

Pocketcube 1P Structure



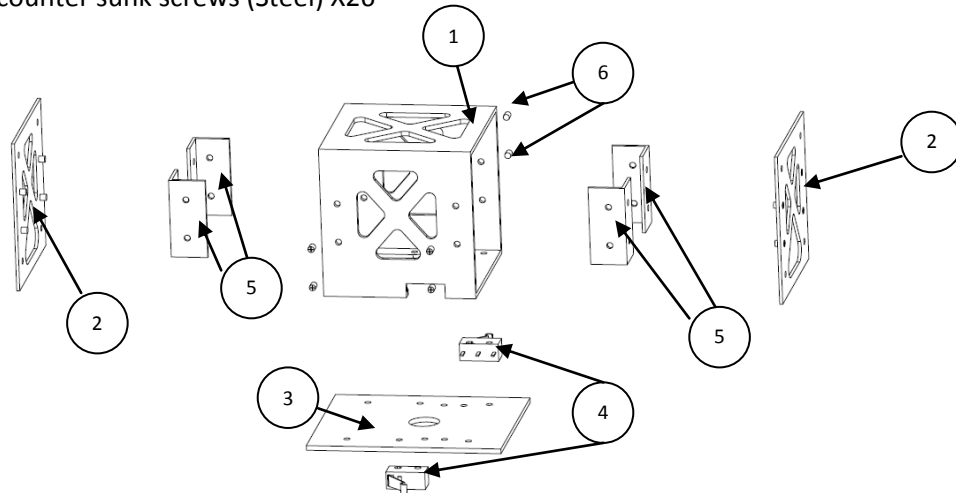
This document contains technical specifications for Alba Orbital's pocketcube 1P structure. This includes results of both computer based and physical testing and analysis. This document also includes internal volume. It also includes a list of material and suppliers.

Brochure

Parts

The product has been constructed before shipping and contains the following parts.

1. Main structure (Al6082 T6)
2. Standard end plates (Al6082 T6) X2
3. Base plate/ deployment tabs (Al6082 T6)
4. Kill Switch X2
5. Angles (Al6082 T6) X4
6. M2.5 counter sunk screws (Steel) X26



Parameters

Mass

All in mass of complete structures of various sizes

Size	Mass unaided (kg)	Approximate mass with payload (kg)
1P	0.069	
2P	0.109	
3P	0.151	

Payload

Internal payload volume of various sizes

Size	Volume (10^{-4} m^3)
1P	1.09
2P	2.51
3P	3.79

Testing and Analysis

All parts and compent and that have been completed with accordance to NASA GEVs. (FEA (Finite Element Analysis), PT (Phyical Testing on engineering model), QT(Quality Test carried out on shipped model))

Test	FEA	PT	QT
Random Vibration	Pass		
Mechanical Shock	Pass		
Thermal Cycle	Pass		
Thermal Vacuum	N/A		

Loads

Mechanical

- Static: $>\pm 392.4 \text{ m/s}^2$ (40g) (three axes)
- Sine Vibration: 3.924 m/s^2 (4g), 5-100 Hz (31.41 – 628.31 rad/s)
- Random Vibrations: Acceptable by Space Flights SPUG

Thermal

- Operational Range: 223 – 363 K