

<b>Requirements Sheet</b>
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Team Number \_\_\_\_\_

Product Type: *Acrobatic bike*

**1. Market Description**

This bicycle is to be designed for the mass consumer market. The expected sales volume is 100,000 per year. Affordability, excellent performance/cost ratio and light weight are most important to be successful in this market.

**2. Requirements**

Manufacturing Cost (C):  $C \leq 10.4 \text{ \$ /part}$

Performance ( $\delta_1, \delta_2, f_1$ ):  
 Displacement  $\delta_1 \leq 0.063 \text{ mm}$   
 Displacement  $\delta_2 \leq 0.010 \text{ mm}$   
 First natural frequency  $f_1 \geq 360 \text{ Hz}$

Mass (m):  $m \leq 0.16 \text{ lbs}$

Surface Quality (Q):  $Q \geq 5$

Load Case (F):  $F1 = 100 \text{ lbs} / F2 = 100 \text{ lbs} / F3 = 100 \text{ lbs}$

The part has to conform to the interface requirements and geometrical boundary conditions shown on page 2 of this document. This requirement cannot be waived.

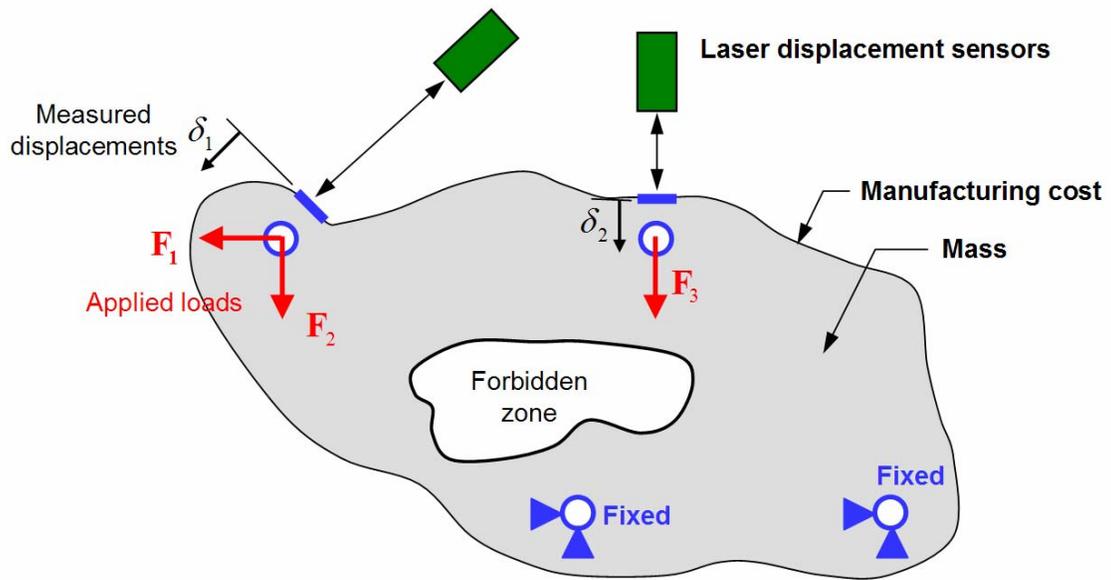
**3. Priorities**

Structural performance is the first priority for this product. Next, the customer cares about light-weighting (low mass) and thirdly, manufacturing cost should be as low as possible. These priorities are shown in the Ishii-matrix below:

Attribute	Constrain	Optimize	Accept
Cost			■
Performance	■		
Mass		■	

Modifications to these requirements have to be negotiated with Management.

## Configuration



No forbidden zone for your team

## Dimensions

