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|  | |  | | --- | | **Simulation of incheietura - Copie**  **Date: 9 June, 2022 Designer: Solidworks**  **Study name: Frequency 1**  **Analysis type: Frequency** | | Table of Contents  [Description 1](#_Toc105664720)  [Assumptions 2](#_Toc105664721)  [Model Information 2](#_Toc105664722)  [Study Properties 3](#_Toc105664723)  [Units 3](#_Toc105664724)  [Material Properties 4](#_Toc105664725)  [Loads and Fixtures 4](#_Toc105664726)  [Connector Definitions 4](#_Toc105664727)  [Contact Information 5](#_Toc105664728)  [Mesh information 6](#_Toc105664729)  [Sensor Details 7](#_Toc105664730)  [Study Results 8](#_Toc105664731)  [Conclusion 12](#_Toc105664732) | |
| Description No Data |

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| Assumptions |

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| Model Information  |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  | | --- | |  |   ****Model name:** incheietura - Copie**  ****Current Configuration:** Default** | | | | | ****Solid Bodies**** | | | | | ****Document Name and Reference**** | ****Treated As**** | ****Volumetric Properties**** | ****Document Path/Date Modified**** | | **LPattern5** | **Solid Body** | ****Mass:0.169735 kg****  ****Volume:6.28649e-05 m^3****  ****Density:2,700 kg/m^3****  ****Weight:1.6634 N**** | ****D:\licenta partea practica\incheietura - Copie.SLDPRT****  **Jun 8 21:12:00 2022** | |

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| Study Properties  |  |  | | --- | --- | | Study name | Frequency 1 | | Analysis type | Frequency | | Mesh type | Solid Mesh | | Number of frequencies | 5 | | Solver type | FFEPlus | | Soft Spring: | Off | | Incompatible bonding options | Automatic | | Thermal option | Include temperature loads | | Zero strain temperature | 298 Kelvin | | Include fluid pressure effects from SOLIDWORKS Flow Simulation | Off | | Result folder | SOLIDWORKS document (D:\licenta partea practica) | |

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| Units  |  |  | | --- | --- | | Unit system: | SI (MKS) | | Length/Displacement | mm | | Temperature | Kelvin | | Angular velocity | Rad/sec | | Pressure/Stress | N/m^2 | |

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| Material Properties  |  |  |  | | --- | --- | --- | | ****Model Reference**** | ****Properties**** | ****Components**** | |  | |  |  | | --- | --- | | ****Name:**** | **1060 Alloy** | | ****Model type:**** | **Linear Elastic Isotropic** | | ****Default failure criterion:**** | **Unknown** | | ****Yield strength:**** | **2.75742e+07 N/m^2** | | ****Tensile strength:**** | **6.89356e+07 N/m^2** | | ****Mass density:**** | **2,700 kg/m^3** | | ****Elastic modulus:**** | **6.9e+10 N/m^2** | | ****Poisson's ratio:**** | **0.33** | | ****Thermal expansion coefficient:**** | **2.4e-05 /Kelvin** | | **SolidBody 1(LPattern5)(incheietura - Copie)** | | **Curve Data:N/A** | | | |

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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: | **2 N** | | |

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| Connector Definitions No Data |

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| Contact Information No Data |

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| Mesh information  |  |  | | --- | --- | | Mesh type | Solid Mesh | | Mesher Used: | Standard mesh | | Automatic Transition: | Off | | Include Mesh Auto Loops: | Off | | Jacobian points for High quality mesh | 16 Points | | Element Size | 3.48036 mm | | Tolerance | 0.174018 mm | | Mesh Quality | High |  Mesh information - Details  |  |  | | --- | --- | | Total Nodes | 39231 | | Total Elements | 24154 | | Maximum Aspect Ratio | 20.589 | | % of elements with Aspect Ratio < 3 | 94.4 | | Percentage of elements with Aspect Ratio > 10 | 0.17 | | Percentage of distorted elements | 0 | | Time to complete mesh(hh;mm;ss): | 00:00:05 | | Computer name: |  | |  | | |

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| Sensor Details No Data |

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| Study Results  | Name | Type | Min | Max | | --- | --- | --- | --- | | Amplitude1 | AMPRES: Resultant Amplitude Plot for Mode Shape: 1(Value = 917.728 Hz) | 0.000e+00  Node: 1521 | 5.350e+00  Node: 2509 | | **incheietura - Copie-Frequency 1-Amplitude-Amplitude1** | | | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Amplitude2 | AMPRES: Resultant Amplitude Plot for Mode Shape: 2(Value = 2,378.79 Hz) | 0.000e+00  Node: 1521 | 6.479e+00  Node: 1774 | | **incheietura - Copie-Frequency 1-Amplitude-Amplitude2** | | | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Amplitude3 | AMPRES: Resultant Amplitude Plot for Mode Shape: 3(Value = 3,806.19 Hz) | 0.000  Node: 1521 | 7.479  Node: 1822 | | **incheietura - Copie-Frequency 1-Amplitude-Amplitude3** | | | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Amplitude4 | AMPRES: Resultant Amplitude Plot for Mode Shape: 4(Value = 5,353.91 Hz) | 0.000e+00  Node: 1521 | 6.218e+00  Node: 2348 | | **incheietura - Copie-Frequency 1-Amplitude-Amplitude4** | | | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Amplitude5 | AMPRES: Resultant Amplitude Plot for Mode Shape: 5(Value = 6,573.58 Hz) | 0.000e+00  Node: 1521 | 7.732e+00  Node: 1774 | | **incheietura - Copie-Frequency 1-Amplitude-Amplitude5** | | | |   **Mode List**   | ****Frequency Number**** | ****Rad/sec**** | ****Hertz**** | ****Seconds**** | | --- | --- | --- | --- | | **1** | **5,766.3** | **917.73** | **0.0010896** | | **2** | **14,946** | **2,378.8** | **0.00042038** | | **3** | **23,915** | **3,806.2** | **0.00026273** | | **4** | **33,640** | **5,353.9** | **0.00018678** | | **5** | **41,303** | **6,573.6** | **0.00015212** |   **Mass Participation (Normalized)**   | ****Mode Number**** | ****Frequency(Hertz)**** | ****X direction**** | ****Y direction**** | ****Z direction**** | | --- | --- | --- | --- | --- | | **1** | **917.73** | **9.8476e-08** | **6.9865e-06** | **0.59816** | | **2** | **2,378.8** | **0.43423** | **0.034108** | **4.8696e-08** | | **3** | **3,806.2** | **0.00023144** | **1.2276e-05** | **6.1456e-05** | | **4** | **5,353.9** | **6.4968e-09** | **0.00023137** | **0.23335** | | **5** | **6,573.6** | **0.33711** | **0.0081659** | **1.7755e-05** | |  |  | **Sum X = 0.77157** | **Sum Y = 0.042525** | **Sum Z = 0.83158** | |

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| Conclusion |