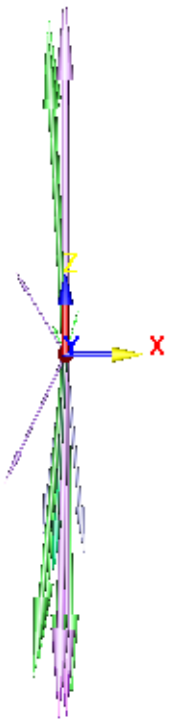
pc-dmis	PART NAME : 440004A		April 22, 2014	11:54
	REV NUMBER :	SER NUMBER :	STATS COUNT :	1

Part Number: 440004-A
SRF 1.3 GHz Superconducting R.F. Cavity

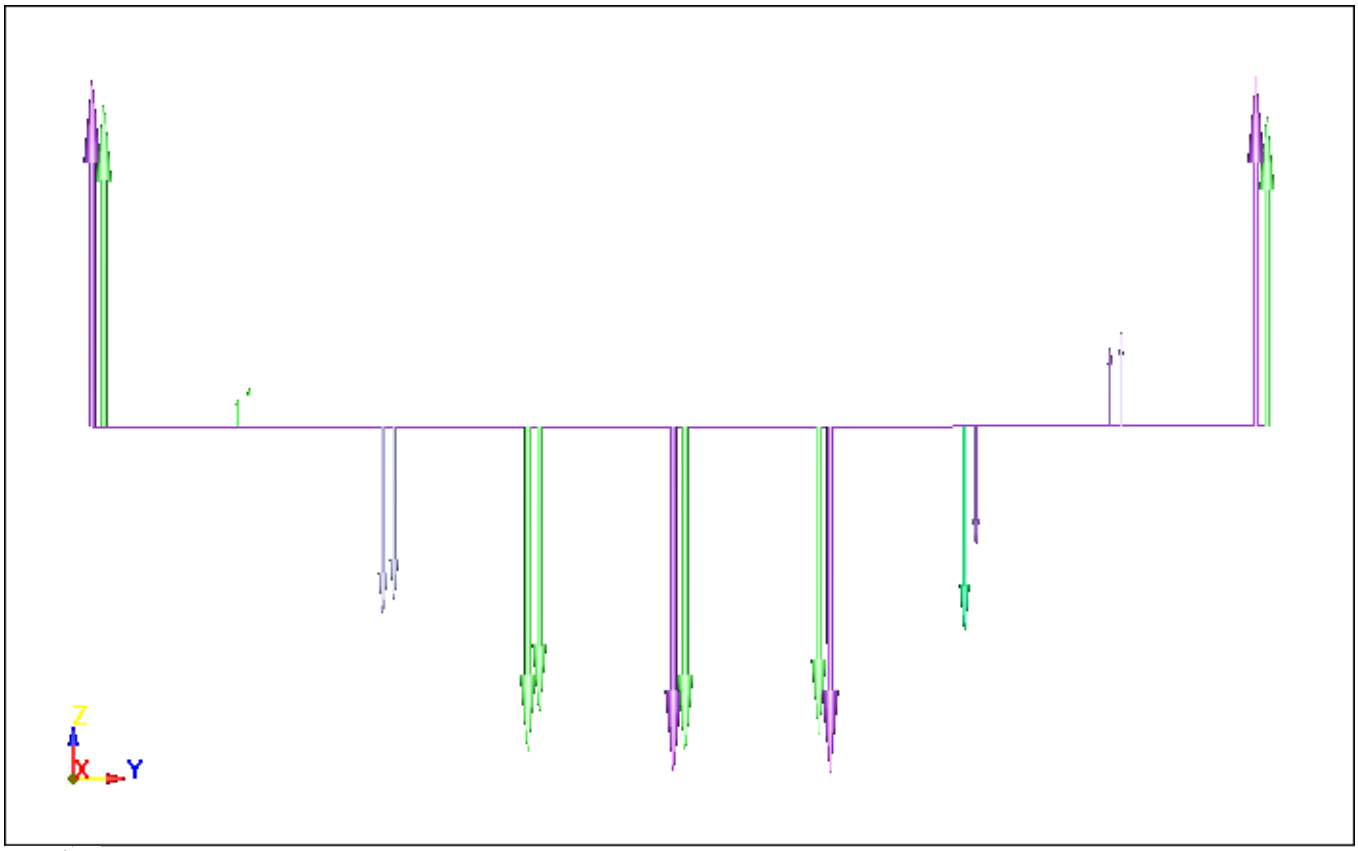
Sample Number : TB9AES028 RF96751
Inspected by : Robert Riley
Measurement Date : Apr/22/2014 09:14

Straightness of measured half-cells

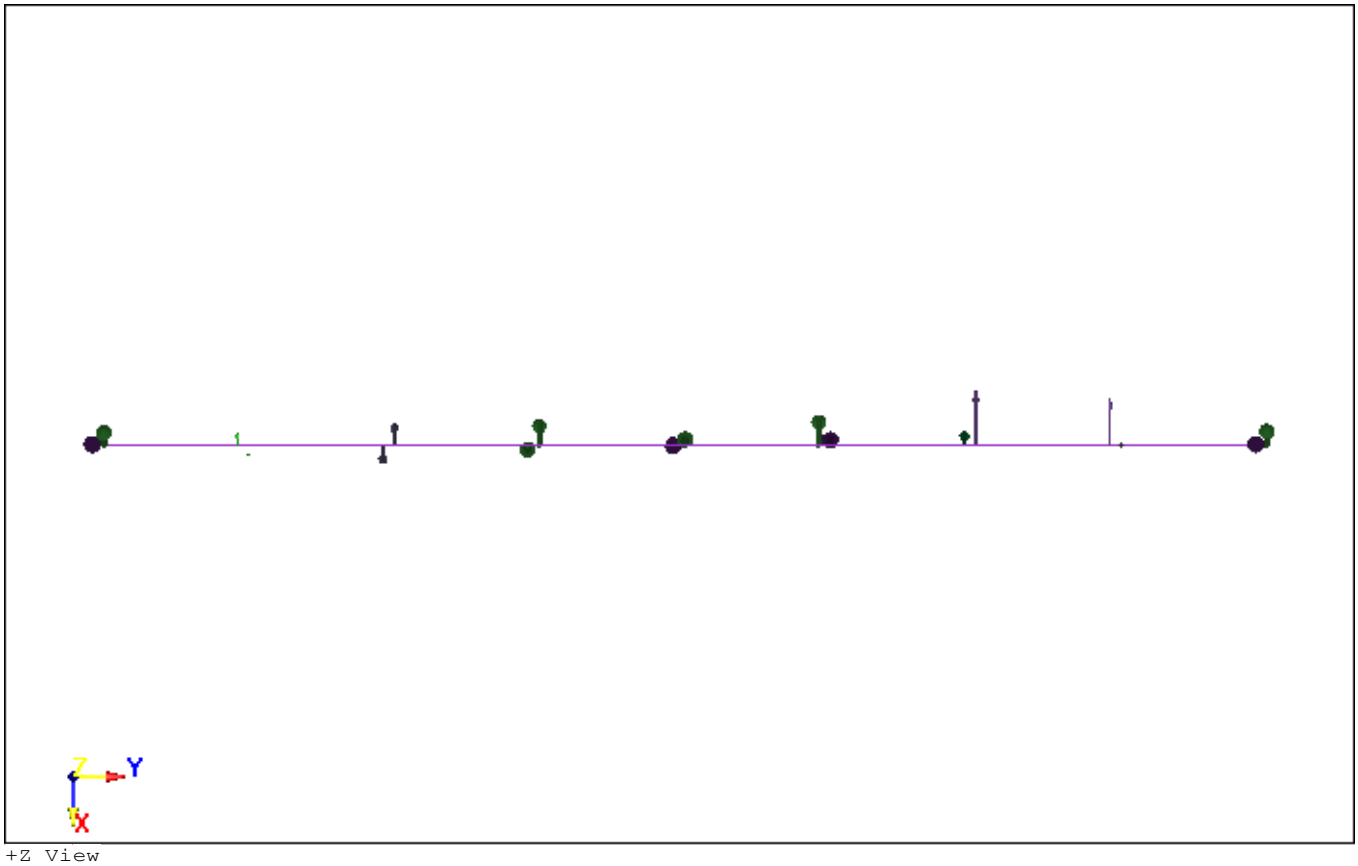
FCFSTRA1	MM	1		
Feature	MEAS	OUTTOL	MAX	MIN
LINE_CELL_ODS	0.558	0.000	0.279	-0.279



-Y View
x1000



+X View
x1000



+Z View
x1000

	MM	LOC01 - OD_CELL_1A				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.008	0.008	0.200	0.200	0.000
Z	0.000	-0.136	-0.136	0.200	0.200	0.000
D	210.300	211.205	0.905	0.200	0.200	0.705
RN	0.000	0.236	0.236	0.200	0.000	0.036

⌖	MM	LOC02 - OD_CELL_1B				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.004	-0.004	0.200	0.200	0.000
Z	0.000	-0.154	-0.154	0.200	0.200	0.000
D	210.300	211.129	0.829	0.200	0.200	0.629
RN	0.000	0.294	0.294	0.200	0.000	0.094

⌖	MM	LOC03 - OD_CELL_2A				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.002	0.002	0.200	0.200	0.000
Z	0.000	-0.381	-0.381	0.200	0.200	0.181
D	210.300	211.177	0.877	0.200	0.200	0.677
RN	0.000	0.254	0.254	0.200	0.000	0.054

⌖	MM	LOC04 - OD_CELL_2B				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.021	0.021	0.200	0.200	0.000
Z	0.000	-0.369	-0.369	0.200	0.200	0.169
D	210.300	211.098	0.798	0.200	0.200	0.598
RN	0.000	0.253	0.253	0.200	0.000	0.053

⌖	MM	LOC05 - OD_CELL_3A				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.029	0.029	0.200	0.200	0.000
Z	0.000	-0.547	-0.547	0.200	0.200	0.347
D	210.300	211.147	0.847	0.200	0.200	0.647
RN	0.000	0.240	0.240	0.200	0.000	0.040

⌖	MM	LOC06 - OD_CELL_3B				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.003	-0.003	0.200	0.200	0.000
Z	0.000	-0.532	-0.532	0.200	0.200	0.332
D	210.300	211.119	0.819	0.200	0.200	0.619
RN	0.000	0.293	0.293	0.200	0.000	0.093

⌖	MM	LOC07 - OD_CELL_4A				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.021	0.021	0.200	0.200	0.000
Z	0.000	-0.644	-0.644	0.200	0.200	0.444
D	210.300	211.133	0.833	0.200	0.200	0.633
RN	0.000	0.277	0.277	0.200	0.000	0.077

⌖	MM	LOC08 - OD_CELL_4B				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.003	-0.003	0.200	0.200	0.000
Z	0.000	-0.611	-0.611	0.200	0.200	0.411
D	210.300	211.070	0.770	0.200	0.200	0.570
RN	0.000	0.259	0.259	0.200	0.000	0.059

⌖	MM	LOC09 - OD_CELL_5A				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.020	0.020	0.200	0.200	0.000
Z	0.000	-0.648	-0.648	0.200	0.200	0.448
D	210.300	211.092	0.792	0.200	0.200	0.592
RN	0.000	0.260	0.260	0.200	0.000	0.060

⌖	MM	LOC10 - OD_CELL_5B				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.014	0.014	0.200	0.200	0.000
Z	0.000	-0.632	-0.632	0.200	0.200	0.432
D	210.300	211.137	0.837	0.200	0.200	0.637
RN	0.000	0.224	0.224	0.200	0.000	0.024

⌖	MM	LOC11 - OD_CELL_6A				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.002	-0.002	0.200	0.200	0.000
Z	0.000	-0.604	-0.604	0.200	0.200	0.404
D	210.300	211.139	0.839	0.200	0.200	0.639
RN	0.000	0.278	0.278	0.200	0.000	0.078

⌖	MM	LOC12 - OD_CELL_6B				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.017	0.017	0.200	0.200	0.000
Z	0.000	-0.636	-0.636	0.200	0.200	0.436
D	210.300	211.083	0.783	0.200	0.200	0.583
RN	0.000	0.224	0.224	0.200	0.000	0.024

⌖	MM	LOC13 - OD_CELL_7A				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.016	0.016	0.200	0.200	0.000
Z	0.000	-0.515	-0.515	0.200	0.200	0.315
D	210.300	211.151	0.851	0.200	0.200	0.651
RN	0.000	0.237	0.237	0.200	0.000	0.037

⌖	MM	LOC14 - OD_CELL_7B				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.022	-0.022	0.200	0.200	0.000
Z	0.000	-0.445	-0.445	0.200	0.200	0.245
D	210.300	210.994	0.694	0.200	0.200	0.494
RN	0.000	0.226	0.226	0.200	0.000	0.026

⌖	MM	LOC15 - OD_CELL_8A				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.012	-0.012	0.200	0.200	0.000
Z	0.000	-0.269	-0.269	0.200	0.200	0.069
D	210.300	211.184	0.884	0.200	0.200	0.684
RN	0.000	0.249	0.249	0.200	0.000	0.049

⌖	MM	LOC16 - OD_CELL_8B				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.028	0.028	0.200	0.200	0.000
Z	0.000	-0.259	-0.259	0.200	0.200	0.059
D	210.300	211.098	0.798	0.200	0.200	0.598
RN	0.000	0.251	0.251	0.200	0.000	0.051

⌖	MM	LOC17 - OD_CELL_9A				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.030	0.030	0.200	0.200	0.000
Z	0.000	-0.045	-0.045	0.200	0.200	0.000
D	210.300	211.164	0.864	0.200	0.200	0.664
RN	0.000	0.260	0.260	0.200	0.000	0.060

⌖	MM	LOC18 - OD_CELL_9B				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.017	0.017	0.200	0.200	0.000
Z	0.000	-0.072	-0.072	0.200	0.200	0.000
D	210.300	211.037	0.737	0.200	0.200	0.537
RN	0.000	0.295	0.295	0.200	0.000	0.095

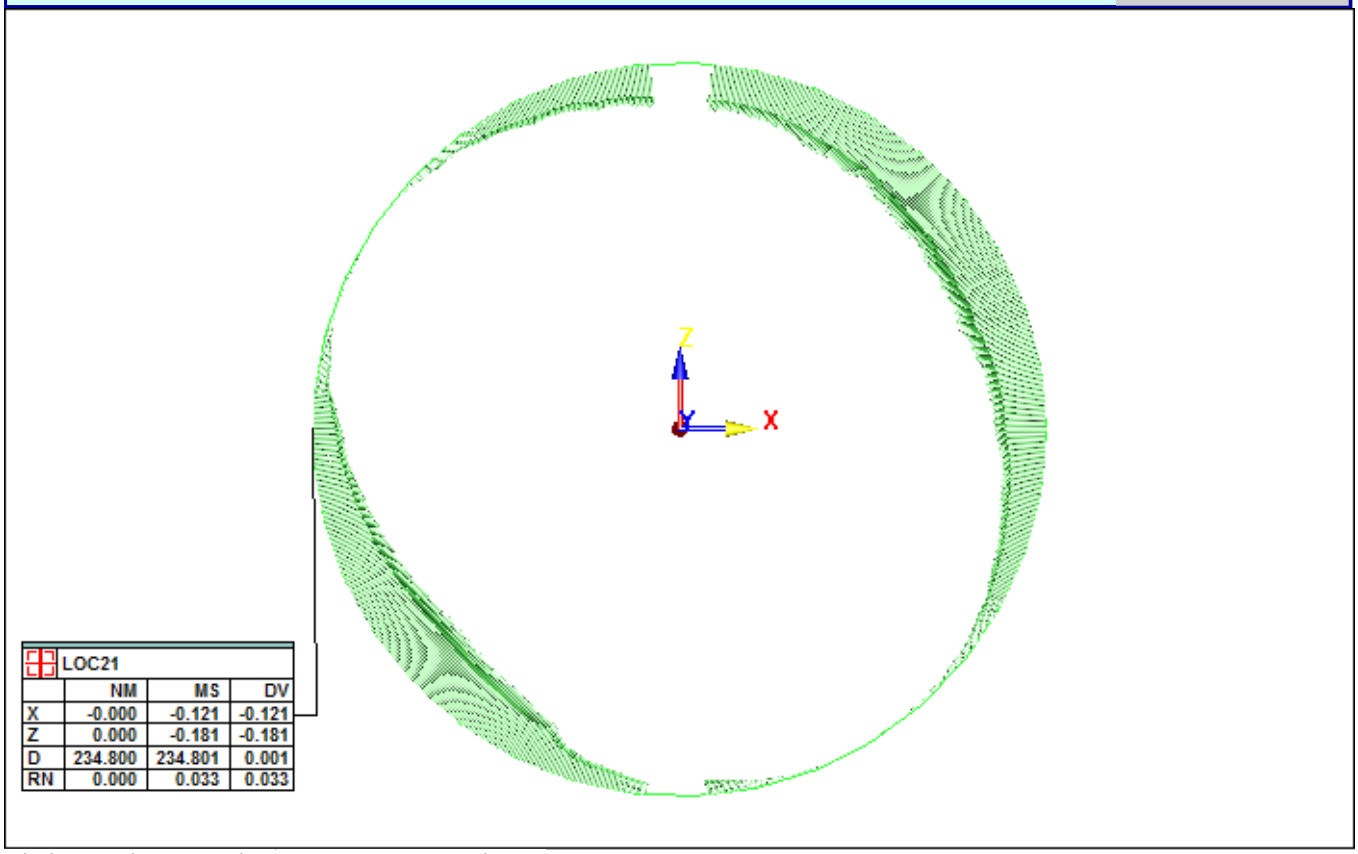
Datum Discs O.D.

⊕	MM	LOC19 - MC_DATUM_DISC_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.000	0.000	0.000	0.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.854	-0.146	0.050	0.050	0.096
RN	0.000	0.042	0.042	0.050	0.000	0.000

⊕	MM	LOC20 - FP_DATUM_DISC_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.000	0.000	0.000	0.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.830	-0.170	0.050	0.050	0.120
RN	0.000	0.051	0.051	0.050	0.000	0.001

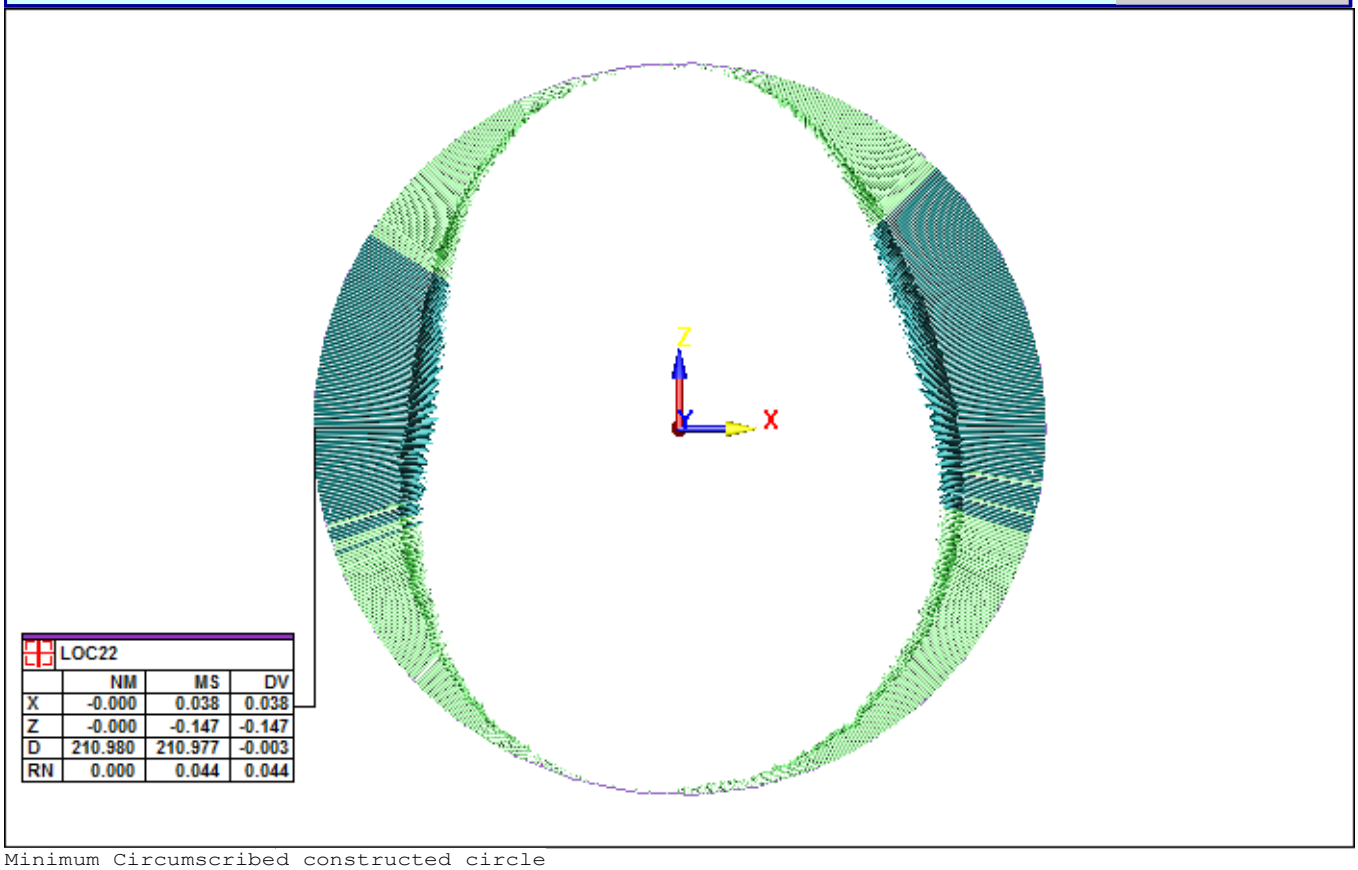
Transition Rings

⊕	MM	LOC21 - MC_TRANSITION_RING_LARGE_OD_MIN_CIR				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.121	-0.121	0.250	0.250	0.000
Z	0.000	-0.181	-0.181	0.250	0.250	0.000
D	234.800	234.801	0.001	0.250	0.250	0.000
RN	0.000	0.033	0.033	0.250	0.000	0.000



Minimum Circumscribed constructed circle
Transition Ring Main Coupler End
x1000

	MM	LOC22 - FP_TRANSITION_RING_LARGE_OD_MIN_CIR				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.038	0.038	0.250	0.250	0.000
Z	0.000	-0.147	-0.147	0.250	0.250	0.000
D	210.980	210.977	-0.003	0.250	0.250	0.000
RN	0.000	0.044	0.044	0.250	0.000	0.000



Minimum Circumscribed constructed circle
Transition Ring Field Probe end
x1000

Transition Rings Planes

	MM	LOC23 - MC_TRANSITION_RING_LARGE_PLN				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	1124.114	1127.079	2.965	10.000	10.000	0.000
FL	0.000	0.109	0.109	0.200	0.000	0.000

AX	I	J	K
V	0.002	1.000	0.004

	MM	LOC24 - FP_TRANSITION_RING_LARGE_PLN				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	120.088	119.794	-0.294	10.000	10.000	0.000
FL	0.000	0.118	0.118	0.200	0.000	0.000

AX	I	J	K
V	0.001	-1.000	0.004

Average distance between Transition Rings

	MM	DIST01 - MC_TRANSITION_RING_LARGE_PLN TO FP_TRANSITION_RING_LARGE_PLN (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1004.026	1007.286	3.260	1.000	1.000	2.260

⌖	MM	LOC25 - F_MAX_X1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	103.472	103.472	1000.000	1000.000	0.000
Y	119.726	119.948	0.222	1.000	1.000	0.000
Z	0.000	-0.820	-0.820	1000.000	1000.000	0.000

⌖	MM	LOC26 - F_MIN_X1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-103.498	-103.498	1000.000	1000.000	0.000
Y	119.726	119.868	0.142	1.000	1.000	0.000
Z	0.000	0.836	0.836	1000.000	1000.000	0.000

⌖	MM	LOC27 - F_MAX_Z1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-3.974	-3.974	1000.000	1000.000	0.000
Y	119.726	120.214	0.488	1.000	1.000	0.000
Z	0.000	103.477	103.477	1000.000	1000.000	0.000

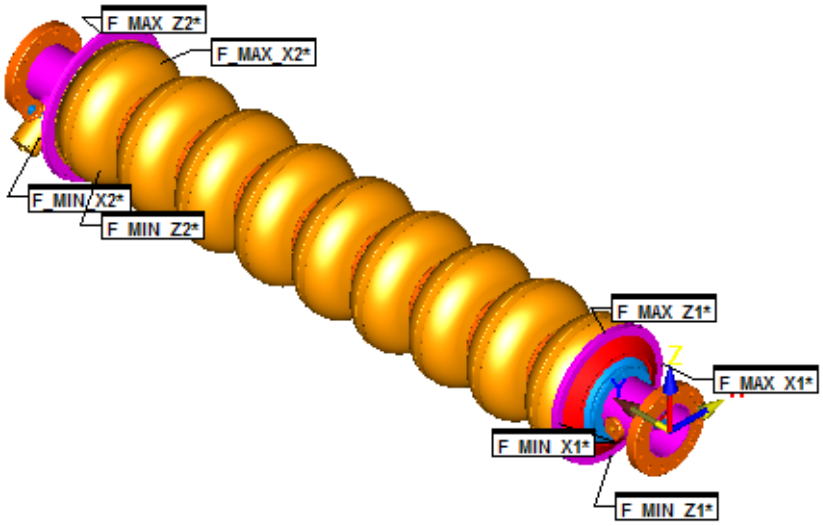
⌖	MM	LOC28 - F_MIN_Z1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.353	1.353	1000.000	1000.000	0.000
Y	119.726	119.467	-0.260	1.000	1.000	0.000
Z	0.000	-103.405	-103.405	1000.000	1000.000	0.000

⌖	MM	LOC29 - F_MAX_X2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	117.906	117.906	1000.000	1000.000	0.000
Y	1123.752	1126.650	2.897	1.000	1.000	1.897
Z	0.000	2.830	2.830	1000.000	1000.000	0.000

⌖	MM	LOC30 - F_MIN_X2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-117.948	-117.948	1000.000	1000.000	0.000
Y	1123.752	1127.260	3.508	1.000	1.000	2.508
Z	0.000	-3.684	-3.684	1000.000	1000.000	0.000

⌖	MM	LOC31 - F_MAX_Z2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.851	-0.851	1000.000	1000.000	0.000
Y	1123.752	1126.484	2.732	1.000	1.000	1.732
Z	0.000	118.040	118.040	1000.000	1000.000	0.000

⌖	MM	LOC32 - F_MIN_Z2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.993	-0.993	1000.000	1000.000	0.000
Y	1123.752	1127.407	3.655	1.000	1.000	2.655
Z	0.000	-117.927	-117.927	1000.000	1000.000	0.000



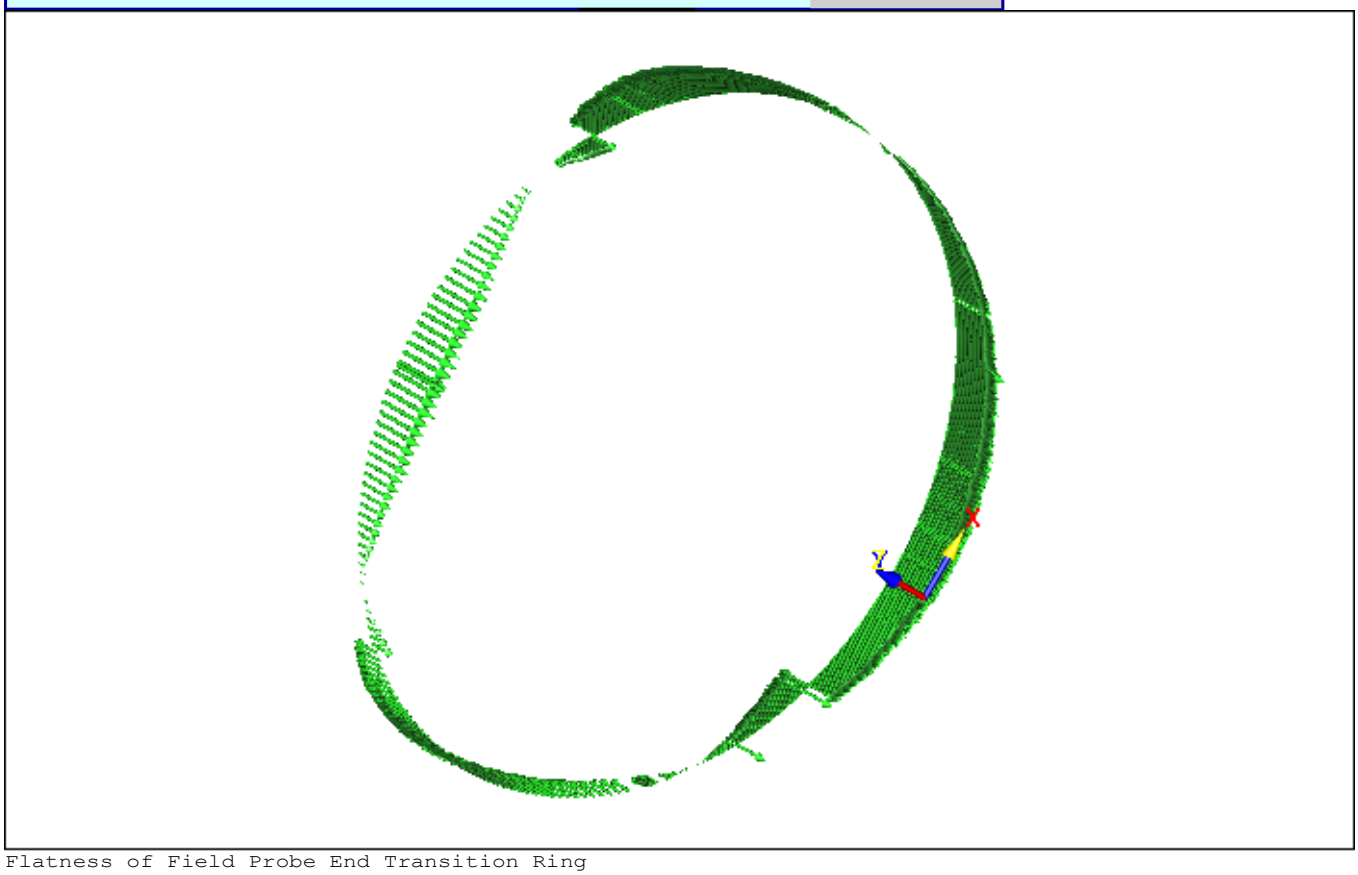
↔	MM	DIST02 - F_MAX_X1 TO F_MAX_X2 (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1004.026	1006.701	2.675	1.000	1.000	1.675

↔	MM	DIST03 - F_MAX_Z1 TO F_MAX_Z2 (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1004.026	1006.270	2.244	1.000	1.000	1.244

↔	MM	DIST04 - F_MIN_X1 TO F_MIN_X2 (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1004.026	1007.392	3.366	1.000	1.000	2.366

↔	MM	DIST05 - F_MIN_X1 TO F_MIN_Z2 (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1004.026	1007.539	3.513	1.000	1.000	2.513

FCFFLAT1	MM	1			
Feature	MEAS	OUTTOL	MAX	MIN	
FP_TRANSITION_RING_LARGE_PLN	0.088	0.000	0.044	-0.044	



Flatness of Field Probe End Transition Ring
x500

FCFFLAT2	MM	▱ 1			
Feature	MEAS	OUTTOL	MAX	MIN	
MC_TRANSITION_RING_LARGE_PLN	0.087	0.000	0.044	-0.044	

Flatness of Main Coupler End Transition Ring
x500

⌖	MM	LOC33 - FP_END_PLN_CONSTRUCTED				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.000	0.000	0.001	0.001	0.000
FL	0.000	0.038	0.038	0.200	0.000	0.000

AX	I	J	K
V	0.000	-1.000	0.002

FCFPERP2	MM	⊥ 2 A			
Feature	MEAS	OUTTOL	MAX	MIN	
FP_END_PLN_CONSTRUCTED	0.259	0.059	0.144	0.114	

∡	DEG	ANGL1 - FP_END_PLN_CONSTRUCTED TO Y_AXIS				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
A	90.000	89.891	-0.109	0.100	0.100	0.009

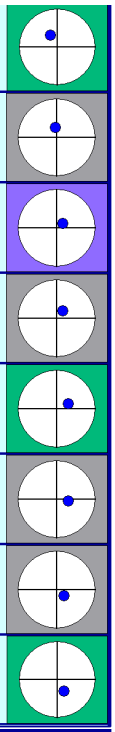
⌖	MM	LOC34 - FP_END_FLANGE_CIR				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.024	-0.024	0.200	0.200	0.000
Z	0.000	0.213	0.213	0.200	0.200	0.013
D	140.000	140.040	0.040	0.300	0.300	0.000
RN	0.000	0.018	0.018	0.200	0.000	0.000

↔	MM	DIST06 - FP_END_PLN_SS TO FP_END_PLN (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1.000	0.981	-0.019	0.100	0.100	0.000

FCFLOC1 Size	MM	12XØ8.8 0.3/0.3					
Feature	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	BONUS
FP_CIR1	8.800	8.756	-0.044	0.300	0.300	0.000	0.000
FP_CIR2	8.800	8.760	-0.040	0.300	0.300	0.000	0.000
FP_CIR3	8.800	8.755	-0.045	0.300	0.300	0.000	0.000
FP_CIR4	8.800	8.746	-0.054	0.300	0.300	0.000	0.000
FP_CIR5	8.800	8.746	-0.054	0.300	0.300	0.000	0.000
FP_CIR6	8.800	8.769	-0.031	0.300	0.300	0.000	0.000
FP_CIR7	8.800	8.757	-0.043	0.300	0.300	0.000	0.000
FP_CIR8	8.800	8.761	-0.039	0.300	0.300	0.000	0.000
FP_CIR9	8.800	8.756	-0.044	0.300	0.300	0.000	0.000
FP_CIR10	8.800	8.770	-0.030	0.300	0.300	0.000	0.000
FP_CIR11	8.800	8.752	-0.048	0.300	0.300	0.000	0.000
FP_CIR12	8.800	8.757	-0.043	0.300	0.300	0.000	0.000

FCFLOC1 Position	MM	⌖ Ø.3 C		
Feature	MEAS	OUTTOL	BONUS	
FP_CIR1	0.038	0.000	0.000	
FP_CIR2	0.049	0.000	0.000	
FP_CIR3	0.067	0.000	0.000	
FP_CIR4	0.059	0.000	0.000	

FP_CIR5	0.000	0.105	0.105	0.300		0.000	0.000
FP_CIR6	0.000	0.077	0.077	0.300		0.000	0.000
FP_CIR7	0.000	0.059	0.059	0.300		0.000	0.000
FP_CIR8	0.000	0.077	0.077	0.300		0.000	0.000
FP_CIR9	0.000	0.101	0.101	0.300		0.000	0.000
FP_CIR10	0.000	0.090	0.090	0.300		0.000	0.000
FP_CIR11	0.000	0.075	0.075	0.300		0.000	0.000
FP_CIR12	0.000	0.105	0.105	0.300		0.000	0.000



FCFLOC1 Datum Shift

Segment	Shift X	Shift Y	Shift Z	Rotation X	Rotation Y	Rotation Z
Segment 1	-0.060	Fixed	-0.029	Fixed	-0.369	Fixed

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

Feature	AX	NOMINAL	MEAS	DEV
FP_CIR1	PR	60.000	59.983	-0.017
	PA	75.000	74.991	-0.009
FP_CIR2	PR	60.000	59.975	-0.024
	PA	45.000	45.001	0.001
FP_CIR3	PR	60.000	59.968	-0.032
	PA	15.000	15.009	0.009
FP_CIR4	PR	60.000	59.973	-0.027
	PA	-15.000	-14.989	0.012
FP_CIR5	PR	60.000	59.949	-0.051
	PA	-45.000	-44.987	0.013
FP_CIR6	PR	60.000	59.962	-0.038
	PA	-75.000	-74.996	0.004
FP_CIR7	PR	60.000	59.977	-0.023
	PA	-105.000	-104.982	0.018
FP_CIR8	PR	60.000	59.962	-0.038
	PA	-135.000	-135.003	-0.004
FP_CIR9	PR	60.000	59.950	-0.050
	PA	-165.000	-165.006	-0.007
FP_CIR10	PR	60.000	59.955	-0.045
	PA	165.000	164.996	-0.004
FP_CIR11	PR	60.000	59.963	-0.037
	PA	135.000	134.998	-0.003
FP_CIR12	PR	60.000	59.949	-0.051
	PA	105.000	104.987	-0.013

	MM	LOC35 - MC_END_FLANGE_PLN				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	1247.400	1249.931	2.531	3.000	3.000	0.000
FL	0.000	0.057	0.057	0.200	0.000	0.000

AX	I	J	K
V	0.000	1.000	0.002

FCFPERP3	MM	⊥ .2 A				
Feature	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
MC_END_FLANGE_PLN	0.000	0.324	0.324	0.200	0.000	0.124

∡	DEG	ANGL2 - MC_END_FLANGE_PLN TO Y_AXIS				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
A	90.000	89.865	-0.135	0.100	0.100	0.035

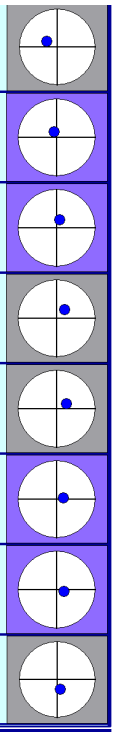
	MM	LOC36 - MC_END_FLANGE_CIR				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.009	0.009	0.200	0.200	0.000
Z	0.000	0.282	0.282	0.200	0.200	0.082
D	140.000	140.020	0.020	0.300	0.300	0.000
RN	0.000	0.021	0.021	0.200	0.000	0.000

↔	MM	DIST07 - MC_END_FLANGE_PLN TO MC_END_FLANGE_PLN_SS (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1.000	0.963	-0.037	0.100	0.100	0.000

FCFLOC2 Size	MM	12XØ8.8 0.3/0.3					
Feature	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	BONUS
MC_CIR1	8.800	8.759	-0.041	0.300	0.300	0.000	0.000
MC_CIR2	8.800	8.771	-0.029	0.300	0.300	0.000	0.000
MC_CIR3	8.800	8.752	-0.048	0.300	0.300	0.000	0.000
MC_CIR4	8.800	8.739	-0.061	0.300	0.300	0.000	0.000
MC_CIR5	8.800	8.755	-0.045	0.300	0.300	0.000	0.000
MC_CIR6	8.800	8.755	-0.045	0.300	0.300	0.000	0.000
MC_CIR7	8.800	8.752	-0.048	0.300	0.300	0.000	0.000
MC_CIR8	8.800	8.745	-0.055	0.300	0.300	0.000	0.000
MC_CIR9	8.800	8.749	-0.051	0.300	0.300	0.000	0.000
MC_CIR10	8.800	8.760	-0.040	0.300	0.300	0.000	0.000
MC_CIR11	8.800	8.751	-0.049	0.300	0.300	0.000	0.000
MC_CIR12	8.800	8.754	-0.046	0.300	0.300	0.000	0.000

FCFLOC2 Position	MM	⌖ Ø.3 E		
Feature	MEAS	OUTTOL	BONUS	
MC_CIR1	0.091	0.000	0.000	
MC_CIR2	0.079	0.000	0.000	
MC_CIR3	0.073	0.000	0.000	
MC_CIR4	0.080	0.000	0.000	

MC_CIR5	0.000	0.091	0.091	0.300		0.000	0.000
MC_CIR6	0.000	0.050	0.050	0.300		0.000	0.000
MC_CIR7	0.000	0.066	0.066	0.300		0.000	0.000
MC_CIR8	0.000	0.091	0.091	0.300		0.000	0.000
MC_CIR9	0.000	0.087	0.087	0.300		0.000	0.000
MC_CIR10	0.000	0.054	0.054	0.300		0.000	0.000
MC_CIR11	0.000	0.055	0.055	0.300		0.000	0.000
MC_CIR12	0.000	0.081	0.081	0.300		0.000	0.000



FCFLOC2 Datum Shift

Segment	Shift X	Shift Y	Shift Z	Rotation X	Rotation Y	Rotation Z
Segment 1	-0.314	Fixed	-2.928	Fixed	-0.216	Fixed

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

Feature	AX	NOMINAL	MEAS	DEV
MC_CIR1	PR	60.000	59.955	-0.045
	PA	75.001	75.006	0.006
MC_CIR2	PR	60.000	59.961	-0.039
	PA	45.001	44.996	-0.005
MC_CIR3	PR	60.000	59.967	-0.033
	PA	15.001	14.986	-0.015
MC_CIR4	PR	60.000	59.963	-0.036
	PA	-15.000	-15.015	-0.016
MC_CIR5	PR	60.000	59.957	-0.043
	PA	-45.000	-45.013	-0.014
MC_CIR6	PR	60.000	59.975	-0.025
	PA	-75.000	-75.004	-0.004
MC_CIR7	PR	60.000	59.967	-0.033
	PA	-105.000	-104.996	0.004
MC_CIR8	PR	60.000	59.955	-0.045
	PA	-135.000	-135.001	-0.001
MC_CIR9	PR	60.000	59.958	-0.043
	PA	-165.000	-165.009	-0.009
MC_CIR10	PR	60.000	59.976	-0.024
	PA	165.000	164.988	-0.012
MC_CIR11	PR	60.000	59.976	-0.024
	PA	135.000	134.987	-0.013
MC_CIR12	PR	60.000	59.960	-0.041
	PA	105.000	105.000	0.000

Datum Disc planes

Datum Disc Field Probe End

⌖	MM	LOC37 - FP_DATUM_DISC_PLN				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	92.842	92.777	-0.065	0.200	0.200	0.000
FL	0.000	0.059	0.059	0.200	0.000	0.000

AX	I	J	K
V	0.000	-1.000	0.002

FCFPERP4	MM	⊥ .2 A
Feature	MEAS	OUTTOL
FP_DATUM_DISC_PLN	0.248	0.048

∠	DEG	ANGL3 - FP_DATUM_DISC_PLN TO Y_AXIS				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
A	90.000	90.134	0.134	0.100	0.100	0.034

Datum Disc Main Coupler End

⌖	MM	LOC38 - MC_DATUM_DISC_PLN				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	1153.900	1156.477	2.578	0.200	0.200	2.378
FL	0.000	0.079	0.079	0.200	0.000	0.000

AX	I	J	K
V	0.003	1.000	0.003

FCFPERP5	MM	⊥ .2 A
Feature	MEAS	OUTTOL
MC_DATUM_DISC_PLN	0.460	0.260

∠	DEG	ANGL4 - MC_DATUM_DISC_PLN TO Y_AXIS				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
A	90.000	90.242	0.242	0.100	0.100	0.142

Distance between Datum Discs

↔	MM	DIST08 - FP_DATUM_DISC_PLN TO MC_DATUM_DISC_PLN (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1061.057	1063.700	2.643	0.200	0.200	2.443

↔	MM	DIST09 - MC_DATUM_DISC_PLN TO MC_END_FLANGE_PLN_CONSTRUCT (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	93.500	93.454	-0.046	0.200	0.200	0.000

Field Probe Flange

⌖	MM	LOC39 - FP_FLANGE_PLN				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	-53.800	-54.260	-0.460	0.200	0.200	0.260
FL	0.000	0.004	0.004	0.200	0.000	0.000

AX	I	J	K
V	-1.000	0.003	0.011

FCFPARL1	MM	// .2 X-
Feature	MEAS	OUTTOL
FP_FLANGE_PLN	0.296	0.096

∠	DEG	ANGL5 - FP_FLANGE_PLN TO WORKPLANE_X_MINUS				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
A	0.000	-0.636	-0.636	0.100	0.100	0.536

⌖	MM	LOC40 - FP_FLANGE				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	60.600	60.486	-0.114	0.200	0.200	0.000
Z	0.000	0.336	0.336	0.200	0.200	0.136
D	33.800	33.867	0.067	0.150	0.150	0.000
RN	0.000	0.019	0.019	0.150	0.000	0.000

↔	MM	DIST10 - FP_FLANGE_PLN TO FP_FLANGE_PLN_SS				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.500	0.557	0.057	0.200	0.200	0.000

Main Coupler Flange

⌖	MM	LOC41 - MC_NW40_PLN				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	88.000	87.936	-0.064	0.200	0.200	0.000
FL	0.000	0.007	0.007	0.200	0.000	0.000

AX	I	J	K
V	1.000	-0.003	-0.002

FCFPARL2	MM	// | .2 | X-				
Feature	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
MC_NW40_PLN	0.000	0.243	0.243	0.200	0.000	0.043

∡	DEG	ANGL6 - MC_NW40_PLN TO WORKPLANE_X_MINUS				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
A	0.000	-0.223	-0.223	0.100	0.100	0.123

↔	MM	DIST11 - MC_NW40_PLN TO MC_NW40_PLN_SS				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.500	0.482	-0.018	0.200	0.200	0.000

⌖	MM	LOC42 - MC_NW40_CIR				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	1186.800	1189.033	2.233	0.200	0.200	2.033
Z	0.000	-0.024	-0.024	0.200	0.200	0.000
D	76.000	76.027	0.027	0.200	0.200	0.000
RN	0.000	0.014	0.014	0.200	0.000	0.000

↔	MM	DIST12 - MC_NW40_CIR TO MC_END_FLANGE_PLN_CONSTRUCT (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	60.600	60.899	0.299	0.200	0.200	0.099

Main Coupler Flange Hole Pattern offset to -Z- axis (rotation)
and Hole Pattern

∡	DEG	ANGL_22PT5 - MC_NW40_22PT5_ANGLE TO ZAXIS				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
A	22.500	22.969	0.469	0.500	0.500	0.000

FCFLOC3 Size	MM	8XØ6.7 0.3/0.3

Feature	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
MC_NW40_BH_1	6.700	6.764	0.064	0.300	0.300	0.000
MC_NW40_BH_2	6.700	6.820	0.120	0.300	0.300	0.000
MC_NW40_BH_3	6.700	6.780	0.080	0.300	0.300	0.000
MC_NW40_BH_4	6.700	6.756	0.056	0.300	0.300	0.000
MC_NW40_BH_5	6.700	6.792	0.092	0.300	0.300	0.000
MC_NW40_BH_6	6.700	6.769	0.069	0.300	0.300	0.000
MC_NW40_BH_7	6.700	6.768	0.068	0.300	0.300	0.000
MC_NW40_BH_8	6.700	6.768	0.068	0.300	0.300	0.000

FCFLOC3 Position	MM	⌖ Ø.3 X-

Feature	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
MC_NW40_BH_1	0.000	0.127	0.127	0.300		0.000
MC_NW40_BH_2	0.000	0.078	0.078	0.300		0.000
MC_NW40_BH_3	0.000	0.127	0.127	0.300		0.000
MC_NW40_BH_4	0.000	0.100	0.100	0.300		0.000
MC_NW40_BH_5	0.000	0.086	0.086	0.300		0.000
MC_NW40_BH_6	0.000	0.127	0.127	0.300		0.000
MC_NW40_BH_7	0.000	0.122	0.122	0.300		0.000
MC_NW40_BH_8	0.000	0.082	0.082	0.300		0.000

FCFLOC3 Datum Shift

Segment	Shift X	Shift Y	Shift Z	Rotation X	Rotation Y	Rotation Z
Segment 1	Fixed	2.285	10.435	0.505	Fixed	Fixed

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

Feature	AX	NOMINAL	MEAS	DEV
MC_NW40_BH_1	PR	1175.016	1175.008	-0.008
	PA	1.430	1.427	-0.003
MC_NW40_BH_2	PR	1157.531	1157.555	0.025
	PA	0.601	0.600	-0.002
MC_NW40_BH_3	PR	1157.531	1157.594	0.063
	PA	-0.601	-0.601	0.000
MC_NW40_BH_4	PR	1175.016	1175.028	0.013
	PA	-1.430	-1.428	0.002
MC_NW40_BH_5	PR	1199.309	1199.301	-0.008
	PA	-1.402	-1.399	0.002
MC_NW40_BH_6	PR	1216.194	1216.130	-0.063
	PA	-0.572	-0.572	0.000
MC_NW40_BH_7	PR	1216.194	1216.135	-0.059
	PA	0.572	0.573	0.001

MC_NW40_BH_8	PR	1199.309	1199.276	-0.033
	PA	1.402	1.400	-0.001

Main Coupler HOM Flange

⊕	MM	LOC43 - MC_HOM_FLANGE_PLN		
AX	MEAS	+TOL	OUTTOL	
FL	0.006	0.200	0.000	

AX	I	J	K
V	-0.549	0.262	0.794

∠	DEG	ANGL7 - MC_HOM_FLANGE_PLN TO XAXIS					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
A	35.000	34.651	-0.349	0.500	0.500	0.000	
⊕	MM	LOC44 - MC_HOM_FLANGE					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	-71.549	-71.278	0.271	10.000	10.000	0.000	
Y	1190.022	1192.629	2.607	10.000	10.000	0.000	
Z	-9.573	-9.683	-0.111	10.000	10.000	0.000	
D	33.800	33.851	0.051	0.150	0.150	0.000	
RN	0.000	0.008	0.008	0.150	0.000	0.000	
↔	MM	DIST13 - MC_HOM_FLANGE_PLN_SS TO MC_HOM_FLANGE_PLN					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.500	0.535	0.035	0.050	0.050	0.000	

Main Coupler HOM

⊕	MM	LOC45 - MC_FORMTEIL_CYL					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	-88.468	-86.262	2.207	100.000	100.000	0.000	
Y	1186.800	1189.572	2.772	0.200	0.200	2.572	
Z	-61.946	-59.934	2.012	100.000	100.000	0.000	
D	44.000	44.078	0.078	0.000	0.100	0.078	
RN	0.000	0.167	0.167	0.100	0.000	0.067	

AX	I	J	K
V	0.820	-0.003	0.572

↔	MM	DIST14 - MC_FORMTEIL_CYL TO MC_END_FLANGE_PLN_CONSTRUCT (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	60.600	60.359	-0.241	0.200	0.200	0.041	
∠	DEG	ANGL8 - MC_FORMTEIL_CYL TO XAXIS					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
A	35.000	34.871	-0.129	0.500	0.500	0.000	
∠	DEG	ANGL11 - MC_FORMTEIL_CYL TO Y_AXIS					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
A	90.000	90.144	0.144	0.500	0.500	0.000	
⊕	MM	LOC46 - MC_FORMTEIL_BUTTON_PNT					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
PR	116.000	116.021	0.021	0.200	0.200	0.000	
⊕	MM	LOC47 - MC_FORMTEIL_COVER_PLN					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
PR	111.000	110.924	-0.076	0.200	0.200	0.000	
FL	0.000	0.017	0.017	0.200	0.000	0.000	

Field Probe HOM Flange

⊕	MM	LOC48 - FP_HOM_FLANGE_PLN					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
FL	0.000	0.003	0.003	0.200	0.000	0.000	

AX	I	J	K
V	-0.486	-0.252	-0.837

∠	DEG	ANGL9 - FP_HOM_FLANGE_PLN TO XAXIS					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
A	30.000	30.124	0.124	0.500	0.500	0.000	
⊕	MM	LOC49 - FP_HOM_FLANGE					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	38.431	38.219	-0.212	10.000	10.000	0.000	
Y	57.119	57.035	-0.084	10.000	10.000	0.000	
Z	-61.636	-61.746	-0.110	10.000	10.000	0.000	
D	33.800	33.796	-0.004	0.150	0.150	0.000	
RN	0.000	0.008	0.008	0.150	0.000	0.000	
↔	MM	DIST15 - FP_HOM_FLANGE_PLN_SS TO FP_HOM_FLANGE_PLN					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.500	0.530	0.030	0.050	0.050	0.000	

Field Probe HOM

⊕	MM	LOC50 - FP_FORMTEIL_CYL					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	93.531	90.912	-2.618	100.000	100.000	0.000	
Y	60.600	60.439	-0.161	0.200	0.200	0.000	
Z	-54.000	-52.617	1.383	100.000	100.000	0.000	
D	44.000	43.824	-0.176	0.000	0.100	0.076	
RN	0.000	0.040	0.040	0.100	0.000	0.000	

AX	I	J	K
V	-0.865	-0.001	0.501

↔	MM	DIST16 - FP_FORMTEIL_CYL TO FP_END_PLN_CONSTRUCTED (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	60.600	60.439	-0.161	0.200	0.200	0.000	
∠	DEG	ANGL10 - FP_FORMTEIL_CYL TO XAXIS					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
A	30.000	30.098	0.098	0.500	0.500	0.000	
∠	DEG	ANGL12 - FP_FORMTEIL_CYL TO Y_AXIS					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
A	90.000	89.944	-0.056	0.500	0.500	0.000	
⊕	MM	LOC51 - FP_FORMTEIL_BUTTON_PNT					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
PR	116.000	115.901	-0.099	0.200	0.200	0.000	
⊕	MM	LOC52 - FP_FORMTEIL_COVER_PLN					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
PR	111.000	110.894	-0.106	0.200	0.200	0.000	
FL	0.000	0.012	0.012	0.200	0.000	0.000	

	MM	LOC53 - PNT_MC_FORMTEIL				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	-56.665	-56.937	-0.272	0.200	0.200	0.072
Y	1183.070	1185.723	2.653	3.000	3.000	0.000
Z	-31.531	-31.037	0.494	0.200	0.200	0.294
T	0.000	1.229	1.229	0.200	0.200	1.029

	MM	LOC54 - PLN_MC_FORMTEIL				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	-55.776	-56.045	-0.269	0.200	0.200	0.069
Y	1184.500	1187.127	2.627	3.000	3.000	0.000
Z	-31.376	-30.889	0.488	0.200	0.200	0.288
T	0.000	1.215	1.215	0.200	0.200	1.015
FL	0.000	0.000	0.000	0.200	0.000	0.000

AX	I	J	K
V	-0.550	0.266	0.792

	MM	DIST17 - PNT_MC_FORMTEIL TO MC_HOM_FLANGE_PLN				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	28.400	28.448	0.048	0.200	0.200	0.000

	MM	DIST18 - PLN_MC_FORMTEIL TO MC_HOM_FLANGE_PLN				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	28.400	28.452	0.052	0.200	0.200	0.000

	DEG	ANGL13 - PLN_MC_FORMTEIL TO MC_HOM_FLANGE_PLN				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
A	0.000	0.263	0.263	1.000	1.000	0.000