Topology study on a drone arm using Solidworks



Part1 *

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Structural analysis Setup

Conducted Structural analysis to estimate current design factor of safety.



Topology study setup

- Mass constraint
- Factor of safety
- Thickness control
- Preserved Region



Topology Study Setup

1st Analysis

- Mass constraint = 60% mass reduction
- Factor of safety=4
- Thickness control Min=10mm Max=12mm



Topology Study Setup

2nd Analysis

- Connections Goals and Manufacturing Run This Results Compare Advisor Results 1 Fixtures External Loads Advisor Advisor = Include Image for Report iketch Surfaces Sheet Metal Markup Evaluate MBD Dimensions SOLIDWORKS Add-Ins Simulation Analysis Preparation SOLIDWORKS CAM SOLIDWORKS CAM TBM E . Model name: Part1 1 🖹 🕀 🕙 👎 Study name: Topology Study 1 from [Static 1](-Default-) Plot type: Material Mass nt Plane Calculated Element Mass : 0.08215Kg Plane ht Plane gin s-Extrude1 Material Mass -Extrude1 Must Keep -Extrude2 y Study 1 from [Static 1]* (-Del Part1 (-[SW]PLA-) nections ures Fixed-1 Ok to Remove ernal Loads Force-1 (:Per item: -60 N:) ils and Constraints(-Best Stiffn Mass Constraint 1 (-Default-) Factor of Safety Constraint 1 nufacturing Controls Preserved Region 1 Thickness control 1 (-Max: Mesh Quality Plot 🥵 Quality1 (-Mesh-) Results Material Mass1 (-Material I
- Mass constraint = 65% mass reduction
- Factor of safety=4
- Thickness control
 Min=10mm

Max=12mm









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Editing Part