LaserSine

September 2, 2017

1 Laser Sine Tests

1.1 Test Setup

2 Code:

In [23]:
```
import GCode
import GRBL
import numpy as np
from uuid import uuid4
import os
import sys
from time import sleep

sys.path.append("..")
from utils import picture
```

In [24]:
```
cnc = GRBL.GRBL(port="/dev/cnc_3018")
cnc.laser_mode = 1

print("Laser Mode: {}".format(cnc.laser_mode))

def init(feed = 100):
    program = GCode.GCode()
    program.G21() # Metric Units
    program.G90() # Relative positioning.
    program.G92(X=0, Y=0, Z=0) # Zero on where we put the workpiece
    program.G1(F=feed)
    return program

def end():
    program = GCode.GCode()
    program.M5()
    program.G0(X=0)
    return program
```

```
ok
Laser Mode: 1.0
```

```
In [33]: X = np.arange(0, 2*4*np.pi*10, 1)
         test_run = GCode.GCode()
         test_run+=init(feed=500)
         test_run.G0(X=X[0])
         test_run.M4(S=255)
         for x in X:
             y = 20*np.sin(x/10)
             # Keep GRBL happy.
             x = np.round(x, 4)
             y = np.round(y, 4)

             test_run.G1(X=x, Y=y)
         test_run+=end()

In [34]: gcode_file = "LaserSine.gcode"

In [35]: test_run.save(gcode_file)

         del test_run
         test_run = GCode.GCode()

         test_run.load(gcode_file)

In [36]: test_run.buffer[0:5]

Out[36]: ['G21', 'G90', 'G92 Z0 Y0 X0', 'G1 F500', 'G0 X0.0']

In [47]: try:
             cnc.run(test_run)
         except KeyboardInterrupt as error:
             print("Feed Hold")
             cnc.cmd("!")
             while 1:
                 try:
                     cnc.reset()
                     break;
                 except:
                     sleep(2)
             print("^C")

In [48]: shift = GCode.GCode()
         shift.G91()
         shift.G0(X=np.round(10*np.pi/5, 4))
         shift.G90()

In [49]: cnc.run(shift)

Out[49]: 0.31099891662597656
```