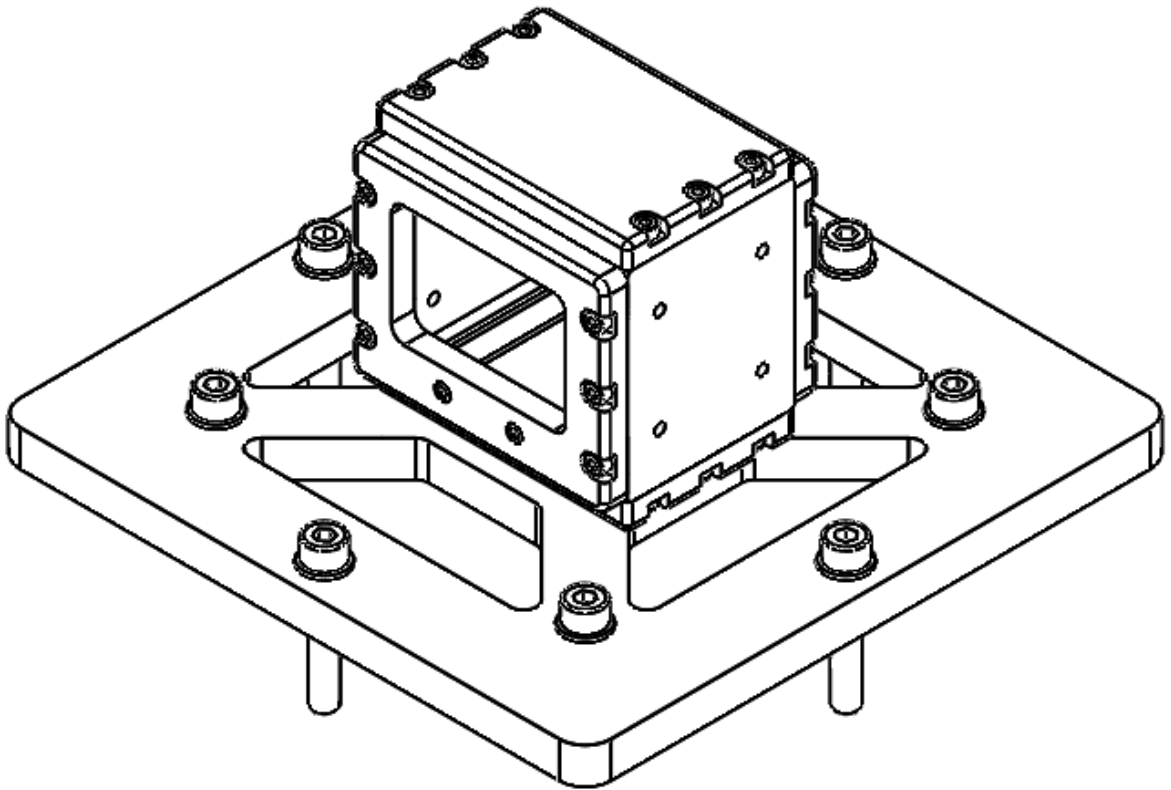


## **VIBEPOD 1P VIBRATION TEST RIG**

*ICD*

Version <1.0>



## VERSION HISTORY

Version #	Implemented By	Revision Date	Reason
0.1	<i>Andrew Dunn</i>	<i>29/01/21</i>	Draft version

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## 1. KEY TERMS

The following table provides definitions for terms relevant to this document.

Term	Definition
1P	1P unit of PQ
1.5P	1.5P unit of PQ
2P	2P unit of PQ
3P	3P unit of PQ
6P	6P unit of PQ
PQ	Pocketcube satellite

## 2. DESCRIPTION

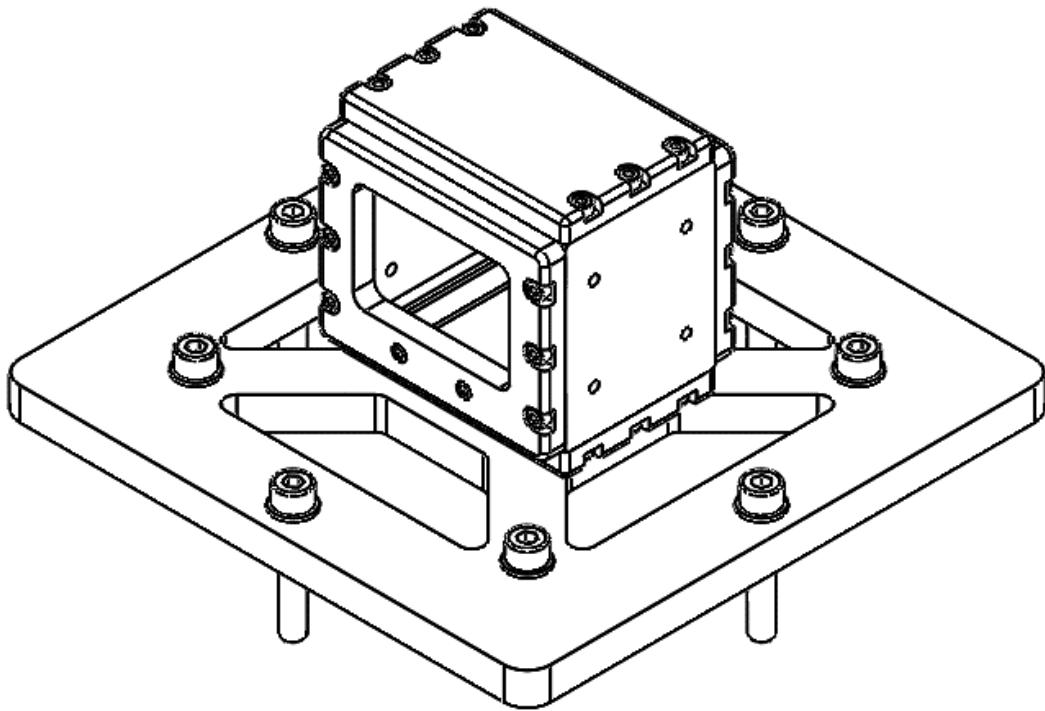


Figure 1 Overview of 1P VibePOD

The 1P VibePOD is a pocketcube (PQ) vibration test rig that can be used for vibration tests. This VibePOD can only be used to qualify 1P PQs. The 1P vibePOD consists of a base plate, base panel, back panel, side panels, front panel & top panel.

### 2.1 ACCESS PANEL

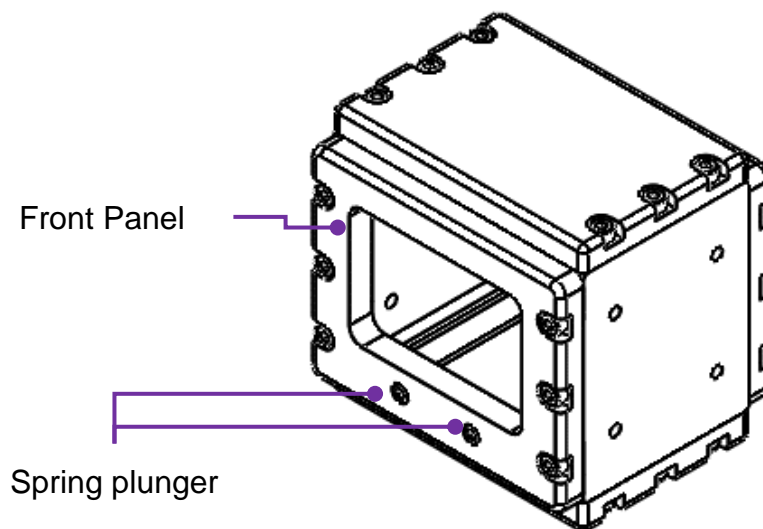


Figure 2 Access Panel

The 1P has one access point (Figure 2) that allow the cables from the accelerometers attached to the satellite to be fed through. They also allow quick visual inspection of the pocketqubes after vibration testing.

The front panel has 2 M6 tapped holes for two spring plungers which are used to preload the pocketqube satellite during vibration testing. The recommended spring plungers are the SPRZ6 from Mismui however the user can use a spring plunger that has similar loads. The operator can adjust how much the satellite can be preloaded by the depth of the plunger in the front panel.

Spring Plunger link:

[Spring Plungers/Short/Stainless Steel by MISUMI | MISUMI online shop - Select, configure, order \(misumi-ec.com\)](https://www.misumi-ec.com/en/Products/Short/Short-Stainless-Steel-Spring-Plunger-SPRZ6)

## 2.2 MECHANICAL INTERFACE

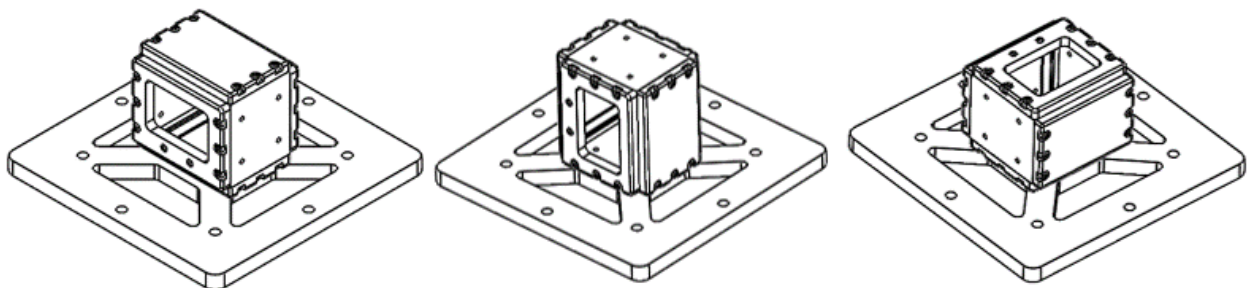


Figure 3 VibePOD in X,Y&Z orientations

The VibePOD can be placed onto 3 orientations (Figure 3) to allow the satellites to be vibrated on the X, Y & Z axes. This can be done by attaching the baseplate to either the side, base or back panel.

### 2.3 BASE PLATE

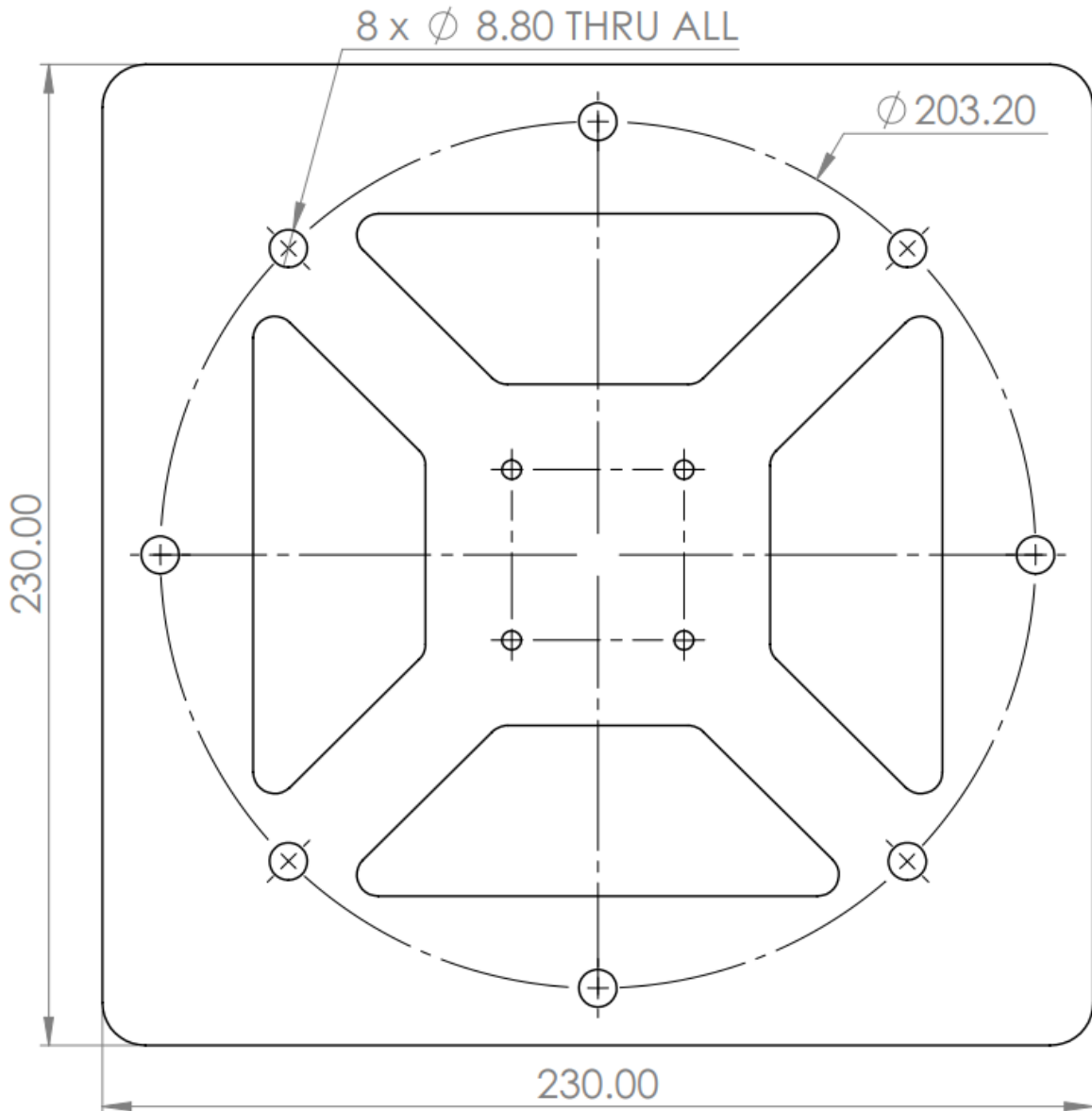


Figure 4 Base plate

The VibePOD is secured to the vibrating table with the base plate (Figure 4). The base plate is attached to the vibrating table with 8 x M8 bolts. The hole locations are based on the Ling Dynamic Systems V810/DPA 20K vibrating table interface. WyrM Engineering can design a custom base plate to accommodate various vibrating tables that have alternative interfaces. The base plate supports the 1P, 1.5P & 2P VibePODs.

## 2.4 1P VIBEPOD DIMENSIONS

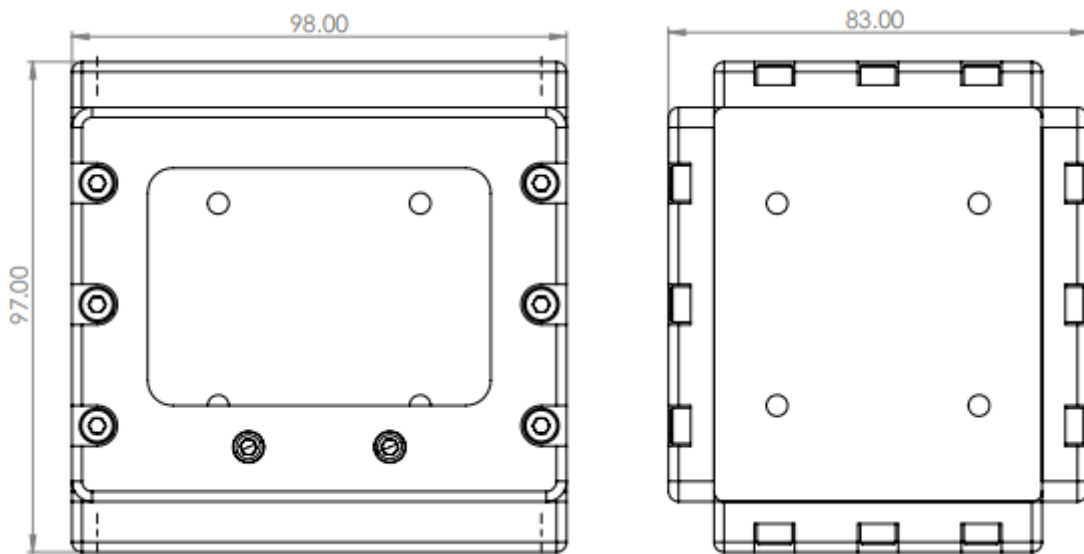


Figure 5 1P VibePOD Dimensions

## 2.5 VIBEPOD PQ INTERFACE

The VibePOD uses a rail tab interface. The PQ chassis is secured onto a base plate which is the satellite's only mechanical interface to the test rig (Figure 6 **Error! Reference source not found.**). The spring plungers interface with the base plate of the PQ base plate. This is to prevent excessive wear on the PQ rail interface during vibration testing.

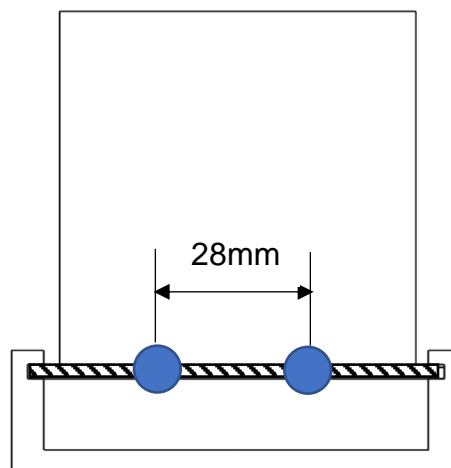


Figure 6 PQ VibePOD interface (blue spring plunger interface)



## 2.6 VIBEPOD ENVELOPE

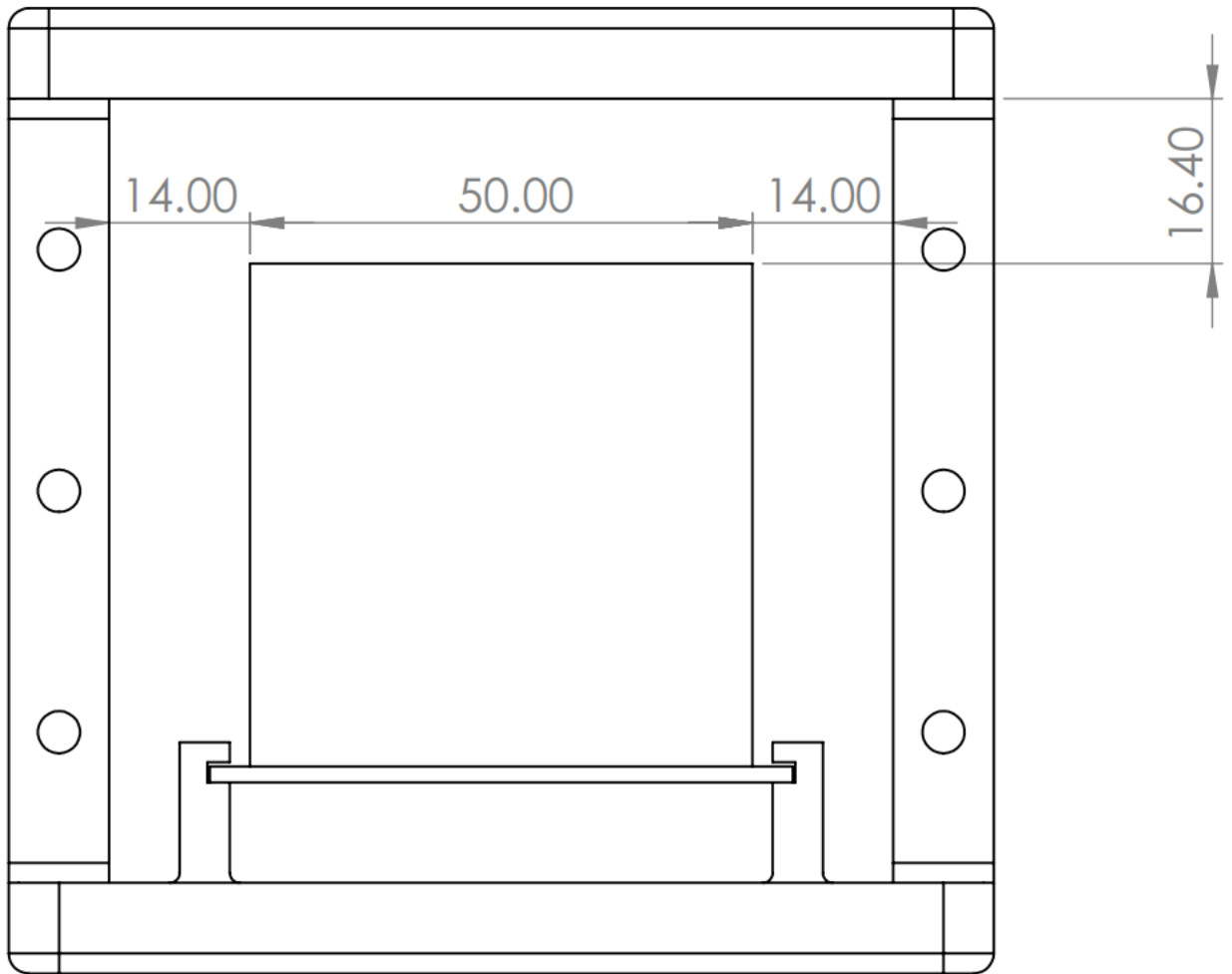


Figure 7 PQ envelope

The envelope the PQs inside the VibePOD are shown in (Figure 7) above. The larger envelope allows accelerometers to be attached to the PQs during testing.

### 3. CONTACT

If you need any assistance regarding the VibePOD, testing your PQ or interested in our products or service don't hesitate to get in touch.

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