Parachute Bay Length (in)	10
Parachute Bay Radius (in)	1.6125

Pressure (psi)	43.41878
Volume (in^3)	81.68632
moles	0.065391
Temp (°R)	1326.67
Ideal Gas Constant (lbf*in*lb-mol^-1*R^-1)	18544.18

Moles to gram of black powder (g)	5.285905

Pressure Calculation:	
Average force Required To Shear a 4-40 Nylon Pin:	98.52
# of pins	3
Total Force in lbs	295.56
Factor of safety	1.2
Force with factor of safety	354.672
Bay cross-section area (in^2)	8.168632
Calculated pressure (psi)	43.41878

Pressure required to shear the pins

Volume of our cylindrical main chute chamber (radius^2 * height * pi in meters)

n = PV/RT (*converted lb-moles to moles)

Combustion temperature of black powder.

80.835 grams/mol for black powder.

Note: 4-40 pins have a diameter of 0.112"