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| Requirements Sheet |
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Team Number _____

Product Type: ***Mountain 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): $C \leq 6.7 \text{ \$ /part}$

Performance (δ_1, δ_2, f_1):
 Displacement $\delta_1 \leq 0.057 \text{ mm}$
 Displacement $\delta_2 \leq 0.009 \text{ mm}$
 First natural frequency $f_1 \geq 320 \text{ Hz}$

Mass (m): $m \leq 0.30 \text{ lbs}$

Surface Quality (Q): $Q \geq 4$

Load Case (F): $F1 = 50 \text{ lbs} / F2 = 100 \text{ lbs} / F3 = 50 \text{ lbs}$

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.

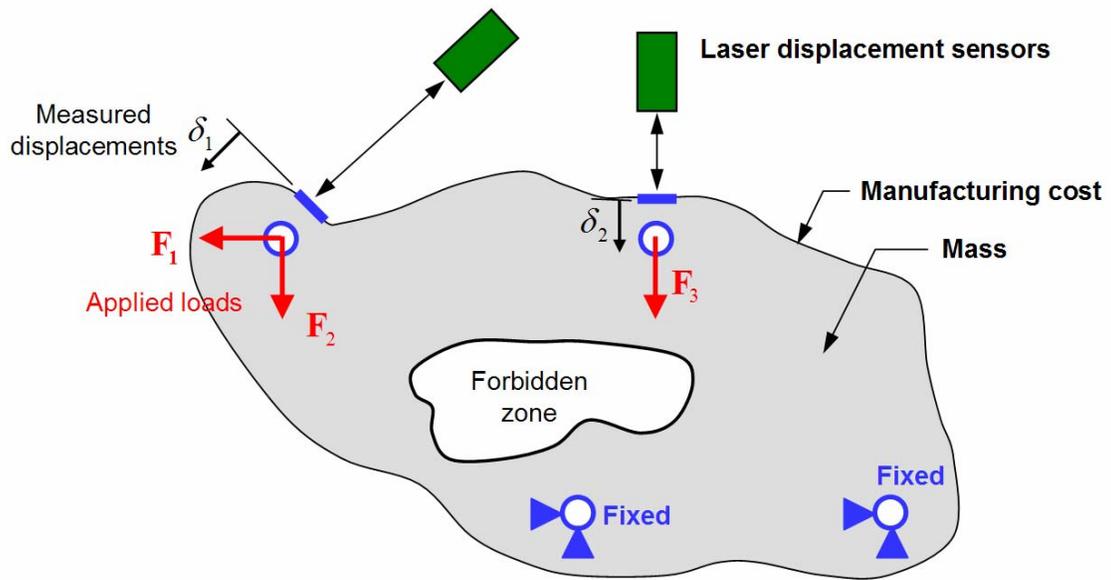
3. Priorities

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

