

Jaw and Fire Control Firmware

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1 Summary

This will heat the igniter, delay until hot and open the gas valve for some maximum time.

2 Heating

The heating element is a tungsten head-light bulb. It has a higher melting point than constantan or even Nichrome. With that, since butane has a low autoignition temperature of 288 °C, the operating window should be very wide. The heavy bulb filament should resist cooling. The PWM will need to keep it a dull yellow for a couple seconds.

3 Gas

Gas will be controlled by its container's valve, operated with a 12 Volt servo. This may be a simple solenoid. Maximum time will be limited to minimize risk and waste.

4 Jaw

Since the mouth needs to be open, mouth control will be here too. This will be a door-lock servo. A spring will hold it closed and the servo will open it against the spring.