| pc-dmis | PART NAME : PN482497_n_650_5cell_2of3_flanges_v01 | | July 18, 2014 | 16:19 |
|---|---|---|---|---|
| | REV NUMBER : | SER NUMBER : | STATS COUNT : | 1 |

482497 Rev. none
PROJECT X - 650 MHZ
CAVITY - 5 CELL BETA=0.9
BARE CAVITY ASSEMBLY

Inspected by : Robert Riley
Cavity Serial Number : B9A-AES-008
Routing Form Number : 96020
: 1407181404

**********

OVERALL LENGTH BETWEEN BEAM TUBE FLANGES

**********

| ↔ | MM | DIST1 - PLNC_FPE_BT_FLANGE TO PLNC_MCE_BT_FLANGE (YAXIS) | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 1333.628 | 1326.999 | -6.629 | 1.500 | 1.500 | 5.129 | |

**********

DISTANCE BETWEEN MAIN COUPLER FLANGE & BEAM TUBE FLANGE

**********

| ↔ | MM | DIST2 - CIR_MC TO CIR_MCE_BT_FLANGE (YAXIS) | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 89.200 | 92.220 | 3.020 | 1.500 | 1.500 | 1.520 | |

**********

DISTANCE BETWEEN MAIN COUPLER FLANGE & FIELD PROBE FLANGE

**********

| ↔ | MM | DIST3 - CIR_MC TO CIR_FP (YAXIS) | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 1179.428 | 1173.167 | -6.260 | 1.500 | 1.500 | 4.760 | |

**********

DISTANCE BETWEEN FIELD PROBE FLANGE & BEAM TUBE FLANGE

**********

| ↔ | MM | DIST4 - CIR_FP TO CIR_FPE_BT_FLANGE (YAXIS) | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 65.000 | 68.241 | 3.241 | 1.500 | 1.500 | 1.741 | |

**********

**********

FIELD PROBE END BEAM TUBE FLANGE

**********

**********

| ⊕ | MM | LOC1 - CIR_FPE_BT_FLANGE | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | 0.000 | -0.032 | -0.032 | 0.200 | 0.200 | 0.000 | |
| Z | 0.000 | 0.131 | 0.131 | 0.200 | 0.200 | 0.000 | |
| D | 170.000 | 169.982 | -0.018 | 0.200 | 0.200 | 0.000 | |
| RN | 0.000 | 0.026 | 0.026 | 0.200 | 0.000 | 0.000 | |
| ↔ | MM | DIST5 - PLNC_FPE_BT_FLANGE TO PLNC_FPE_BT_FLANGE_SS (YAXIS) | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 1.000 | 0.993 | -0.007 | 0.200 | 0.200 | 0.000 | |
| ⊕ | MM | LOC2 - PLN_FPE_BEAM_TUBE | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| Y | -651.814 | -648.353 | 3.461 | 1.500 | 1.500 | 1.961 | |
| FL | 0.000 | 0.011 | 0.011 | 0.250 | 0.000 | 0.000 | |

| ⌖ | MM | LOC3 - PLNC_FPE_BT_FLANGE | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| Y | -651.814 | -648.334 | 3.480 | 1.500 | 1.500 | 1.980 | |
| FL | 0.000 | 0.019 | 0.019 | 0.250 | 0.000 | 0.000 | |

| ⌖ | MM | LOC4 - PLNC_FPE_BT_FLANGE_SS | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| Y | -650.814 | -647.341 | 3.473 | 1.500 | 1.500 | 1.973 | |
| FL | 0.000 | 0.010 | 0.010 | 0.250 | 0.000 | 0.000 | |

| // | MM | PARL1 - PLNC_FPE_BT_FLANGE TO YMINUS | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 0 | 0.208 | 0.208 | 0.250 | 0 | 0.000 | |

| ⌖ | MM | LOC5 - CIRC_FPE_BC | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | 0.000 | -0.017 | -0.017 | 0.200 | 0.200 | 0.000 | |
| Z | 0.000 | 0.124 | 0.124 | 0.200 | 2.000 | 0.000 | |
| D | 151.600 | 151.559 | -0.041 | 0.200 | 0.200 | 0.000 | |
| RN | 0.000 | 0.082 | 0.082 | 0.200 | 0.000 | 0.000 | |

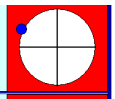
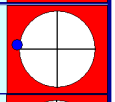
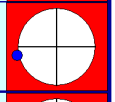
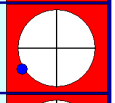
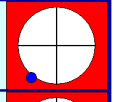
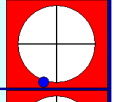
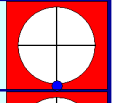
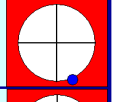
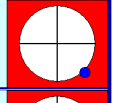
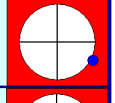
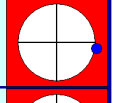
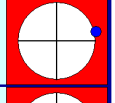
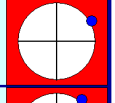
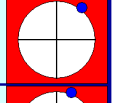
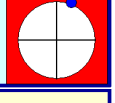
**********

BOLT CIRCLE POSITION TO FLANGE & CAVITY ROTATION

**********

| FCFLOC1 Size | MM | 18XØ8.5 0.13/0.13 | | | | | |
|---|---|---|---|---|---|---|---|
| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
| CIR_FPE_BC1 | 8.500 | 8.581 | 0.081 | 0.130 | 0.130 | 0.000 | 0.211 |
| CIR_FPE_BC2 | 8.500 | 8.489 | -0.011 | 0.130 | 0.130 | 0.000 | 0.119 |
| CIR_FPE_BC3 | 8.500 | 8.503 | 0.003 | 0.130 | 0.130 | 0.000 | 0.133 |
| CIR_FPE_BC4 | 8.500 | 8.490 | -0.010 | 0.130 | 0.130 | 0.000 | 0.120 |
| CIR_FPE_BC5 | 8.500 | 8.513 | 0.013 | 0.130 | 0.130 | 0.000 | 0.143 |
| CIR_FPE_BC6 | 8.500 | 8.510 | 0.010 | 0.130 | 0.130 | 0.000 | 0.140 |
| CIR_FPE_BC7 | 8.500 | 8.500 | 0.000 | 0.130 | 0.130 | 0.000 | 0.130 |
| CIR_FPE_BC8 | 8.500 | 8.499 | -0.001 | 0.130 | 0.130 | 0.000 | 0.129 |
| CIR_FPE_BC9 | 8.500 | 8.521 | 0.021 | 0.130 | 0.130 | 0.000 | 0.151 |
| CIR_FPE_BC10 | 8.500 | 8.521 | 0.021 | 0.130 | 0.130 | 0.000 | 0.151 |
| CIR_FPE_BC11 | 8.500 | 8.505 | 0.005 | 0.130 | 0.130 | 0.000 | 0.135 |
| CIR_FPE_BC12 | 8.500 | 8.506 | 0.006 | 0.130 | 0.130 | 0.000 | 0.136 |
| CIR_FPE_BC13 | 8.500 | 8.488 | -0.012 | 0.130 | 0.130 | 0.000 | 0.118 |
| CIR_FPE_BC14 | 8.500 | 8.533 | 0.033 | 0.130 | 0.130 | 0.000 | 0.163 |
| CIR_FPE_BC15 | 8.500 | 8.515 | 0.015 | 0.130 | 0.130 | 0.000 | 0.145 |
| CIR_FPE_BC16 | 8.500 | 8.502 | 0.002 | 0.130 | 0.130 | 0.000 | 0.132 |
| CIR_FPE_BC17 | 8.500 | 8.503 | 0.003 | 0.130 | 0.130 | 0.000 | 0.133 |
| CIR_FPE_BC18 | 8.500 | 8.495 | -0.005 | 0.130 | 0.130 | 0.000 | 0.125 |

| FCFLOC1 Position | MM | ⌖ Ø.2 Ⓜ A B | | | | | |
|---|---|---|---|---|---|---|---|
| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
| CIR_FPE_BC1 | 0.000 | 1.689 | 1.689 | 0.200 | | 1.278 | 0.211 |
| CIR_FPE_BC2 | 0.000 | 1.716 | 1.716 | 0.200 | | 1.397 | 0.119 |
| CIR_FPE_BC3 | 0.000 | 1.752 | 1.752 | 0.200 | | 1.420 | 0.133 |

| | | | |
|---|---|---|---|
| CIR_FPE_BC4 | 1.797 | 0.120 |  |
| CIR_FPE_BC5 | 1.816 | 0.143 |  |
| CIR_FPE_BC6 | 1.802 | 0.140 |  |
| CIR_FPE_BC7 | 1.788 | 0.130 |  |
| CIR_FPE_BC8 | 1.716 | 0.129 |  |
| CIR_FPE_BC9 | 1.760 | 0.151 |  |
| CIR_FPE_BC10 | 1.791 | 0.151 |  |
| CIR_FPE_BC11 | 1.816 | 0.135 |  |
| CIR_FPE_BC12 | 1.847 | 0.136 |  |
| CIR_FPE_BC13 | 1.852 | 0.118 |  |
| CIR_FPE_BC14 | 1.854 | 0.163 |  |
| CIR_FPE_BC15 | 1.829 | 0.145 |  |
| CIR_FPE_BC16 | 1.815 | 0.132 |  |
| CIR_FPE_BC17 | 1.856 | 0.133 |  |
| CIR_FPE_BC18 | 1.727 | 0.125 |  |

FCFLOC1 Datum Shift

| Segment | Shift X | Shift Y | Shift Z | Rotation X | Rotation Y | Rotation Z |
|---|---|---|---|---|---|---|
| Segment 1 | Fixed | Fixed | Fixed | Fixed | Fixed | Fixed |

FCFLOC1 Summary FIT TO DATUMS=ON, DEV PERPEN CENTERLINE=ON

| Feature | AX | NOMINAL | MEAS | DEV |
|---|---|---|---|---|
| CIR_FPE_BC1 | X | 75.800 | 75.835 | 0.035 |
| | Z | 0.000 | 0.844 | 0.844 |
| CIR_FPE_BC2 | X | 71.229 | 70.920 | -0.309 |
| | Z | 25.925 | 26.725 | 0.800 |
| CIR_FPE_BC3 | X | 58.066 | 57.483 | -0.583 |
| | Z | 48.723 | 49.377 | 0.654 |
| CIR_FPE_BC4 | X | 37.900 | 37.093 | -0.807 |
| | Z | 65.645 | 66.040 | 0.395 |
| CIR_FPE_BC5 | X | 13.163 | 12.260 | -0.903 |
| | Z | 74.648 | 74.742 | 0.094 |
| CIR_FPE_BC6 | X | -13.163 | -14.043 | -0.880 |
| | Z | 74.648 | 74.452 | -0.196 |

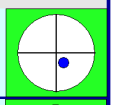
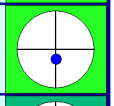
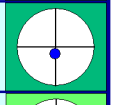
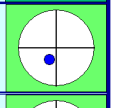
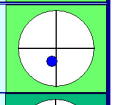
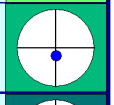
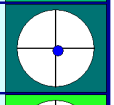
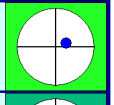
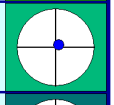
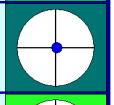
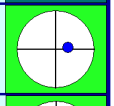
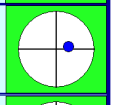
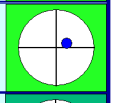
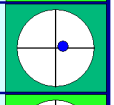
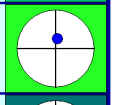
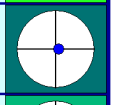
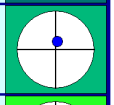
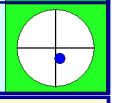
| | | | | |
|---|---|---|---|---|
| CIR_FPE_BC7 | X | -37.900 | -38.664 | -0.764 |
| | Z | 65.645 | 65.181 | -0.464 |
| CIR_FPE_BC8 | X | -58.066 | -58.595 | -0.529 |
| | Z | 48.723 | 48.047 | -0.676 |
| CIR_FPE_BC9 | X | -71.229 | -71.516 | -0.287 |
| | Z | 25.925 | 25.093 | -0.832 |
| CIR_FPE_BC10 | X | -75.800 | -75.789 | 0.011 |
| | Z | 0.000 | -0.896 | -0.896 |
| CIR_FPE_BC11 | X | -71.229 | -70.865 | 0.364 |
| | Z | -25.925 | -26.757 | -0.832 |
| CIR_FPE_BC12 | X | -58.066 | -57.433 | 0.633 |
| | Z | -48.723 | -49.396 | -0.673 |
| CIR_FPE_BC13 | X | -37.900 | -37.078 | 0.822 |
| | Z | -65.645 | -66.071 | -0.426 |
| CIR_FPE_BC14 | X | -13.163 | -12.247 | 0.916 |
| | Z | -74.648 | -74.789 | -0.141 |
| CIR_FPE_BC15 | X | 13.163 | 14.054 | 0.891 |
| | Z | -74.648 | -74.444 | 0.204 |
| CIR_FPE_BC16 | X | 37.900 | 38.686 | 0.786 |
| | Z | -65.645 | -65.192 | 0.453 |
| CIR_FPE_BC17 | X | 58.066 | 58.646 | 0.580 |
| | Z | -48.723 | -47.998 | 0.725 |
| CIR_FPE_BC18 | X | 71.229 | 71.548 | 0.319 |
| | Z | -25.925 | -25.122 | 0.803 |

**********

BOLT CIRCLE POSITION TO FLANGE ONLY

**********

| FCFLOC2 Size | MM | 18XØ8.5 0.13/0.13 | | | | | |
|---|---|---|---|---|---|---|---|
| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
| CIR_FPE_BC1 | 8.500 | 8.581 | 0.081 | 0.130 | 0.130 | 0.000 | 0.211 |
| CIR_FPE_BC2 | 8.500 | 8.489 | -0.011 | 0.130 | 0.130 | 0.000 | 0.119 |
| CIR_FPE_BC3 | 8.500 | 8.503 | 0.003 | 0.130 | 0.130 | 0.000 | 0.133 |
| CIR_FPE_BC4 | 8.500 | 8.490 | -0.010 | 0.130 | 0.130 | 0.000 | 0.120 |
| CIR_FPE_BC5 | 8.500 | 8.513 | 0.013 | 0.130 | 0.130 | 0.000 | 0.143 |
| CIR_FPE_BC6 | 8.500 | 8.510 | 0.010 | 0.130 | 0.130 | 0.000 | 0.140 |
| CIR_FPE_BC7 | 8.500 | 8.500 | 0.000 | 0.130 | 0.130 | 0.000 | 0.130 |
| CIR_FPE_BC8 | 8.500 | 8.499 | -0.001 | 0.130 | 0.130 | 0.000 | 0.129 |
| CIR_FPE_BC9 | 8.500 | 8.521 | 0.021 | 0.130 | 0.130 | 0.000 | 0.151 |
| CIR_FPE_BC10 | 8.500 | 8.521 | 0.021 | 0.130 | 0.130 | 0.000 | 0.151 |
| CIR_FPE_BC11 | 8.500 | 8.505 | 0.005 | 0.130 | 0.130 | 0.000 | 0.135 |
| CIR_FPE_BC12 | 8.500 | 8.506 | 0.006 | 0.130 | 0.130 | 0.000 | 0.136 |
| CIR_FPE_BC13 | 8.500 | 8.488 | -0.012 | 0.130 | 0.130 | 0.000 | 0.118 |
| CIR_FPE_BC14 | 8.500 | 8.533 | 0.033 | 0.130 | 0.130 | 0.000 | 0.163 |
| CIR_FPE_BC15 | 8.500 | 8.515 | 0.015 | 0.130 | 0.130 | 0.000 | 0.145 |
| CIR_FPE_BC16 | 8.500 | 8.502 | 0.002 | 0.130 | 0.130 | 0.000 | 0.132 |
| CIR_FPE_BC17 | 8.500 | 8.503 | 0.003 | 0.130 | 0.130 | 0.000 | 0.133 |
| CIR_FPE_BC18 | 8.500 | 8.495 | -0.005 | 0.130 | 0.130 | 0.000 | 0.125 |
| FCFLOC2 Position | MM | ⌖ Ø.2 Ⓜ A | | | | | |

| Feature | MEAS | BONUS | |
|---|---|---|---|
| CIR_FPE_BC1 | 0.133 | 0.211 |  |
| CIR_FPE_BC2 | 0.081 | 0.119 |  |
| CIR_FPE_BC3 | 0.060 | 0.133 |  |
| CIR_FPE_BC4 | 0.112 | 0.120 |  |
| CIR_FPE_BC5 | 0.120 | 0.143 |  |
| CIR_FPE_BC6 | 0.071 | 0.140 |  |
| CIR_FPE_BC7 | 0.031 | 0.130 |  |
| CIR_FPE_BC8 | 0.092 | 0.129 |  |
| CIR_FPE_BC9 | 0.040 | 0.151 |  |
| CIR_FPE_BC10 | 0.012 | 0.151 |  |
| CIR_FPE_BC11 | 0.106 | 0.135 |  |
| CIR_FPE_BC12 | 0.106 | 0.136 |  |
| CIR_FPE_BC13 | 0.093 | 0.118 |  |
| CIR_FPE_BC14 | 0.067 | 0.163 |  |
| CIR_FPE_BC15 | 0.088 | 0.145 |  |
| CIR_FPE_BC16 | 0.024 | 0.132 |  |
| CIR_FPE_BC17 | 0.070 | 0.133 |  |
| CIR_FPE_BC18 | 0.091 | 0.125 |  |

FCFLOC2 Datum Shift

| Segment | Shift X | Shift Y | Shift Z | Rotation X | Rotation Y | Rotation Z |
|---|---|---|---|---|---|---|
| Segment 1 | Fixed | Fixed | Fixed | Fixed | 0.678 | Fixed |

FCFLOC2 Summary FIT TO DATUMS=ON, DEV PERPEN CENTERLINE=ON

| Feature | AX | NOMINAL | MEAS | DEV |
|---|---|---|---|---|
| CIR_FPE_BC1 | X | 75.800 | 75.840 | 0.040 |
| | Z | 0.000 | -0.053 | -0.053 |
| CIR_FPE_BC2 | X | 71.229 | 71.231 | 0.002 |
| | Z | 25.925 | 25.884 | -0.041 |
| CIR_FPE_BC3 | X | 58.066 | 58.063 | -0.003 |

| | | | | |
|---|---|---|---|---|
| | Z | 48.723 | 48.693 | -0.030 |
| CIR_FPE_BC4 | X | 37.900 | 37.872 | -0.028 |
| | Z | 65.645 | 65.597 | -0.048 |
| CIR_FPE_BC5 | X | 13.163 | 13.144 | -0.019 |
| | Z | 74.648 | 74.591 | -0.057 |
| CIR_FPE_BC6 | X | -13.163 | -13.161 | 0.002 |
| | Z | 74.648 | 74.613 | -0.035 |
| CIR_FPE_BC7 | X | -37.900 | -37.890 | 0.010 |
| | Z | 65.645 | 65.633 | -0.012 |
| CIR_FPE_BC8 | X | -58.066 | -58.022 | 0.044 |
| | Z | 48.723 | 48.737 | 0.014 |
| CIR_FPE_BC9 | X | -71.229 | -71.214 | 0.015 |
| | Z | 25.925 | 25.937 | 0.012 |
| CIR_FPE_BC10 | X | -75.800 | -75.794 | 0.006 |
| | Z | 0.000 | 0.001 | 0.001 |
| CIR_FPE_BC11 | X | -71.229 | -71.177 | 0.052 |
| | Z | -25.925 | -25.917 | 0.008 |
| CIR_FPE_BC12 | X | -58.066 | -58.014 | 0.052 |
| | Z | -48.723 | -48.713 | 0.010 |
| CIR_FPE_BC13 | X | -37.900 | -37.857 | 0.043 |
| | Z | -65.645 | -65.628 | 0.017 |
| CIR_FPE_BC14 | X | -13.163 | -13.131 | 0.032 |
| | Z | -74.648 | -74.639 | 0.009 |
| CIR_FPE_BC15 | X | 13.163 | 13.172 | 0.009 |
| | Z | -74.648 | -74.605 | 0.043 |
| CIR_FPE_BC16 | X | 37.900 | 37.912 | 0.012 |
| | Z | -65.645 | -65.645 | 0.000 |
| CIR_FPE_BC17 | X | 58.066 | 58.074 | 0.008 |
| | Z | -48.723 | -48.689 | 0.034 |
| CIR_FPE_BC18 | X | 71.229 | 71.246 | 0.017 |
| | Z | -25.925 | -25.967 | -0.042 |

**********
**********

MAIN COUPLER END BEAM TUBE FLANGE

**********
**********

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ⌖ | MM | LOC14 - CIR_MCE_BT_FLANGE | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | 0.000 | 0.008 | 0.008 | 0.200 | 0.200 | 0.000 | |
| Z | 0.000 | -0.128 | -0.128 | 0.200 | 0.200 | 0.000 | |
| D | 170.000 | 169.974 | -0.026 | 0.200 | 0.200 | 0.000 | |
| RN | 0.000 | 0.022 | 0.022 | 0.200 | 0.000 | 0.000 | |
| ⟷ | MM | DIST6 - PLNC_MCE_BT_FLANGE TO PLNC_MCE_BT_FLANGE_SS (YAXIS) | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 1.000 | 0.972 | -0.028 | 0.200 | 0.200 | 0.000 | |
| ⌖ | MM | LOC15 - PLN_MCE_BEAM_TUBE | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| Y | 681.814 | 678.664 | -3.150 | 1.500 | 1.500 | 1.650 | |
| FL | 0.000 | 0.010 | 0.010 | 0.250 | 0.000 | 0.000 | |

| ⌖ | MM | LOC16 - PLNC_MCE_BT_FLANGE | | | | |
|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL |
| Y | 681.814 | 678.665 | -3.149 | 1.500 | 1.500 | 1.649 |
| FL | 0.000 | 0.027 | 0.027 | 0.250 | 0.000 | 0.000 |

| ⌖ | MM | LOC17 - PLNC_MCE_BT_FLANGE_SS | | | | |
|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL |
| Y | 680.814 | 677.693 | -3.121 | 1.500 | 1.500 | 1.621 |
| FL | 0.000 | 0.024 | 0.024 | 0.250 | 0.000 | 0.000 |

| // | MM | PARL2 - PLNC_MCE_BT_FLANGE TO YMINUS | | | | |
|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL |
| M | 0 | 0.079 | 0.079 | 0.250 | 0 | 0.000 |

| ⌖ | MM | LOC18 - CIRC_MCE_BC | | | | |
|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL |
| X | 0.000 | 0.009 | 0.009 | 0.200 | 0.200 | 0.000 |
| Z | 0.000 | -0.142 | -0.142 | 0.200 | 0.200 | 0.000 |
| D | 151.600 | 151.577 | -0.023 | 0.200 | 0.200 | 0.000 |
| RN | 0.000 | 0.083 | 0.083 | 0.200 | 0.000 | 0.000 |

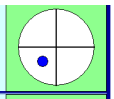
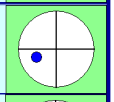
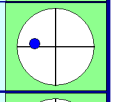
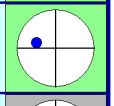
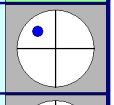
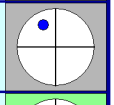
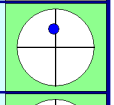
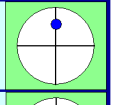
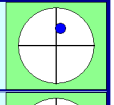
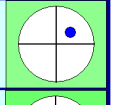
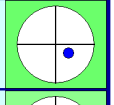
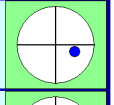
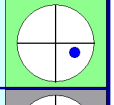
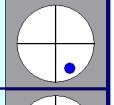
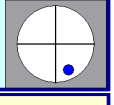
**********

BOLT CIRCLE POSITION TO FLANGE & CAVITY ROTATION

**********

| FCFLOC3 Size | MM | 18XØ8.5 0.13/0.13 | | | | | |
|---|---|---|---|---|---|---|---|
| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
| CIR_MCE_BC1 | 8.500 | 8.511 | 0.011 | 0.130 | 0.130 | 0.000 | 0.141 |
| CIR_MCE_BC2 | 8.500 | 8.498 | -0.002 | 0.130 | 0.130 | 0.000 | 0.128 |
| CIR_MCE_BC3 | 8.500 | 8.495 | -0.005 | 0.130 | 0.130 | 0.000 | 0.125 |
| CIR_MCE_BC4 | 8.500 | 8.504 | 0.004 | 0.130 | 0.130 | 0.000 | 0.134 |
| CIR_MCE_BC5 | 8.500 | 8.508 | 0.008 | 0.130 | 0.130 | 0.000 | 0.138 |
| CIR_MCE_BC6 | 8.500 | 8.512 | 0.012 | 0.130 | 0.130 | 0.000 | 0.142 |
| CIR_MCE_BC7 | 8.500 | 8.489 | -0.011 | 0.130 | 0.130 | 0.000 | 0.119 |
| CIR_MCE_BC8 | 8.500 | 8.512 | 0.012 | 0.130 | 0.130 | 0.000 | 0.142 |
| CIR_MCE_BC9 | 8.500 | 8.505 | 0.005 | 0.130 | 0.130 | 0.000 | 0.135 |
| CIR_MCE_BC10 | 8.500 | 8.492 | -0.008 | 0.130 | 0.130 | 0.000 | 0.122 |
| CIR_MCE_BC11 | 8.500 | 8.509 | 0.009 | 0.130 | 0.130 | 0.000 | 0.139 |
| CIR_MCE_BC12 | 8.500 | 8.507 | 0.007 | 0.130 | 0.130 | 0.000 | 0.137 |
| CIR_MCE_BC13 | 8.500 | 8.495 | -0.005 | 0.130 | 0.130 | 0.000 | 0.125 |
| CIR_MCE_BC14 | 8.500 | 8.547 | 0.047 | 0.130 | 0.130 | 0.000 | 0.177 |
| CIR_MCE_BC15 | 8.500 | 8.502 | 0.002 | 0.130 | 0.130 | 0.000 | 0.132 |
| CIR_MCE_BC16 | 8.500 | 8.508 | 0.008 | 0.130 | 0.130 | 0.000 | 0.138 |
| CIR_MCE_BC17 | 8.500 | 8.500 | 0.000 | 0.130 | 0.130 | 0.000 | 0.130 |
| CIR_MCE_BC18 | 8.500 | 8.505 | 0.005 | 0.130 | 0.130 | 0.000 | 0.135 |

| FCFLOC3 Position | MM | ⌖ Ø.2 Ⓜ C B | | | | | |
|---|---|---|---|---|---|---|---|
| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
| CIR_MCE_BC1 | 0.000 | 0.264 | 0.264 | 0.200 | | 0.000 | 0.141 |
| CIR_MCE_BC2 | 0.000 | 0.243 | 0.243 | 0.200 | | 0.000 | 0.128 |
| CIR_MCE_BC3 | 0.000 | 0.218 | 0.218 | 0.200 | | 0.000 | 0.125 |

| | | | |
|---|---|---|---|
| CIR_MCE_BC4 | 0.173 | 0.134 |  |
| CIR_MCE_BC5 | 0.184 | 0.138 |  |
| CIR_MCE_BC6 | 0.183 | 0.142 |  |
| CIR_MCE_BC7 | 0.160 | 0.119 |  |
| CIR_MCE_BC8 | 0.215 | 0.142 |  |
| CIR_MCE_BC9 | 0.220 | 0.135 |  |
| CIR_MCE_BC10 | 0.153 | 0.122 |  |
| CIR_MCE_BC11 | 0.188 | 0.139 |  |
| CIR_MCE_BC12 | 0.157 | 0.137 |  |
| CIR_MCE_BC13 | 0.158 | 0.125 |  |
| CIR_MCE_BC14 | 0.151 | 0.177 |  |
| CIR_MCE_BC15 | 0.172 | 0.132 |  |
| CIR_MCE_BC16 | 0.188 | 0.138 |  |
| CIR_MCE_BC17 | 0.241 | 0.130 |  |
| CIR_MCE_BC18 | 0.251 | 0.135 |  |

FCFLOC3 Datum Shift

| Segment | Shift X | Shift Y | Shift Z | Rotation X | Rotation Y | Rotation Z |
|---|---|---|---|---|---|---|
| Segment 1 | Fixed | Fixed | Fixed | Fixed | Fixed | Fixed |

FCFLOC3 Summary FIT TO DATUMS=ON, DEV PERPEN CENTERLINE=ON

| Feature | AX | NOMINAL | MEAS | DEV |
|---|---|---|---|---|
| CIR_MCE_BC1 | X | -75.800 | -75.762 | 0.038 |
| | Z | 0.000 | -0.127 | -0.127 |
| CIR_MCE_BC2 | X | -71.229 | -71.243 | -0.014 |
| | Z | 25.925 | 25.804 | -0.121 |
| CIR_MCE_BC3 | X | -58.066 | -58.111 | -0.045 |
| | Z | 48.723 | 48.624 | -0.099 |
| CIR_MCE_BC4 | X | -37.900 | -37.960 | -0.060 |
| | Z | 65.645 | 65.583 | -0.062 |
| CIR_MCE_BC5 | X | -13.163 | -13.248 | -0.085 |
| | Z | 74.648 | 74.613 | -0.035 |
| CIR_MCE_BC6 | X | 13.163 | 13.073 | -0.090 |
| | Z | 74.648 | 74.662 | 0.014 |

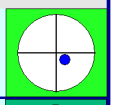
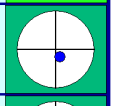
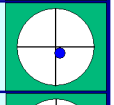
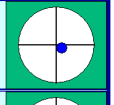
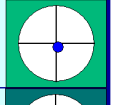
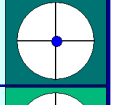
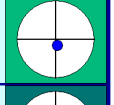
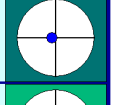
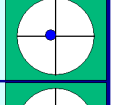
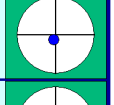
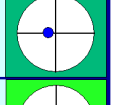
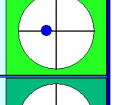
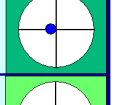
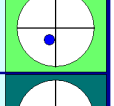
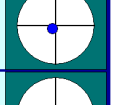
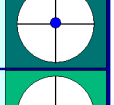
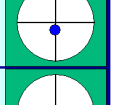
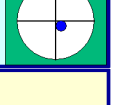
| | | | | |
|---|---|---|---|---|
| CIR_MCE_BC7 | X | 37.900 | 37.823 | -0.077 |
| | Z | 65.645 | 65.668 | 0.023 |
| CIR_MCE_BC8 | X | 58.066 | 57.989 | -0.077 |
| | Z | 48.723 | 48.798 | 0.075 |
| CIR_MCE_BC9 | X | 71.229 | 71.177 | -0.052 |
| | Z | 25.925 | 26.022 | 0.097 |
| CIR_MCE_BC10 | X | 75.800 | 75.792 | -0.008 |
| | Z | 0.000 | 0.076 | 0.076 |
| CIR_MCE_BC11 | X | 71.229 | 71.231 | 0.002 |
| | Z | -25.925 | -25.831 | 0.094 |
| CIR_MCE_BC12 | X | 58.066 | 58.085 | 0.019 |
| | Z | -48.723 | -48.647 | 0.076 |
| CIR_MCE_BC13 | X | 37.900 | 37.961 | 0.061 |
| | Z | -65.645 | -65.594 | 0.051 |
| CIR_MCE_BC14 | X | 13.163 | 13.226 | 0.063 |
| | Z | -74.648 | -74.690 | -0.042 |
| CIR_MCE_BC15 | X | -13.163 | -13.082 | 0.081 |
| | Z | -74.648 | -74.677 | -0.029 |
| CIR_MCE_BC16 | X | -37.900 | -37.816 | 0.084 |
| | Z | -65.645 | -65.687 | -0.042 |
| CIR_MCE_BC17 | X | -58.066 | -58.007 | 0.059 |
| | Z | -48.723 | -48.828 | -0.105 |
| CIR_MCE_BC18 | X | -71.229 | -71.173 | 0.056 |
| | Z | -25.925 | -26.037 | -0.112 |

**********

BOLT CIRCLE POSITION TO FLANGE ONLY

**********

| FCFLOC4 Size | MM | 18XØ8.5 0.13/0.13 | | | | | |
|---|---|---|---|---|---|---|---|
| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
| CIR_MCE_BC1 | 8.500 | 8.511 | 0.011 | 0.130 | 0.130 | 0.000 | 0.141 |
| CIR_MCE_BC2 | 8.500 | 8.498 | -0.002 | 0.130 | 0.130 | 0.000 | 0.128 |
| CIR_MCE_BC3 | 8.500 | 8.495 | -0.005 | 0.130 | 0.130 | 0.000 | 0.125 |
| CIR_MCE_BC4 | 8.500 | 8.504 | 0.004 | 0.130 | 0.130 | 0.000 | 0.134 |
| CIR_MCE_BC5 | 8.500 | 8.508 | 0.008 | 0.130 | 0.130 | 0.000 | 0.138 |
| CIR_MCE_BC6 | 8.500 | 8.512 | 0.012 | 0.130 | 0.130 | 0.000 | 0.142 |
| CIR_MCE_BC7 | 8.500 | 8.489 | -0.011 | 0.130 | 0.130 | 0.000 | 0.119 |
| CIR_MCE_BC8 | 8.500 | 8.512 | 0.012 | 0.130 | 0.130 | 0.000 | 0.142 |
| CIR_MCE_BC9 | 8.500 | 8.505 | 0.005 | 0.130 | 0.130 | 0.000 | 0.135 |
| CIR_MCE_BC10 | 8.500 | 8.492 | -0.008 | 0.130 | 0.130 | 0.000 | 0.122 |
| CIR_MCE_BC11 | 8.500 | 8.509 | 0.009 | 0.130 | 0.130 | 0.000 | 0.139 |
| CIR_MCE_BC12 | 8.500 | 8.507 | 0.007 | 0.130 | 0.130 | 0.000 | 0.137 |
| CIR_MCE_BC13 | 8.500 | 8.495 | -0.005 | 0.130 | 0.130 | 0.000 | 0.125 |
| CIR_MCE_BC14 | 8.500 | 8.547 | 0.047 | 0.130 | 0.130 | 0.000 | 0.177 |
| CIR_MCE_BC15 | 8.500 | 8.502 | 0.002 | 0.130 | 0.130 | 0.000 | 0.132 |
| CIR_MCE_BC16 | 8.500 | 8.508 | 0.008 | 0.130 | 0.130 | 0.000 | 0.138 |
| CIR_MCE_BC17 | 8.500 | 8.500 | 0.000 | 0.130 | 0.130 | 0.000 | 0.130 |
| CIR_MCE_BC18 | 8.500 | 8.505 | 0.005 | 0.130 | 0.130 | 0.000 | 0.135 |
| FCFLOC4 Position | MM | ⌖ Ø.2 Ⓜ C | | | | | |

| Feature | MEAS | BONUS | |
|---|---|---|---|
| CIR_MCE_BC1 | 0.097 | 0.141 |  |
| CIR_MCE_BC2 | 0.072 | 0.128 |  |
| CIR_MCE_BC3 | 0.060 | 0.125 |  |
| CIR_MCE_BC4 | 0.054 | 0.134 |  |
| CIR_MCE_BC5 | 0.040 | 0.138 |  |
| CIR_MCE_BC6 | 0.010 | 0.142 |  |
| CIR_MCE_BC7 | 0.052 | 0.119 |  |
| CIR_MCE_BC8 | 0.030 | 0.142 |  |
| CIR_MCE_BC9 | 0.041 | 0.135 |  |
| CIR_MCE_BC10 | 0.044 | 0.122 |  |
| CIR_MCE_BC11 | 0.063 | 0.139 |  |
| CIR_MCE_BC12 | 0.087 | 0.137 |  |
| CIR_MCE_BC13 | 0.045 | 0.125 |  |
| CIR_MCE_BC14 | 0.133 | 0.177 |  |
| CIR_MCE_BC15 | 0.037 | 0.132 |  |
| CIR_MCE_BC16 | 0.013 | 0.138 |  |
| CIR_MCE_BC17 | 0.063 | 0.130 |  |
| CIR_MCE_BC18 | 0.064 | 0.135 |  |

FCFLOC4 Datum Shift

| Segment | Shift X | Shift Y | Shift Z | Rotation X | Rotation Y | Rotation Z |
|---|---|---|---|---|---|---|
| Segment 1 | Fixed | Fixed | Fixed | Fixed | 0.073 | Fixed |

FCFLOC4 Summary FIT TO DATUMS=ON, DEV PERPEN CENTERLINE=ON

| Feature | AX | NOMINAL | MEAS | DEV |
|---|---|---|---|---|
| CIR_MCE_BC1 | X | -75.800 | -75.762 | 0.038 |
| | Z | 0.000 | -0.030 | -0.030 |
| CIR_MCE_BC2 | X | -71.229 | -71.210 | 0.019 |
| | Z | 25.925 | 25.895 | -0.030 |
| CIR_MCE_BC3 | X | -58.066 | -58.049 | 0.017 |

| | | | | |
|---|---|---|---|---|
| | Z | 48.723 | 48.698 | -0.025 |
| CIR_MCE_BC4 | X | -37.900 | -37.877 | 0.023 |
| | Z | 65.645 | 65.631 | -0.014 |
| CIR_MCE_BC5 | X | -13.163 | -13.153 | 0.010 |
| | Z | 74.648 | 74.630 | -0.018 |
| CIR_MCE_BC6 | X | 13.163 | 13.167 | 0.004 |
| | Z | 74.648 | 74.645 | -0.003 |
| CIR_MCE_BC7 | X | 37.900 | 37.907 | 0.007 |
| | Z | 65.645 | 65.620 | -0.025 |
| CIR_MCE_BC8 | X | 58.066 | 58.051 | -0.015 |
| | Z | 48.723 | 48.724 | 0.001 |
| CIR_MCE_BC9 | X | 71.229 | 71.210 | -0.019 |
| | Z | 25.925 | 25.931 | 0.006 |
| CIR_MCE_BC10 | X | 75.800 | 75.792 | -0.008 |
| | Z | 0.000 | -0.020 | -0.020 |
| CIR_MCE_BC11 | X | 71.229 | 71.198 | -0.031 |
| | Z | -25.925 | -25.922 | 0.003 |
| CIR_MCE_BC12 | X | 58.066 | 58.023 | -0.043 |
| | Z | -48.723 | -48.721 | 0.002 |
| CIR_MCE_BC13 | X | 37.900 | 37.877 | -0.023 |
| | Z | -65.645 | -65.643 | 0.002 |
| CIR_MCE_BC14 | X | 13.163 | 13.131 | -0.032 |
| | Z | -74.648 | -74.707 | -0.059 |
| CIR_MCE_BC15 | X | -13.163 | -13.177 | -0.014 |
| | Z | -74.648 | -74.660 | -0.012 |
| CIR_MCE_BC16 | X | -37.900 | -37.899 | 0.001 |
| | Z | -65.645 | -65.638 | 0.007 |
| CIR_MCE_BC17 | X | -58.066 | -58.069 | -0.003 |
| | Z | -48.723 | -48.754 | -0.031 |
| CIR_MCE_BC18 | X | -71.229 | -71.206 | 0.023 |
| | Z | -25.925 | -25.947 | -0.022 |

**********

ROTATIONAL ANGLE BETWEEN FIELD PROBE & MAIN COUPLER END BEAM TUBE FLANGES

**********

| ∠ | DEG | ANGL1 - LINC_MCE_BC TO LINC_FPE_BC | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| A | 0.000 | 0.605 | 0.605 | 1.000 | 1.000 | 0.000 | |

**********

**********

MAIN COUPLER FLANGE

**********

**********

| ⊕ | MM | LOC6 - CIR_MC | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| Y | 592.614 | 589.594 | -3.020 | 1.500 | 1.500 | 1.520 | |
| Z | 0.000 | -0.002 | -0.002 | 0.200 | 0.200 | 0.000 | |
| D | 140.000 | 139.961 | -0.039 | 0.200 | 0.200 | 0.000 | |
| RN | 0.000 | 0.014 | 0.014 | 0.200 | 0.000 | 0.000 | |

| ⟷ | MM | DIST7 - PLN_MC TO PLNC_MC_SS | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 1.000 | 1.016 | 0.016 | 0.200 | 0.200 | 0.000 | |
| ⌖ | MM | LOC7 - PLN_MC | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | -150.000 | -147.615 | 2.385 | 1.500 | 1.500 | 0.885 | |
| FL | 0.000 | 0.044 | 0.044 | 0.250 | 0.000 | 0.000 | |
| ⌖ | MM | LOC8 - PLNC_MC_SS | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | -149.000 | -146.598 | 2.402 | 1.500 | 1.500 | 0.902 | |
| FL | 0.000 | 0.039 | 0.039 | 0.250 | 0.000 | 0.000 | |
| ⌖ | MM | LOC9 - PLN_MC_TUBE | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | -150.000 | -147.564 | 2.436 | 1.500 | 1.500 | 0.936 | |
| FL | 0.000 | 0.010 | 0.010 | 0.250 | 0.000 | 0.000 | |
| // | MM | PARL3 - PLN_MC TO XMINUS | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 0 | 0.748 | 0.748 | 0.250 | 0 | 0.498 | |
| ⌖ | MM | LOC10 - CIRC_MC_BC | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| Y | 592.614 | 589.613 | -3.001 | 1.500 | 1.500 | 1.501 | |
| Z | 0.000 | -0.015 | -0.015 | 0.200 | 0.200 | 0.000 | |
| D | 120.000 | 119.941 | -0.059 | 0.200 | 0.200 | 0.000 | |
| RN | 0.000 | 0.043 | 0.043 | 0.200 | 0.000 | 0.000 | |

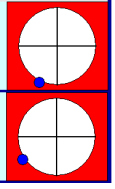
**********

BOLT CIRCLE POSITION TO FLANGE & CAVITY ROTATION

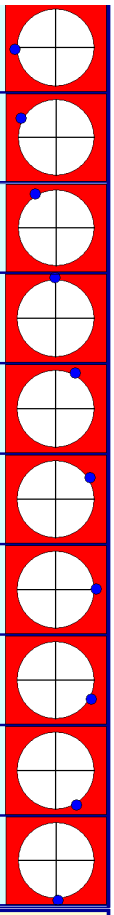
**********

| FCFLOC5 Size | MM | 12XØ8.8 0.13/0.13 | | | | | |
|---|---|---|---|---|---|---|---|
| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
| CIR_MC_BH_30 | 8.800 | 8.827 | 0.027 | 0.130 | 0.130 | 0.000 | 0.157 |
| CIR_MC_BH_60 | 8.800 | 8.803 | 0.003 | 0.130 | 0.130 | 0.000 | 0.133 |
| CIR_MC_BH_... | 8.800 | 8.812 | 0.012 | 0.130 | 0.130 | 0.000 | 0.142 |
| CIR_MC_BH_... | 8.800 | 8.818 | 0.018 | 0.130 | 0.130 | 0.000 | 0.148 |
| CIR_MC_BH_... | 8.800 | 8.831 | 0.031 | 0.130 | 0.130 | 0.000 | 0.161 |
| CIR_MC_BH_... | 8.800 | 8.823 | 0.023 | 0.130 | 0.130 | 0.000 | 0.153 |
| CIR_MC_BH_... | 8.800 | 8.813 | 0.013 | 0.130 | 0.130 | 0.000 | 0.143 |
| CIR_MC_BH_... | 8.800 | 8.837 | 0.037 | 0.130 | 0.130 | 0.000 | 0.167 |
| CIR_MC_BH_... | 8.800 | 8.834 | 0.034 | 0.130 | 0.130 | 0.000 | 0.164 |
| CIR_MC_BH_... | 8.800 | 8.827 | 0.027 | 0.130 | 0.130 | 0.000 | 0.157 |
| CIR_MC_BH_... | 8.800 | 8.817 | 0.017 | 0.130 | 0.130 | 0.000 | 0.147 |
| CIR_MC_BH_... | 8.800 | 8.836 | 0.036 | 0.130 | 0.130 | 0.000 | 0.166 |

| FCFLOC5 Position | MM | ⌖ Ø0.2 Ⓜ D B | | | | | |
|---|---|---|---|---|---|---|---|
| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
| CIR_MC_BH_30 | 0.000 | 2.202 | 2.202 | 0.200 | | 1.845 | 0.157 |
| CIR_MC_BH_60 | 0.000 | 2.154 | 2.154 | 0.200 | | 1.821 | 0.133 |



| | | | |
|---|---|---|---|
| CIR_MC_BH_090 | 2.109 | 0.142 | |
| CIR_MC_BH_120 | 2.116 | 0.148 | |
| CIR_MC_BH_150 | 2.109 | 0.161 | |
| CIR_MC_BH_180 | 2.148 | 0.153 | |
| CIR_MC_BH_210 | 2.177 | 0.143 | |
| CIR_MC_BH_240 | 2.174 | 0.167 | |
| CIR_MC_BH_270 | 2.194 | 0.164 | |
| CIR_MC_BH_300 | 2.241 | 0.157 | |
| CIR_MC_BH_330 | 2.248 | 0.147 | |
| CIR_MC_BH_360 | 2.227 | 0.166 | |



FCFLOC5 Datum Shift

| Segment | Shift X | Shift Y | Shift Z | Rotation X | Rotation Y | Rotation Z |
|---|---|---|---|---|---|---|
| Segment 1 | Fixed | Fixed | Fixed | Fixed | Fixed | Fixed |

FCFLOC5 Summary FIT TO DATUMS=ON, DEV PERPEN CENTERLINE=ON

| Feature | AX | NOMINAL | MEAS | DEV |
|---|---|---|---|---|
| CIR_MC_BH_30 | Y | -51.962 | -52.448 | -0.487 |
| | Z | 30.000 | 29.013 | -0.987 |
| CIR_MC_BH_60 | Y | -30.000 | -30.891 | -0.891 |
| | Z | 51.962 | 51.356 | -0.605 |
| CIR_MC_BH_090 | Y | 0.000 | -1.054 | -1.053 |
| | Z | 60.000 | 59.945 | -0.055 |
| CIR_MC_BH_120 | Y | 30.000 | 29.073 | -0.927 |
| | Z | 51.962 | 52.472 | 0.511 |
| CIR_MC_BH_150 | Y | 51.961 | 51.410 | -0.551 |
| | Z | 30.000 | 30.899 | 0.899 |
| CIR_MC_BH_180 | Y | 60.000 | 59.987 | -0.013 |
| | Z | 0.000 | 1.074 | 1.074 |
| CIR_MC_BH_210 | Y | 51.961 | 52.483 | 0.522 |
| | Z | -30.000 | -29.045 | 0.955 |
| CIR_MC_BH_240 | Y | 30.000 | 30.924 | 0.924 |
| | Z | -51.962 | -51.390 | 0.572 |
| CIR_MC_BH_270 | Y | 0.000 | 1.096 | 1.097 |
| | Z | -60.000 | -59.978 | 0.022 |
| CIR_MC_BH_300 | Y | -30.000 | -29.009 | 0.991 |
| | Z | -51.962 | -52.484 | -0.522 |
| CIR_MC_BH_330 | Y | -51.962 | -51.378 | 0.584 |
| | Z | -30.000 | -30.961 | -0.961 |

| | | | | |
|---|---|---|---|---|
| CIR_MC_BH_360 | Y | -60.000 | -59.947 | 0.053 |
| | Z | 0.000 | -1.112 | -1.112 |

**********

BOLT CIRCLE POSITION TO FLANGE ONLY

**********

| FCFLOC6 Size | MM | 12XØ8.8 0.13/0.13 |
|---|---|---|

| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
|---|---|---|---|---|---|---|---|
| CIR_MC_BH_30 | 8.800 | 8.827 | 0.027 | 0.130 | 0.130 | 0.000 | 0.157 |
| CIR_MC_BH_60 | 8.800 | 8.803 | 0.003 | 0.130 | 0.130 | 0.000 | 0.133 |
| CIR_MC_BH_... | 8.800 | 8.812 | 0.012 | 0.130 | 0.130 | 0.000 | 0.142 |
| CIR_MC_BH_... | 8.800 | 8.818 | 0.018 | 0.130 | 0.130 | 0.000 | 0.148 |
| CIR_MC_BH_... | 8.800 | 8.831 | 0.031 | 0.130 | 0.130 | 0.000 | 0.161 |
| CIR_MC_BH_... | 8.800 | 8.823 | 0.023 | 0.130 | 0.130 | 0.000 | 0.153 |
| CIR_MC_BH_... | 8.800 | 8.813 | 0.013 | 0.130 | 0.130 | 0.000 | 0.143 |
| CIR_MC_BH_... | 8.800 | 8.837 | 0.037 | 0.130 | 0.130 | 0.000 | 0.167 |
| CIR_MC_BH_... | 8.800 | 8.834 | 0.034 | 0.130 | 0.130 | 0.000 | 0.164 |
| CIR_MC_BH_... | 8.800 | 8.827 | 0.027 | 0.130 | 0.130 | 0.000 | 0.157 |
| CIR_MC_BH_... | 8.800 | 8.817 | 0.017 | 0.130 | 0.130 | 0.000 | 0.147 |
| CIR_MC_BH_... | 8.800 | 8.836 | 0.036 | 0.130 | 0.130 | 0.000 | 0.166 |

| FCFLOC6 Position | MM | ⌖ Ø0.2 Ⓜ D |
|---|---|---|

| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
|---|---|---|---|---|---|---|---|
| CIR_MC_BH_30 | 0.000 | 0.134 | 0.134 | 0.200 | | 0.000 | 0.157 |
| CIR_MC_BH_60 | 0.000 | 0.138 | 0.138 | 0.200 | | 0.000 | 0.133 |
| CIR_MC_BH_090 | 0.000 | 0.101 | 0.101 | 0.200 | | 0.000 | 0.142 |
| CIR_MC_BH_120 | 0.000 | 0.041 | 0.041 | 0.200 | | 0.000 | 0.148 |
| CIR_MC_BH_150 | 0.000 | 0.056 | 0.056 | 0.200 | | 0.000 | 0.161 |
| CIR_MC_BH_180 | 0.000 | 0.007 | 0.007 | 0.200 | | 0.000 | 0.153 |
| CIR_MC_BH_210 | 0.000 | 0.041 | 0.041 | 0.200 | | 0.000 | 0.143 |
| CIR_MC_BH_240 | 0.000 | 0.052 | 0.052 | 0.200 | | 0.000 | 0.167 |
| CIR_MC_BH_270 | 0.000 | 0.049 | 0.049 | 0.200 | | 0.000 | 0.164 |
| CIR_MC_BH_300 | 0.000 | 0.112 | 0.112 | 0.200 | | 0.000 | 0.157 |
| CIR_MC_BH_330 | 0.000 | 0.102 | 0.102 | 0.200 | | 0.000 | 0.147 |
| CIR_MC_BH_360 | 0.000 | 0.114 | 0.114 | 0.200 | | 0.000 | 0.166 |

FCFLOC6 Datum Shift

| Segment | Shift X | Shift Y | Shift Z | Rotation X | Rotation Y | Rotation Z |
|---|---|---|---|---|---|---|
| Segment 1 | Fixed | Fixed | Fixed | 358.973 | Fixed | Fixed |

| FCFLOC6 Summary FIT TO DATUMS=ON, DEV PERPEN CENTERLINE=ON | | | | |
|---|---|---|---|---|
| Feature | AX | NOMINAL | MEAS | DEV |
| CIR_MC_BH_30 | Y | -51.962 | -51.920 | 0.042 |
| | Z | 30.000 | 29.948 | -0.052 |
| CIR_MC_BH_60 | Y | -30.000 | -29.966 | 0.035 |
| | Z | 51.962 | 51.902 | -0.060 |
| CIR_MC_BH_090 | Y | 0.000 | 0.021 | 0.021 |
| | Z | 60.000 | 59.954 | -0.046 |
| CIR_MC_BH_120 | Y | 30.000 | 30.009 | 0.009 |
| | Z | 51.962 | 51.943 | -0.019 |
| CIR_MC_BH_150 | Y | 51.961 | 51.956 | -0.006 |
| | Z | 30.000 | 29.973 | -0.027 |
| CIR_MC_BH_180 | Y | 60.000 | 59.996 | -0.003 |
| | Z | 0.000 | -0.001 | -0.001 |
| CIR_MC_BH_210 | Y | 51.961 | 51.954 | -0.007 |
| | Z | -30.000 | -29.981 | 0.019 |
| CIR_MC_BH_240 | Y | 30.000 | 29.998 | -0.002 |
| | Z | -51.962 | -51.936 | 0.026 |
| CIR_MC_BH_270 | Y | 0.000 | 0.021 | 0.022 |
| | Z | -60.000 | -59.988 | 0.012 |
| CIR_MC_BH_300 | Y | -30.000 | -29.945 | 0.056 |
| | Z | -51.962 | -51.955 | 0.006 |
| CIR_MC_BH_330 | Y | -51.962 | -51.925 | 0.037 |
| | Z | -30.000 | -30.035 | -0.035 |
| CIR_MC_BH_360 | Y | -60.000 | -59.958 | 0.043 |
| | Z | 0.000 | -0.038 | -0.038 |

**********
**********

FIELD PROBE FLANGE

**********
**********

| ⌖ | MM | LOC11 - CIR_FP | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| Y | -586.814 | -583.573 | 3.241 | 1.500 | 1.500 | 1.741 | |
| Z | 0.000 | 0.430 | 0.430 | 0.200 | 0.200 | 0.230 | |
| D | 33.800 | 33.773 | -0.027 | 0.200 | 0.200 | 0.000 | |
| RN | 0.000 | 0.057 | 0.057 | 0.200 | 0.000 | 0.000 | |
| ⟷ | MM | DIST8 - PLN_FP TO PLN_FP_SS (XAXIS) | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 0.500 | 0.510 | 0.010 | 0.050 | 0.000 | 0.000 | |
| ⌖ | MM | LOC12 - PLN_FP | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | 80.000 | 79.177 | -0.823 | 1.500 | 1.500 | 0.000 | |
| FL | 0.000 | 0.001 | 0.001 | 0.250 | 0.000 | 0.000 | |
| ⌖ | MM | LOC13 - PLN_FP_SS | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | 79.500 | 78.667 | -0.833 | 1.500 | 1.500 | 0.000 | |
| FL | 0.000 | 0.006 | 0.006 | 0.250 | 0.000 | 0.000 | |

| ⌖ | MM | LOC19 - PLN_FP_TUBE | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | 80.000 | 79.172 | -0.828 | 1.500 | 1.500 | 0.000 | |
| FL | 0.000 | 0.008 | 0.008 | 0.250 | 0.000 | 0.000 | |

| // | MM | PARL4 - PLN_FP TO XPLUS | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 0 | 0.210 | 0.210 | 0.250 | 0 | 0.000 | |

| ⌖ | MM | LOC36 - CIRC_FP_BC | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| Y | -586.814 | -583.583 | 3.230 | 1.500 | 1.500 | 1.730 | |
| Z | 0.000 | 0.417 | 0.417 | 0.200 | 0.200 | 0.217 | |
| D | 27.000 | 26.912 | -0.088 | 0.200 | 0.200 | 0.000 | |
| RN | 0.000 | 0.044 | 0.044 | 0.200 | 0.000 | 0.000 | |

**********

BOLT CIRCLE POSITION TO FLANGE & CAVITY ROTATION

**********

| FCFLOC7 Size | MM | 6XØ4.5 0.05/0.05 | | | | | |
|---|---|---|---|---|---|---|---|
| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
| CIR_FP_BC1 | 4.500 | 4.556 | 0.056 | 0.050 | 0.050 | 0.006 | 0.000 |
| CIR_FP_BC2 | 4.500 | 4.544 | 0.044 | 0.050 | 0.050 | 0.000 | 0.000 |
| CIR_FP_BC3 | 4.500 | 4.556 | 0.056 | 0.050 | 0.050 | 0.006 | 0.000 |
| CIR_FP_BC4 | 4.500 | 4.561 | 0.061 | 0.050 | 0.050 | 0.011 | 0.000 |
| CIR_FP_BC5 | 4.500 | 4.579 | 0.079 | 0.050 | 0.050 | 0.029 | 0.000 |
| CIR_FP_BC6 | 4.500 | 4.542 | 0.042 | 0.050 | 0.050 | 0.000 | 0.000 |

| FCFLOC7 Position | MM | ⌖ Ø0.2 E B | | | | | |
|---|---|---|---|---|---|---|---|
| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
| CIR_FP_BC1 | 0.000 | 0.131 | 0.131 | 0.200 | | 0.000 | 0.000 |
| CIR_FP_BC2 | 0.000 | 0.073 | 0.073 | 0.200 | | 0.000 | 0.000 |
| CIR_FP_BC3 | 0.000 | 0.142 | 0.142 | 0.200 | | 0.000 | 0.000 |
| CIR_FP_BC4 | 0.000 | 0.087 | 0.087 | 0.200 | | 0.000 | 0.000 |
| CIR_FP_BC5 | 0.000 | 0.114 | 0.114 | 0.200 | | 0.000 | 0.000 |
| CIR_FP_BC6 | 0.000 | 0.199 | 0.199 | 0.200 | | 0.000 | 0.000 |

| FCFLOC7 Datum Shift | | | | | | |
|---|---|---|---|---|---|---|
| Segment | Shift X | Shift Y | Shift Z | Rotation X | Rotation Y | Rotation Z |
| Segment 1 | Fixed | Fixed | Fixed | Fixed | Fixed | Fixed |

| FCFLOC7 Summary FIT TO DATUMS=ON, DEV PERPEN CENTERLINE=ON | | | | |
|---|---|---|---|---|
| Feature | AX | NOMINAL | MEAS | DEV |
| CIR_FP_BC1 | Y | 0.000 | 0.028 | 0.028 |
| | Z | 13.500 | 13.441 | -0.059 |
| CIR_FP_BC2 | Y | -11.691 | -11.659 | 0.032 |
| | Z | 6.750 | 6.767 | 0.017 |
| CIR_FP_BC3 | Y | -11.691 | -11.679 | 0.012 |
| | Z | -6.750 | -6.680 | 0.070 |
| CIR_FP_BC4 | Y | 0.000 | -0.022 | -0.022 |
| | Z | -13.500 | -13.462 | 0.038 |
| CIR_FP_BC5 | Y | 11.691 | 11.646 | -0.046 |
| | Z | -6.750 | -6.784 | -0.034 |
| CIR_FP_BC6 | Y | 11.691 | 11.653 | -0.038 |
| | Z | 6.750 | 6.658 | -0.092 |

**********

BOLT CIRCLEE POSITION TO FLANGE ONLY

**********

| FCFLOC8 Size | MM | 6XØ4.5 0.05/0.05 |
|---|---|---|

| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
|---|---|---|---|---|---|---|---|
| CIR_FP_BC1 | 4.500 | 4.556 | 0.056 | 0.050 | 0.050 | 0.006 | 0.000 |
| CIR_FP_BC2 | 4.500 | 4.544 | 0.044 | 0.050 | 0.050 | 0.000 | 0.000 |
| CIR_FP_BC3 | 4.500 | 4.556 | 0.056 | 0.050 | 0.050 | 0.006 | 0.000 |
| CIR_FP_BC4 | 4.500 | 4.561 | 0.061 | 0.050 | 0.050 | 0.011 | 0.000 |
| CIR_FP_BC5 | 4.500 | 4.579 | 0.079 | 0.050 | 0.050 | 0.029 | 0.000 |
| CIR_FP_BC6 | 4.500 | 4.542 | 0.042 | 0.050 | 0.050 | 0.000 | 0.000 |

| FCFLOC8 Position | MM | ⌖ Ø0.2 E |
|---|---|---|

| Feature | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | BONUS |
|---|---|---|---|---|---|---|---|
| CIR_FP_BC1 | 0.000 | 0.135 | 0.135 | 0.200 | | 0.000 | 0.000 |
| CIR_FP_BC2 | 0.000 | 0.072 | 0.072 | 0.200 | | 0.000 | 0.000 |
| CIR_FP_BC3 | 0.000 | 0.091 | 0.091 | 0.200 | | 0.000 | 0.000 |
| CIR_FP_BC4 | 0.000 | 0.109 | 0.109 | 0.200 | | 0.000 | 0.000 |
| CIR_FP_BC5 | 0.000 | 0.048 | 0.048 | 0.200 | | 0.000 | 0.000 |
| CIR_FP_BC6 | 0.000 | 0.158 | 0.158 | 0.200 | | 0.000 | 0.000 |

| FCFLOC8 Datum Shift | | | | | | |
|---|---|---|---|---|---|---|
| Segment | Shift X | Shift Y | Shift Z | Rotation X | Rotation Y | Rotation Z |
| Segment 1 | Fixed | Fixed | Fixed | 0.258 | Fixed | Fixed |

| FCFLOC8 Summary FIT TO DATUMS=ON, DEV PERPEN CENTERLINE=ON | | | | |
|---|---|---|---|---|
| Feature | AX | NOMINAL | MEAS | DEV |
| CIR_FP_BC1 | Y | 0.000 | -0.033 | -0.033 |
| | Z | 13.500 | 13.441 | -0.059 |
| CIR_FP_BC2 | Y | -11.691 | -11.689 | 0.002 |
| | Z | 6.750 | 6.714 | -0.036 |
| CIR_FP_BC3 | Y | -11.691 | -11.649 | 0.042 |
| | Z | -6.750 | -6.733 | 0.017 |
| CIR_FP_BC4 | Y | 0.000 | 0.039 | 0.039 |
| | Z | -13.500 | -13.462 | 0.038 |
| CIR_FP_BC5 | Y | 11.691 | 11.676 | -0.015 |
| | Z | -6.750 | -6.732 | 0.018 |
| CIR_FP_BC6 | Y | 11.691 | 11.623 | -0.068 |
| | Z | 6.750 | 6.710 | -0.040 |

**********
**********

TRANSITION RINGS

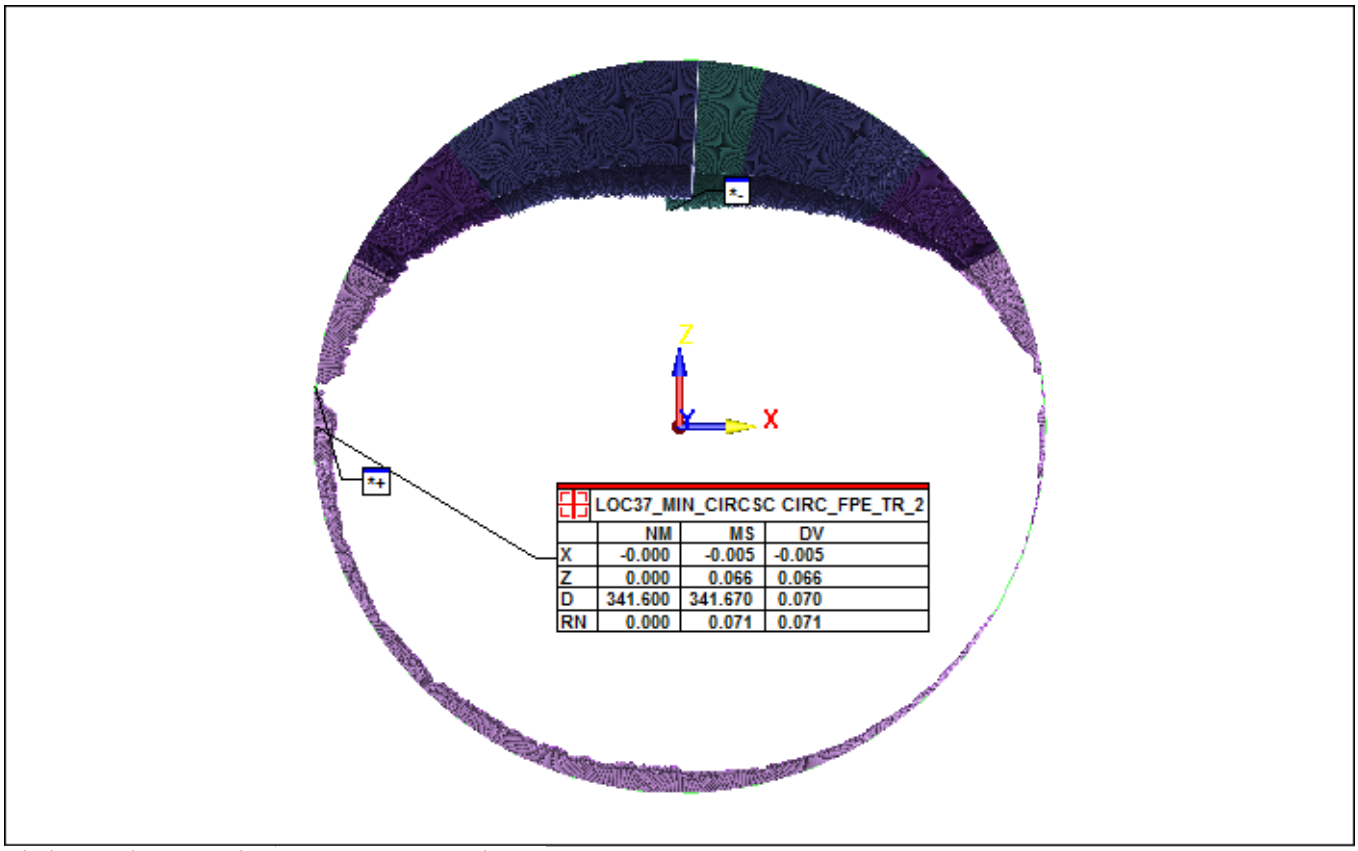
**********
**********

| ⌖ | MM | LOC20 - CIR_FPE_TR | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | 0.000 | -0.001 | -0.001 | 0.200 | 0.200 | 0.000 | |
| Y | -507.877 | -507.877 | 0.000 | 1.500 | 1.500 | 0.000 | |
| Z | 0.000 | 0.033 | 0.033 | 0.200 | 0.200 | 0.000 | |
| D | 341.600 | 341.626 | 0.026 | 0.200 | 0.200 | 0.000 | |
| RN | 0.000 | 0.032 | 0.032 | 0.200 | 0.000 | 0.000 | |

| ⌖ | MM | LOC21 - CIR_MCE_TR | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | 0.000 | 0.019 | 0.019 | 0.200 | 0.200 | 0.000 | |
| Y | 507.877 | 507.877 | 0.000 | 1.500 | 1.500 | 0.000 | |
| Z | 0.000 | 0.034 | 0.034 | 0.200 | 0.200 | 0.000 | |
| D | 341.600 | 341.641 | 0.041 | 0.200 | 0.200 | 0.000 | |
| RN | 0.000 | 0.015 | 0.015 | 0.200 | 0.000 | 0.000 | |

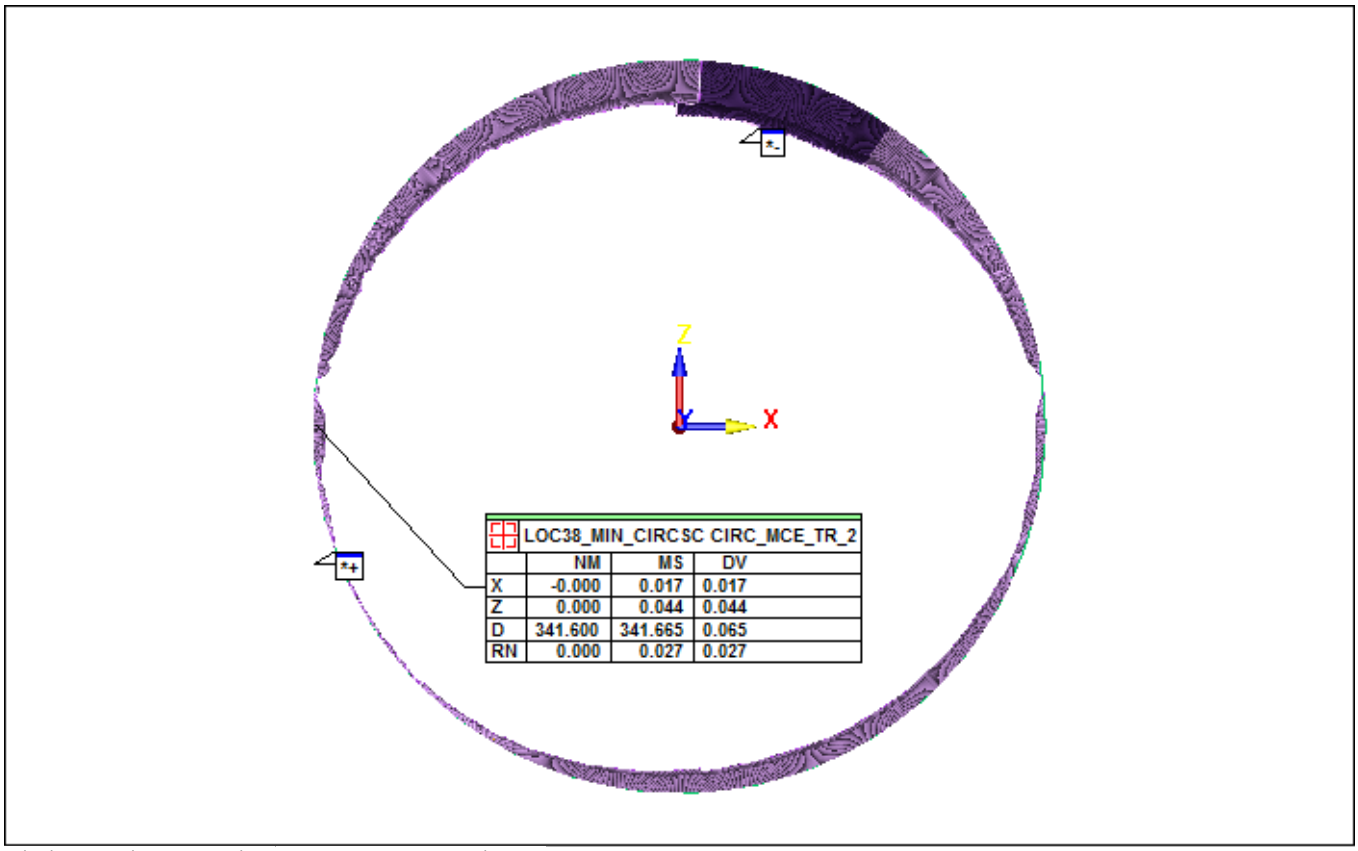
| ⌖ | MM | LOC37_MIN_CIRCSC - CIRC_FPE_TR_2 | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | 0.000 | -0.005 | -0.005 | 0.200 | 0.200 | 0.000 | |
| Z | 0.000 | 0.066 | 0.066 | 0.200 | 0.200 | 0.000 | |
| D | 341.600 | 341.670 | 0.070 | 0.200 | 0.200 | 0.000 | |
| RN | 0.000 | 0.071 | 0.071 | 0.051 | 0.000 | 0.020 | |

| ○ | MM | CIRTY15 - CIRC_FPE_TR_2 | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 0.000 | 0.071 | 0.071 | 0.200 | 0.000 | 0.000 | |




Minimum Circumscribed constructed circle
Transition Ring Field Probe End
x1000

| | MM | LOC38_MIN_CIRCSC - CIRC_MCE_TR_2 | | | | | |
|---|---|---|---|---|---|---|---|
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| X | 0.000 | 0.017 | 0.017 | 0.200 | 0.200 | 0.000 | |
| Z | 0.000 | 0.044 | 0.044 | 0.200 | 0.200 | 0.000 | |
| D | 341.600 | 341.665 | 0.065 | 0.200 | 0.200 | 0.000 | |
| RN | 0.000 | 0.027 | 0.027 | 0.051 | 0.000 | 0.000 | |
| ○ | MM | CIRTY16 - CIRC_MCE_TR_2 | | | | | |
| AX | NOMINAL | MEAS | DEV | +TOL | -TOL | OUTTOL | |
| M | 0.000 | 0.027 | 0.027 | 0.200 | 0.000 | 0.000 | |




Minimum Circumscribed constructed circle
Transition Ring Main Coupler End
x1000

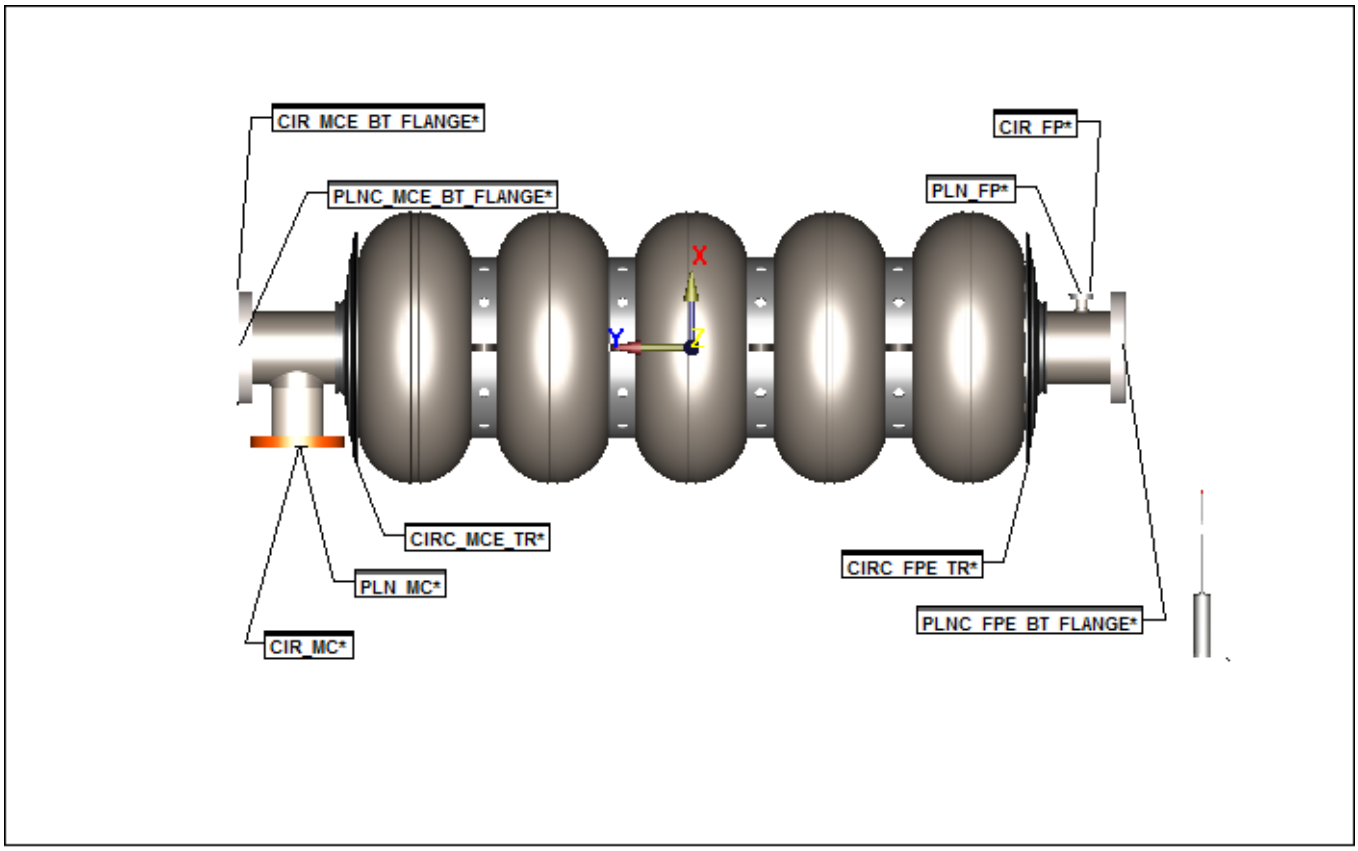
**********
**********

COSINE VECTORS OF PLANES

**********
**********

| | | | | |
|---|---|---|---|---|
| ⌖ | MM | LOC24 - PLNC_FPE_BT_FLANGE | | |
| AX | | MEAS | | |
| AX | | I | J | K |
| V | | -0.00060 | -1.00000 | 0.00104 |
| ⌖ | MM | LOC25 - PLNC_FPE_BT_FLANGE_SS | | |
| AX | | MEAS | | |
| AX | | I | J | K |
| V | | -0.00066 | -1.00000 | 0.00102 |
| ⌖ | MM | LOC26 - PLN_FP | | |
| AX | | MEAS | | |
| AX | | I | J | K |
| V | | 0.99997 | 0.00168 | 0.00799 |
| ⌖ | MM | LOC27 - PLN_FP_SS | | |
| AX | | MEAS | | |
| AX | | I | J | K |
| V | | 0.99997 | 0.00207 | 0.00754 |
| ⌖ | MM | LOC28 - PLNC_MCE_BT_FLANGE | | |
| AX | | MEAS | | |
| AX | | I | J | K |
| V | | -0.00033 | 1.00000 | -0.00030 |
| ⌖ | MM | LOC29 - PLNC_MCE_BT_FLANGE_SS | | |
| AX | | MEAS | | |

| AX | I | J | K |
|---|---|---|---|
| V | -0.00031 | 1.00000 | -0.00030 |
| ⊞ | MM | LOC30 - PLN_MC | |
| AX | MEAS | | |
| AX | I | J | K |
| V | -0.99998 | 0.00390 | -0.00395 |
| ⊞ | MM | LOC31 - PLNC_MC_SS | |
| AX | MEAS | | |
| AX | I | J | K |
| V | -0.99998 | 0.00397 | -0.00392 |
| ⊞ | MM | LOC32 - LINC_Z_AXIS | |
| AX | MEAS | | |
| AX | I | J | K |
| V | 0.00000 | 0.00000 | 1.00000 |
| ⊞ | MM | LOC33 - LINC_FPE_BC | |
| AX | MEAS | | |
| AX | I | J | K |
| V | -0.01180 | 0.00000 | 0.99993 |
| ⊞ | MM | LOC34 - LINC_MCE_BC | |
| AX | MEAS | | |
| AX | I | J | K |
| V | -0.00124 | 0.00000 | 1.00000 |
| ⊞ | MM | LOC35 - LINC_MC_BC | |
| AX | MEAS | | |
| AX | I | J | K |
| V | 0.00000 | -0.00015 | 1.00000 |
| ⊞ | MM | LOC37 - LINC_FP_BC | |
| AX | MEAS | | |
| AX | I | J | K |
| V | 0.00000 | 0.00072 | 1.00000 |


CIR_MCE_BT_FLANGE*
PLNC_MCE_BT_FLANGE*
CIRC_MCE_TR*
PLN_MC*
CIR_MC*
CIR_FP*
PLN_FP*
CIRC_FPE_TR*
PLNC_FPE_BT_FLANGE*
X
Y
Z