pc-dmis	PART NAME : PN440004-n-Trans-Rings-000-TB9NR005-v4-IR		May 27, 2011	14:09
	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' : TB9NR005
' ' : 1105271004

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	24.852	-0.148	10.000	10.000	0.000	
Z	0.000	0.000	0.000	0.000	0.000	0.000	
D	111.000	111.156	0.156	0.050	0.050	0.106	
RN	0.000	0.054	0.054	0.050	0.000	0.004	

#	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	-1029.852	2.532	10.000	10.000	0.000	
Z	0.000	0.000	0.000	0.000	0.000	0.000	
D	111.000	110.695	-0.305	0.050	0.050	0.255	
RN	0.000	0.131	0.131	0.050	0.000	0.081	

Datum Disc planes

#	MM	LOC3 - PLNC_DD_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	27.000	27.442	0.442	10.000	10.000	0.000	
FL	0.000	0.148	0.148	0.100	0.000	0.048	

#	MM	LOC4 - PLNC_DD_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1034.384	-1032.043	2.341	10.000	10.000	0.000	
FL	0.000	0.138	0.138	0.100	0.000	0.038	

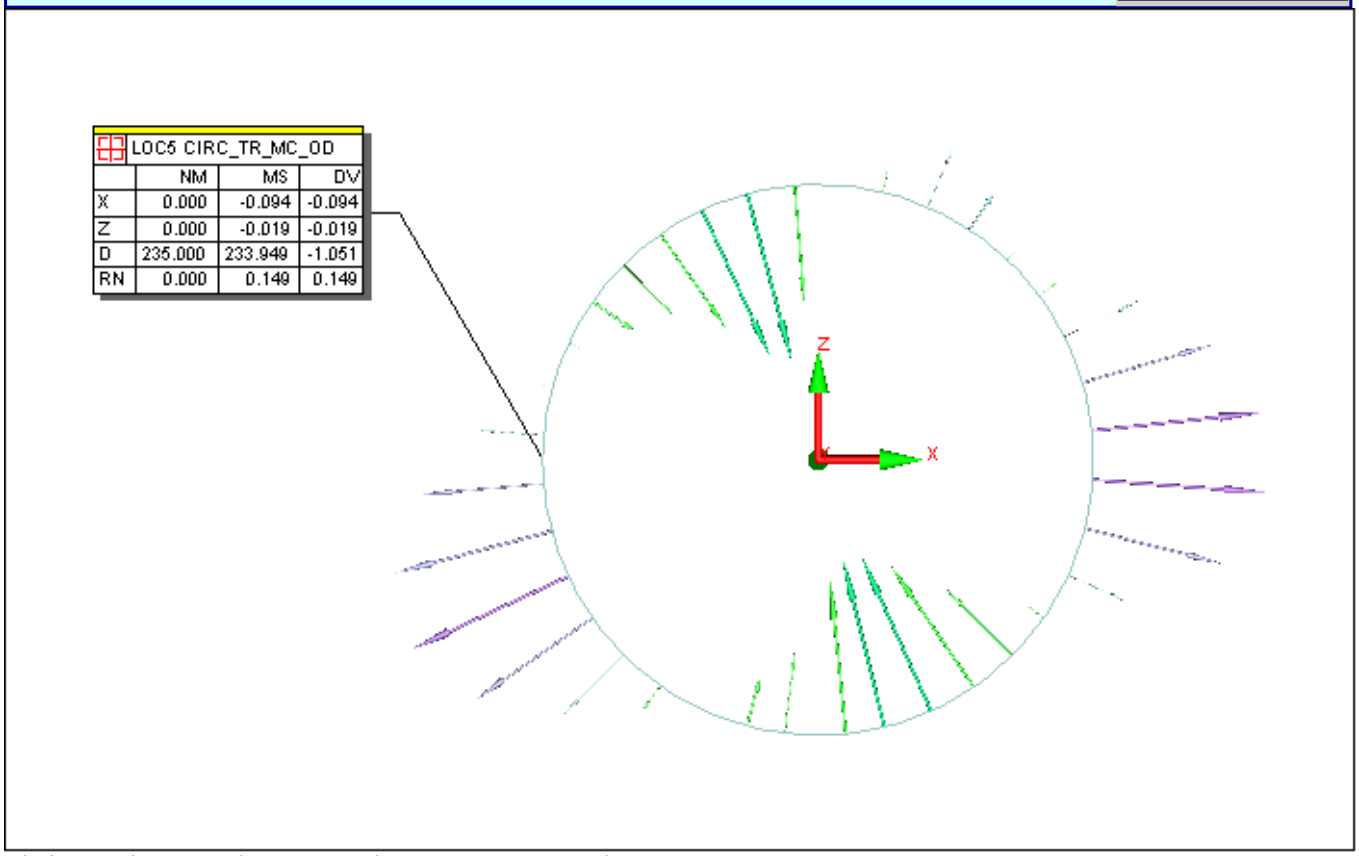
Distance between Datum Disc planes

↔	MM	DIST1 - PLNC_DD_FP TO PLNC_DD_MC (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1061.060	1059.485	-1.575	0.200	0.200	-1.375	

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	-0.094	-0.094	0.250	0.250	0.000	
Z	0.000	-0.019	-0.019	0.250	0.250	0.000	
D	235.000	233.949	-1.051	0.250	0.250	0.801	
RN	0.000	0.149	0.149	0.250	0.000	0.000	

○	MM	RND1 - CIRC_TR_MC_OD					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.149	0.149	0.250	0.000	0.000	

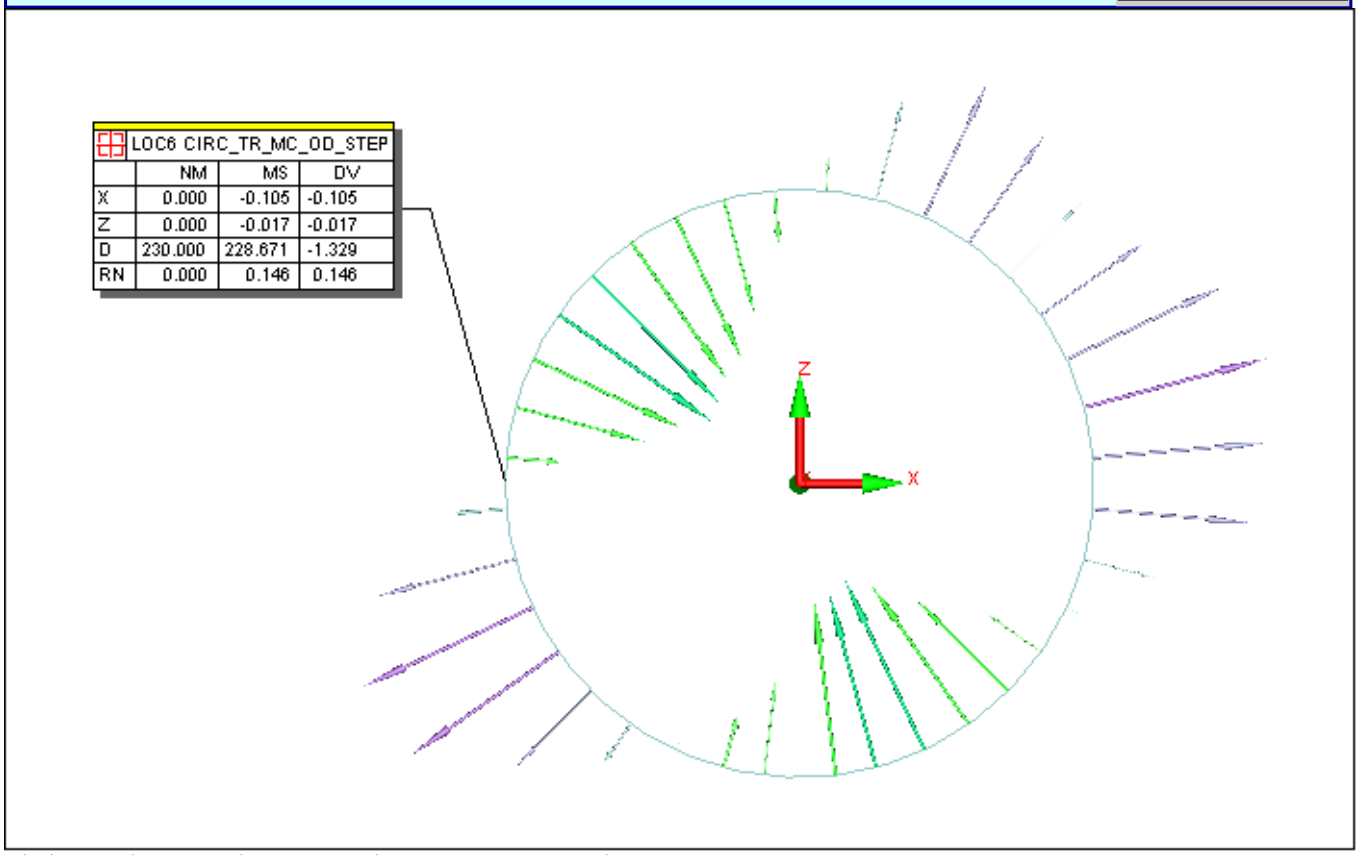


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D. x1000

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	-0.105	-0.105	0.250	0.250	0.000
Z	0.000	-0.017	-0.017	0.250	0.250	0.000
D	230.000	228.671	-1.329	0.000	0.250	1.079
RN	0.000	0.146	0.146	0.250	0.000	0.000

	MM	RND2 - CIRC_TR_MC_OD_STEP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.146	0.146	0.250	0.000	0.000

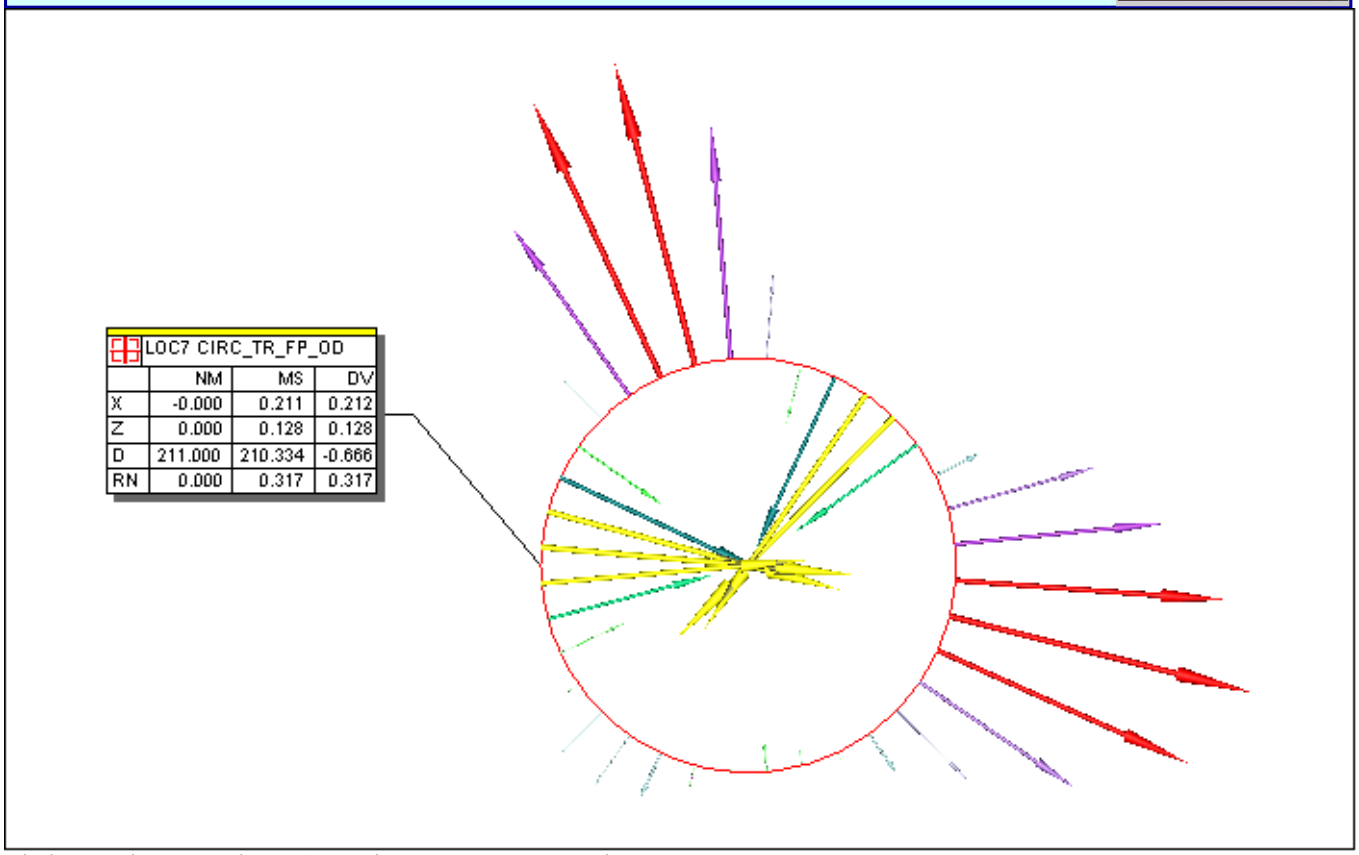


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step x1000

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	0.211	0.212	0.250	0.250	0.000
Z	0.000	0.128	0.128	0.250	0.250	0.000
D	211.000	210.334	-0.666	0.250	0.250	0.416
RN	0.000	0.317	0.317	0.250	0.000	0.067

○	MM	RND3 - CIRC_TR_FP_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.317	0.317	0.250	0.000	0.067

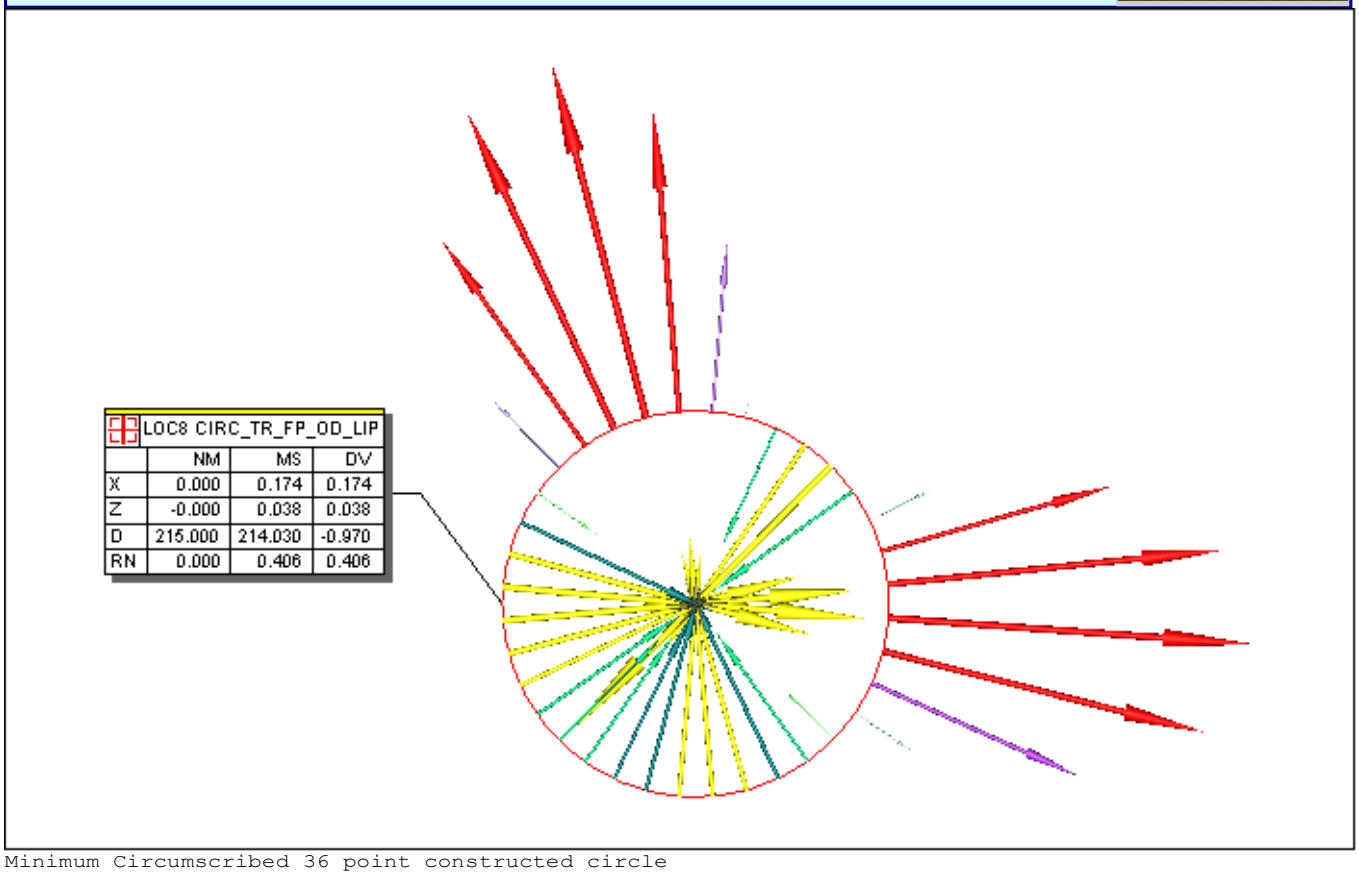


Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D. x1000

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

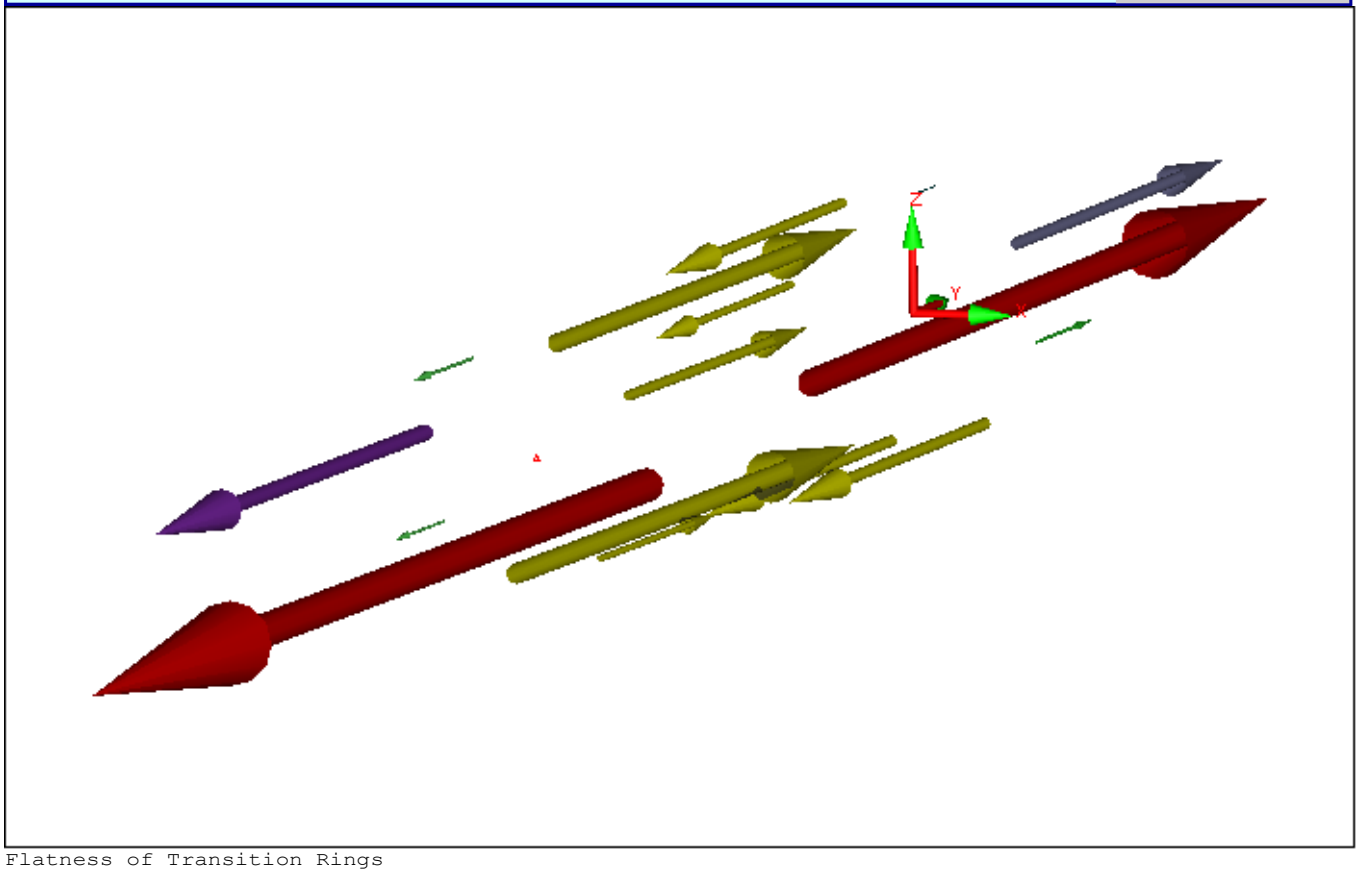
	MM	LOC8 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.174	0.174	0.250	0.250	0.000
Z	0.000	0.038	0.038	0.250	0.250	0.000
D	215.000	214.030	-0.970	0.250	0.250	0.720
RN	0.000	0.406	0.406	0.250	0.000	0.156

	MM	RND4 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.406	0.406	0.250	0.000	0.156



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

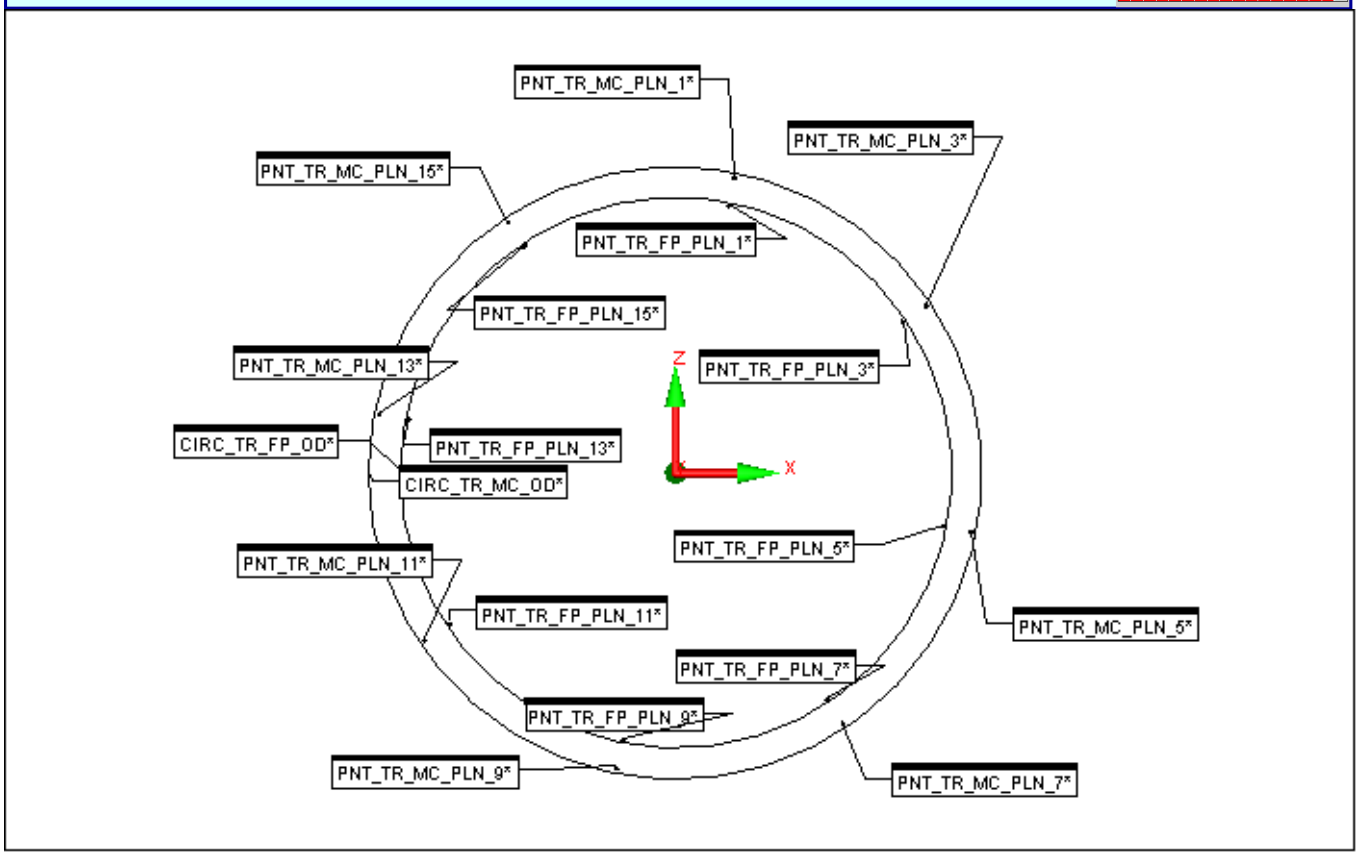
⌗	MM	LOC9 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	0.000	0.000	0.000	0.000	0.000	0.000	
FL	0.000	0.353	0.353	0.200	0.000	0.153	
AX		I		J		K	
V		-0.004		1.000		0.005	
⌗	MM	LOC10 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1007.541	-0.041	10.000	10.000	0.000	
FL	0.000	0.483	0.483	0.200	0.000	0.283	
AX		I		J		K	
V		0.004		-1.000		0.003	
▱	MM	FLAT3 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.353	0.353	0.200	0.000	0.153	
▱	MM	FLAT4 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.483	0.483	0.200	0.000	0.283	



Flatness of Transition Rings
x5000

⊥	MM	PERP1 - PLNC_TR_MC TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	1.394	1.394	0.200	0	1.194

⊥	MM	PERP2 - PLNC_TR_FP TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	1.222	1.222	0.200	0	1.022



Transition Ring points Main Coupler end

#	MM	LOC11 - PNT_TR_MC_PLN_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.485	-0.485	1.000	1.000	0.000
PR	115.000	114.973	-0.027	1.000	1.000	0.000
PA	101.250	101.264	0.014	1.000	1.000	0.000

#	MM	LOC12 - PNT_TR_MC_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.146	0.146	1.000	1.000	0.000
PR	115.000	114.977	-0.023	1.000	1.000	0.000
PA	146.250	146.277	0.027	1.000	1.000	0.000

#	MM	LOC13 - PNT_TR_MC_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.551	0.551	1.000	1.000	0.000
PR	115.000	115.000	0.000	1.000	1.000	0.000
PA	-168.750	-168.718	0.032	1.000	1.000	0.000

⌗	MM	LOC14 - PNT_TR_MC_PLN_7				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.596	0.597	1.000	1.000	0.000
PR	115.000	115.022	0.022	1.000	1.000	0.000
PA	-123.750	-123.719	0.031	1.000	1.000	0.000

⌗	MM	LOC15 - PNT_TR_MC_PLN_9				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.372	0.372	1.000	1.000	0.000
PR	115.000	115.037	0.037	1.000	1.000	0.000
PA	-78.750	-78.735	0.015	1.000	1.000	0.000

⌗	MM	LOC16 - PNT_TR_MC_PLN_11				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.213	0.213	1.000	1.000	0.000
PR	115.000	115.024	0.023	1.000	1.000	0.000
PA	-33.750	-33.746	0.004	1.000	1.000	0.000

⌗	MM	LOC17 - PNT_TR_MC_PLN_13				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.595	-0.595	1.000	1.000	0.000
PR	115.000	115.006	0.006	1.000	1.000	0.000
PA	11.250	11.250	0.000	1.000	1.000	0.000

⌗	MM	LOC18 - PNT_TR_MC_PLN_15				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.798	-0.798	1.000	1.000	0.000
PR	115.000	114.983	-0.017	1.000	1.000	0.000
PA	56.250	56.253	0.003	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	-1006.984	0.516	1.000	1.000	0.000
PR	104.000	103.945	-0.055	1.000	1.000	0.000
PA	101.250	101.273	0.022	1.000	1.000	0.000

⌗	MM	LOC20 - PNT_TR_FP_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1006.895	0.605	1.000	1.000	0.000
PR	104.000	103.974	-0.026	1.000	1.000	0.000
PA	146.250	146.295	0.045	1.000	1.000	0.000

⌗	MM	LOC21 - PNT_TR_FP_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1007.458	0.042	1.000	1.000	0.000
PR	104.000	104.019	0.019	1.000	1.000	0.000
PA	-168.750	-168.703	0.047	1.000	1.000	0.000

MM	LOC22 - PNT_TR_FP_PLN_7					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1007.487	0.013	1.000	1.000	0.000
PR	104.000	104.049	0.049	1.000	1.000	0.000
PA	-123.750	-123.715	0.035	1.000	1.000	0.000
MM	LOC23 - PNT_TR_FP_PLN_9					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1007.752	-0.252	1.000	1.000	0.000
PR	104.000	103.830	-0.170	1.000	1.000	0.000
PA	-78.750	-78.911	-0.161	1.000	1.000	0.000
MM	LOC24 - PNT_TR_FP_PLN_11					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1008.117	-0.617	1.000	1.000	0.000
PR	104.000	103.663	-0.337	1.000	1.000	0.000
PA	-33.750	-33.791	-0.041	1.000	1.000	0.000
MM	LOC25 - PNT_TR_FP_PLN_13					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1008.071	-0.571	1.000	1.000	0.000
PR	104.000	103.688	-0.312	1.000	1.000	0.000
PA	11.250	11.358	0.108	1.000	1.000	0.000
MM	LOC26 - PNT_TR_FP_PLN_15					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1007.564	-0.064	1.000	1.000	0.000
PR	104.000	103.890	-0.110	1.000	1.000	0.000
PA	56.250	56.458	0.208	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	1007.476	-0.024	1.000	1.000	0.000
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	1006.766	-0.734	1.000	1.000	0.000
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	1006.499	-1.001	1.000	1.000	-0.001
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	1007.041	-0.459	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	1008.009	0.509	1.000	1.000	0.000

↔	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	1008.083	0.583	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	1008.124	0.624	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	1008.330	0.830	1.000	1.000	0.000	

↔	MM	DIST_BETWEEN_PLANES - PLNC_TR_MC TO PLNC_TR_FP (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1007.541	0.041	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	-0.016	-0.016	0.200	0.200	0.000	
Y	0.000	-968.047	-968.047	2000.000	2000.000	0.000	
Z	0.000	-0.198	-0.198	0.200	0.200	0.000	
D	210.300	211.070	0.770	0.200	0.200	0.570	
RN	0.000	0.228	0.228	0.200	0.000	0.028	

⌖	MM	LOC_CC4 - CIRC_CAV_1_2					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	-0.220	-0.220	0.200	0.200	0.020	
Y	0.000	-957.423	-957.423	2000.000	2000.000	0.000	
Z	0.000	0.002	0.002	0.200	0.200	0.000	
D	210.300	210.882	0.582	0.200	0.200	0.382	
RN	0.000	0.203	0.203	0.200	0.000	0.003	

⌖	MM	LOC_CC5 - CIRC_CAV_2_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	-0.193	-0.193	0.200	0.200	0.000	
Y	0.000	-851.039	-851.039	2000.000	2000.000	0.000	
Z	0.000	-0.616	-0.616	0.200	0.200	0.416	
D	210.300	210.860	0.560	0.200	0.200	0.360	
RN	0.000	0.377	0.377	0.200	0.000	0.177	

⌖	MM	LOC_CC6 - CIRC_CAV_2_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.162	-0.162	0.200	0.200	0.000
Y	0.000	-841.511	-841.511	2000.000	2000.000	0.000
Z	0.000	-0.687	-0.687	0.200	0.200	0.487
D	210.300	210.947	0.647	0.200	0.200	0.447
RN	0.000	0.356	0.356	0.200	0.000	0.156

⌖	MM	LOC_CC7 - CIRC_CAV_3_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.089	-0.089	0.200	0.200	0.000
Y	0.000	-735.312	-735.312	2000.000	2000.000	0.000
Z	0.000	-0.988	-0.988	0.200	0.200	0.788
D	210.300	210.976	0.676	0.200	0.200	0.476
RN	0.000	0.434	0.434	0.200	0.000	0.234

⌖	MM	LOC_CC8 - CIRC_CAV_3_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.234	-0.234	0.200	0.200	0.034
Y	0.000	-726.138	-726.138	2000.000	2000.000	0.000
Z	0.000	-1.078	-1.078	0.200	0.200	0.878
D	210.300	210.975	0.675	0.200	0.200	0.475
RN	0.000	0.454	0.454	0.200	0.000	0.254

⌖	MM	LOC_CC9 - CIRC_CAV_4_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.352	-0.352	0.200	0.200	0.152
Y	0.000	-620.113	-620.113	2000.000	2000.000	0.000
Z	0.000	-1.527	-1.527	0.200	0.200	1.327
D	210.300	210.960	0.660	0.200	0.200	0.460
RN	0.000	0.291	0.291	0.200	0.000	0.091

⌖	MM	LOC_CC10 - CIRC_CAV_4_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.309	-0.309	0.200	0.200	0.109
Y	0.000	-610.616	-610.616	2000.000	2000.000	0.000
Z	0.000	-1.598	-1.598	0.200	0.200	1.398
D	210.300	210.898	0.598	0.200	0.200	0.398
RN	0.000	0.360	0.360	0.200	0.000	0.160

⌖	MM	LOC_CC11 - CIRC_CAV_5_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.291	-0.291	0.200	0.200	0.091
Y	0.000	-505.077	-505.077	2000.000	2000.000	0.000
Z	0.000	-1.913	-1.913	0.200	0.200	1.713
D	210.300	210.940	0.640	0.200	0.200	0.440
RN	0.000	0.270	0.270	0.200	0.000	0.070

⊞	MM	LOC_CC12 - CIRC_CAV_5_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.248	-0.248	0.200	0.200	0.048
Y	0.000	-495.580	-495.580	2000.000	2000.000	0.000
Z	0.000	-1.953	-1.953	0.200	0.200	1.753
D	210.300	211.018	0.718	0.200	0.200	0.518
RN	0.000	0.375	0.375	0.200	0.000	0.175

⊞	MM	LOC_CC13 - CIRC_CAV_6_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.230	-0.230	0.200	0.200	0.030
Y	0.000	-389.074	-389.074	2000.000	2000.000	0.000
Z	0.000	-2.136	-2.136	0.200	0.200	1.936
D	210.300	210.926	0.626	0.200	0.200	0.426
RN	0.000	0.401	0.401	0.200	0.000	0.201

⊞	MM	LOC_CC14 - CIRC_CAV_6_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.314	-0.314	0.200	0.200	0.114
Y	0.000	-379.245	-379.245	2000.000	2000.000	0.000
Z	0.000	-2.162	-2.162	0.200	0.200	1.962
D	210.300	210.789	0.489	0.200	0.200	0.289
RN	0.000	0.321	0.321	0.200	0.000	0.121

⊞	MM	LOC_CC15 - CIRC_CAV_7_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.323	-0.323	0.200	0.200	0.123
Y	0.000	-273.618	-273.618	2000.000	2000.000	0.000
Z	0.000	-1.860	-1.860	0.200	0.200	1.660
D	210.300	210.886	0.586	0.200	0.200	0.386
RN	0.000	0.234	0.234	0.200	0.000	0.034

⊞	MM	LOC_CC16 - CIRC_CAV_7_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.468	-0.468	0.200	0.200	0.268
Y	0.000	-264.151	-264.151	2000.000	2000.000	0.000
Z	0.000	-1.815	-1.815	0.200	0.200	1.615
D	210.300	210.971	0.671	0.200	0.200	0.471
RN	0.000	0.292	0.292	0.200	0.000	0.092

⊞	MM	LOC_CC17 - CIRC_CAV_8_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.385	-0.385	0.200	0.200	0.185
Y	0.000	-158.654	-158.654	2000.000	2000.000	0.000
Z	0.000	-1.556	-1.556	0.200	0.200	1.356
D	210.300	210.900	0.600	0.200	0.200	0.400
RN	0.000	0.433	0.433	0.200	0.000	0.233

⊞	MM	LOC_CC18 - CIRC_CAV_8_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.164	-0.164	0.200	0.200	0.000
Y	0.000	-149.829	-149.829	2000.000	2000.000	0.000
Z	0.000	-1.416	-1.416	0.200	0.200	1.216
D	210.300	210.916	0.616	0.200	0.200	0.416
RN	0.000	0.325	0.325	0.200	0.000	0.125

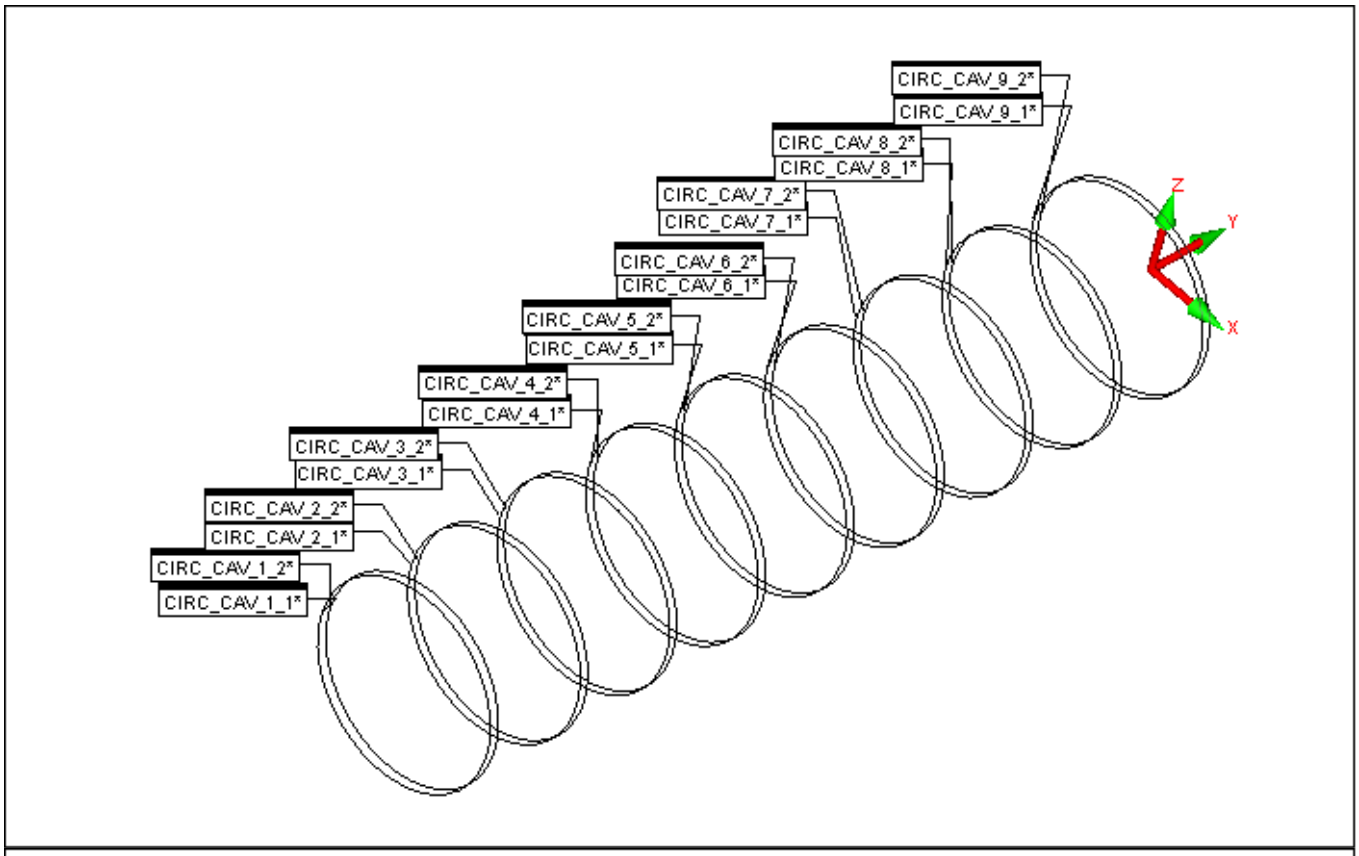
⊞	MM	LOC_CC19 - CIRC_CAV_9_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.036	0.036	0.200	0.200	0.000
Y	0.000	-44.780	-44.780	2000.000	2000.000	0.000
Z	0.000	-0.795	-0.795	0.200	0.200	0.595
D	210.300	210.925	0.625	0.200	0.200	0.425
RN	0.000	0.132	0.132	0.200	0.000	0.000

⊞	MM	LOC_CC20 - CIRC_CAV_9_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.111	-0.111	0.200	0.200	0.000
Y	0.000	-36.096	-36.096	2000.000	2000.000	0.000
Z	0.000	-0.538	-0.538	0.200	0.200	0.338
D	210.300	210.839	0.539	0.200	0.200	0.339
RN	0.000	0.190	0.190	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	0.615	0.615	0.200	0.200	0.415
Y	0.000	114.649	114.649	2000.000	2000.000	0.000
Z	0.000	0.914	0.914	0.200	0.200	0.714
D	140.000	139.990	-0.010	0.300	0.300	0.000
RN	0.000	0.033	0.033	0.200	0.000	0.000

⊞	MM	LOC_24 - CIR_END_FLANGE_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.078	-0.078	0.200	0.200	0.000
Y	-1153.884	-1118.355	35.530	2000.000	2000.000	0.000
Z	0.000	0.382	0.382	0.200	0.200	0.182
D	140.000	139.979	-0.021	0.300	0.300	0.000
RN	0.000	0.041	0.041	0.200	0.000	0.000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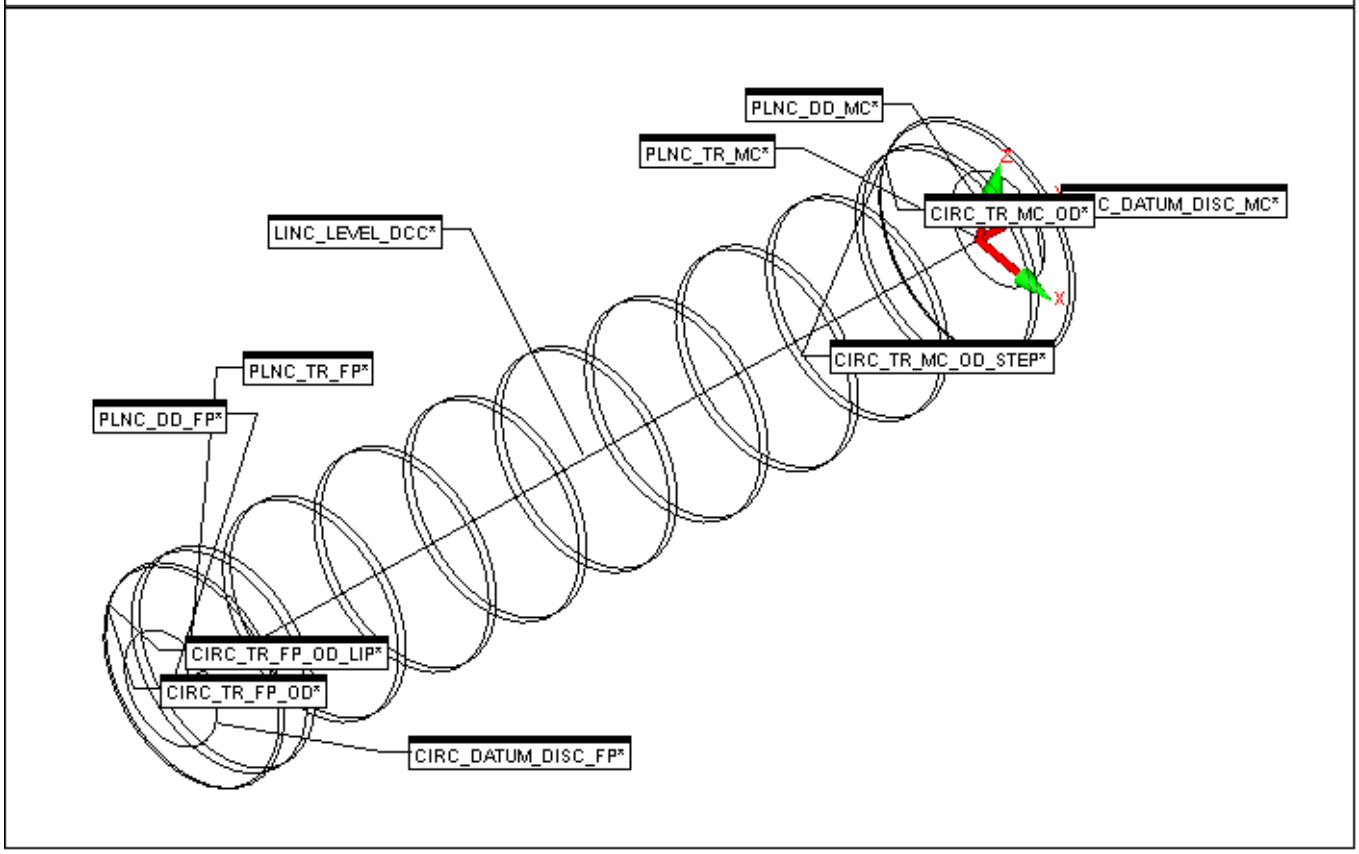
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X