pc-dmis	PART NAME : PN440004-n-Trans-Rings-000-TB9XXX000-v4-IR		February 10, 2010	14:17
	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' : TB9AES010
' ' : 1002101118

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	26.730	1.730	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.850	-0.150	0.050	0.050	0.100
RN	0.000	0.022	0.022	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	-1030.351	2.034	10.000	10.000	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	0.045	0.045	0.050	0.000	0.000

Datum Disc planes

⌖	MM	LOC3 - PLNC_DD_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	27.000	28.863	1.863	10.000	10.000	0.000
FL	0.000	0.040	0.040	0.100	0.000	0.000

⌖	MM	LOC4 - PLNC_DD_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1034.384	-1032.499	1.885	10.000	10.000	0.000
FL	0.000	0.064	0.064	0.100	0.000	0.000

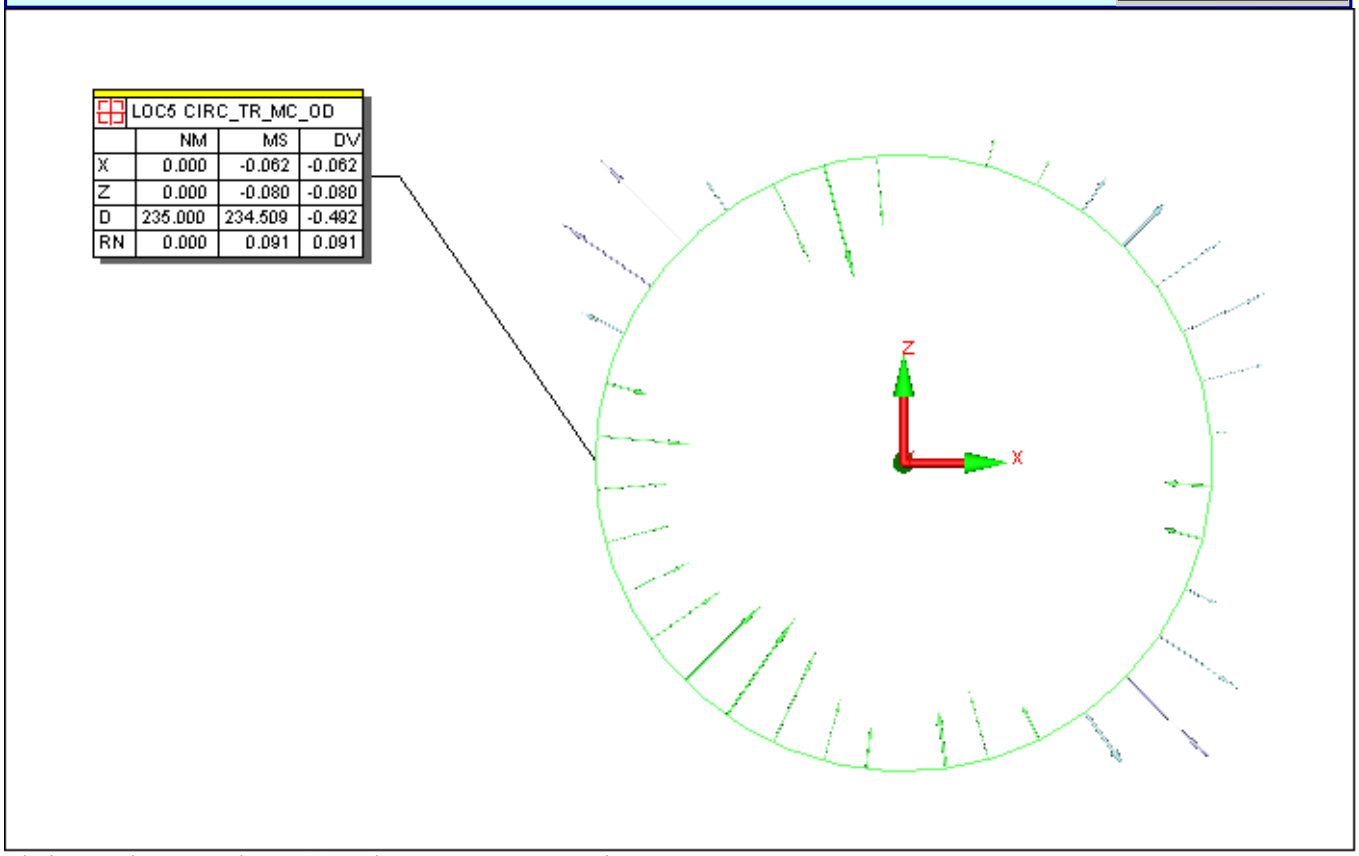
Distance between Datum Disc planes

↔	MM	DIST1 - PLNC_DD_FP TO PLNC_DD_MC (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1061.060	1061.363	0.303	0.200	0.200	0.103

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	-0.062	-0.062	0.250	0.250	0.000
Z	0.000	-0.080	-0.080	0.250	0.250	0.000
D	235.000	234.509	-0.492	0.250	0.250	0.242
RN	0.000	0.091	0.091	0.250	0.000	0.000

○	MM	RND1 - CIRC_TR_MC_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.091	0.091	0.250	0.000	0.000

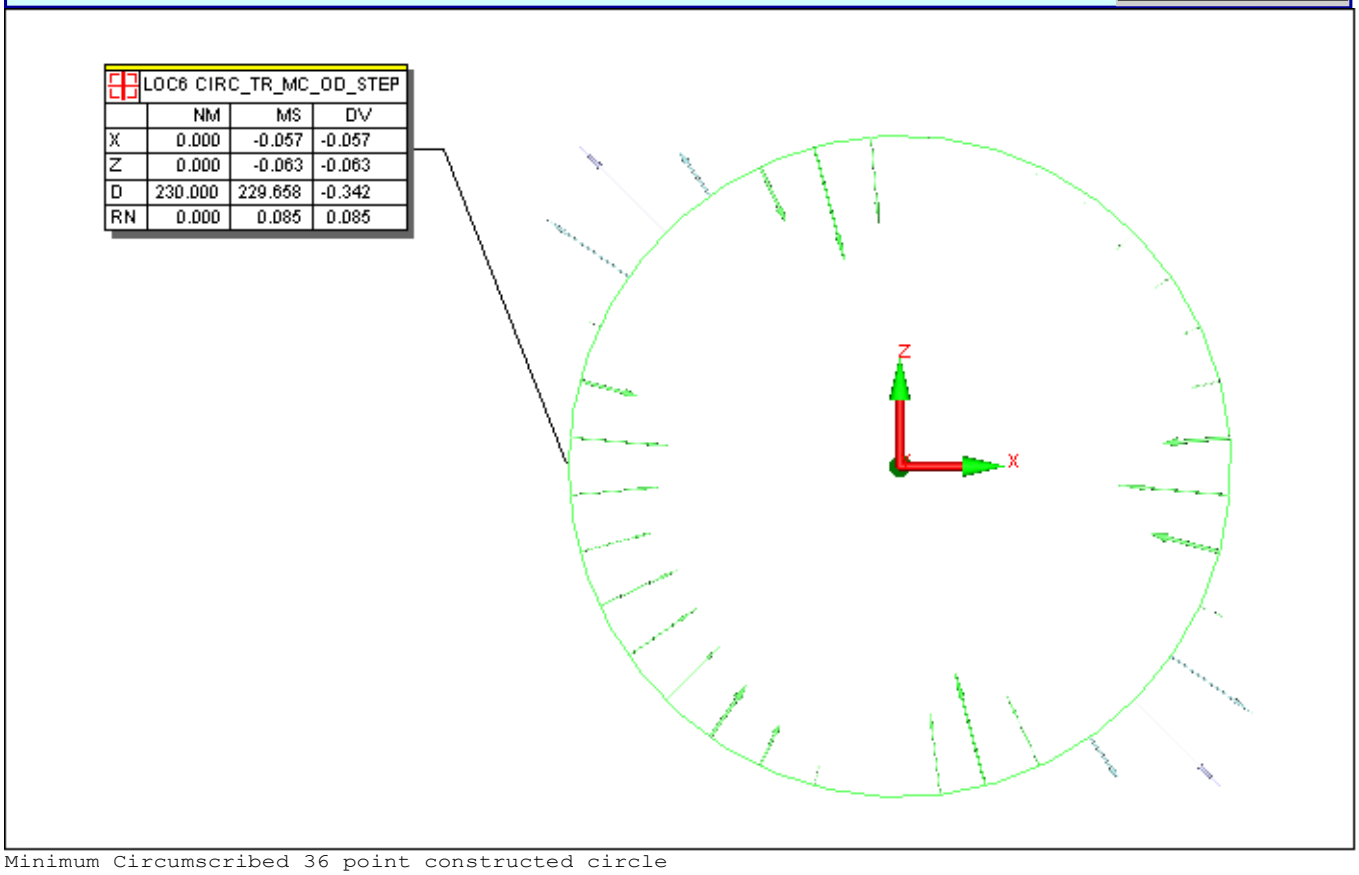


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D. x1000

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	-0.057	-0.057	0.250	0.250	0.000
Z	0.000	-0.063	-0.063	0.250	0.250	0.000
D	230.000	229.658	-0.342	0.000	0.250	0.092
RN	0.000	0.085	0.085	0.250	0.000	0.000

	MM	RND2 - CIRC_TR_MC_OD_STEP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.085	0.085	0.250	0.000	0.000

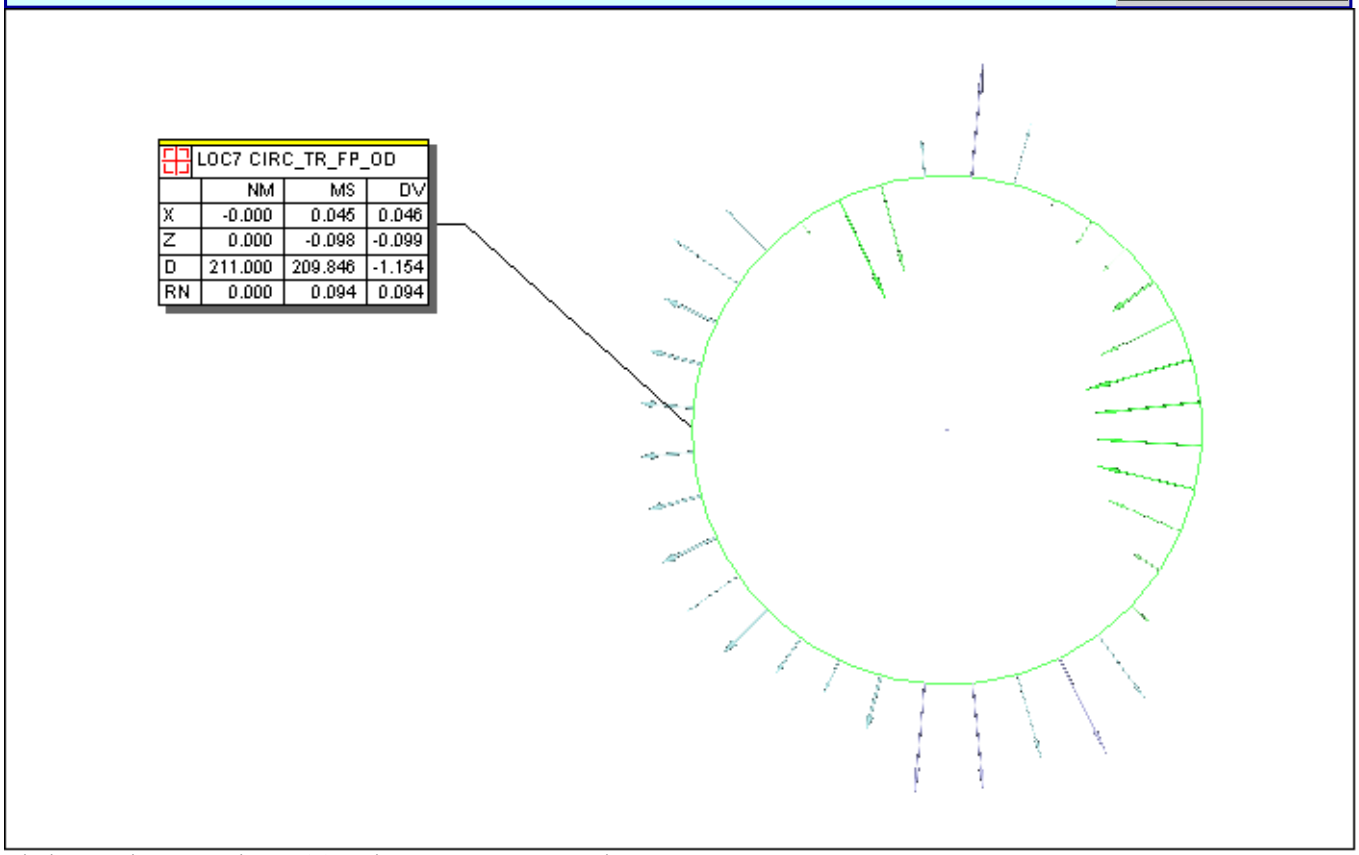


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step x1000

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	0.045	0.046	0.250	0.250	0.000
Z	0.000	-0.098	-0.099	0.250	0.250	0.000
D	211.000	209.846	-1.154	0.250	0.250	0.904
RN	0.000	0.094	0.094	0.250	0.000	0.000

○	MM	RND3 - CIRC_TR_FP_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.094	0.094	0.250	0.000	0.000

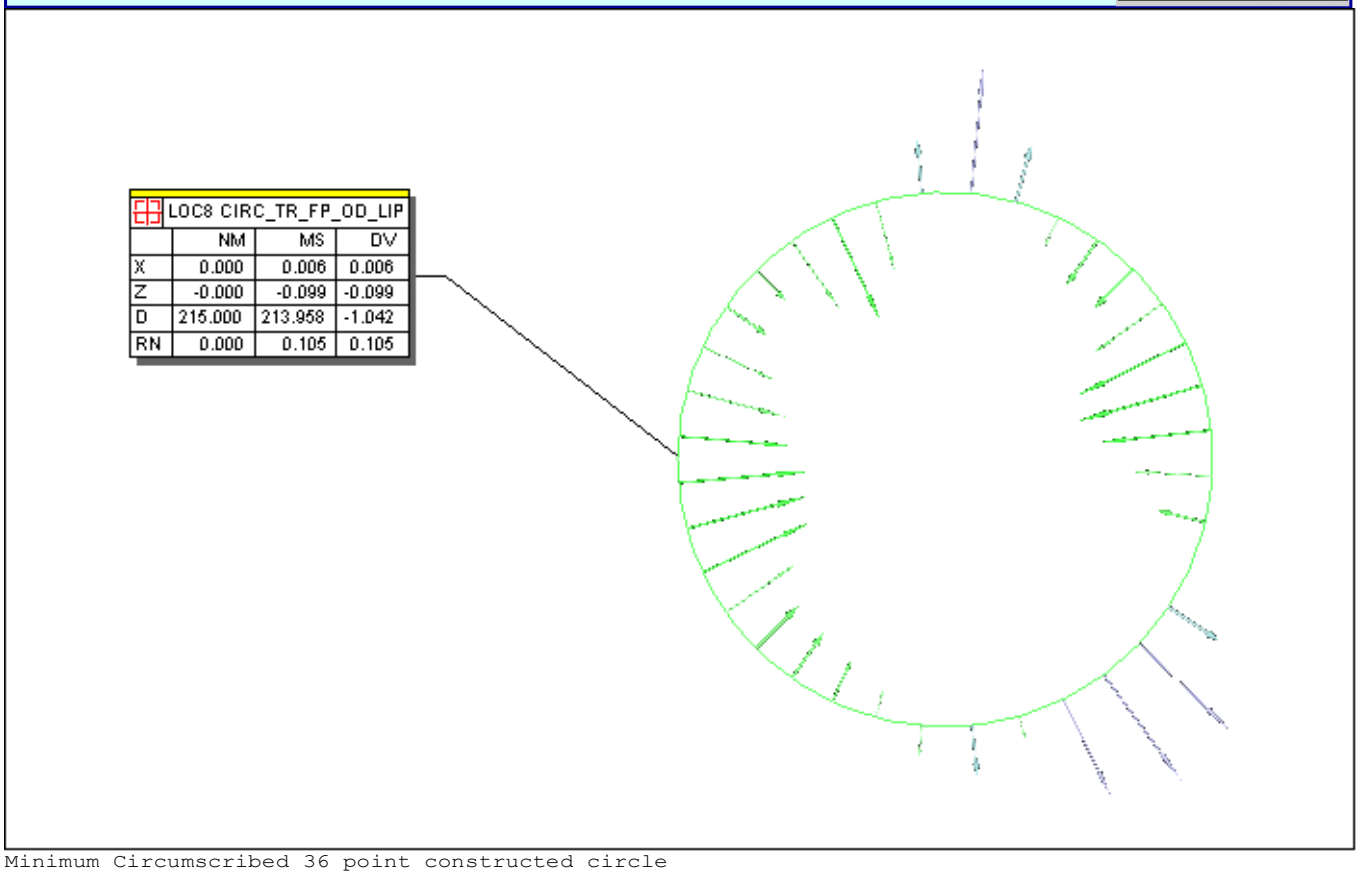


Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D. x1000

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

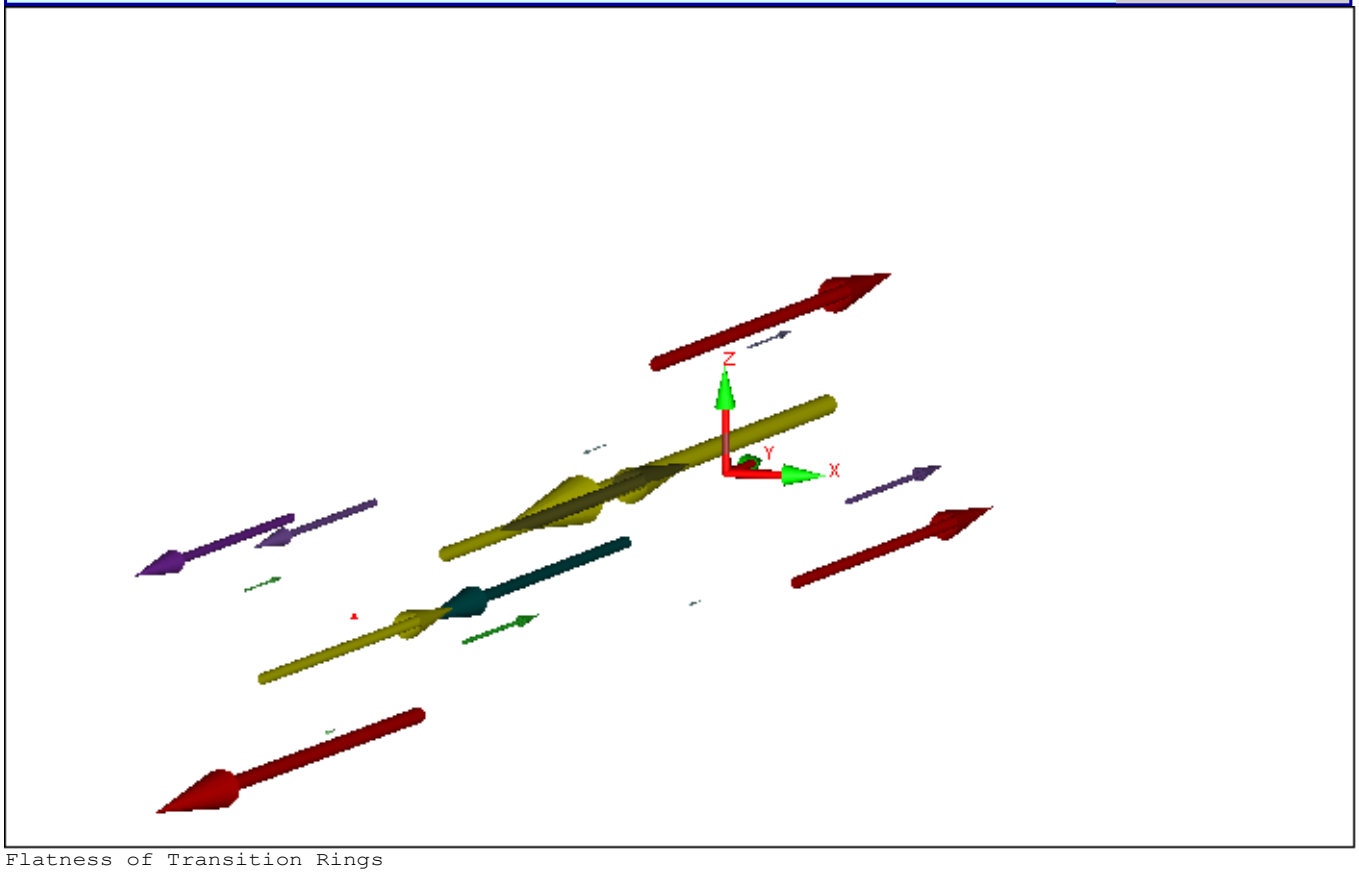
#	MM	LOC8 - CIRC_TR_FP_OD_LIP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.006	0.006	0.250	0.250	0.000	
Z	0.000	-0.099	-0.099	0.250	0.250	0.000	
D	215.000	213.958	-1.042	0.250	0.250	0.792	
RN	0.000	0.105	0.105	0.250	0.000	0.000	

○	MM	RND4 - CIRC_TR_FP_OD_LIP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.105	0.105	0.250	0.000	0.000	



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

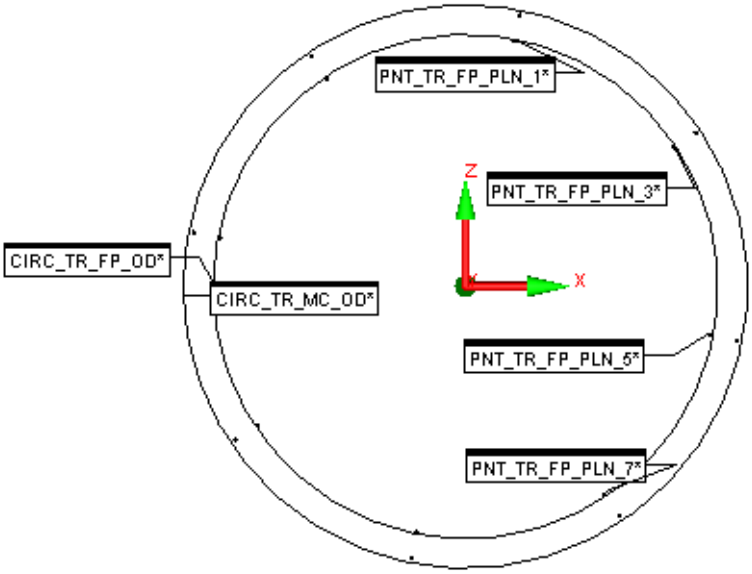
	MM	LOC9 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	0.000	0.000	0.000	0.000	0.000	0.000	
FL	0.000	0.306	0.306	0.200	0.000	0.106	
AX		I		J		K	
V		0.002		1.000		0.001	
	MM	LOC10 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1005.693	1.807	10.000	10.000	0.000	
FL	0.000	0.274	0.274	0.200	0.000	0.074	
AX		I		J		K	
V		-0.001		-1.000		0.004	
	MM	FLAT3 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.306	0.306	0.200	0.000	0.106	
	MM	FLAT4 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.274	0.274	0.200	0.000	0.074	



Flatness of Transition Rings
x5000

⊥	MM	PERP1 - PLNC_TR_MC TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	0.543	0.543	0.200	0	0.343

⊥	MM	PERP2 - PLNC_TR_FP TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	0.791	0.791	0.200	0	0.591



Transition Ring points Main Coupler end

⊕	MM	LOC11 - PNT_TR_MC_PLN_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.125	-0.126	1.000	1.000	0.000
PR	115.000	115.010	0.010	1.000	1.000	0.000
PA	101.250	101.251	0.001	1.000	1.000	0.000

⊕	MM	LOC12 - PNT_TR_MC_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.396	-0.396	1.000	1.000	0.000
PR	115.000	115.002	0.002	1.000	1.000	0.000
PA	146.250	146.249	-0.001	1.000	1.000	0.000

⊕	MM	LOC13 - PNT_TR_MC_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.108	-0.108	1.000	1.000	0.000
PR	115.000	114.994	-0.006	1.000	1.000	0.000
PA	-168.750	-168.750	0.000	1.000	1.000	0.000

⌖	MM	LOC14 - PNT_TR_MC_PLN_7				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.098	0.099	1.000	1.000	0.000
PR	115.000	114.989	-0.011	1.000	1.000	0.000
PA	-123.750	-123.746	0.004	1.000	1.000	0.000

⌖	MM	LOC15 - PNT_TR_MC_PLN_9				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.140	0.141	1.000	1.000	0.000
PR	115.000	114.989	-0.011	1.000	1.000	0.000
PA	-78.750	-78.742	0.008	1.000	1.000	0.000

⌖	MM	LOC16 - PNT_TR_MC_PLN_11				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.109	0.109	1.000	1.000	0.000
PR	115.000	114.998	-0.003	1.000	1.000	0.000
PA	-33.750	-33.740	0.010	1.000	1.000	0.000

⌖	MM	LOC17 - PNT_TR_MC_PLN_13				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.147	0.147	1.000	1.000	0.000
PR	115.000	115.007	0.007	1.000	1.000	0.000
PA	11.250	11.259	0.009	1.000	1.000	0.000

⌖	MM	LOC18 - PNT_TR_MC_PLN_15				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.135	0.135	1.000	1.000	0.000
PR	115.000	115.011	0.011	1.000	1.000	0.000
PA	56.250	56.256	0.006	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	-1005.401	2.099	1.000	1.000	1.099
PR	104.000	104.040	0.040	1.000	1.000	0.000
PA	101.250	101.247	-0.003	1.000	1.000	0.000

⌖	MM	LOC20 - PNT_TR_FP_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1005.413	2.087	1.000	1.000	1.087
PR	104.000	104.023	0.023	1.000	1.000	0.000
PA	146.250	146.235	-0.015	1.000	1.000	0.000

⌖	MM	LOC21 - PNT_TR_FP_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1005.800	1.700	1.000	1.000	0.700
PR	104.000	103.992	-0.008	1.000	1.000	0.000
PA	-168.750	-168.768	-0.018	1.000	1.000	0.000

⌖	MM	LOC22 - PNT_TR_FP_PLN_7					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1006.191	1.309	1.000	1.000	0.309	
PR	104.000	103.963	-0.037	1.000	1.000	0.000	
PA	-123.750	-123.754	-0.004	1.000	1.000	0.000	
⌖	MM	LOC23 - PNT_TR_FP_PLN_9					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1006.055	1.445	1.000	1.000	0.445	
PR	104.000	104.096	0.096	1.000	1.000	0.000	
PA	-78.750	-78.720	0.030	1.000	1.000	0.000	
⌖	MM	LOC24 - PNT_TR_FP_PLN_11					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1005.737	1.763	1.000	1.000	0.763	
PR	104.000	104.106	0.106	1.000	1.000	0.000	
PA	-33.750	-33.765	-0.015	1.000	1.000	0.000	
⌖	MM	LOC25 - PNT_TR_FP_PLN_13					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1005.524	1.976	1.000	1.000	0.976	
PR	104.000	104.049	0.049	1.000	1.000	0.000	
PA	11.250	11.198	-0.052	1.000	1.000	0.000	
⌖	MM	LOC26 - PNT_TR_FP_PLN_15					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1005.420	2.080	1.000	1.000	1.080	
PR	104.000	103.960	-0.040	1.000	1.000	0.000	
PA	56.250	56.199	-0.051	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	1005.671	-1.829	1.000	1.000	-0.829	
↔	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	1005.555	-1.945	1.000	1.000	-0.945	
↔	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	1005.275	-2.225	1.000	1.000	-1.225	
↔	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	1005.017	-2.483	1.000	1.000	-1.483	
↔	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	1005.692	-1.808	1.000	1.000	-0.808	

↔	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	1006.290	-1.210	1.000	1.000	-0.210	

↔	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	1006.195	-1.305	1.000	1.000	-0.305	

↔	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	1005.846	-1.654	1.000	1.000	-0.654	

↔	MM	DIST_BETWEEN_PLANES - PLNC_TR_MC TO PLNC_TR_FP (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1005.693	-1.807	1.000	1.000	-0.807	

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	-0.028	-0.028	0.200	0.200	0.000	
Y	0.000	-967.375	-967.375	2000.000	2000.000	0.000	
Z	0.000	-0.079	-0.079	0.200	0.200	0.000	
D	210.300	210.995	0.695	0.200	0.200	0.495	
RN	0.000	0.173	0.173	0.200	0.000	0.000	

⊕	MM	LOC_CC4 - CIRC_CAV_1_2					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	-0.027	-0.027	0.200	0.200	0.000	
Y	0.000	-958.146	-958.146	2000.000	2000.000	0.000	
Z	0.000	-0.124	-0.124	0.200	0.200	0.000	
D	210.300	211.034	0.734	0.200	0.200	0.534	
RN	0.000	0.195	0.195	0.200	0.000	0.000	

⊕	MM	LOC_CC5 - CIRC_CAV_2_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	-0.002	-0.002	0.200	0.200	0.000	
Y	0.000	-851.696	-851.696	2000.000	2000.000	0.000	
Z	0.000	-0.381	-0.381	0.200	0.200	0.181	
D	210.300	211.088	0.788	0.200	0.200	0.588	
RN	0.000	0.199	0.199	0.200	0.000	0.000	

⊕	MM	LOC_CC6 - CIRC_CAV_2_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.019	-0.019	0.200	0.200	0.000
Y	0.000	-842.810	-842.810	2000.000	2000.000	0.000
Z	0.000	-0.420	-0.420	0.200	0.200	0.220
D	210.300	211.179	0.879	0.200	0.200	0.679
RN	0.000	0.235	0.235	0.200	0.000	0.035

⊕	MM	LOC_CC7 - CIRC_CAV_3_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.037	-0.037	0.200	0.200	0.000
Y	0.000	-736.326	-736.326	2000.000	2000.000	0.000
Z	0.000	-0.598	-0.598	0.200	0.200	0.398
D	210.300	211.266	0.966	0.200	0.200	0.766
RN	0.000	0.152	0.152	0.200	0.000	0.000

⊕	MM	LOC_CC8 - CIRC_CAV_3_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.009	0.009	0.200	0.200	0.000
Y	0.000	-727.207	-727.207	2000.000	2000.000	0.000
Z	0.000	-0.556	-0.556	0.200	0.200	0.356
D	210.300	211.123	0.823	0.200	0.200	0.623
RN	0.000	0.330	0.330	0.200	0.000	0.130

⊕	MM	LOC_CC9 - CIRC_CAV_4_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.023	0.023	0.200	0.200	0.000
Y	0.000	-620.897	-620.897	2000.000	2000.000	0.000
Z	0.000	-0.589	-0.589	0.200	0.200	0.389
D	210.300	211.221	0.921	0.200	0.200	0.721
RN	0.000	0.250	0.250	0.200	0.000	0.050

⊕	MM	LOC_CC10 - CIRC_CAV_4_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.036	0.036	0.200	0.200	0.000
Y	0.000	-612.078	-612.078	2000.000	2000.000	0.000
Z	0.000	-0.604	-0.604	0.200	0.200	0.404
D	210.300	211.230	0.930	0.200	0.200	0.730
RN	0.000	0.270	0.270	0.200	0.000	0.070

⊕	MM	LOC_CC11 - CIRC_CAV_5_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.153	0.153	0.200	0.200	0.000
Y	0.000	-505.485	-505.485	2000.000	2000.000	0.000
Z	0.000	-0.821	-0.821	0.200	0.200	0.621
D	210.300	211.346	1.046	0.200	0.200	0.846
RN	0.000	0.142	0.142	0.200	0.000	0.000

⊕	MM	LOC_CC12 - CIRC_CAV_5_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.147	0.147	0.200	0.200	0.000
Y	0.000	-496.528	-496.528	2000.000	2000.000	0.000
Z	0.000	-0.781	-0.781	0.200	0.200	0.581
D	210.300	211.287	0.987	0.200	0.200	0.787
RN	0.000	0.312	0.312	0.200	0.000	0.112

⊕	MM	LOC_CC13 - CIRC_CAV_6_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.280	0.280	0.200	0.200	0.080
Y	0.000	-389.792	-389.792	2000.000	2000.000	0.000
Z	0.000	-0.953	-0.953	0.200	0.200	0.753
D	210.300	211.068	0.768	0.200	0.200	0.568
RN	0.000	0.215	0.215	0.200	0.000	0.015

⊕	MM	LOC_CC14 - CIRC_CAV_6_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.262	0.262	0.200	0.200	0.062
Y	0.000	-381.316	-381.316	2000.000	2000.000	0.000
Z	0.000	-0.954	-0.954	0.200	0.200	0.754
D	210.300	211.187	0.887	0.200	0.200	0.687
RN	0.000	0.207	0.207	0.200	0.000	0.007

⊕	MM	LOC_CC15 - CIRC_CAV_7_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.440	0.440	0.200	0.200	0.240
Y	0.000	-275.012	-275.012	2000.000	2000.000	0.000
Z	0.000	-0.869	-0.869	0.200	0.200	0.669
D	210.300	211.203	0.903	0.200	0.200	0.703
RN	0.000	0.195	0.195	0.200	0.000	0.000

⊕	MM	LOC_CC16 - CIRC_CAV_7_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.454	0.454	0.200	0.200	0.254
Y	0.000	-266.183	-266.183	2000.000	2000.000	0.000
Z	0.000	-0.877	-0.877	0.200	0.200	0.677
D	210.300	211.110	0.810	0.200	0.200	0.610
RN	0.000	0.267	0.267	0.200	0.000	0.067

⊕	MM	LOC_CC17 - CIRC_CAV_8_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.448	0.448	0.200	0.200	0.248
Y	0.000	-159.283	-159.283	2000.000	2000.000	0.000
Z	0.000	-0.587	-0.587	0.200	0.200	0.387
D	210.300	211.107	0.807	0.200	0.200	0.607
RN	0.000	0.276	0.276	0.200	0.000	0.076

⌖	MM	LOC_CC18 - CIRC_CAV_8_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.477	0.477	0.200	0.200	0.277
Y	0.000	-150.782	-150.782	2000.000	2000.000	0.000
Z	0.000	-0.590	-0.590	0.200	0.200	0.390
D	210.300	211.177	0.877	0.200	0.200	0.677
RN	0.000	0.209	0.209	0.200	0.000	0.009

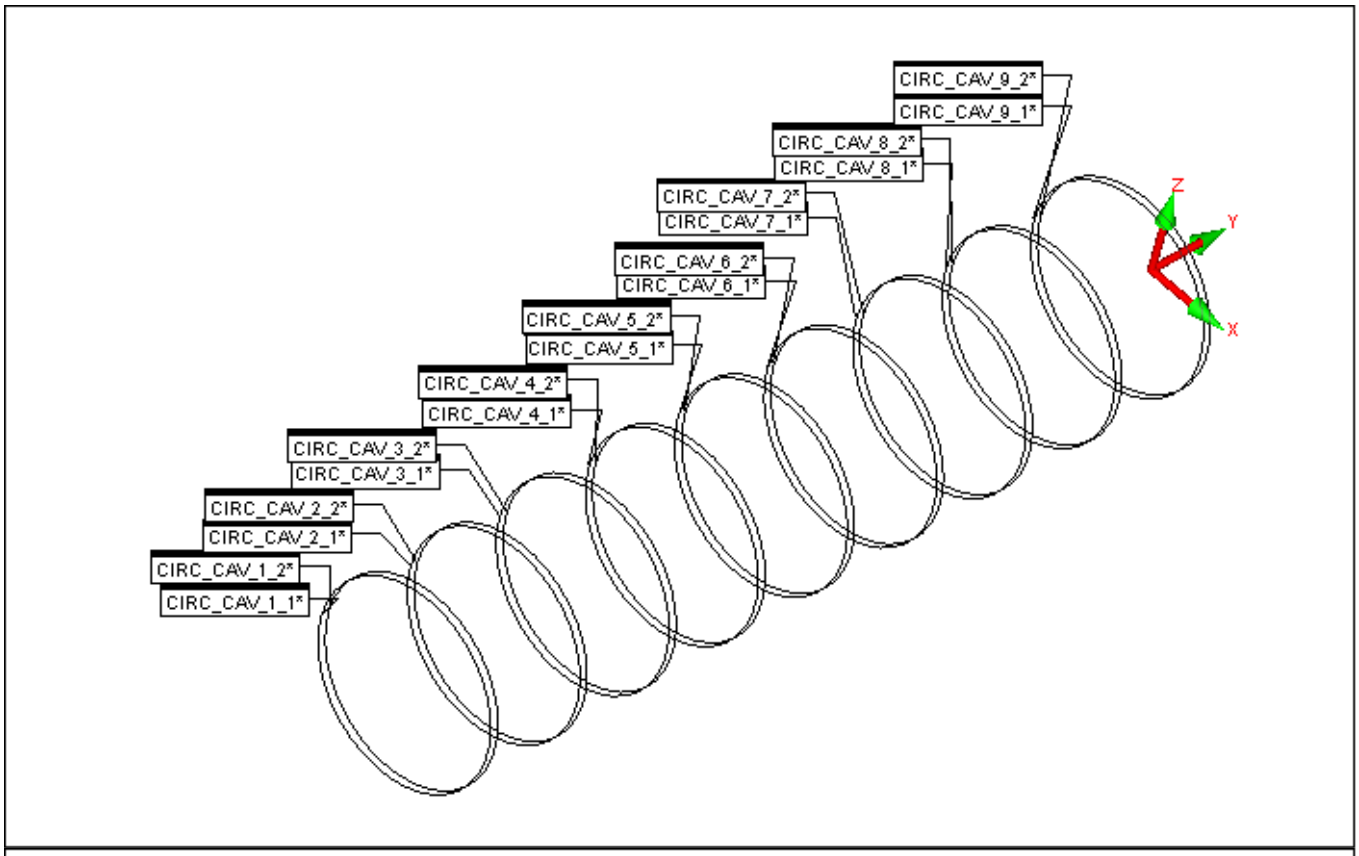
⌖	MM	LOC_CC19 - CIRC_CAV_9_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.182	0.182	0.200	0.200	0.000
Y	0.000	-44.441	-44.441	2000.000	2000.000	0.000
Z	0.000	-0.210	-0.210	0.200	0.200	0.010
D	210.300	211.109	0.809	0.200	0.200	0.609
RN	0.000	0.183	0.183	0.200	0.000	0.000

⌖	MM	LOC_CC20 - CIRC_CAV_9_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.181	0.181	0.200	0.200	0.000
Y	0.000	-35.820	-35.820	2000.000	2000.000	0.000
Z	0.000	-0.226	-0.226	0.200	0.200	0.026
D	210.300	210.975	0.675	0.200	0.200	0.475
RN	0.000	0.245	0.245	0.200	0.000	0.045

Location of End Flanges

⌖	MM	LOC_23 - CIR_END_FLANGE_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.253	-0.253	0.200	0.200	0.053
Y	0.000	116.531	116.531	2000.000	2000.000	0.000
Z	0.000	0.387	0.387	0.200	0.200	0.187
D	140.000	139.998	-0.002	0.300	0.300	0.000
RN	0.000	0.046	0.046	0.200	0.000	0.000

⌖	MM	LOC_24 - CIR_END_FLANGE_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.074	-0.074	0.200	0.200	0.000
Y	-1153.884	-1118.855	35.029	2000.000	2000.000	0.000
Z	0.000	0.169	0.169	0.200	0.200	0.000
D	140.000	139.942	-0.058	0.300	0.300	0.000
RN	0.000	0.037	0.037	0.200	0.000	0.000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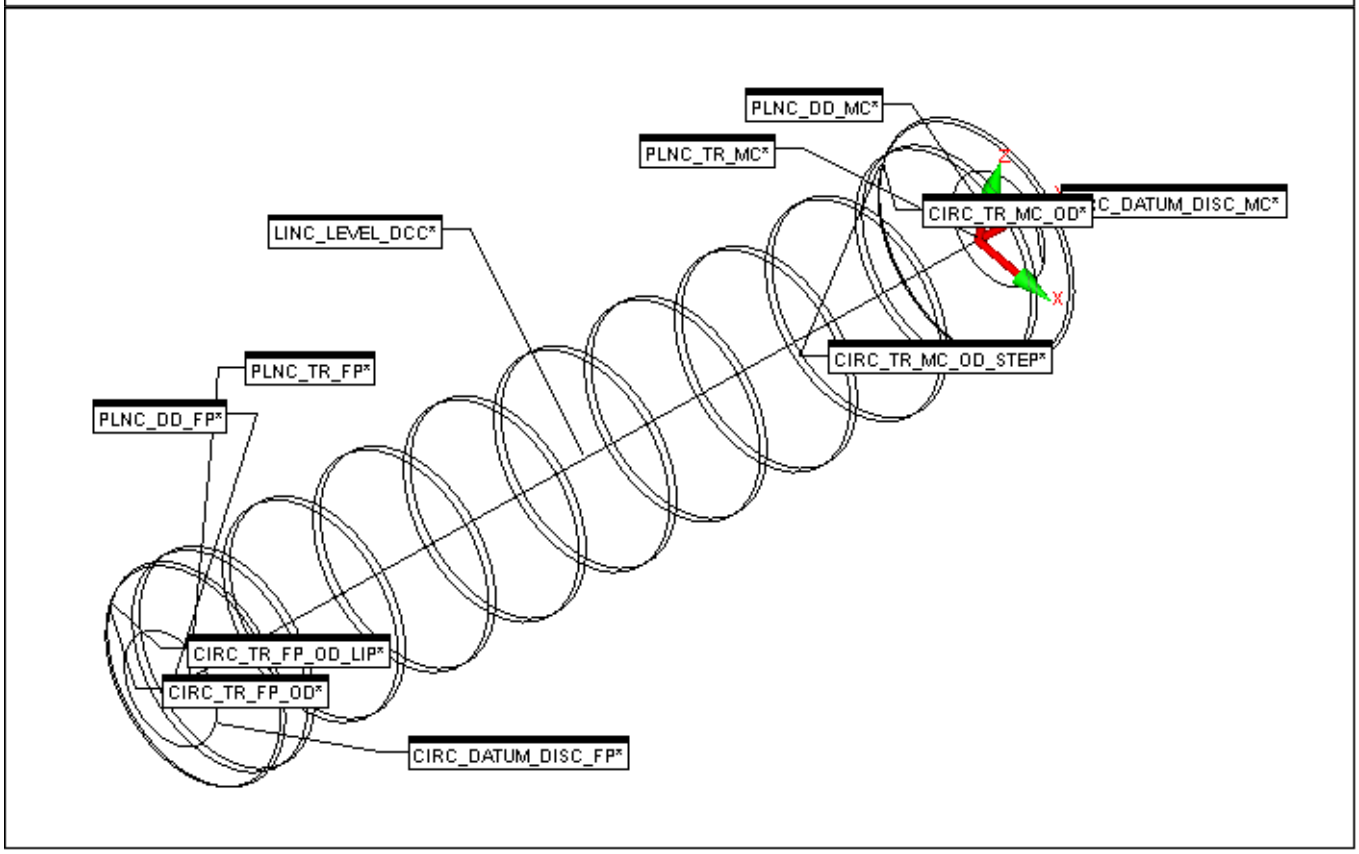
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Z
X