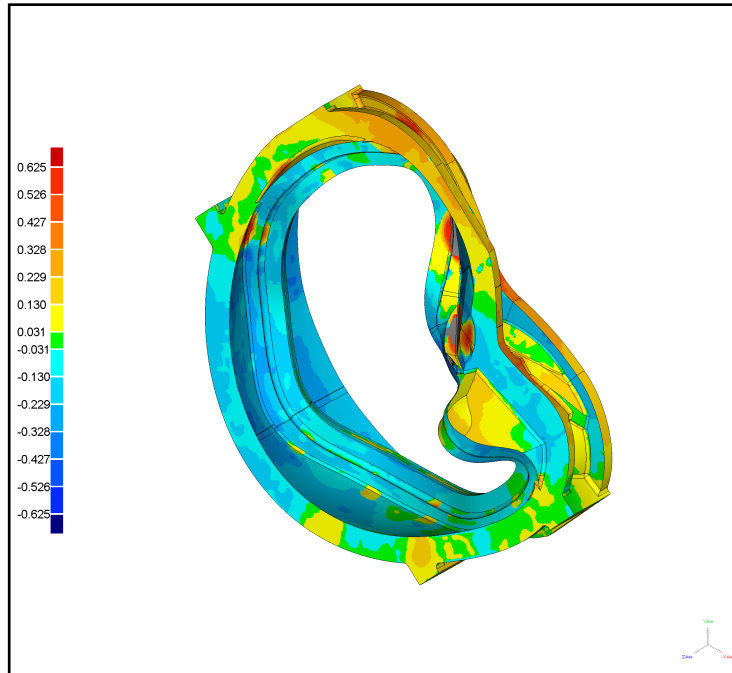


### Qualify Report

Title: A5-AR  
Date: 3/16/2006, 8:09 am



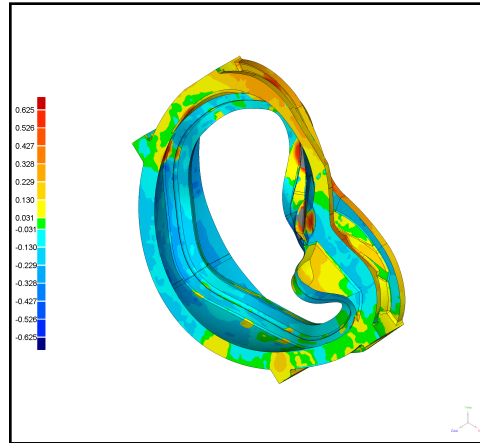
Author: Steve Pilgram  
Part: A5 Coil  
Test: Merged Points 8

### 3D Comparison Results

|                 |                    |
|-----------------|--------------------|
| Reference Model | lps-coil-a-casting |
| Test Model      | Merged Points 8    |
| # Data Points   | 1265651            |

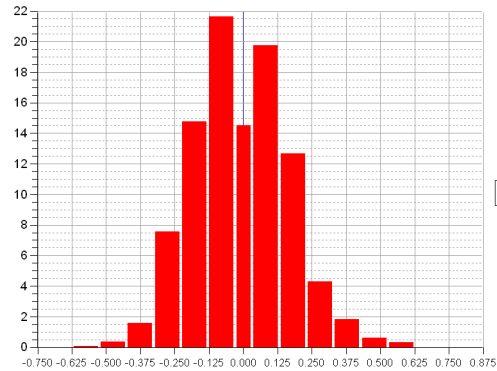
|            |        |
|------------|--------|
| Tolerances | in     |
| Max Tol +  | 0.625  |
| Min Tol +  | 0.031  |
| Min Tol -  | -0.031 |
| Max Tol -  | -0.625 |

|             |                |
|-------------|----------------|
| Deviation   | in             |
| Max Dev +   | 0.625          |
| Max Dev -   | -0.625         |
| Average +/- | 0.131 / -0.136 |
| Std Dev     | 0.168          |



#### Percentage Deviations

| >=Min  | <Max   | # Points | %      |
|--------|--------|----------|--------|
| -0.625 | -0.526 | 911      | 0.072  |
| -0.526 | -0.427 | 4304     | 0.340  |
| -0.427 | -0.328 | 20121    | 1.590  |
| -0.328 | -0.229 | 95568    | 7.551  |
| -0.229 | -0.130 | 186829   | 14.761 |
| -0.130 | -0.031 | 273897   | 21.641 |
| -0.031 | 0.031  | 183763   | 14.519 |
| 0.031  | 0.130  | 249969   | 19.750 |
| 0.130  | 0.229  | 160608   | 12.690 |
| 0.229  | 0.328  | 54593    | 4.313  |
| 0.328  | 0.427  | 23281    | 1.839  |
| 0.427  | 0.526  | 7914     | 0.625  |
| 0.526  | 0.625  | 3893     | 0.308  |

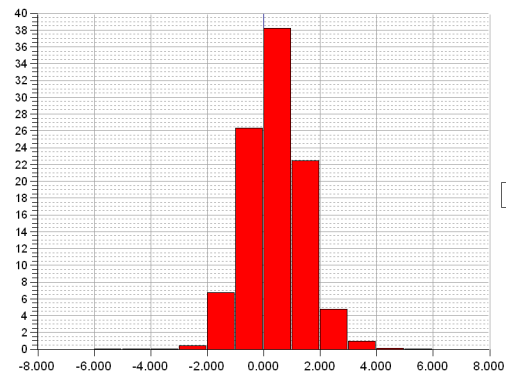


Deviation Distribution

|                  |   |       |
|------------------|---|-------|
| Out of Max Tol + | 0 | 0.000 |
| Out of Max Tol - | 0 | 0.000 |

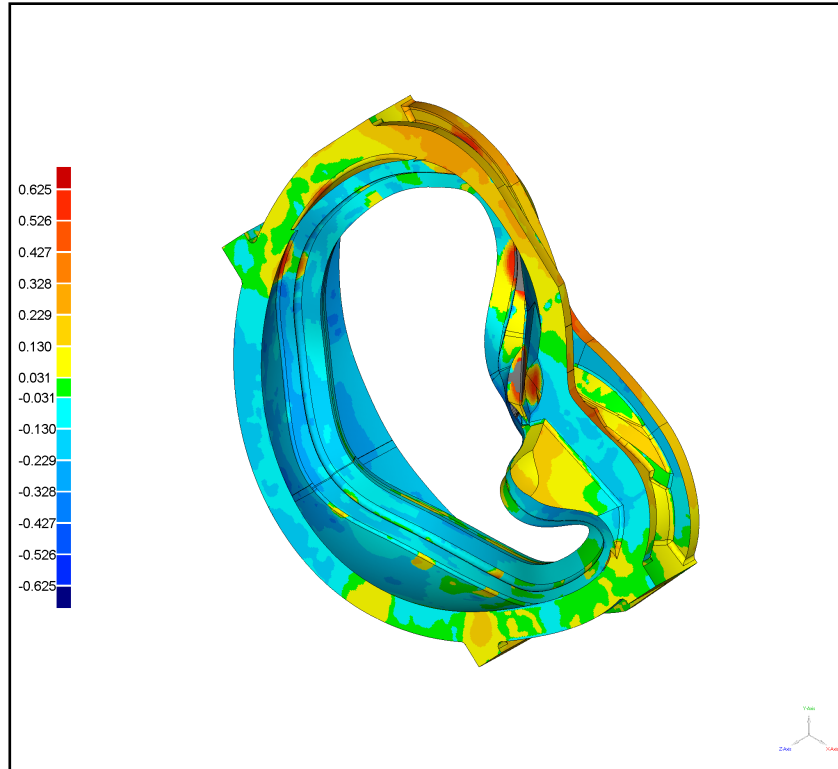
#### Standard Deviations

| Distribution (+/-) | # Points | %      |
|--------------------|----------|--------|
| -6 * Std Dev       | 0        | 0.000  |
| -5 * Std Dev       | 0        | 0.000  |
| -4 * Std Dev       | 170      | 0.013  |
| -3 * Std Dev       | 5733     | 0.453  |
| -2 * Std Dev       | 85539    | 6.758  |
| -1 * Std Dev       | 333342   | 26.338 |
| 1 * Std Dev        | 483414   | 38.195 |
| 2 * Std Dev        | 284269   | 22.460 |
| 3 * Std Dev        | 60095    | 4.748  |
| 4 * Std Dev        | 11625    | 0.918  |
| 5 * Std Dev        | 1464     | 0.116  |
| 6 * Std Dev        | 0        | 0.000  |

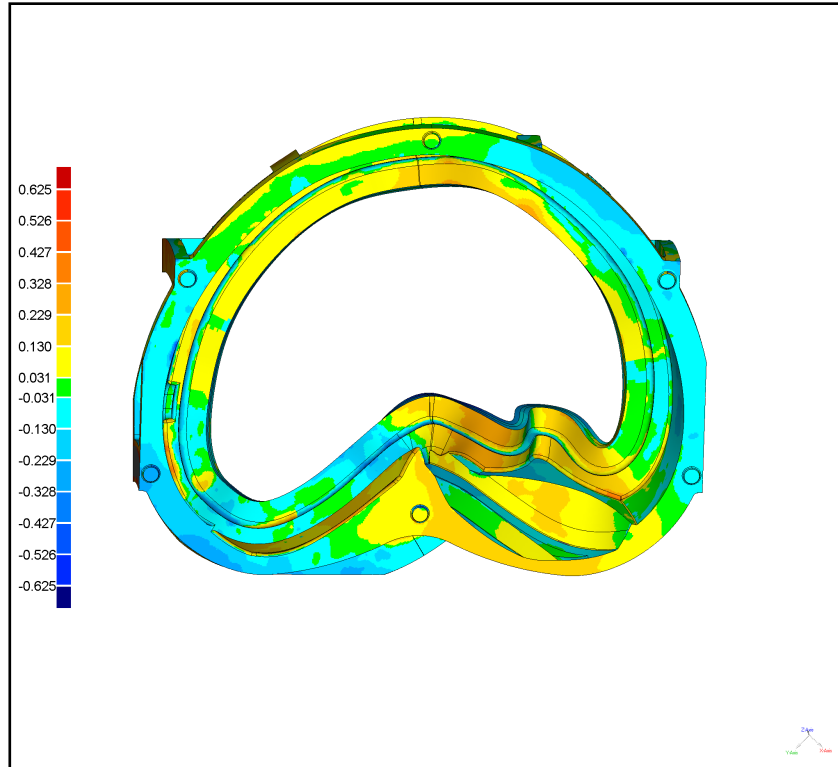


Standard Deviations

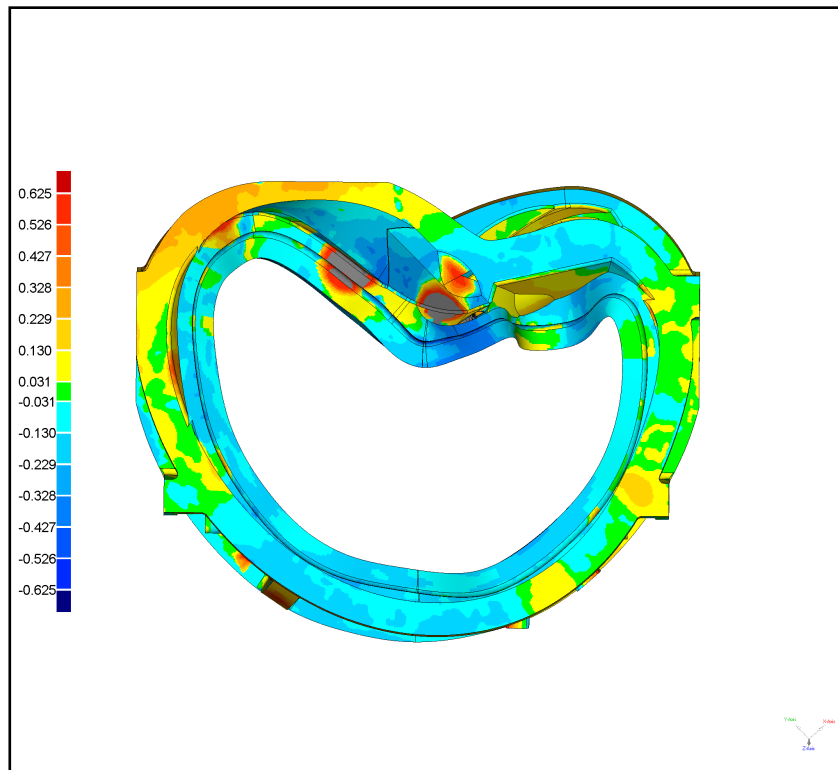
Predefined: Isometric



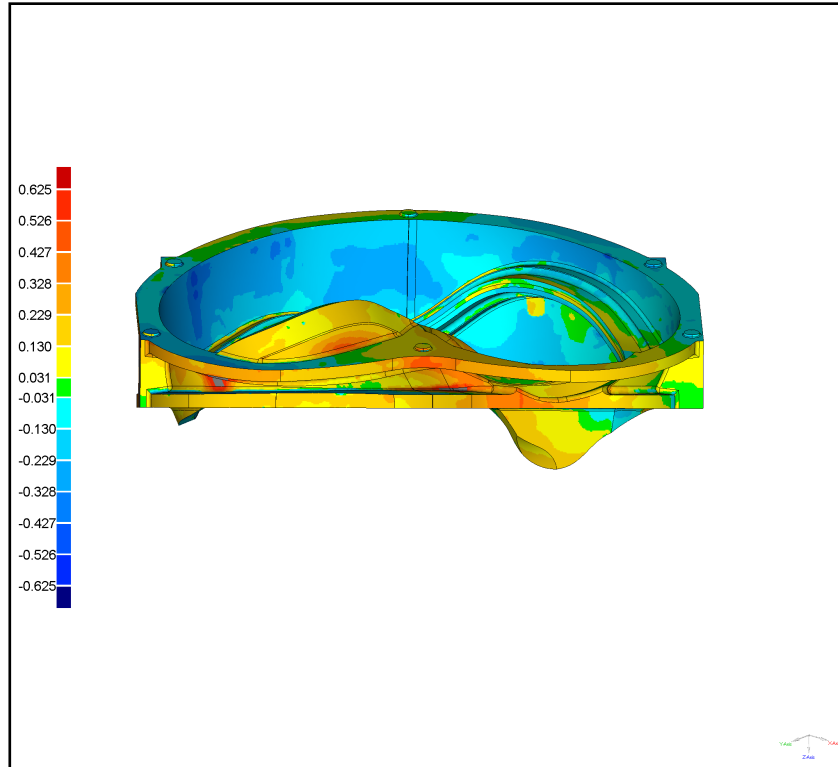
UserDefined: top



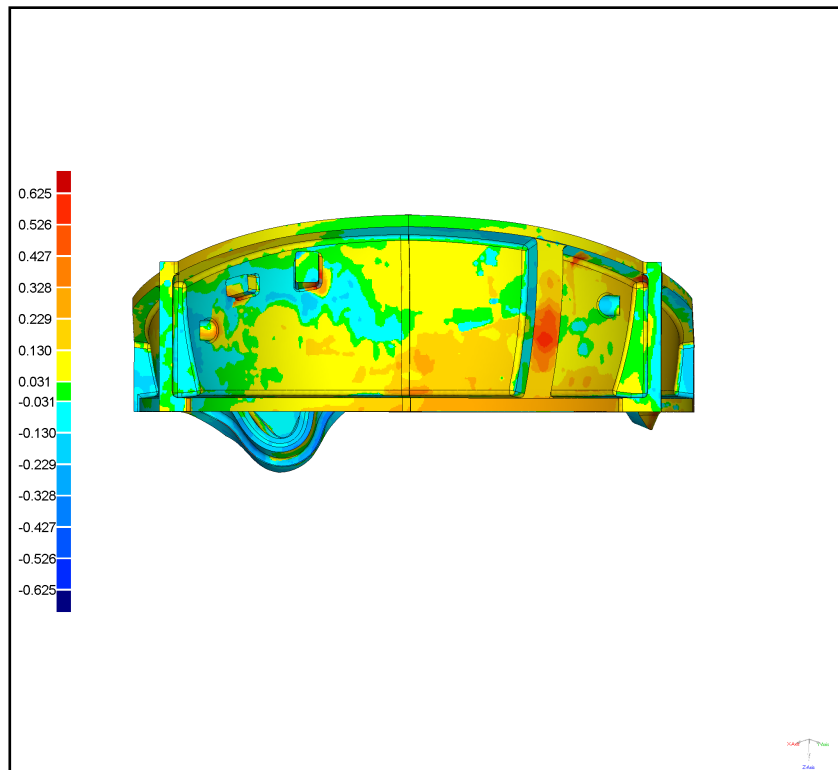
UserDefined: bottom



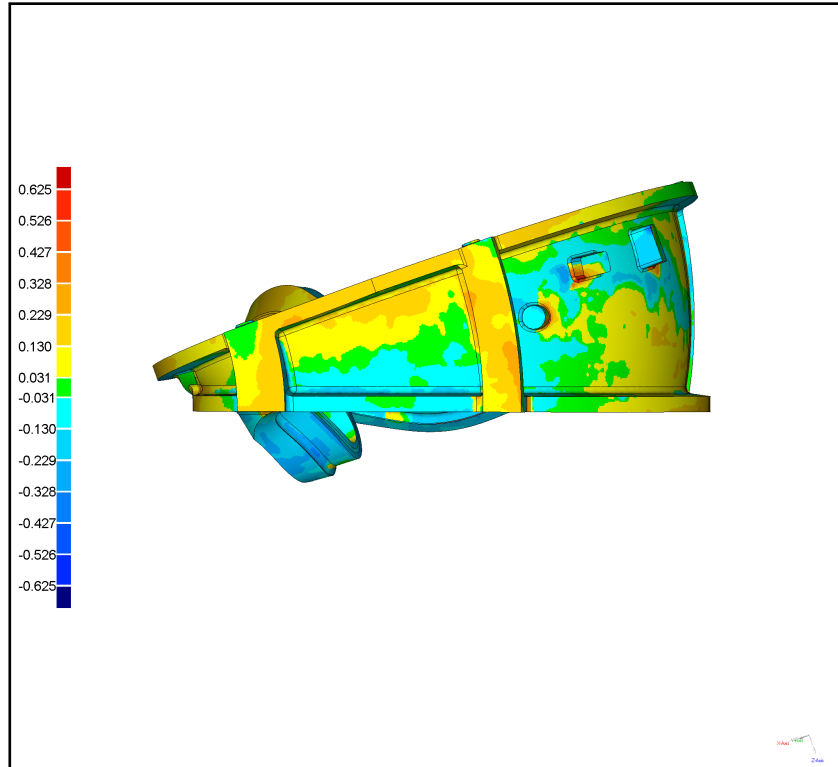
UserDefined: front



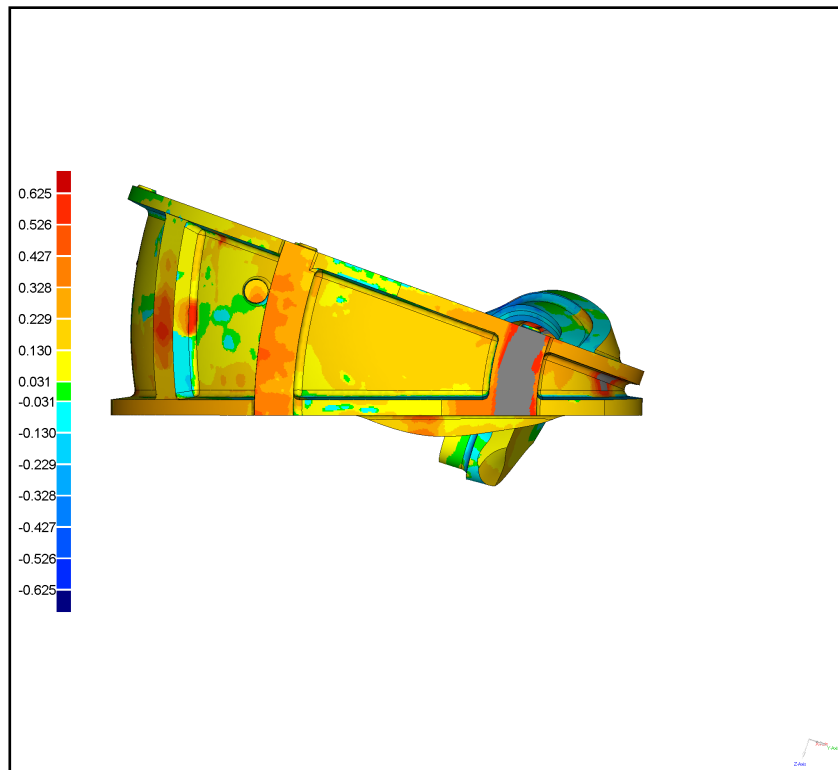
UserDefined: back



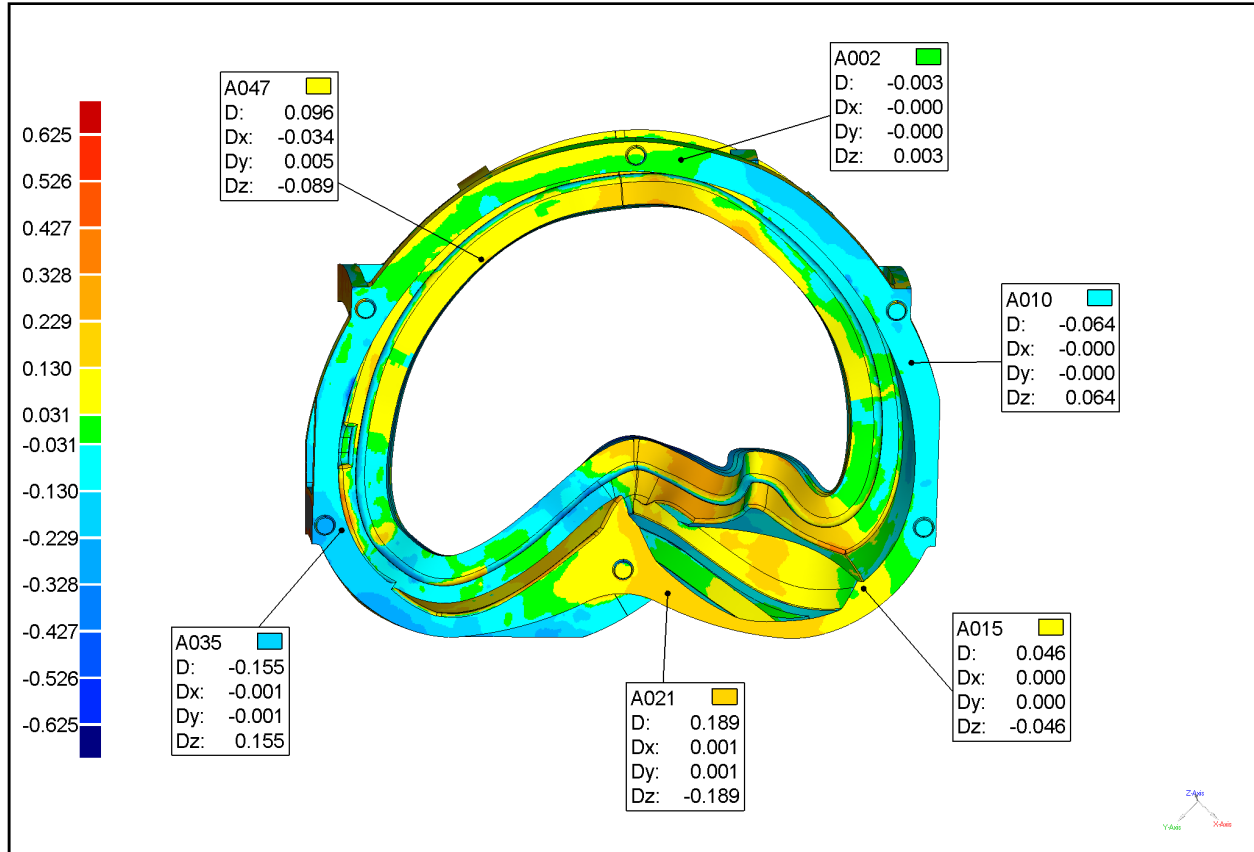
UserDefined: right



UserDefined: left



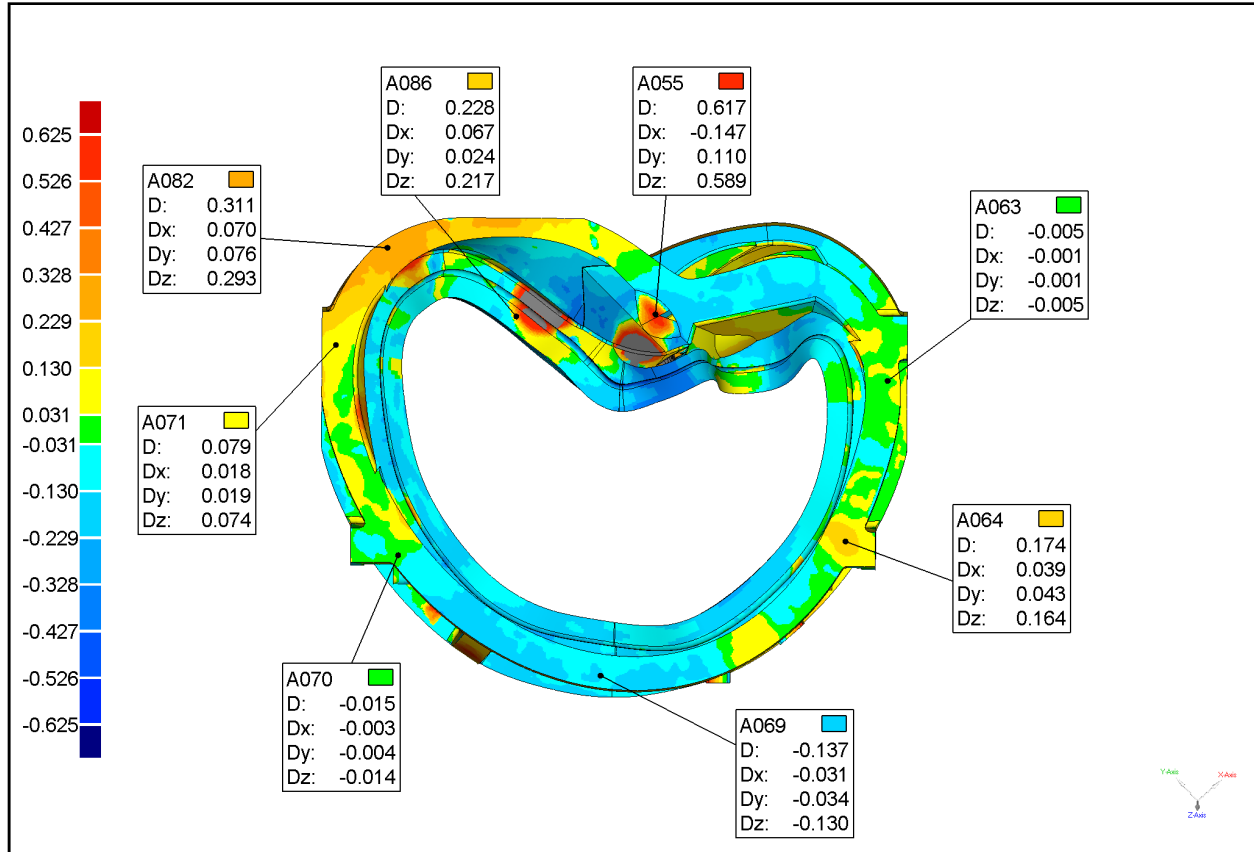
**Annotated: Annotation View 1**



Units: in

| Name | Dev    | Status | Tol + | Tol - | Ref X    | Ref Y   | Ref Z   | Dev Radius | Dev X  | Dev Y  | Dev Z  | Test X   | Test Y  | Test Z  |
|------|--------|--------|-------|-------|----------|---------|---------|------------|--------|--------|--------|----------|---------|---------|
| A002 | -0.003 |        |       |       | -99.198  | -62.082 | -12.233 | 0.039      | -0.000 | -0.000 | 0.003  | -99.198  | -62.082 | -12.230 |
| A010 | -0.064 |        |       |       | -43.091  | -62.771 | -11.854 | 0.039      | -0.000 | -0.000 | 0.064  | -43.091  | -62.771 | -11.790 |
| A015 | 0.046  |        |       |       | -20.266  | -27.074 | -11.430 | 0.039      | 0.000  | 0.000  | -0.046 | -20.266  | -27.074 | -11.476 |
| A021 | 0.189  |        |       |       | -45.178  | -2.953  | -11.419 | 0.039      | 0.001  | 0.001  | -0.189 | -45.177  | -2.952  | -11.609 |
| A035 | -0.155 |        |       |       | -95.766  | 27.733  | -11.536 | 0.039      | -0.001 | -0.001 | 0.155  | -95.767  | 27.731  | -11.381 |
| A047 | 0.096  |        |       |       | -108.451 | -22.558 | 2.490   | 0.039      | -0.034 | 0.005  | -0.089 | -108.485 | -22.553 | 2.400   |

**Annotated: Annotation View 2**

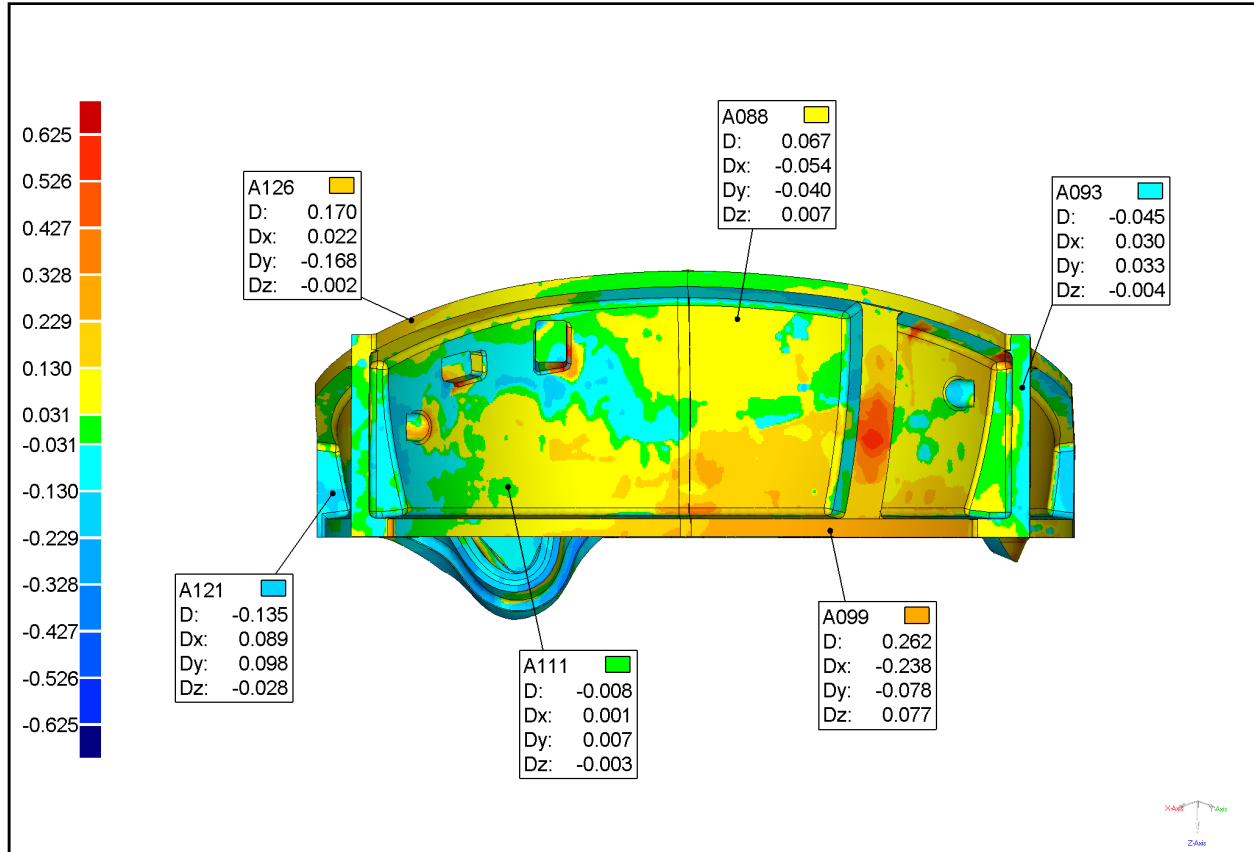


Units: in

| Name | Dev    | Status | Tol + | Tol - | Ref X    | Ref Y   | Ref Z   | Dev Radius | Dev X  | Dev Y  | Dev Z  | Test X   | Test Y  | Test Z  |
|------|--------|--------|-------|-------|----------|---------|---------|------------|--------|--------|--------|----------|---------|---------|
| A055 | 0.617  |        |       |       | -50.170  | -7.840  | 0.624   | 0.039      | -0.147 | 0.110  | 0.589  | -50.317  | -7.730  | 1.213   |
| A063 | -0.005 |        |       |       | -25.357  | -45.772 | 5.845   | 0.039      | -0.001 | -0.001 | -0.005 | -25.358  | -45.773 | 5.840   |
| A064 | 0.174  |        |       |       | -50.446  | -61.845 | 15.992  | 0.039      | 0.039  | 0.043  | 0.164  | -50.407  | -61.802 | 16.156  |
| A069 | -0.137 |        |       |       | -100.815 | -48.865 | 24.584  | 0.039      | -0.031 | -0.034 | -0.130 | -100.845 | -48.899 | 24.455  |
| A070 | -0.015 |        |       |       | -114.872 | -7.288  | 17.101  | 0.039      | -0.003 | -0.004 | -0.014 | -114.875 | -7.291  | 17.088  |
| A071 | 0.079  |        |       |       | -98.516  | 28.565  | 3.881   | 0.039      | 0.018  | 0.019  | 0.074  | -98.499  | 28.585  | 3.955   |
| A082 | 0.311  |        |       |       | -79.660  | 34.997  | -2.275  | 0.039      | 0.070  | 0.076  | 0.293  | -79.590  | 35.073  | -1.982  |
| A086 | 0.228  |        |       |       | -72.212  | 7.029   | -13.604 | 0.039      | 0.067  | 0.024  | 0.217  | -72.144  | 7.053   | -13.387 |



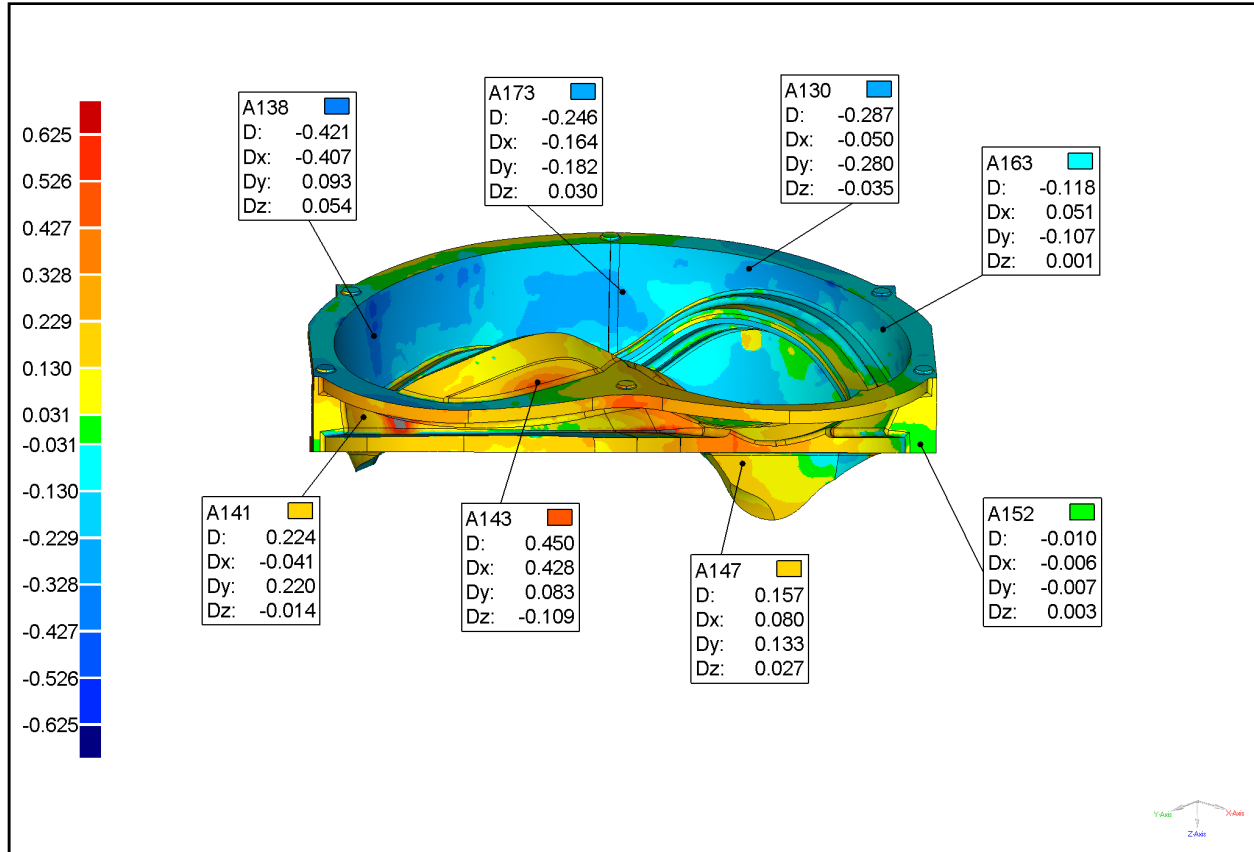
**Annotated: Annotation View 3**



Units: in

| Name | Dev    | Status | Tol + | Tol - | Ref X    | Ref Y   | Ref Z   | Dev Radius | Dev X  | Dev Y  | Dev Z  | Test X   | Test Y  | Test Z  |
|------|--------|--------|-------|-------|----------|---------|---------|------------|--------|--------|--------|----------|---------|---------|
| A088 | 0.067  |        |       |       | -109.224 | -50.514 | -6.620  | 0.039      | -0.054 | -0.040 | 0.007  | -109.278 | -50.554 | -6.613  |
| A093 | -0.045 |        |       |       | -124.713 | -6.368  | -3.931  | 0.039      | 0.030  | 0.033  | -0.004 | -124.683 | -6.335  | -3.934  |
| A099 | 0.262  |        |       |       | -112.451 | -33.925 | 22.521  | 0.039      | -0.238 | -0.078 | 0.077  | -112.689 | -34.003 | 22.598  |
| A111 | -0.008 |        |       |       | -76.488  | -64.396 | 15.153  | 0.039      | 0.001  | 0.007  | -0.003 | -76.487  | -64.389 | 15.150  |
| A121 | -0.135 |        |       |       | -22.894  | -45.101 | -1.692  | 0.039      | 0.089  | 0.098  | -0.028 | -22.805  | -45.003 | -1.721  |
| A126 | 0.170  |        |       |       | -63.978  | -71.963 | -11.586 | 0.039      | 0.022  | -0.168 | -0.002 | -63.956  | -72.131 | -11.587 |

**Annotated: Annotation View 4**



Units: in

| Name | Dev    | Status | Tol + | Tol - | Ref X    | Ref Y   | Ref Z   | Dev Radius | Dev X  | Dev Y  | Dev Z  | Test X   | Test Y  | Test Z  |
|------|--------|--------|-------|-------|----------|---------|---------|------------|--------|--------|--------|----------|---------|---------|
| A130 | -0.287 |        |       |       | -81.338  | -66.576 | -9.787  | 0.039      | -0.050 | -0.280 | -0.035 | -81.389  | -66.856 | -9.822  |
| A138 | -0.421 |        |       |       | -116.570 | -5.551  | -4.617  | 0.039      | -0.407 | 0.093  | 0.054  | -116.977 | -5.458  | -4.563  |
| A141 | 0.224  |        |       |       | -87.576  | 31.547  | -5.975  | 0.039      | -0.041 | 0.220  | -0.014 | -87.617  | 31.767  | -5.989  |
| A143 | 0.450  |        |       |       | -64.815  | 10.912  | -12.605 | 0.039      | 0.428  | 0.083  | -0.109 | -64.387  | 10.995  | -12.715 |
| A147 | 0.157  |        |       |       | -40.972  | -17.468 | 4.301   | 0.039      | 0.080  | 0.133  | 0.027  | -40.892  | -17.335 | 4.328   |
| A152 | -0.010 |        |       |       | -17.289  | -38.135 | 0.362   | 0.039      | -0.006 | -0.007 | 0.003  | -17.295  | -38.142 | 0.365   |
| A163 | -0.118 |        |       |       | -45.704  | -61.250 | -8.348  | 0.039      | 0.051  | -0.107 | 0.001  | -45.654  | -61.357 | -8.347  |
| A173 | -0.246 |        |       |       | -101.588 | -56.036 | -3.312  | 0.039      | -0.164 | -0.182 | 0.030  | -101.751 | -56.218 | -3.282  |

**Annotated: All**

Units: in

| Name | Dev    | Status | Tol + | Tol - | Ref X    | Ref Y   | Ref Z   | Dev Radius | Dev X  | Dev Y  | Dev Z  | Test X   | Test Y  | Test Z  |
|------|--------|--------|-------|-------|----------|---------|---------|------------|--------|--------|--------|----------|---------|---------|
| A002 | -0.003 |        |       |       | -99.198  | -62.082 | -12.233 | 0.039      | -0.000 | -0.000 | 0.003  | -99.198  | -62.082 | -12.230 |
| A010 | -0.064 |        |       |       | -43.091  | -62.771 | -11.854 | 0.039      | -0.000 | -0.000 | 0.064  | -43.091  | -62.771 | -11.790 |
| A015 | 0.046  |        |       |       | -20.266  | -27.074 | -11.430 | 0.039      | 0.000  | 0.000  | -0.046 | -20.266  | -27.074 | -11.476 |
| A021 | 0.189  |        |       |       | -45.178  | -2.953  | -11.419 | 0.039      | 0.001  | 0.001  | -0.189 | -45.177  | -2.952  | -11.609 |
| A035 | -0.155 |        |       |       | -95.766  | 27.733  | -11.536 | 0.039      | -0.001 | -0.001 | 0.155  | -95.767  | 27.731  | -11.381 |
| A047 | 0.096  |        |       |       | -108.451 | -22.558 | 2.490   | 0.039      | -0.034 | 0.005  | -0.089 | -108.485 | -22.553 | 2.400   |
| A055 | 0.617  |        |       |       | -50.170  | -7.840  | 0.624   | 0.039      | -0.147 | 0.110  | 0.589  | -50.317  | -7.730  | 1.213   |
| A063 | -0.005 |        |       |       | -25.357  | -45.772 | 5.845   | 0.039      | -0.001 | -0.001 | -0.005 | -25.358  | -45.773 | 5.840   |
| A064 | 0.174  |        |       |       | -50.446  | -61.845 | 15.992  | 0.039      | 0.039  | 0.043  | 0.164  | -50.407  | -61.802 | 16.156  |
| A069 | -0.137 |        |       |       | -100.815 | -48.865 | 24.584  | 0.039      | -0.031 | -0.034 | -0.130 | -100.845 | -48.899 | 24.455  |
| A070 | -0.015 |        |       |       | -114.872 | -7.288  | 17.101  | 0.039      | -0.003 | -0.004 | -0.014 | -114.875 | -7.291  | 17.088  |
| A071 | 0.079  |        |       |       | -98.516  | 28.565  | 3.881   | 0.039      | 0.018  | 0.019  | 0.074  | -98.499  | 28.585  | 3.955   |
| A082 | 0.311  |        |       |       | -79.660  | 34.997  | -2.275  | 0.039      | 0.070  | 0.076  | 0.293  | -79.590  | 35.073  | -1.982  |
| A086 | 0.228  |        |       |       | -72.212  | 7.029   | -13.604 | 0.039      | 0.067  | 0.024  | 0.217  | -72.144  | 7.053   | -13.387 |
| A088 | 0.067  |        |       |       | -109.224 | -50.514 | -6.620  | 0.039      | -0.054 | -0.040 | 0.007  | -109.278 | -50.554 | -6.613  |
| A093 | -0.045 |        |       |       | -124.713 | -6.368  | -3.931  | 0.039      | 0.030  | 0.033  | -0.004 | -124.683 | -6.335  | -3.934  |
| A099 | 0.262  |        |       |       | -112.451 | -33.925 | 22.521  | 0.039      | -0.238 | -0.078 | 0.077  | -112.689 | -34.003 | 22.598  |
| A111 | -0.008 |        |       |       | -76.488  | -64.396 | 15.153  | 0.039      | 0.001  | 0.007  | -0.003 | -76.487  | -64.389 | 15.150  |
| A121 | -0.135 |        |       |       | -22.894  | -45.101 | -1.692  | 0.039      | 0.089  | 0.098  | -0.028 | -22.805  | -45.003 | -1.721  |
| A126 | 0.170  |        |       |       | -63.978  | -71.963 | -11.586 | 0.039      | 0.022  | -0.168 | -0.002 | -63.956  | -72.131 | -11.587 |
| A130 | -0.287 |        |       |       | -81.338  | -66.576 | -9.787  | 0.039      | -0.050 | -0.280 | -0.035 | -81.389  | -66.856 | -9.822  |
| A138 | -0.421 |        |       |       | -116.570 | -5.551  | -4.617  | 0.039      | -0.407 | 0.093  | 0.054  | -116.977 | -5.458  | -4.563  |
| A141 | 0.224  |        |       |       | -87.576  | 31.547  | -5.975  | 0.039      | -0.041 | 0.220  | -0.014 | -87.617  | 31.767  | -5.989  |
| A143 | 0.450  |        |       |       | -64.815  | 10.912  | -12.605 | 0.039      | 0.428  | 0.083  | -0.109 | -64.387  | 10.995  | -12.715 |
| A147 | 0.157  |        |       |       | -40.972  | -17.468 | 4.301   | 0.039      | 0.080  | 0.133  | 0.027  | -40.892  | -17.335 | 4.328   |
| A152 | -0.010 |        |       |       | -17.289  | -38.135 | 0.362   | 0.039      | -0.006 | -0.007 | 0.003  | -17.295  | -38.142 | 0.365   |
| A163 | -0.118 |        |       |       | -45.704  | -61.250 | -8.348  | 0.039      | 0.051  | -0.107 | 0.001  | -45.654  | -61.357 | -8.347  |
| A173 | -0.246 |        |       |       | -101.588 | -56.036 | -3.312  | 0.039      | -0.164 | -0.182 | 0.030  | -101.751 | -56.218 | -3.282  |