1. The first step is to make sure you have a clean installation area. Be sure to clean the concrete cone or top slab with a whisk broom or chisel. This will assure a flat seating surface free of rocks, gravel, blacktop, protruding concrete or frozen debris.

2. With the installation area now clean, measure the distance from the cone or top slab to the projected finish grade. When making this measurement, be sure to deduct the distance, or height, of the cover frame. Determine the net build-up of rings necessary to come within a 1/4 inch of the grade with the cover frame in place.

3. Now that you have your preliminary measurements, you will need to determine the best ring height combination to attain the necessary adjustment for your specific installation. In cases where grades are not flat, use slope rings to accommodate for this difference.

4. With the measurements determined and your required rings selected, dry stack the rings on the cone or top slab. Index any slope rings as necessary. With the rings dry-stacked, place the cover frame casting on top of the assembly and verify the height and slope match.

5. When the assembly is in place and you have your desired height and slope, mark the entire stack with a vertical line of spray-paint. Once you have your line, disassemble the set-up.

6. You are now ready to begin the actual installation. With all rings within arm's reach, apply a 3/16 to 1/4 inch bead of approved caulk butyl sealant or a 3/8 inch round rope ASTM C-990 to the cone or top slab following the male tongue as a guide. If the cone or top slab is extremely rough, a second bead can be added approximately in the middle of the flat. This is done to assure a complete seal. PLEASE NOTE that it may be necessary to create a flat sealable surface using mortar if the cone or top slab is too badly chipped up prior to installing the ring.

7. With the sealant applied, place the first ring down onto the cone or top slab with the male lip into the opening. Make sure to line up your paint strip. In most cases, this first ring will fit securely into the opening.*** Apply a 3/16 to 1/4 inch bead of an approved caulk butyl sealant or a 3/8 inch round rope ASTM C-990 on the bottom of the next ring following the male tongue as a guide. Be sure to apply the sealant to the male lip ensuring that it covers the entire 360 degrees of the ring

8. As before, place the second ring down onto the first with the male lip interlocking into the center of the first ring. For each ring, make sure to line up your paint strip.

9. Repeat the assembly as you did in the prior steps for each additional ring, applying the bead of sealant and placing the rings on top of one another being sure to line up the paint strip.

10. At this point, you will have all the rings stacked with the sealant applied.

11. You will now proceed to install the cover frame. Prior to setting it in place, apply a 3/16 to 1/4 inch bead of the approved caulk butyl sealant or a 3/8 inch round rope ASTM C-990 on the top of the last ring. Be sure to apply the sealant in a location so that it contacts the cover frame the full 360 degrees. If necessary, you may apply a double bead of sealant.

12. With the sealant applied, set the cover in place verifying that it is centered on the top ring.

13. At this point, the installation of your LADTECH adjustment rings is almost complete.The final step is to press down with a back hoe bucket compressing the butyl rubber between all the rings.

13.a At this point, the installation of your LADTECH adjustment rings is complete.

13. b **As you can see you can immediately back fill the installation area and proceed to your next installation site.** INSTALLATION COMPLETE!!

**The cone or top slab may be eccentric or undersized and may not allow the ring to sit flush. In this case, the lip on the adjustment ring may be cut as necessary to allow the ring to sit flush and align on the manhole assembly

1. First, determine the amount of lip to be removed.
2. Using a common carpenter's saw, make a perpendicular cut at each end of that distance, being careful NOT to cut into the base surface of the ring. Hold the saw flush against the lip's mounting surface and proceed to cut off the portion of the lip between the two perpendicular Cuts. **CAUTION:** BE SURE NOT TO cut beyond the perpendicular cuts you have made.
3. The ring can now be installed flush to the manhole, top slab or cone assembly utilizing the approved butyl sealant.