



20" Synergy Reef Overflow

Thank you for choosing the **Synergy Reef Overflow**. Please note that this is a Do-It-Yourself project and can be installed in either glass or acrylic aquariums. Always keep in mind that working with power tools, glass and acrylic have inherent dangers, including personal injury, electrocution, accidental death, or cracked glass, so please be careful and wear gloves, shoes, pants, eye protection, etc... If you have any questions or concerns, please email us at sales@synergyreef.com. Prior to installation, be sure that you have everything you will need to complete the installation. This includes, but is not limited to:

- ✓ *****Aquarium, either glass or acrylic with a thickness of 3/4" to 1.5"**, if it's glass please make sure the panel you are going to drill is **NOT TEMPERED!** If you are uncertain about this then **STOP** and please contact the tank manufacturer. If you attempt to drill a tempered panel, it will shatter.
- ✓ Cordless drill with adjustable clutch. We recommend the use of a cordless drill to avoid electrocution, as water needs to be applied over the hole saw during drilling. The clutch will limit torque transfer to the glass, reducing the chances of cracking the glass. Always set your torque to the lowest level on the drill, patience is a virtue when drilling glass.
- ✓ Drilling template (included with the Synergy Reef Overflow Kit).
- ✓ Tape measure, to determine mounting location.
- ✓ Permeant Marker or wax pencil to mark mounting location.
- ✓ Spring clamps and/or double sided tape to hold the template in place while you drill.
- ✓ Water source. Spray bottle, garden hose, bucket, etc...
- ✓ Correct Holesaw:
 - 63mm or 65mm is used for both our 16" Overflow and 20" Overflow.
 - For glass you will need to purchase a diamond coated holesaw located on our website www.synergyreef.com
 - For acrylic you will need a 2.5" standard holesaw with teeth sold at most home improvement stores.
- ✓ Synergy Reef Overflow Kit.

Drilling and Installing:

1. Determine your desired water level. We find with typical applications within our recommended flow rates the water level in our boxes will rise 1/4" to 1/2" (depending on GPH of flow) from the bottom of the teeth slots. So mark the drilling template about 1" below the top and this is a rough guide as to where your water level will be. Use this measurement to determine where you would like to place your internal overflow box. Once you have your desired water level determined you can measure and mark how far down the holes will be from the top of the tank using our template. We recommend at least 1.5 to 2 inches from the water level to the top of the tank for rimless aquariums. Tanks with bracing, the water level will be higher.

2. Now locate the drilling template where you have determined you need to drill the hole(s). Note that the template is the same outline as the actual Front Overflow Box. Make sure the template is in the CORRECT UP orientation. Manually align the template on the inside of the aquarium and MARK the holes with your marker.
3. After marking the holes locations, use the Rear Overflow Box and align it to the circles you just drew on the aquarium. If the rear box aligns with the holes and is not hitting the rear plastic trim on trimmed tanks, then you are ready to mount the template and drill. You can use duct tape to mount the template, although we do recommend using spring clamps to hold it in place. DO NOT use screw type clamps, these can cause too much localized stress and crack your glass!
4. Make sure to protect the opposite panel and position a bucket or reservoir to catch the plug when it drills through. Also if placing a bucket on the glass, protect the glass from the bucket by placing a piece of paper towel and/or clean cardboard so that the bucket doesn't scratch the tank.
5. Ideally you will use a cordless drill with an adjustable clutch that can be set very light. This will prevent extra force on the glass should you bind the bit during drilling. It is now time to start drilling!! Pour some regular old water in the template hole to cool and lubricate the holesaw, you will want to keep the bit wet through the whole drilling process. The provided template will keep your holesaw in place. Water will channel thru the template. This is normal.
6. After drilling for a bit you should be able to remove the hole saw from the template and see a groove starting in the glass. Once you see this groove you may want to remove the drilling template; it has served its purpose. Be sure to start both holes before removing the template.
7. Remember to keep the hole-saw wet through the process for cooling and lubrication. As you get near to the end of drilling the hole you will see the water start to leak through, this is the sign that you are close. At this point you will want to use very light pressure and patience to minimize chip out on the opposite side. However, some chips is normal and likely so don't worry about them as the gasket will cover and seal them.
8. Once you drill both holes, clean up the drilling mess and dry the aquarium and proceed to install the boxes.
9. Remove the nuts from the bulkheads. Place 1 gasket on each of the bulkheads on the front overflow box and mount the Synergy Reef Overflow by inserting the bulkheads through the holes you just drilled from the inside of the tank, this gasket will be between the front overflow box and the tank. Get another gasket and put it over each bulkhead on the outside of the tank. This gasket will be between the tank and the external box. Insert the external box through the bulkheads and secure it in place with the 2 nuts your removed earlier and hand tighten. Over tightening the bulkheads can cause the gaskets to leak. See figure A.1 on next page.
10. Your overflow is now ready to plumb any way you choose. Enjoy!

More information can be found on our website www.synergyreef.com

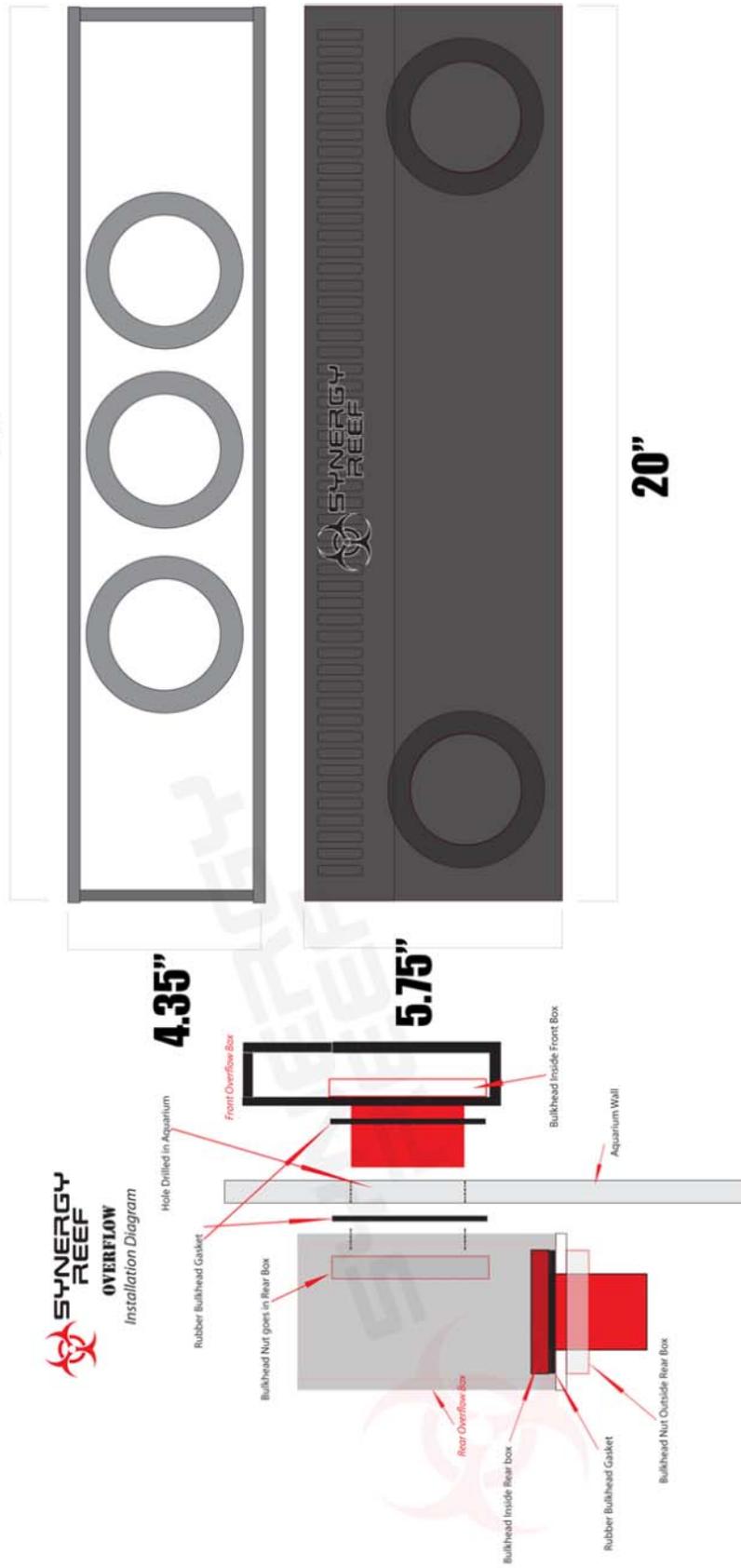


FIGURE A.1

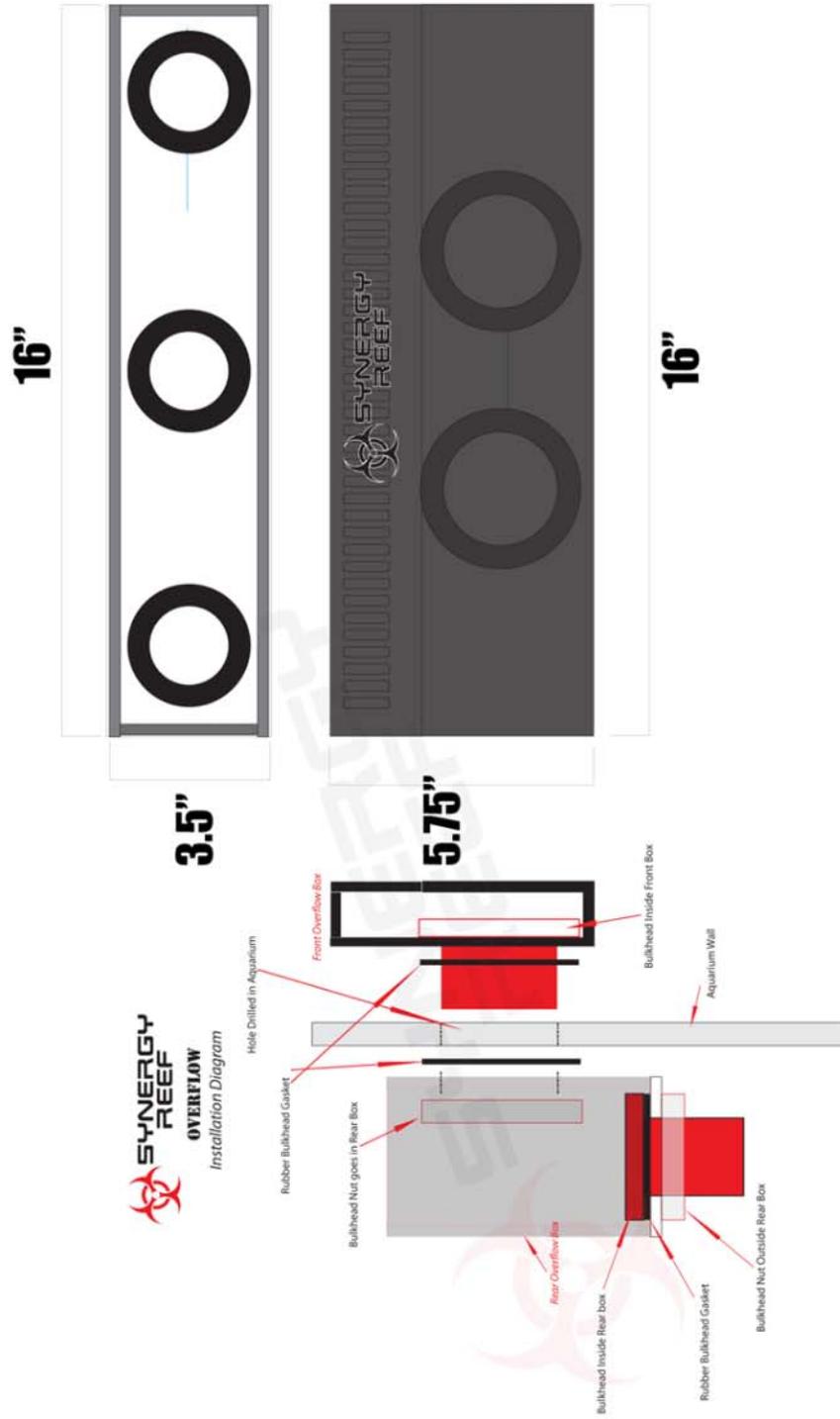


FIGURE A.1.1