WILLIAM E. BOEING DEPARTMENT OF
AERONAUTICS & ASTRONAUTICS
College of Engineering

AA421
Flexure Buckling Test Plan

SPACE Lab

Part Name: _____

Part Number: _____

Date: _____ / _____ / _____
yyyy mm dd

Test Team:

Name	Initials

Introduction

This experiment is designed to verify the ability of the flexures to hold the weight of the thrusters being tested by loading the flexures up to the maximum thruster weight that flexure is designed to carry. System requirement 5 and PPT mount requirement 1 say the flexures must be able to hold the weight of thrusters up to 17.5 lbs(8kg). This test plan is to accompany the test procedure for flexure buckling.

Test Parameters

Constraint	Description	Value
m_{pA}	Mass of test stand pendulum with thruster shelf	1.78 kg
m_{pB}	Mass of test stand pendulum without thruster shelf	0.46 kg
T	Temperature of room	15-20C

Test Variables

Variable	Description	Values / Range
t	Flexure thickness	0.01”-0.025” in 0.005” steps
m	Mass carried by flexures	100-8000g

Measurements

Measurement	Description	Range
d	Displacement of pendulum due to loading	Values must not diverge relative to previous measurements
m_p	Mass of pendulum	1.78kg +/-5%
m	Mass of test masses	Given mass +/-1%
t	Flexure thickness	Given thickness +/-1%

Test Matrix

Run	Flexure Thickness(in)	Mass(g)	Deflection(in)
FX1: _____			
FX2: _____			

FX3: _____			
FX4: _____			