



This presentation will cover the conversion of the stock Pop-Off valve on a Nissan 300ZX Z31 which is set for about 8 psi to a higher psi.

The boost can be increased on the turbo by installing a boost controller. Visit [www.bobsharpzcarclub.org](http://www.bobsharpzcarclub.org) to find out how. When the boost is increased above the stock pop-off valve (relief valve) the stock valve will bleed of the boost.

There is a number of ways to make this mod. One is the "washer method", and the "drill the hole and install the spring." I am sure there are other methods. The hole can be plugged with a 1" npt plug. You can also, search Ebay.com for a HGK or Greddy out of production valve.

The old valve needs to be disassembled to make the needed modifications. The top of the valve cover is drilled out where the pin holds the valve together.



This is where the valve is located on the engine.

The valve can be removed with a Crescent 10" wrench or a pipe wrench.



Photo courtesy of  
Eric90na84AE

This is a picture of plugging the intake plenum with a 1" npt plug. Doing this will eliminate the safety factor.

To start the project drill out the center rod that holds the valve together. Once the pin is disconnected from the valve cover plate the rest is simple. Install the new spring. Just insert the new pen through the valve assembly. Then slide the cotter pin into place. Then tap the tabs back into place.



To remove the valve assembly, just bend back the 3 tabs that hold it in place.

Drill out here

Valve Assembly





This is the pin that was drilled out. You drill the top of the valve until the cover plate separates from the pin. The valve can be taken apart completely. Replace it with a 3/8" x 2" Clevis Pin.

The shorter spring is the original one taken from the stock valve. The spring to the left needs to be cut the same length of the original spring and then inserted into the valve. The valve pressure was increased to about 14 psi. This spring was bought in a hardware store. You may want to experiment with others.



Note: You may need to experiment with springs in order to get the right one. HKS springs may still be available.

Clevis Pin

This is a picture of the valve put back together with the new pin installed. This Clevis pin can be bought at most hardware stores.



This is a picture of the valve body just before final assembly. Note the cotter pin to the left of the valve to hold it all together.



A few washers are needed to separate the valve cover plate from the valve body.

Washers

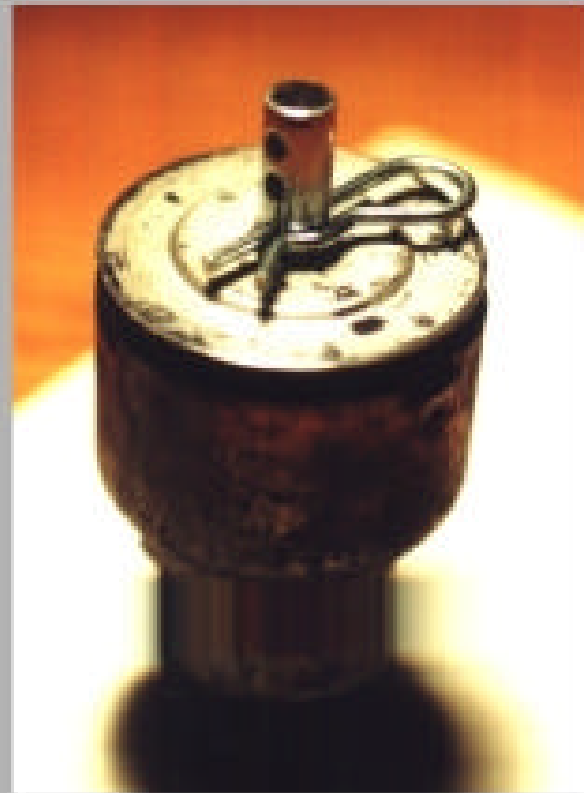




The valve cover plate is placed on the valve body.



Note that when the cotter pin is inserted. The valve cover may be too loose.

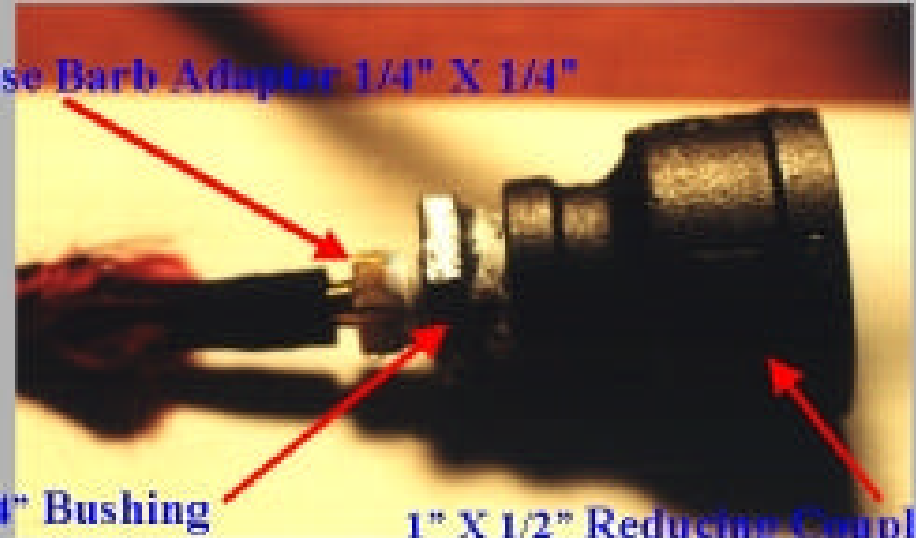




A few washers are placed on top of the valve cover plate to hold it securely in place. Then the cotter pin is installed

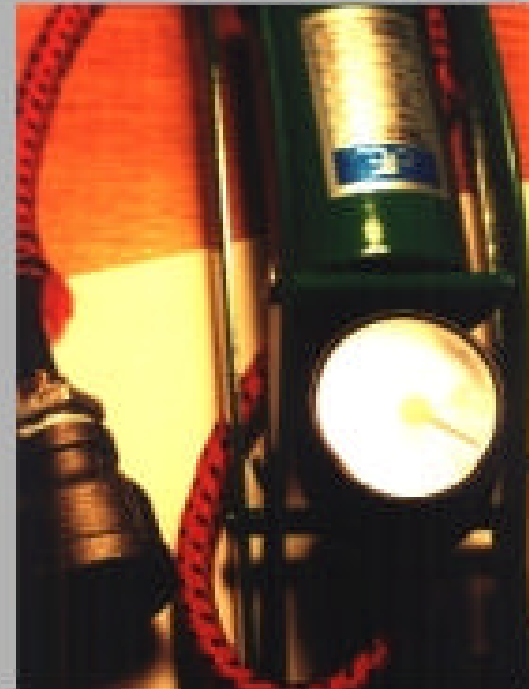
This is a test device that I created to test the valve. It is crude and not very accurate, but it will tell you if the valve will open when under pressure. It is made from a bicycle pump and hardware fittings

ID Hose Barb Adapter 1/4" X 1/4"



1/2" X 1/4" Bushing

1" X 1/2" Reducing Coupling

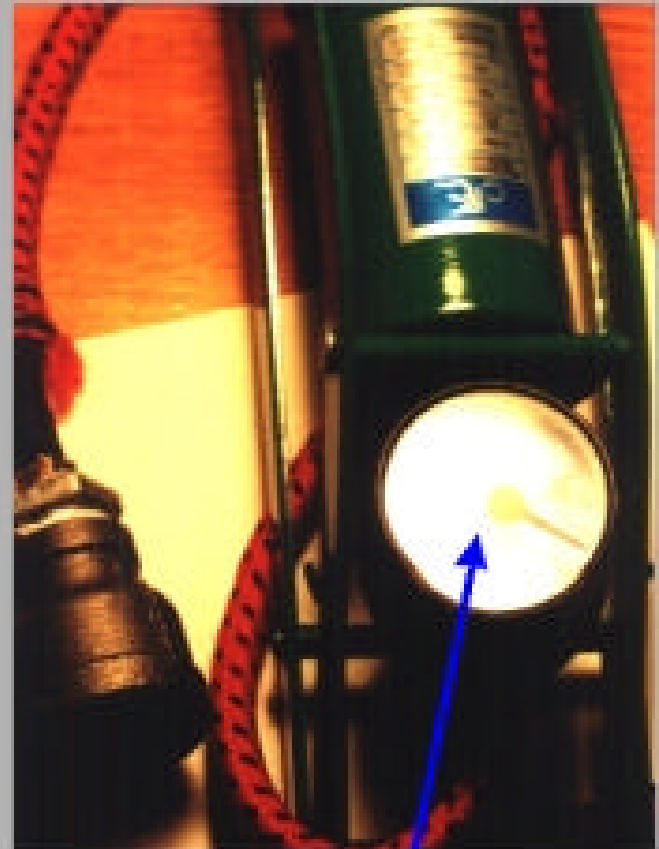


Bicycle Pump



This is what the test pump looks like with the valve installed.

This bicycle pump had a pressure gauge on it. I could tell that the stock pop-off valve was below 10 psi and that the new modified valve was above a 10 psi, about 14 psi. The gauge was not that accurate. It was good enough to test the valve before installation.



**Gauge on pump**