pc-dmis	PART NAME : PN440004-n-Trans-Rings-000-TB9ACC012-v4-IR		January 18, 2011	16:06
	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' : TB9ACC012
' ' : 1101181459

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	27.079	2.079	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.802	-0.198	0.050	0.050	0.148
RN	0.000	0.020	0.020	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	-1028.278	4.107	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.883	-0.117	0.050	0.050	0.067
RN	0.000	0.038	0.038	0.050	0.000	0.000

Datum Disc planes

⌖	MM	LOC3 - PLNC_DD_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	27.000	29.268	2.268	10.000	10.000	0.000
FL	0.000	0.081	0.081	0.100	0.000	0.000

⌖	MM	LOC4 - PLNC_DD_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1034.384	-1030.361	4.023	10.000	10.000	0.000
FL	0.000	0.051	0.051	0.100	0.000	0.000

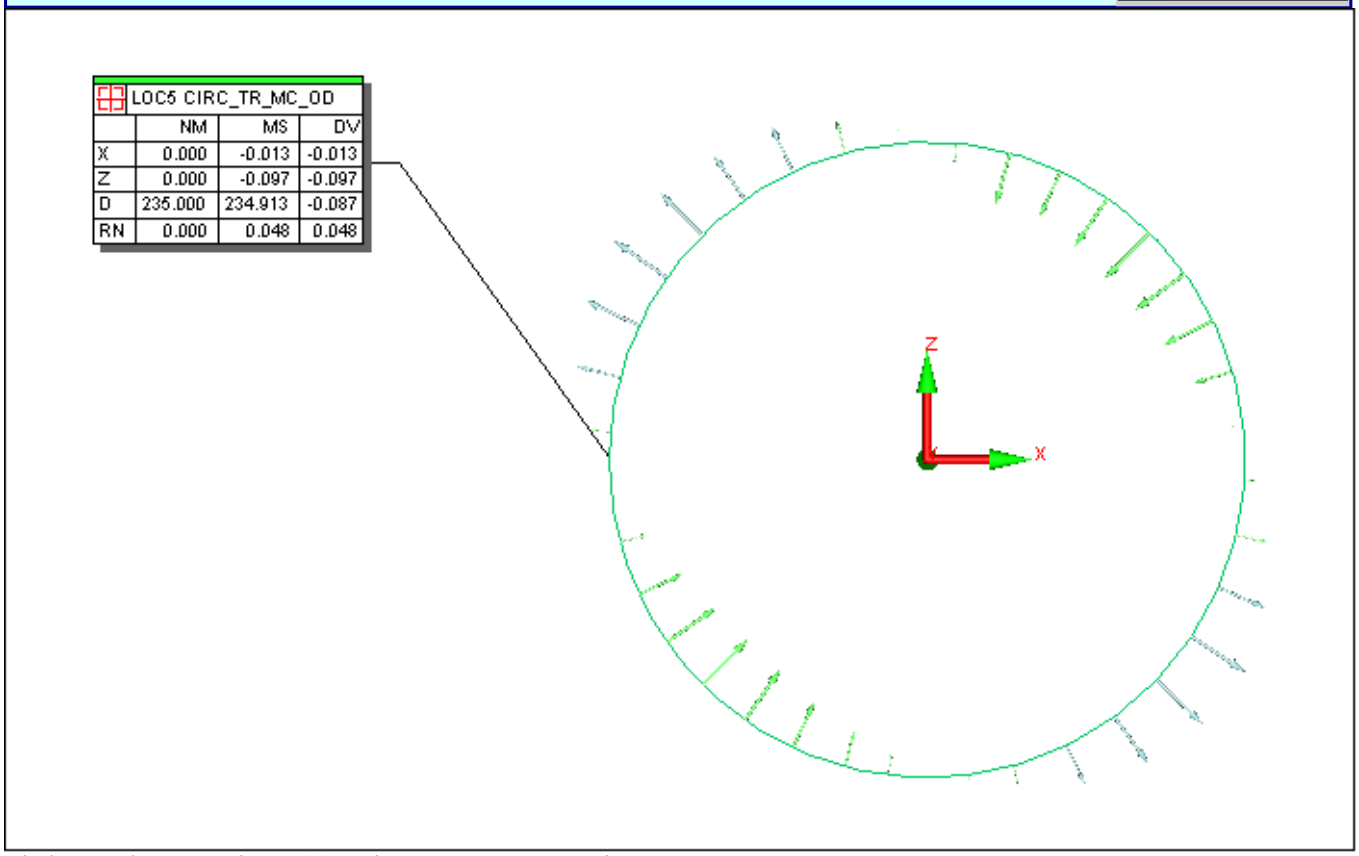
Distance between Datum Disc planes

↔	MM	DIST1 - PLNC_DD_FP TO PLNC_DD_MC (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1061.060	1059.629	-1.431	0.200	0.200	-1.231	

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	-0.013	-0.013	0.250	0.250	0.000	
Z	0.000	-0.097	-0.097	0.250	0.250	0.000	
D	235.000	234.913	-0.087	0.250	0.250	0.000	
RN	0.000	0.048	0.048	0.250	0.000	0.000	

○	MM	RND1 - CIRC_TR_MC_OD					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.048	0.048	0.250	0.000	0.000	

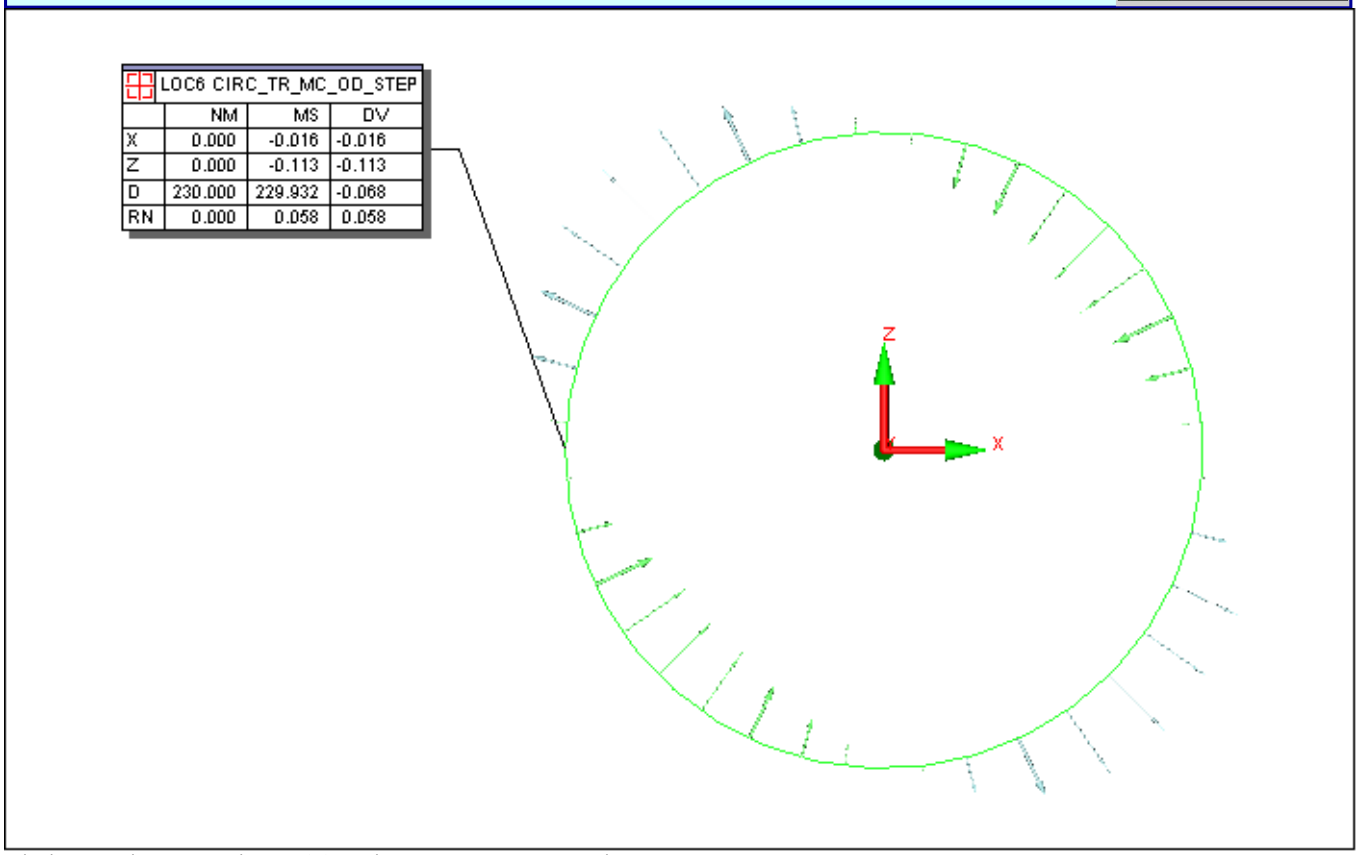


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D. x1000

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	-0.016	-0.016	0.250	0.250	0.000
Z	0.000	-0.113	-0.113	0.250	0.250	0.000
D	230.000	229.932	-0.068	0.000	0.250	0.000
RN	0.000	0.058	0.058	0.250	0.000	0.000

	MM	RND2 - CIRC_TR_MC_OD_STEP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.058	0.058	0.250	0.000	0.000

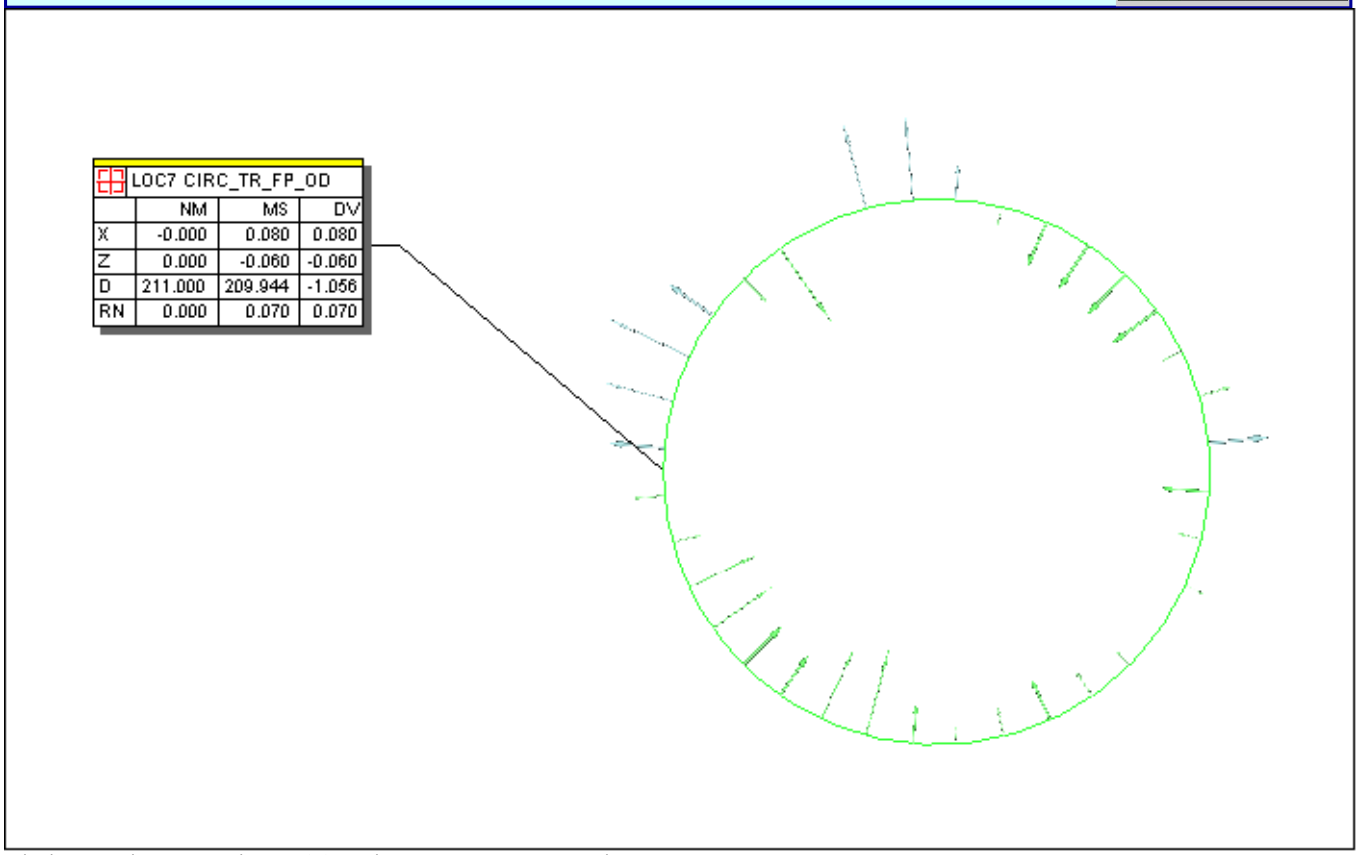


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step x1000

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	0.080	0.080	0.250	0.250	0.000
Z	0.000	-0.060	-0.060	0.250	0.250	0.000
D	211.000	209.944	-1.056	0.250	0.250	0.806
RN	0.000	0.070	0.070	0.250	0.000	0.000

	MM	RND3 - CIRC_TR_FP_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.070	0.070	0.250	0.000	0.000

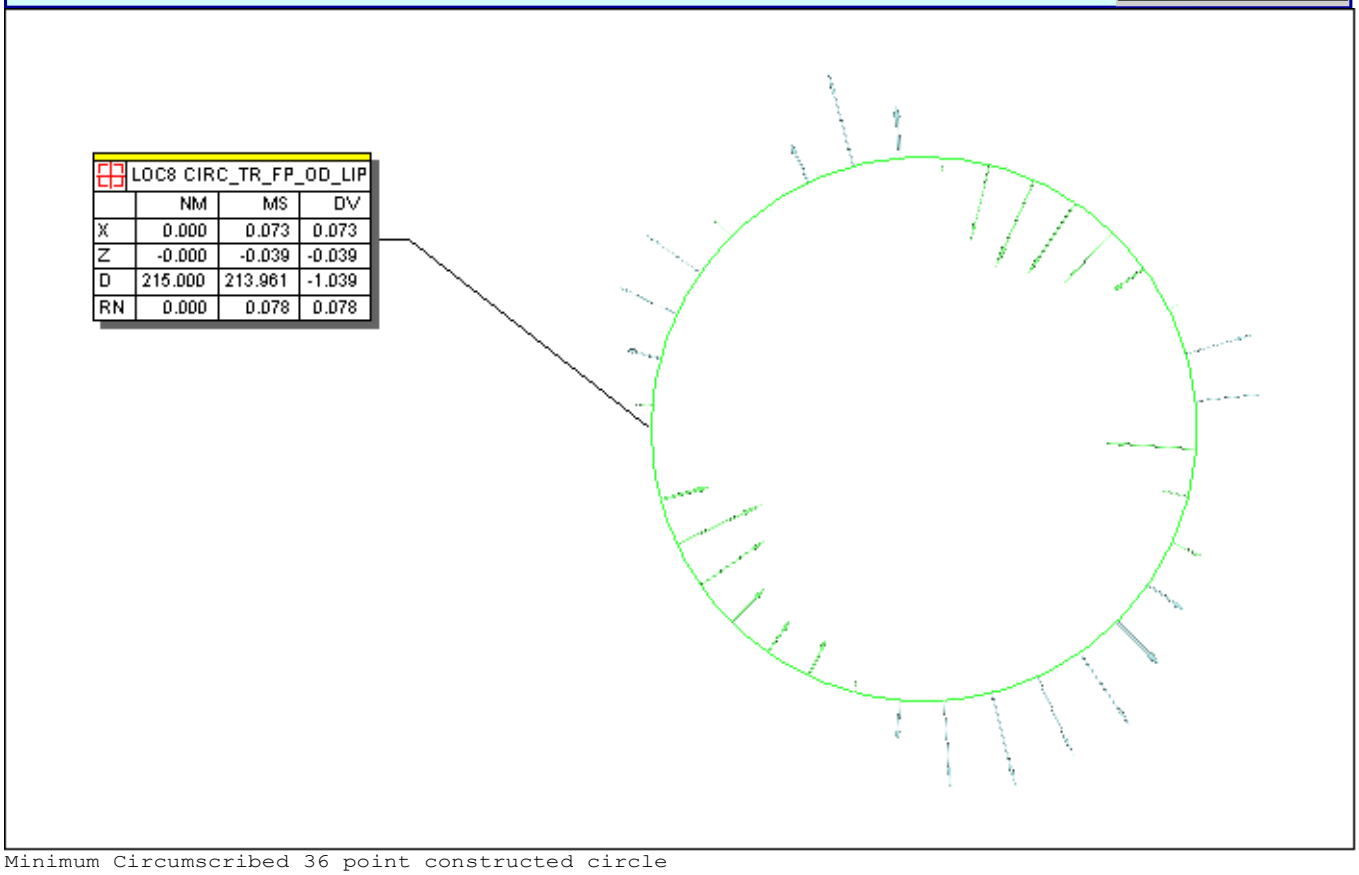


Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D. x1000

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

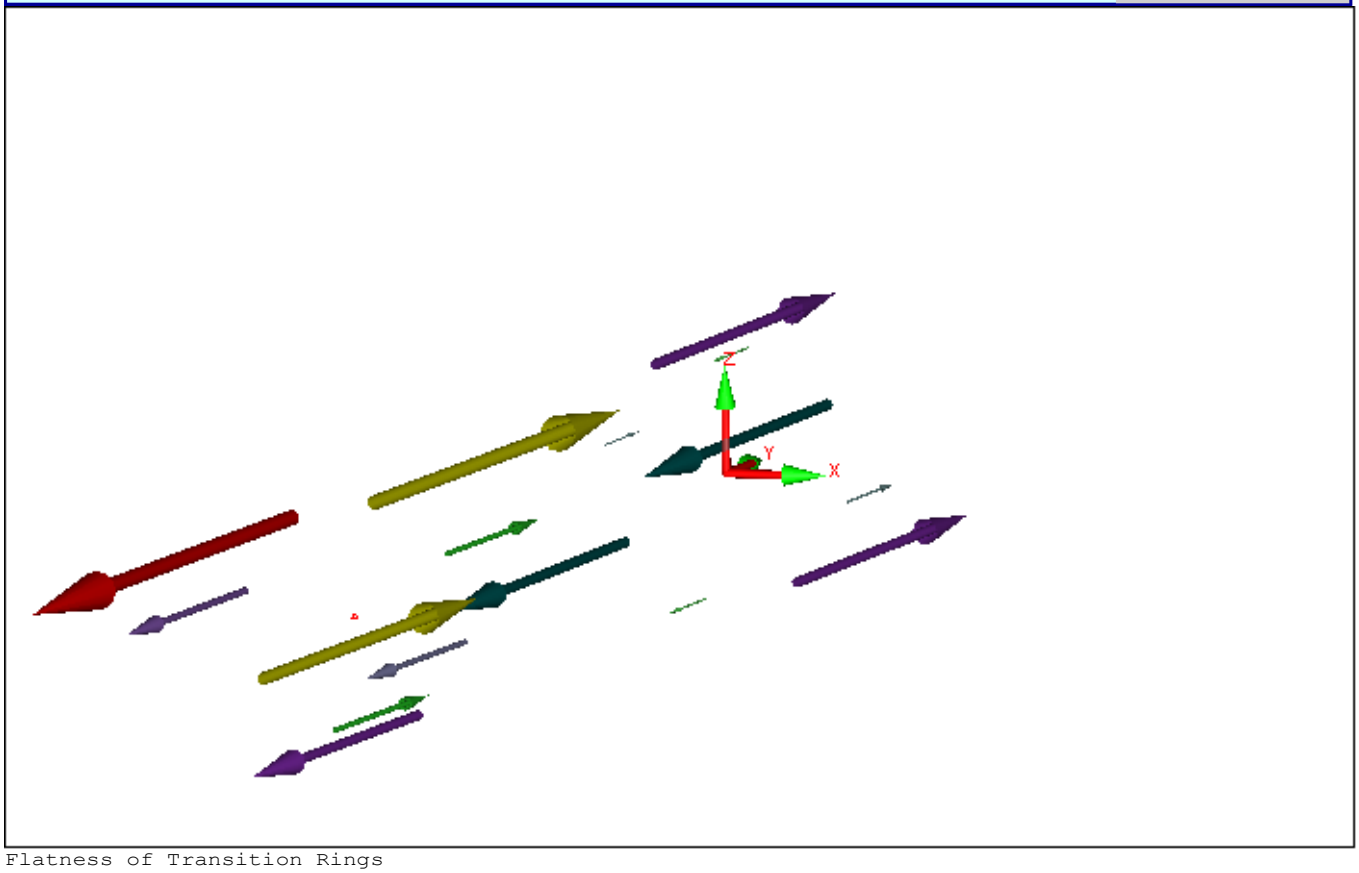
⌗	MM	LOC8 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.073	0.073	0.250	0.250	0.000
Z	0.000	-0.039	-0.039	0.250	0.250	0.000
D	215.000	213.961	-1.039	0.250	0.250	0.789
RN	0.000	0.078	0.078	0.250	0.000	0.000

○	MM	RND4 - CIRC_TR_FP_OD_LIP				
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
215.0 O.D. lip x1000

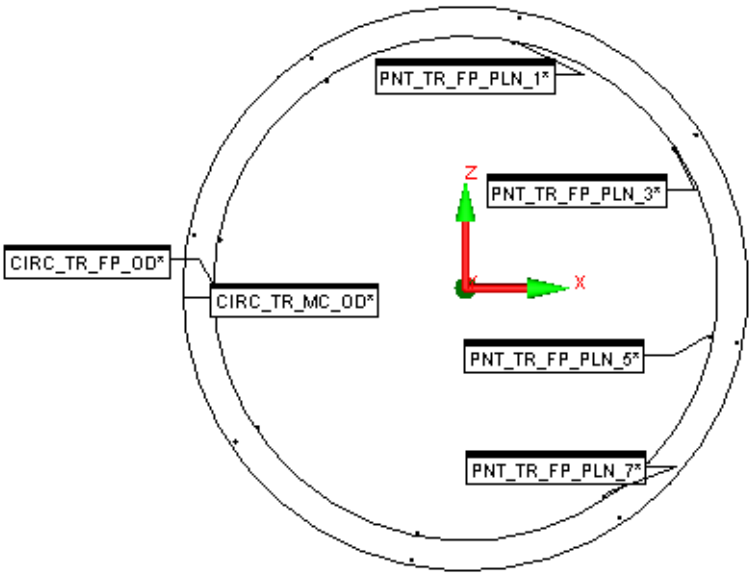
⌖	MM	LOC9 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	0.000	0.000	0.000	0.000	0.000	0.000	
FL	0.000	0.197	0.197	0.200	0.000	0.000	
AX		I		J		K	
V		0.002		1.000		0.004	
⌖	MM	LOC10 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1004.532	2.968	10.000	10.000	0.000	
FL	0.000	0.270	0.270	0.200	0.000	0.070	
AX		I		J		K	
V		-0.004		-1.000		0.002	
▱	MM	FLAT3 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.197	0.197	0.200	0.000	0.000	
▱	MM	FLAT4 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.270	0.270	0.200	0.000	0.070	



Flatness of Transition Rings
x5000

⊥	MM	PERP1 - PLNC_TR_MC TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	0.940	0.940	0.200	0	0.740

⊥	MM	PERP2 - PLNC_TR_FP TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	0.685	0.685	0.200	0	0.485



Transition Ring points Main Coupler end

⊕	MM	LOC11 - PNT_TR_MC_PLN_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.489	-0.489	1.000	1.000	0.000
PR	115.000	114.994	-0.006	1.000	1.000	0.000
PA	101.250	101.241	-0.009	1.000	1.000	0.000

⊕	MM	LOC12 - PNT_TR_MC_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.414	-0.414	1.000	1.000	0.000
PR	115.000	114.999	-0.001	1.000	1.000	0.000
PA	146.250	146.242	-0.008	1.000	1.000	0.000

⊕	MM	LOC13 - PNT_TR_MC_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.050	0.050	1.000	1.000	0.000
PR	115.000	115.005	0.005	1.000	1.000	0.000
PA	-168.750	-168.753	-0.003	1.000	1.000	0.000

⌖	MM	LOC14 - PNT_TR_MC_PLN_7				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.442	0.442	1.000	1.000	0.000
PR	115.000	115.014	0.014	1.000	1.000	0.000
PA	-123.750	-123.756	-0.006	1.000	1.000	0.000

⌖	MM	LOC15 - PNT_TR_MC_PLN_9				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.451	0.451	1.000	1.000	0.000
PR	115.000	115.011	0.011	1.000	1.000	0.000
PA	-78.750	-78.763	-0.013	1.000	1.000	0.000

⌖	MM	LOC16 - PNT_TR_MC_PLN_11				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.220	0.220	1.000	1.000	0.000
PR	115.000	115.004	0.004	1.000	1.000	0.000
PA	-33.750	-33.765	-0.015	1.000	1.000	0.000

⌖	MM	LOC17 - PNT_TR_MC_PLN_13				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.007	-0.007	1.000	1.000	0.000
PR	115.000	114.996	-0.004	1.000	1.000	0.000
PA	11.250	11.233	-0.017	1.000	1.000	0.000

⌖	MM	LOC18 - PNT_TR_MC_PLN_15				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.253	-0.253	1.000	1.000	0.000
PR	115.000	114.991	-0.009	1.000	1.000	0.000
PA	56.250	56.238	-0.012	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	-1004.252	3.248	1.000	1.000	2.248
PR	104.000	104.022	0.022	1.000	1.000	0.000
PA	101.250	101.224	-0.026	1.000	1.000	0.000

⌖	MM	LOC20 - PNT_TR_FP_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1004.589	2.911	1.000	1.000	1.911
PR	104.000	104.000	0.000	1.000	1.000	0.000
PA	146.250	146.221	-0.029	1.000	1.000	0.000

⌖	MM	LOC21 - PNT_TR_FP_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1004.884	2.616	1.000	1.000	1.616
PR	104.000	103.975	-0.025	1.000	1.000	0.000
PA	-168.750	-168.772	-0.022	1.000	1.000	0.000

⌖	MM	LOC22 - PNT_TR_FP_PLN_7					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1004.938	2.562	1.000	1.000	1.562	
PR	104.000	103.963	-0.037	1.000	1.000	0.000	
PA	-123.750	-123.757	-0.007	1.000	1.000	0.000	
⌖	MM	LOC23 - PNT_TR_FP_PLN_9					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1004.631	2.869	1.000	1.000	1.869	
PR	104.000	104.021	0.021	1.000	1.000	0.000	
PA	-78.750	-78.808	-0.058	1.000	1.000	0.000	
⌖	MM	LOC24 - PNT_TR_FP_PLN_11					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1004.312	3.188	1.000	1.000	2.188	
PR	104.000	103.956	-0.044	1.000	1.000	0.000	
PA	-33.750	-33.799	-0.049	1.000	1.000	0.000	
⌖	MM	LOC25 - PNT_TR_FP_PLN_13					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1004.298	3.202	1.000	1.000	2.202	
PR	104.000	103.918	-0.081	1.000	1.000	0.000	
PA	11.250	11.228	-0.022	1.000	1.000	0.000	
⌖	MM	LOC26 - PNT_TR_FP_PLN_15					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1004.356	3.144	1.000	1.000	2.144	
PR	104.000	103.924	-0.076	1.000	1.000	0.000	
PA	56.250	56.266	0.016	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	1004.291	-3.209	1.000	1.000	-2.209	
↔	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	1004.103	-3.397	1.000	1.000	-2.397	
↔	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	1003.764	-3.736	1.000	1.000	-2.736	
↔	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	1004.175	-3.325	1.000	1.000	-2.325	
↔	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	1004.933	-2.567	1.000	1.000	-1.567	

↔	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	1005.380	-2.120	1.000	1.000	-1.120	

↔	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	1005.082	-2.418	1.000	1.000	-1.418	

↔	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	1004.532	-2.968	1.000	1.000	-1.968	

↔	MM	DIST_BETWEEN_PLANES - PLNC_TR_MC TO PLNC_TR_FP (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1004.532	-2.968	1.000	1.000	-1.968	

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	0.137	0.137	0.200	0.200	0.000	
Y	0.000	-967.337	-967.337	2000.000	2000.000	0.000	
Z	0.000	0.018	0.018	0.200	0.200	0.000	
D	210.300	210.688	0.388	0.200	0.200	0.188	
RN	0.000	0.158	0.158	0.200	0.000	0.000	

⊕	MM	LOC_CC4 - CIRC_CAV_1_2					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.171	0.171	0.200	0.200	0.000	
Y	0.000	-955.270	-955.270	2000.000	2000.000	0.000	
Z	0.000	0.003	0.003	0.200	0.200	0.000	
D	210.300	210.571	0.271	0.200	0.200	0.071	
RN	0.000	0.104	0.104	0.200	0.000	0.000	

⊕	MM	LOC_CC5 - CIRC_CAV_2_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.496	0.496	0.200	0.200	0.296	
Y	0.000	-852.325	-852.325	2000.000	2000.000	0.000	
Z	0.000	0.000	0.000	0.200	0.200	0.000	
D	210.300	210.620	0.320	0.200	0.200	0.120	
RN	0.000	0.077	0.077	0.200	0.000	0.000	

⊕	MM	LOC_CC6 - CIRC_CAV_2_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.481	0.481	0.200	0.200	0.281
Y	0.000	-840.302	-840.302	2000.000	2000.000	0.000
Z	0.000	-0.018	-0.018	0.200	0.200	0.000
D	210.300	210.563	0.263	0.200	0.200	0.063
RN	0.000	0.134	0.134	0.200	0.000	0.000

⊕	MM	LOC_CC7 - CIRC_CAV_3_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.630	0.630	0.200	0.200	0.430
Y	0.000	-737.301	-737.301	2000.000	2000.000	0.000
Z	0.000	0.018	0.018	0.200	0.200	0.000
D	210.300	210.628	0.328	0.200	0.200	0.128
RN	0.000	0.124	0.124	0.200	0.000	0.000

⊕	MM	LOC_CC8 - CIRC_CAV_3_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.645	0.645	0.200	0.200	0.445
Y	0.000	-725.811	-725.811	2000.000	2000.000	0.000
Z	0.000	0.034	0.034	0.200	0.200	0.000
D	210.300	210.595	0.295	0.200	0.200	0.095
RN	0.000	0.055	0.055	0.200	0.000	0.000

⊕	MM	LOC_CC9 - CIRC_CAV_4_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.654	0.654	0.200	0.200	0.454
Y	0.000	-623.090	-623.090	2000.000	2000.000	0.000
Z	0.000	0.114	0.114	0.200	0.200	0.000
D	210.300	210.611	0.311	0.200	0.200	0.111
RN	0.000	0.111	0.111	0.200	0.000	0.000

⊕	MM	LOC_CC10 - CIRC_CAV_4_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.679	0.679	0.200	0.200	0.479
Y	0.000	-610.862	-610.862	2000.000	2000.000	0.000
Z	0.000	0.128	0.128	0.200	0.200	0.000
D	210.300	210.586	0.286	0.200	0.200	0.086
RN	0.000	0.081	0.081	0.200	0.000	0.000

⊕	MM	LOC_CC11 - CIRC_CAV_5_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.441	0.441	0.200	0.200	0.241
Y	0.000	-506.131	-506.131	2000.000	2000.000	0.000
Z	0.000	-0.004	-0.004	0.200	0.200	0.000
D	210.300	210.703	0.403	0.200	0.200	0.203
RN	0.000	0.090	0.090	0.200	0.000	0.000

⊕	MM	LOC_CC12 - CIRC_CAV_5_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.473	0.473	0.200	0.200	0.273
Y	0.000	-494.922	-494.922	2000.000	2000.000	0.000
Z	0.000	-0.022	-0.022	0.200	0.200	0.000
D	210.300	210.619	0.319	0.200	0.200	0.119
RN	0.000	0.134	0.134	0.200	0.000	0.000

⊕	MM	LOC_CC13 - CIRC_CAV_6_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.289	0.289	0.200	0.200	0.089
Y	0.000	-391.033	-391.033	2000.000	2000.000	0.000
Z	0.000	-0.117	-0.117	0.200	0.200	0.000
D	210.300	210.629	0.329	0.200	0.200	0.129
RN	0.000	0.031	0.031	0.200	0.000	0.000

⊕	MM	LOC_CC14 - CIRC_CAV_6_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.277	0.277	0.200	0.200	0.077
Y	0.000	-379.836	-379.836	2000.000	2000.000	0.000
Z	0.000	-0.143	-0.143	0.200	0.200	0.000
D	210.300	210.598	0.298	0.200	0.200	0.098
RN	0.000	0.072	0.072	0.200	0.000	0.000

⊕	MM	LOC_CC15 - CIRC_CAV_7_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.214	0.214	0.200	0.200	0.014
Y	0.000	-275.575	-275.575	2000.000	2000.000	0.000
Z	0.000	-0.205	-0.205	0.200	0.200	0.005
D	210.300	210.630	0.330	0.200	0.200	0.130
RN	0.000	0.159	0.159	0.200	0.000	0.000

⊕	MM	LOC_CC16 - CIRC_CAV_7_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.270	0.270	0.200	0.200	0.070
Y	0.000	-264.304	-264.304	2000.000	2000.000	0.000
Z	0.000	-0.202	-0.202	0.200	0.200	0.002
D	210.300	210.606	0.306	0.200	0.200	0.106
RN	0.000	0.112	0.112	0.200	0.000	0.000

⊕	MM	LOC_CC17 - CIRC_CAV_8_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.121	-0.121	0.200	0.200	0.000
Y	0.000	-160.610	-160.610	2000.000	2000.000	0.000
Z	0.000	-0.234	-0.234	0.200	0.200	0.034
D	210.300	210.661	0.361	0.200	0.200	0.161
RN	0.000	0.297	0.297	0.200	0.000	0.097

⌖	MM	LOC_CC18 - CIRC_CAV_8_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.060	0.060	0.200	0.200	0.000
Y	0.000	-150.562	-150.562	2000.000	2000.000	0.000
Z	0.000	-0.242	-0.242	0.200	0.200	0.042
D	210.300	211.080	0.780	0.200	0.200	0.580
RN	0.000	0.231	0.231	0.200	0.000	0.031

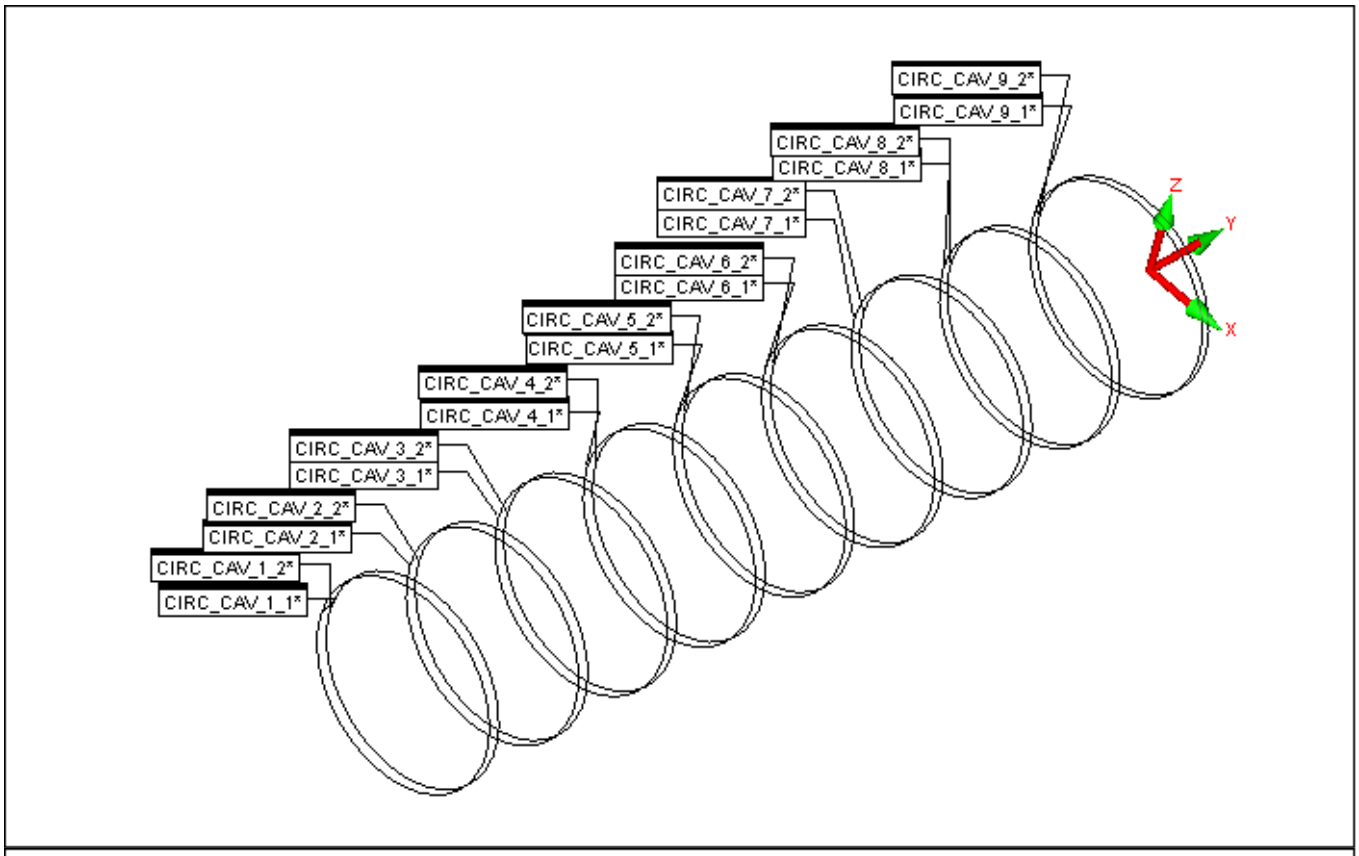
⌖	MM	LOC_CC19 - CIRC_CAV_9_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.023	-0.023	0.200	0.200	0.000
Y	0.000	-43.781	-43.781	2000.000	2000.000	0.000
Z	0.000	-0.060	-0.060	0.200	0.200	0.000
D	210.300	210.995	0.695	0.200	0.200	0.495
RN	0.000	0.165	0.165	0.200	0.000	0.000

⌖	MM	LOC_CC20 - CIRC_CAV_9_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.037	-0.037	0.200	0.200	0.000
Y	0.000	-35.086	-35.086	2000.000	2000.000	0.000
Z	0.000	-0.073	-0.073	0.200	0.200	0.000
D	210.300	210.961	0.661	0.200	0.200	0.461
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	-0.140	-0.140	0.200	0.200	0.000
Y	0.000	116.873	116.873	2000.000	2000.000	0.000
Z	0.000	0.296	0.296	0.200	0.200	0.096
D	140.000	139.964	-0.036	0.300	0.300	0.000
RN	0.000	0.007	0.007	0.200	0.000	0.000

⌖	MM	LOC_24 - CIR_END_FLANGE_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.219	-0.219	0.200	0.200	0.019
Y	-1153.884	-1116.781	37.103	2000.000	2000.000	0.000
Z	0.000	0.261	0.261	0.200	0.200	0.061
D	140.000	140.056	0.056	0.300	0.300	0.000
RN	0.000	0.005	0.005	0.200	0.000	0.000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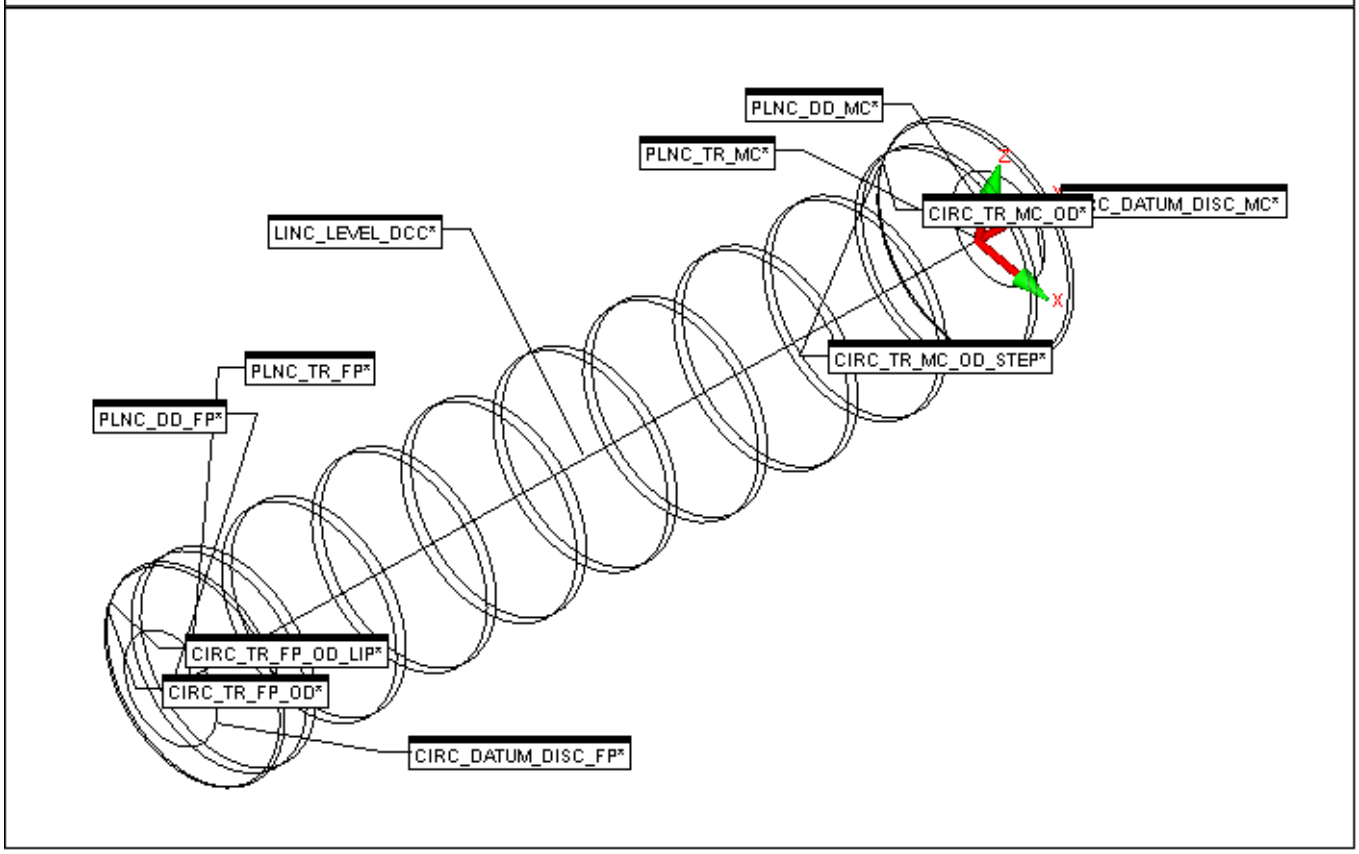
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