MODEL GRZA VARIABLE LENGTH SECTION (VLS)

The minimum length that the Model GRZA Variable Length Section (VLS) can be used for is 5 1/2". The maximum length for the VLS is 15".

The VLS ships from the factory fully assembled. The installer should disassemble the VLS to ensure they understand how the parts go together. Be sure not to discard any parts.

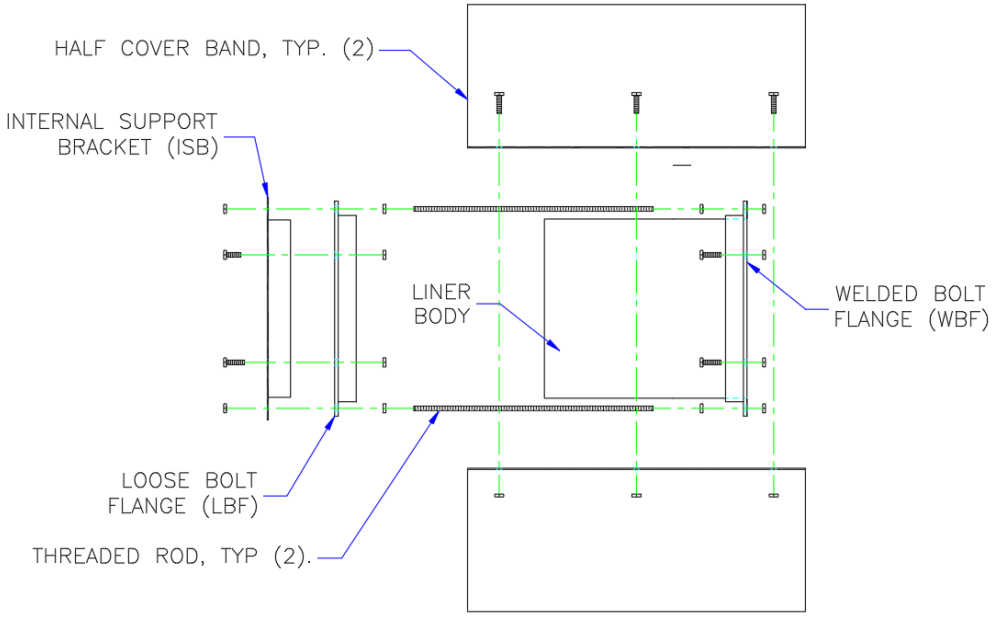

Figure 1: Variable Length Section Components (Insulation and some hardware not shown).

1. Permanently install and support the adjacent component on the downward side of the slope. Then place the adjacent component on the upper side of the slope in its installed location, but able to be removed. It is important to have both adjacent components in their installed locations to get the correct length for the variable length section.

- Do not apply silicone at this point. You are only determining the overall length required.

2. Measure the space between the two adjacent components. Make sure all four sides of the gap measure equally.

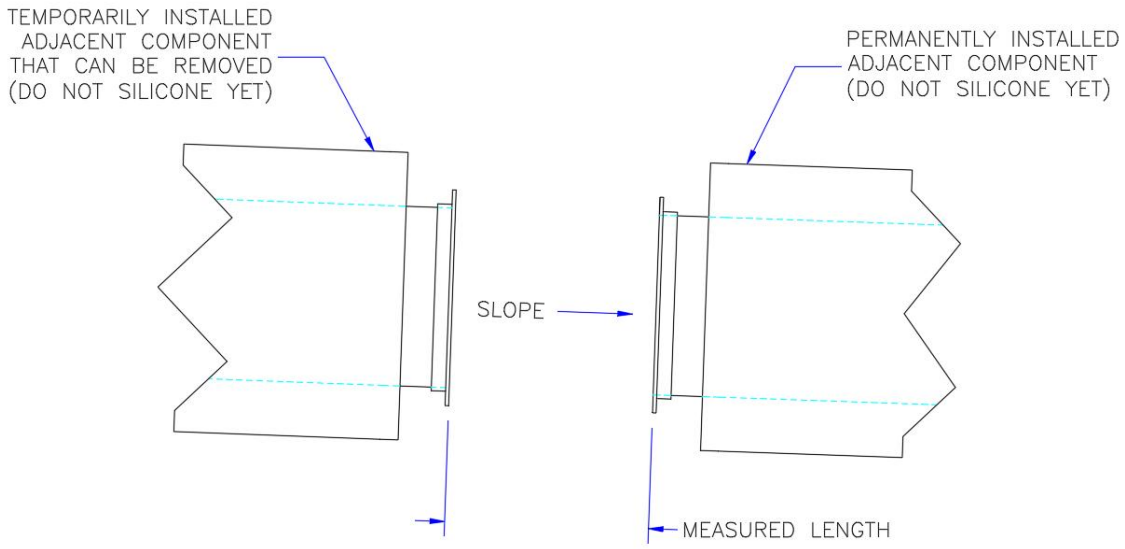

Figure 2: Measure the length between the two adjacent components.

3. After the VLS is disassembled, cut the un-flanged end of the VLS liner body to the measured length.

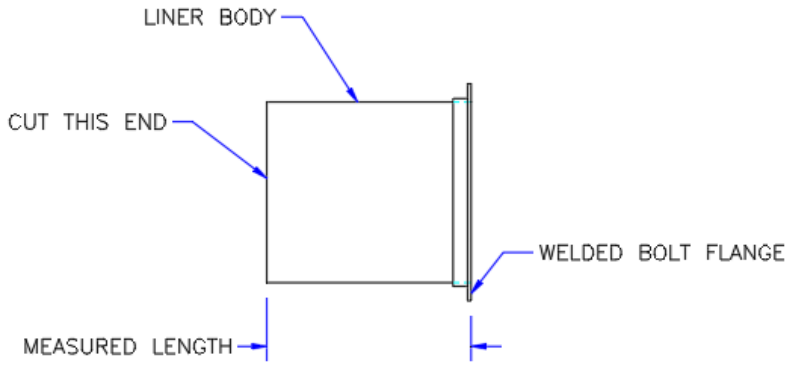

Figure 3: Cut the Liner Body to the measured length between adjacent sections.

4. Once the VLS Liner Body has been cut to the desired length, insert the ISB all the way into the cut end (do not apply any silicone). If the fit is snug, tap gently on the ISB with a rubber mallet being very careful not to deform it.

5. Test fit the 1/4" diameter threaded rod and cut it so that 1" protrudes past each end. (See figure 4)

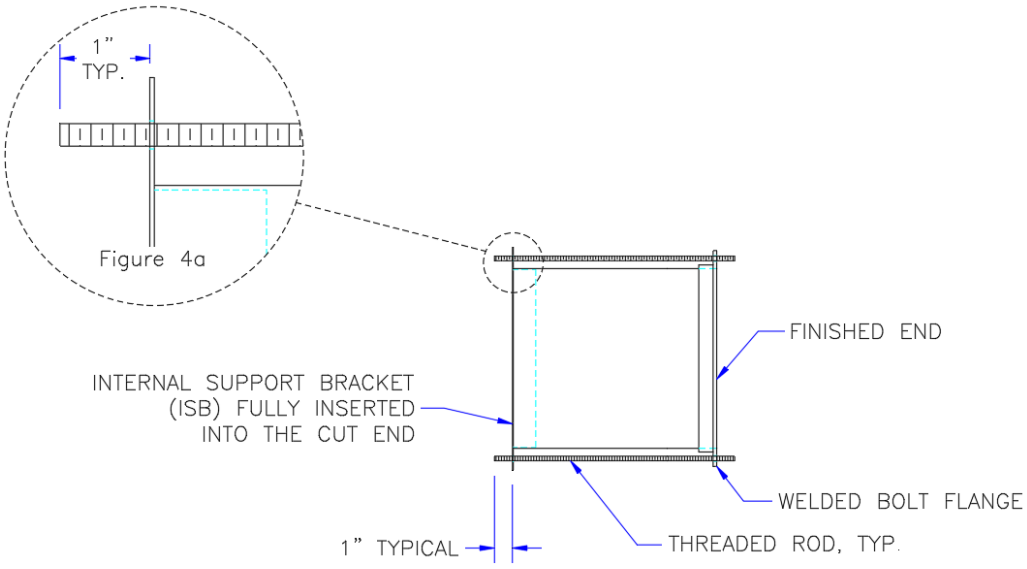

Figure 4: Threaded Rod should protrude 1" past each end.

6. Remove the ISB, and threaded rod from the VLS. Once again, if the fit is snug, tap gently on the ISB with a rubber mallet being very careful not to deform it. Also, make sure the adjacent component on the upside of the slope is out of the way so that the VLS can be attached to the component on the downside of the slope.

- As mentioned in step 1, make sure the adjacent component on the downside of the slope is permanently installed and ready to bear weight.

7. Install the finished end of the adjustable liner to the completely installed adjacent component on the downside of the slope using the provided silicone sealant, nuts, and bolts leaving two holes **on opposite sides** open for the threaded rods.

- It is important to choose holes that allow the threaded rod to pass unobstructed through the spacer. (See figure 7)

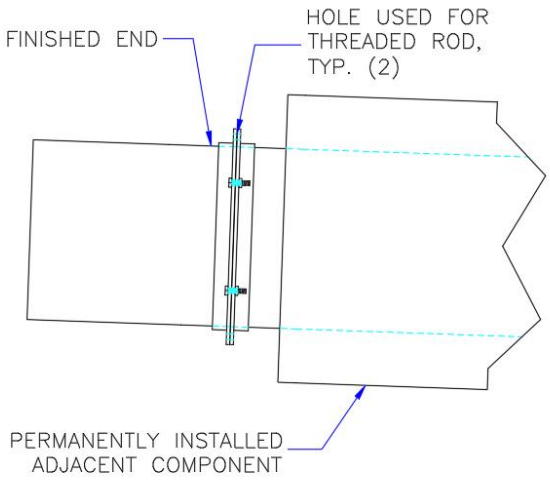

Figure 5: Install the finished end of the Liner Body to the permanently installed adjacent component.

8. Place one nut on each of the two provided threaded rods. The nuts should be no more than 1-1/4" and no less than 1-1/8" from the end of each threaded rod.

9. Install the two pieces of threaded rod by inserting the end with the nut into the two holes left open on the welded bolt flange of the VLS. Tighten another nut from the permanently installed component side so that the threaded rods are attached securely. (See figure 6a)

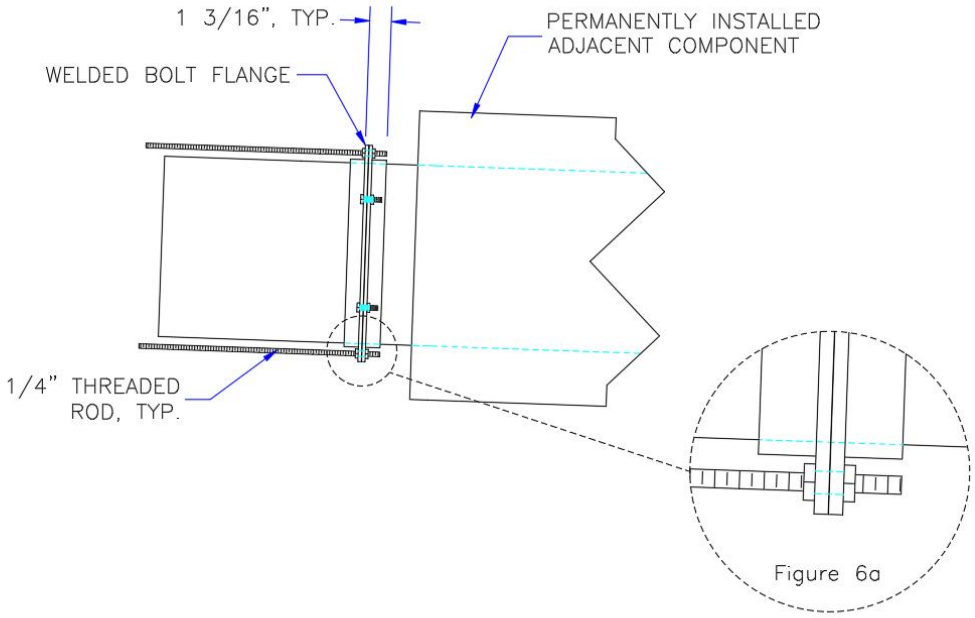

Figure 6: Tighten 2 Threaded Rods to opposite sides of the VLS.

10. Place one nut approximately 4" from the loose ends of each of the threaded rods.

11. Slide the Loose Bolt Flange (LBF) over the VLS making sure the threaded rod goes through the correct bolt holes.

12. Place a bead of silicone on the flat side of the LBF all the way around. (See figure 7)

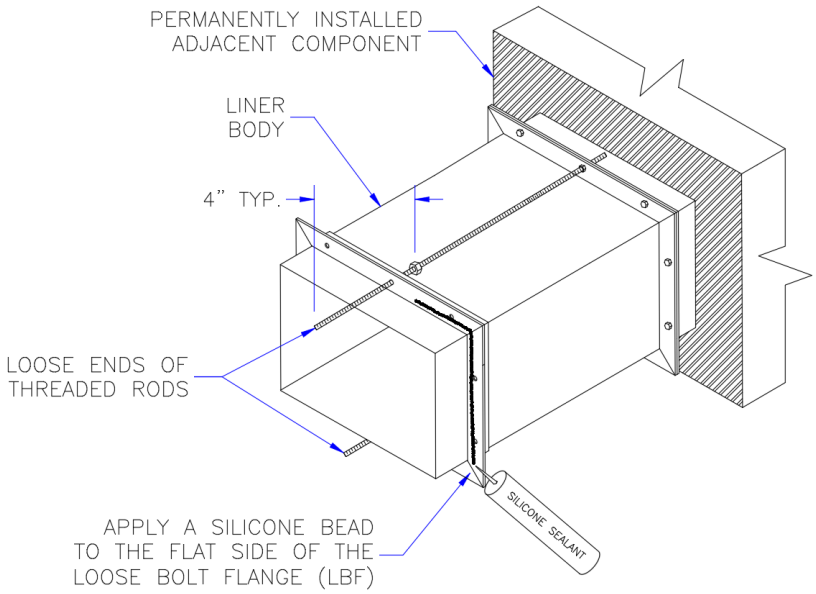

Figure 7: Slide the Loose Bolt Flange over the Liner Body and apply a bead of silicone.

13. Place a heavy bead of silicone all the way around the bend of the ISB. (See figure 8a)

14. Insert ISB all the way into the VLS making sure the threaded rods are going through the correct holes.

15. Then place another bead of silicone on the flat side of the ISB. (See figure 8)

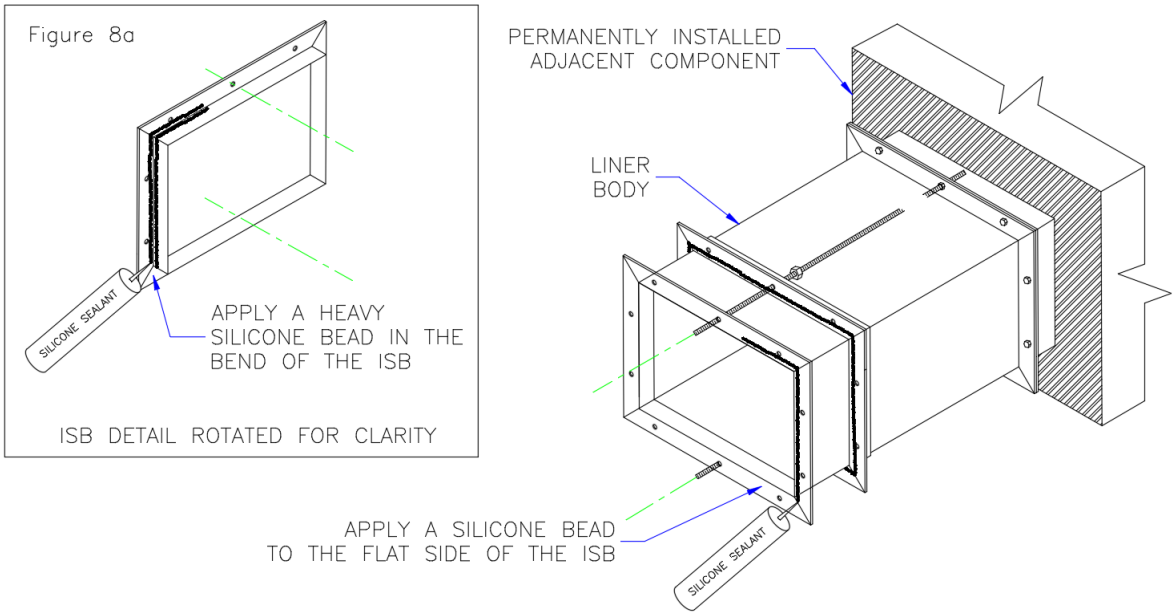

Figure 8: Insert the Internal Support Bracket into the cut end of the Liner Body and apply silicone to both.

16. Reinstall the previously removed adjacent component by making sure the threaded rods are going through the correct holes and tightening two more nuts to the loose end of the threaded rods (See figure 9a). Make sure the ISB is fully inserted in the VLS, and the previously removed component is tight up against the ISB. (See figure 9)

17. Move the LBF towards the ISB and tighten the nuts placed 4" deep on the threaded rod until they are holding the LBF tight against the ISB and the flange on the previously removed adjacent component.

18. Install the remaining nuts and bolts.

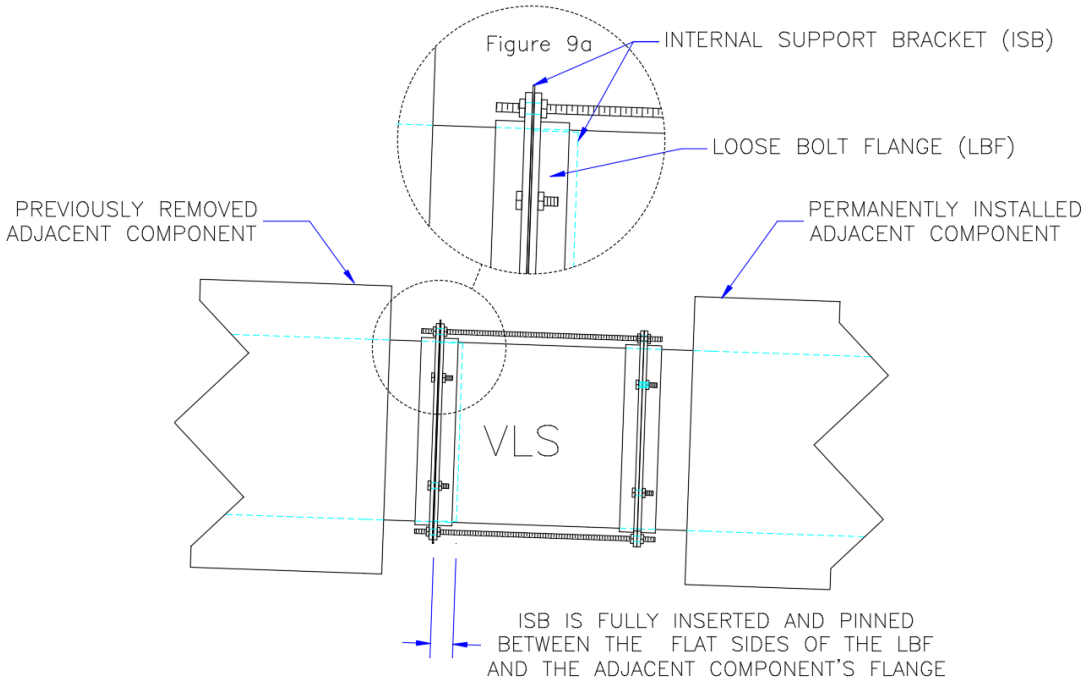

Figure 9: Reinstall the previously removed adjacent component.

19. Wrap 3 wraps of the 8" wide x 1" thick insulation that was provided for the completely installed adjacent component in the 7-1/2" space between the completely installed adjacent component and the spacer on the VLS. Make sure to overlap any seams in the wrap. (See figure 10)

20. Cut the 1" thick insulation provided with the VLS to 1 1/2" wider than the remaining gap between the two adjacent components. Wrap the liner 3 times with insulation being careful not to leave any gaps and overlapping any seams. (See figure 10)

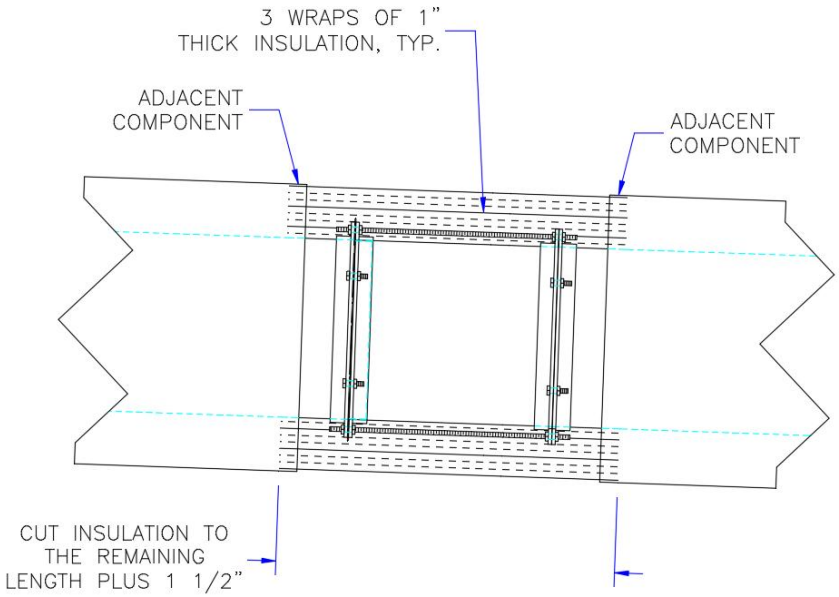

Figure 10: Wrap three wraps of insulation for GRZA and four wraps for GR4ZA.

21. Install the VLS cover band by centering the two halves over the entire length of the exposed insulation, making sure to overlap each adjacent component's shell. The cover band may require field-trimming when used between two fittings. If so, cut both halves of the VLS shell so that it overlaps each adjacent component's shell a minimum of 1". Fasten the two VLS half shells together with the provided nuts and bolts. (See figure 11)

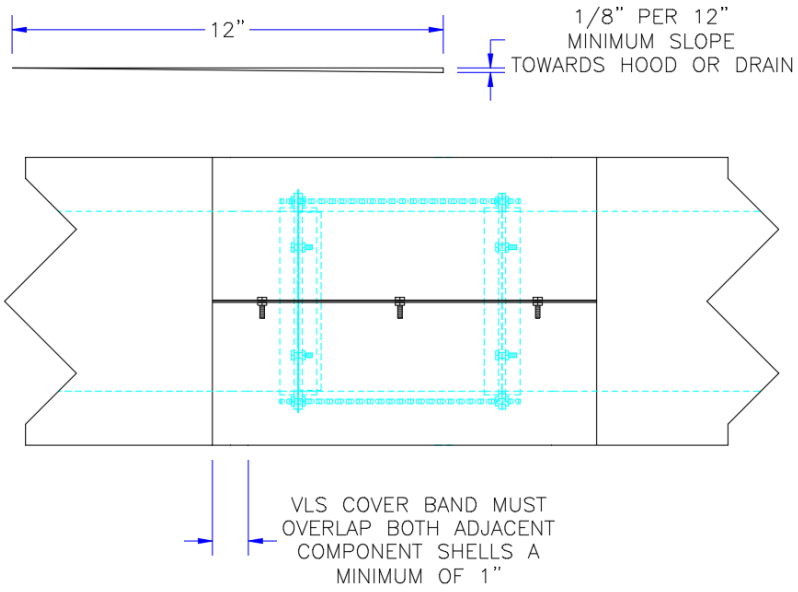

Figure 11: Install the VLS shell.