 7/8	2 11/16	2 11/16
	10	3 3/4	3 7/16	3 7/16	3 7/16	3 7/16	3 3/16	3 3/16	3 3/16	3 3/16	3	3
	11	4 3/16	3 7/8	3 7/8	3 7/8	3 7/8	3 9/16	3 9/16	3 9/16	3 9/16	3 5/16	3 5/16
	12	4 9/16	4 1/4	4 1/4	4 1/4	4 1/4	3 15/16	3 15/16	3 15/16	3 15/16	3 11/16	3 11/16
	13	5	4 5/8	4 5/8	4 5/8	4 5/8	4 5/16	4 5/16	4 5/16	4 5/16	4	4
	14		4 3/4	4 7/8	4 15/16	5	4 5/8	4 5/8	4 5/8	4 5/8	4 5/16	4 5/16
	15						4 13/16	4 7/8	4 15/16	5	4 11/16	4 11/16
	16										4 13/16	4 7/8
	17											
	18											
	19											
	20											
	21											

20" & 30" Benches, Arch Height Adjustment Distance for Slope												
Nominal Bench Length (feet)												
Arch #	74	75	77	78	79	80	82	83	84	85	87	
Adjustment Height (inches)	1 (Drain)	0	0	0	0	0	0	0	0	0	0	0
	2	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	1/4
	3	11/16	11/16	5/8	5/8	5/8	5/8	9/16	9/16	9/16	9/16	9/16
	4	1	1	15/16	15/16	15/16	15/16	7/8	7/8	7/8	7/8	13/16
	5	1 5/16	1 5/16	1 1/4	1 1/4	1 1/4	1 1/4	1 3/16	1 3/16	1 3/16	1 3/16	1 1/8
	6	1 11/16	1 11/16	1 9/16	1 9/16	1 9/16	1 9/16	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8
	7	2	2	1 7/8	1 7/8	1 7/8	1 7/8	1 3/4	1 3/4	1 3/4	1 3/4	1 11/16
	8	2 5/16	2 5/16	2 3/16	2 3/16	2 3/16	2 3/16	2 1/16	2 1/16	2 1/16	2 1/16	1 15/16
	9	2 11/16	2 11/16	2 1/2	2 1/2	2 1/2	2 1/2	2 3/8	2 3/8	2 3/8	2 3/8	2 1/4
	10	3	3	2 13/16	2 13/16	2 13/16	2 13/16	2 5/8	2 5/8	2 5/8	2 5/8	2 1/2
	11	3 5/16	3 5/16	3 1/8	3 1/8	3 1/8	3 1/8	2 15/16	2 15/16	2 15/16	2 15/16	2 3/4
	12	3 11/16	3 11/16	3 7/16	3 7/16	3 7/16	3 7/16	3 1/4	3 1/4	3 1/4	3 1/4	3 1/16
	13	4	4	3 3/4	3 3/4	3 3/4	3 3/4	3 1/2	3 1/2	3 1/2	3 1/2	3 5/16
	14	4 5/16	4 5/16	4 1/16	4 1/16	4 1/16	4 1/16	3 13/16	3 13/16	3 13/16	3 13/16	3 5/8
	15	4 11/16	4 11/16	4 3/8	4 3/8	4 3/8	4 3/8	4 1/8	4 1/8	4 1/8	4 1/8	3 7/8
	16	4 15/16	5	4 11/16	4 11/16	4 11/16	4 11/16	4 7/16	4 7/16	4 7/16	4 7/16	4 3/16
	17			4 13/16	4 7/8	4 15/16	5	4 11/16	4 11/16	4 11/16	4 11/16	4 7/16
	18							4 13/16	4 7/8	4 15/16	5	4 3/4
	19											4 13/16
	20											
	21											

20" & 30" Benches, Arch Height Adjustment Distance for Slope											
Nominal Bench Length (feet)											
Arch #	88	89	90	92	93	94	95	97	98	99	100
Adjustment Height (inches)	1 (Drain)	0	0	0	0	0	0	0	0	0	0
	2	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
	3	9/16	9/16	9/16	1/2	1/2	1/2	1/2	1/2	1/2	1/2
	4	13/16	13/16	13/16	13/16	13/16	13/16	3/4	3/4	3/4	3/4
	5	1 1/8	1 1/8	1 1/8	1 1/16	1 1/16	1 1/16	1	1	1	1
	6	1 3/8	1 3/8	1 3/8	1 5/16	1 5/16	1 5/16	1 1/4	1 1/4	1 1/4	1 1/4
	7	1 11/16	1 11/16	1 11/16	1 9/16	1 9/16	1 9/16	1 1/2	1 1/2	1 1/2	1 1/2
	8	1 15/16	1 15/16	1 15/16	1 13/16	1 13/16	1 13/16	1 3/4	1 3/4	1 3/4	1 3/4
	9	2 1/4	2 1/4	2 1/4	2 1/8	2 1/8	2 1/8	2	2	2	2
	10	2 1/2	2 1/2	2 1/2	2 3/8	2 3/8	2 3/8	2 1/4	2 1/4	2 1/4	2 1/4
	11	2 3/4	2 3/4	2 3/4	2 5/8	2 5/8	2 5/8	2 1/2	2 1/2	2 1/2	2 1/2
	12	3 1/16	3 1/16	3 1/16	2 7/8	2 7/8	2 7/8	2 3/4	2 3/4	2 3/4	2 3/4
	13	3 5/16	3 5/16	3 5/16	3 3/16	3 3/16	3 3/16	3	3	3	3
	14	3 5/8	3 5/8	3 5/8	3 7/16	3 7/16	3 7/16	3 1/4	3 1/4	3 1/4	3 1/4
	15	3 7/8	3 7/8	3 7/8	3 11/16	3 11/16	3 11/16	3 1/2	3 1/2	3 1/2	3 1/2
	16	4 3/16	4 3/16	4 3/16	3 15/16	3 15/16	3 15/16	3 3/4	3 3/4	3 3/4	3 3/4
	17	4 7/16	4 7/16	4 7/16	4 3/16	4 3/16	4 3/16	4	4	4	4
	18	4 3/4	4 3/4	4 3/4	4 1/2	4 1/2	4 1/2	4 1/4	4 1/4	4 1/4	4 1/4
	19	4 7/8	4 15/16	5	4 3/4	4 3/4	4 3/4	4 1/2	4 1/2	4 1/2	4 1/2
	20				4 13/16	4 7/8	4 15/16	5	4 3/4	4 3/4	4 3/4
	21							4 7/8	4 7/8	4 15/16	5

12" Benches, Arch Height Adjustment Distance for Slope													
Nominal Bench Length (feet)													
Arch #	7	8	9	10	12	13	14	15	17	18	19	20	
1 (Drain)	0	0	0	0	0	0	0	0	0	0	0	0	
2	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	
3	7/16	1/2	9/16	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	
4					3/4	13/16	7/8	15/16	15/16	15/16	15/16	15/16	
5									1 1/16	1 1/8	1 3/16	1 1/4	
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													

12" Benches, Arch Height Adjustment Distance for Slope													
Nominal Bench Length (feet)													
Arch #	22	23	24	25	27	28	29	30	32	33	34	35	
1 (Drain)	0	0	0	0	0	0	0	0	0	0	0	0	
2	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	
3	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	
4	15/16	15/16	15/16	15/16	15/16	15/16	15/16	15/16	15/16	15/16	15/16	15/16	
5	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	
6	1 3/8	1 7/16	1 1/2	1 9/16	1 9/16	1 9/16	1 9/16	1 9/16	1 9/16	1 9/16	1 9/16	1 9/16	
7					1 11/16	1 3/4	1 13/16	1 7/8	1 7/8	1 7/8	1 7/8	1 7/8	
8									2	2 1/16	2 1/8	2 3/16	
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													

12" Benches, Arch Height Adjustment Distance for Slope													
Nominal Bench Length (feet)													
Arch #	37	38	39	40	42	43	44	45	47	48	49	50	
1 (Drain)	0	0	0	0	0	0	0	0	0	0	0	0	
2	5/16	5/16	5/16	5/16	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
3	5/8	5/8	5/8	5/8	9/16	9/16	9/16	9/16	1/2	1/2	1/2	1/2	1/2
4	15/16	15/16	15/16	15/16	13/16	13/16	13/16	13/16	3/4	3/4	3/4	3/4	3/4
5	1 1/4	1 1/4	1 1/4	1 1/4	1 1/8	1 1/8	1 1/8	1 1/8	1	1	1	1	1
6	1 9/16	1 9/16	1 9/16	1 9/16	1 3/8	1 3/8	1 3/8	1 3/8	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
7	1 7/8	1 7/8	1 7/8	1 7/8	1 11/16	1 11/16	1 11/16	1 11/16	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
8	2 3/16	2 3/16	2 3/16	2 3/16	1 15/16	1 15/16	1 15/16	1 15/16	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
9	2 5/16	2 3/8	2 7/16	2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2	2	2	2	2
10					2 5/16	2 3/8	2 7/16	2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
11									2 3/8	2 3/8	2 7/16	2 1/2	
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													

12" Benches, Arch Height Adjustment Distance for Slope												
Nominal Bench Length (feet)												
Arch #	52	53	54	55	57	58	59	60	62	63	64	
1 (Drain)	0	0	0	0	0	0	0	0	0	0	0	
2	1/4	1/4	1/4	1/4	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16
3	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	3/8	3/8	3/8	3/8
4	11/16	11/16	11/16	11/16	5/8	5/8	5/8	5/8	9/16	9/16	9/16	9/16
5	15/16	15/16	15/16	15/16	13/16	13/16	13/16	13/16	3/4	3/4	3/4	3/4
6	1 1/8	1 1/8	1 1/8	1 1/8	1 1/16	1 1/16	1 1/16	1 1/16	15/16	15/16	15/16	15/16
7	1 3/8	1 3/8	1 3/8	1 3/8	1 1/4	1 1/4	1 1/4	1 1/4	1 1/8	1 1/8	1 1/8	1 1/8
8	1 9/16	1 9/16	1 9/16	1 9/16	1 7/16	1 7/16	1 7/16	1 7/16	1 3/8	1 3/8	1 3/8	1 3/8
9	1 13/16	1 13/16	1 13/16	1 13/16	1 11/16	1 11/16	1 11/16	1 11/16	1 9/16	1 9/16	1 9/16	1 9/16
10	2 1/16	2 1/16	2 1/16	2 1/16	1 7/8	1 7/8	1 7/8	1 7/8	1 3/4	1 3/4	1 3/4	1 3/4
11	2 1/4	2 1/4	2 1/4	2 1/4	2 1/16	2 1/16	2 1/16	2 1/16	1 15/16	1 15/16	1 15/16	1 15/16
12	2 3/8	2 7/16	2 7/16	2 1/2	2 5/16	2 5/16	2 5/16	2 5/16	2 1/8	2 1/8	2 1/8	2 1/8
13					2 3/8	2 7/16	2 7/16	2 1/2	2 5/16	2 5/16	2 5/16	2 5/16
14									2 3/8	2 7/16	2 7/16	
15												
16												
17												
18												
19												
20												
21												

12" Benches, Arch Height Adjustment Distance for Slope												
Nominal Bench Length (feet)												
Arch #	65	67	68	69	70	72	73	74	75	77	78	
1 (Drain)	0	0	0	0	0	0	0	0	0	0	0	
2	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	
3	3/8	3/8	3/8	3/8	3/8	5/16	5/16	5/16	5/16	5/16	5/16	
4	9/16	9/16	9/16	9/16	9/16	1/2	1/2	1/2	1/2	7/16	7/16	
5	3/4	11/16	11/16	11/16	11/16	11/16	11/16	11/16	11/16	5/8	5/8	
6	15/16	7/8	7/8	7/8	7/8	13/16	13/16	13/16	13/16	3/4	3/4	
7	1 1/8	1 1/16	1 1/16	1 1/16	1 1/16	1	1	1	1	15/16	15/16	
8	1 3/8	1 1/4	1 1/4	1 1/4	1 1/4	1 3/16	1 3/16	1 3/16	1 3/16	1 1/16	1 1/16	
9	1 9/16	1 7/16	1 7/16	1 7/16	1 7/16	1 5/16	1 5/16	1 5/16	1 5/16	1 1/4	1 1/4	
10	1 3/4	1 5/8	1 5/8	1 5/8	1 5/8	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8	1 3/8	
11	1 15/16	1 13/16	1 13/16	1 13/16	1 13/16	1 11/16	1 11/16	1 11/16	1 11/16	1 9/16	1 9/16	
12	2 1/8	1 15/16	1 15/16	1 15/16	1 15/16	1 13/16	1 13/16	1 13/16	1 13/16	1 11/16	1 11/16	
13	2 5/16	2 1/8	2 1/8	2 1/8	2 1/8	2	2	2	2	1 7/8	1 7/8	
14	2 1/2	2 5/16	2 5/16	2 5/16	2 5/16	2 3/16	2 3/16	2 3/16	2 3/16	2	2	
15		2 3/8	2 7/16	2 7/16	2 1/2	2 5/16	2 5/16	2 5/16	2 5/16	2 3/16	2 3/16	
16						2 3/8	2 7/16	2 7/16	2 1/2	2 5/16	2 5/16	
17										2 3/8	2 7/16	
18												
19												
20												
21												

12" Benches, Arch Height Adjustment Distance for Slope										
Nominal Bench Length (feet)										
Arch #	79	80	82	83	84	85	87	88	89	
1 (Drain)	0	0	0	0	0	0	0	0	0	
2	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	
3	5/16	5/16	5/16	5/16	5/16	5/16	1/4	1/4	1/4	
4	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	
5	5/8	5/8	9/16	9/16	9/16	9/16	9/16	9/16	9/16	
6	3/4	3/4	3/4	3/4	3/4	3/4	11/16	11/16	11/16	
7	15/16	15/16	7/8	7/8	7/8	7/8	13/16	13/16	13/16	
8	1 1/16	1 1/16	1	1	1	1	15/16	15/16	15/16	
9	1 1/4	1 1/4	1 3/16	1 3/16	1 3/16	1 3/16	1 1/8	1 1/8	1 1/8	
10	1 3/8	1 3/8	1 5/16	1 5/16	1 5/16	1 5/16	1 1/4	1 1/4	1 1/4	
11	1 9/16	1 9/16	1 1/2	1 1/2	1 1/2	1 1/2	1 3/8	1 3/8	1 3/8	
12	1 11/16	1 11/16	1 5/8	1 5/8	1 5/8	1 5/8	1 1/2	1 1/2	1 1/2	
13	1 7/8	1 7/8	1 3/4	1 3/4	1 3/4	1 3/4	1 11/16	1 11/16	1 11/16	
14	2	2	1 15/16	1 15/16	1 15/16	1 15/16	1 13/16	1 13/16	1 13/16	
15	2 3/16	2 3/16	2 1/16	2 1/16	2 1/16	2 1/16	1 15/16	1 15/16	1 15/16	
16	2 5/16	2 5/16	2 3/16	2 3/16	2 3/16	2 3/16	2 1/16	2 1/16	2 1/16	
17	2 7/16	2 1/2	2 3/8	2 3/8	2 3/8	2 3/8	2 1/4	2 1/4	2 1/4	
18			2 7/16	2 7/16	2 1/2	2 1/2	2 3/8	2 3/8	2 3/8	
19							2 7/16	2 7/16	2 1/2	
20										
21										

12" Benches, Arch Height Adjustment Distance for Slope									
Nominal Bench Length (feet)									
Arch #	90	92	93	94	95	97	98	99	100
1 (Drain)	0	0	0	0	0	0	0	0	0
2	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
3	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
4	7/16	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
5	9/16	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
6	11/16	11/16	11/16	11/16	11/16	5/8	5/8	5/8	5/8
7	13/16	13/16	13/16	13/16	13/16	3/4	3/4	3/4	3/4
8	15/16	15/16	15/16	15/16	15/16	7/8	7/8	7/8	7/8
9	1 1/8	1 1/16	1 1/16	1 1/16	1 1/16	1	1	1	1
10	1 1/4	1 3/16	1 3/16	1 3/16	1 3/16	1 1/8	1 1/8	1 1/8	1 1/8
11	1 3/8	1 5/16	1 5/16	1 5/16	1 5/16	1 1/4	1 1/4	1 1/4	1 1/4
12	1 1/2	1 7/16	1 7/16	1 7/16	1 7/16	1 3/8	1 3/8	1 3/8	1 3/8
13	1 11/16	1 9/16	1 9/16	1 9/16	1 9/16	1 1/2	1 1/2	1 1/2	1 1/2
14	1 13/16	1 11/16	1 11/16	1 11/16	1 11/16	1 5/8	1 5/8	1 5/8	1 5/8
15	1 15/16	1 13/16	1 13/16	1 13/16	1 13/16	1 3/4	1 3/4	1 3/4	1 3/4
16	2 1/16	1 15/16	1 15/16	1 15/16	1 15/16	1 7/8	1 7/8	1 7/8	1 7/8
17	2 1/4	2 1/8	2 1/8	2 1/8	2 1/8	2	2	2	2
18	2 3/8	2 1/4	2 1/4	2 1/4	2 1/4	2 1/8	2 1/8	2 1/8	2 1/8
19	2 1/2	2 3/8	2 3/8	2 3/8	2 3/8	2 1/4	2 1/4	2 1/4	2 1/4
20		2 7/16	2 7/16	2 1/2	2 1/2	2 3/8	2 3/8	2 3/8	2 3/8
21						2 7/16	2 7/16	2 1/2	2 1/2

Appendix B

Bench Length (ft)	Dimension L (inches)	Bench Length (ft)	Dimension L (inches)	Bench Length (ft)	Dimension L (inches)
7.5	78	50.5	594	94.5	1122
8.5	90	52.5	618	95.5	1134
9.5	102	53.5	630	97.5	1158
10.5	114	54.5	642	98.5	1170
12.5	138	55.5	654	99.5	1182
13.5	150	57.5	678	100.5	1194
14.5	162	58.5	690		
15.5	174	59.5	702		
17.5	198	60.5	714		
18.5	210	62.5	738		
19.5	222	63.5	750		
20.5	234	64.5	762		
22.5	258	65.5	834		
23.5	270	67.5	798		
24.5	282	68.5	810		
25.5	294	69.5	822		
27.5	318	70.5	834		
28.5	330	72.5	858		
29.5	342	73.5	870		
30.5	354	74.5	882		
32.5	378	75.5	894		
33.5	390	77.5	918		
34.5	402	78.5	930		
35.5	414	79.5	942		
37.5	438	80.5	954		
38.5	450	82.5	978		
39.5	462	83.5	990		
40.5	474	84.5	1002		
42.5	498	85.5	1014		
43.5	510	87.5	1038		
44.5	522	88.5	1050		
45.5	534	89.5	1062		
47.5	558	90.5	1074		
48.5	570	92.5	1098		
49.5	582	93.5	1110		

