

**NCSX MCWF B1 to C1 Alignment Calculator**  
**Calculator to Determine Adjustments Needed to Align Monuments**

**Monument Coordinates**

Fixed Design (Target) Values

	x	y	z	Active?
1	10.400	26.717	-16.280	no
2	15.010	37.362	-24.258	no
3	27.282	42.451	-45.518	yes
4	33.060	38.541	-55.532	yes
5	45.238	17.724	-76.648	yes
6	45.875	-15.184	-77.689	yes
7	33.734	-37.935	-56.660	yes
8	25.580	-42.870	-42.560	yes
9	15.137	-37.033	-24.503	yes
10	10.224	-25.803	-16.006	no
11				no
12				no
13				no
14				no
15				no

Measured Values

	x	y	z
1	10.38234	26.70987	-16.290
2	14.99726	37.35538	-24.265
3	27.2768	42.44814	-45.521
4	33.05709	38.54228	-55.532
5	45.24317	17.73006	-76.651
6	45.87014	-15.17942	-77.690
7	33.72795	-37.92909	-56.659
8	25.57782	-42.87054	-42.558
9	15.13374	-37.03833	-24.498
10	10.21926	-25.81089	-15.996
11			
12			
13			
14			
15			

Required Adjustment dz', Target-Measure, in coord sys normal to flange (z' +down)

0.019
0.014
0.006
0.002
-0.001
0.004
0.003
0.000
-0.002
-0.005
0.000
0.000
0.000
0.000
0.000
0.000

**Corner Coordinates**

Fixed Design (Target) Values

	x	y	z
p1	62.440	-47.188	-52.720
p2	26.650	-47.188	-22.689
p3	26.650	47.188	-22.689
p4	62.440	47.188	-52.720

Required Adjustments

	x'	y'	z' (+ is down)
p1	0.002	-0.002	0.001
p2	0.002	-0.001	0.002
p3	0.003	-0.001	0.002
p4	0.003	-0.002	0.002

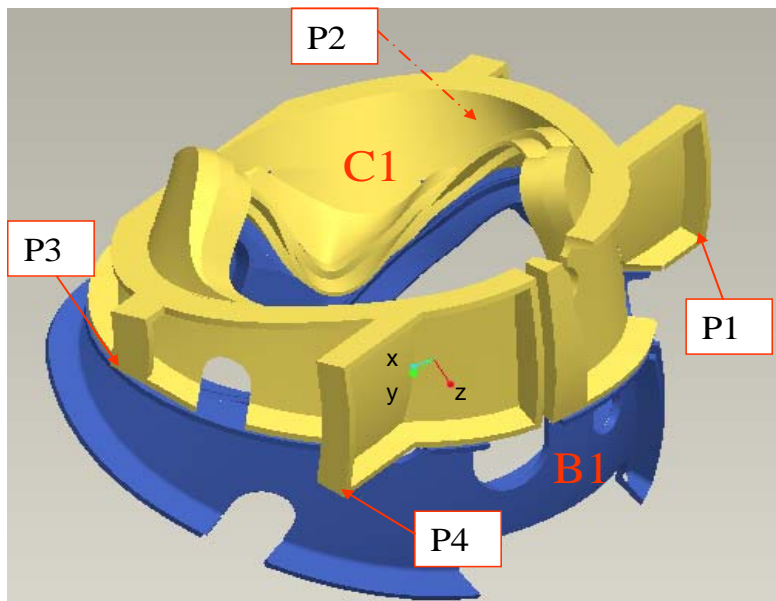
If the Z adjustment return is a negative number, shim thickness must be added.  
 If the Z adjustment return is a positive number, shim thickness must be removed.

**Flange Angle**  deg  
 (use 20 for AB, 40 for BC)

**Click to Solve**

Best Fit Possible After Adjustments  
 rms **0.0064** in  
 (if large, check measurements or coil distortion)

Note: The Analysis ToolPak and Solver Add-ins are required to run this spreadsheet (see Tools->Add-ins...)



050708 Six



## 061908 E Datum Initial

10.391	26.734	-16.301
15.007	37.379	-24.277
27.289	42.471	-45.531
33.071	38.561	-55.542
45.254	17.751	-76.660
45.880	-15.158	-77.696
33.739	-37.907	-56.666
25.586	-42.848	-42.570
15.145	-37.016	-24.509
10.230	-25.787	-16.007

## 061908 E Datum Post Adj 1

10.392	26.696	-16.299
27.283	42.443	-45.529
33.067	38.531	-55.539
45.254	17.723	-76.654
45.882	-15.185	-77.703
33.743	-37.938	-56.674
25.592	-42.878	-42.573
15.146	-37.050	-24.513
10.233	-25.823	-16.010

## 062008 e datum 2nd set al 40

10.393	26.696	-16.299
15.005	37.342	-24.273
27.286	42.438	-45.527
33.066	38.533	-55.539
45.255	17.723	-76.657
45.884	-15.185	-77.702
33.744	-37.938	-56.671
25.595	-42.880	-42.571
15.152	-37.051	-24.512
10.235	-25.825	-16.007

## 062008 HPA1 Edatum post adjust 2

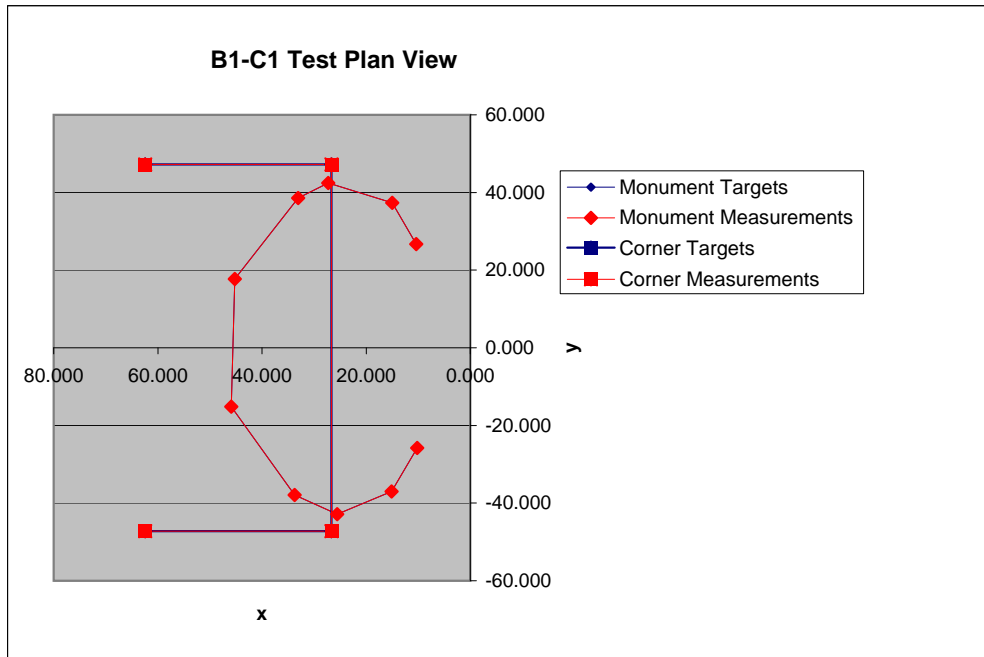
10.383	26.690	-16.291
14.994	37.338	-24.263
27.274	42.440	-45.517
33.057	38.532	-55.530
45.245	17.731	-76.653
45.880	-15.178	-77.697
33.744	-37.935	-56.669
25.596	-42.881	-42.571
15.151	-37.055	-24.509
10.236	-25.830	-16.004

## 062008 e datum post adj 3

10.383	26.704	-16.291
14.996	37.349	-24.267
27.276	42.441	-45.520
33.058	38.534	-55.533
45.243	17.726	-76.656
45.869	-15.184	-77.690
33.728	-37.934	-56.660
25.579	-42.877	-42.561
15.138	-37.042	-24.500
10.221	-25.817	-15.998

## 062008 E Datum post adj 4

10.38234	26.70987	-16.29012
14.99726	37.35538	-24.26532
27.2768	42.44814	-45.52086
33.05709	38.54228	-55.53193
45.24317	17.73006	-76.65067
45.87014	-15.17942	-77.68964
33.72795	-37.92909	-56.65874
25.57782	-42.87054	-42.55826
15.13374	-37.03833	-24.498
10.21926	-25.81089	-15.99586



10.2240 -26 -16

Predicted Measured Values

62.4381	-47.1859	-52.7209
26.6479	-47.1862	-22.6900
26.6473	47.1888	-22.6909
62.4374	47.1891	-52.7218

m)

: shim locations

