

X-Stream Hybrid Pro

Kit Essentials



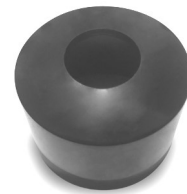
Bucket w/6' hose



Leather Cup Assembly



Gamma Lid Assembly



ABS plunger Cap



Inlet Valve

Threaded Ring

Exit Valve



Kaboodle



Items not included in kit



3/4" PVC Tee



3/4" x 2-1/8" PVC Coupling (3)



3/4" x 1-1/4" PVC Female Bushing



2" x 1-1/2" ABS Reducer



1-1/2" ABS San Tee



1-1/4" PVC Coupling (2)



1 1/4" PVC Female Adapter
(Electrical Department)



1-1/4" PVC Pipe



2" ABS Pipe

Best from Home Depot



3/4" PVC pipe

Introduction

You are about to build an X-Stream Hybrid Pro hand pump. The most popular and well developed suction pump in the world. Several essential features of the X-Stream are proprietary and produced only for Gold-N-Sand. That's why it would be impossible to build one without the DIY kit. Before we get started lets go over a few of our unique features.

- **Patented Valve System** Our innovative design reduces clogging and allows the user to replace the diaphragm flappers as needed. An extra set comes with your kit.
- **Leather Cups** For centuries humans have used leather in different types of pumps and windmills. The unique properties of leather make it a perfect pump seal. The leather cups are cut 1/16th less than the diameter of the plunger tube. This allows for the cups to absorb water and swell making a tight seal which is continually lubricated by the water itself! There is nothing man-made that can compare to the durability of leather. Two things you should be aware of: Do not use a conditioner and do not let the leather freeze.
- **Totally Submersible** Over the years (since 2008) Red has designed several models to improve the Gold-N-Sand experience and the X-Stream Pro represents the best features of all the models. Making a submersible pump is totally up to you and quite simple. This option will be explained further as we build your own hand pump.
- **Customize your pump!** The standard X-Stream Hybrid Pro has specific dimensions based on several factors which include an average height of the user and shipping concerns that make it more efficient to ship. You can change the length of your pump since shipping is not an issue.

Lets get started!

Safety warning!

Wear Safety glasses and follow all safety procedures for all your tools.

Step 1. Cut 2" ABS Body Pipe

The standard length of ABS pipe is 20"

Customize: Depending on you height or other factors you can cut this piece to any length desired.

Bevel the inside of the tube to insert the plunger easier. The Leather cups need this.



Cut 2" ABS to your desired length



Rounded on the inside makes it
Easier to insert plunger.

Step 2. Cut 3/4" PVC Plunger Pipe

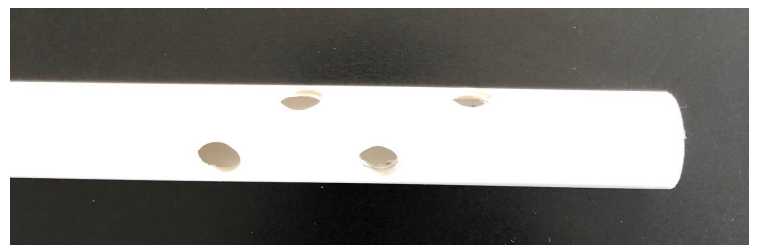
The standard length is 18*

Customize: Make the plunger Tube 2" shorter than the Body .

Note: if you intend to dive with the pump drill 8 -3/8" holes starting 2" from one side.



Plunger body will include the handle
and Leather cup assembly.



Divers can drill these holes to
make the pump submersible

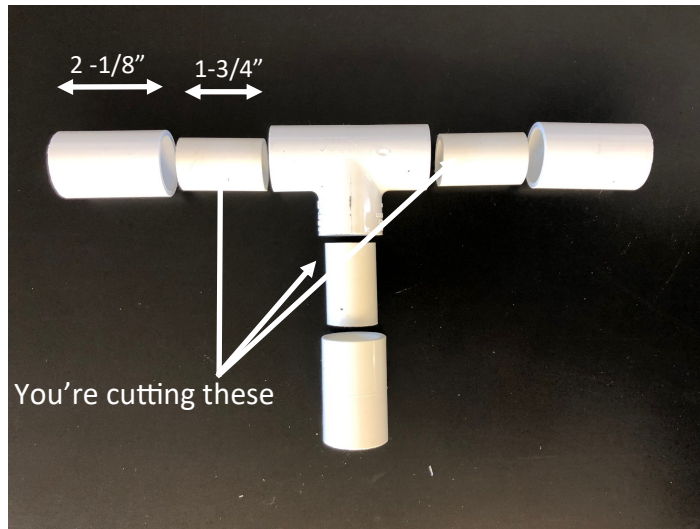
Step 3. Cut 3/4 coupler inserts for Handle

The Standard length is 1-3/4 x 3

Note: some 3/4 couplers are smaller than the standard length of 2 -1/8 "

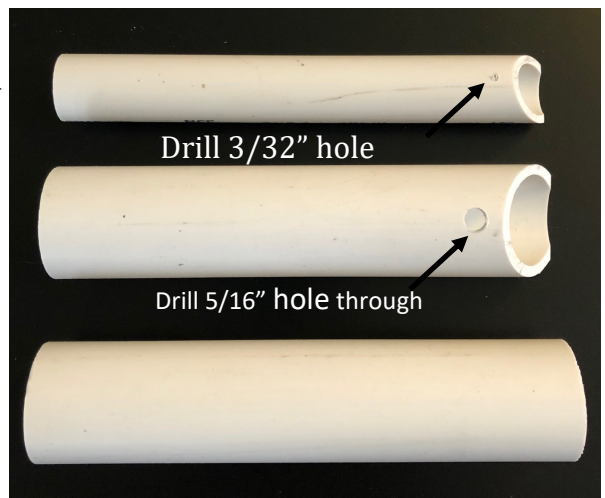
If your couplers are 2-1/8" then your inserts will be 1-3/4" IF NOT please

Cut your inserts to fit.



Step 4. Cut 3/4" and 1-1/4" PVC Pipe for nozzles.

Cut an 8" piece of 3/4 PVC angling one end.



Cut two 8" pieces of 1-1/4 PVC angling an end of one.



Step 5. Insert Roll Pins in angled nozzles.



The roll pins act a "Rock Blockers"

Step 6. Glue 1 1/4" PVC Bushing to 3/4" angled nozzle.

3/4 "x 1-1/4" PVC Female Bushing

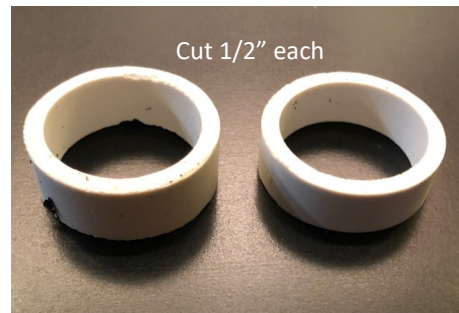


Glue the bushing to the 8" nozzle with PVC

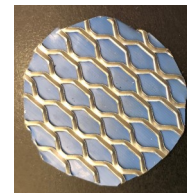


Step 7. Build Bedrock Nozzle

Cut (2) 1/2" sections of 1-1/4 pipe



Trace outline from one 1/2" piece on screen



Insert one of the 1/2" inch pieces in 1- 1/4 Coupler. Set in the screen and place the other 1/2" over it using a small amount of Glue. Hammer the piece flush with the coupler.



Finish product!

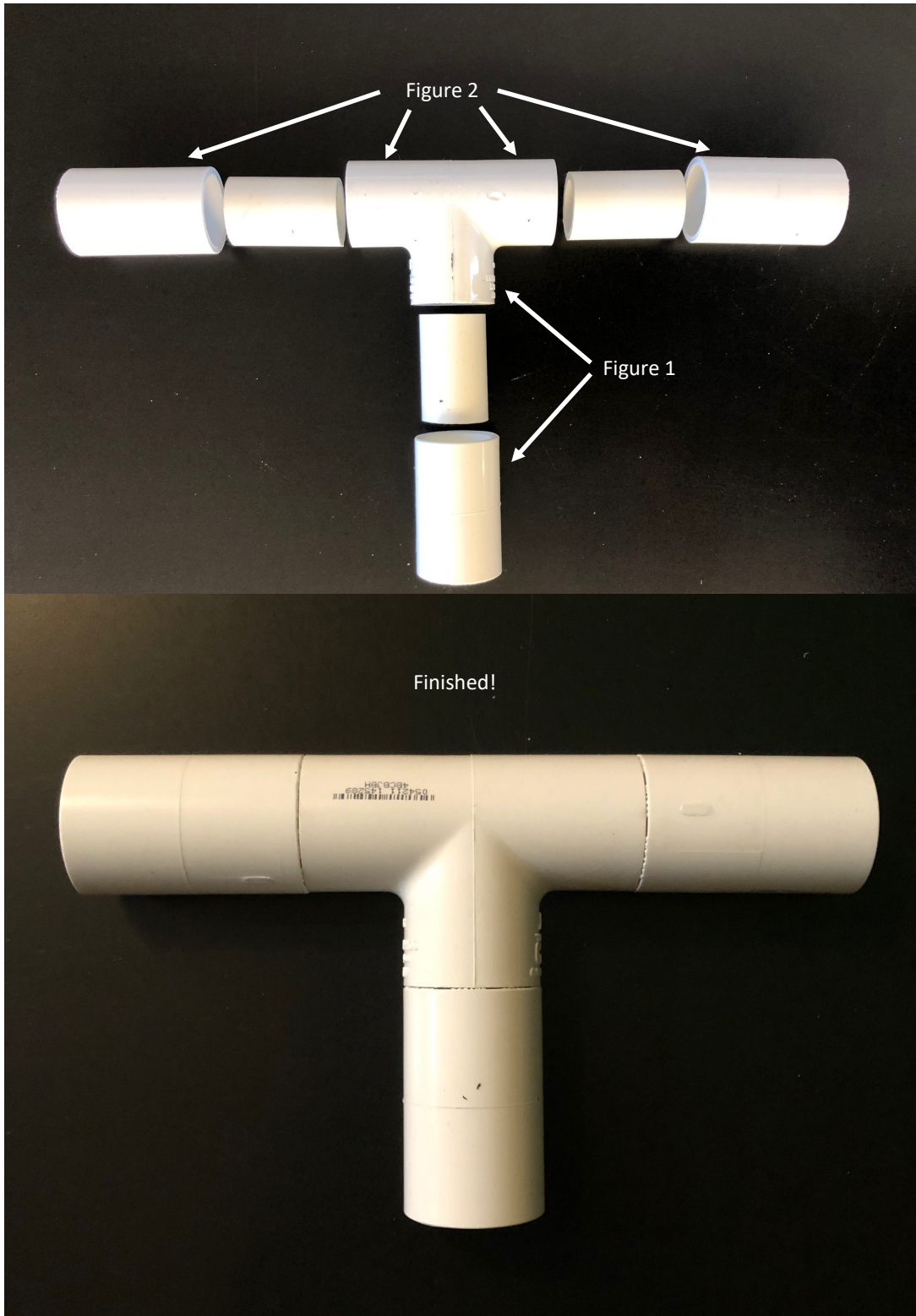


Step 8. Build Handle Assembly

Carefully apply PVC glue to inside Tee and coupler shown in fig. 1.

Force the parts together using a rubber hammer.

Next, apply glue to the remaining 2 Tee and couplers and force together. Figure 2.



Step 9. Build Leather Cup Assembly

Find the fitting that looks like this (it called a Kaboodle)

Insert the 5/16" bolt and place a washer over the threads (Fig . 1).

Place cups back to back with the other washer on top (Fig. 2).



Kaboodle

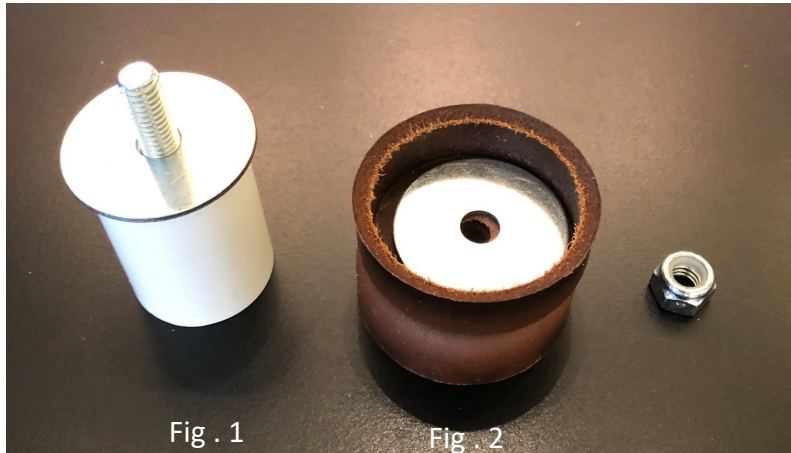


Fig . 1

Fig . 2

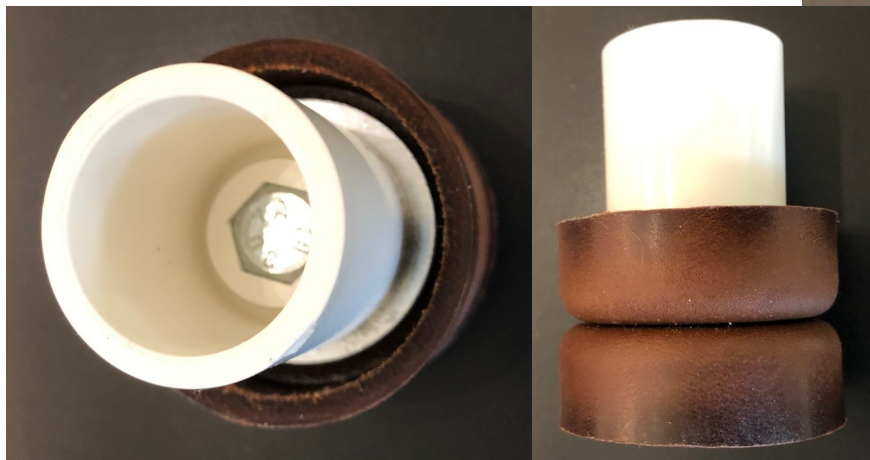
Place cups and washer (Fig . 2) on bolt (Fig 1) add the lock nut and tighten with 1/2" wrench.

You now should have two leather cups back to back sandwiched between two washers.

Your Leather Cup assembly should look like this.
(Fig. 3)



Fig . 3



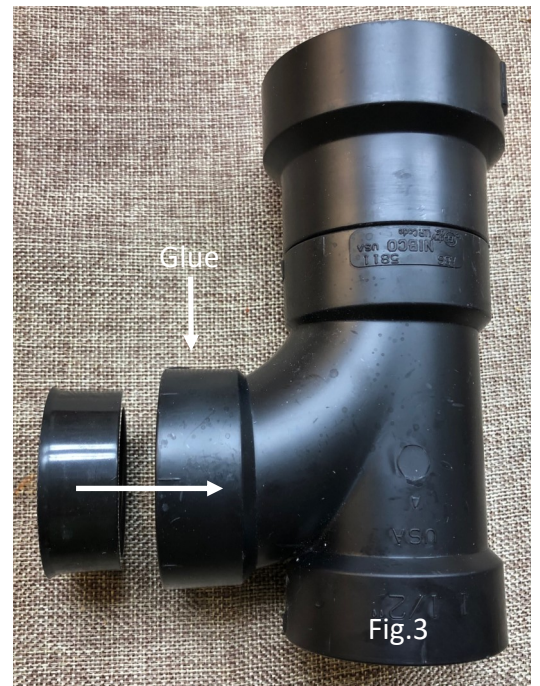
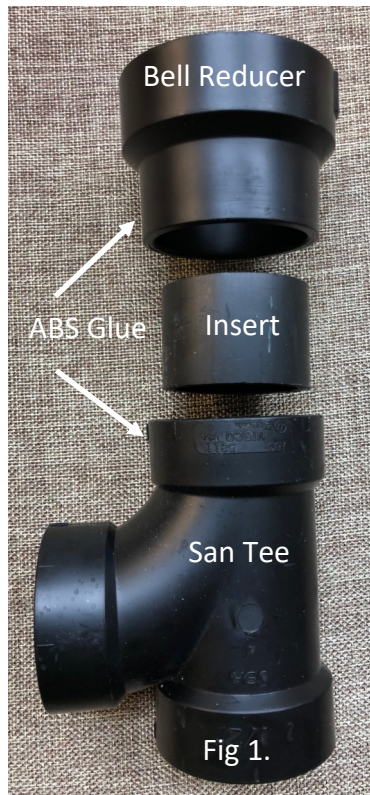
Step 10. Build Valve Assembly.

Locate the 1-1/2 San . Tee , 1-1/2 insert, and Bell Reducer.

Using ABS glue, join the insert to the Bell Reducer. It may be necessary to use a rubber hammer.

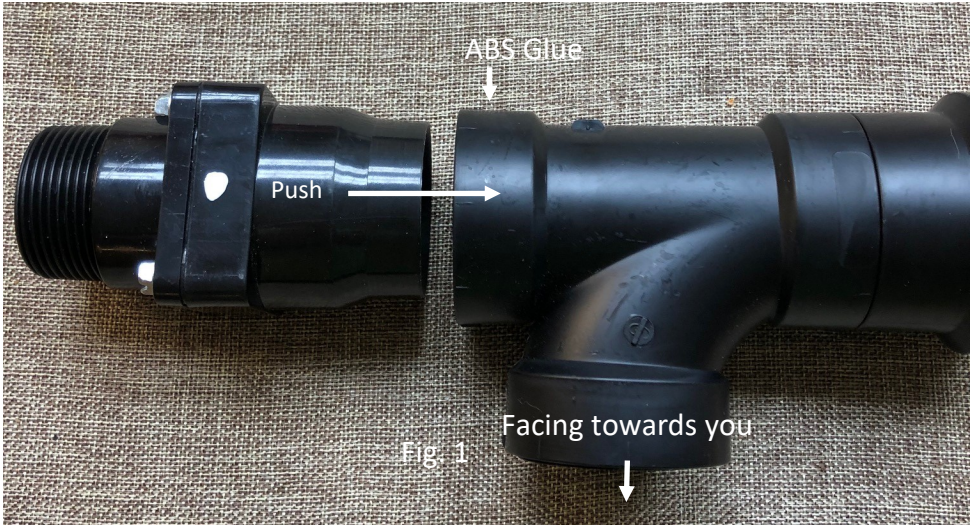
Next, apply ABS glue to the San Tee and join the Bell Reducer Fig.1. When finished they should look like Fig. 2

Apply ABS Glue to the San Tee and insert the Male Threaded Bushing giving a 1/4 turn to seat glue Fig 3.



Step 10. Build Valve Assembly continued:

Place the assembly where the threaded ring is facing you and white dot facing up as shown in Fig 1



Completed Valve Assembly!



Step 11. Lid Assembly

Locate Lid assembly parts:

Notice the direction the beveled side is pointing. The lid is between the nut and this fitting. It only fits one way.

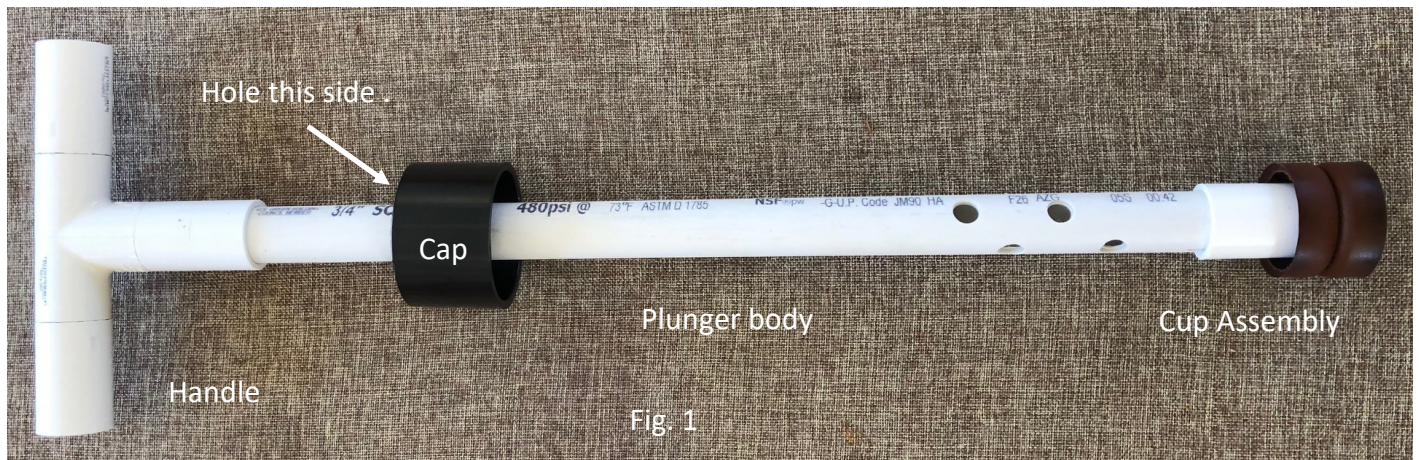


At this point, all pump component assembly parts are complete. Now lets put it all together!

Step 12. Build your Plunger

Note: If you have not cut your desired length of 3/4" PVC pipe for the plunger please do so now. Remember that it must be 2" shorter than the 2" ABS pipe cut for the Pump body.

The Plunger consist of 4 parts; the Handle, the body , the cup assembly and the cap. See Fig.1



Please follow these instructions:

1. Apply a generous amount of PVC glue to the inside coupler of the cup assembly.
2. Insert the plunger body (drill hole side), place the cup assembly on a hard surface and use a rubber hammer to force the body completely in the cup assembly. The fitting will be tight so use some force to seat the body. See fig. 2
3. **This part is very critical,** Place the cap on the plunger body before gluing the Handle with the hole closest to the Handle.
4. Before gluing the Handle, double check the cap . Make sure it's on correctly and not upside down. This cannot be undone so be confident it's correct. See Fig. 1
5. With the cup assembly on the hard surface (is the cap on?) apply PVC glue to the Handle and use the rubber hammer to seat.



Step 13. Build your pump

This is the last step where you complete your pump and start prospecting!

1. If you decide to paint your pump body this is the time to do it. At GNS we use a flat black with the glossy label which we think looks awesome. You may decide to customize your pump and we think that awesome too!
2. This last step is quite easy and will only take a couple of minutes. Simply apply some ABS glue to the 2" side of the bell reducer and insert your pump body in with a slight twist and hold it in place for 30 second. Also, if you beveled one side insert the opposite end.
3. The exit valve simply threads in and the white dot shows where the 12 o'clock position is.



You can contact me at: 720-628-3519 sometimes it's better to text or email Red@gold-n-sand.com I live in a very remote area of Colorado and run an Air Bnb called Red's Retreat so feel free to check it out too! Because of the thin air my cell is sketchy but you can try . Thanks for being my customer and let's hook up at some of the GPAA gold shows!