

Requirements Sheet

Team Number _____

Product Type: ***Racing 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): $C \leq 7.8 \text{ \$ /part}$

Performance (δ_1, δ_2, f_1):
 Displacement $\delta_1 \leq 0.071 \text{ mm}$
 Displacement $\delta_2 \leq 0.011 \text{ mm}$
 First natural frequency $f_1 \geq 295 \text{ Hz}$

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

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

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

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.

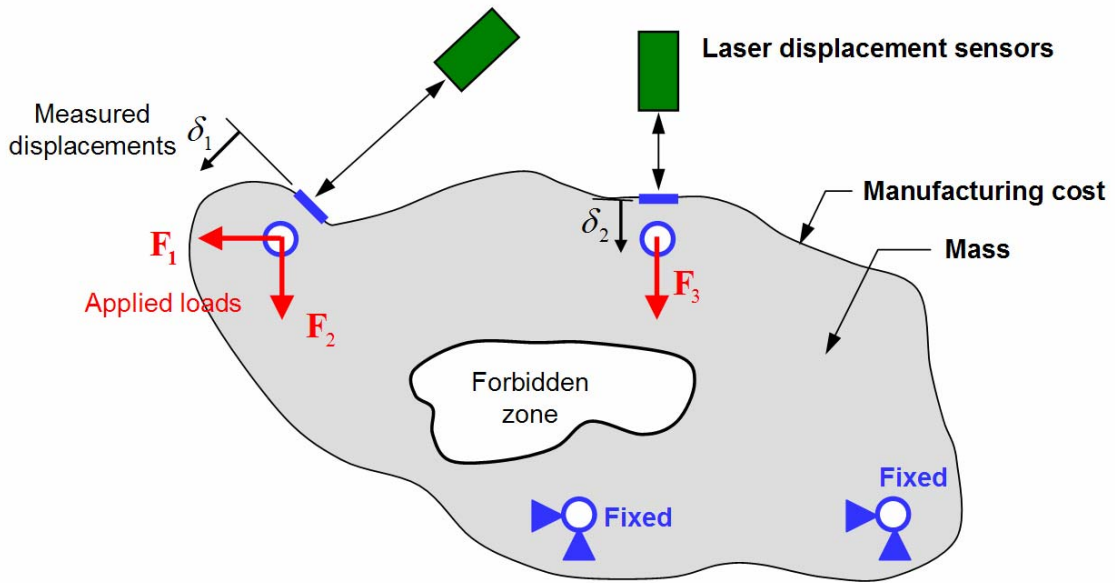
3. Priorities

Light-weighting (low mass) is the first priority for this product. Next, the customer cares about high structural performance 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

