pc-dmis	PART NAME : PN440004-n-Trans-Rings-000-TB9XXX000-v4-IR		March 19, 2013	10:31
	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' : TB9NR015
' ' : 1303190841

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	26.529	1.529	10.000	10.000	0.000	
Z	0.000	0.000	0.000	0.000	0.000	0.000	
D	111.000	110.834	-0.166	0.050	0.050	0.116	
RN	0.000	0.041	0.041	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	-1035.692	-3.308	10.000	10.000	0.000	
Z	0.000	0.000	0.000	0.000	0.000	0.000	
D	111.000	110.878	-0.122	0.050	0.050	0.072	
RN	0.000	0.052	0.052	0.050	0.000	0.002	

Datum Disc planes

#	MM	LOC3 - PLNC_DD_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	27.000	28.399	1.399	10.000	10.000	0.000	
FL	0.000	0.028	0.028	0.100	0.000	0.000	

#	MM	LOC4 - PLNC_DD_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1034.384	-1037.768	-3.384	10.000	10.000	0.000	
FL	0.000	0.043	0.043	0.100	0.000	0.000	

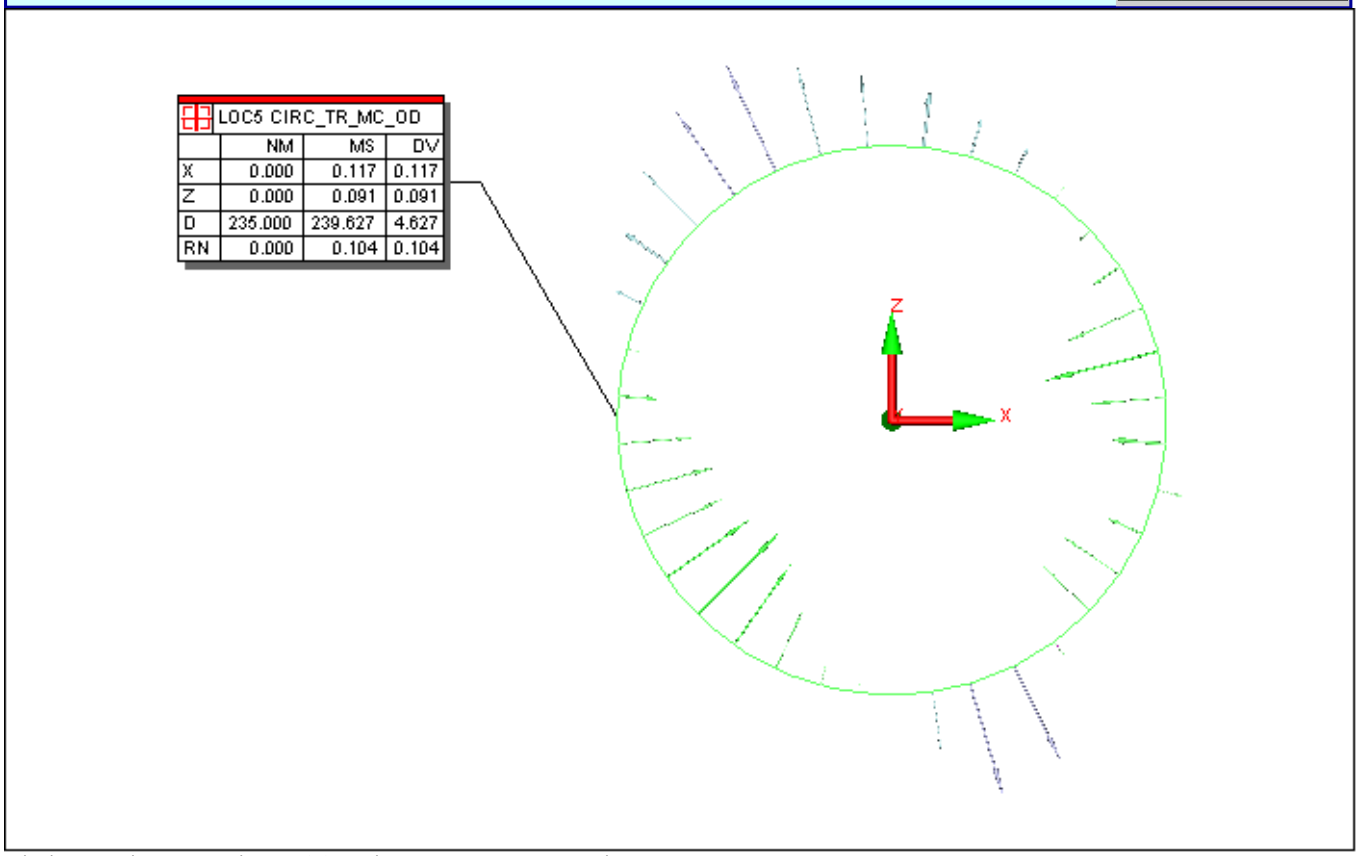
Distance between Datum Disc planes

↔	MM	DIST1 - PLNC_DD_FP TO PLNC_DD_MC (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1061.060	1066.167	5.107	0.200	0.200	4.907

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	0.117	0.117	0.250	0.250	0.000
Z	0.000	0.091	0.091	0.250	0.250	0.000
D	235.000	239.627	4.627	0.250	0.250	4.377
RN	0.000	0.104	0.104	0.250	0.000	0.000

○	MM	RND1 - CIRC_TR_MC_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.104	0.104	0.250	0.000	0.000

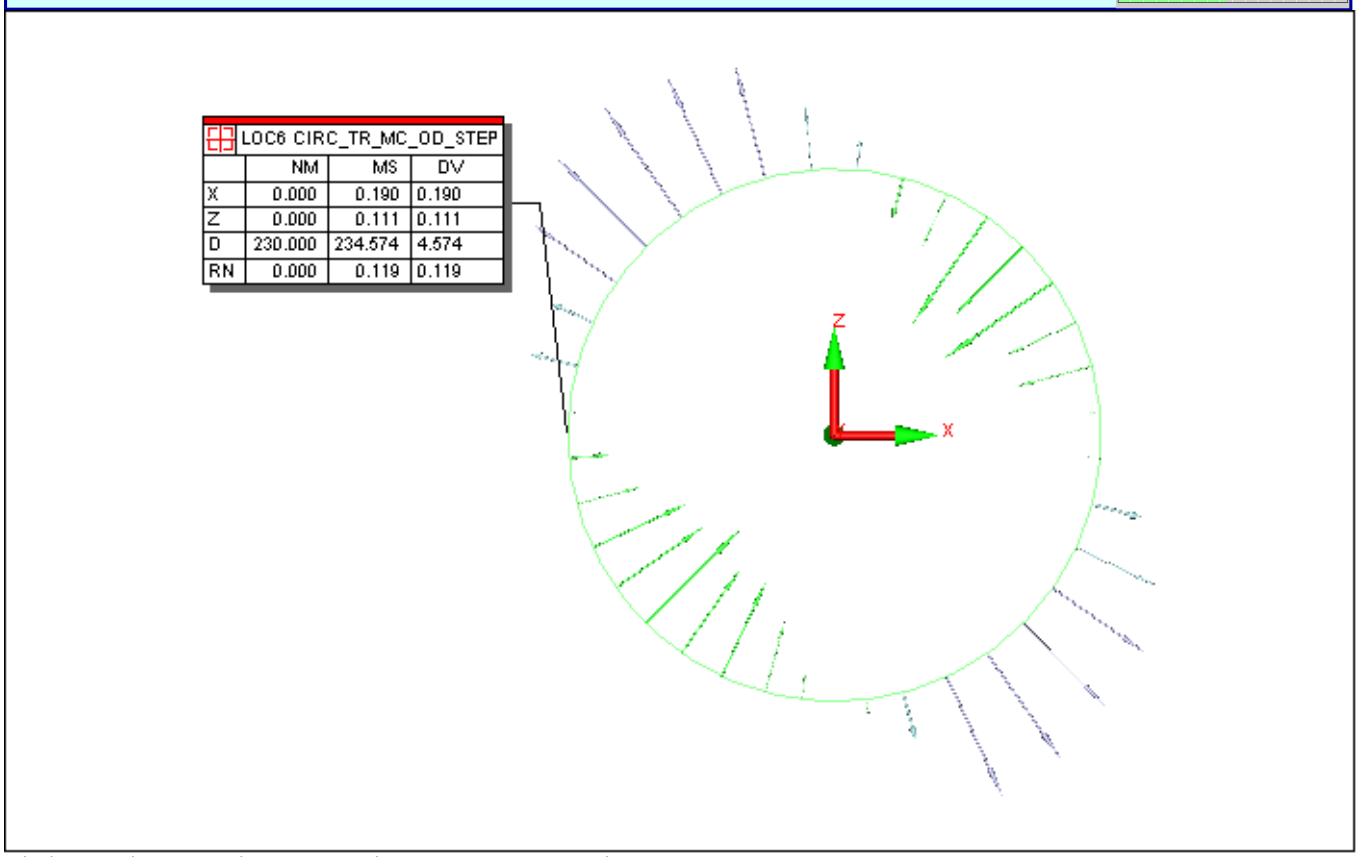


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D. x1000

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	0.190	0.190	0.250	0.250	0.000
Z	0.000	0.111	0.111	0.250	0.250	0.000
D	230.000	234.574	4.574	0.000	0.250	4.574
RN	0.000	0.119	0.119	0.250	0.000	0.000

	MM	RND2 - CIRC_TR_MC_OD_STEP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.119	0.119	0.250	0.000	0.000

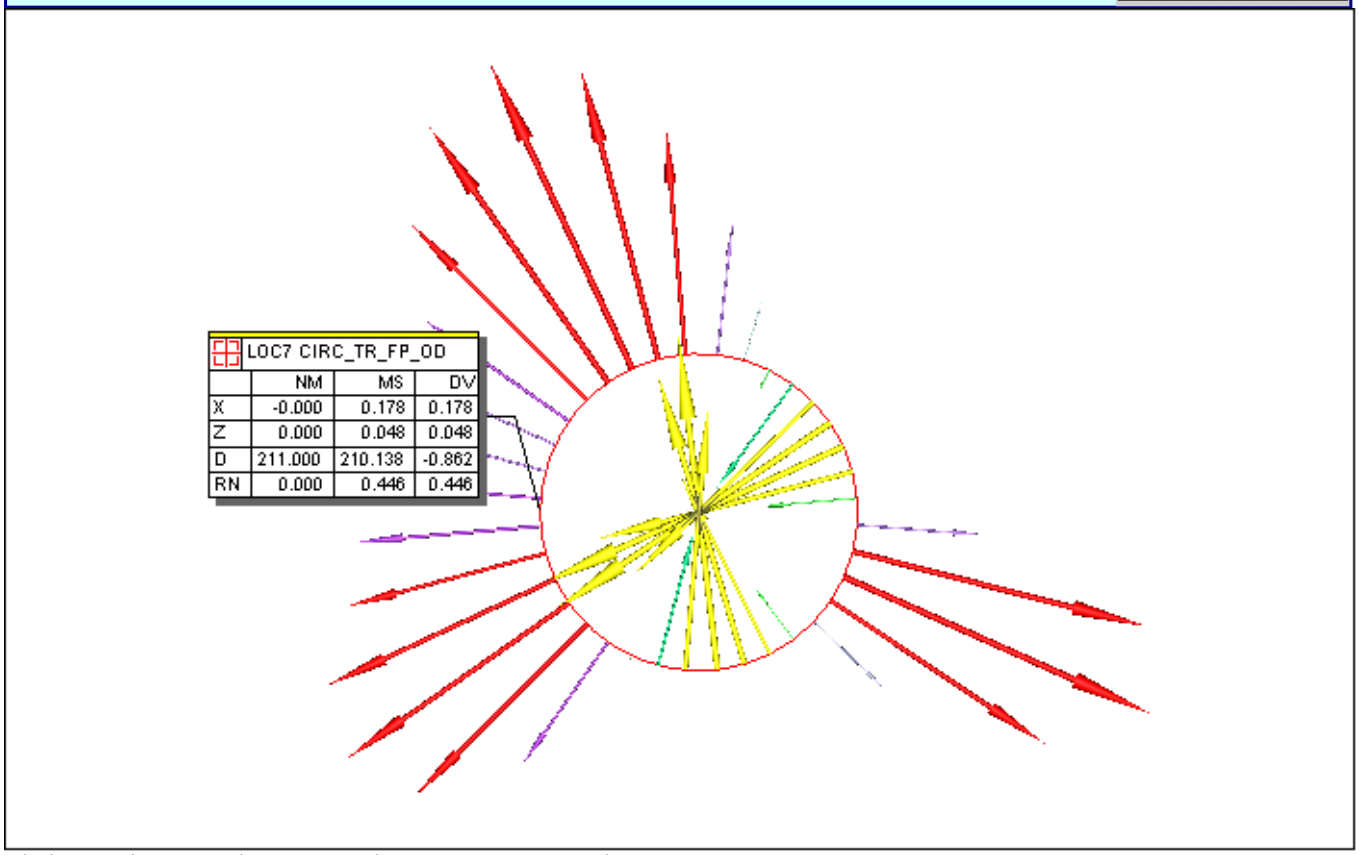


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step x1000

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	0.178	0.178	0.250	0.250	0.000
Z	0.000	0.048	0.048	0.250	0.250	0.000
D	211.000	210.138	-0.862	0.250	0.250	0.612
RN	0.000	0.446	0.446	0.250	0.000	0.196

○	MM	RND3 - CIRC_TR_FP_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.446	0.446	0.250	0.000	0.196

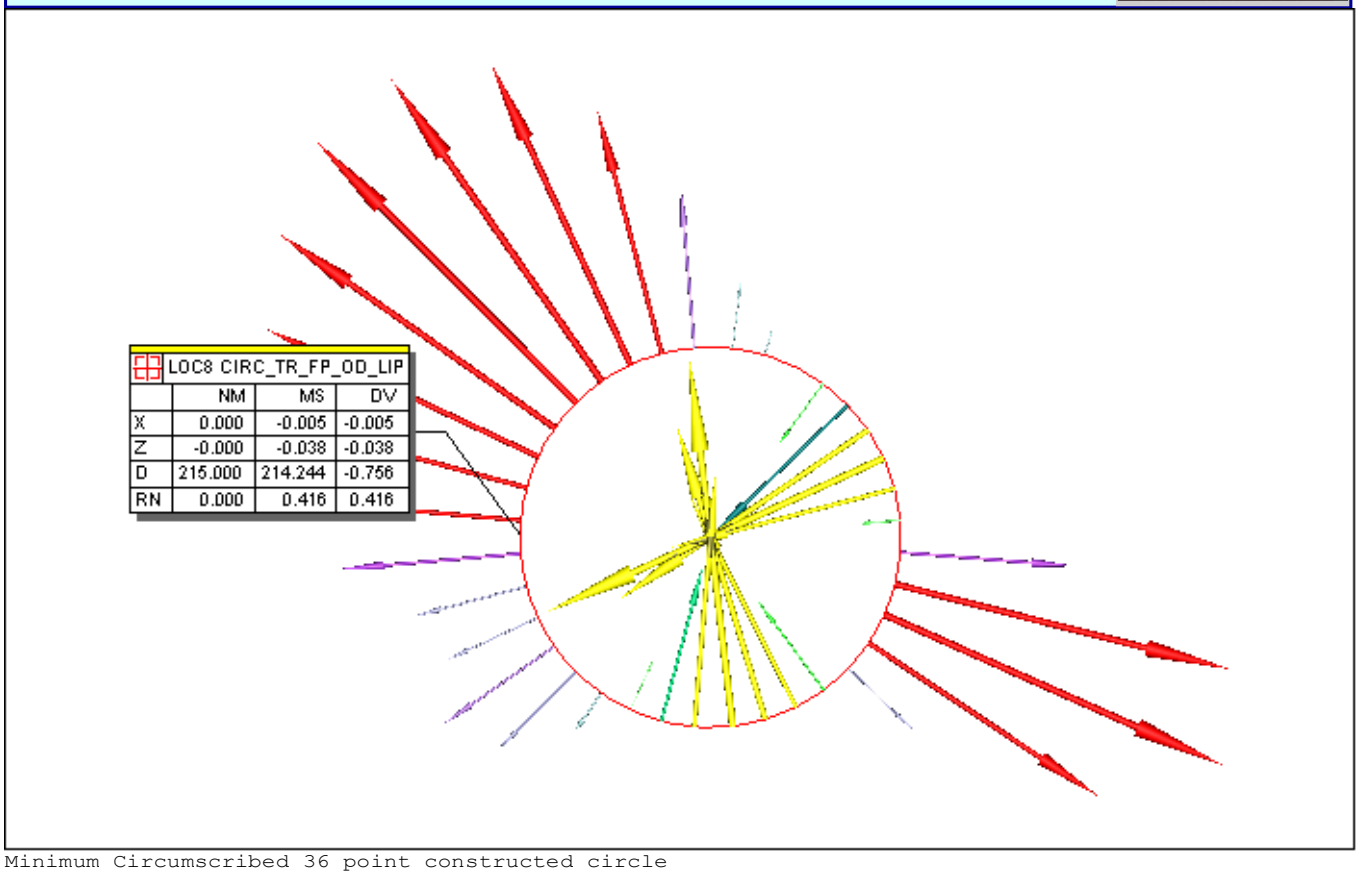


Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D. x1000

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

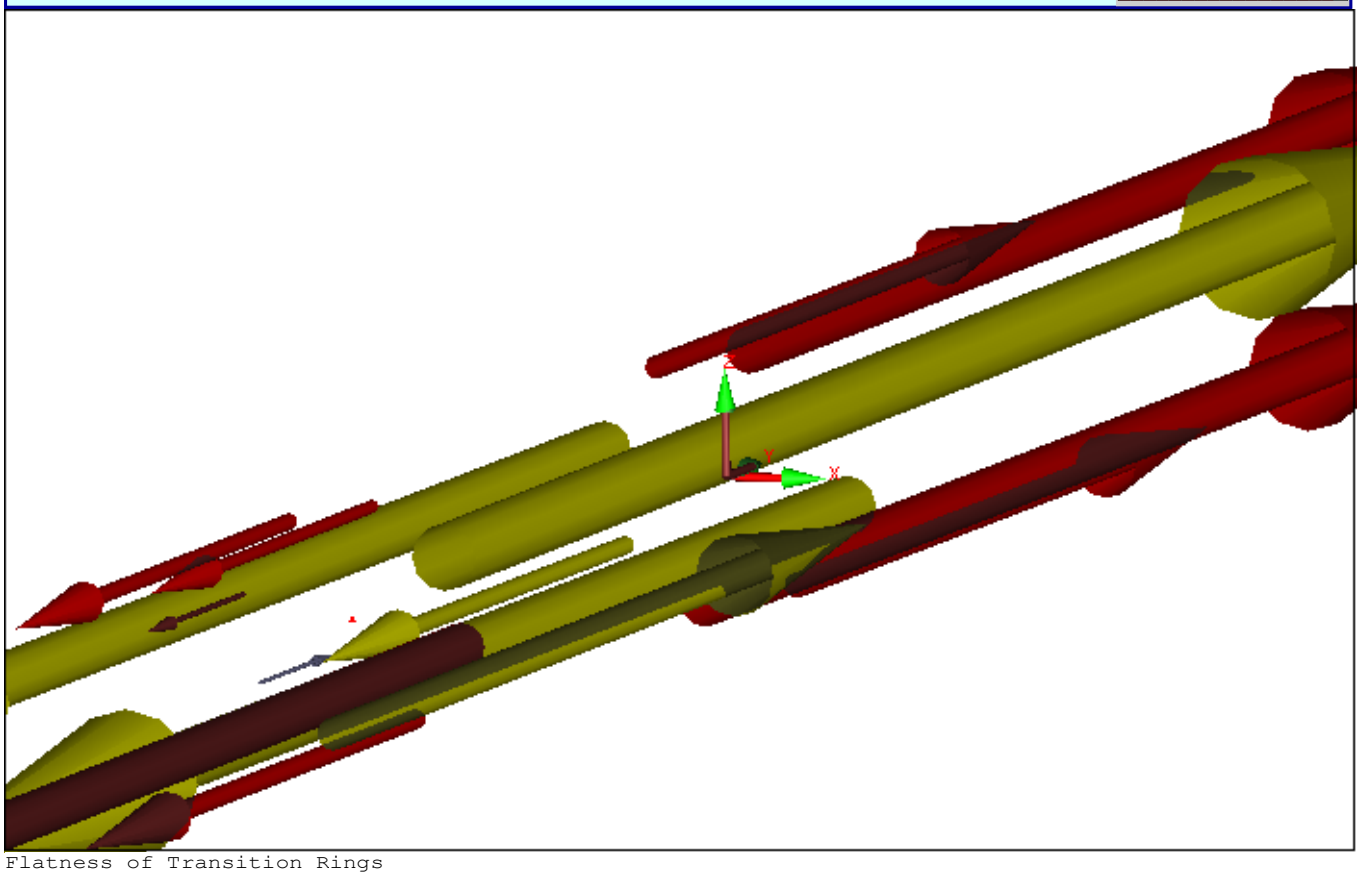
	MM	LOC8 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.005	-0.005	0.250	0.250	0.000
Z	0.000	-0.038	-0.038	0.250	0.250	0.000
D	215.000	214.244	-0.756	0.250	0.250	0.506
RN	0.000	0.416	0.416	0.250	0.000	0.166

	MM	RND4 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.416	0.416	0.250	0.000	0.166



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

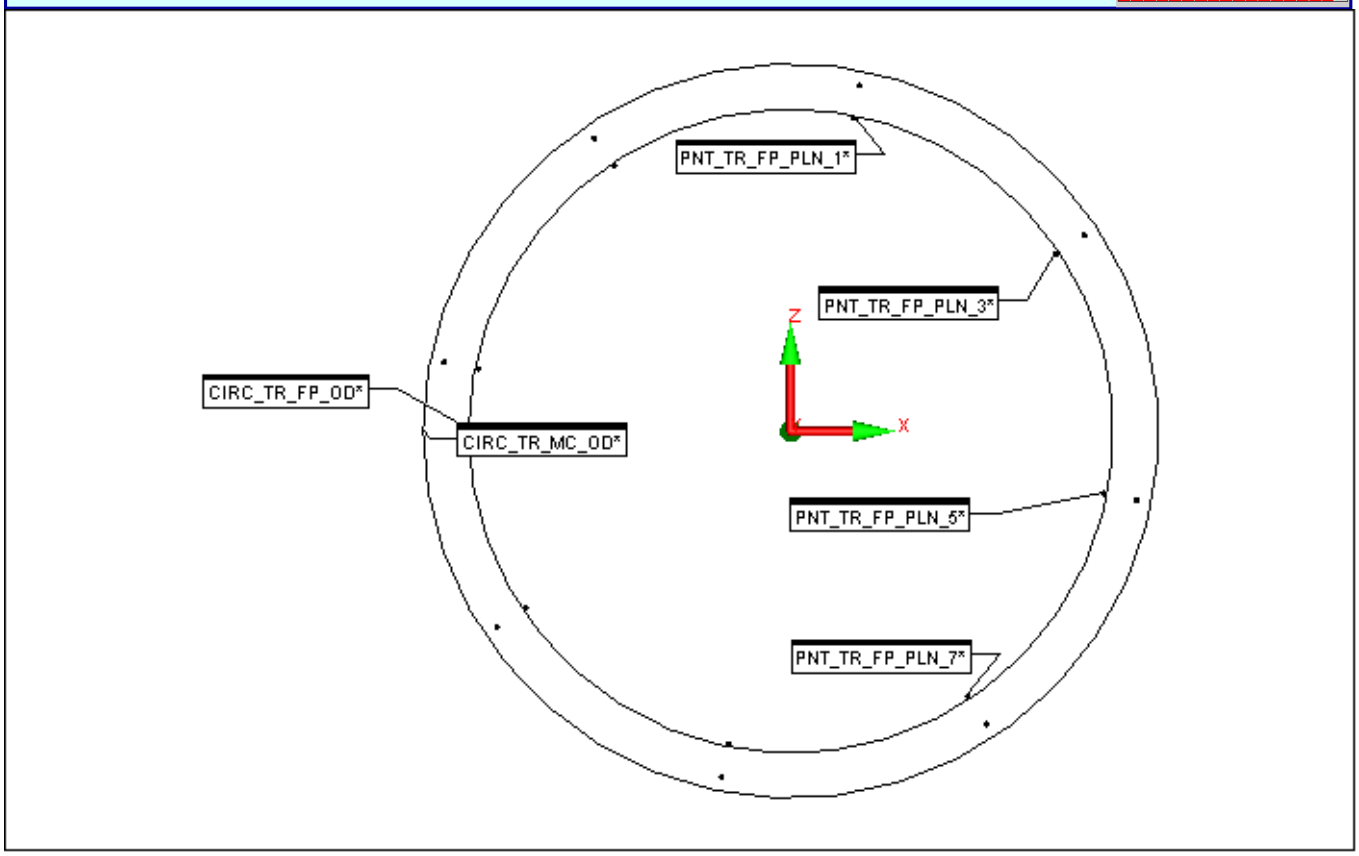
	MM	LOC9 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	0.000	0.000	0.000	0.000	0.000	0.000	
FL	0.000	0.964	0.964	0.200	0.000	0.764	
AX		I		J		K	
V		-0.004		1.000		-0.001	
	MM	LOC10 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.482	-3.982	10.000	10.000	0.000	
FL	0.000	1.011	1.011	0.200	0.000	0.811	
AX		I		J		K	
V		0.003		-1.000		-0.002	
	MM	FLAT3 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.964	0.964	0.200	0.000	0.764	
	MM	FLAT4 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	1.011	1.011	0.200	0.000	0.811	



Flatness of Transition Rings
x5000

⊥	MM	PERP1 - PLNC_TR_MC TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	1.481	1.481	0.200	0	1.281

⊥	MM	PERP2 - PLNC_TR_FP TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	1.186	1.186	0.200	0	0.986



Transition Ring points Main Coupler end

#	MM	LOC11 - PNT_TR_MC_PLN_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.618	0.618	1.000	1.000	0.000
PR	115.000	115.032	0.032	1.000	1.000	0.000
PA	101.250	101.258	0.008	1.000	1.000	0.000

#	MM	LOC12 - PNT_TR_MC_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.291	0.291	1.000	1.000	0.000
PR	115.000	115.016	0.016	1.000	1.000	0.000
PA	146.250	146.248	-0.002	1.000	1.000	0.000

#	MM	LOC13 - PNT_TR_MC_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.143	-0.143	1.000	1.000	0.000
PR	115.000	114.991	-0.009	1.000	1.000	0.000
PA	-168.750	-168.754	-0.004	1.000	1.000	0.000

⌗	MM	LOC14 - PNT_TR_MC_PLN_7				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.354	0.354	1.000	1.000	0.000
PR	115.000	114.970	-0.030	1.000	1.000	0.000
PA	-123.750	-123.747	0.003	1.000	1.000	0.000

⌗	MM	LOC15 - PNT_TR_MC_PLN_9				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.240	0.240	1.000	1.000	0.000
PR	115.000	114.972	-0.028	1.000	1.000	0.000
PA	-78.750	-78.734	0.016	1.000	1.000	0.000

⌗	MM	LOC16 - PNT_TR_MC_PLN_11				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.576	-0.576	1.000	1.000	0.000
PR	115.000	114.982	-0.018	1.000	1.000	0.000
PA	-33.750	-33.723	0.027	1.000	1.000	0.000

⌗	MM	LOC17 - PNT_TR_MC_PLN_13				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.863	-0.863	1.000	1.000	0.000
PR	115.000	115.009	0.009	1.000	1.000	0.000
PA	11.250	11.280	0.030	1.000	1.000	0.000

⌗	MM	LOC18 - PNT_TR_MC_PLN_15				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.079	0.079	1.000	1.000	0.000
PR	115.000	115.030	0.030	1.000	1.000	0.000
PA	56.250	56.271	0.021	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	-1011.736	-4.236	1.000	1.000	3.236
PR	104.000	104.009	0.009	1.000	1.000	0.000
PA	101.250	101.261	0.011	1.000	1.000	0.000

⌗	MM	LOC20 - PNT_TR_FP_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1010.763	-3.263	1.000	1.000	2.263
PR	104.000	104.016	0.016	1.000	1.000	0.000
PA	146.250	146.252	0.002	1.000	1.000	0.000

⌗	MM	LOC21 - PNT_TR_FP_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1011.587	-4.087	1.000	1.000	3.087
PR	104.000	104.002	0.002	1.000	1.000	0.000
PA	-168.750	-168.742	0.008	1.000	1.000	0.000

⌖	MM	LOC22 - PNT_TR_FP_PLN_7					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.345	-3.845	1.000	1.000	2.845	
PR	104.000	103.994	-0.006	1.000	1.000	0.000	
PA	-123.750	-123.741	0.009	1.000	1.000	0.000	
⌖	MM	LOC23 - PNT_TR_FP_PLN_9					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.056	-3.556	1.000	1.000	2.556	
PR	104.000	103.884	-0.116	1.000	1.000	0.000	
PA	-78.750	-78.883	-0.133	1.000	1.000	0.000	
⌖	MM	LOC24 - PNT_TR_FP_PLN_11					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.571	-4.071	1.000	1.000	3.071	
PR	104.000	103.734	-0.266	1.000	1.000	0.000	
PA	-33.750	-33.795	-0.044	1.000	1.000	0.000	
⌖	MM	LOC25 - PNT_TR_FP_PLN_13					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.851	-4.351	1.000	1.000	3.351	
PR	104.000	103.740	-0.260	1.000	1.000	0.000	
PA	11.250	11.327	0.077	1.000	1.000	0.000	
⌖	MM	LOC26 - PNT_TR_FP_PLN_15					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.949	-4.449	1.000	1.000	3.449	
PR	104.000	103.900	-0.100	1.000	1.000	0.000	
PA	56.250	56.411	0.161	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	1010.988	3.488	1.000	1.000	2.488	
↔	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	1012.028	4.528	1.000	1.000	3.528	
↔	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	1012.355	4.855	1.000	1.000	3.855	
↔	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	1011.054	3.554	1.000	1.000	2.554	
↔	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	1011.444	3.944	1.000	1.000	2.944	

↔	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	1011.698	4.198	1.000	1.000	3.198

↔	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	1011.296	3.796	1.000	1.000	2.796

↔	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	1010.994	3.494	1.000	1.000	2.494

↔	MM	DIST_BETWEEN_PLANES - PLNC_TR_MC TO PLNC_TR_FP (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1007.500	1011.482	3.982	1.000	1.000	2.982

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	0.064	0.064	0.200	0.200	0.000
Y	0.000	-973.343	-973.343	2000.000	2000.000	0.000
Z	0.000	-0.190	-0.190	0.200	0.200	0.000
D	210.300	210.814	0.514	0.200	0.200	0.314
RN	0.000	0.588	0.588	0.200	0.000	0.388

⌖	MM	LOC_CC4 - CIRC_CAV_1_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.006	0.006	0.200	0.200	0.000
Y	0.000	-963.338	-963.338	2000.000	2000.000	0.000
Z	0.000	-0.294	-0.294	0.200	0.200	0.094
D	210.300	211.295	0.995	0.200	0.200	0.795
RN	0.000	0.495	0.495	0.200	0.000	0.295

⌖	MM	LOC_CC5 - CIRC_CAV_2_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.078	-0.078	0.200	0.200	0.000
Y	0.000	-857.579	-857.579	2000.000	2000.000	0.000
Z	0.000	-0.499	-0.499	0.200	0.200	0.299
D	210.300	211.259	0.959	0.200	0.200	0.759
RN	0.000	0.356	0.356	0.200	0.000	0.156

⌗	MM	LOC_CC6 - CIRC_CAV_2_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.007	-0.007	0.200	0.200	0.000
Y	0.000	-847.606	-847.606	2000.000	2000.000	0.000
Z	0.000	-0.604	-0.604	0.200	0.200	0.404
D	210.300	211.299	0.999	0.200	0.200	0.799
RN	0.000	0.237	0.237	0.200	0.000	0.037

⌗	MM	LOC_CC7 - CIRC_CAV_3_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.065	0.065	0.200	0.200	0.000
Y	0.000	-740.833	-740.833	2000.000	2000.000	0.000
Z	0.000	-0.944	-0.944	0.200	0.200	0.744
D	210.300	211.264	0.964	0.200	0.200	0.764
RN	0.000	0.355	0.355	0.200	0.000	0.155

⌗	MM	LOC_CC8 - CIRC_CAV_3_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.314	0.314	0.200	0.200	0.114
Y	0.000	-730.548	-730.548	2000.000	2000.000	0.000
Z	0.000	-0.813	-0.813	0.200	0.200	0.613
D	210.300	211.199	0.899	0.200	0.200	0.699
RN	0.000	0.296	0.296	0.200	0.000	0.096

⌗	MM	LOC_CC9 - CIRC_CAV_4_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.275	0.275	0.200	0.200	0.075
Y	0.000	-625.336	-625.336	2000.000	2000.000	0.000
Z	0.000	-1.016	-1.016	0.200	0.200	0.816
D	210.300	211.208	0.908	0.200	0.200	0.708
RN	0.000	0.264	0.264	0.200	0.000	0.064

⌗	MM	LOC_CC10 - CIRC_CAV_4_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.130	0.130	0.200	0.200	0.000
Y	0.000	-614.845	-614.845	2000.000	2000.000	0.000
Z	0.000	-1.277	-1.277	0.200	0.200	1.077
D	210.300	211.168	0.868	0.200	0.200	0.668
RN	0.000	0.260	0.260	0.200	0.000	0.060

⌗	MM	LOC_CC11 - CIRC_CAV_5_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.395	0.395	0.200	0.200	0.195
Y	0.000	-508.794	-508.794	2000.000	2000.000	0.000
Z	0.000	-1.291	-1.291	0.200	0.200	1.091
D	210.300	211.186	0.886	0.200	0.200	0.686
RN	0.000	0.302	0.302	0.200	0.000	0.102

⊞	MM	LOC_CC12 - CIRC_CAV_5_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.482	0.482	0.200	0.200	0.282
Y	0.000	-498.985	-498.985	2000.000	2000.000	0.000
Z	0.000	-1.230	-1.230	0.200	0.200	1.030
D	210.300	211.156	0.856	0.200	0.200	0.656
RN	0.000	0.304	0.304	0.200	0.000	0.104

⊞	MM	LOC_CC13 - CIRC_CAV_6_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.733	0.733	0.200	0.200	0.533
Y	0.000	-392.803	-392.803	2000.000	2000.000	0.000
Z	0.000	-1.155	-1.155	0.200	0.200	0.955
D	210.300	211.216	0.916	0.200	0.200	0.716
RN	0.000	0.349	0.349	0.200	0.000	0.149

⊞	MM	LOC_CC14 - CIRC_CAV_6_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.701	0.701	0.200	0.200	0.501
Y	0.000	-382.803	-382.803	2000.000	2000.000	0.000
Z	0.000	-1.271	-1.271	0.200	0.200	1.071
D	210.300	211.172	0.872	0.200	0.200	0.672
RN	0.000	0.312	0.312	0.200	0.000	0.112

⊞	MM	LOC_CC15 - CIRC_CAV_7_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.898	0.898	0.200	0.200	0.698
Y	0.000	-277.182	-277.182	2000.000	2000.000	0.000
Z	0.000	-0.828	-0.828	0.200	0.200	0.628
D	210.300	211.196	0.896	0.200	0.200	0.696
RN	0.000	0.419	0.419	0.200	0.000	0.219

⊞	MM	LOC_CC16 - CIRC_CAV_7_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.735	0.735	0.200	0.200	0.535
Y	0.000	-266.565	-266.565	2000.000	2000.000	0.000
Z	0.000	-0.856	-0.856	0.200	0.200	0.656
D	210.300	211.282	0.982	0.200	0.200	0.782
RN	0.000	0.241	0.241	0.200	0.000	0.041

⊞	MM	LOC_CC17 - CIRC_CAV_8_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.631	0.631	0.200	0.200	0.431
Y	0.000	-160.997	-160.997	2000.000	2000.000	0.000
Z	0.000	-0.481	-0.481	0.200	0.200	0.281
D	210.300	211.122	0.822	0.200	0.200	0.622
RN	0.000	0.209	0.209	0.200	0.000	0.009

⌗	MM	LOC_CC18 - CIRC_CAV_8_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.579	0.579	0.200	0.200	0.379
Y	0.000	-150.555	-150.555	2000.000	2000.000	0.000
Z	0.000	-0.480	-0.480	0.200	0.200	0.280
D	210.300	211.281	0.981	0.200	0.200	0.781
RN	0.000	0.309	0.309	0.200	0.000	0.109

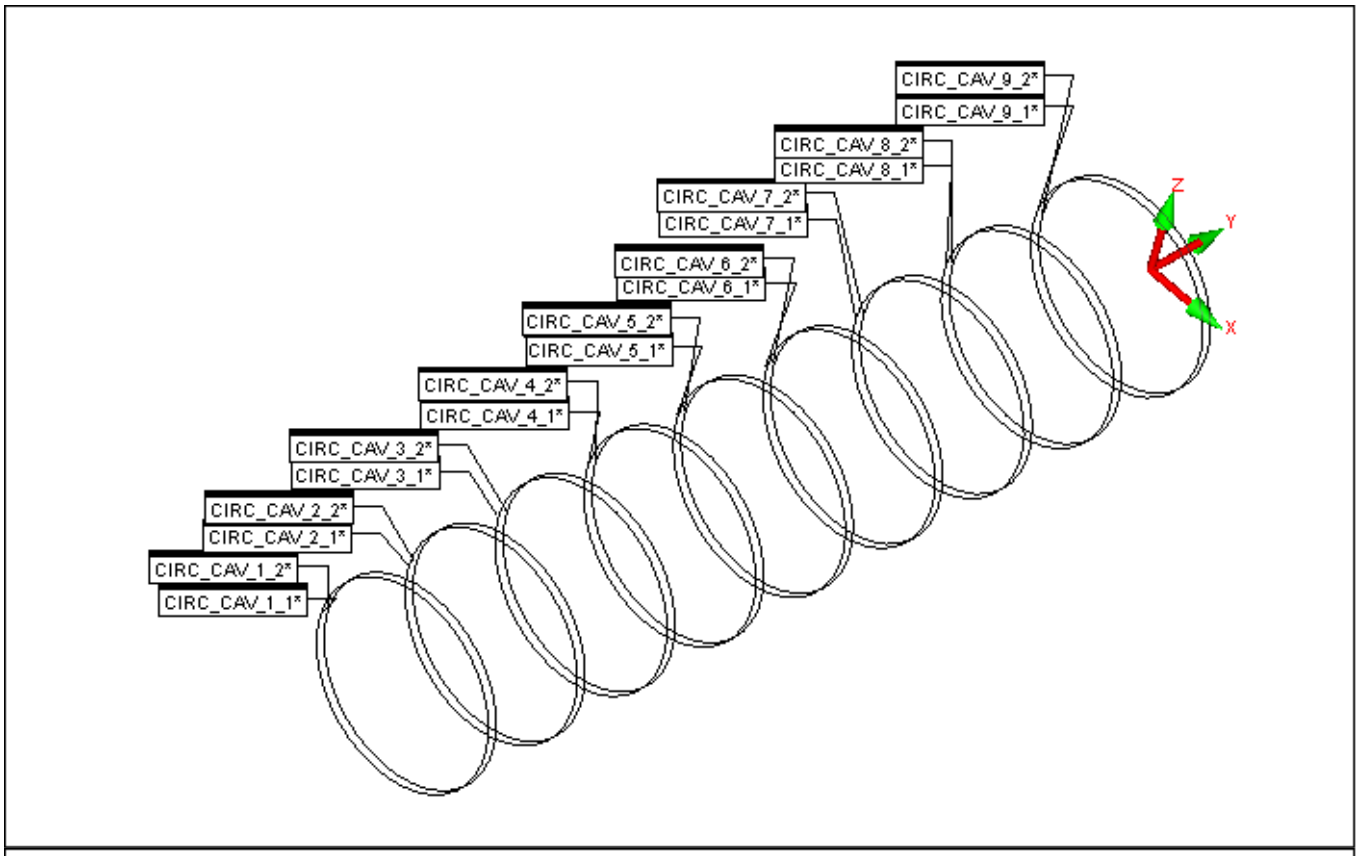
⌗	MM	LOC_CC19 - CIRC_CAV_9_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.203	0.203	0.200	0.200	0.003
Y	0.000	-43.883	-43.883	2000.000	2000.000	0.000
Z	0.000	-0.065	-0.065	0.200	0.200	0.000
D	210.300	211.001	0.701	0.200	0.200	0.501
RN	0.000	0.319	0.319	0.200	0.000	0.119

⌗	MM	LOC_CC20 - CIRC_CAV_9_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.202	0.202	0.200	0.200	0.002
Y	0.000	-33.638	-33.638	2000.000	2000.000	0.000
Z	0.000	-0.197	-0.197	0.200	0.200	0.000
D	210.300	210.487	0.187	0.200	0.200	0.000
RN	0.000	0.313	0.313	0.200	0.000	0.113

Location of End Flanges

⌗	MM	LOC_23 - CIR_END_FLANGE_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.653	-0.653	0.200	0.200	0.453
Y	0.000	116.323	116.323	2000.000	2000.000	0.000
Z	0.000	-0.088	-0.088	0.200	0.200	0.000
D	140.000	139.895	-0.105	0.300	0.300	0.000
RN	0.000	0.009	0.009	0.200	0.000	0.000

⌗	MM	LOC_24 - CIR_END_FLANGE_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.191	-0.191	0.200	0.200	0.000
Y	-1153.884	-1124.194	29.690	2000.000	2000.000	0.000
Z	0.000	0.144	0.144	0.200	0.200	0.000
D	140.000	139.923	-0.077	0.300	0.300	0.000
RN	0.000	0.008	0.008	0.200	0.000	0.000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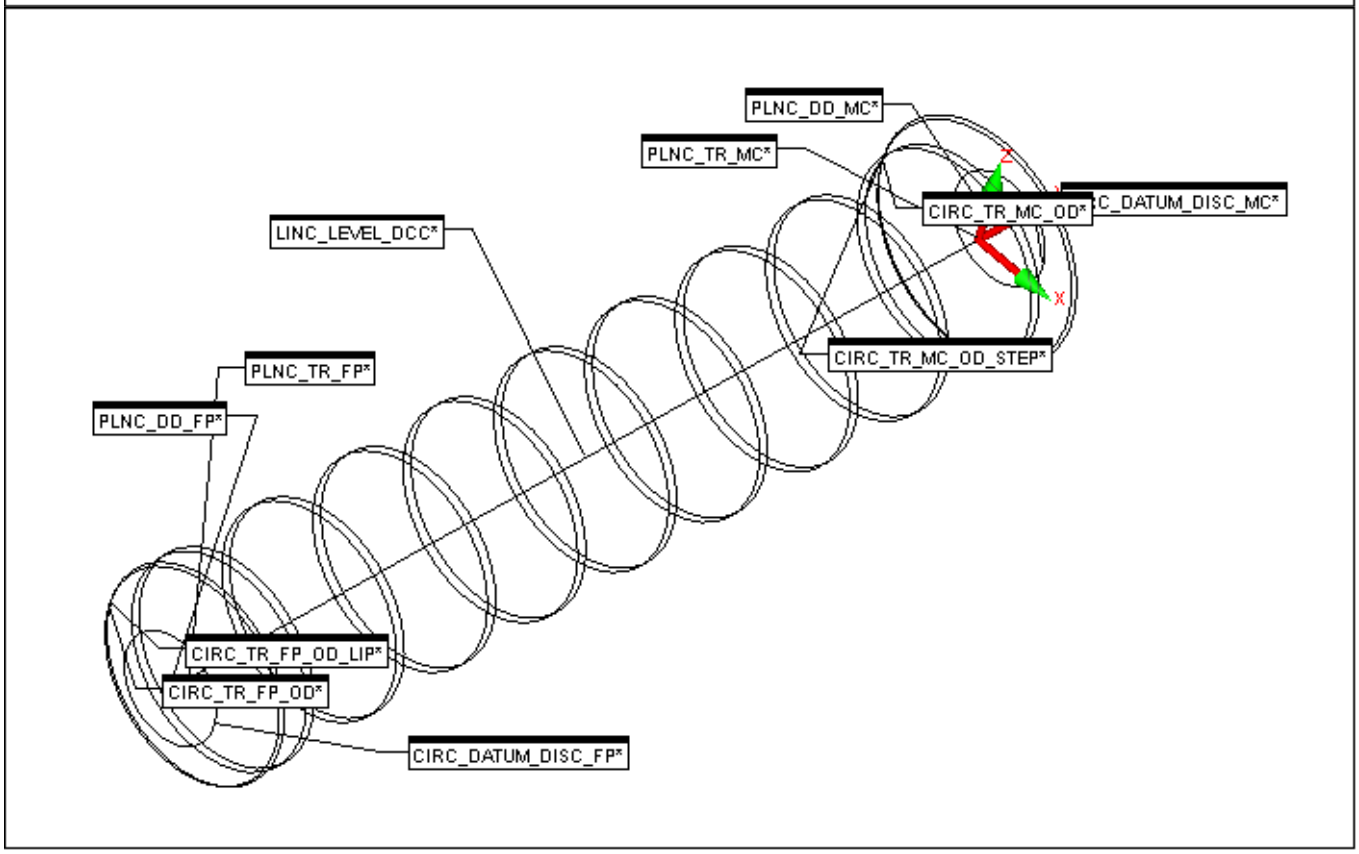
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X