In [5]:
```
phi=1.0;
land_height=6.0e-3;
ve=.8;
stroke=100.0e-3;
piston_dia=99.4e-3;
bore=100.0e-3;
CR=8.0;
T0=333;
P0=101.325e3;
bsfc=300;
P1=3.0e6;
T1=400;
Ra=286.9;

V_crev=pi*(1/4.0)*land_height*(bore**2-piston_dia**2); print "V_crev= ",V_crev," m^3"
m_crev=1000.0*(2/3.0)*P1*V_crev/(Ra*T1); print "m_crev= ",m_crev," g";

V_tot=V_crev+pi*bore**2*stroke*ve*(1/4.0); print "V_tot= ",V_tot," m^3";
m_tot=1000.0*P0*V_tot/(Ra*T0); print "m_tot= ",m_tot, " g";

x_crev=m_crev/m_tot; print "x_crev= ",x_crev;
```

```
V_crev=  5.63790217613e-07  m^3
m_crev=  0.00982555276426  g
V_tot=  0.000628882320936  m^3
m_tot=  0.666977550944  g
x_crev=  0.0147314594777
```

In [7]:
```
HC_emiss=(2/3.0)*V_crev*(1-(1/2.0)-(1/3.0))*1e6/(V_tot); print "HC_emiss= ",HC_emiss," ppm by Vo
```

```
HC_emiss=  99.6106193912  ppm by Volume
```

In [10]:
```
bsHC_ratio=m_crev*(1-1/2.0-1/3.0)/m_tot; print "bsHC_ratio= ",bsHC_ratio;
```

```
bsHC_ratio=  0.00245524324628
```

In [11]:
```
bsHC=bsHC_ratio*bsfc; print "bsHC= ",bsHC, " g/kW*h";
```

```
bsHC=  0.736572973885  g/kW*h
```

In [ ]:
```

```