pc-dmis	PART NAME : PN440004-n-Trans-Rings-000-TB9NR004-v4-IR		April 04, 2011	11:37
	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' : TB9NR004
' ' : 1104041035

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	26.061	1.061	10.000	10.000	0.000	
Z	0.000	0.000	0.000	0.000	0.000	0.000	
D	111.000	110.833	-0.167	0.050	0.050	0.117	
RN	0.000	0.074	0.074	0.050	0.000	0.024	

#	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	-1033.364	-0.980	10.000	10.000	0.000	
Z	0.000	0.000	0.000	0.000	0.000	0.000	
D	111.000	110.816	-0.184	0.050	0.050	0.134	
RN	0.000	0.124	0.124	0.050	0.000	0.074	

Datum Disc planes

#	MM	LOC3 - PLNC_DD_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	27.000	27.885	0.885	10.000	10.000	0.000	
FL	0.000	0.065	0.065	0.100	0.000	0.000	

#	MM	LOC4 - PLNC_DD_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1034.384	-1035.719	-1.335	10.000	10.000	0.000	
FL	0.000	0.074	0.074	0.100	0.000	0.000	

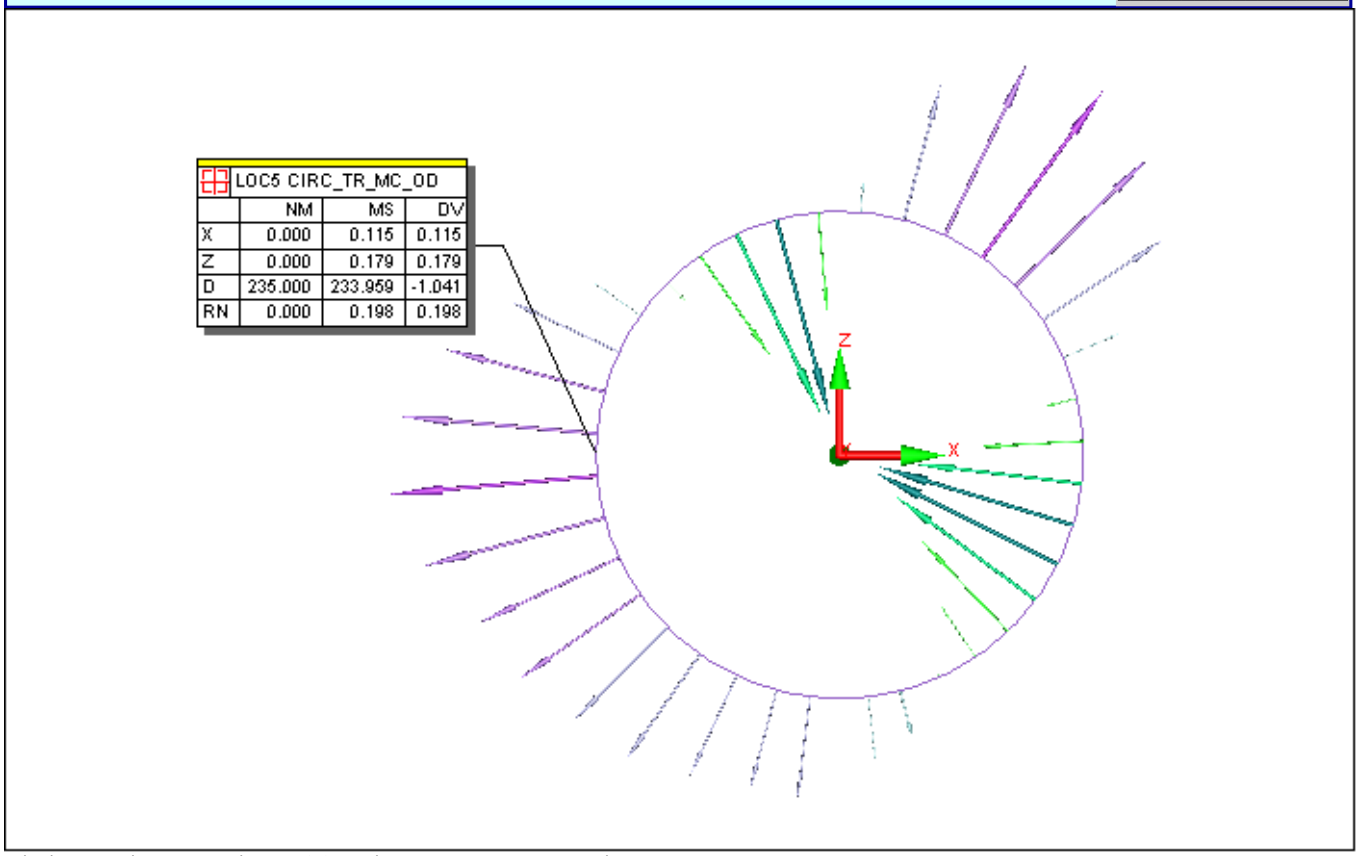
Distance between Datum Disc planes

↔	MM	DIST1 - PLNC_DD_FP TO PLNC_DD_MC (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1061.060	1063.605	2.545	0.200	0.200	2.345

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	0.115	0.115	0.250	0.250	0.000
Z	0.000	0.179	0.179	0.250	0.250	0.000
D	235.000	233.959	-1.041	0.250	0.250	0.791
RN	0.000	0.198	0.198	0.250	0.000	0.000

○	MM	RND1 - CIRC_TR_MC_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.198	0.198	0.250	0.000	0.000

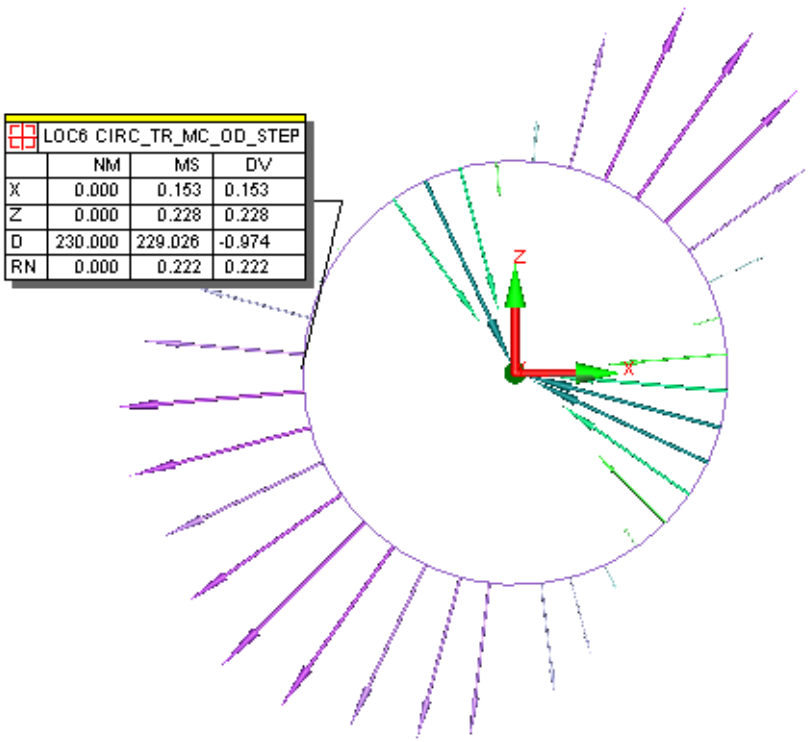


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D. x1000

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	0.153	0.153	0.250	0.250	0.000
Z	0.000	0.228	0.228	0.250	0.250	0.000
D	230.000	229.026	-0.974	0.000	0.250	0.724
RN	0.000	0.222	0.222	0.250	0.000	0.000

○	MM	RND2 - CIRC_TR_MC_OD_STEP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.222	0.222	0.250	0.000	0.000

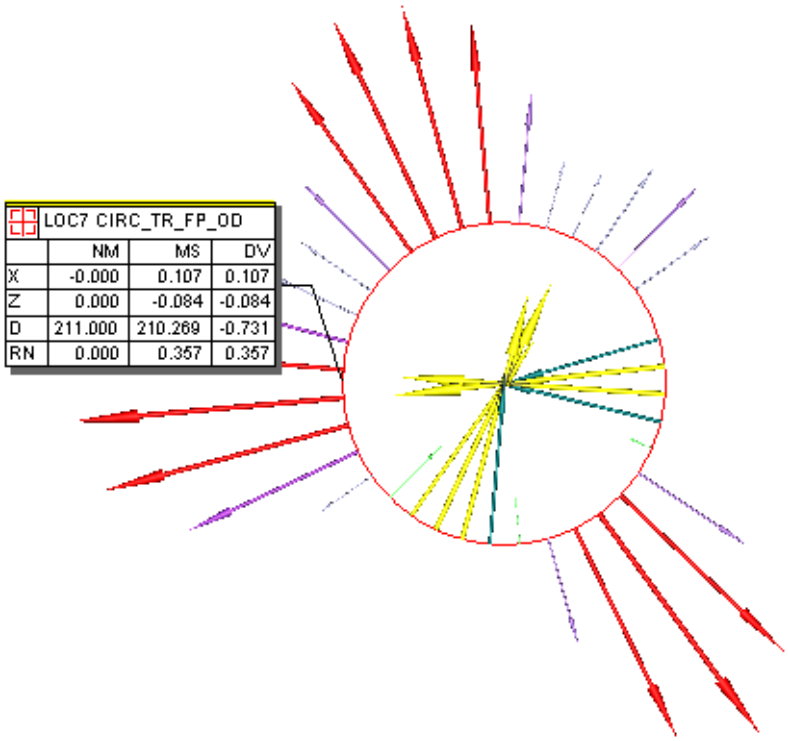


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step x1000

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	0.107	0.107	0.250	0.250	0.000
Z	0.000	-0.084	-0.084	0.250	0.250	0.000
D	211.000	210.269	-0.731	0.250	0.250	0.481
RN	0.000	0.357	0.357	0.250	0.000	0.107

	MM	RND3 - CIRC_TR_FP_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.357	0.357	0.250	0.000	0.107

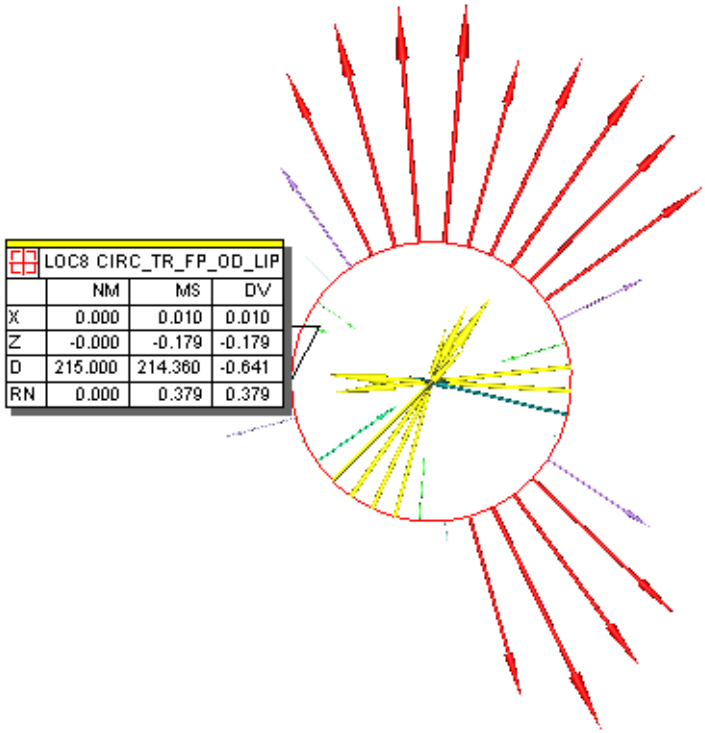


Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D. x1000

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

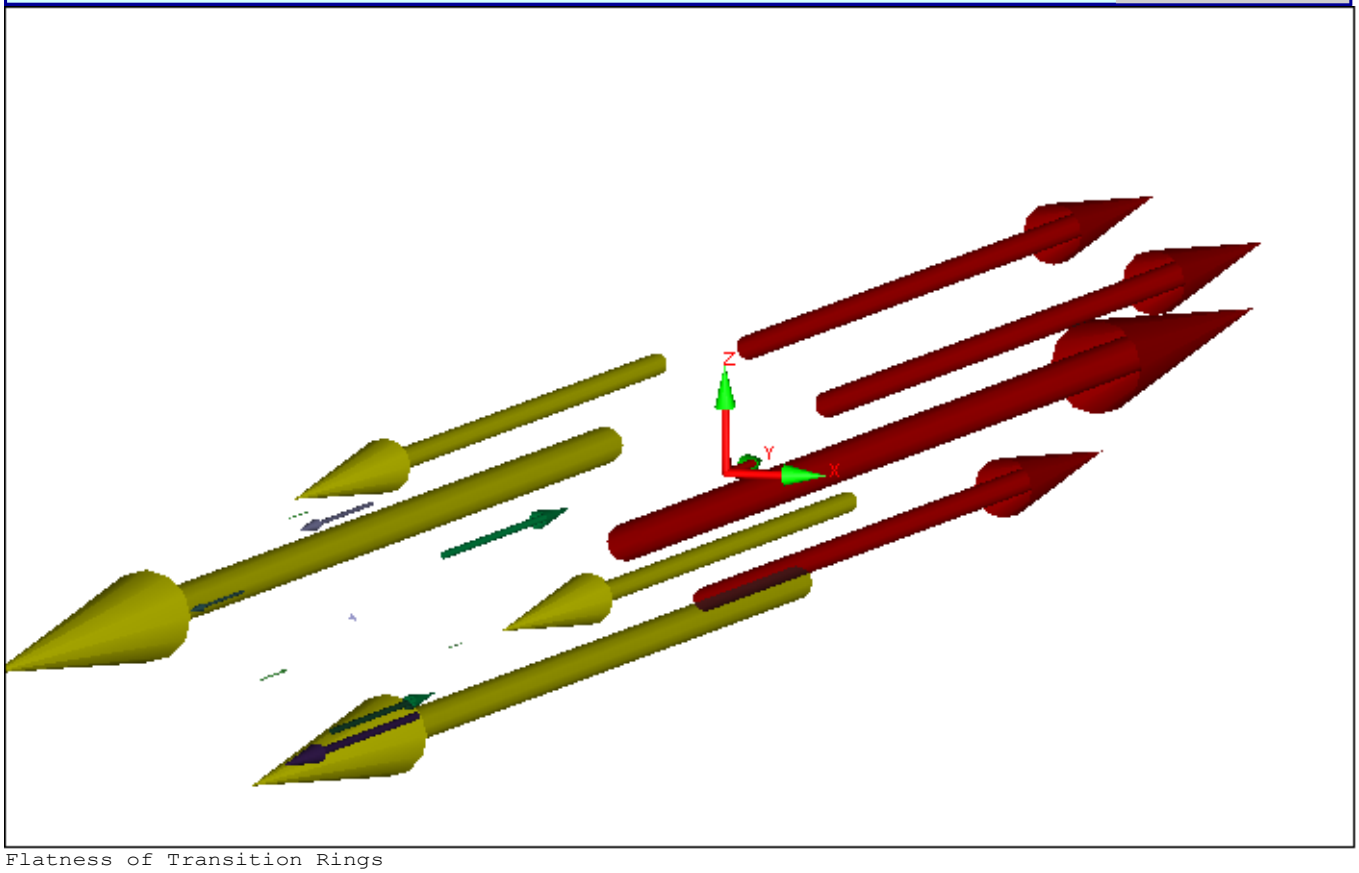
⌗	MM	LOC8 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.010	0.010	0.250	0.250	0.000
Z	0.000	-0.179	-0.179	0.250	0.250	0.000
D	215.000	214.360	-0.641	0.250	0.250	0.391
RN	0.000	0.379	0.379	0.250	0.000	0.129

○	MM	RND4 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.379	0.379	0.250	0.000	0.129



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

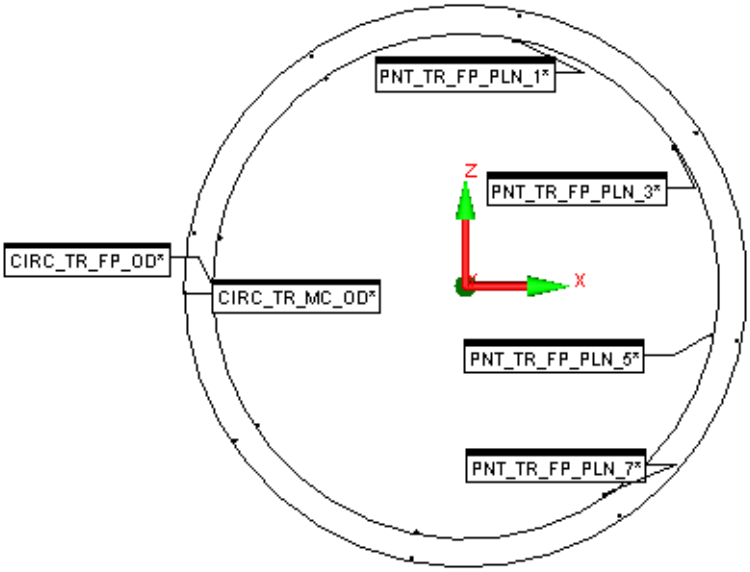
⌗	MM	LOC9 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	0.000	0.000	0.000	0.000	0.000	0.000	
FL	0.000	0.670	0.670	0.200	0.000	0.470	
AX		I		J		K	
V		0.000		1.000		-0.004	
⌗	MM	LOC10 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.359	-3.859	10.000	10.000	0.000	
FL	0.000	0.140	0.140	0.200	0.000	0.000	
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	0.670	0.670	0.200	0.000	0.470	
▱	MM	FLAT4 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.140	0.140	0.200	0.000	0.000	



Flatness of Transition Rings
x5000

⊥	MM	PERP1 - PLNC_TR_MC TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	1.324	1.324	0.200	0	1.124

⊥	MM	PERP2 - PLNC_TR_FP TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	0.704	0.704	0.200	0	0.504



Transition Ring points Main Coupler end

#	MM	LOC11 - PNT_TR_MC_PLN_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.664	0.664	1.000	1.000	0.000
PR	115.000	114.937	-0.063	1.000	1.000	0.000
PA	101.250	101.233	-0.017	1.000	1.000	0.000

#	MM	LOC12 - PNT_TR_MC_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.499	0.499	1.000	1.000	0.000
PR	115.000	114.978	-0.022	1.000	1.000	0.000
PA	146.250	146.250	0.000	1.000	1.000	0.000

#	MM	LOC13 - PNT_TR_MC_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.258	-0.258	1.000	1.000	0.000
PR	115.000	115.028	0.028	1.000	1.000	0.000
PA	-168.750	-168.751	-0.001	1.000	1.000	0.000

⌗	MM	LOC14 - PNT_TR_MC_PLN_7				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.660	-0.659	1.000	1.000	0.000
PR	115.000	115.063	0.063	1.000	1.000	0.000
PA	-123.750	-123.769	-0.019	1.000	1.000	0.000

⌗	MM	LOC15 - PNT_TR_MC_PLN_9				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.230	-0.229	1.000	1.000	0.000
PR	115.000	115.064	0.064	1.000	1.000	0.000
PA	-78.750	-78.796	-0.046	1.000	1.000	0.000

⌗	MM	LOC16 - PNT_TR_MC_PLN_11				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.075	0.075	1.000	1.000	0.000
PR	115.000	115.024	0.024	1.000	1.000	0.000
PA	-33.750	-33.815	-0.065	1.000	1.000	0.000

⌗	MM	LOC17 - PNT_TR_MC_PLN_13				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.260	-0.260	1.000	1.000	0.000
PR	115.000	114.974	-0.026	1.000	1.000	0.000
PA	11.250	11.186	-0.064	1.000	1.000	0.000

⌗	MM	LOC18 - PNT_TR_MC_PLN_15				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.169	0.169	1.000	1.000	0.000
PR	115.000	114.938	-0.062	1.000	1.000	0.000
PA	56.250	56.205	-0.045	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	-1011.012	-3.512	1.000	1.000	2.512
PR	104.000	103.892	-0.108	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	-1011.027	-3.527	1.000	1.000	2.527
PR	104.000	103.939	-0.061	1.000	1.000	0.000
PA	146.250	146.267	0.017	1.000	1.000	0.000

⌗	MM	LOC21 - PNT_TR_FP_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1011.381	-3.881	1.000	1.000	2.881
PR	104.000	104.021	0.021	1.000	1.000	0.000
PA	-168.750	-168.723	0.027	1.000	1.000	0.000

⌗	MM	LOC22 - PNT_TR_FP_PLN_7					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.715	-4.215	1.000	1.000	3.215	
PR	104.000	104.084	0.084	1.000	1.000	0.000	
PA	-123.750	-123.744	0.006	1.000	1.000	0.000	
⌗	MM	LOC23 - PNT_TR_FP_PLN_9					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.692	-4.192	1.000	1.000	3.192	
PR	104.000	104.085	0.085	1.000	1.000	0.000	
PA	-78.750	-78.749	0.001	1.000	1.000	0.000	
⌗	MM	LOC24 - PNT_TR_FP_PLN_11					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.608	-4.108	1.000	1.000	3.108	
PR	104.000	104.113	0.113	1.000	1.000	0.000	
PA	-33.750	-33.792	-0.042	1.000	1.000	0.000	
⌗	MM	LOC25 - PNT_TR_FP_PLN_13					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.375	-3.875	1.000	1.000	2.875	
PR	104.000	104.067	0.067	1.000	1.000	0.000	
PA	11.250	11.169	-0.081	1.000	1.000	0.000	
⌗	MM	LOC26 - PNT_TR_FP_PLN_15					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1011.063	-3.563	1.000	1.000	2.563	
PR	104.000	103.976	-0.024	1.000	1.000	0.000	
PA	56.250	56.160	-0.090	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	1011.115	3.615	1.000	1.000	2.615	
↔	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	1011.232	3.732	1.000	1.000	2.732	
↔	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	1011.676	4.176	1.000	1.000	3.176	
↔	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	1011.526	4.026	1.000	1.000	3.026	
↔	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	1011.123	3.623	1.000	1.000	2.623	

↔	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	1011.056	3.556	1.000	1.000	2.556	

↔	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	1011.462	3.962	1.000	1.000	2.962	

↔	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	1011.683	4.183	1.000	1.000	3.183	

↔	MM	DIST_BETWEEN_PLANES - PLNC_TR_MC TO PLNC_TR_FP (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1011.359	3.859	1.000	1.000	2.859	

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	-0.063	-0.063	0.200	0.200	0.000	
Y	0.000	-971.951	-971.951	2000.000	2000.000	0.000	
Z	0.000	-0.155	-0.155	0.200	0.200	0.000	
D	210.300	211.020	0.720	0.200	0.200	0.520	
RN	0.000	0.215	0.215	0.200	0.000	0.015	

⌖	MM	LOC_CC4 - CIRC_CAV_1_2					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	-0.269	-0.269	0.200	0.200	0.069	
Y	0.000	-961.208	-961.208	2000.000	2000.000	0.000	
Z	0.000	0.103	0.103	0.200	0.200	0.000	
D	210.300	211.008	0.708	0.200	0.200	0.508	
RN	0.000	0.285	0.285	0.200	0.000	0.085	

⌖	MM	LOC_CC5 - CIRC_CAV_2_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	-0.491	-0.491	0.200	0.200	0.291	
Y	0.000	-855.023	-855.023	2000.000	2000.000	0.000	
Z	0.000	-0.217	-0.217	0.200	0.200	0.017	
D	210.300	210.934	0.634	0.200	0.200	0.434	
RN	0.000	0.283	0.283	0.200	0.000	0.083	

⌗	MM	LOC_CC6 - CIRC_CAV_2_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.431	-0.431	0.200	0.200	0.231
Y	0.000	-844.672	-844.672	2000.000	2000.000	0.000
Z	0.000	-0.340	-0.340	0.200	0.200	0.140
D	210.300	210.864	0.564	0.200	0.200	0.364
RN	0.000	0.330	0.330	0.200	0.000	0.130

⌗	MM	LOC_CC7 - CIRC_CAV_3_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.362	-0.362	0.200	0.200	0.162
Y	0.000	-739.352	-739.352	2000.000	2000.000	0.000
Z	0.000	-0.198	-0.198	0.200	0.200	0.000
D	210.300	210.916	0.616	0.200	0.200	0.416
RN	0.000	0.378	0.378	0.200	0.000	0.178

⌗	MM	LOC_CC8 - CIRC_CAV_3_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.383	-0.383	0.200	0.200	0.183
Y	0.000	-729.605	-729.605	2000.000	2000.000	0.000
Z	0.000	-0.089	-0.089	0.200	0.200	0.000
D	210.300	210.946	0.646	0.200	0.200	0.446
RN	0.000	0.420	0.420	0.200	0.000	0.220

⌗	MM	LOC_CC9 - CIRC_CAV_4_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.462	-0.462	0.200	0.200	0.262
Y	0.000	-623.732	-623.732	2000.000	2000.000	0.000
Z	0.000	-0.047	-0.047	0.200	0.200	0.000
D	210.300	210.912	0.612	0.200	0.200	0.412
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	-0.514	-0.514	0.200	0.200	0.314
Y	0.000	-613.777	-613.777	2000.000	2000.000	0.000
Z	0.000	0.101	0.101	0.200	0.200	0.000
D	210.300	210.948	0.648	0.200	0.200	0.448
RN	0.000	0.392	0.392	0.200	0.000	0.192

⌗	MM	LOC_CC11 - CIRC_CAV_5_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.030	-0.030	0.200	0.200	0.000
Y	0.000	-507.748	-507.748	2000.000	2000.000	0.000
Z	0.000	0.172	0.172	0.200	0.200	0.000
D	210.300	210.932	0.632	0.200	0.200	0.432
RN	0.000	0.402	0.402	0.200	0.000	0.202

⊞	MM	LOC_CC12 - CIRC_CAV_5_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.197	0.197	0.200	0.200	0.000
Y	0.000	-498.096	-498.096	2000.000	2000.000	0.000
Z	0.000	0.355	0.355	0.200	0.200	0.155
D	210.300	210.938	0.638	0.200	0.200	0.438
RN	0.000	0.239	0.239	0.200	0.000	0.039

⊞	MM	LOC_CC13 - CIRC_CAV_6_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.177	0.177	0.200	0.200	0.000
Y	0.000	-392.460	-392.460	2000.000	2000.000	0.000
Z	0.000	0.420	0.420	0.200	0.200	0.220
D	210.300	210.937	0.637	0.200	0.200	0.437
RN	0.000	0.325	0.325	0.200	0.000	0.125

⊞	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	-382.916	-382.916	2000.000	2000.000	0.000
Z	0.000	0.305	0.305	0.200	0.200	0.105
D	210.300	210.975	0.675	0.200	0.200	0.475
RN	0.000	0.293	0.293	0.200	0.000	0.093

⊞	MM	LOC_CC15 - CIRC_CAV_7_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.297	0.297	0.200	0.200	0.097
Y	0.000	-276.307	-276.307	2000.000	2000.000	0.000
Z	0.000	0.240	0.240	0.200	0.200	0.040
D	210.300	210.600	0.300	0.200	0.200	0.100
RN	0.000	0.296	0.296	0.200	0.000	0.096

⊞	MM	LOC_CC16 - CIRC_CAV_7_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.336	0.336	0.200	0.200	0.136
Y	0.000	-267.448	-267.448	2000.000	2000.000	0.000
Z	0.000	0.291	0.291	0.200	0.200	0.091
D	210.300	210.971	0.671	0.200	0.200	0.471
RN	0.000	0.529	0.529	0.200	0.000	0.329

⊞	MM	LOC_CC17 - CIRC_CAV_8_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.107	0.107	0.200	0.200	0.000
Y	0.000	-160.486	-160.486	2000.000	2000.000	0.000
Z	0.000	0.298	0.298	0.200	0.200	0.098
D	210.300	210.840	0.540	0.200	0.200	0.340
RN	0.000	0.449	0.449	0.200	0.000	0.249

⌗	MM	LOC_CC18 - CIRC_CAV_8_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.098	0.098	0.200	0.200	0.000
Y	0.000	-150.923	-150.923	2000.000	2000.000	0.000
Z	0.000	0.393	0.393	0.200	0.200	0.193
D	210.300	210.941	0.641	0.200	0.200	0.441
RN	0.000	0.407	0.407	0.200	0.000	0.207

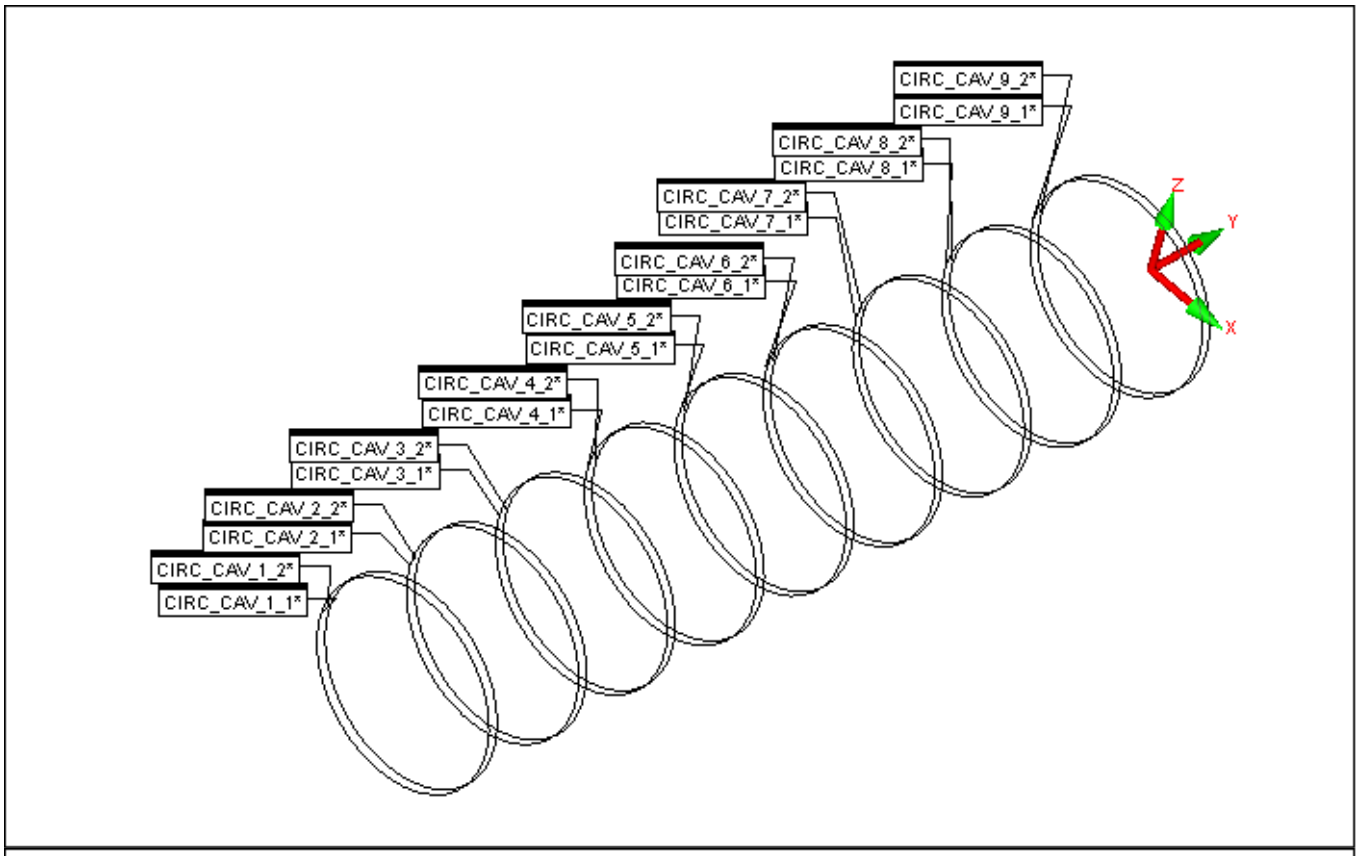
⌗	MM	LOC_CC19 - CIRC_CAV_9_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.018	-0.018	0.200	0.200	0.000
Y	0.000	-45.139	-45.139	2000.000	2000.000	0.000
Z	0.000	0.236	0.236	0.200	0.200	0.036
D	210.300	210.783	0.483	0.200	0.200	0.283
RN	0.000	0.180	0.180	0.200	0.000	0.000

⌗	MM	LOC_CC20 - CIRC_CAV_9_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.015	-0.015	0.200	0.200	0.000
Y	0.000	-35.320	-35.320	2000.000	2000.000	0.000
Z	0.000	0.177	0.177	0.200	0.200	0.000
D	210.300	210.841	0.541	0.200	0.200	0.341
RN	0.000	0.317	0.317	0.200	0.000	0.117

Location of End Flanges

⌗	MM	LOC_23 - CIR_END_FLANGE_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.362	-0.362	0.200	0.200	0.162
Y	0.000	115.856	115.856	2000.000	2000.000	0.000
Z	0.000	-0.166	-0.166	0.200	0.200	0.000
D	140.000	140.078	0.078	0.300	0.300	0.000
RN	0.000	0.027	0.027	0.200	0.000	0.000

⌗	MM	LOC_24 - CIR_END_FLANGE_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.425	0.425	0.200	0.200	0.225
Y	-1153.884	-1121.858	32.027	2000.000	2000.000	0.000
Z	0.000	0.129	0.129	0.200	0.200	0.000
D	140.000	140.124	0.124	0.300	0.300	0.000
RN	0.000	0.032	0.032	0.200	0.000	0.000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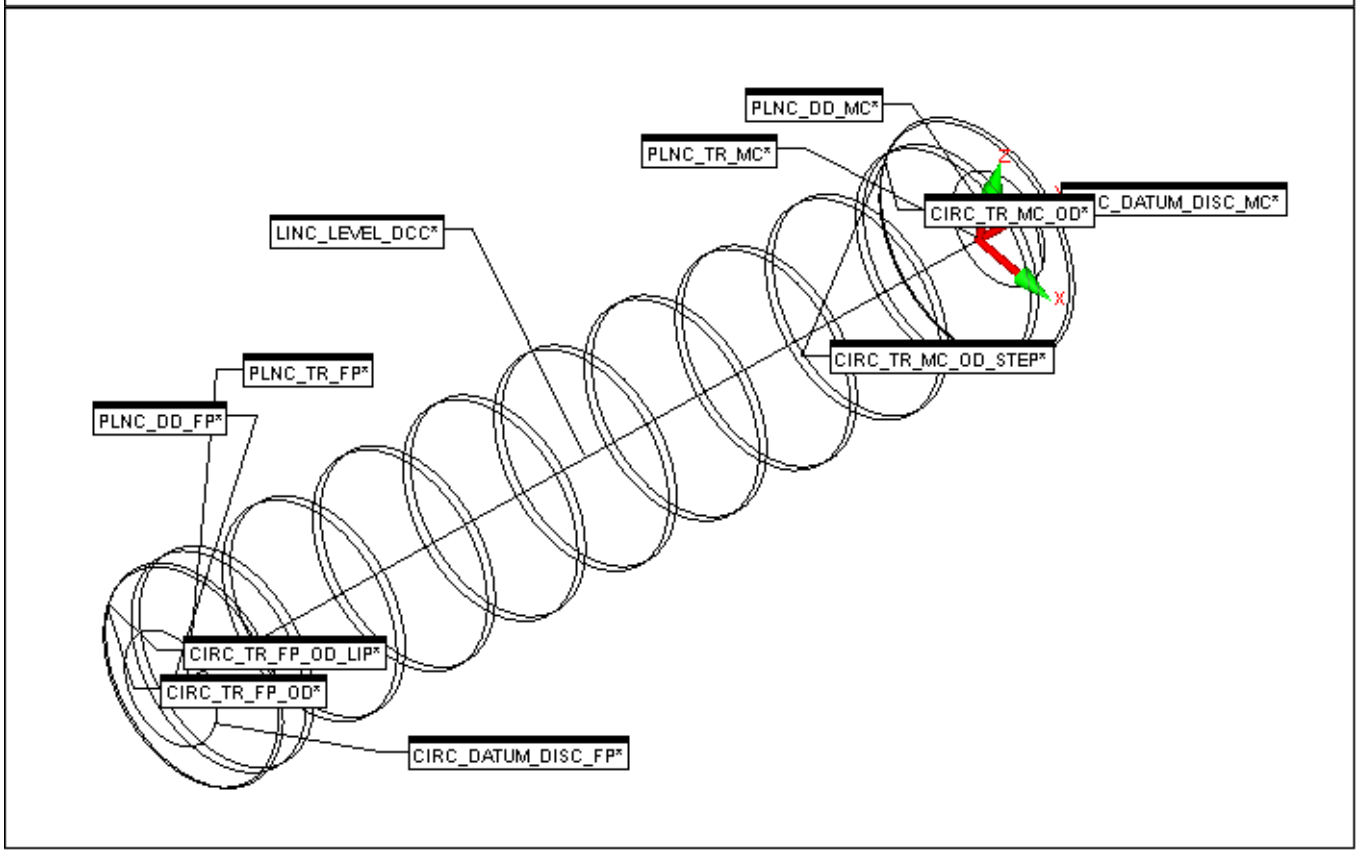
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Z
X