Project Title:	Alternative Methods for Hot Tub Jet Action
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Area:	Mechanical Engineering
Sponsor:	Master Spas

Master Spas in Fort Wayne, Indiana is the world's largest manufacturer of swim spas and a leading manufacturer of hot tubs. Master Spas is looking for an alternative method for one of their hot tub models, the Twilight Series TS 7.2, to move water without requiring external plumbing. Current hot tub jet designs are effective at providing relaxing and therapeutic experience by mixing air and water at a high flow rate. However, this design requires water and air hoses to be run to each of the 38 jets, where each connection takes time to assemble and mount on the hot tub and poses a risk of leakage. An alternative method that provided the same experience and maintained key features of the current design would reduce manufacturing costs, increase production rates, and improve reliability. The alternative design would need to provide a similar flow rate of water, consume similar amounts of electricity, be sturdy, and maintain a similar life span to the current design. The design would also need to adhere to American National Standard Institute (ANSI) ICC-6 2013 10.2, as well as other general standards for any safety concerns and regulations.