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|  | |  | | --- | | **Simulation of arm optimalisation test part**  **Date: zondag 9 oktober 2016 Designer: Teun**  **Study name: SimulationXpress Study**  **Analysis type: Static** | | Table of Contents  [Description 1](#_Toc463807421)  [Assumptions 2](#_Toc463807422)  [Model Information 2](#_Toc463807423)  [Material Properties 3](#_Toc463807424)  [Loads and Fixtures 3](#_Toc463807425)  [Mesh Information 4](#_Toc463807426)  [Study Results 6](#_Toc463807427)  [Conclusion 8](#_Toc463807428) | |
| Description No Data |

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| Assumptions |

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| Model Information  |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  | | --- | |  |   ****Model name:** arm optimalisation test part**  ****Current Configuration:** Default** | | | | | ****Solid Bodies**** | | | | | ****Document Name and Reference**** | ****Treated As**** | ****Volumetric Properties**** | ****Document Path/Date Modified**** | | **Cut-Extrude13** | **Solid Body** | ****Mass:0.133175 kg****  ****Volume:1.72954e-005 m^3****  ****Density:7700 kg/m^3****  ****Weight:1.30511 N**** | ****D:\Documents\Industrieel Ontwerper\Jaar 3\Bachelor opdracht\cad\pack and go 2\arm optimalisation test part.SLDPRT****  **Oct 07 11:32:57 2016** | |

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| Material Properties  |  |  |  | | --- | --- | --- | | ****Model Reference**** | ****Properties**** | ****Components**** | |  | |  |  | | --- | --- | | ****Name:**** | **Alloy Steel** | | ****Model type:**** | **Linear Elastic Isotropic** | | ****Default failure criterion:**** | **Max von Mises Stress** | | ****Yield strength:**** | **620.422 N/mm^2** | | ****Tensile strength:**** | **723.826 N/mm^2** | | **SolidBody 1(Cut-Extrude13)(arm optimalisation test part)** | |

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| **Loads and Fixtures**  | ****Fixture name**** | ****Fixture Image**** | ****Fixture Details**** | | --- | --- | --- | | **Fixed-5** |  | |  |  | | --- | --- | | Entities: | **1 face(s)** | | Type: | **Fixed Geometry** | |  | ****Load name**** | ****Load Image**** | ****Load Details**** | | --- | --- | --- | | **Force-6** |  | |  |  | | --- | --- | | Entities: | **1 face(s)** | | Type: | **Apply normal force** | | Value: | **7 N** | | |

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| Mesh Information  |  |  | | --- | --- | | Mesh type | Solid Mesh | | Mesher Used: | Standard mesh | | Automatic Transition: | Off | | Include Mesh Auto Loops: | Off | | Jacobian points | 4 Points | | Element Size | 3.33923 mm | | Tolerance | 0.166961 mm | | Mesh Quality | High |  Mesh Information - Details  |  |  | | --- | --- | | Total Nodes | 20339 | | Total Elements | 9380 | | Maximum Aspect Ratio | 16.22 | | % of elements with Aspect Ratio < 3 | 78.8 | | % of elements with Aspect Ratio > 10 | 0.0746 | | % of distorted elements(Jacobian) | 0 | | Time to complete mesh(hh;mm;ss): | 00:00:05 | | Computer name: | TEUN-PC | |  | | |

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| Study Results  | Name | Type | Min | Max | | --- | --- | --- | --- | | Stress | VON: von Mises Stress | 0.00147679 N/mm^2 (MPa)  Node: 16244 | 6.71135 N/mm^2 (MPa)  Node: 20061 | | **arm optimalisation test part-SimulationXpress Study-Stress-Stress** | | | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Displacement | URES: Resultant Displacement | 0 mm  Node: 233 | 0.0108968 mm  Node: 2323 | | **arm optimalisation test part-SimulationXpress Study-Displacement-Displacement** | | | |  | Name | Type | | --- | --- | | Deformation | Deformed Shape | | **arm optimalisation test part-SimulationXpress Study-Displacement-Deformation** | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Factor of Safety | Max von Mises Stress | 92.4437  Node: 20061 | 420115  Node: 16244 | | **arm optimalisation test part-SimulationXpress Study-Factor of Safety-Factor of Safety** | | | | |

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| Conclusion |