pc-dmis	PART NAME : PN440004-n-Trans-Rings-000-TB9NR002-v4-IR		April 20, 2010	13:12
	REV NUMBER :	SER NUMBER :	STATS COUNT :	1

440004-n
FNAL 1.3GHZ TESLA
RF CAVITY
ASSEMBLY
measurement of Transition Rings
@ 000 rotational orientation

'Inspected by ' : Robert Riley
'Cavity Number' : TB9NR002
' ' : 1004201047

Datum Discs

⌖	MM	LOC1 - CIRC_DATUM_DISC_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.000	0.000	0.000	0.000	0.000
Y	25.000	27.033	2.033	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	111.406	0.406	0.050	0.050	0.356
RN	0.000	0.035	0.035	0.050	0.000	0.000

⌖	MM	LOC2 - CIRC_DATUM_DISC_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.000	0.000	0.000	0.000	0.000
Y	-1032.384	-1030.753	1.631	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	111.086	0.086	0.050	0.050	0.036
RN	0.000	0.043	0.043	0.050	0.000	0.000

Datum Disc planes

⌖	MM	LOC3 - PLNC_DD_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	27.000	28.814	1.814	10.000	10.000	0.000
FL	0.000	0.162	0.162	0.100	0.000	0.062

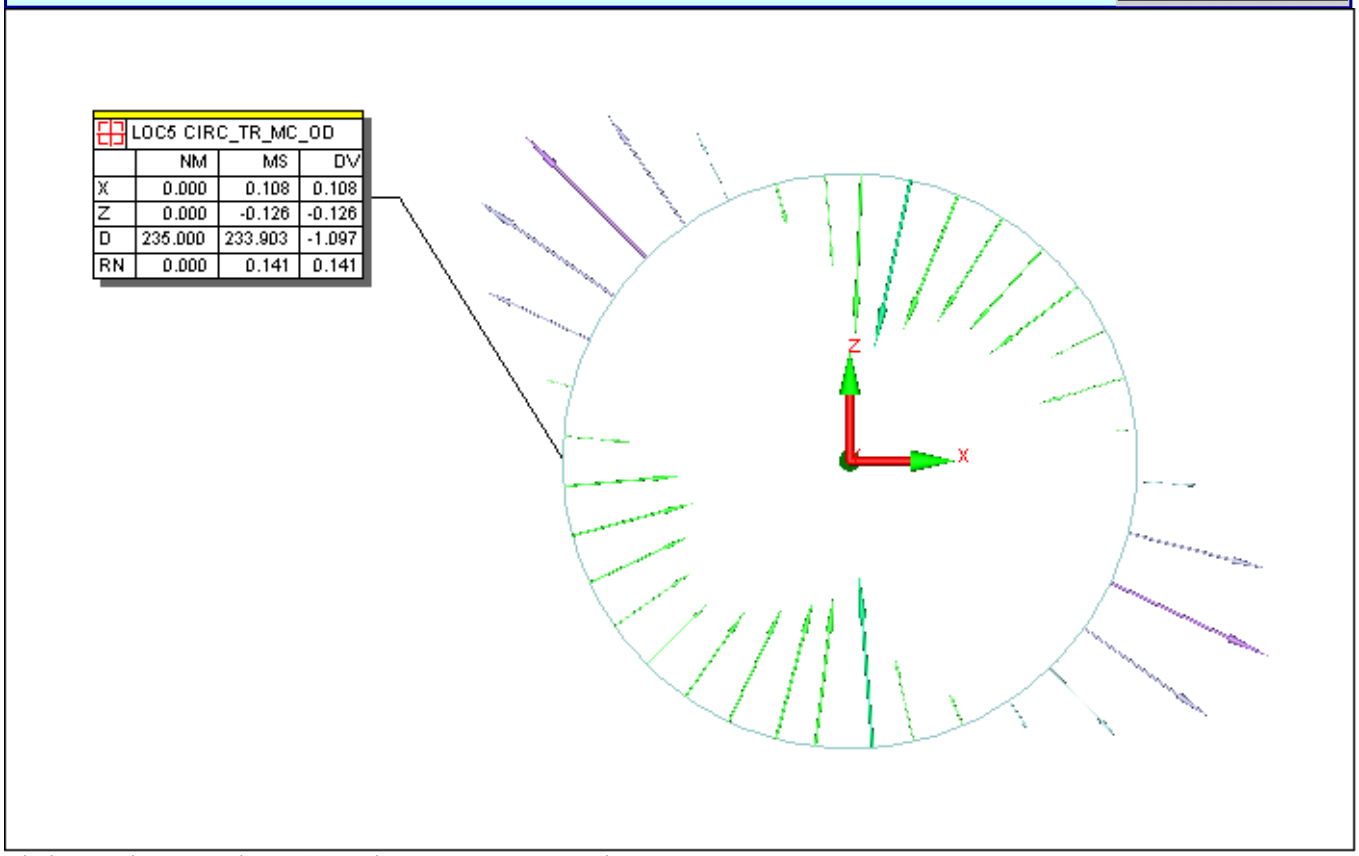
⌖	MM	LOC4 - PLNC_DD_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1034.384	-1032.642	1.742	10.000	10.000	0.000
FL	0.000	0.103	0.103	0.100	0.000	0.003

Distance between Datum Disc planes

↔	MM	DIST1 - PLNC_DD_FP TO PLNC_DD_MC (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1061.060	1061.456	0.396	0.200	0.200	0.196

Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D.

⌖	MM	LOC5 - CIRC_TR_MC_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.108	0.108	0.250	0.250	0.000
Z	0.000	-0.126	-0.126	0.250	0.250	0.000
D	235.000	233.903	-1.097	0.250	0.250	0.847
RN	0.000	0.141	0.141	0.250	0.000	0.000
○	MM	RND1 - CIRC_TR_MC_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.141	0.141	0.250	0.000	0.000

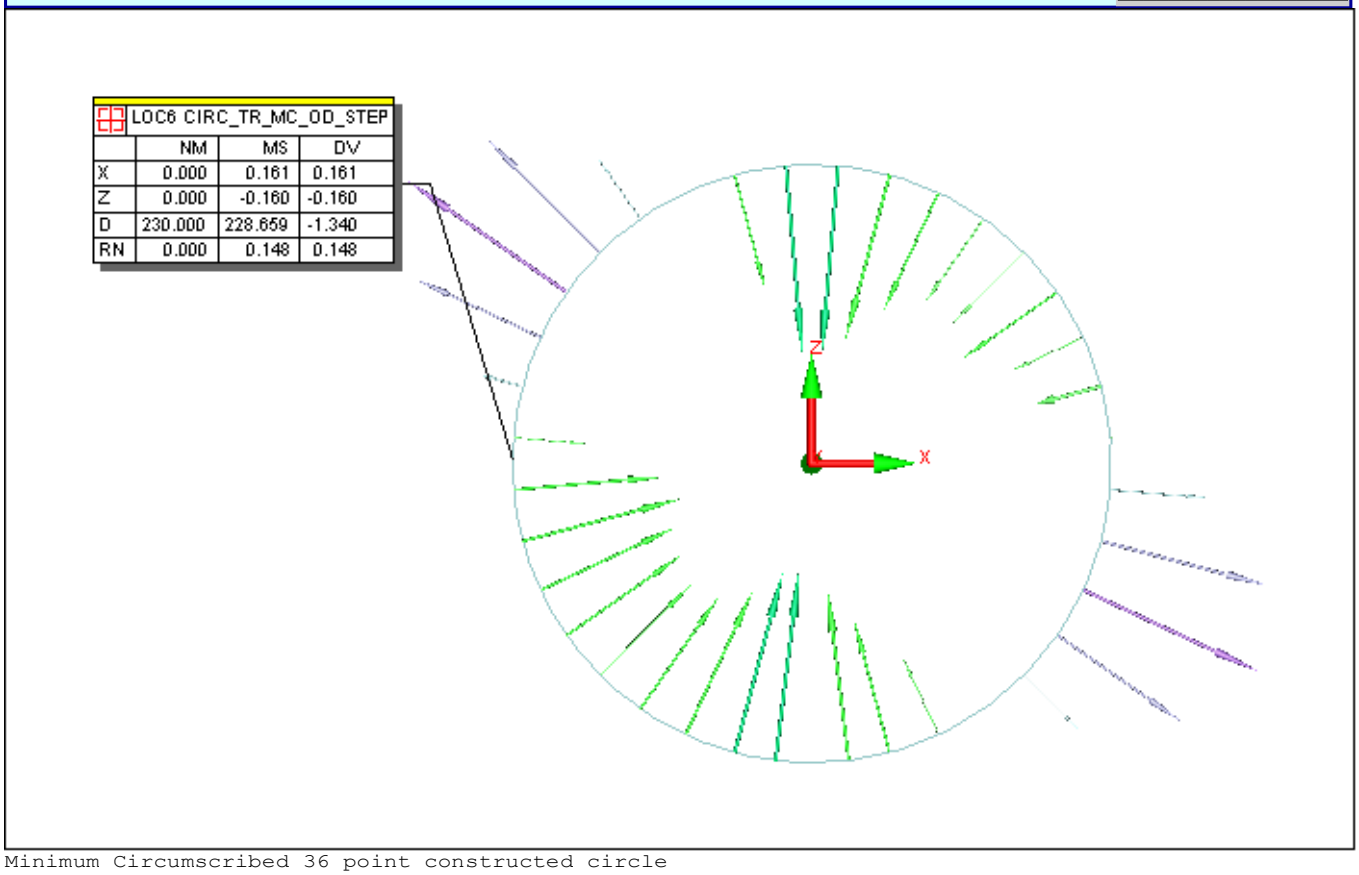


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D. x1000

Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step

#	MM	LOC6 - CIRC_TR_MC_OD_STEP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.161	0.161	0.250	0.250	0.000	
Z	0.000	-0.160	-0.160	0.250	0.250	0.000	
D	230.000	228.659	-1.340	0.000	0.250	1.090	
RN	0.000	0.148	0.148	0.250	0.000	0.000	

○	MM	RND2 - CIRC_TR_MC_OD_STEP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.148	0.148	0.250	0.000	0.000	

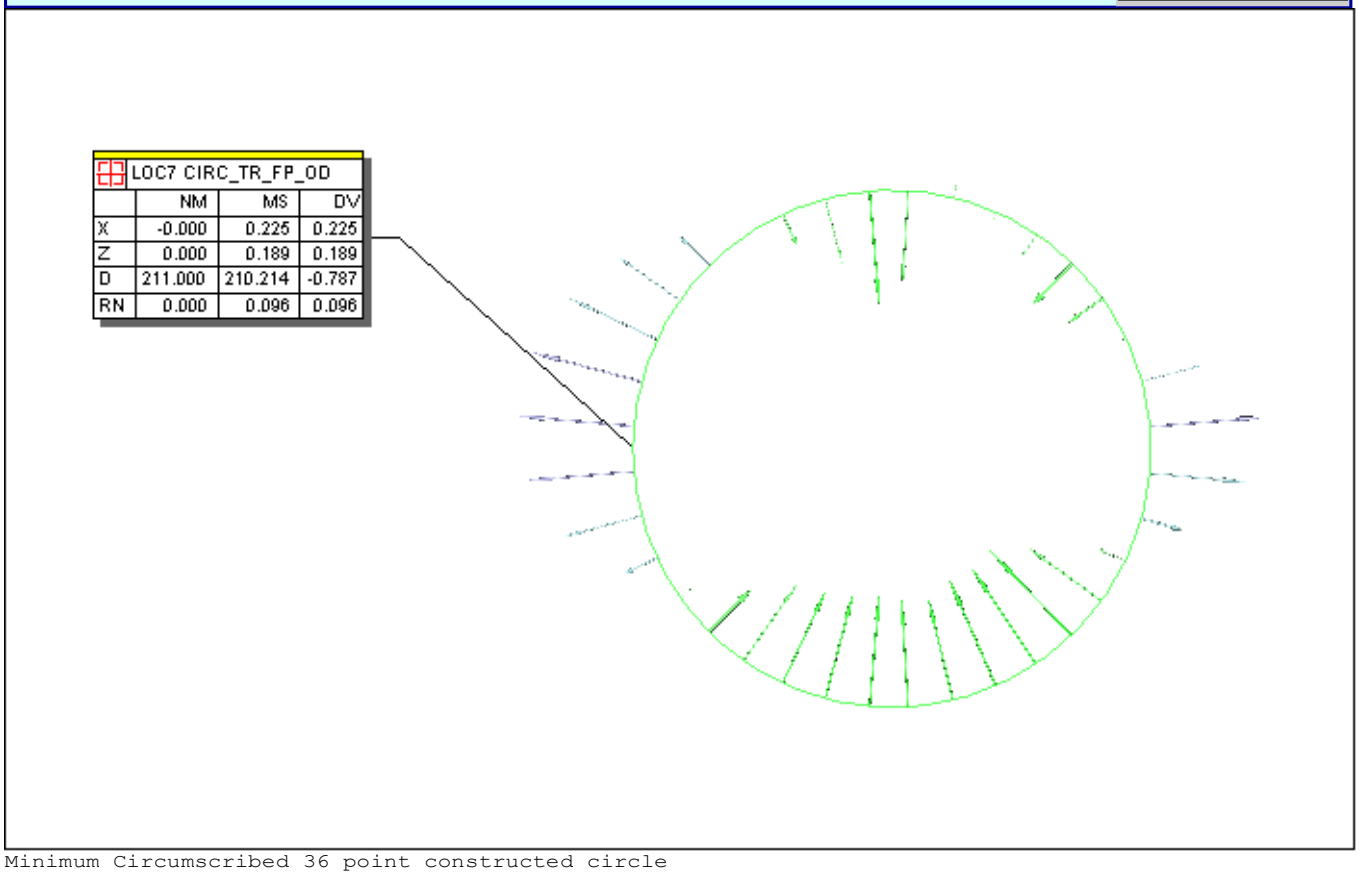


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step x1000

Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D.

	MM	LOC7 - CIRC_TR_FP_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.225	0.225	0.250	0.250	0.000
Z	0.000	0.189	0.189	0.250	0.250	0.000
D	211.000	210.214	-0.787	0.250	0.250	0.537
RN	0.000	0.096	0.096	0.250	0.000	0.000

	MM	RND3 - CIRC_TR_FP_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.096	0.096	0.250	0.000	0.000

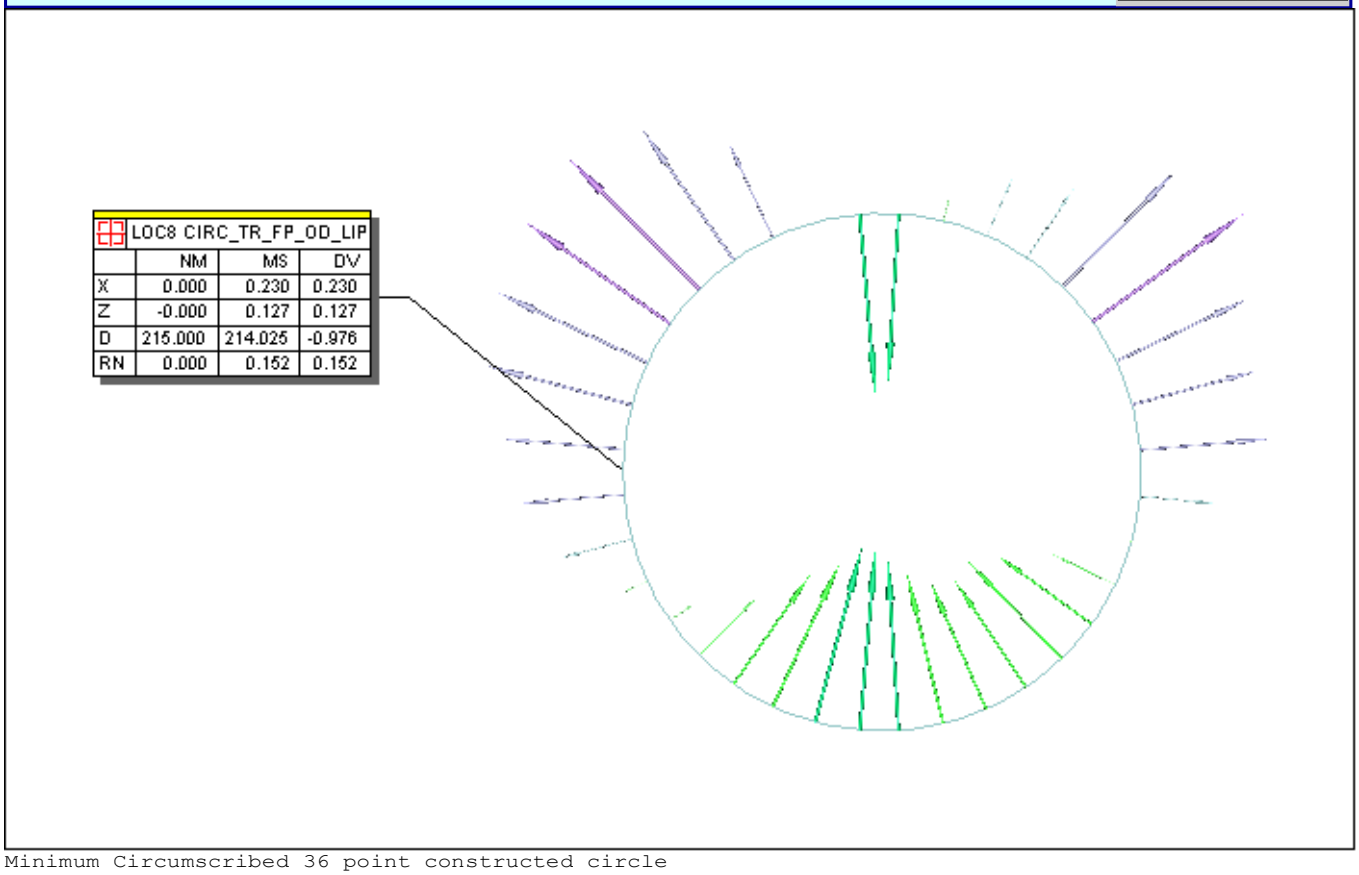


Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D. x1000

Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
215.0 O.D. lip

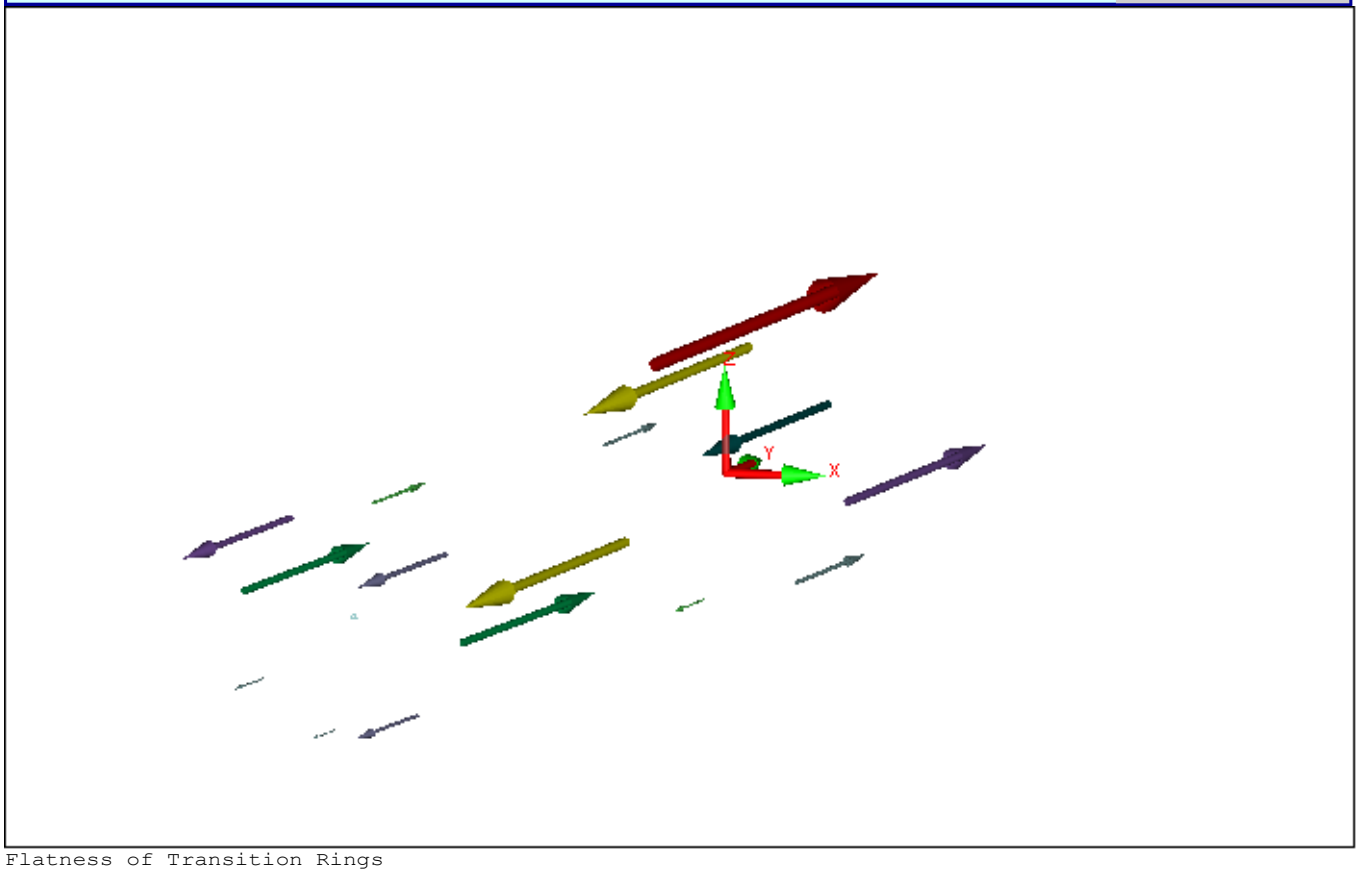
	MM	LOC8 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.230	0.230	0.250	0.250	0.000
Z	0.000	0.127	0.127	0.250	0.250	0.000
D	215.000	214.025	-0.976	0.250	0.250	0.726
RN	0.000	0.152	0.152	0.250	0.000	0.000

	MM	RND4 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.152	0.152	0.250	0.000	0.000



Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
215.0 O.D. lip x1000

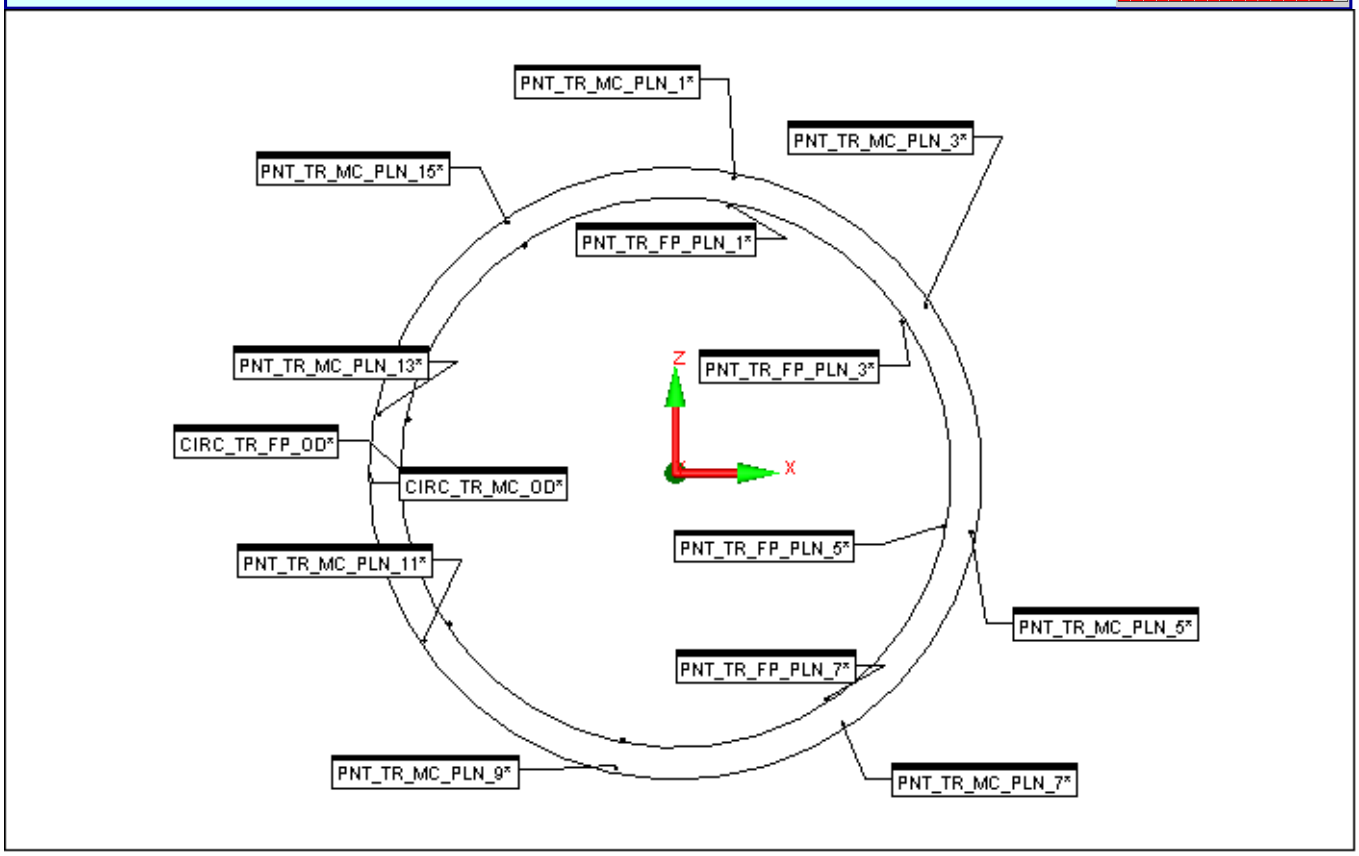
⌖	MM	LOC9 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	0.000	0.000	0.000	0.000	0.000	0.000	
FL	0.000	0.216	0.216	0.200	0.000	0.016	
AX		I		J		K	
V		0.001		1.000		-0.001	
⌖	MM	LOC10 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1006.963	0.537	10.000	10.000	0.000	
FL	0.000	0.129	0.129	0.200	0.000	0.000	
AX		I		J		K	
V		-0.015		-1.000		0.004	
▱	MM	FLAT3 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.216	0.216	0.200	0.000	0.016	
▱	MM	FLAT4 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.129	0.129	0.200	0.000	0.000	



Flatness of Transition Rings
x5000

⊥	MM	PERP1 - PLNC_TR_MC TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	2.425	2.425	0.200	0	2.225

⊥	MM	PERP2 - PLNC_TR_FP TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	1.038	1.038	0.200	0	0.838



Transition Ring points Main Coupler end

⊕	MM	LOC11 - PNT_TR_MC_PLN_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.330	-0.330	1.000	1.000	0.000
PR	115.000	114.969	-0.031	1.000	1.000	0.000
PA	101.250	101.196	-0.054	1.000	1.000	0.000

⊕	MM	LOC12 - PNT_TR_MC_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.601	0.601	1.000	1.000	0.000
PR	115.000	114.919	-0.081	1.000	1.000	0.000
PA	146.250	146.220	-0.030	1.000	1.000	0.000

⊕	MM	LOC13 - PNT_TR_MC_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	1.266	1.266	1.000	1.000	0.266
PR	115.000	114.920	-0.080	1.000	1.000	0.000
PA	-168.750	-168.743	0.007	1.000	1.000	0.000

⌖	MM	LOC14 - PNT_TR_MC_PLN_7				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	1.047	1.048	1.000	1.000	0.048
PR	115.000	114.973	-0.027	1.000	1.000	0.000
PA	-123.750	-123.717	0.033	1.000	1.000	0.000

⌖	MM	LOC15 - PNT_TR_MC_PLN_9				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.221	0.221	1.000	1.000	0.000
PR	115.000	115.034	0.034	1.000	1.000	0.000
PA	-78.750	-78.721	0.029	1.000	1.000	0.000

⌖	MM	LOC16 - PNT_TR_MC_PLN_11				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.762	-0.762	1.000	1.000	0.000
PR	115.000	115.078	0.078	1.000	1.000	0.000
PA	-33.750	-33.741	0.009	1.000	1.000	0.000

⌖	MM	LOC17 - PNT_TR_MC_PLN_13				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-1.159	-1.159	1.000	1.000	0.159
PR	115.000	115.085	0.085	1.000	1.000	0.000
PA	11.250	11.223	-0.027	1.000	1.000	0.000

⌖	MM	LOC18 - PNT_TR_MC_PLN_15				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.885	-0.885	1.000	1.000	0.000
PR	115.000	115.043	0.043	1.000	1.000	0.000
PA	56.250	56.198	-0.051	1.000	1.000	0.000

Transition Ring points Field Probe end

⌖	MM	LOC19 - PNT_TR_FP_PLN_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1007.110	0.390	1.000	1.000	0.000
PR	104.000	103.997	-0.003	1.000	1.000	0.000
PA	101.250	101.221	-0.029	1.000	1.000	0.000

⌖	MM	LOC20 - PNT_TR_FP_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1007.465	0.035	1.000	1.000	0.000
PR	104.000	103.982	-0.018	1.000	1.000	0.000
PA	146.250	146.229	-0.021	1.000	1.000	0.000

⌖	MM	LOC21 - PNT_TR_FP_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1007.362	0.138	1.000	1.000	0.000
PR	104.000	103.976	-0.024	1.000	1.000	0.000
PA	-168.750	-168.761	-0.011	1.000	1.000	0.000

⌖	MM	LOC22 - PNT_TR_FP_PLN_7					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1007.204	0.296	1.000	1.000	0.000	
PR	104.000	103.983	-0.017	1.000	1.000	0.000	
PA	-123.750	-123.749	0.001	1.000	1.000	0.000	
⌖	MM	LOC23 - PNT_TR_FP_PLN_9					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1006.801	0.699	1.000	1.000	0.000	
PR	104.000	103.719	-0.281	1.000	1.000	0.000	
PA	-78.750	-78.890	-0.140	1.000	1.000	0.000	
⌖	MM	LOC24 - PNT_TR_FP_PLN_11					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1006.523	0.977	1.000	1.000	0.000	
PR	104.000	103.642	-0.358	1.000	1.000	0.000	
PA	-33.750	-33.740	0.010	1.000	1.000	0.000	
⌖	MM	LOC25 - PNT_TR_FP_PLN_13					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1006.427	1.073	1.000	1.000	0.073	
PR	104.000	103.777	-0.223	1.000	1.000	0.000	
PA	11.250	11.395	0.145	1.000	1.000	0.000	
⌖	MM	LOC26 - PNT_TR_FP_PLN_15					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1006.813	0.687	1.000	1.000	0.000	
PR	104.000	104.038	0.038	1.000	1.000	0.000	
PA	56.250	56.437	0.187	1.000	1.000	0.000	

Distances between matching points on Transition Rings

↔	MM	DIST_PA_11.25 - PNT_TR_MC_PLN_13 TO PNT_TR_FP_PLN_13 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1005.268	-2.232	1.000	1.000	-1.232	
↔	MM	DIST_PA_56.25 - PNT_TR_MC_PLN_15 TO PNT_TR_FP_PLN_15 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1005.929	-1.571	1.000	1.000	-0.571	
↔	MM	DIST_PA_101.25 - PNT_TR_MC_PLN_1 TO PNT_TR_FP_PLN_1 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1006.780	-0.720	1.000	1.000	0.000	
↔	MM	DIST_PA_146.25 - PNT_TR_MC_PLN_3 TO PNT_TR_FP_PLN_3 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1008.066	0.566	1.000	1.000	0.000	
↔	MM	DIST_PA_-168.75 - PNT_TR_MC_PLN_5 TO PNT_TR_FP_PLN_5 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1008.628	1.128	1.000	1.000	0.128	

↔	MM	DIST_PA_-123.75 - PNT_TR_MC_PLN_7 TO PNT_TR_FP_PLN_7 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1008.251	0.751	1.000	1.000	0.000	

↔	MM	DIST_PA_-78.75 - PNT_TR_MC_PLN_9 TO PNT_TR_FP_PLN_9 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1007.023	-0.477	1.000	1.000	0.000	

↔	MM	DIST_PA_-33.75 - PNT_TR_MC_PLN_11 TO PNT_TR_FP_PLN_11 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1005.761	-1.739	1.000	1.000	-0.739	

↔	MM	DIST_BETWEEN_PLANES - PLNC_TR_MC TO PLNC_TR_FP (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1006.963	-0.537	1.000	1.000	0.000	

LOCATIONS OF CONSTRUCTED CIRCLES
ON 18 HALF CELLS

⊕	MM	LOC_CC3 - CIRC_CAV_1_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.088	0.088	0.200	0.200	0.000	
Y	0.000	-969.131	-969.131	2000.000	2000.000	0.000	
Z	0.000	0.155	0.155	0.200	0.200	0.000	
D	210.300	210.895	0.595	0.200	0.200	0.395	
RN	0.000	0.337	0.337	0.200	0.000	0.137	

⊕	MM	LOC_CC4 - CIRC_CAV_1_2					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.101	0.101	0.200	0.200	0.000	
Y	0.000	-959.198	-959.198	2000.000	2000.000	0.000	
Z	0.000	0.228	0.228	0.200	0.200	0.028	
D	210.300	210.929	0.629	0.200	0.200	0.429	
RN	0.000	0.292	0.292	0.200	0.000	0.092	

⊕	MM	LOC_CC5 - CIRC_CAV_2_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.624	0.624	0.200	0.200	0.424	
Y	0.000	-852.707	-852.707	2000.000	2000.000	0.000	
Z	0.000	0.308	0.308	0.200	0.200	0.108	
D	210.300	210.837	0.537	0.200	0.200	0.337	
RN	0.000	0.285	0.285	0.200	0.000	0.085	

⊕	MM	LOC_CC6 - CIRC_CAV_2_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.594	0.594	0.200	0.200	0.394
Y	0.000	-843.393	-843.393	2000.000	2000.000	0.000
Z	0.000	0.268	0.268	0.200	0.200	0.068
D	210.300	210.841	0.541	0.200	0.200	0.341
RN	0.000	0.603	0.603	0.200	0.000	0.403

⊕	MM	LOC_CC7 - CIRC_CAV_3_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.824	0.824	0.200	0.200	0.624
Y	0.000	-737.598	-737.598	2000.000	2000.000	0.000
Z	0.000	0.124	0.124	0.200	0.200	0.000
D	210.300	210.797	0.497	0.200	0.200	0.297
RN	0.000	0.212	0.212	0.200	0.000	0.012

⊕	MM	LOC_CC8 - CIRC_CAV_3_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.943	0.943	0.200	0.200	0.743
Y	0.000	-728.084	-728.084	2000.000	2000.000	0.000
Z	0.000	0.060	0.060	0.200	0.200	0.000
D	210.300	210.868	0.568	0.200	0.200	0.368
RN	0.000	0.414	0.414	0.200	0.000	0.214

⊕	MM	LOC_CC9 - CIRC_CAV_4_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.882	0.882	0.200	0.200	0.682
Y	0.000	-621.469	-621.469	2000.000	2000.000	0.000
Z	0.000	0.071	0.071	0.200	0.200	0.000
D	210.300	210.888	0.588	0.200	0.200	0.388
RN	0.000	0.301	0.301	0.200	0.000	0.101

⊕	MM	LOC_CC10 - CIRC_CAV_4_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.921	0.921	0.200	0.200	0.721
Y	0.000	-612.142	-612.142	2000.000	2000.000	0.000
Z	0.000	-0.102	-0.102	0.200	0.200	0.000
D	210.300	210.843	0.543	0.200	0.200	0.343
RN	0.000	0.306	0.306	0.200	0.000	0.106

⊕	MM	LOC_CC11 - CIRC_CAV_5_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.980	0.980	0.200	0.200	0.780
Y	0.000	-505.849	-505.849	2000.000	2000.000	0.000
Z	0.000	0.490	0.490	0.200	0.200	0.290
D	210.300	210.849	0.549	0.200	0.200	0.349
RN	0.000	0.320	0.320	0.200	0.000	0.120

⊕	MM	LOC_CC12 - CIRC_CAV_5_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.954	0.954	0.200	0.200	0.754
Y	0.000	-495.936	-495.936	2000.000	2000.000	0.000
Z	0.000	0.329	0.329	0.200	0.200	0.129
D	210.300	210.836	0.536	0.200	0.200	0.336
RN	0.000	0.278	0.278	0.200	0.000	0.078

⊕	MM	LOC_CC13 - CIRC_CAV_6_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.970	0.970	0.200	0.200	0.770
Y	0.000	-389.875	-389.875	2000.000	2000.000	0.000
Z	0.000	0.235	0.235	0.200	0.200	0.035
D	210.300	210.823	0.523	0.200	0.200	0.323
RN	0.000	0.279	0.279	0.200	0.000	0.079

⊕	MM	LOC_CC14 - CIRC_CAV_6_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.961	0.961	0.200	0.200	0.761
Y	0.000	-381.044	-381.044	2000.000	2000.000	0.000
Z	0.000	0.252	0.252	0.200	0.200	0.052
D	210.300	210.919	0.619	0.200	0.200	0.419
RN	0.000	0.393	0.393	0.200	0.000	0.193

⊕	MM	LOC_CC15 - CIRC_CAV_7_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.588	0.588	0.200	0.200	0.388
Y	0.000	-274.066	-274.066	2000.000	2000.000	0.000
Z	0.000	0.104	0.104	0.200	0.200	0.000
D	210.300	210.853	0.553	0.200	0.200	0.353
RN	0.000	0.336	0.336	0.200	0.000	0.136

⊕	MM	LOC_CC16 - CIRC_CAV_7_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.518	0.518	0.200	0.200	0.318
Y	0.000	-264.985	-264.985	2000.000	2000.000	0.000
Z	0.000	0.022	0.022	0.200	0.200	0.000
D	210.300	210.867	0.567	0.200	0.200	0.367
RN	0.000	0.345	0.345	0.200	0.000	0.145

⊕	MM	LOC_CC17 - CIRC_CAV_8_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.381	0.381	0.200	0.200	0.181
Y	0.000	-158.894	-158.894	2000.000	2000.000	0.000
Z	0.000	-0.107	-0.107	0.200	0.200	0.000
D	210.300	210.820	0.520	0.200	0.200	0.320
RN	0.000	0.444	0.444	0.200	0.000	0.244

⊕	MM	LOC_CC18 - CIRC_CAV_8_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.392	0.392	0.200	0.200	0.192
Y	0.000	-149.585	-149.585	2000.000	2000.000	0.000
Z	0.000	-0.215	-0.215	0.200	0.200	0.015
D	210.300	210.813	0.513	0.200	0.200	0.313
RN	0.000	0.262	0.262	0.200	0.000	0.062

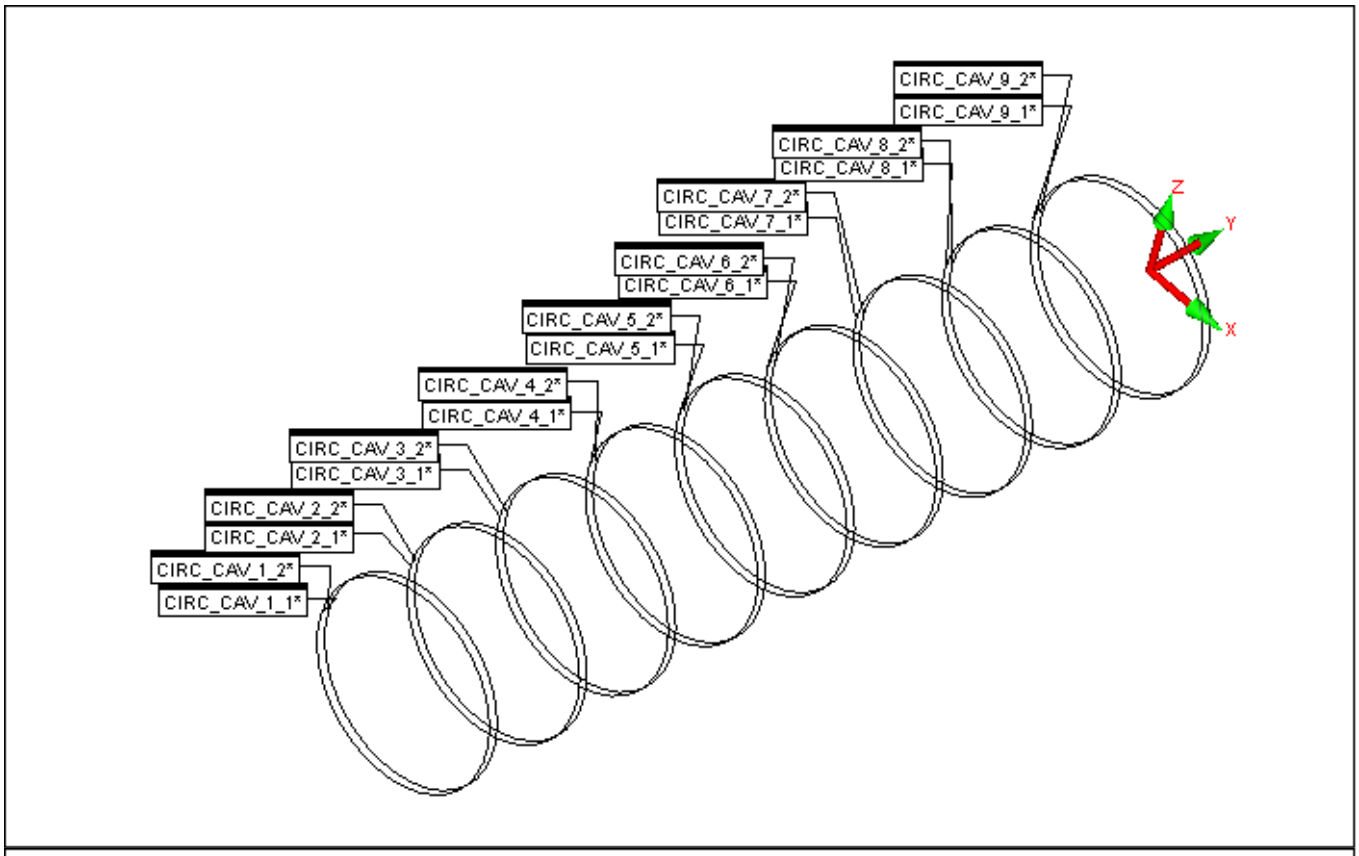
⊕	MM	LOC_CC19 - CIRC_CAV_9_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.162	0.162	0.200	0.200	0.000
Y	0.000	-43.347	-43.347	2000.000	2000.000	0.000
Z	0.000	-0.098	-0.098	0.200	0.200	0.000
D	210.300	210.992	0.692	0.200	0.200	0.492
RN	0.000	0.231	0.231	0.200	0.000	0.031

⊕	MM	LOC_CC20 - CIRC_CAV_9_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.256	0.256	0.200	0.200	0.056
Y	0.000	-33.614	-33.614	2000.000	2000.000	0.000
Z	0.000	0.028	0.028	0.200	0.200	0.000
D	210.300	210.769	0.469	0.200	0.200	0.269
RN	0.000	0.167	0.167	0.200	0.000	0.000

Location of End Flanges

⊕	MM	LOC_23 - CIR_END_FLANGE_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.316	-0.316	0.200	0.200	0.116
Y	0.000	116.827	116.827	2000.000	2000.000	0.000
Z	0.000	0.382	0.382	0.200	0.200	0.182
D	140.000	140.016	0.016	0.300	0.300	0.000
RN	0.000	0.041	0.041	0.200	0.000	0.000

⊕	MM	LOC_24 - CIR_END_FLANGE_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.377	-0.377	0.200	0.200	0.177
Y	-1153.884	-1119.259	34.625	2000.000	2000.000	0.000
Z	0.000	-0.209	-0.209	0.200	0.200	0.009
D	140.000	139.865	-0.135	0.300	0.300	0.000
RN	0.000	0.027	0.027	0.200	0.000	0.000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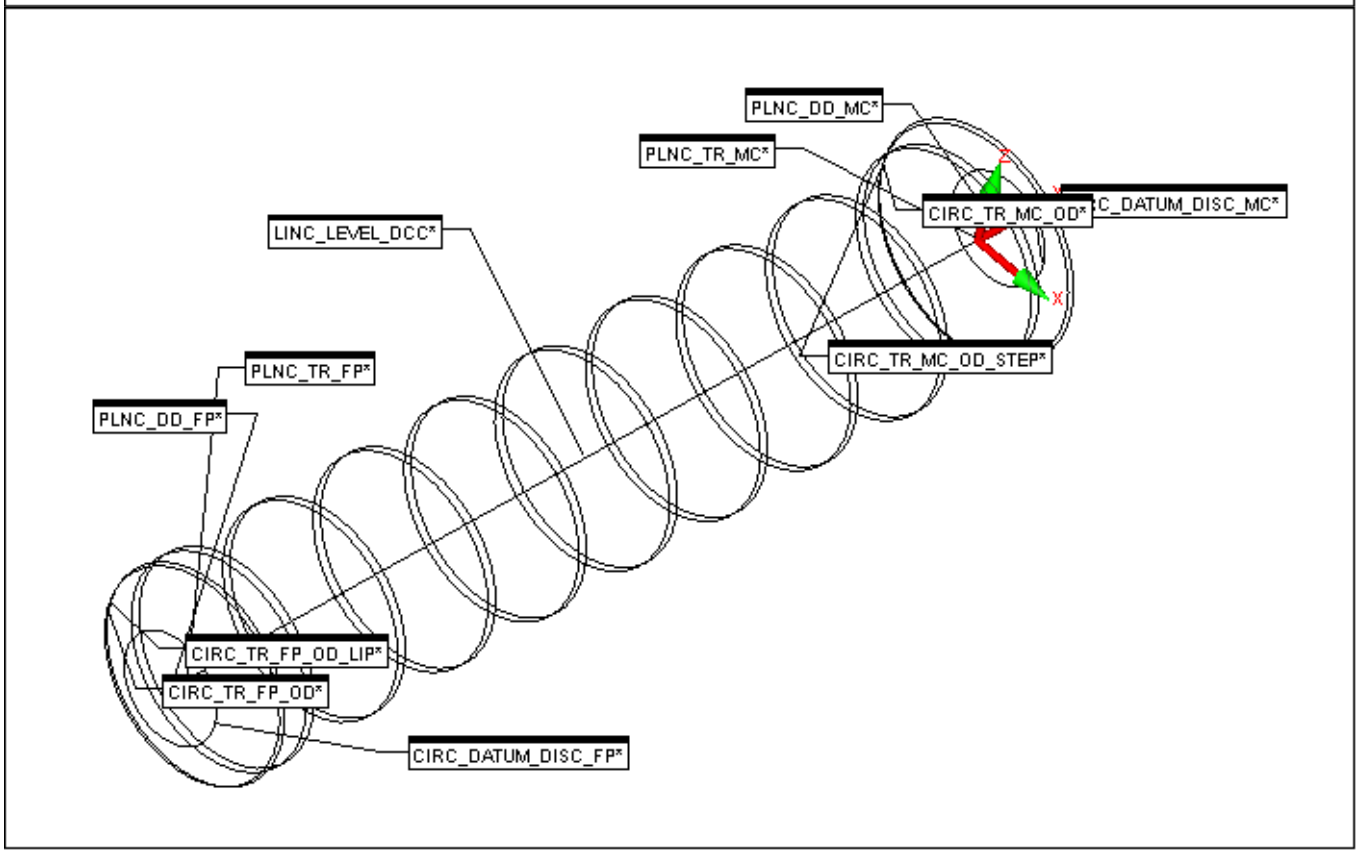
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X