FERMILAB Technical Division

QUALITY CONTROL REPORT

DATE=10/6/2009 TIME=4:06:04 PM

PART NAME : PN440004-n-Trans-Rings-000-TB9AES002-v2-IR
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' : TB9AES002
' ' : 0910061449

Datum Discs

MM	DIM LOC1= LOCATION OF CIRCLE 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	25.963	0.963	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.779	-0.221	0.050	0.050	0.171
RN	0.000	0.074	0.074	0.050	0.000	0.024

MM	DIM LOC2= LOCATION OF CIRCLE 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	-1026.806	5.578	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.726	-0.274	0.050	0.050	0.224
RN	0.000	0.033	0.033	0.050	0.000	0.000

Datum Disc planes

MM	DIM LOC3= LOCATION OF PLANE PLNC_DD_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	27.000	28.033	1.033	10.000	10.000	0.000
FL	0.000	0.077	0.077	0.100	0.000	0.000

MM	DIM LOC4= LOCATION OF PLANE PLNC_DD_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1034.384	-1028.839	5.546	10.000	10.000	0.000
FL	0.000	0.080	0.080	0.100	0.000	0.000

PART NUMBER=PN440004-n-Trans-Rings-000-TB9AES002-v2-IR DATE=10/6/2009 TIME=4:06:05 PM

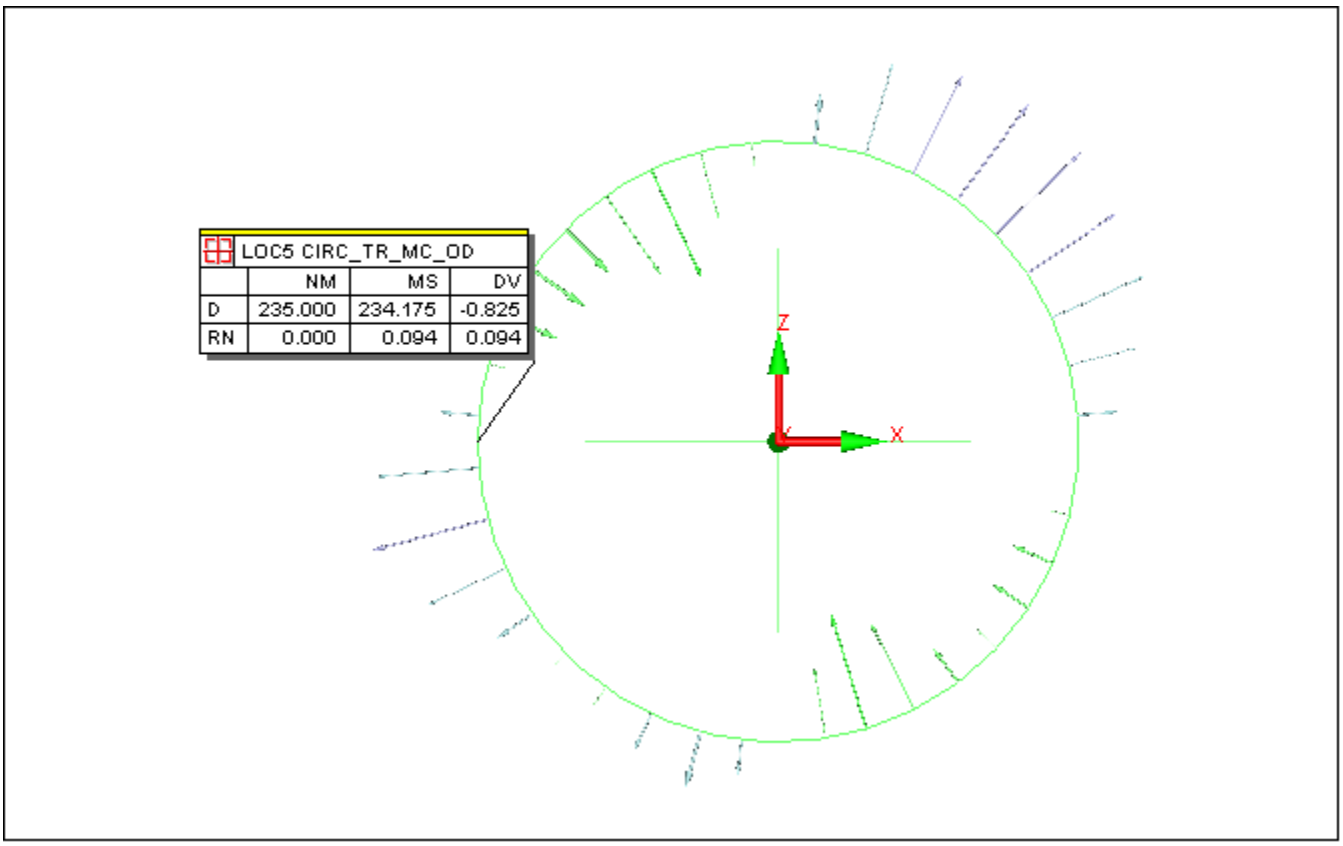
Distance between Datum Disc planes

MM	DIM DIST1= 2D DISTANCE FROM PLANE PLNC_DD_FP TO PLANE PLNC_DD_MC PAR TO YAXIS					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1061.060	1056.872	-4.188	0.200	0.200	3.988

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

MM	DIM LOC5= LOCATION OF CIRCLE CIRC_TR_MC_OD					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.153	-0.153	0.250	0.250	0.000
Z	0.000	-0.018	-0.018	0.250	0.250	0.000
D	235.000	234.175	-0.825	0.250	0.250	0.575
RN	0.000	0.094	0.094	0.250	0.000	0.000

MM	DIM RND1= ROUNDNESS OF CIRCLE CIRC_TR_MC_OD					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.094	0.094	0.250	0.000	0.000

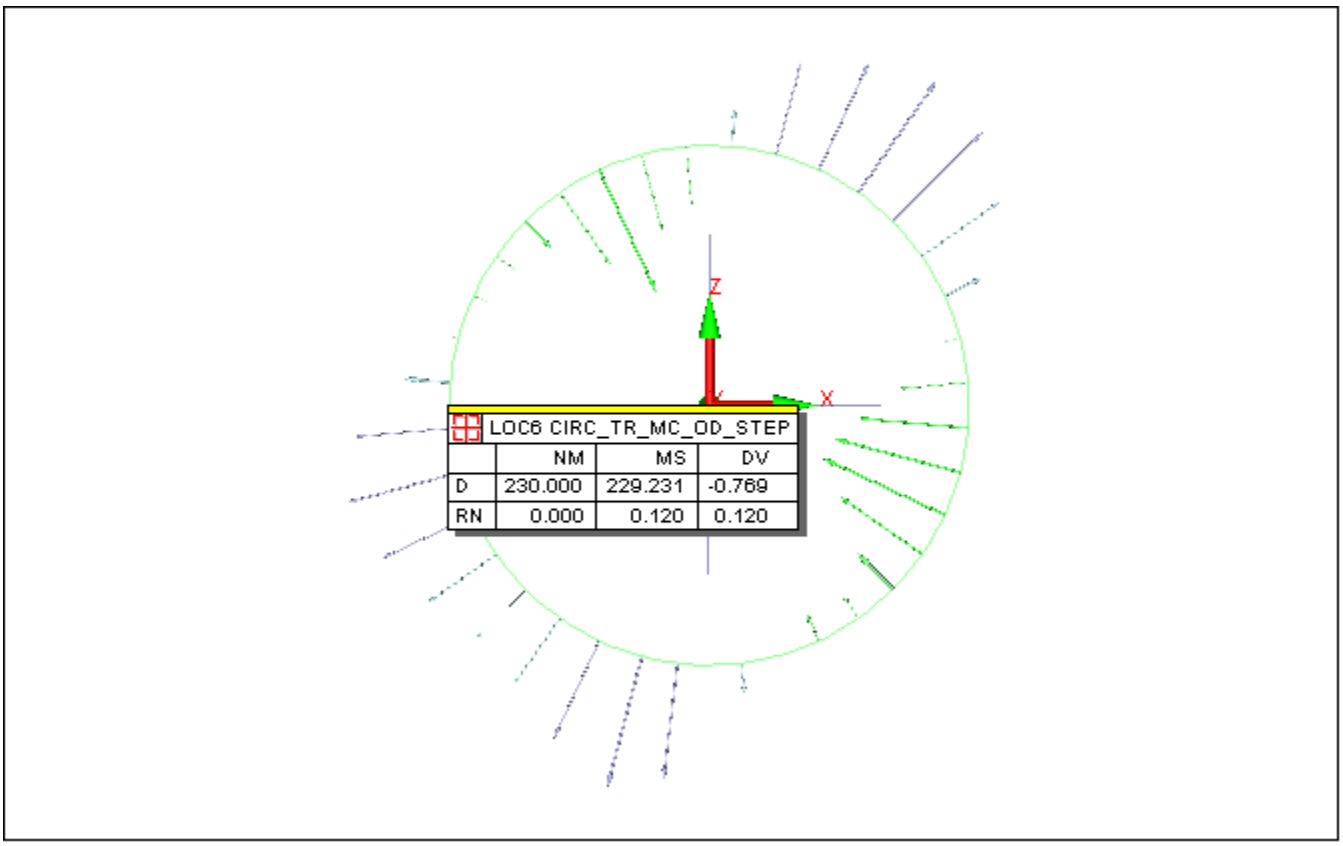


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D. x1000

PART NUMBER=PN440004-n-Trans-Rings-000-TB9AES002-v2-IR DATE=10/6/2009 TIME=4:06:05 PM
Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step

MM	DIM LOC6= LOCATION OF CIRCLE CIRC_TR_MC_OD_STEP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.150	-0.150	0.250	0.250	0.000
Z	0.000	-0.024	-0.024	0.250	0.250	0.000
D	230.000	229.231	-0.769	0.000	0.250	0.519
RN	0.000	0.120	0.120	0.250	0.000	0.000

MM	DIM RND2= ROUNDNESS OF CIRCLE CIRC_TR_MC_OD_STEP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.120	0.120	0.250	0.000	0.000

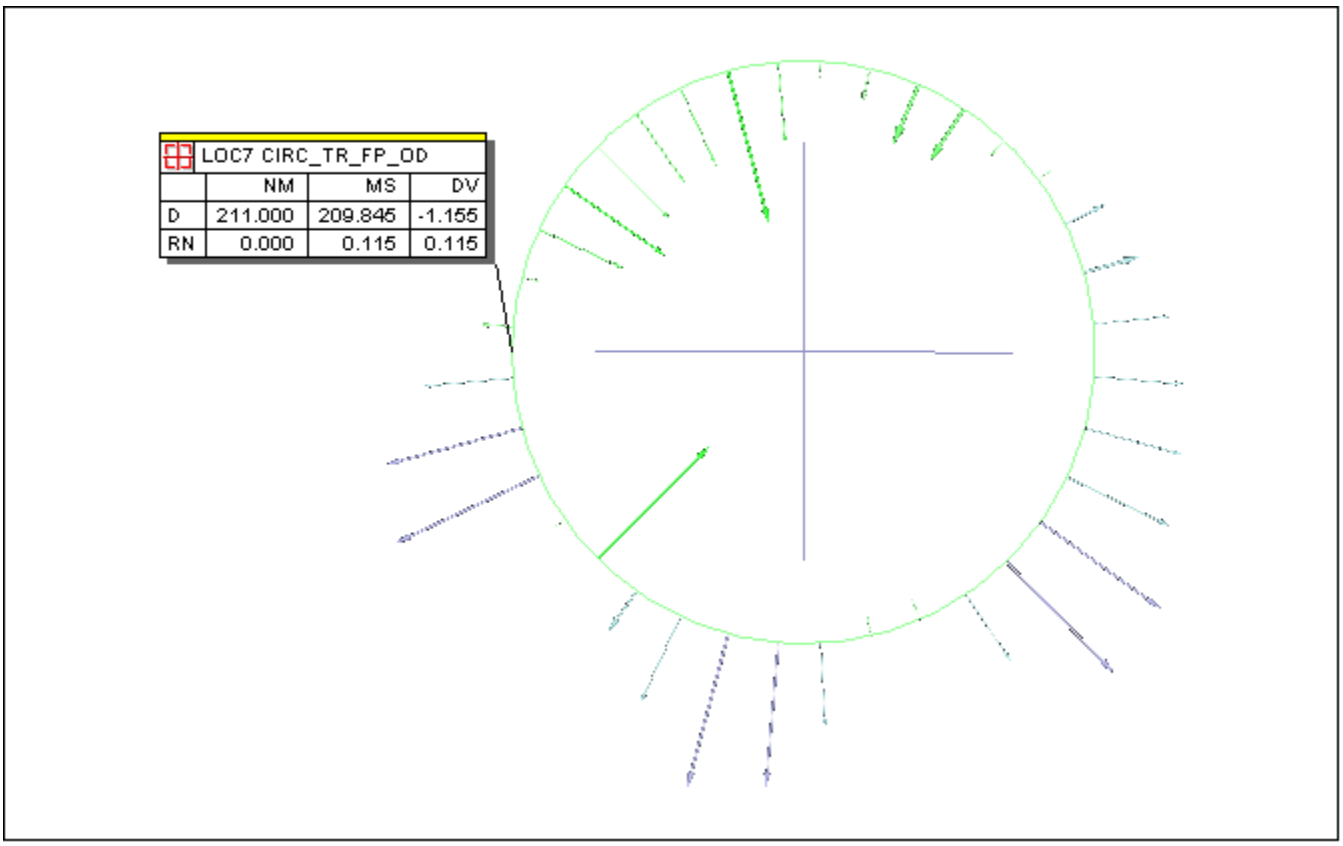


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step x1000

PART NUMBER=PN440004-n-Trans-Rings-000-TB9AES002-v2-IR DATE=10/6/2009 TIME=4:06:05 PM
Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D.

MM	DIM LOC7= LOCATION OF CIRCLE CIRC_TR_FP_OD					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.112	0.112	0.250	0.250	0.000
Z	0.000	-0.005	-0.005	0.250	0.250	0.000
D	211.000	209.845	-1.155	0.250	0.250	0.905
RN	0.000	0.115	0.115	0.250	0.000	0.000

MM	DIM RND3= ROUNDNESS OF CIRCLE CIRC_TR_FP_OD					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.115	0.115	0.250	0.000	0.000

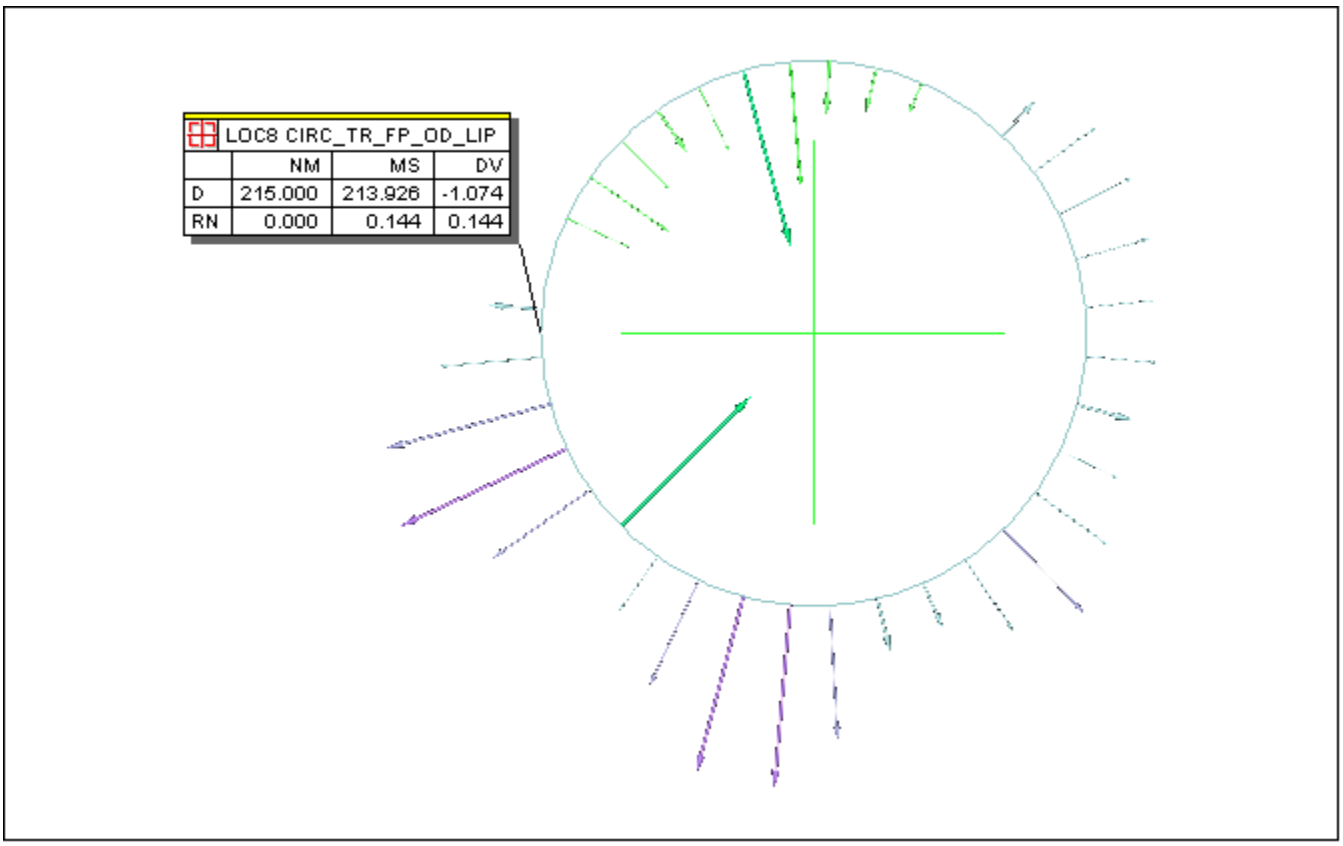


Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D. x1000

PART NUMBER=PN440004-n-Trans-Rings-000-TB9AES002-v2-IR DATE=10/6/2009 TIME=4:06:05 PM
Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
215.0 O.D. lip

MM	DIM LOC8= LOCATION OF CIRCLE CIRC_TR_FP_OD_LIP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.135	0.135	0.250	0.250	0.000
Z	0.000	-0.030	-0.030	0.250	0.250	0.000
D	215.000	213.926	-1.074	0.250	0.250	0.824
RN	0.000	0.144	0.144	0.250	0.000	0.000

MM	DIM RND4= ROUNDNESS OF CIRCLE CIRC_TR_FP_OD_LIP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.144	0.144	0.250	0.000	0.000



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

PART NUMBER=PN440004-n-Trans-Rings-000-TB9AES002-v2-IR DATE=10/6/2009 TIME=4:06:05 PM

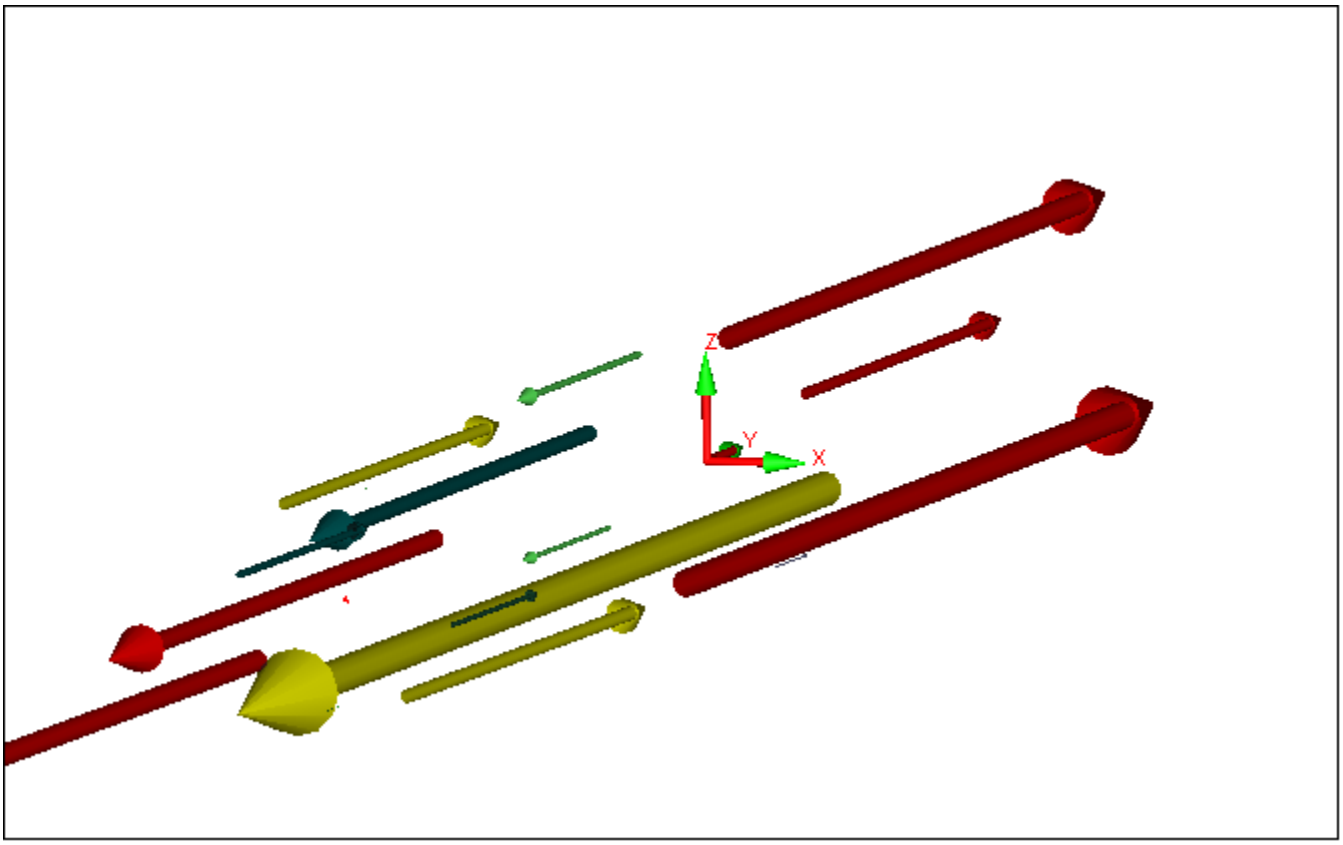
Transition Ring planes

MM	DIM LOC9= LOCATION OF PLANE 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	0.579	0.579	0.200	0.000	0.379

MM	DIM LOC10= LOCATION OF PLANE PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1002.946	4.554	10.000	10.000	0.000
FL	0.000	0.331	0.331	0.200	0.000	0.131

MM	DIM FLAT3= FLATNESS OF PLANE PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.579	0.579	0.250	0.000	0.329

MM	DIM FLAT4= FLATNESS OF PLANE PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.331	0.331	0.250	0.000	0.081



Flatness of Transition Rings
x5000

PART NUMBER=PN440004-n-Trans-Rings-000-TB9AES002-v2-IR DATE=10/6/2009 TIME=4:06:05 PM
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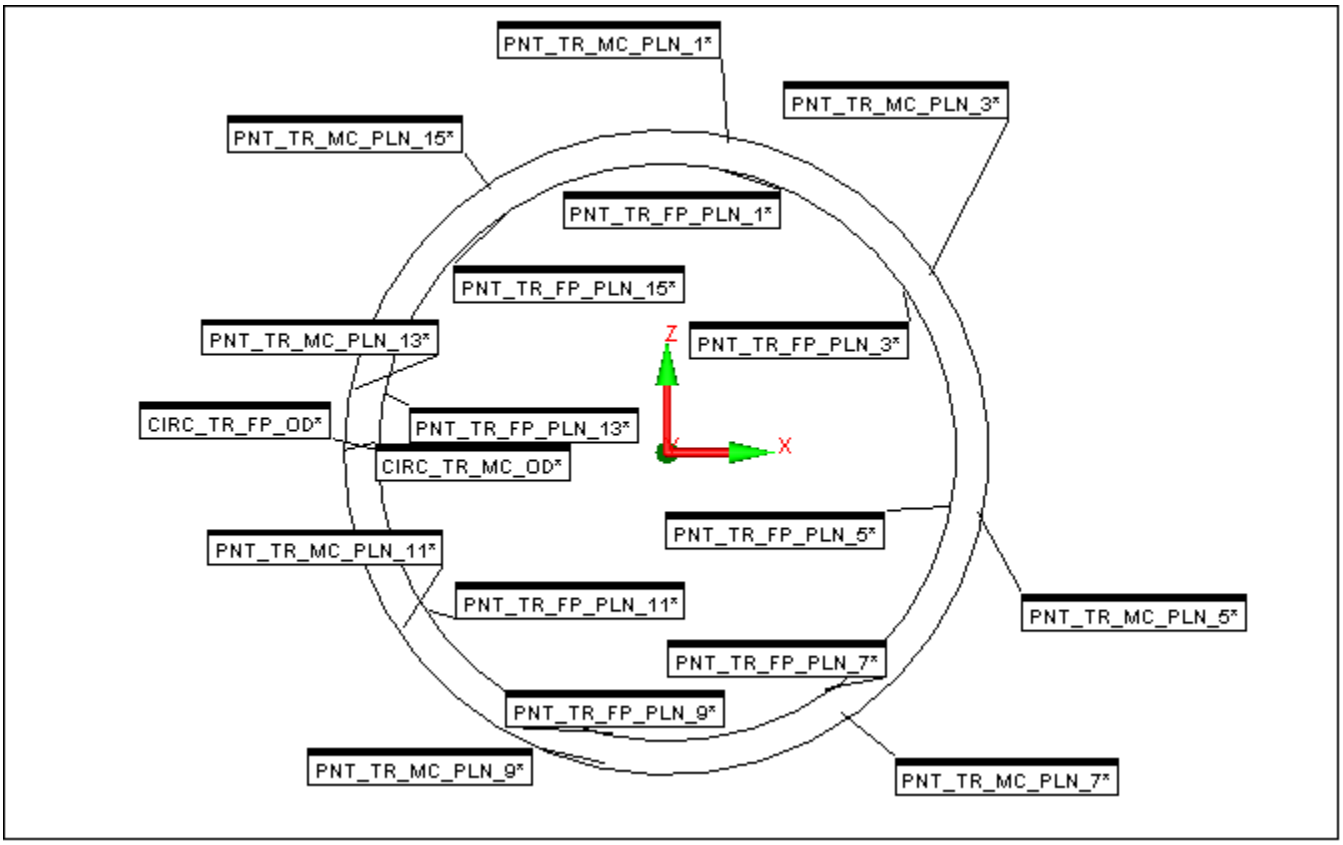

Transition Ring points Main Coupler end

MM	DIM LOC11= LOCATION OF POINT PNT_TR_MC_PLN_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.062	-0.062	1.000	1.000	0.000
PR	115.000	114.944	-0.056	1.000	1.000	0.000
PA	101.250	101.230	-0.020	1.000	1.000	0.000

MM	DIM LOC12= LOCATION OF POINT PNT_TR_MC_PLN_3					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.388	-0.388	1.000	1.000	0.000
PR	115.000	114.975	-0.025	1.000	1.000	0.000
PA	146.250	146.251	0.001	1.000	1.000	0.000

MM	DIM LOC13= LOCATION OF POINT PNT_TR_MC_PLN_5					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.754	-0.754	1.000	1.000	0.000
PR	115.000	115.023	0.023	1.000	1.000	0.000
PA	-168.750	-168.752	-0.002	1.000	1.000	0.000

MM	DIM LOC14= LOCATION OF POINT PNT_TR_MC_PLN_7					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.098	-0.097	1.000	1.000	0.000
PR	115.000	115.042	0.042	1.000	1.000	0.000
PA	-123.750	-123.767	-0.017	1.000	1.000	0.000

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MM	DIM LOC15= LOCATION OF POINT PNT_TR_MC_PLN_9					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.526	0.527	1.000	1.000	0.000
PR	115.000	115.064	0.064	1.000	1.000	0.000
PA	-78.750	-78.789	-0.039	1.000	1.000	0.000

MM	DIM LOC16= LOCATION OF POINT PNT_TR_MC_PLN_11					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.449	0.449	1.000	1.000	0.000
PR	115.000	115.040	0.040	1.000	1.000	0.000
PA	-33.750	-33.815	-0.065	1.000	1.000	0.000

MM	DIM LOC17= LOCATION OF POINT PNT_TR_MC_PLN_13					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.279	0.279	1.000	1.000	0.000
PR	115.000	114.987	-0.013	1.000	1.000	0.000
PA	11.250	11.188	-0.062	1.000	1.000	0.000

MM	DIM LOC18= LOCATION OF POINT PNT_TR_MC_PLN_15					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.049	0.048	1.000	1.000	0.000
PR	115.000	114.941	-0.059	1.000	1.000	0.000
PA	56.250	56.201	-0.049	1.000	1.000	0.000

Transition Ring points Field Probe end

MM	DIM LOC19= LOCATION OF POINT PNT_TR_FP_PLN_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1002.764	4.736	1.000	1.000	3.736
PR	104.000	104.001	0.001	1.000	1.000	0.000
PA	101.250	101.218	-0.032	1.000	1.000	0.000

MM	DIM LOC20= LOCATION OF POINT PNT_TR_FP_PLN_3					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1003.329	4.171	1.000	1.000	3.171
PR	104.000	104.001	0.001	1.000	1.000	0.000
PA	146.250	146.222	-0.028	1.000	1.000	0.000

MM	DIM LOC21= LOCATION OF POINT PNT_TR_FP_PLN_5					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1003.366	4.134	1.000	1.000	3.134
PR	104.000	104.002	0.002	1.000	1.000	0.000
PA	-168.750	-168.781	-0.031	1.000	1.000	0.000

MM	DIM LOC22= LOCATION OF POINT PNT_TR_FP_PLN_7					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1003.271	4.229	1.000	1.000	3.229
PR	104.000	104.001	0.000	1.000	1.000	0.000
PA	-123.750	-123.774	-0.024	1.000	1.000	0.000

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MM DIM LOC23= LOCATION OF POINT PNT_TR_FP_PLN_9

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1003.116	4.384	1.000	1.000	3.384
PR	104.000	103.999	-0.001	1.000	1.000	0.000
PA	-78.750	-78.870	-0.120	1.000	1.000	0.000

MM DIM LOC24= LOCATION OF POINT PNT_TR_FP_PLN_11

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1002.942	4.558	1.000	1.000	3.558
PR	104.000	103.883	-0.117	1.000	1.000	0.000
PA	-33.750	-33.829	-0.079	1.000	1.000	0.000

MM DIM LOC25= LOCATION OF POINT PNT_TR_FP_PLN_13

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1002.408	5.092	1.000	1.000	4.092
PR	104.000	103.846	-0.153	1.000	1.000	0.000
PA	11.250	11.218	-0.032	1.000	1.000	0.000

MM DIM LOC26= LOCATION OF POINT PNT_TR_FP_PLN_15

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1002.371	5.129	1.000	1.000	4.129
PR	104.000	103.881	-0.119	1.000	1.000	0.000
PA	56.250	56.283	0.033	1.000	1.000	0.000

Distances between matching points on Transition Rings

MM DIM DIST_PA_11.25= 2D DISTANCE FROM POINT PNT_TR_MC_PLN_13 TO POINT PNT_TR_FP_PLN_13 PAR TO YAXIS

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1007.500	1002.687	-4.813	1.000	1.000	3.813

MM DIM DIST_PA_56.25= 2D DISTANCE FROM POINT PNT_TR_MC_PLN_15 TO POINT PNT_TR_FP_PLN_15 PAR TO YAXIS

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1007.500	1002.420	-5.080	1.000	1.000	4.080

MM DIM DIST_PA_101.25= 2D DISTANCE FROM POINT PNT_TR_MC_PLN_1 TO POINT PNT_TR_FP_PLN_1 PAR TO YAXIS

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1007.500	1002.703	-4.797	1.000	1.000	3.797

MM DIM DIST_PA_146.25= 2D DISTANCE FROM POINT PNT_TR_MC_PLN_3 TO POINT PNT_TR_FP_PLN_3 PAR TO YAXIS

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1007.500	1002.940	-4.560	1.000	1.000	3.560

MM DIM DIST_PA_-168.75= 2D DISTANCE FROM POINT PNT_TR_MC_PLN_5 TO POINT PNT_TR_FP_PLN_5 PAR TO YAXIS

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1007.500	1002.611	-4.889	1.000	1.000	3.889

MM DIM DIST_PA_-123.75= 2D DISTANCE FROM POINT PNT_TR_MC_PLN_7 TO POINT PNT_TR_FP_PLN_7 PAR TO YAXIS

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1007.500	1003.173	-4.327	1.000	1.000	3.327

MM DIM DIST_PA_-78.75= 2D DISTANCE FROM POINT PNT_TR_MC_PLN_9 TO POINT PNT_TR_FP_PLN_9 PAR TO YAXIS

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1007.500	1003.643	-3.857	1.000	1.000	2.857

MM DIM DIST_PA_-33.75= 2D DISTANCE FROM POINT PNT_TR_MC_PLN_11 TO POINT PNT_TR_FP_PLN_11 PAR TO YAXIS

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1007.500	1003.390	-4.110	1.000	1.000	3.110

MM DIM DIST_BETWEEN_PLANES= 2D DISTANCE FROM PLANE PLNC_TR_MC TO PLANE PLNC_TR_FP PAR TO YAXIS

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1007.500	1002.946	-4.554	1.000	1.000	3.554

LOCATIONS OF CONSTRUCTED CIRCLES
ON 18 HALF CELLS

MM DIM LOC_CC3= LOCATION OF CIRCLE CIRC_CAV_1_1

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.193	0.193	0.200	0.200	0.000
Y	0.000	-963.435	-963.435	2000.000	2000.000	0.000
Z	0.000	-0.264	-0.264	0.200	0.200	0.064
D	210.300	211.026	0.726	0.200	0.200	0.526
RN	0.000	0.162	0.162	0.200	0.000	0.000

MM DIM LOC_CC4= LOCATION OF CIRCLE CIRC_CAV_1_2

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.187	0.187	0.200	0.200	0.000
Y	0.000	-955.038	-955.038	2000.000	2000.000	0.000
Z	0.000	-0.209	-0.209	0.200	0.200	0.009
D	210.300	210.983	0.683	0.200	0.200	0.483
RN	0.000	0.278	0.278	0.200	0.000	0.078

MM DIM LOC_CC5= LOCATION OF CIRCLE CIRC_CAV_2_1

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.278	0.278	0.200	0.200	0.078
Y	0.000	-848.912	-848.912	2000.000	2000.000	0.000
Z	0.000	-0.490	-0.490	0.200	0.200	0.290
D	210.300	211.047	0.747	0.200	0.200	0.547
RN	0.000	0.179	0.179	0.200	0.000	0.000

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MM DIM LOC_CC6= LOCATION OF CIRCLE CIRC_CAV_2_2

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.221	0.221	0.200	0.200	0.021
Y	0.000	-840.232	-840.232	2000.000	2000.000	0.000
Z	0.000	-0.478	-0.478	0.200	0.200	0.278
D	210.300	211.082	0.782	0.200	0.200	0.582
RN	0.000	0.181	0.181	0.200	0.000	0.000

MM DIM LOC_CC7= LOCATION OF CIRCLE CIRC_CAV_3_1

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.196	0.196	0.200	0.200	0.000
Y	0.000	-734.125	-734.125	2000.000	2000.000	0.000
Z	0.000	-0.686	-0.686	0.200	0.200	0.486
D	210.300	211.045	0.745	0.200	0.200	0.545
RN	0.000	0.237	0.237	0.200	0.000	0.037

MM DIM LOC_CC8= LOCATION OF CIRCLE CIRC_CAV_3_2

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.220	0.220	0.200	0.200	0.020
Y	0.000	-725.789	-725.789	2000.000	2000.000	0.000
Z	0.000	-0.691	-0.691	0.200	0.200	0.491
D	210.300	211.024	0.724	0.200	0.200	0.524
RN	0.000	0.197	0.197	0.200	0.000	0.000

MM DIM LOC_CC9= LOCATION OF CIRCLE CIRC_CAV_4_1

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.137	0.137	0.200	0.200	0.000
Y	0.000	-619.621	-619.621	2000.000	2000.000	0.000
Z	0.000	-0.769	-0.769	0.200	0.200	0.569
D	210.300	211.070	0.770	0.200	0.200	0.570
RN	0.000	0.308	0.308	0.200	0.000	0.108

MM DIM LOC_CC10= LOCATION OF CIRCLE CIRC_CAV_4_2

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.167	0.167	0.200	0.200	0.000
Y	0.000	-610.978	-610.978	2000.000	2000.000	0.000
Z	0.000	-0.734	-0.734	0.200	0.200	0.534
D	210.300	211.036	0.736	0.200	0.200	0.536
RN	0.000	0.175	0.175	0.200	0.000	0.000

MM DIM LOC_CC11= LOCATION OF CIRCLE CIRC_CAV_5_1

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.023	-0.023	0.200	0.200	0.000
Y	0.000	-504.398	-504.398	2000.000	2000.000	0.000
Z	0.000	-0.734	-0.734	0.200	0.200	0.534
D	210.300	210.962	0.662	0.200	0.200	0.462
RN	0.000	0.242	0.242	0.200	0.000	0.042

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MM DIM LOC_CC12= LOCATION OF CIRCLE CIRC_CAV_5_2

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.049	-0.049	0.200	0.200	0.000
Y	0.000	-495.454	-495.454	2000.000	2000.000	0.000
Z	0.000	-0.721	-0.721	0.200	0.200	0.521
D	210.300	211.001	0.701	0.200	0.200	0.501
RN	0.000	0.227	0.227	0.200	0.000	0.027

MM DIM LOC_CC13= LOCATION OF CIRCLE CIRC_CAV_6_1

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.333	-0.333	0.200	0.200	0.133
Y	0.000	-389.965	-389.965	2000.000	2000.000	0.000
Z	0.000	-0.605	-0.605	0.200	0.200	0.405
D	210.300	211.022	0.722	0.200	0.200	0.522
RN	0.000	0.175	0.175	0.200	0.000	0.000

MM DIM LOC_CC14= LOCATION OF CIRCLE CIRC_CAV_6_2

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.358	-0.358	0.200	0.200	0.158
Y	0.000	-381.400	-381.400	2000.000	2000.000	0.000
Z	0.000	-0.594	-0.594	0.200	0.200	0.394
D	210.300	211.050	0.750	0.200	0.200	0.550
RN	0.000	0.169	0.169	0.200	0.000	0.000

MM DIM LOC_CC15= LOCATION OF CIRCLE CIRC_CAV_7_1

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.508	-0.508	0.200	0.200	0.308
Y	0.000	-274.411	-274.411	2000.000	2000.000	0.000
Z	0.000	-0.423	-0.423	0.200	0.200	0.223
D	210.300	211.050	0.750	0.200	0.200	0.550
RN	0.000	0.171	0.171	0.200	0.000	0.000

MM DIM LOC_CC16= LOCATION OF CIRCLE CIRC_CAV_7_2

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.521	-0.521	0.200	0.200	0.321
Y	0.000	-266.111	-266.111	2000.000	2000.000	0.000
Z	0.000	-0.409	-0.409	0.200	0.200	0.209
D	210.300	211.032	0.732	0.200	0.200	0.532
RN	0.000	0.118	0.118	0.200	0.000	0.000

MM DIM LOC_CC17= LOCATION OF CIRCLE CIRC_CAV_8_1

AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.390	-0.390	0.200	0.200	0.190
Y	0.000	-159.281	-159.281	2000.000	2000.000	0.000
Z	0.000	-0.246	-0.246	0.200	0.200	0.046
D	210.300	211.066	0.766	0.200	0.200	0.566
RN	0.000	0.217	0.217	0.200	0.000	0.017

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MM	DIM LOC_CC18= LOCATION OF CIRCLE CIRC_CAV_8_2					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.414	-0.414	0.200	0.200	0.214
Y	0.000	-150.889	-150.889	2000.000	2000.000	0.000
Z	0.000	-0.199	-0.199	0.200	0.200	0.000
D	210.300	211.053	0.753	0.200	0.200	0.553
RN	0.000	0.269	0.269	0.200	0.000	0.069

MM	DIM LOC_CC19= LOCATION OF CIRCLE CIRC_CAV_9_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.238	-0.238	0.200	0.200	0.038
Y	0.000	-44.278	-44.278	2000.000	2000.000	0.000
Z	0.000	-0.061	-0.061	0.200	0.200	0.000
D	210.300	211.085	0.785	0.200	0.200	0.585
RN	0.000	0.179	0.179	0.200	0.000	0.000

MM	DIM LOC_CC20= LOCATION OF CIRCLE CIRC_CAV_9_2					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.188	-0.188	0.200	0.200	0.000
Y	0.000	-35.218	-35.218	2000.000	2000.000	0.000
Z	0.000	-0.053	-0.053	0.200	0.200	0.000
D	210.300	211.012	0.712	0.200	0.200	0.512
RN	0.000	0.257	0.257	0.200	0.000	0.057

Location of End Flanges

MM	DIM LOC_23= LOCATION OF CIRCLE CIR_END_FLANGE_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.287	0.287	0.200	0.200	0.087
Y	0.000	115.762	115.762	2000.000	2000.000	0.000
Z	0.000	-0.027	-0.027	0.200	0.200	0.000
D	140.000	140.055	0.055	0.300	0.300	0.000
RN	0.000	0.024	0.024	0.200	0.000	0.000

MM	DIM LOC_24= LOCATION OF CIRCLE CIR_END_FLANGE_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.234	-0.234	0.200	0.200	0.034
Y	-1153.884	-1148.305	5.580	2000.000	2000.000	0.000
Z	0.000	0.333	0.333	0.200	0.200	0.133
D	140.000	139.828	-0.172	0.300	0.300	0.000
RN	0.000	0.010	0.010	0.200	0.000	0.000

PART NUMBER=PN440004-n-Trans-Rings-000-TB9AES002-v2-IR DATE=10/6/2009 TIME=4:06:06 PM

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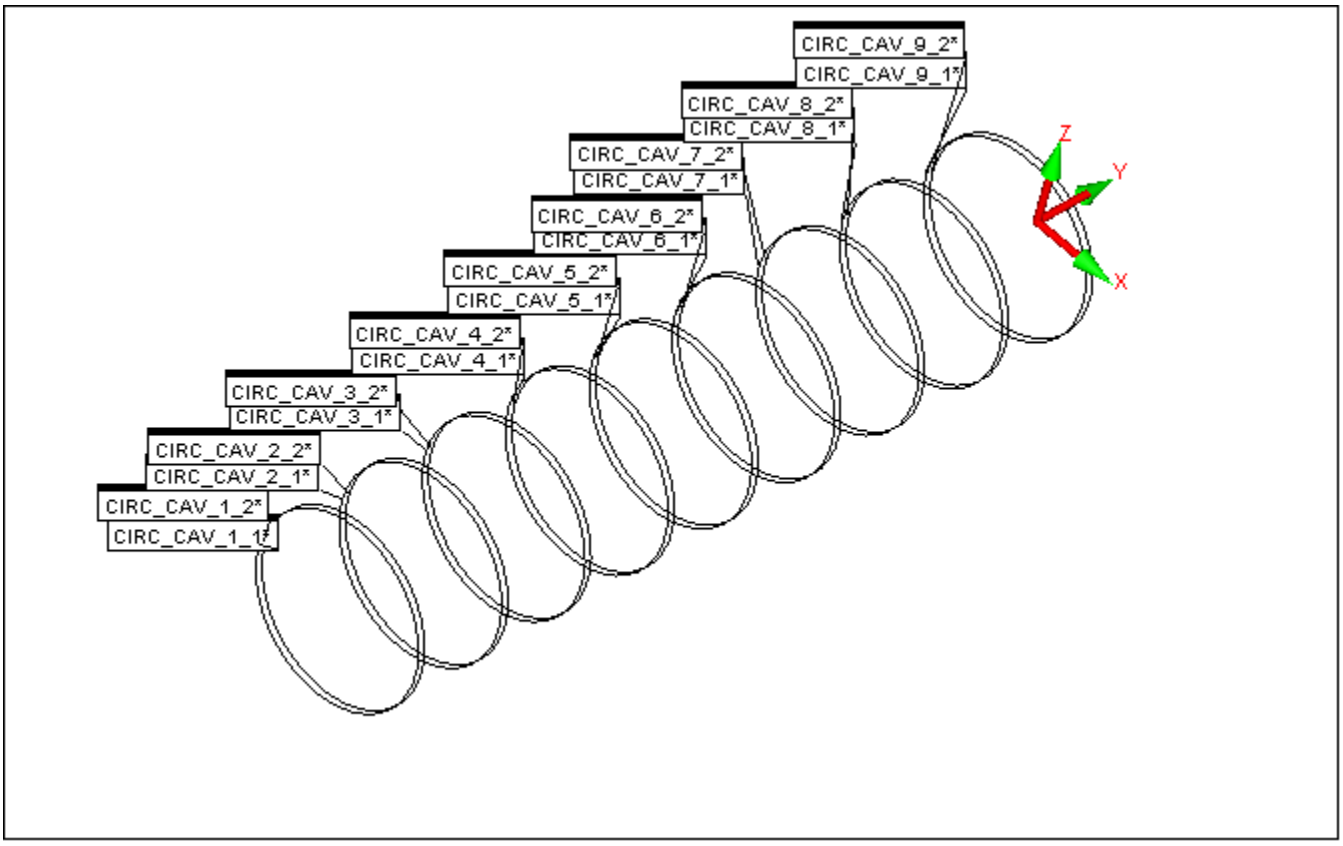

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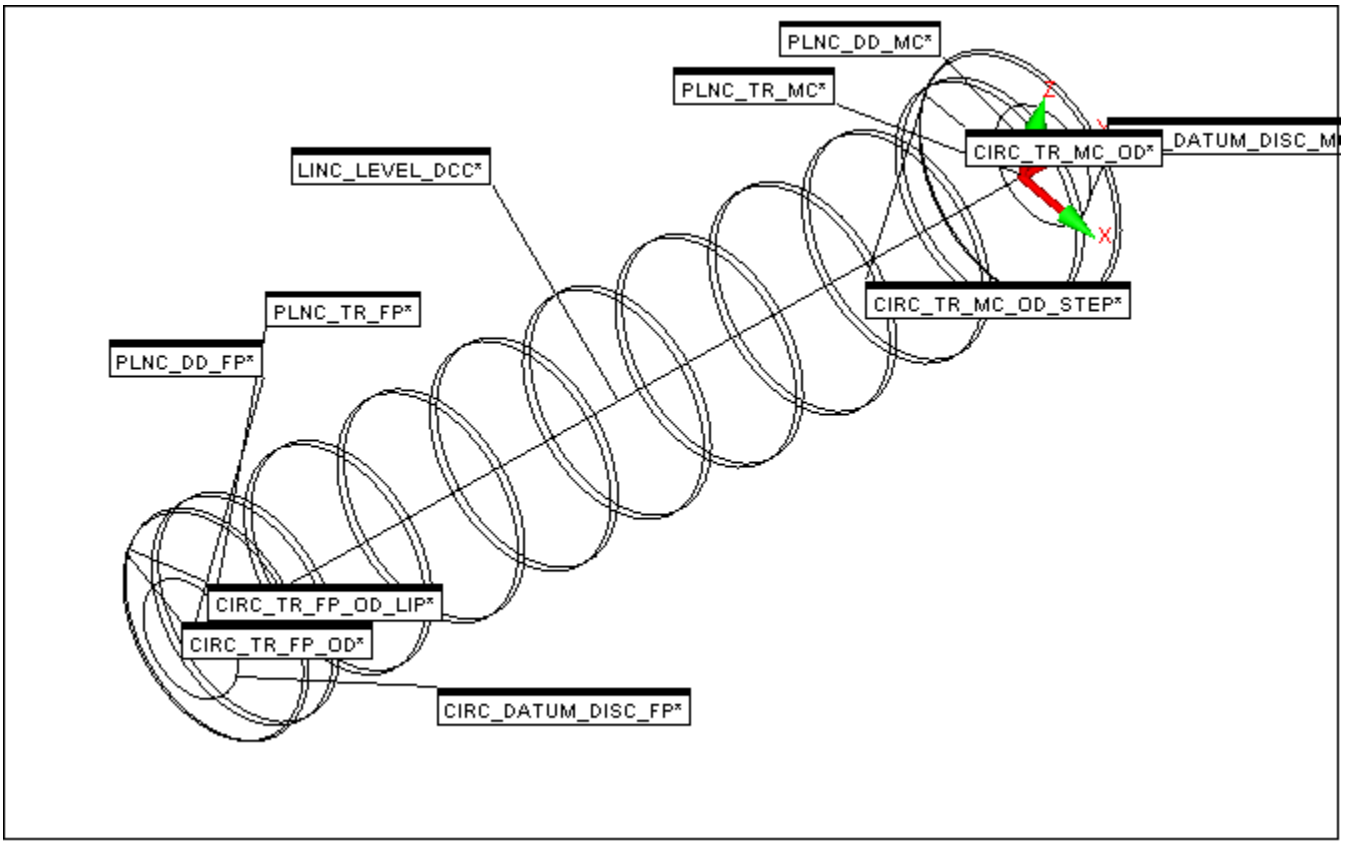

END OF MEASUREMENT FOR
PN=PN440004-n-Trans-Rings-000-TB9AES002-v2-IR DWG= SN
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PART NUMBER=PN440004-n-Trans-Rings-000-TB9AES002-v2-IR DATE=10/6/2009 TIME=4:06:06 PM
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