pc-dmis	PART NAME : PN440004-n-Trans-Rings-000-TB9AES012-v4-IR		February 24, 2011	15:50
	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' : TB9AES012
' ' : 1102241343

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	27.226	2.226	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.769	-0.231	0.050	0.050	0.181
RN	0.000	0.091	0.091	0.050	0.000	0.041

⌖	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	-1033.216	-0.832	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.804	-0.196	0.050	0.050	0.146
RN	0.000	0.080	0.080	0.050	0.000	0.030

Datum Disc planes

⌖	MM	LOC3 - PLNC_DD_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	27.000	29.360	2.360	10.000	10.000	0.000
FL	0.000	0.118	0.118	0.100	0.000	0.018

⌖	MM	LOC4 - PLNC_DD_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1034.384	-1035.381	-0.996	10.000	10.000	0.000
FL	0.000	0.121	0.121	0.100	0.000	0.021

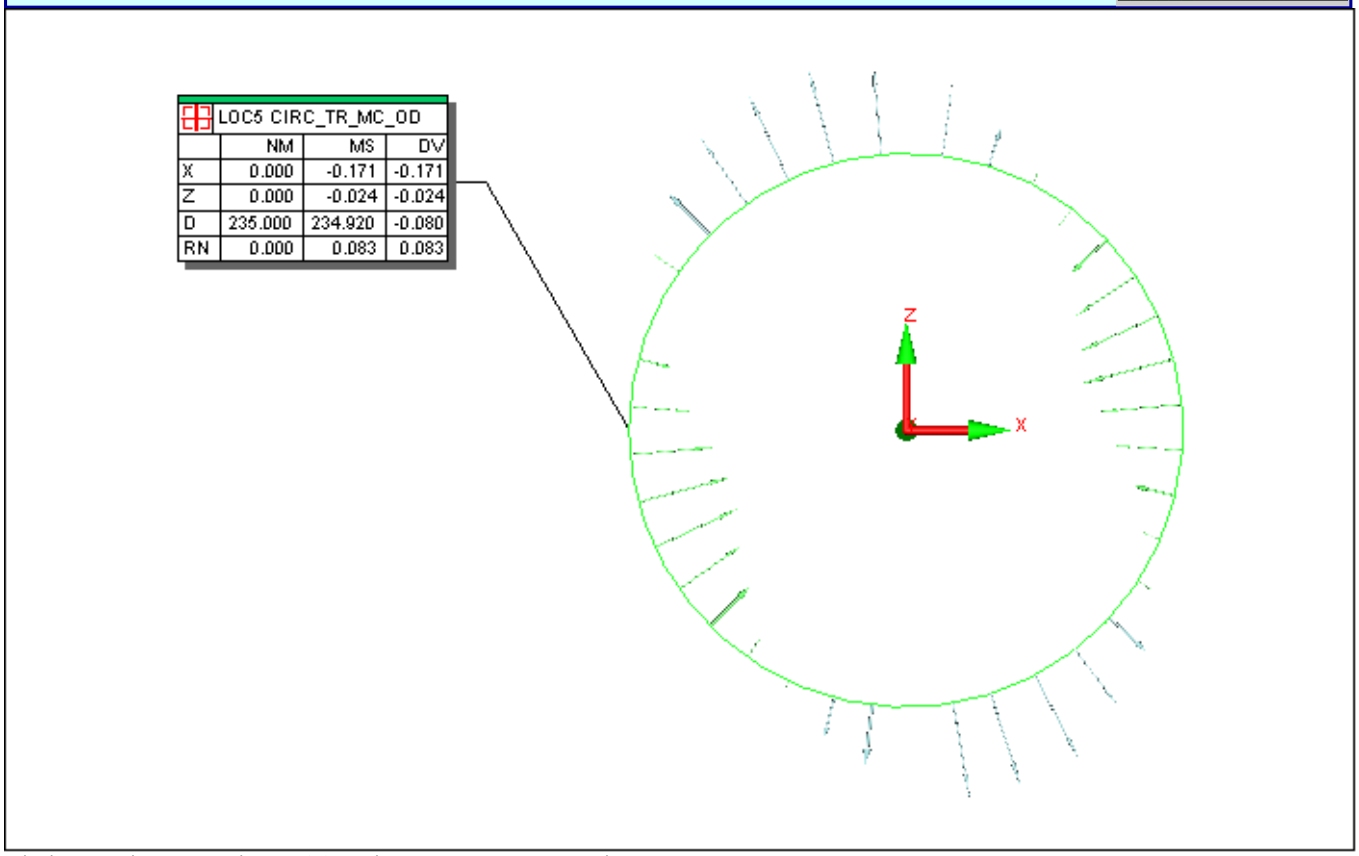
Distance between Datum Disc planes

↔	MM	DIST1 - PLNC_DD_FP TO PLNC_DD_MC (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1061.060	1064.740	3.680	0.200	0.200	3.480

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	-0.171	-0.171	0.250	0.250	0.000
Z	0.000	-0.024	-0.024	0.250	0.250	0.000
D	235.000	234.920	-0.080	0.250	0.250	0.000
RN	0.000	0.083	0.083	0.250	0.000	0.000

○	MM	RND1 - CIRC_TR_MC_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.083	0.083	0.250	0.000	0.000

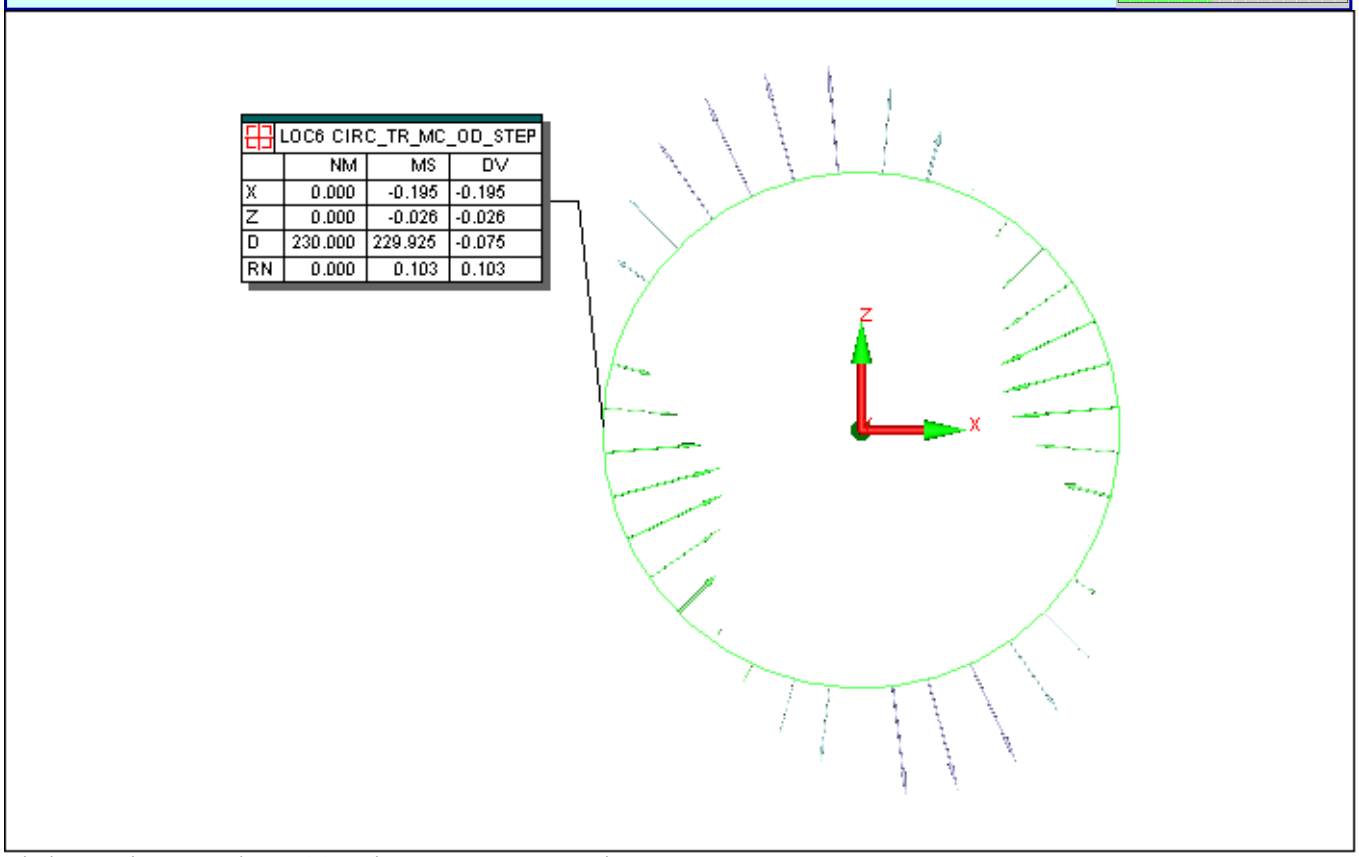


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D. x1000

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	-0.195	-0.195	0.250	0.250	0.000	
Z	0.000	-0.026	-0.026	0.250	0.250	0.000	
D	230.000	229.925	-0.075	0.000	0.250	0.000	
RN	0.000	0.103	0.103	0.250	0.000	0.000	

○	MM	RND2 - CIRC_TR_MC_OD_STEP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.103	0.103	0.250	0.000	0.000	

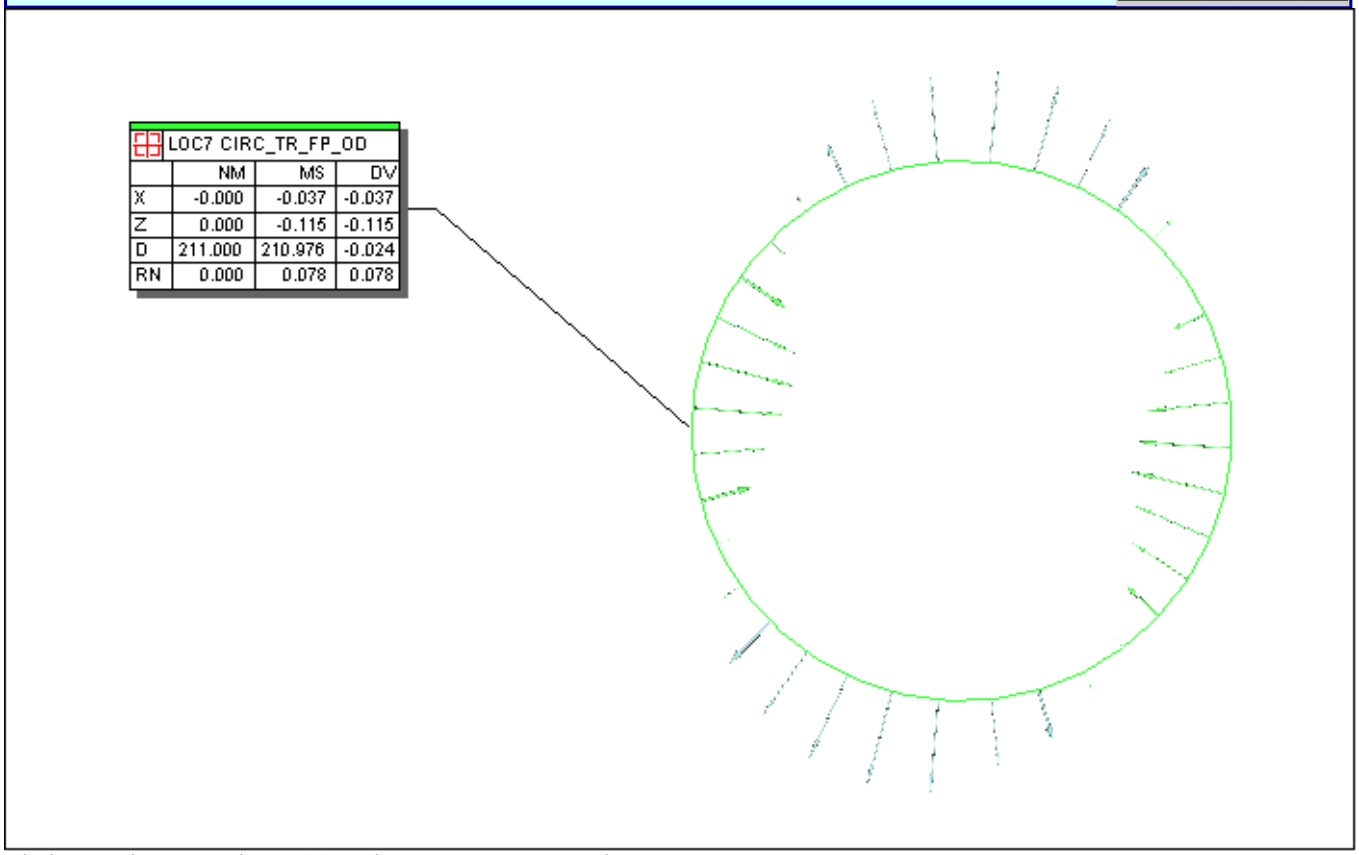


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step x1000

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	-0.037	-0.037	0.250	0.250	0.000
Z	0.000	-0.115	-0.115	0.250	0.250	0.000
D	211.000	210.976	-0.024	0.250	0.250	0.000
RN	0.000	0.078	0.078	0.250	0.000	0.000

	MM	RND3 - CIRC_TR_FP_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.078	0.078	0.250	0.000	0.000

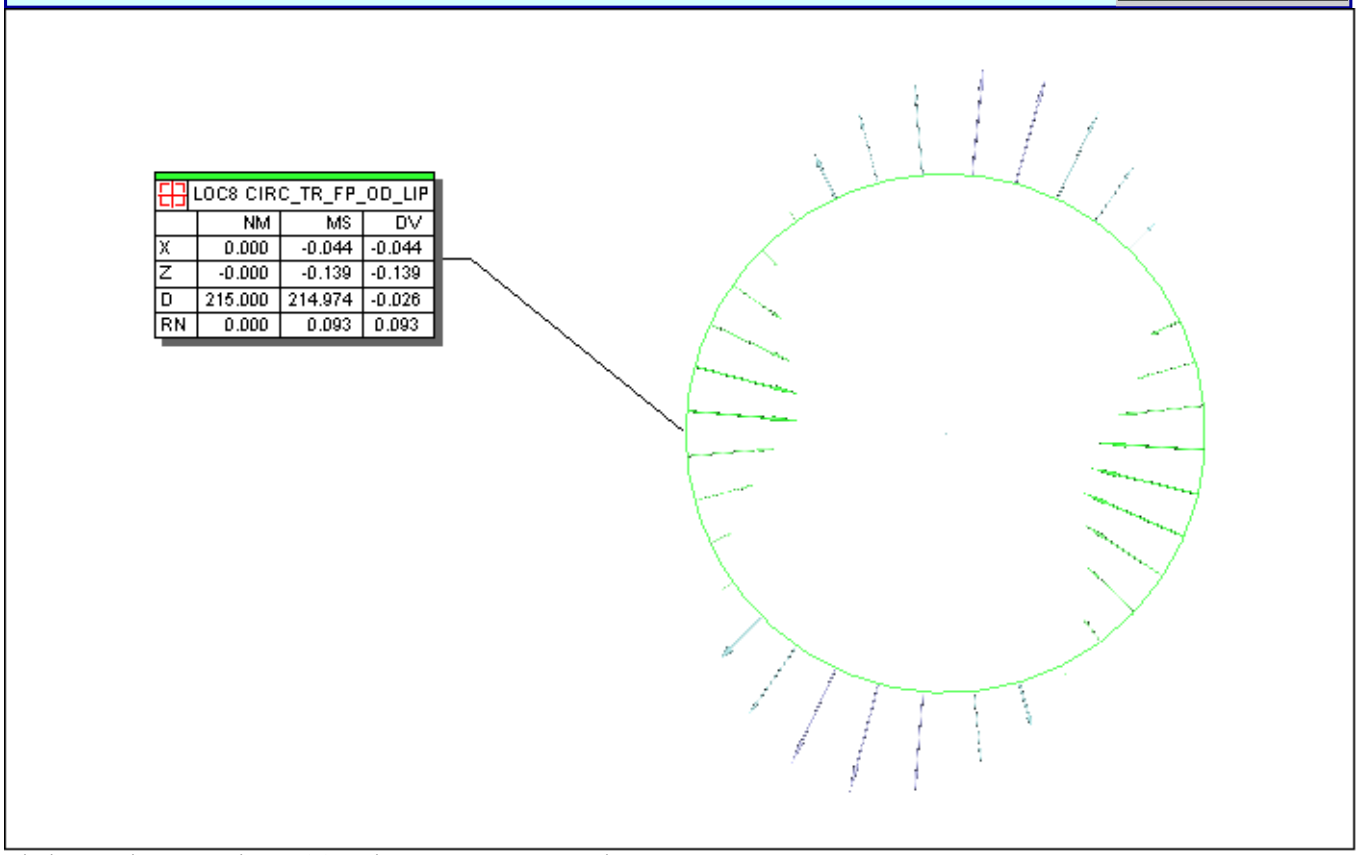


Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D. x1000

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

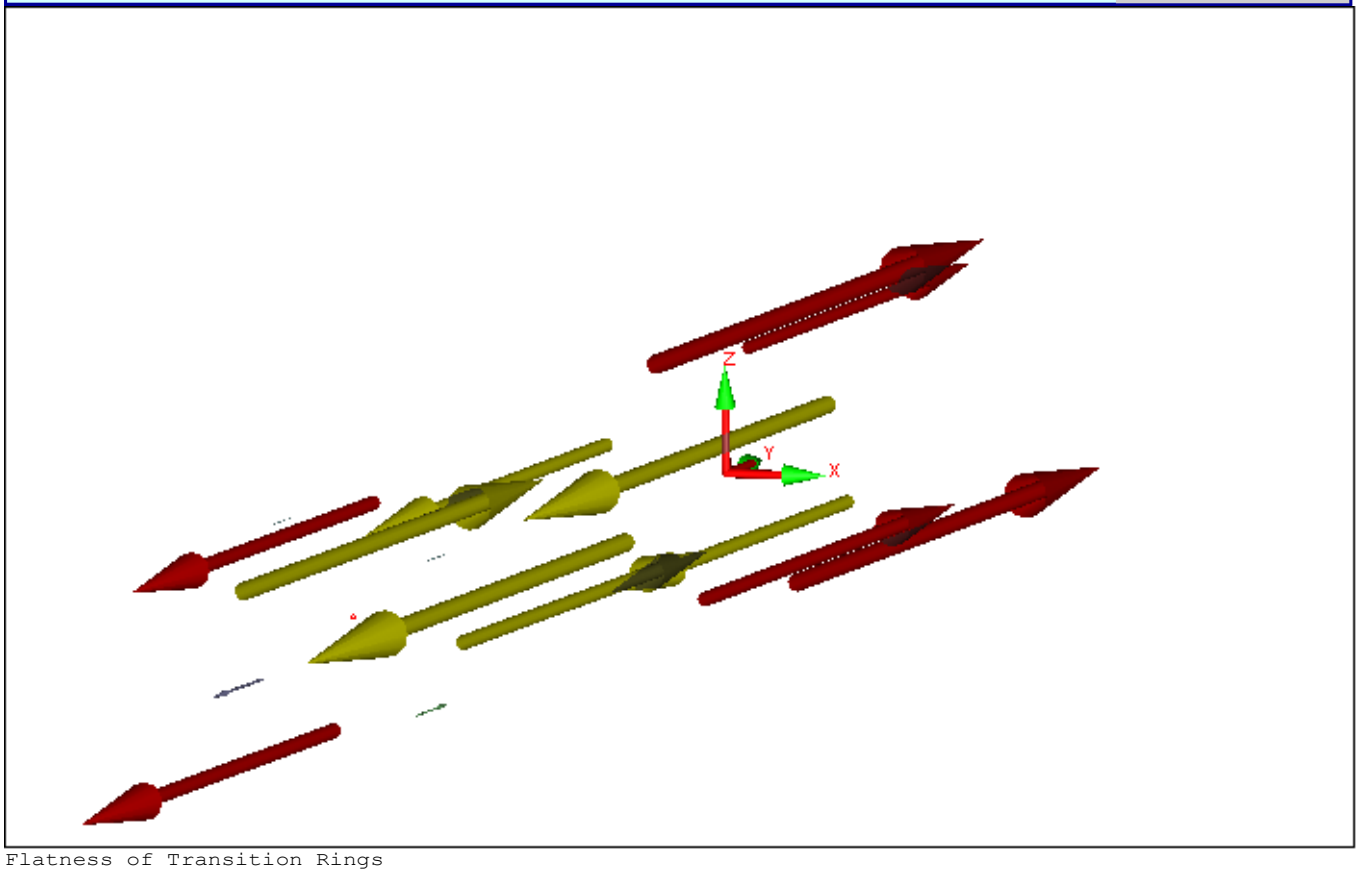
	MM	LOC8 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.044	-0.044	0.250	0.250	0.000
Z	0.000	-0.139	-0.139	0.250	0.250	0.000
D	215.000	214.974	-0.026	0.250	0.250	0.000
RN	0.000	0.093	0.093	0.250	0.000	0.000

	MM	RND4 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.093	0.093	0.250	0.000	0.000



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

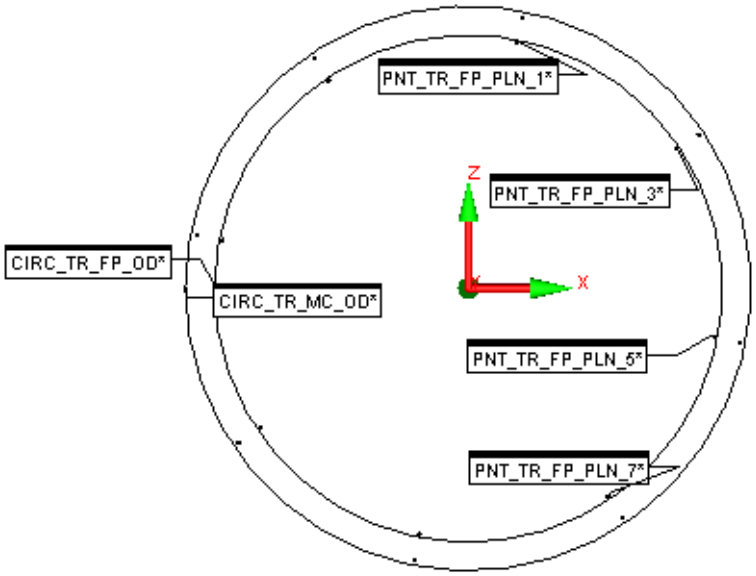
	MM	LOC9 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	0.000	0.000	0.000	0.000	0.000	0.000	
FL	0.000	0.345	0.345	0.200	0.000	0.145	
AX		I		J		K	
V		0.006		1.000		0.001	
	MM	LOC10 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1008.320	-0.820	10.000	10.000	0.000	
FL	0.000	0.300	0.300	0.200	0.000	0.100	
AX		I		J		K	
V		0.002		-1.000		0.005	
	MM	FLAT3 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.345	0.345	0.200	0.000	0.145	
	MM	FLAT4 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.300	0.300	0.200	0.000	0.100	



Flatness of Transition Rings
x5000

⊥	MM	PERP1 - PLNC_TR_MC TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	1.402	1.402	0.200	0	1.202

⊥	MM	PERP2 - PLNC_TR_FP TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	1.050	1.050	0.200	0	0.850



Transition Ring points Main Coupler end

⊕	MM	LOC11 - PNT_TR_MC_PLN_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.151	-0.151	1.000	1.000	0.000
PR	115.000	114.941	-0.059	1.000	1.000	0.000
PA	101.250	101.191	-0.059	1.000	1.000	0.000

⊕	MM	LOC12 - PNT_TR_MC_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.840	-0.840	1.000	1.000	0.000
PR	115.000	114.976	-0.024	1.000	1.000	0.000
PA	146.250	146.209	-0.041	1.000	1.000	0.000

⊕	MM	LOC13 - PNT_TR_MC_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.816	-0.816	1.000	1.000	0.000
PR	115.000	115.025	0.025	1.000	1.000	0.000
PA	-168.750	-168.791	-0.041	1.000	1.000	0.000

⌖	MM	LOC14 - PNT_TR_MC_PLN_7				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.137	-0.136	1.000	1.000	0.000
PR	115.000	115.061	0.061	1.000	1.000	0.000
PA	-123.750	-123.807	-0.057	1.000	1.000	0.000

⌖	MM	LOC15 - PNT_TR_MC_PLN_9				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.401	0.401	1.000	1.000	0.000
PR	115.000	115.070	0.070	1.000	1.000	0.000
PA	-78.750	-78.834	-0.084	1.000	1.000	0.000

⌖	MM	LOC16 - PNT_TR_MC_PLN_11				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.508	0.508	1.000	1.000	0.000
PR	115.000	115.031	0.031	1.000	1.000	0.000
PA	-33.750	-33.856	-0.106	1.000	1.000	0.000

⌖	MM	LOC17 - PNT_TR_MC_PLN_13				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.562	0.562	1.000	1.000	0.000
PR	115.000	114.977	-0.023	1.000	1.000	0.000
PA	11.250	11.149	-0.101	1.000	1.000	0.000

⌖	MM	LOC18 - PNT_TR_MC_PLN_15				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.473	0.473	1.000	1.000	0.000
PR	115.000	114.938	-0.062	1.000	1.000	0.000
PA	56.250	56.164	-0.086	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	-1007.942	-0.442	1.000	1.000	0.000
PR	104.000	103.978	-0.022	1.000	1.000	0.000
PA	101.250	101.165	-0.085	1.000	1.000	0.000

⌖	MM	LOC20 - PNT_TR_FP_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1007.917	-0.417	1.000	1.000	0.000
PR	104.000	103.967	-0.033	1.000	1.000	0.000
PA	146.250	146.180	-0.070	1.000	1.000	0.000

⌖	MM	LOC21 - PNT_TR_FP_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1008.113	-0.613	1.000	1.000	0.000
PR	104.000	103.979	-0.021	1.000	1.000	0.000
PA	-168.750	-168.806	-0.056	1.000	1.000	0.000

⌖	MM	LOC22 - PNT_TR_FP_PLN_7					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1008.610	-1.110	1.000	1.000	0.110	
PR	104.000	104.003	0.003	1.000	1.000	0.000	
PA	-123.750	-123.801	-0.051	1.000	1.000	0.000	
⌖	MM	LOC23 - PNT_TR_FP_PLN_9					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1008.966	-1.466	1.000	1.000	0.466	
PR	104.000	104.095	0.095	1.000	1.000	0.000	
PA	-78.750	-78.762	-0.012	1.000	1.000	0.000	
⌖	MM	LOC24 - PNT_TR_FP_PLN_11					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1008.759	-1.259	1.000	1.000	0.259	
PR	104.000	104.151	0.151	1.000	1.000	0.000	
PA	-33.750	-33.817	-0.067	1.000	1.000	0.000	
⌖	MM	LOC25 - PNT_TR_FP_PLN_13					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1008.232	-0.732	1.000	1.000	0.000	
PR	104.000	104.111	0.111	1.000	1.000	0.000	
PA	11.250	11.123	-0.127	1.000	1.000	0.000	
⌖	MM	LOC26 - PNT_TR_FP_PLN_15					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1008.022	-0.522	1.000	1.000	0.000	
PR	104.000	104.005	0.005	1.000	1.000	0.000	
PA	56.250	56.098	-0.153	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	1008.793	1.293	1.000	1.000	0.293	
↔	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	1008.495	0.995	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	1007.792	0.292	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	1007.077	-0.423	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	1007.296	-0.204	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	1008.474	0.974	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	1009.367	1.867	1.000	1.000	0.867

↔	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	1009.267	1.767	1.000	1.000	0.767

↔	MM	DIST_BETWEEN_PLANES - PLNC_TR_MC TO PLNC_TR_FP (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1007.500	1008.320	0.820	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	-0.051	-0.051	0.200	0.200	0.000
Y	0.000	-969.603	-969.603	2000.000	2000.000	0.000
Z	0.000	-0.096	-0.096	0.200	0.200	0.000
D	210.300	211.172	0.872	0.200	0.200	0.672
RN	0.000	0.231	0.231	0.200	0.000	0.031

⊕	MM	LOC_CC4 - CIRC_CAV_1_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.034	-0.034	0.200	0.200	0.000
Y	0.000	-960.629	-960.629	2000.000	2000.000	0.000
Z	0.000	-0.137	-0.137	0.200	0.200	0.000
D	210.300	211.167	0.867	0.200	0.200	0.667
RN	0.000	0.215	0.215	0.200	0.000	0.015

⊕	MM	LOC_CC5 - CIRC_CAV_2_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.094	-0.094	0.200	0.200	0.000
Y	0.000	-853.603	-853.603	2000.000	2000.000	0.000
Z	0.000	-0.369	-0.369	0.200	0.200	0.169
D	210.300	211.040	0.740	0.200	0.200	0.540
RN	0.000	0.195	0.195	0.200	0.000	0.000

⊕	MM	LOC_CC6 - CIRC_CAV_2_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.087	-0.087	0.200	0.200	0.000
Y	0.000	-844.876	-844.876	2000.000	2000.000	0.000
Z	0.000	-0.325	-0.325	0.200	0.200	0.125
D	210.300	211.044	0.744	0.200	0.200	0.544
RN	0.000	0.203	0.203	0.200	0.000	0.003

⊕	MM	LOC_CC7 - CIRC_CAV_3_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.188	-0.188	0.200	0.200	0.000
Y	0.000	-738.381	-738.381	2000.000	2000.000	0.000
Z	0.000	-0.475	-0.475	0.200	0.200	0.275
D	210.300	211.024	0.724	0.200	0.200	0.524
RN	0.000	0.153	0.153	0.200	0.000	0.000

⊕	MM	LOC_CC8 - CIRC_CAV_3_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.177	-0.177	0.200	0.200	0.000
Y	0.000	-729.711	-729.711	2000.000	2000.000	0.000
Z	0.000	-0.476	-0.476	0.200	0.200	0.276
D	210.300	211.272	0.972	0.200	0.200	0.772
RN	0.000	0.217	0.217	0.200	0.000	0.017

⊕	MM	LOC_CC9 - CIRC_CAV_4_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.226	-0.226	0.200	0.200	0.026
Y	0.000	-622.487	-622.487	2000.000	2000.000	0.000
Z	0.000	-0.647	-0.647	0.200	0.200	0.447
D	210.300	211.065	0.765	0.200	0.200	0.565
RN	0.000	0.236	0.236	0.200	0.000	0.036

⊕	MM	LOC_CC10 - CIRC_CAV_4_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.192	-0.192	0.200	0.200	0.000
Y	0.000	-613.894	-613.894	2000.000	2000.000	0.000
Z	0.000	-0.673	-0.673	0.200	0.200	0.473
D	210.300	211.217	0.917	0.200	0.200	0.717
RN	0.000	0.236	0.236	0.200	0.000	0.036

⊕	MM	LOC_CC11 - CIRC_CAV_5_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.265	-0.265	0.200	0.200	0.065
Y	0.000	-506.835	-506.835	2000.000	2000.000	0.000
Z	0.000	-0.757	-0.757	0.200	0.200	0.557
D	210.300	211.237	0.937	0.200	0.200	0.737
RN	0.000	0.212	0.212	0.200	0.000	0.012

⊕	MM	LOC_CC12 - CIRC_CAV_5_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.258	-0.258	0.200	0.200	0.058
Y	0.000	-498.341	-498.341	2000.000	2000.000	0.000
Z	0.000	-0.729	-0.729	0.200	0.200	0.529
D	210.300	211.293	0.993	0.200	0.200	0.793
RN	0.000	0.230	0.230	0.200	0.000	0.030

⊕	MM	LOC_CC13 - CIRC_CAV_6_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.277	-0.277	0.200	0.200	0.077
Y	0.000	-391.696	-391.696	2000.000	2000.000	0.000
Z	0.000	-0.722	-0.722	0.200	0.200	0.522
D	210.300	211.177	0.877	0.200	0.200	0.677
RN	0.000	0.165	0.165	0.200	0.000	0.000

⊕	MM	LOC_CC14 - CIRC_CAV_6_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.308	-0.308	0.200	0.200	0.108
Y	0.000	-382.595	-382.595	2000.000	2000.000	0.000
Z	0.000	-0.699	-0.699	0.200	0.200	0.499
D	210.300	211.220	0.920	0.200	0.200	0.720
RN	0.000	0.262	0.262	0.200	0.000	0.062

⊕	MM	LOC_CC15 - CIRC_CAV_7_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.343	-0.343	0.200	0.200	0.143
Y	0.000	-275.908	-275.908	2000.000	2000.000	0.000
Z	0.000	-0.590	-0.590	0.200	0.200	0.390
D	210.300	210.956	0.656	0.200	0.200	0.456
RN	0.000	0.210	0.210	0.200	0.000	0.010

⊕	MM	LOC_CC16 - CIRC_CAV_7_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.315	-0.315	0.200	0.200	0.115
Y	0.000	-267.022	-267.022	2000.000	2000.000	0.000
Z	0.000	-0.630	-0.630	0.200	0.200	0.430
D	210.300	211.196	0.896	0.200	0.200	0.696
RN	0.000	0.204	0.204	0.200	0.000	0.004

⊕	MM	LOC_CC17 - CIRC_CAV_8_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.227	-0.227	0.200	0.200	0.027
Y	0.000	-160.047	-160.047	2000.000	2000.000	0.000
Z	0.000	-0.464	-0.464	0.200	0.200	0.264
D	210.300	211.222	0.922	0.200	0.200	0.722
RN	0.000	0.236	0.236	0.200	0.000	0.036

⊕	MM	LOC_CC18 - CIRC_CAV_8_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.240	-0.240	0.200	0.200	0.040
Y	0.000	-151.444	-151.444	2000.000	2000.000	0.000
Z	0.000	-0.446	-0.446	0.200	0.200	0.246
D	210.300	211.355	1.055	0.200	0.200	0.855
RN	0.000	0.191	0.191	0.200	0.000	0.000

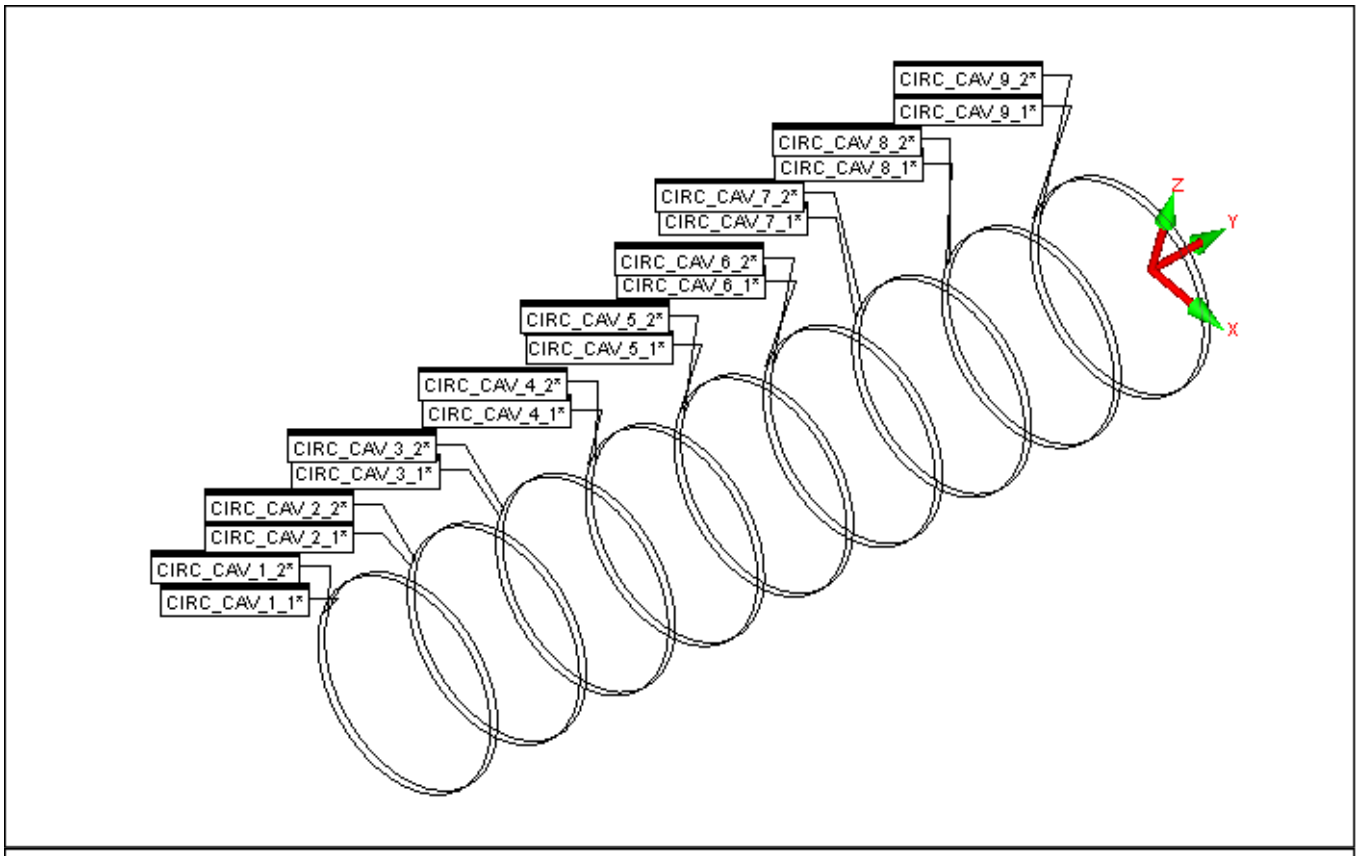
⊕	MM	LOC_CC19 - CIRC_CAV_9_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.113	-0.113	0.200	0.200	0.000
Y	0.000	-44.547	-44.547	2000.000	2000.000	0.000
Z	0.000	-0.237	-0.237	0.200	0.200	0.037
D	210.300	211.141	0.841	0.200	0.200	0.641
RN	0.000	0.216	0.216	0.200	0.000	0.016

⊕	MM	LOC_CC20 - CIRC_CAV_9_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.147	-0.147	0.200	0.200	0.000
Y	0.000	-35.694	-35.694	2000.000	2000.000	0.000
Z	0.000	-0.224	-0.224	0.200	0.200	0.024
D	210.300	211.189	0.889	0.200	0.200	0.689
RN	0.000	0.246	0.246	0.200	0.000	0.046

Location of End Flanges

⊕	MM	LOC_23 - CIR_END_FLANGE_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.243	0.243	0.200	0.200	0.043
Y	0.000	117.035	117.035	2000.000	2000.000	0.000
Z	0.000	0.268	0.268	0.200	0.200	0.068
D	140.000	140.031	0.031	0.300	0.300	0.000
RN	0.000	0.014	0.014	0.200	0.000	0.000

⊕	MM	LOC_24 - CIR_END_FLANGE_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.150	0.150	0.200	0.200	0.000
Y	-1153.884	-1121.722	32.163	2000.000	2000.000	0.000
Z	0.000	0.256	0.256	0.200	0.200	0.056
D	140.000	139.969	-0.031	0.300	0.300	0.000
RN	0.000	0.010	0.010	0.200	0.000	0.000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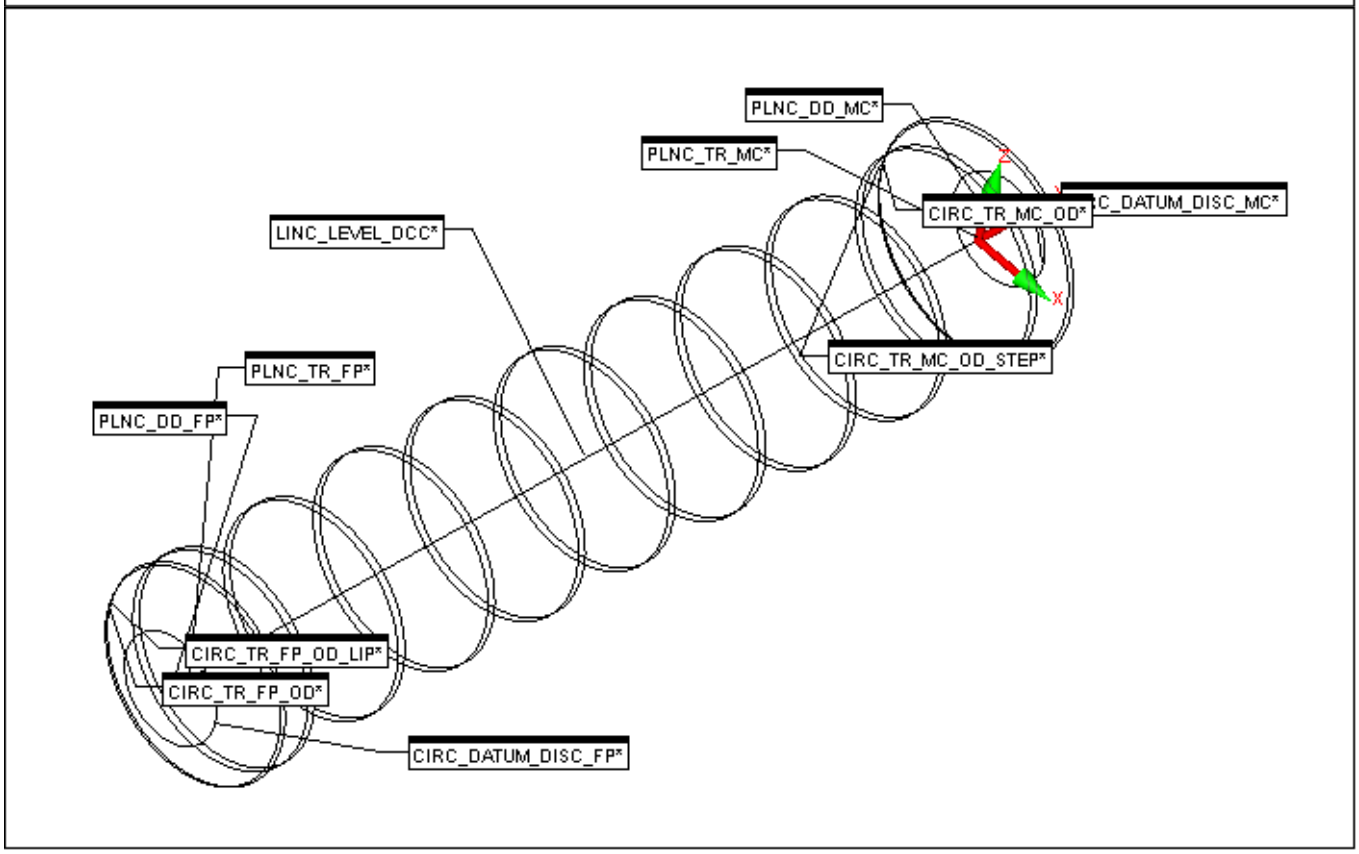
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X