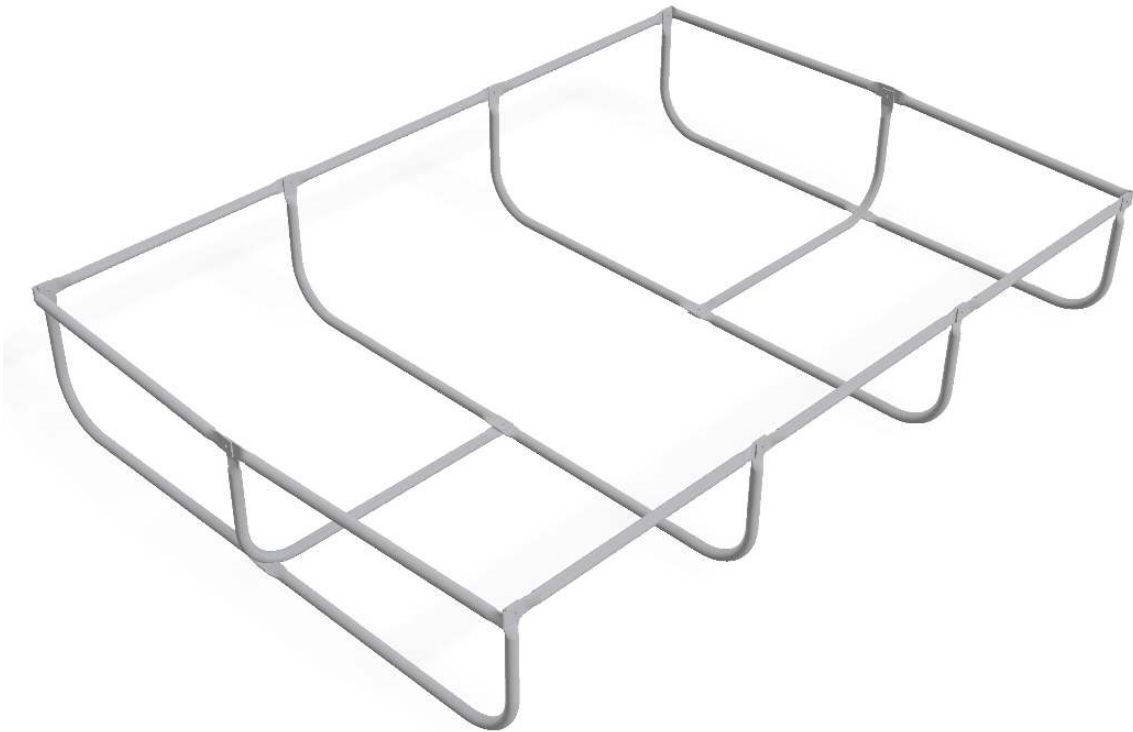


Assembly Manual

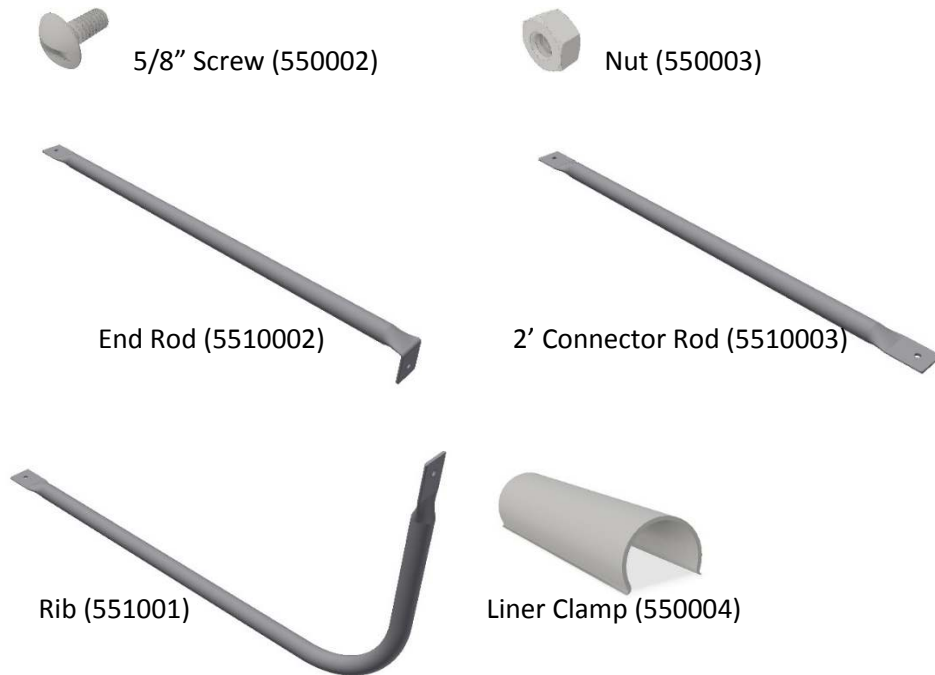
4' x 6' Floating Raft Frame
(and optional extension kit)



Introduction

Thank you for purchasing this high quality RaftMaster™ deep water culture frame for your hydroponic and aquaponic growing needs. Please completely review these instructions before starting assembly. Proper installation will provide years of maintenance-free use.

Parts Guide



Required Tools



Site Preparation

The RaftMaster™ bed is designed to be installed on a clean and level surface. The liner that you install will be resting directly on the surface. Therefore, the entire area should be completely clear of any debris that may puncture the liner. If the site is not level, sand can be used to level the area. Sand that is manufactured through a crushing process is not recommended since it may contain sharp pieces.

The liner should be puncture-resistant such as Dura-Skrim or Ultra-Skrim liners. Plastic films that do not contain reinforcement fiber should not be used.

Assembly

1. Take 3 rib sections and attach them as shown in Figure 1. **Note: The connection point for the end rib should be set under the two side ribs.**

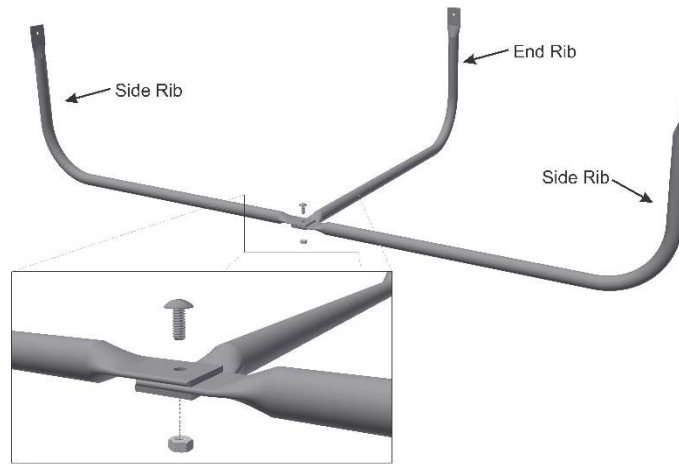


Figure 1

2. Position the bolt through the three ribs and tighten the nut. **Note: The nuts should always be facing away from the liner to minimize the risk of puncturing the liner.**
3. Connect two end rods to the end rib. Leave the nuts slightly loose so that the pieces can be adjusted.

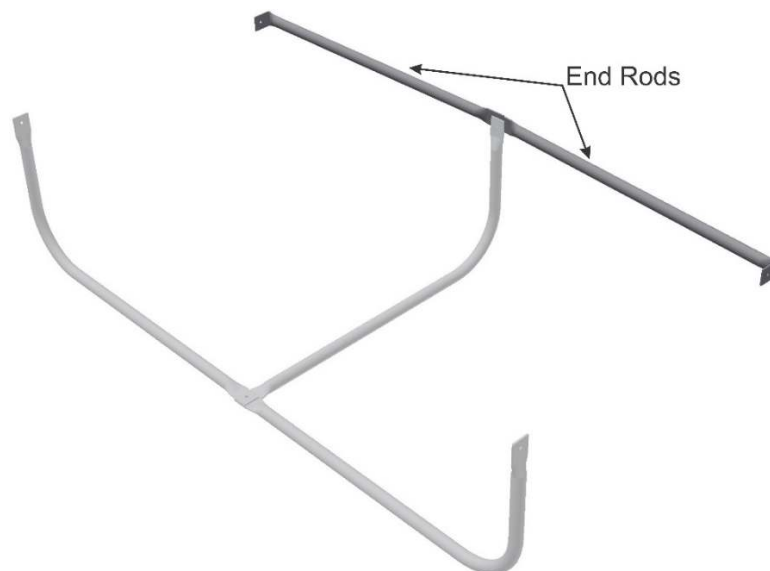


Figure 2

4. Tightly fasten 2 rib pieces together and place them at the end of the assembly.



Figure 3

5. Place two screws through this rib assembly to temporarily hold them in place with the rest of the frame. Note: This section will be close to the curvature of the end rib, but will not connect into it. (Do not add the nuts yet.)

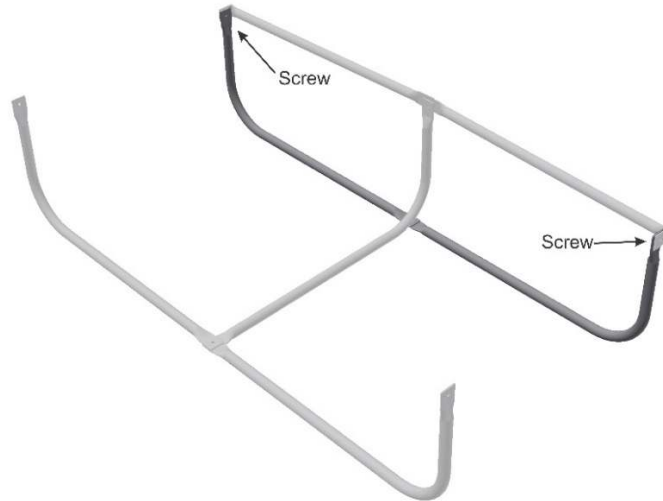


Figure 4

6. Attach two connector rods. Add the two nuts to the end section and then place two screws through the other end to temporarily hold the rods in place. If you are relocating this assembly, you may want to add nuts to these screws to prevent them from falling out.

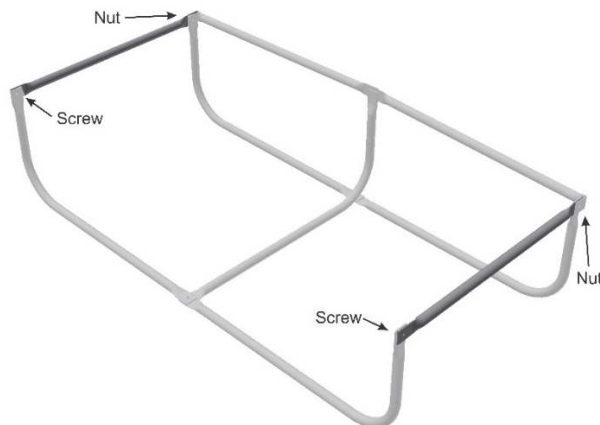


Figure 5

7. Repeat steps 1 through 6 to build the second end section.

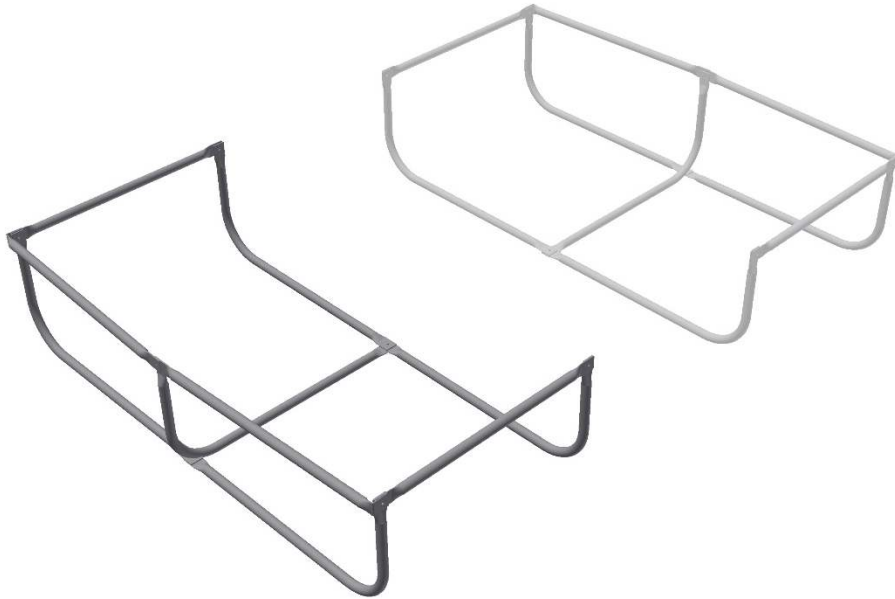


Figure 6

8. If you have any extension kits, please skip to the next section “Extension Kits”.
9. Add the last two connecting rods and tighten all the nuts.



Figure 7

Extension Kits (optional)

10. Add a set of connector rods.

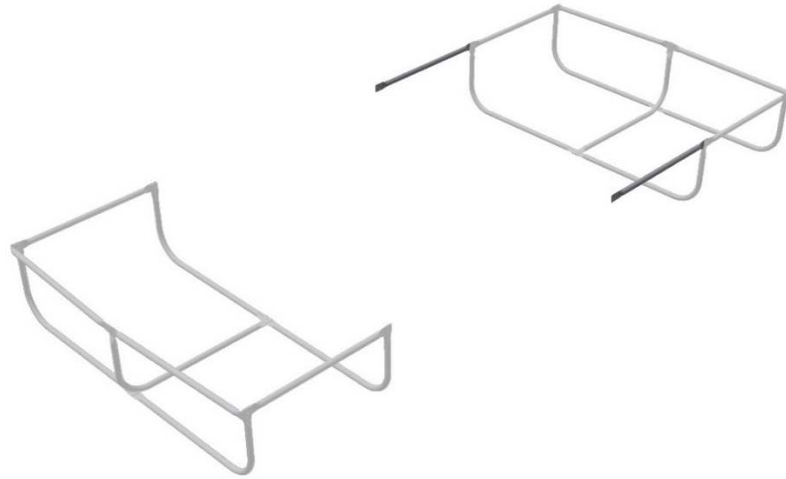


Figure 8

11. Assemble a set of ribs. Reminder: Be sure the nut is facing away from the liner area and to tighten the nut since you won't have access to this area once the frame is assembled.



Figure 9

12. Attach the rib set to the connector rods.

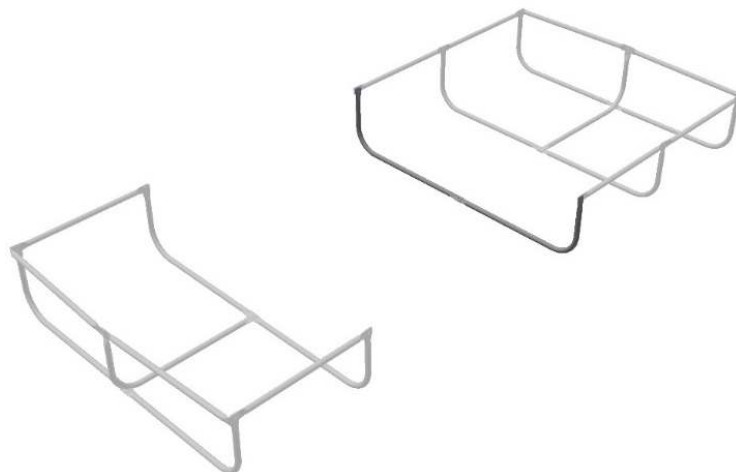


Figure 10

13. Repeat this process for the entire length of the frame.

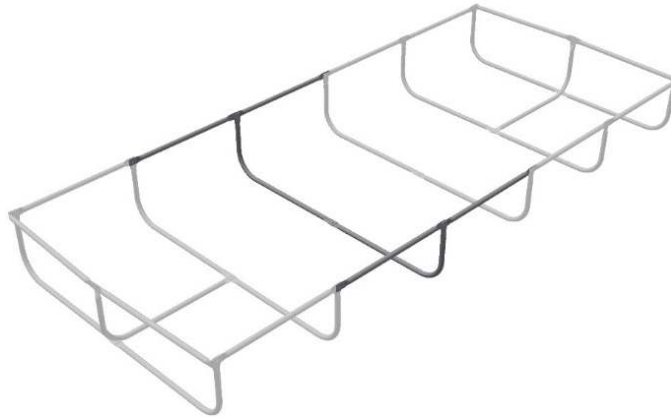


Figure 11

14. Add the last two connecting rods and tighten all the nuts throughout the entire frame.

Liner Installation

15. Inspect the entire area to make sure there are no items or debris that could puncture the liner. Also thoroughly inspect the entire frame for sharp corners or edges..
16. If the frame and liner are being placed directly on a concrete floor, it is recommended that you place a protective material (such as a tarp) along the bottom of the frame. If the frame is set on sand, it is possible to submerge the bottom of the frame into the sand to provide a completely smooth bottom and reduce stress on your liner.
17. The liner dimensions should be:
Width: The width of the bed plus two feet. For example, a 4 foot wide bed will need 6 feet of liner, or an 8 foot wide bed will need 10 feet.
Length: The length of the bed plus 4 feet. For example, a 12 foot long bed will need 16 feet of liner. (It is possible to use less liner, but we recommend having extra.)

NOTICE: The following instructions are recommended guidelines. Because there are several styles of liners, the frame manufacturer doesn't make any warranties with the installation, durability, or life-span of the liner. The installer/purchaser is responsible for all aspects of the liner.

18. Spread the liner down the entire length of the frame. Make sure there is extra material hanging over each end and that the liner is not stretched over the ribs. There should be a "bump" over each rib to alleviate any stress against the liner.



Figure 12

19. The liner should have a smooth corner transition from the floor to the sides. If it is too sharp, the liner walls will bow out past the frame when it is filled with water.

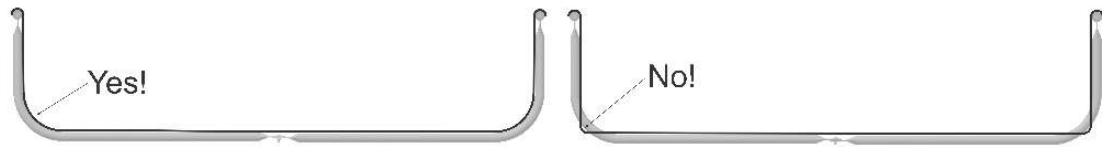


Figure 13

20. Once an area of liner is in the proper location, snap on a liner clamp. When complete, there should be 3 clamps on each connector rod.

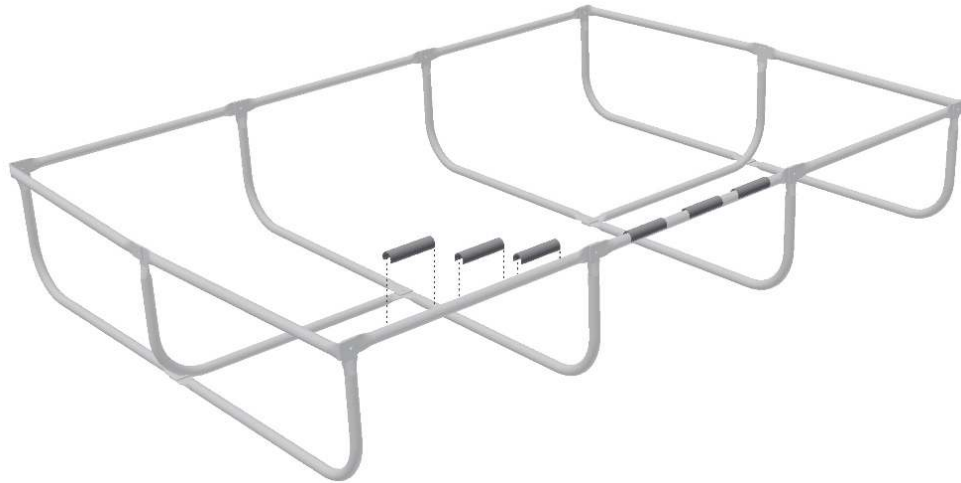


Figure 14

21. When complete, the liner should go around at least half of the rail to insure the clamp provides enough grasping force to hold it in place.

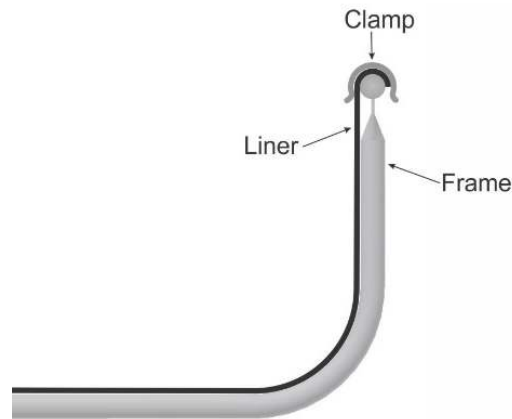


Figure 15

22. There are a few different techniques for folding a liner around the corners. The most common method is to take each corner and crease it inward (along the diagonal lines shown in Figure 16), then fold it against the end wall of the frame. Two clips should be used to secure it into place. If you are not familiar with folding the liner, we recommend practicing on a piece of paper and make a small “tray” with it.

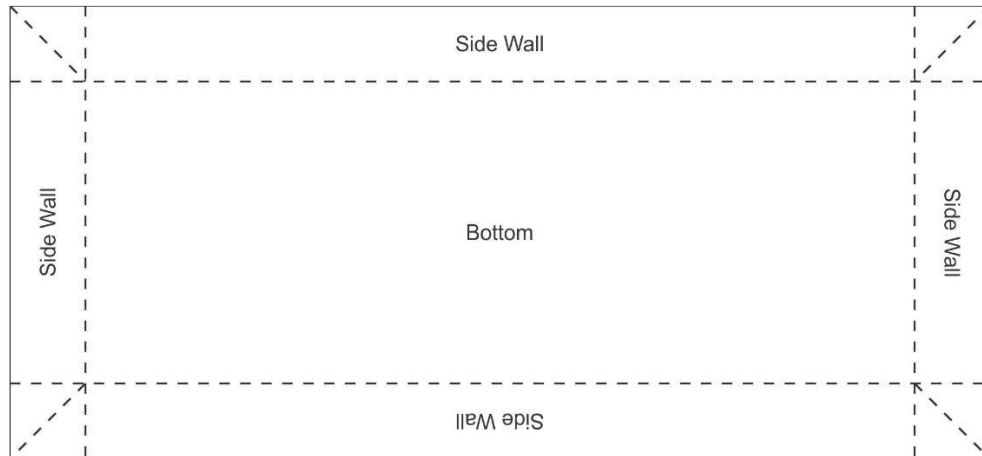


Figure 16

23. When complete, the folded lap will rest against the end wall. Make sure that no liner edges are located below the final water level or the water will pour out of the bed.



Figure 17

Bulkhead Fitting Installation (optional)

Notice: The manufacturer does not provide warranty support for improper installation of fittings. The installer/purchaser is responsible for all aspects of the liner and fitting installations. Read and understand all of the instructions before proceeding.

24. Find a location that will stay relatively flat (not near the bottom at the curvature). With a sharp razor knife, carefully cut a hole into the liner that is the same size as the fitting. Using the fitting as a template, it may be helpful to trace a circle onto the liner as a guide.



Figure 18

25. Make sure the rubber gasket is on the bulkhead fitting and insert it through the new hole.



Figure 19

26. Add the washer and nut and tighten. Do not overtighten or the rubber gasket may bulge and not seal properly between the liner and the bulkhead fitting. Note: Some fittings are not shipped with washers.

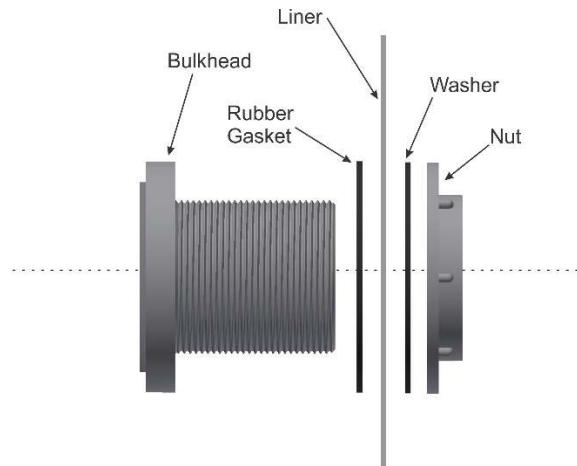


Figure 20

27. When the final plumbing is connected to the bulkhead fitting, it should not apply any stress against the liner. Depending on where the fitting was placed, it may not be perfectly level. The remaining plumbing should be installed to meet the angle of the fitting. Do not force the fitting to match the plumbing!

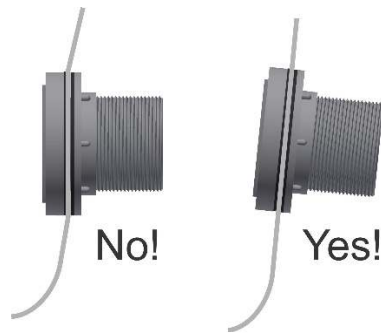


Figure 21