





# **IntroBuction**



Shocks

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The rocker is a component that transmits pushrod motion into the shock absorber through a lever mechanism. It is CNC machined out of 6061-T6 aluminum, and it has three hol2 ( ) 0.2s for bolts to mount onto.

! **Upright Ass2 ( ) 0.2mbly**





## **Loading Conditions**

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**c.2G Bump**



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## ! Brake Pads

be transferred to the brake pads (which is a very conservative assumption), we found that we are well within the manufacturer's the maximum operating temperature as the maximum temperature that the



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## Material Specifications

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Part	Material/Details
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We are using sets of 15mm ID, 42mm OD double sealed steel wheel bearing from FAG. The axles that are support by the wheel bearing s are ground carbon steel shafts that are precisely machined with very low tolerances to reduce wear and tear on the bearings casings.

## **Material Specifications**

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The walls of the enclosure are constructed

fibreglass panels and the geometry of the battery box. The battery caps were extended in

## **Battery Ventilation#**

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There is a high factor of safety





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Kevlar on the inner layer provides protection against aeroshell fragmentation in the event of a collision. Post-

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The front impact by a 10cm high bumper 35cm from the ground is absorbed by the two main truss sections of the chassis and has very little effect on the car. Both displacement and probability of failure are very low. The fixed supports are placed where the rear wheel

constraint. Also, maximum displacement is not at the front of the rollcage, and hence the battery box can be assumed to be adequately protected by the frame.

### **Scenario 2: 5G Impact at a slight angle from the front**

This is an almost unimaginable worst case scenario. Furthermore, the aeroshell and wheels will greatly decrease the impact felt by the chassis. The frame surrounding the driver has





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# **APPENDIX A**

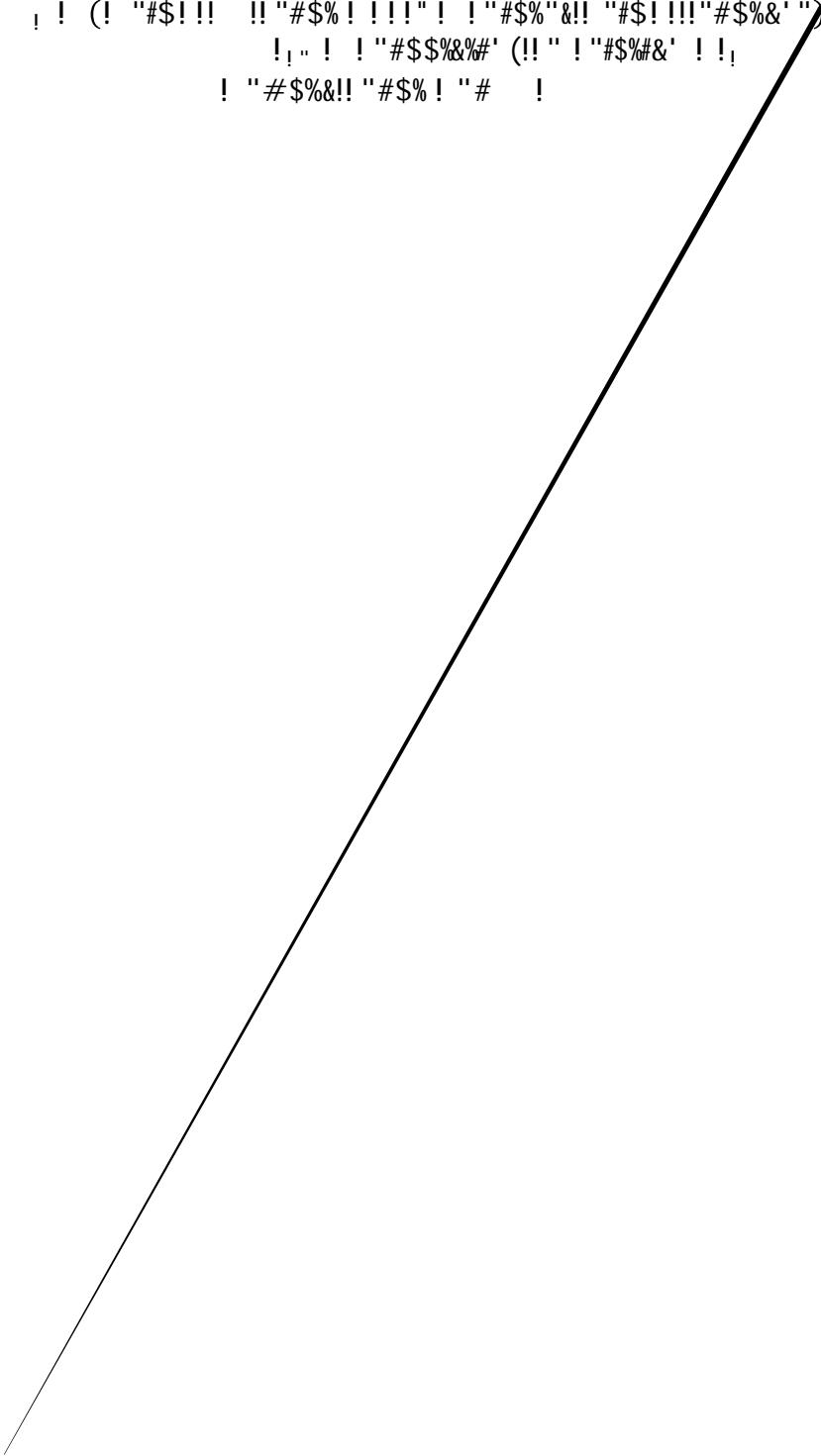
## **MECHANICAL SYSTEMS ANALYSIS**

### **Front Suspension**

Weight of Car with Driver and Ballast                    778 lbs

## Cornering

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In the relevant calculations below, we combine the loadings from the front suspension from all three scenarios, where applicable, for each rod end bearing and bolt calculation.

## Bearing Loads

### Steel Double-Sealed Ball Bearings

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## **Side Rollover Stage 1**