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|  | |  | | --- | | **ｼﾐｭﾚｰｼｮﾝ実行 omisa自作QL-10vol1 メイン板**  **日付: 2019年1月21日 設計者:: Solidworks**  **ｽﾀﾃﾞｨ名: 静解析 1**  **解析ﾀｲﾌﾟ: 静解析** | | 目次  [表記 1](#_Toc535830895)  [仮定 2](#_Toc535830896)  [ﾓﾃﾞﾙ情報 2](#_Toc535830897)  [ｽﾀﾃﾞｨ ﾌﾟﾛﾊﾟﾃｨ 3](#_Toc535830898)  [単位 4](#_Toc535830899)  [材料特性 4](#_Toc535830900)  [荷重と拘束 5](#_Toc535830901)  [結合定義 5](#_Toc535830902)  [接触情報 6](#_Toc535830903)  [ﾒｯｼｭ情報 7](#_Toc535830904)  [ｾﾝｻｰ詳細 8](#_Toc535830905)  [合成力 8](#_Toc535830906)  [梁 8](#_Toc535830907)  [ｽﾀﾃﾞｨ結果 9](#_Toc535830908)  [結論 11](#_Toc535830909) | |
| 表記 ﾃﾞｰﾀなし |

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| 仮定 |

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| ﾓﾃﾞﾙ情報  |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  | | --- | |  |   ****ﾓﾃﾞﾙ名:** omisa自作QL-10vol1 メイン板**  ****現在のｺﾝﾌｨｷﾞｭﾚｰｼｮﾝ:** ﾃﾞﾌｫﾙﾄ** | | | | | ****ｿﾘｯﾄﾞ ﾎﾞﾃﾞｨ**** | | | | | ****ﾄﾞｷｭﾒﾝﾄ名と参照**** | ****次として扱う**** | ****体積特性**** | ****ﾄﾞｷｭﾒﾝﾄ ﾊﾟｽ/変更日時**** | | **円形ﾊﾟﾀｰﾝ2** | **ｿﾘｯﾄﾞ ﾎﾞﾃﾞｨ** | ****質量:0.0205132 kg****  ****体積:7.65418e-006 m^3****  ****密度:2680 kg/m^3****  ****重量:0.201029 N**** | ****D:\ロボ研\高専ロボコン的趣味設計\自作QL-10\部品\omisa自作QL-10vol1 メイン板.SLDPRT****  **Dec 26 11:50:05 2018** | |

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| ｽﾀﾃﾞｨ ﾌﾟﾛﾊﾟﾃｨ  |  |  | | --- | --- | | ｽﾀﾃﾞｨ名 | 静解析 1 | | 解析ﾀｲﾌﾟ | 静解析 | | ﾒｯｼｭﾀｲﾌﾟ | 固体ﾒｯｼｭ | | 熱伝導効果: | ｵﾝ | | 熱ｵﾌﾟｼｮﾝ | 温度荷重を考慮します | | ひずみｾﾞﾛ時の温度 | 298 Kelvin | | SOLIDWORKS Flow Simulation の流体圧力結果を考慮する | Off | | ｿﾙﾊﾞﾀｲﾌﾟ | FFEPlus | | 面内力効果: | Off | | ｿﾌﾄｽﾌﾟﾘﾝｸﾞ: | Off | | 慣性力: | Off | | 互換性のないﾎﾞﾝﾄﾞ ｵﾌﾟｼｮﾝ | 自動 | | 大変位 | Off | | ﾌﾘｰﾎﾞﾃﾞｨﾌｫｰｽの計算 | ｵﾝ | | 摩擦 | Off | | ｱﾀﾞﾌﾟﾃｨﾌﾞ法ﾌﾗｸﾞ: | Off | | 結果ﾌｫﾙﾀﾞ | SOLIDWORKS ﾄﾞｷｭﾒﾝﾄ (D:\ロボ研\高専ロボコン的趣味設計\自作QL-10\部品) | |

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| 単位  |  |  | | --- | --- | | 単位系: | SI (MKS) | | 長さ/変位 | mm | | 温度 | Kelvin | | 角速度 | Rad/sec | | 圧力/応力 | N/m^2 | |

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| 材料特性  |  |  |  | | --- | --- | --- | | ****ﾓﾃﾞﾙ参照**** | ****ﾌﾟﾛﾊﾟﾃｨ**** | ****成分**** | |  | |  |  | | --- | --- | | ****名前:**** | **5052-O** | | ****ﾓﾃﾞﾙ ﾀｲﾌﾟ:**** | **線形等方性弾性** | | ****ﾃﾞﾌｫﾙﾄ破壊基準:**** | **未知** | | ****降伏強さ:**** | **9e+007 N/m^2** | | ****引張り強さ:**** | **1.95e+008 N/m^2** | | ****弾性係数:**** | **7e+010 N/m^2** | | ****ﾎﾟｱｿﾝ比:**** | **0.33** | | ****質量密度:**** | **2680 kg/m^3** | | ****せん断弾性係数:**** | **2.59e+010 N/m^2** | | ****温度膨張率:**** | **2.4e-005 /Kelvin** | | **ｿﾘｯﾄﾞﾎﾞﾃﾞｨ 1(円形ﾊﾟﾀｰﾝ2)(omisa自作QL-10vol1 メイン板)** | | **ｶｰﾌﾞ ﾃﾞｰﾀ:N/A::** | | | |

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| **荷重と拘束**  | ****拘束名**** | ****拘束ｲﾒｰｼﾞ**** | ****拘束詳細**** | | --- | --- | --- | | **固定-1** |  | |  |  | | --- | --- | | ｴﾝﾃｨﾃｨ: | **1 面（複数面）** | | ﾀｲﾌﾟ: | **固定ｼﾞｵﾒﾄﾘ** | | | ****合成力****   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **成分** | **X** | **Y** | **Z** | **合力** | | **反力(N)** | **6.07967e-005** | **-5.59947e-005** | **-1.12318e-005** | **8.34135e-005** | | **反ﾓｰﾒﾝﾄ(N.m)** | **0** | **0** | **0** | **0** | | | |  | ****荷重名**** | ****ｲﾒｰｼﾞを読み込み**** | ****詳細を読み込み**** | | --- | --- | --- | | **力-1** |  | |  |  | | --- | --- | | ｴﾝﾃｨﾃｨ: | **18 面（複数面）** | | ﾀｲﾌﾟ: | **面に垂直荷重** | | 値: | **1 N** | | |

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| 結合定義 ﾃﾞｰﾀなし |

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| ﾒｯｼｭ情報  |  |  | | --- | --- | | ﾒｯｼｭﾀｲﾌﾟ | 固体ﾒｯｼｭ | | 使用ﾒｯｼｬｰ: | 標準ﾒｯｼｭ | | 自動徐変: | Off | | ﾒｯｼｭ自動ﾙｰﾌﾟを使用: | Off | | ﾔｺﾋﾞｱﾝ点 | 4 点 | | 要素ｻｲｽﾞ | 1.97153 mm | | 許容誤差 | 0.0985765 mm | | ﾒｯｼｭ特性ﾌﾟﾛｯﾄ | 高 |  ﾒｯｼｭ情報 - 詳細  |  |  | | --- | --- | | 総節点数 | 20967 | | 総要素数 | 10887 | | 最大ｱｽﾍﾟｸﾄ比 | 4.9198 | | ｱｽﾍﾟｸﾄ比 < 3 の要素ﾊﾟｰｾﾝﾃｰｼﾞ | 98.3 | | ｱｽﾍﾟｸﾄ比 > 10 の要素ﾊﾟｰｾﾝﾃｰｼﾞ | 0 | | ひずみ要素のﾊﾟｰｾﾝﾃｰｼﾞ(ﾔｺﾋﾞｱﾝ) | 0 | | ﾒｯｼｭ完成に必要な時間(hh;mm;ss): | 00:00:05 | | ｺﾝﾋﾟｭｰﾀ名: |  | |  | | |

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| 合成力反力  | 選択ｾｯﾄ | 単位 | X方向合計 | Y方向合計 | Z方向合計 | 合力 | | --- | --- | --- | --- | --- | --- | | ﾓﾃﾞﾙ全体 | N | 6.07967e-005 | -5.59947e-005 | -1.12318e-005 | 8.34135e-005 |  反ﾓｰﾒﾝﾄ  | 選択ｾｯﾄ | 単位 | X方向合計 | Y方向合計 | Z方向合計 | 合力 | | --- | --- | --- | --- | --- | --- | | ﾓﾃﾞﾙ全体 | N.m | 0 | 0 | 0 | 0 | |
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| ｽﾀﾃﾞｨ結果  | 名前 | ﾀｲﾌﾟ | 最小値 | 最大値 | | --- | --- | --- | --- | | 応力1 | VON: von Mises 応力 | 3.214e+000N/m^2  節点: 1752 | 4.576e+005N/m^2  節点: 17912 | | **omisa自作QL-10vol1 メイン板-静解析 1-応力-応力1** | | | |  | 名前 | ﾀｲﾌﾟ | 最小値 | 最大値 | | --- | --- | --- | --- | | 変位1 | URES: 合成変位 | 0.000e+000mm  節点: 191 | 7.089e-005mm  節点: 1870 | | **omisa自作QL-10vol1 メイン板-静解析 1-変位-変位1** | | | |  | 名前 | ﾀｲﾌﾟ | 最小値 | 最大値 | | --- | --- | --- | --- | | ひずみ1 | ESTRN: 相当ひずみ | 9.755e-011  要素: 2370 | 5.037e-006  要素: 6394 | | **omisa自作QL-10vol1 メイン板-静解析 1-ひずみ-ひずみ1** | | | |  |  | | --- | |  | | **ｲﾒｰｼﾞ-1** | |

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| 結論 |