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GROWERS EQUIPMENT INC.

Innovative Growers Equipment, Inc.

Ebb & Flow Bench Assembly Instructions

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PARTS LIST

A1

Square to square clamp

A2

Pop Rivet

A3

Flat Washer

A4

Load bearing plug

A5

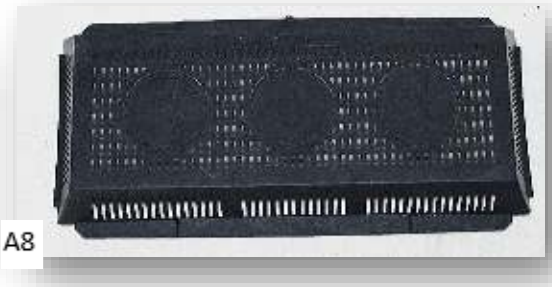
Bench corner

A6

¼ -20 Bolt and Nut

A7

Bench glue



A8

Bench filter

A9

Stringer pipe insert

(Only used on benches over 27')

A10

Side Rail Joiner Plate

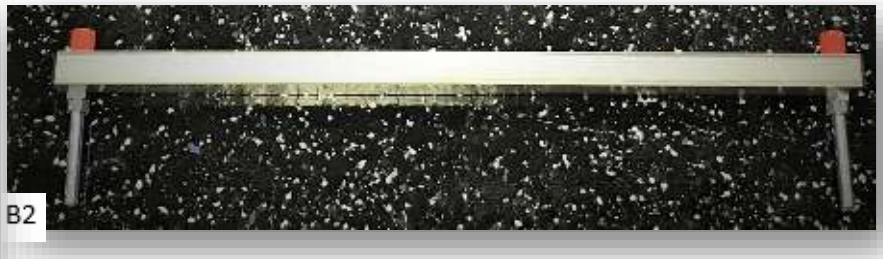
(Only used on benches over 24')

Tek (Self-tapping) Screws

Screen for Bulkhead fitting

¾" Bulkhead fitting

Legs (Leg Supports)



Header

Bench Crossbar

End Frame

(Only used on benches over 5')

Tools needed for assembly

- 7/16 Open ended wrench
- 7/16 socket (for larger jobs we recommend an impact gun)
- Caulking gun
- Pop riveter (we recommend a pneumatic riveter for larger quantities)
- Power drill (for benches wider than 5')

End tray (with drain molding)

Middle trays (for longer benches)

End tray

Parts Included with Max Roll Tables

S1

Anti-tip/Max roll header

S2

Tap Con Screws

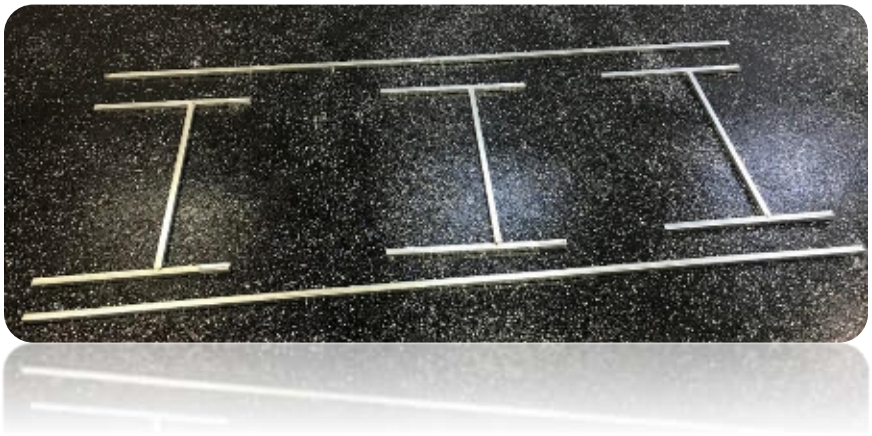
S3

Safety Chains

S4

L-Bracket

1. Lay out the stringer pipe and leg support pieces (***B1***) on the ground as shown in the picture below.



2. Stand up one of the leg supports (***B1***) on end (ridged end up as shown in Figure 1) and rest the end of the stringer pipe on the bar connecting the two leg ends. Please go to Innovative Growers Equipment youtube page if you need further instructions on this.

Figure 1

3. Take two clamps (***A1***) and line them up perpendicular to one another (outside one vertically and inside one horizontal). ***When lined up place the screws (***A6***) through the holes facing inward and screw in the nuts (***A6***) from the inner portion of the frame as shown in *Figure 2*.

Figure 2

Inside clamp position

Outside clamp position

4. Perform the same steps on the other end of the leg support shown. You'll now have one end of the bench standing as shown below on *Figure 3*.

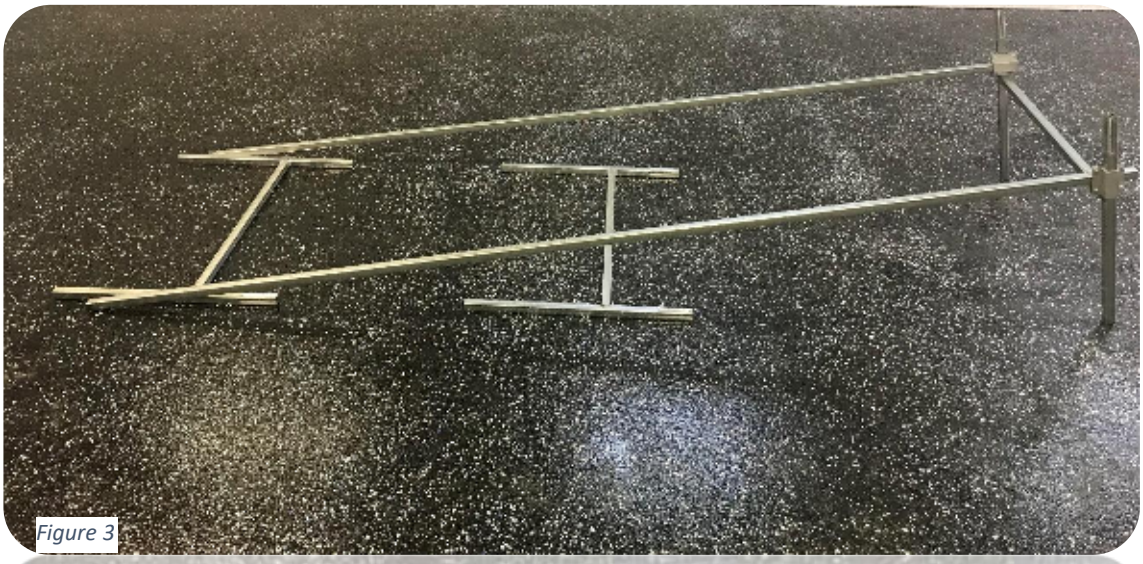


Figure 3

5. Now stand up the leg support on the opposite end of the frame and attach the clamps on each corner on that side as well. Then stand up any leg supports in the middle of the frame and repeat the steps again until the frame is complete (shown on *Figure 4a & 4b*). **NOTE: Longer tables will require additional leg supports in the middle of the frame so just use the diagrams attached for reference. They will provide spacing requirements.**

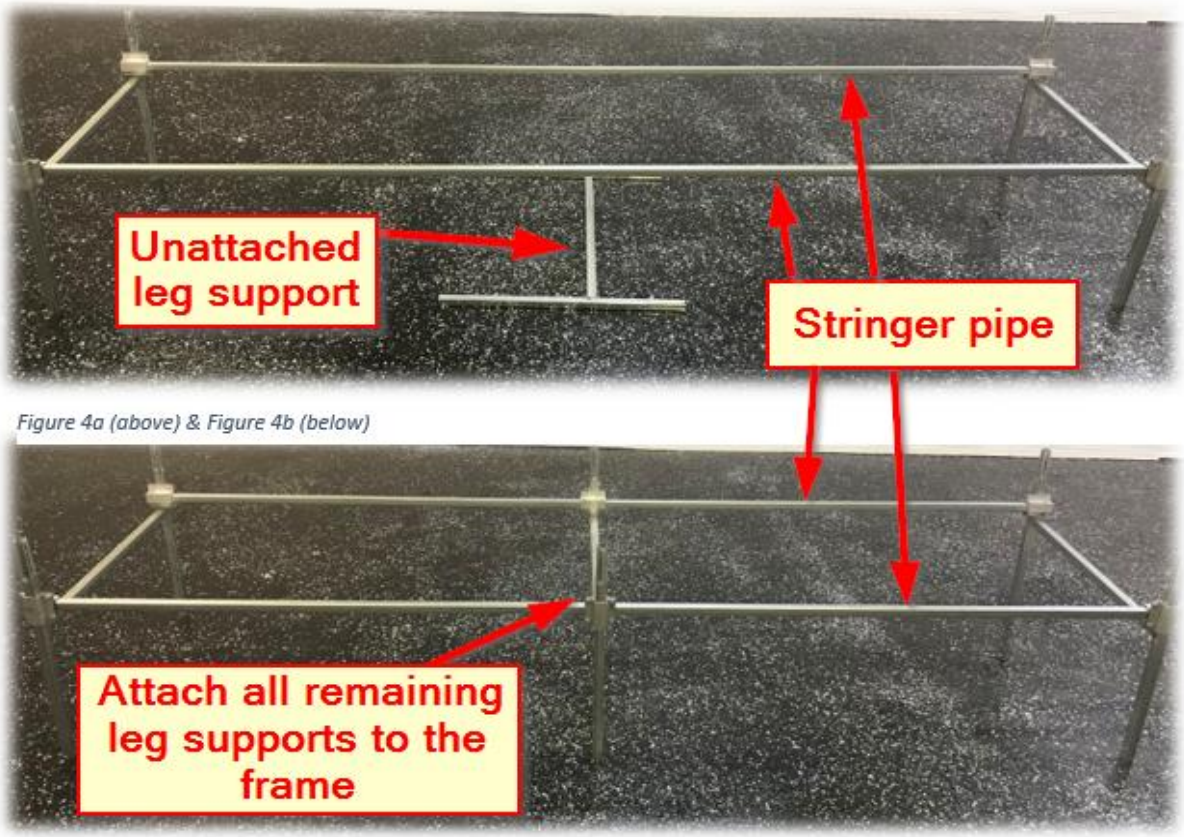


Figure 4a (above) & Figure 4b (below)

6. Once the legs are all standing, you can insert the load bearing plugs (***A4***) into the bottom of all the welded legs (***B1*** – *see Figure 5*). Also, install them to the ends of the stringer pipes on each corner of the frame (shown on *Figure 6*).

Figure 5 (below)

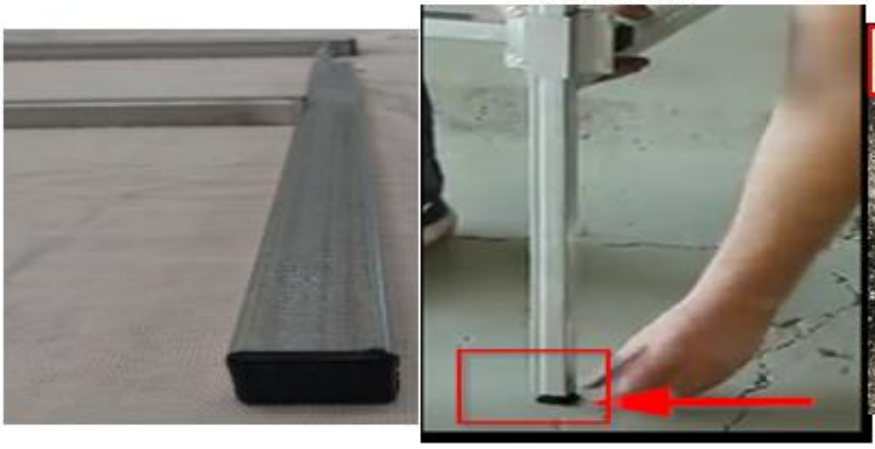


Figure 6 (below)

7. Insert the flat washers (***A3***) in the bolts of the pre-assembled headers (***B2***) and slide the bolts through the opening of the crimped end of the leg supports (***B1*** – *shown on Figure 7).*

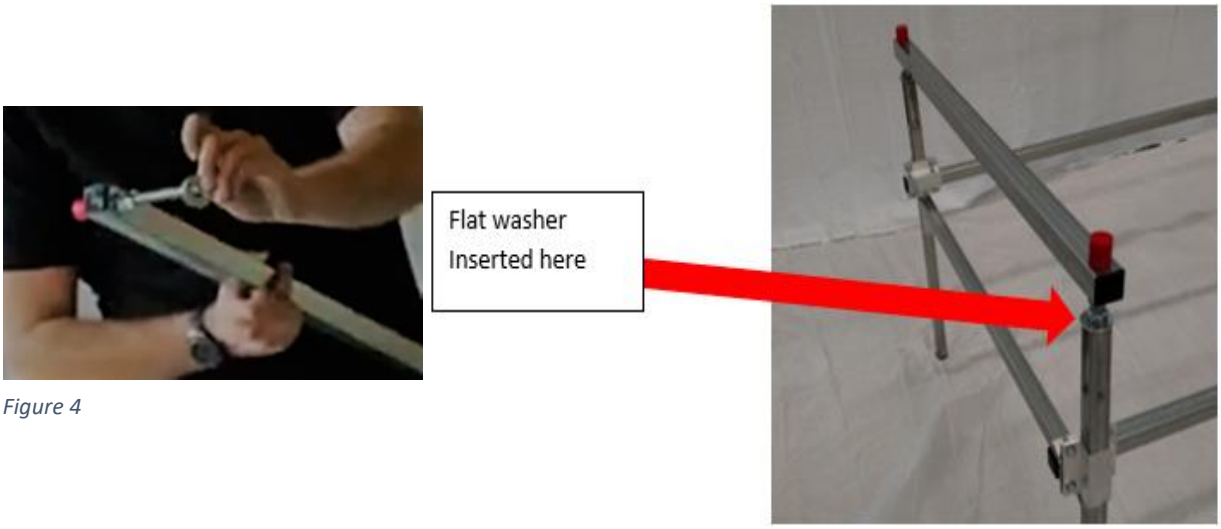


Figure 4

8. ******FOR MAX ROLL TABLES ONLY*** - If you have a max roll table, insert your max roll headers (***S1***) into legs (***B1***) like you would regular headers (*Figure 8*). The location for these headers will be labeled on your aluminum side rails as well as your custom bench diagram

Figure 5

9. ***FOR MAX ROLL TABLES ONLY - Now, take the rolling pipe and slide them through the opening of the swinging bar attached to the anti-tip (***S1***) on one end of the table and push it through the opening at the other end of the table (see Figures 9, 10, 11). Note: if the bench is over 24' you will have swedged pipe to connect to additional rolling pipe).

Figure 6 (above), Figure 10 (bottom left), Figure 11 (bottom right)

10. Next, take the end frames (***E1***) and lay them across the rolling pipe on each of the table (*Figure 12a and Figure 12b*).

Figure 12a

Figure 12b

11. Lay out the bench cross bars (***B3***) over the rolling pipe equally spaced across the bench as shown in *Figures 13a, 13b, 13c*. **Be sure** the pre-punched holes are **FACING UP** when they're laid across the bench.

Figure 13a

Figure 13b

Figure 13c

12. Bench corners (***A5***) should now be riveted to the END aluminum pieces using the pop rivets (***A2***). *Figure 14a* shows one of the bench corners connected to the aluminum end piece with the pop rivets in the holes. *Figure 14b* shows what the rivets should look like after they've been riveted. *Figure 14c* shows what both end aluminum rails should look like after all the bench corners have been riveted to them. Notice the bench corners are now connected to the aluminum.

Figure 14c

Figure 14b

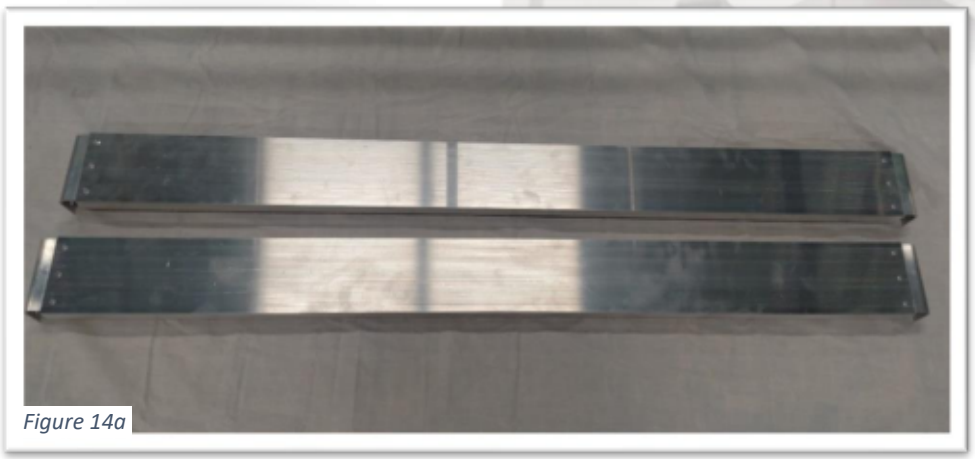


Figure 14a

13. Now take the side rail (longer) aluminum pieces and insert the bench cross bar (***B3***) ends into the slot lined along the aluminum piece. On benches 5' or wider you will have to connect the end frames (***E1***) as well. (see *Figure 15 and Figure 16*)

Figure 15

Figure 16

End Frame

NOTE: Make sure the pre-drilled holes are positioned upward on the bench cross bars and end frames. Notice the position of the end frames on *Figure 18*. (Again - end frames will only be used for benches 5' or wider)

Figure 17

Figure 18

14. Rivet aluminum side rail to bench cross bars (***B3***) in the pre-punched and pre-drilled holes using the pop rivets (***A2***). Repeat this on the other side of the table. (See *Figures* below).

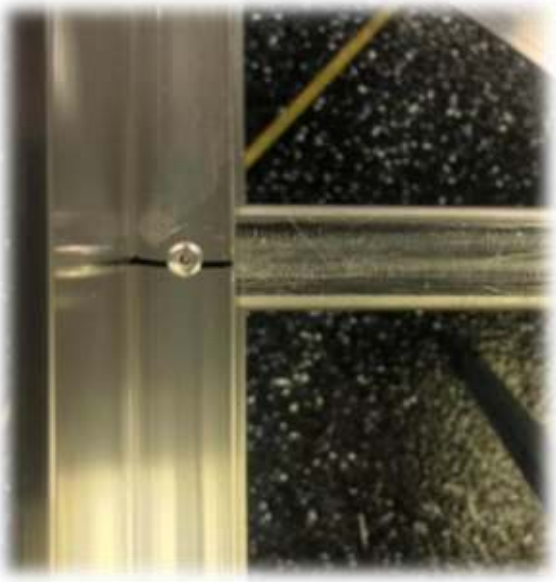


Figure 19

Figure 20

For benches over 24' - Insert side rail joiner plates (***A10***) into the two matching sides of aluminum (see *Figure 21a* and *Figure 21b*). Refer to your custom diagram provided along with these instructions for the side rail locations.

Figure 21a

Figure 21b

15. Now rivet the end aluminum pieces with corners (***A5***) to the aluminum sides.

Figure 22

16. Only for benches 5’ or wider – Drill tek screws (***A11***) through end frame (***E1***) on the short end of the aluminum side. Keep in mind there are no pre-drilled holes on this end and you will have to use a power drill to drive through the aluminum and end frame. (see Figure 23)

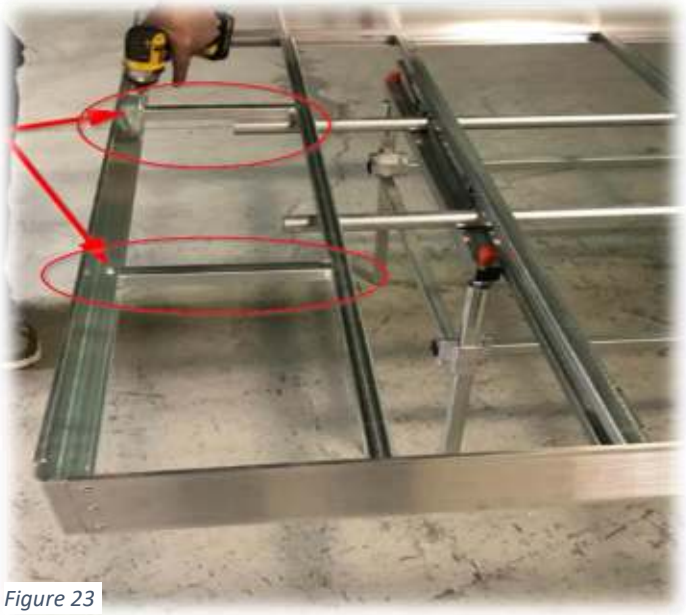


Figure 23

17. Now you can lay the plastic trays onto the bench. Lay the piece of plastic with the indented lip onto the bench first (see *Figure 24*). You can follow the customer diagram provided or use the markings on the aluminum side rail. Just keep in mind that the indented end of the tray goes at the bottom.

Figure 24

18. **ON BENCHES WITH MAXROLL HEADERS ONLY** - Next, ensure the table is level and then you will want to screw the safety chains (***S3***) into all legs with anti-tip headers (***S1*** -*Figure 25*) on them. You'll want to use the tek screws (***A11***) and verify the chain is stretched tight before screwing in both ends of the chain. (see *Figure 26*)

Figure 25

Figure 26

FOR MAX ROLL TABLES ONLY - Place 2 of these L-brackets (***S4***) on each leg that has an Anti-tip header (***S1***). Use provided tek screws (***A11***) and insert two tek screws in the bench leg. Then use the provided tapcon screws (***S2***) and install the anchor into concrete. (See *Figure 27*)

Figure 27

Gluing Instructions

DO NOT GLUE IN BETWEEN THE TRAYS – ONLY GLUE ON TOP OF SEAM WHEN TRAYS MEET- SHOWN IN PICTURE

STEP 1: Lay trays out per included drawing. Trays should have roughly a 1/8” gap, there is a planned air gap in the end to allow for expansion. Make sure all trays are sitting level before moving on to the next step

Step 2: Place glue tube (***A7***) in caulking gun and cut open end (before screwing on nozzle) to prepare to glue.

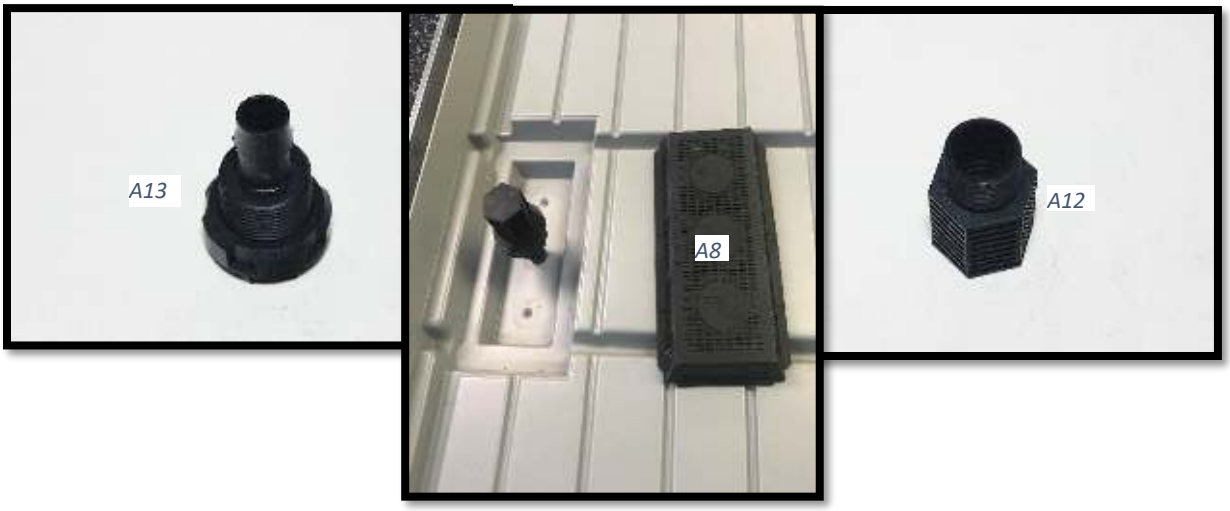
DO NOT GLUE IN BETWEEN THE TRAYS – ONLY GLUE ON TOP OF SEAM WHEN TRAYS MEET- SHOWN IN PICTURE

Step 3: Run a bead of glue filling up the 1/8” gap you left, allow extra to run down the main drainage channel. Use a small utensil such as a small piece of plastic or metal pipe to smooth glue in main drainage channel, making sure there is a seam sealed on both ends and no large globs blocking water flowage. You may have to repeat these 1 or 2 times after a few minutes. DO NOT Smooth glue on the top of the gap, let it settle by gravity only smooth glue in the drainage channel.

DO NOT GLUE IN BETWEEN THE TRAYS – ONLY GLUE ON TOP OF SEAM WHEN TRAYS MEET- SHOWN IN PICTURE

Your Ebb and Flow bench is now complete!

*If you would like to use the included bulkhead fitting for draining and filling. Simply uses a 1 3/8” hole saw to drill a hole in the sump and attach fitting – Drill the hole through the plastic table not the Bench filter. *



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