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|  | |  | | --- | | **Simulation of Part\_Assembly**  **Date: 10 April 2019 Designer: Utkarsh Rawat**  **Study name:SimulationXpress Study**  **Analysis type:Static** | | Table of Contents  [Description 1](#_Toc5783311)  [Assumptions 2](#_Toc5783312)  [Model Information 2](#_Toc5783313)  [Material Properties 4](#_Toc5783314)  [Loads and Fixtures 5](#_Toc5783315)  [Mesh information 6](#_Toc5783316)  [Study Results 8](#_Toc5783317)  [Conclusion 11](#_Toc5783318) | |
| Description No Data |

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| Assumptions  |  |  | | --- | --- | | Original Model | Model Analyzed | |

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| Model Information  |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  | | --- | |  |   ****Model name:** Part\_Assembly**  ****Current Configuration:** Default** | | | | | ****Solid Bodies**** | | | | | ****<L\_MdInf\_SldBd\_Nm/>**** | ****Treated As**** | ****Volumetric Properties**** | ****Document Path/Date Modified**** | | **cam clamp-1-solid1** | **Solid Body** | ****Mass:0.639885 kg****  ****Volume:8.20365e-005 m^3****  ****Density:7800 kg/m^3****  ****Weight:6.27087 N**** | ****H:\VIT\SEM 6\Tool Design\Project\cam clamp\Part\_Assembly.SLDPRT****  **Apr 10 09:46:45 2019** | | ****<L\_MdInf\_ShlBd\_Nm/>**** | ****<L\_MdIn\_ShlBd\_Fr/>**** | ****<L\_MdInf\_ShlBd\_VolProp/>**** | ****<L\_MdIn\_ShlBd\_DtMd/>**** | | ****<L\_MdInf\_CpBd\_Nm/>**** | ****<L\_MdInf\_CompBd\_Props/>**** | | | | ****<L\_MdInf\_BmBd\_Nm/>**** | ****<L\_MdIn\_BmBd\_Fr/>**** | ****<L\_MdInf\_BmBd\_VolProp/>**** | ****<L\_MdIn\_BmBd\_DtMd/>**** | |

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| Material Properties  |  |  |  | | --- | --- | --- | | ****Model Reference**** | ****Properties**** | ****Components**** | |  | |  |  | | --- | --- | | ****Name:**** | **Cast Carbon Steel** | | ****Model type:**** | **Linear Elastic Isotropic** | | ****Default failure criterion:**** | **Max von Mises Stress** | | ****Yield strength:**** | **248.168 N/mm^2** | | ****Tensile strength:**** | **482.549 N/mm^2** | | **SolidBody 15(cam clamp-1-solid1)(Part\_Assembly)** | |

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| **Loads and Fixtures**  | ****Fixture name**** | ****Fixture Image**** | ****Fixture Details**** | | --- | --- | --- | | **Fixed-1** |  | |  |  | | --- | --- | | Entities: | **2 face(s)** | | Type: | **Fixed Geometry** | |  | ****Load name**** | ****Load Image**** | ****Load Details**** | | --- | --- | --- | | **Force-1** |  | |  |  | | --- | --- | | Entities: | **1 face(s)** | | Type: | **Apply normal force** | | Value: | **613 N** | | | **Force-2** |  | |  |  | | --- | --- | | Entities: | **1 face(s)** | | Type: | **Apply normal force** | | Value: | **613 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 | 4.3465 mm | | Tolerance | 0.217325 mm | | Mesh Quality | High |  Mesh information - Details  |  |  | | --- | --- | | Total Nodes | 14199 | | Total Elements | 8753 | | Maximum Aspect Ratio | 15.809 | | % of elements with Aspect Ratio < 3 | 98.2 | | % of elements with Aspect Ratio > 10 | 0.0571 | | % of distorted elements(Jacobian) | 0 | | Time to complete mesh(hh;mm;ss): | 00:00:03 | | Computer name: | DELL-INSPIRON | |  | | |

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| Study Results  | Name | Type | Min | Max | | --- | --- | --- | --- | | Stress | VON: von Mises Stress | 5.70371e-008 N/mm^2 (MPa)  Node: 4020 | 32.5611 N/mm^2 (MPa)  Node: 7838 | | **Part\_Assembly-SimulationXpress Study-Stress-Stress** | | | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Displacement | URES: Resultant Displacement | 0 mm  Node: 1 | 0.0137922 mm  Node: 12231 | | **Part\_Assembly-SimulationXpress Study-Displacement-Displacement** | | | |  | Name | Type | | --- | --- | | Deformation | Deformed shape | | **Part\_Assembly-SimulationXpress Study-Displacement-Deformation** | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Factor of Safety | Max von Mises Stress | 7.62161  Node: 7838 | 4.35099e+009  Node: 4020 | | **Part\_Assembly-SimulationXpress Study-Factor of Safety-Factor of Safety** | | | | |

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| Conclusion |