High Powered Water Cannon

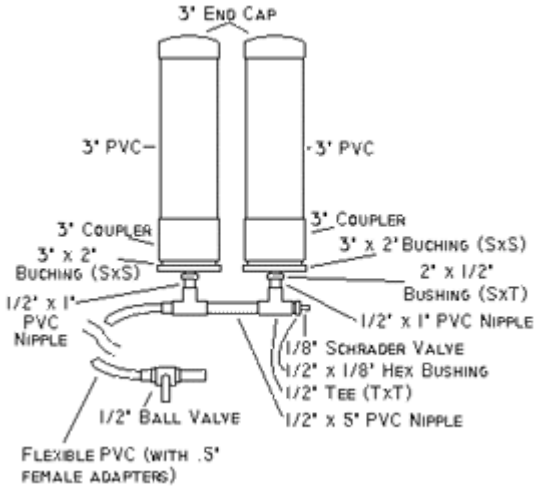
My friend and I had water wars with our neighbors back in middle school. Standard water balloons just weren't doing the job. We knew we needed something with more **power**. I originally got the idea from my water rocket. I thought; what if I held the rocket - a blast of water wood shoot out with great force. From that I came up with this idea.

My friend and I actually made two designs. One cannon was huge, but was portable and did not require a constant air/water hook up. The other was much smaller and had the ability to shoot a constant blast of water.

Design #1

This water cannon had two three inch chambers which were connected via tees and PVC nipples. There was a flexible hose which was then connected to a ball valve and then to the nozzle. We first thought about using an electric solenoid valve, but we changed are minds and thought this would be simpler. The two tanks are held in a large backpack, which was worn.

Theory: The chambers were filed half with water and then pressurized to about 90 PSI. When the valve is opened, the air pressure pushes the water through the nozzle at a very high speed.



Design #2

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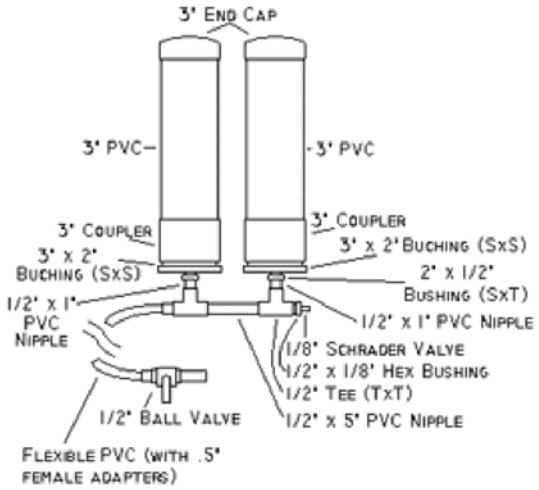

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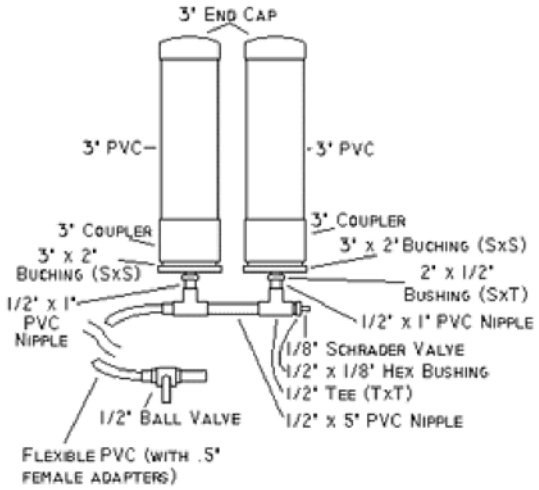
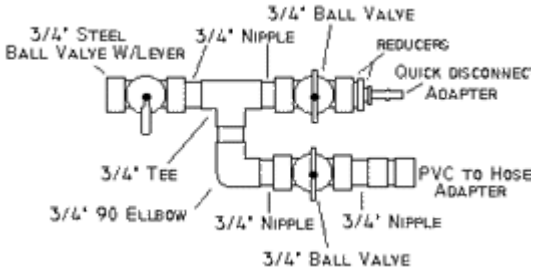


Design #2

This design does not require the huge backpack setup, however the cannon must be permanently connected to a air/water supply. There is an air compressor 'quick disconnect' adapter which is connected to the gauge, which then is connected to a ball valve. The hose is connected by using a hose to PVC thread adapter which is connected to another ball valve (The bottom hose). Both of these air/water lines are then joined together to a main valve (the blue one).

Theory/operation: The water line is turned on and is allowed to flow through the setup. Then the air line is turned on (by means of the ball valve). The incoming air line pushes the water out at a great force. With the compressor pumping continuously, a constant water burst is achieved.

Warning: If the air line and water line are opened and the main valve is closed, air can enter the water pipes of the house (or whatever source). This could in tern rupture the pipes. Careful! More Pictures



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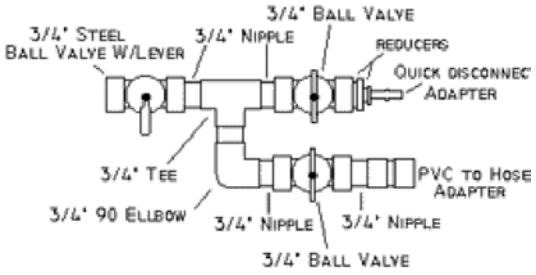

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