

# Non CO2 Dragster Overview

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The following is all material I have that is related to my presentation at the 2013 BCTEA conference

I will admit that I had the idea for this come from a couple of sources. I read Make: Magazine, with that I read about their Compressed Air Rocket article in which they constructed a PVC bike pump powered rocket launcher. In Jr. High we also had a similar launcher built out of threaded steel pipe that ran off of the compressor and was powered by a ball valve which was very inaccurate. Between these two I decided to build a hybrid and came up with a rocket launcher that could shoot 330 ft. consistently. While setting up at my new school I discovered a compressed air launcher for dragster. I hooked it up and the results were less than expected. The launcher operated on a manual valve, but the problem was that before the valve could be fully opened the cars had already left the launcher. I decided to build an adapter for my launcher and have it electrically launch cars as well. The results were great.

## The Make: launcher has some flaws:

PVC has some issues such as UV decay as well as their need to wrap it in Duct Tape in case it blows up. Even in their article they suggest building it out of steel. With this I recommend building a steel tank if at all possible, since unlike Make: we are building this to withstand years of student abuse rather than a few weekends of light use. The Make: launcher has 30 Cubic Inches of volume, if you are using a bike pump a smaller volume may allow for faster filling but may not be enough to launch two cars at the same time.

## Required Materials To Build My Launcher:

A thick walled steel tube that has a volume of 80+ Cubic Inches (Salvage)

Thick steel material to cap both ends (Salvage)

One steel female 3/8" pipe thread coupler (to fit the compressor fitting \$2)

One steel male 3/4" Male thread pipe (to fit the electric valve \$2)

One 20 Volt irrigation Valve (\$30)

A power supply close to 20 Volts of two 9 volt batteries (A Thrift Store Laptop Chargers are the best that I found \$3)

Spring loaded switch (Fridge Door Switch \$3)

Assorted pipe couplers (\$10)

10' of 1/2 Pex Pipe, collars and assorted fittings (est \$12 Home Depot )

Teflon tape (\$1)

Wire, Electrical tape (\$5)

\$68 Depending on what you already have or can salvage

## Specialty Required Tools

Welder (One could also build launcher out of threaded steel pipe)

Pex Pipe Crimper (Most hardware stores in my area seem to lend them out if you buy the material from them, one style of crimp can be closed by using a CV Joint Crimping tool as well)

## Basic Option for Launcher

Note: Square tubing is nice since it can double as a stand

