pc-dmis	PART NAME : PN440004-n-Trans-Rings-000-TB9AES007-v4-IR		June 21, 2010	15:02
	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' : TB9AES007
' ' : 1006211139

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	27.056	2.056	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	0.069	0.069	0.050	0.000	0.019

⌖	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	-1033.142	-0.757	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.854	-0.146	0.050	0.050	0.096
RN	0.000	0.064	0.064	0.050	0.000	0.014

Datum Disc planes

⌖	MM	LOC3 - PLNC_DD_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	27.000	29.014	2.013	10.000	10.000	0.000
FL	0.000	0.098	0.098	0.100	0.000	0.000

⌖	MM	LOC4 - PLNC_DD_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1034.384	-1035.114	-0.729	10.000	10.000	0.000
FL	0.000	0.066	0.066	0.100	0.000	0.000

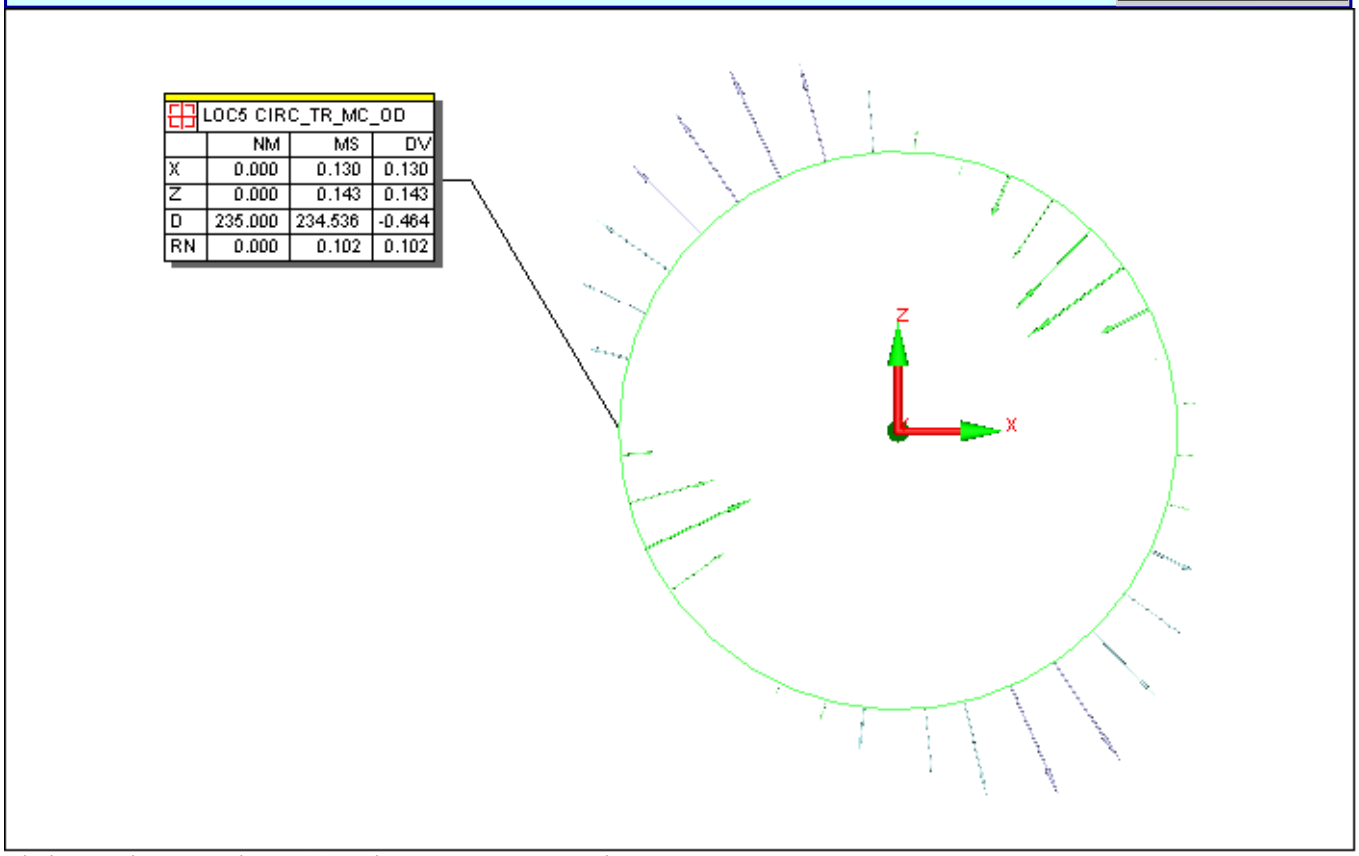
Distance between Datum Disc planes

↔	MM	DIST1 - PLNC_DD_FP TO PLNC_DD_MC (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1061.060	1064.127	3.067	0.200	0.200	2.867

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	0.130	0.130	0.250	0.250	0.000
Z	0.000	0.143	0.143	0.250	0.250	0.000
D	235.000	234.536	-0.464	0.250	0.250	0.214
RN	0.000	0.102	0.102	0.250	0.000	0.000

○	MM	RND1 - CIRC_TR_MC_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.102	0.102	0.250	0.000	0.000

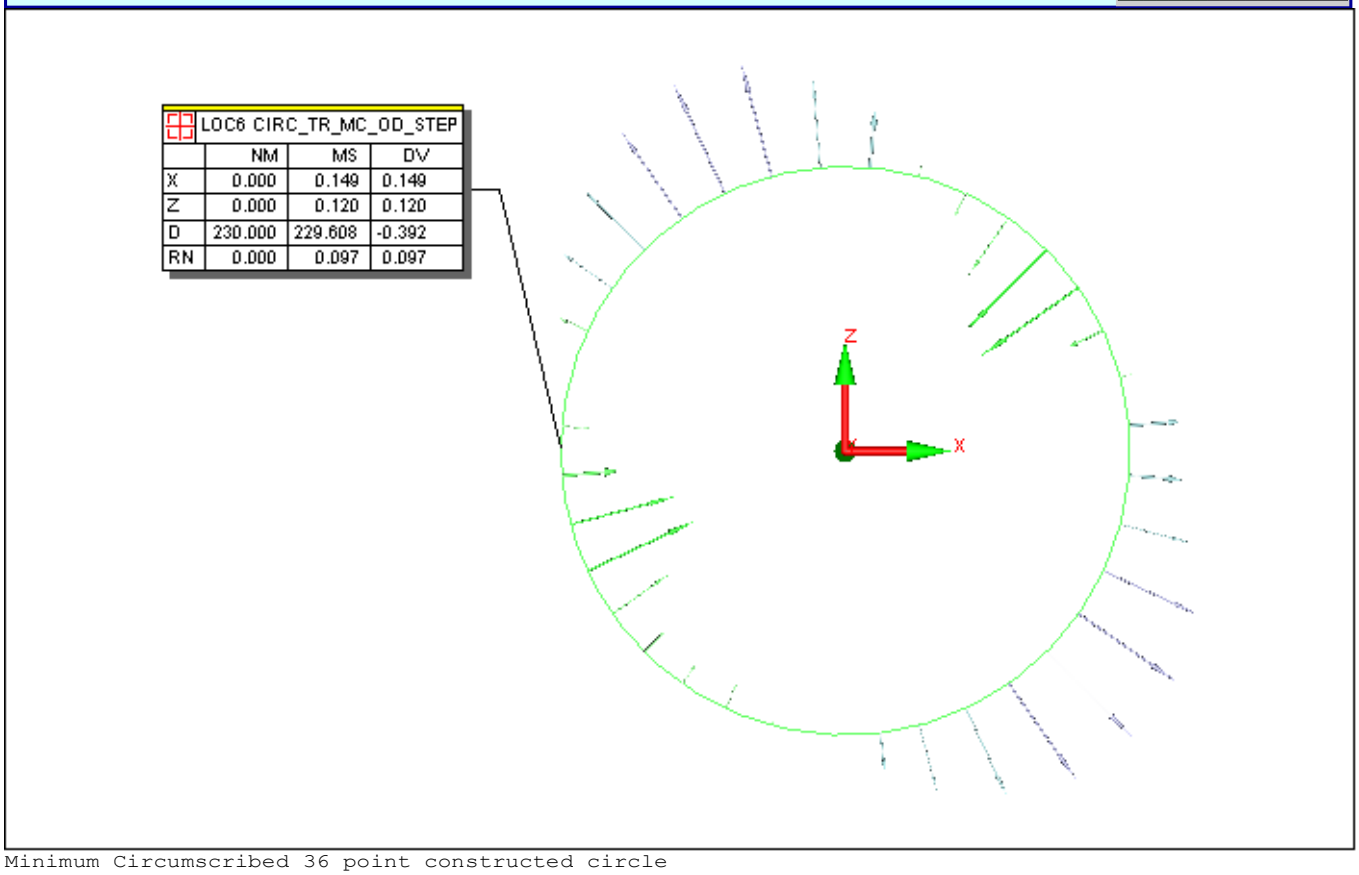


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D. x1000

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	0.149	0.149	0.250	0.250	0.000
Z	0.000	0.120	0.120	0.250	0.250	0.000
D	230.000	229.608	-0.392	0.000	0.250	0.142
RN	0.000	0.097	0.097	0.250	0.000	0.000

○	MM	RND2 - CIRC_TR_MC_OD_STEP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.097	0.097	0.250	0.000	0.000

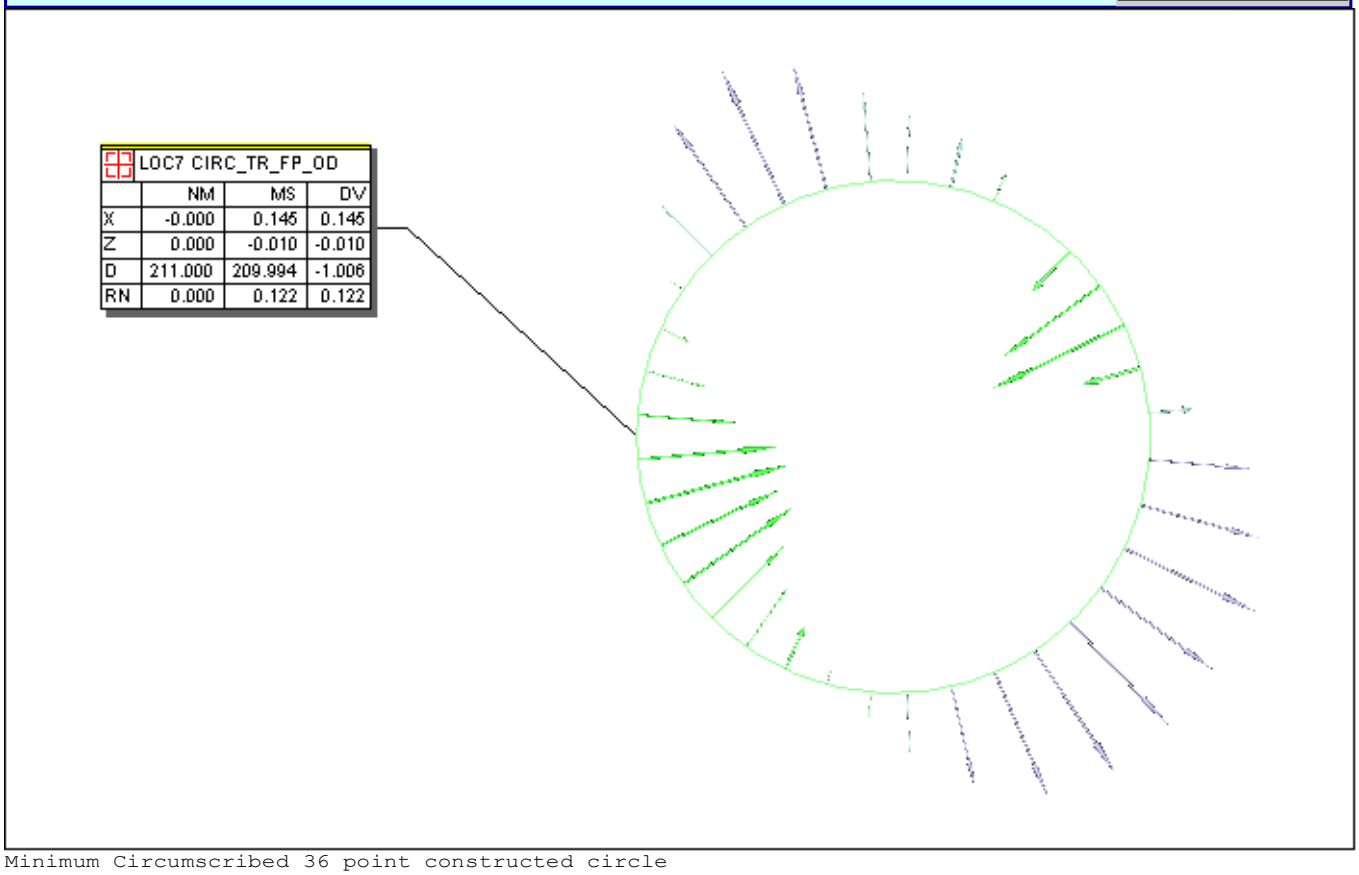


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step x1000

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	0.145	0.145	0.250	0.250	0.000
Z	0.000	-0.010	-0.010	0.250	0.250	0.000
D	211.000	209.994	-1.006	0.250	0.250	0.756
RN	0.000	0.122	0.122	0.250	0.000	0.000

○	MM	RND3 - CIRC_TR_FP_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.122	0.122	0.250	0.000	0.000

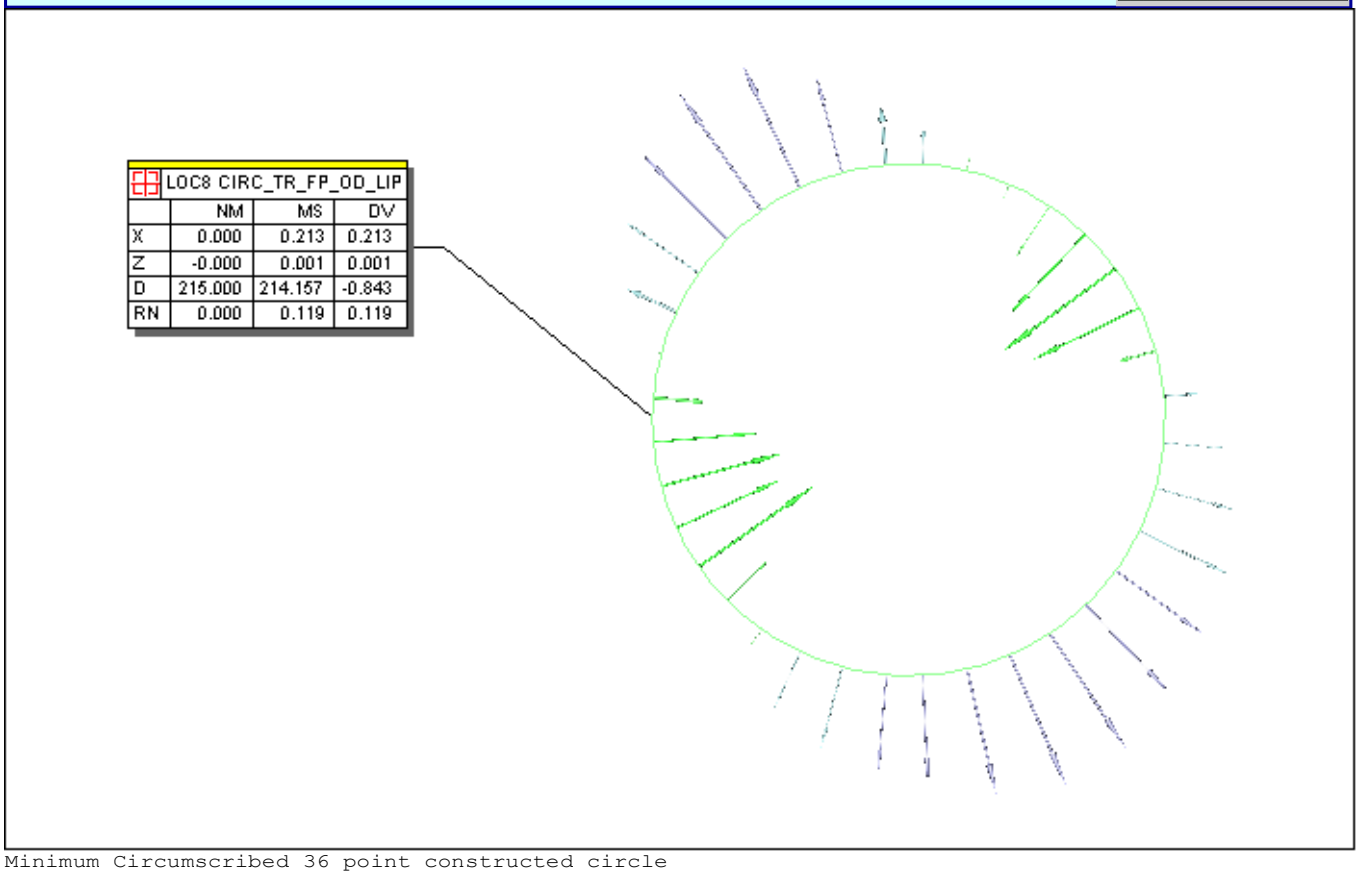


Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D. x1000

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

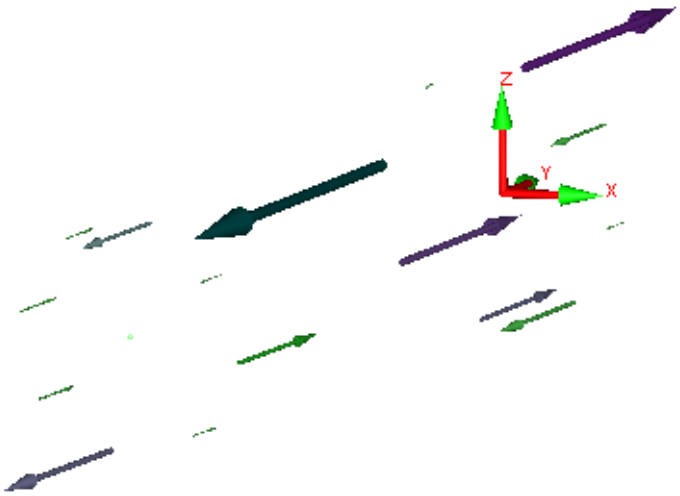
#	MM	LOC8 - CIRC_TR_FP_OD_LIP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.213	0.213	0.250	0.250	0.000	
Z	0.000	0.001	0.001	0.250	0.250	0.000	
D	215.000	214.157	-0.843	0.250	0.250	0.593	
RN	0.000	0.119	0.119	0.250	0.000	0.000	

○	MM	RND4 - CIRC_TR_FP_OD_LIP					
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 Field Probe end
215.0 O.D. lip x1000

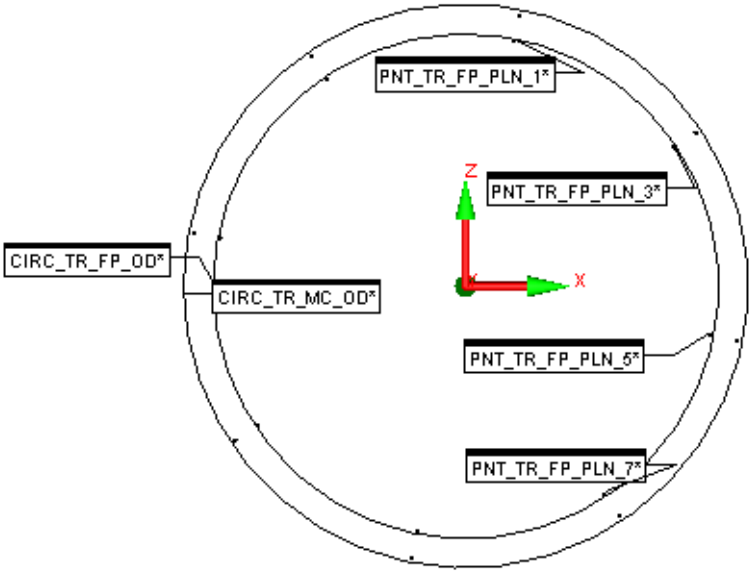
⌖	MM	LOC9 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	0.000	0.000	0.000	0.000	0.000	0.000	
FL	0.000	0.188	0.188	0.200	0.000	0.000	
AX		I		J		K	
V		-0.007		1.000		0.001	
⌖	MM	LOC10 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1008.425	-0.925	10.000	10.000	0.000	
FL	0.000	0.098	0.098	0.200	0.000	0.000	
AX		I		J		K	
V		-0.008		-1.000		0.000	
▱	MM	FLAT3 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.188	0.188	0.200	0.000	0.000	
▱	MM	FLAT4 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.098	0.098	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	1.621	1.621	0.200	0	1.421

⊥	MM	PERP2 - PLNC_TR_FP TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	1.531	1.531	0.200	0	1.331



Transition Ring points Main Coupler end

⊕	MM	LOC11 - PNT_TR_MC_PLN_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.083	0.082	1.000	1.000	0.000
PR	115.000	114.936	-0.064	1.000	1.000	0.000
PA	101.250	101.213	-0.037	1.000	1.000	0.000

⊕	MM	LOC12 - PNT_TR_MC_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.509	0.509	1.000	1.000	0.000
PR	115.000	114.957	-0.043	1.000	1.000	0.000
PA	146.250	146.236	-0.014	1.000	1.000	0.000

⊕	MM	LOC13 - PNT_TR_MC_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.753	0.753	1.000	1.000	0.000
PR	115.000	115.003	0.003	1.000	1.000	0.000
PA	-168.750	-168.757	-0.007	1.000	1.000	0.000

⌖	MM	LOC14 - PNT_TR_MC_PLN_7				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.500	0.500	1.000	1.000	0.000
PR	115.000	115.046	0.046	1.000	1.000	0.000
PA	-123.750	-123.767	-0.017	1.000	1.000	0.000

⌖	MM	LOC15 - PNT_TR_MC_PLN_9				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.043	0.043	1.000	1.000	0.000
PR	115.000	115.070	0.070	1.000	1.000	0.000
PA	-78.750	-78.791	-0.041	1.000	1.000	0.000

⌖	MM	LOC16 - PNT_TR_MC_PLN_11				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.474	-0.474	1.000	1.000	0.000
PR	115.000	115.035	0.035	1.000	1.000	0.000
PA	-33.750	-33.809	-0.059	1.000	1.000	0.000

⌖	MM	LOC17 - PNT_TR_MC_PLN_13				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.868	-0.868	1.000	1.000	0.000
PR	115.000	114.999	-0.001	1.000	1.000	0.000
PA	11.250	11.184	-0.066	1.000	1.000	0.000

⌖	MM	LOC18 - PNT_TR_MC_PLN_15				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.545	-0.546	1.000	1.000	0.000
PR	115.000	114.950	-0.050	1.000	1.000	0.000
PA	56.250	56.189	-0.061	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	-1008.576	-1.076	1.000	1.000	0.076
PR	104.000	103.962	-0.038	1.000	1.000	0.000
PA	101.250	101.206	-0.044	1.000	1.000	0.000

⌖	MM	LOC20 - PNT_TR_FP_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1009.067	-1.567	1.000	1.000	0.567
PR	104.000	103.968	-0.032	1.000	1.000	0.000
PA	146.250	146.226	-0.024	1.000	1.000	0.000

⌖	MM	LOC21 - PNT_TR_FP_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1009.161	-1.661	1.000	1.000	0.661
PR	104.000	103.996	-0.004	1.000	1.000	0.000
PA	-168.750	-168.760	-0.010	1.000	1.000	0.000

⌖	MM	LOC22 - PNT_TR_FP_PLN_7					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1008.879	-1.379	1.000	1.000	0.379	
PR	104.000	104.032	0.032	1.000	1.000	0.000	
PA	-123.750	-123.765	-0.015	1.000	1.000	0.000	
⌖	MM	LOC23 - PNT_TR_FP_PLN_9					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1008.366	-0.866	1.000	1.000	0.000	
PR	104.000	103.991	-0.009	1.000	1.000	0.000	
PA	-78.750	-78.855	-0.105	1.000	1.000	0.000	
⌖	MM	LOC24 - PNT_TR_FP_PLN_11					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1007.775	-0.275	1.000	1.000	0.000	
PR	104.000	103.915	-0.085	1.000	1.000	0.000	
PA	-33.750	-33.834	-0.084	1.000	1.000	0.000	
⌖	MM	LOC25 - PNT_TR_FP_PLN_13					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1007.629	-0.129	1.000	1.000	0.000	
PR	104.000	103.882	-0.118	1.000	1.000	0.000	
PA	11.250	11.215	-0.035	1.000	1.000	0.000	
⌖	MM	LOC26 - PNT_TR_FP_PLN_15					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1007.944	-0.444	1.000	1.000	0.000	
PR	104.000	103.917	-0.083	1.000	1.000	0.000	
PA	56.250	56.260	0.010	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	1006.761	-0.739	1.000	1.000	0.000	
↔	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	1007.398	-0.102	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	1008.659	1.159	1.000	1.000	0.159	
↔	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	1009.576	2.076	1.000	1.000	1.076	
↔	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	1009.914	2.414	1.000	1.000	1.414	

↔	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	1009.379	1.879	1.000	1.000	0.879	

↔	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	1008.409	0.909	1.000	1.000	0.000	

↔	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	1007.301	-0.199	1.000	1.000	0.000	

↔	MM	DIST_BETWEEN_PLANES - PLNC_TR_MC TO PLNC_TR_FP (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1008.425	0.925	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	0.371	0.371	0.200	0.200	0.171	
Y	0.000	-970.061	-970.061	2000.000	2000.000	0.000	
Z	0.000	-0.174	-0.174	0.200	0.200	0.000	
D	210.300	211.096	0.796	0.200	0.200	0.596	
RN	0.000	0.239	0.239	0.200	0.000	0.039	

⊕	MM	LOC_CC4 - CIRC_CAV_1_2					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.354	0.354	0.200	0.200	0.154	
Y	0.000	-961.367	-961.367	2000.000	2000.000	0.000	
Z	0.000	-0.161	-0.161	0.200	0.200	0.000	
D	210.300	211.149	0.849	0.200	0.200	0.649	
RN	0.000	0.139	0.139	0.200	0.000	0.000	

⊕	MM	LOC_CC5 - CIRC_CAV_2_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.850	0.850	0.200	0.200	0.650	
Y	0.000	-853.888	-853.888	2000.000	2000.000	0.000	
Z	0.000	-0.261	-0.261	0.200	0.200	0.061	
D	210.300	211.344	1.044	0.200	0.200	0.844	
RN	0.000	0.191	0.191	0.200	0.000	0.000	

⊕	MM	LOC_CC6 - CIRC_CAV_2_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.917	0.917	0.200	0.200	0.717
Y	0.000	-845.465	-845.465	2000.000	2000.000	0.000
Z	0.000	-0.272	-0.272	0.200	0.200	0.072
D	210.300	211.420	1.120	0.200	0.200	0.920
RN	0.000	0.209	0.209	0.200	0.000	0.009

⊕	MM	LOC_CC7 - CIRC_CAV_3_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.281	1.281	0.200	0.200	1.081
Y	0.000	-738.039	-738.039	2000.000	2000.000	0.000
Z	0.000	-0.377	-0.377	0.200	0.200	0.177
D	210.300	211.263	0.963	0.200	0.200	0.763
RN	0.000	0.218	0.218	0.200	0.000	0.018

⊕	MM	LOC_CC8 - CIRC_CAV_3_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.289	1.289	0.200	0.200	1.089
Y	0.000	-729.738	-729.738	2000.000	2000.000	0.000
Z	0.000	-0.364	-0.364	0.200	0.200	0.164
D	210.300	211.195	0.895	0.200	0.200	0.695
RN	0.000	0.230	0.230	0.200	0.000	0.030

⊕	MM	LOC_CC9 - CIRC_CAV_4_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.452	1.452	0.200	0.200	1.252
Y	0.000	-622.605	-622.605	2000.000	2000.000	0.000
Z	0.000	-0.423	-0.423	0.200	0.200	0.223
D	210.300	211.434	1.134	0.200	0.200	0.934
RN	0.000	0.198	0.198	0.200	0.000	0.000

⊕	MM	LOC_CC10 - CIRC_CAV_4_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.470	1.470	0.200	0.200	1.270
Y	0.000	-614.130	-614.130	2000.000	2000.000	0.000
Z	0.000	-0.499	-0.499	0.200	0.200	0.299
D	210.300	211.406	1.106	0.200	0.200	0.906
RN	0.000	0.274	0.274	0.200	0.000	0.074

⊕	MM	LOC_CC11 - CIRC_CAV_5_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.639	1.639	0.200	0.200	1.439
Y	0.000	-506.776	-506.776	2000.000	2000.000	0.000
Z	0.000	-0.485	-0.485	0.200	0.200	0.285
D	210.300	211.188	0.888	0.200	0.200	0.688
RN	0.000	0.179	0.179	0.200	0.000	0.000

⊕	MM	LOC_CC12 - CIRC_CAV_5_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.640	1.640	0.200	0.200	1.440
Y	0.000	-498.627	-498.627	2000.000	2000.000	0.000
Z	0.000	-0.476	-0.476	0.200	0.200	0.276
D	210.300	211.224	0.924	0.200	0.200	0.724
RN	0.000	0.220	0.220	0.200	0.000	0.020

⊕	MM	LOC_CC13 - CIRC_CAV_6_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.621	1.621	0.200	0.200	1.421
Y	0.000	-391.701	-391.701	2000.000	2000.000	0.000
Z	0.000	-0.368	-0.368	0.200	0.200	0.168
D	210.300	211.639	1.339	0.200	0.200	1.139
RN	0.000	0.277	0.277	0.200	0.000	0.077

⊕	MM	LOC_CC14 - CIRC_CAV_6_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.614	1.614	0.200	0.200	1.414
Y	0.000	-383.868	-383.868	2000.000	2000.000	0.000
Z	0.000	-0.363	-0.363	0.200	0.200	0.163
D	210.300	211.569	1.269	0.200	0.200	1.069
RN	0.000	0.205	0.205	0.200	0.000	0.005

⊕	MM	LOC_CC15 - CIRC_CAV_7_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.413	1.413	0.200	0.200	1.213
Y	0.000	-275.755	-275.755	2000.000	2000.000	0.000
Z	0.000	-0.264	-0.264	0.200	0.200	0.064
D	210.300	211.196	0.896	0.200	0.200	0.696
RN	0.000	0.184	0.184	0.200	0.000	0.000

⊕	MM	LOC_CC16 - CIRC_CAV_7_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.409	1.409	0.200	0.200	1.209
Y	0.000	-267.061	-267.061	2000.000	2000.000	0.000
Z	0.000	-0.250	-0.250	0.200	0.200	0.050
D	210.300	211.264	0.964	0.200	0.200	0.764
RN	0.000	0.206	0.206	0.200	0.000	0.006

⊕	MM	LOC_CC17 - CIRC_CAV_8_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	1.010	1.010	0.200	0.200	0.810
Y	0.000	-160.038	-160.038	2000.000	2000.000	0.000
Z	0.000	-0.214	-0.214	0.200	0.200	0.014
D	210.300	211.254	0.954	0.200	0.200	0.754
RN	0.000	0.174	0.174	0.200	0.000	0.000

⌖	MM	LOC_CC18 - CIRC_CAV_8_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.952	0.952	0.200	0.200	0.752
Y	0.000	-151.879	-151.879	2000.000	2000.000	0.000
Z	0.000	-0.247	-0.247	0.200	0.200	0.047
D	210.300	211.318	1.018	0.200	0.200	0.818
RN	0.000	0.245	0.245	0.200	0.000	0.045

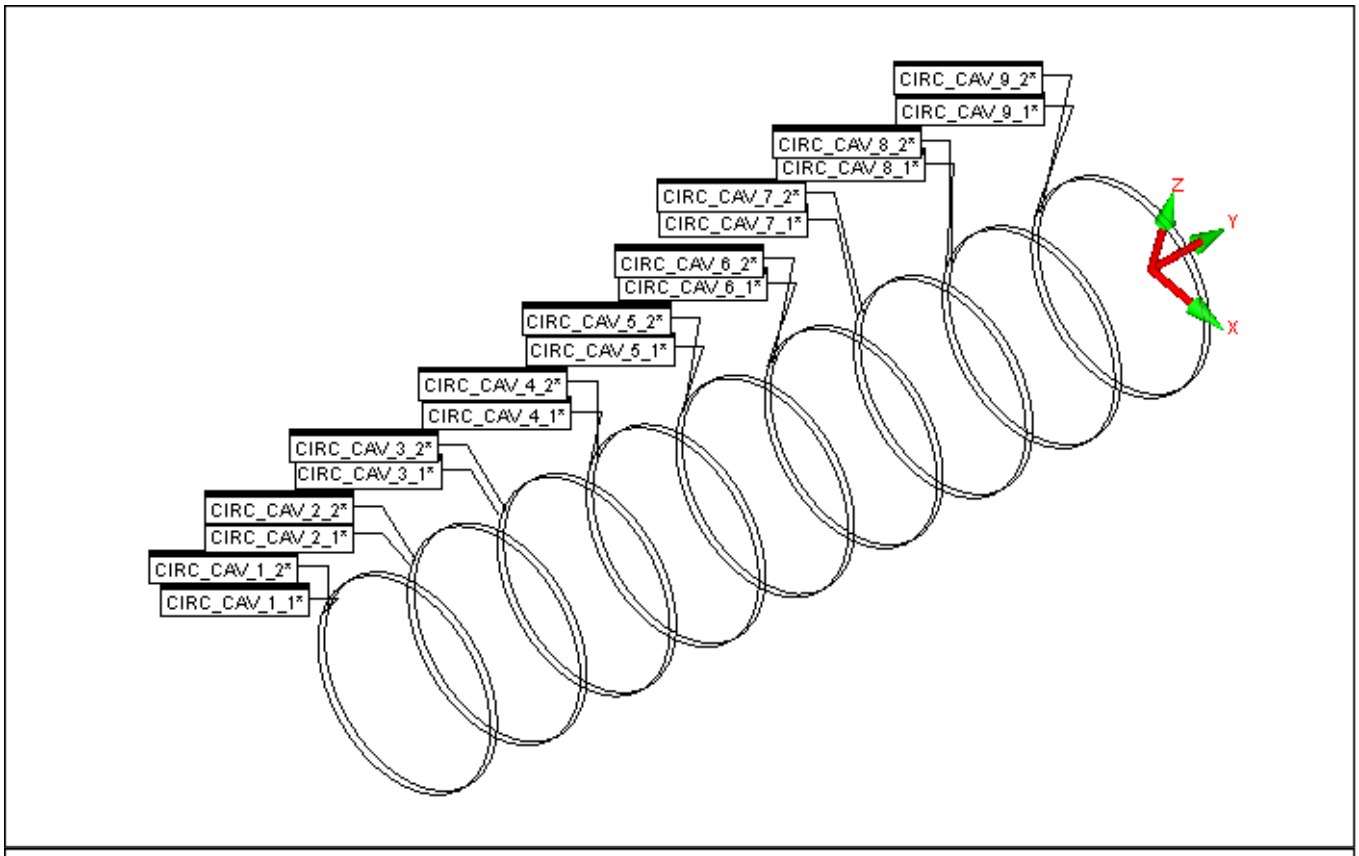
⌖	MM	LOC_CC19 - CIRC_CAV_9_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.403	0.403	0.200	0.200	0.203
Y	0.000	-43.906	-43.906	2000.000	2000.000	0.000
Z	0.000	-0.135	-0.135	0.200	0.200	0.000
D	210.300	211.139	0.839	0.200	0.200	0.639
RN	0.000	0.200	0.200	0.200	0.000	0.000

⌖	MM	LOC_CC20 - CIRC_CAV_9_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.370	0.370	0.200	0.200	0.170
Y	0.000	-35.507	-35.507	2000.000	2000.000	0.000
Z	0.000	-0.096	-0.096	0.200	0.200	0.000
D	210.300	210.946	0.646	0.200	0.200	0.446
RN	0.000	0.205	0.205	0.200	0.000	0.005

Location of End Flanges

⌖	MM	LOC_23 - CIR_END_FLANGE_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.738	-0.738	0.200	0.200	0.538
Y	0.000	116.843	116.843	2000.000	2000.000	0.000
Z	0.000	-0.144	-0.144	0.200	0.200	0.000
D	140.000	139.986	-0.014	0.300	0.300	0.000
RN	0.000	0.008	0.008	0.200	0.000	0.000

⌖	MM	LOC_24 - CIR_END_FLANGE_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.798	-0.798	0.200	0.200	0.598
Y	-1153.884	-1121.652	32.232	2000.000	2000.000	0.000
Z	0.000	0.078	0.078	0.200	0.200	0.000
D	140.000	139.968	-0.032	0.300	0.300	0.000
RN	0.000	0.006	0.006	0.200	0.000	0.000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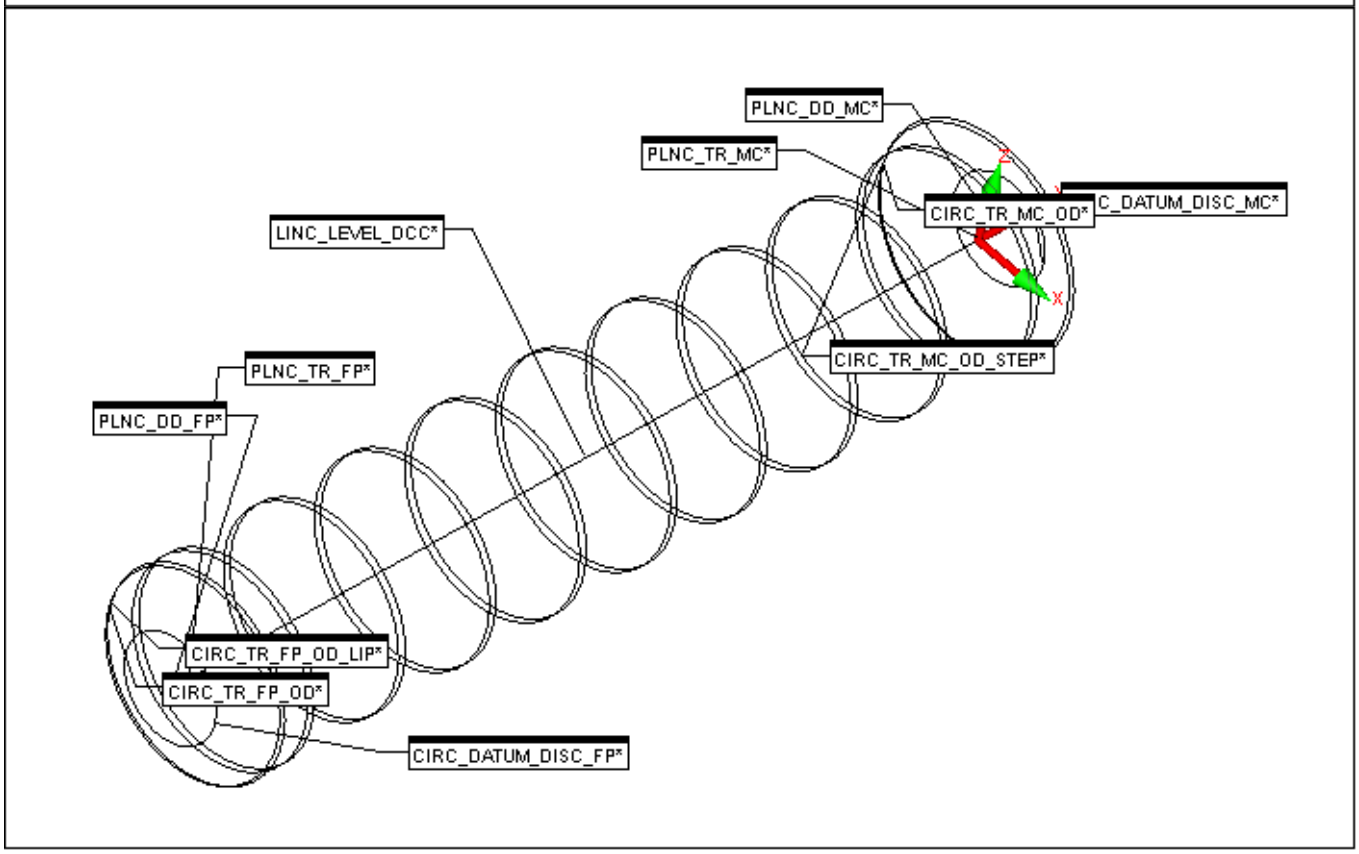
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Z
X