



Fermilab

TS-SSC 90-074

10/16/90

To: John Carson
From: Jim Strait
Subject: DC0303 Collaring Shims

The Kapton collaring shims for DC0303 should be 17 mils in the inner coil and 13 mils in the outer coil. These thicknesses include the adhesive and represent the thickness that would be measured with a flat anvil micrometer. The thickness, with and without adhesive, of each of the layers used to make the shim packages should be measured and recorded in the traveller.

The choice of shim thicknesses is based on the prestress in DS0311 and DC0302[1], which are the two magnets in which the strain gage installation was the most accurate and therefore the data are considered to be the most reliable. The inner and outer prestresses immediately after collaring were 6.1 and 5.1 kpsi in DC0302 and 7.9 and 8.9 kpsi in DS0311. The inner and outer coils in DC0303 are both approximately 1.5 mils smaller than those in DC0302 and approximately 1 and 4.5 mils respectively smaller than those in DS0311. The inner and outer shims specified here for DC0303 are 4 and 3 mils larger than in DC0302 and 4 and 5 mils larger than in DS0311. The sum of the inner and outer coils plus shims in DC0303 are therefore approximately 2.5 and 1.5 mils larger than in DC0302 and approximately 3 and 0.5 mils larger than in DS0311.

Unfortunately, I cannot make quantitative sense of the relative preloads in DS0311 and DC0302. The sum of coil plus shim thickness is about 1 mil larger in the inner coil and 1 mil smaller in the outer coil, but the prestresses are lower in both the inner and outer coils in DC0302 than in DS0311. Depending on whether I use the results from DC0302 or DS0311 to predict the prestress in DC0303, I calculate the inner (outer) coil prestress to be between 9 and 13 (7 and 9) kpsi.

The sum of coil plus shim that I am requesting for DC0303 is comparable to the amount I originally requested for DC0302 (about +1 mil in the inner coil and -1 mil in the outer coil). With my original shims, the press did not close on DC0302, so we may expect the same behavior with these shims for DC0303. I see no alternative to using these thicker shims if we want adequate preload in the magnet. We may be forced to drive the tapered keys rather than placing them into the collars.

Reference

- [1] J. Strait, Analysis of DC0302 Collaring Data, TS-SSC 90-071, 10/11/90.

cc: Rodger Bossert
Steve Delchamps
Wayne Koska
Gale Pewitt
Ried Rihel
Masayoshi Wake

for Stock m/s.

Magnet	shims	collar euro	friction fudge	Tcalc	Tmeas
DS0310	13/10	7/8.5 $\begin{bmatrix} 9/7 \\ 9/6.5 \end{bmatrix}$ $\begin{bmatrix} 7.8/5.2 \\ 7.0/4.3 \end{bmatrix}$	1/1 1.0/1.0 0.75/0.75 0.6/0.6	14.4/10.3 10.1/13.9 9.8/14.7 9.8/14.7 9.6/14.8	9.9/4.2
DS0311	13/8	10.8/8.4 11.2/8.6 10.4/6.8 9.5/5.6	1/1 1.0/1.0 0.75/0.75 0.6/0.6	10.0/8.4 7.9/8.5 7.9/8.5 7.9/8.0	7.9/8.0
DC0302	13/10	15.1/10.6 13.2/9.1 12.2/8.3	1/1 0.75/0.75 0.6/0.6	6.6/5.6 6.2/5.1 6.1/5.1	6.1/5.1
DC0303	15/12 15/12 18/14 18/13 18/13 17/13 17/13	12/9 15.1/10.6 15.1/10.6 15.1/10.6 15.1/8.6 11.7/8.6 15.0/10.6	1/1 1/1 1/1 1/1 1/1 1/1 1/1	10.1/7.1 6.4/6.4 9.8/7.6 10.2/6.4 14.2/7.3 12.7/7.8 8.8/6.8	

Magnit	shims	collar enot	friction force	Scale	\sqrt{meas}
DC0303	17/13	11.7/8.6 15.1/10.6	1.0/1.0	12.7/3.8 8.8/6.8	
		10.4/6.8 13.2/9.1	0.75/0.35	13.3/8.8 9.8/7.1	
		9.5/5.6 12.2/8.3	0.6/0.6	13.8/9.8 10.5/7.1	

	^{5 up} in ⑨ 5.9	^{5 up} out ⑦ 5.0		
DCO302			in ⑬ 4.1	out ⑧ 4.6
DCO303	4.3	3.8	2.3	3.2
Δ_{coll}	-1.6	-1.2	-1.8	-1.4
Δ_{shim}	+4(3)	+3(0)	+4(3)	+3(0)
$\Delta_{\text{coll}} + \Delta_{\text{shim}}$	+2.4(1.4)	+1.8(-1.2)	+2.2(1.2)	+1.6(-1.4)

	^{5 up} in ⑨ 5.0	^{5 up} out ⑦ 8.4		
DSO311			in ⑬ 3.6	out ⑧ 7.8
DCO303	4.3	3.8	2.3	3.2
Δ_{coll}	-0.7	-4.6	-1.3	-4.6
Δ_{shim}	+4	+5	+4	+5
$\Delta_{\text{coll}} + \Delta_{\text{shim}}$	+3.3	+0.4	+2.7	+0.4

DSO311	5.0	8.4	3.6	7.8
DCO302	5.9	5.0	4.1	4.6
Δ_{coll}	+0.9	-3.4	+0.5	-3.2
Δ_{shim}	0	+2	0	+2
$\Delta_{\text{coll}} + \Delta_{\text{shim}}$	+0.9	-1.4	+0.5	-1.2

Position	Quadrants				I - 4 - 0
	I - 1 - 0	I - 2 - 0	I - 3 - 0	I - 4 - 0	
1	.018	.014	.018	.015	.018 .015
2	.018	.015	.018	.015	.018 .014
3	.018	.015	.018	.015	.018 .015
4	.018	.015	.018	.015	.018 .015
5	.018	.015	.018	.015	.018 .015
6	.018	.015	.018	.014	.018 .014
7	.018	.014	.018	.015	.018 .015
8	.018	.015	.018	.015	.018 .015

* INNER Pole Shimming $.005 + \Delta H = .0065$
 $.005 + \Delta H = \underline{.0065}$
 Total pole Shim + $\Delta H = .013$
 $.005$ thick Z strip $= \underline{.005}$
 Total thickness $= .018$

* Outer Pole Shimming $.005 + \Delta H = .0065$
 $.002 + \Delta H = \underline{.0035}$
 Total pole shim + $\Delta H = .010$
 $.005$ thick CRP ^{long} _{short} $= \underline{.005}$
 Total thickness $= .015$

Jim.

Pole Shimming as used
 on DC0302. measured with a
 1" mic, then after keying failed

Bob Jensen
 X3173

----- Magnet Number DC0303 -----

Collar Parameters:

Undefl. Cavity Oversize (nom.) = 2.00 mils
d(cavity_in)/d(stress_in) = 0.28 mils/kpsi
d(cavity_in)/d(stress_out) = 0.28 mils/kpsi
d(cavity_out)/d(stress_in) = 0.28 mils/kpsi
d(cavity_out)/d(stress_out) = 0.28 mils/kpsi
Collar cavity "error" (inner) = 15.10 mils
Collar cavity "error" (outer) = 10.80 mils
Friction fudge factor (inner) = 1.00
Friction fudge factor (outer) = 1.00

Average Coil Parameters:

Undefl. Inner Coil Oversize = 8.91 mils
Undefl. Outer Coil Oversize = 8.23 mils
d(coil_in)/(dstress_in) = -0.51 mils/kpsi
d(coil_out)/(dstress_out) = -0.63 mils/kpsi

shim (mils) prestress (kpsi)

inner	outer	inner	outer
13.0	12.0	3.5	7.3
14.0	12.0	4.9	8.9
15.0	12.0	6.4	8.4
14.0	11.0	5.4	5.8
14.0	13.0	4.5	8.1
11.0	11.0	1.1	7.0
15.0	13.0	5.9	7.7
17.0	13.0	8.8	6.8

----- Magnet Number DC0303 -----

Collar Parameters:

Undefl. Cavity Oversize (nom.) = 2.00 mils
d(cavity_in)/d(stress_in) = 0.28 mils/kpsi
d(cavity_in)/d(stress_out) = 0.28 mils/kpsi
d(cavity_out)/d(stress_in) = 0.28 mils/kpsi
d(cavity_out)/d(stress_out) = 0.28 mils/kpsi
Collar cavity "error" (inner) = 11.70 mils
Collar cavity "error" (outer) = 8.60 mils
Friction fudge factor (inner) = 1.00
Friction fudge factor (outer) = 1.00

Average Coil Parameters:

Undefl. Inner Coil Oversize = 8.91 mils
Undefl. Outer Coil Oversize = 8.23 mils
d(coil_in)/(dstress_in) = -0.51 mils/kpsi
d(coil_out)/(dstress_out) = -0.63 mils/kpsi

shim (mils) prestress (kpsi)

inner	outer	inner	outer
13.0	12.0	7.5	8.3
14.0	12.0	8.9	7.9
15.0	12.0	10.3	7.4
14.0	11.0	9.3	8.6
14.0	13.0	8.5	9.1
11.0	11.0	5.1	7.9
15.0	13.0	9.9	8.7
17.0	13.0	12.7	7.8

----- Magnet Number DC0303 -----

Collar Parameters:

Undefl. Cavity Oversize (nom.) = 2.00 mils
d(cavity_in)/d(stress_in) = 0.28 mils/kpsi
d(cavity_in)/d(stress_out) = 0.28 mils/kpsi
d(cavity_out)/d(stress_in) = 0.28 mils/kpsi
d(cavity_out)/d(stress_out) = 0.28 mils/kpsi
Collar cavity "error" (inner) = 10.40 mils
Collar cavity "error" (outer) = 8.80 mils
Friction fudge factor (inner) = 0.75
Friction fudge factor (outer) = 0.75

Average Coil Parameters:

Undefl. Inner Coil Oversize = 8.91 mils
Undefl. Outer Coil Oversize = 8.23 mils
d(coil_in)/(dstress_in) = -0.51 mils/kpsi
d(coil_out)/(dstress_out) = -0.63 mils/kpsi

shim (mils) prestress (kpsi)

inner	outer	inner	outer
13.0	12.0	8.8	9.9
14.0	12.0	8.8	9.3
15.0	12.0	10.4	8.8
14.0	11.0	9.3	7.7
14.0	13.0	7.9	10.9
11.0	11.0	3.9	9.7
15.0	13.0	9.7	10.2
17.0	13.0	13.3	8.8

----- Magnet Number DC0303 -----

Collar Parameters:

Undefl. Cavity .Oversize (nom.) = 2.00 mils
d(cavity_in)/d(stress_in) = 0.28 mils/kpsi
d(cavity_in)/d(stress_out) = 0.28 mils/kpsi
d(cavity_out)/d(stress_in) = 0.28 mils/kpsi
d(cavity_out)/d(stress_out) = 0.28 mils/kpsi
Collar cavity "error" (inner) = 13.20 mils
Collar cavity "error" (outer) = 9.10 mils
Friction fudge factor (inner) = 0.75
Friction fudge factor (outer) = 0.75

Average Coil Parameters:

Undefl. Inner Coil Oversize = 8.91 mils
Undefl. Outer Coil Oversize = 8.23 mils
d(coil_in)/(dstress_in) = -0.51 mils/kpsi
d(coil_out)/(dstress_out) = -0.63 mils/kpsi

shim (mils) prestress (kpsi)

inner	outer	inner	outer
13.0	12.0	3.3	8.2
14.0	12.0	5.1	7.5
15.0	12.0	6.9	6.8
14.0	11.0	5.8	5.9
14.0	13.0	4.4	9.1
11.0	11.0	0.4	7.9
15.0	13.0	6.2	8.4
17.0	13.0	9.8	7.1

----- Magnet Number DC0303 -----

Collar Parameters:

Undefl. Cavity Oversize (nom.) = 2.00 mils
 $d(\text{cavity_in})/d(\text{stress_in})$ = 0.28 mils/kpsi
 $d(\text{cavity_in})/d(\text{stress_out})$ = 0.28 mils/kpsi
 $d(\text{cavity_out})/d(\text{stress_in})$ = 0.28 mils/kpsi
 $d(\text{cavity_out})/d(\text{stress_out})$ = 0.28 mils/kpsi
 Collar cavity "error" (inner) = 9.50 mils
 Collar cavity "error" (outer) = 5.60 mils
 Friction fudge factor (inner) = 0.60
 Friction fudge factor (outer) = 0.60

Average Coil Parameters:

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Undefl. Inner Coil Oversize = 8.91 mils
Undefl. Outer Coil Oversize = 8.23 mils
d(coil_in)/(dstress_in) = -0.51 mils/kpsi
d(coil_out)/(dstress_out) = -0.63 mils/kpsi

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inner	outer	inner	outer
13.0	12.0	8.2	11.6
14.0	12.0	8.3	10.7
15.0	12.0	10.5	9.8
14.0	11.0	9.2	8.8
14.0	13.0	7.4	12.6
11.0	11.0	2.8	11.5
15.0	13.0	9.5	11.7
17.0	13.0	13.8	9.8

----- Magnet Number DC0303 -----

Collar Parameters:

Undefl. Cavity Oversize (nom.) = 2.00 mils
d(cavity_in)/d(stress_in) = 0.28 mils/kpsi
d(cavity_in)/d(stress_out) = 0.28 mils/kpsi
d(cavity_out)/d(stress_in) = 0.28 mils/kpsi
d(cavity_out)/d(stress_out) = 0.28 mils/kpsi
Collar cavity "error" (inner) = 12.20 mils
Collar cavity "error" (outer) = 8.30 mils
Friction fudge factor (inner) = 0.60
Friction fudge factor (outer) = 0.60

Average Coil Parameters:

Undefl. Inner Coil Oversize = 8.91 mils
Undefl. Outer Coil Oversize = 8.23 mils
d(coil_in)/(dstress_in) = -0.51 mils/kpsi
d(coil_out)/(dstress_out) = -0.63 mils/kpsi

shim (mils)		prestress (kpsi)	
inner	outer	inner	outer
13.0	12.0	2.8	8.9
14.0	12.0	5.0	8.0
15.0	12.0	7.1	7.1
14.0	11.0	5.9	6.1
14.0	13.0	4.1	9.9
11.0	11.0	-0.6	8.8
15.0	13.0	6.2	9.0
17.0	13.0	10.5	7.1

----- Magnet Number DC0303 -----

Data file: ts_ssc_prj\$root:[ts_ssc_prj.data.coil_size]ssc_inner_17m1010.dat
Coil # 17M-1010 Coil type: INNER Coil location: Lower Inner
COIL # 17M-1010 COIL TYPE: INNER DATE:

MEAS. BY:

coil stress (kpsi) 8.0 8.0 10.0 12.0

average size (mils) 0.0054 0.0046 0.0035 0.0025
sigma 0.0014 0.0008 0.0008 0.0011
minimum 0.0005 0.0029 0.0020 -.0005
maximum 0.0074 0.0062 0.0051 0.0124
range 0.0069 0.0033 0.0031 0.0129
#points 20 20 20 441

Fit avg = avg_0 + (dl/dsig) * stress

avg_0 = 8.4 dl/dsig = -0.48

----- Magnet Number DC0303 -----

Data file: ts_ssc_prj\$root:[ts_ssc_prj.data.coil_size]ssc_inner_17m1012.dat
Coil # 17M-1012 Coil type: INNER Coil location: Upper Inner
COIL # 17M-1012 COIL TYPE: INNER DATE: 8/7/90 MEAS. BY: SANDERS

coil stress (kpsi) 8.0 8.0 10.0 12.0

average size (mils) 0.0063 0.0052 0.0040 0.0032
sigma 0.0010 0.0009 0.0009 0.0010
minimum 0.0047 0.0036 0.0028 0.0001
maximum 0.0084 0.0071 0.0061 0.0124
range 0.0037 0.0035 0.0033 0.0123
#points 20 20 20 444

Fit avg = avg_0 + (dl/dsig) * stress

avg_0 = 9.4 dl/dsig = -0.53

----- Magnet Number DC0303 -----

Data file: ts_ssc_prj\$root:[ts_ssc_prj.data.coil_size]ssc_outer_17m2012.dat

Coil # 17M-2012 Coil type: OUTER Coil location: Lower Outer

COIL # 17M-2012 COIL TYPE: OUTER DATE: 8/30/90 MEAS. BY: PHILLIPS

coil stress (kpsi) 8.0 8.0 10.0 12.0

average size (mils) 0.0042 0.0027 0.0014 0.0004
sigma 0.0009 0.0010 0.0010 0.0009
minimum 0.0025 0.0008 -0.002 -0.0047
maximum 0.0059 0.0044 0.0032 0.0034
range 0.0034 0.0036 0.0034 0.0081
#points 20 20 20 444

Fit avg = avg_0 + (dI/dsig) * stress

avg_0 = 7.9 dI/dsig = -0.84

----- Magnet Number DC0303 -----

Data file: ts_ssc_prj\$root:[ts_ssc_prj.data.coil_size]ssc_outer_17m2011.dat

Coil # 17M-2011 Coil type: OUTER Coil location: Upper Outer

COIL # 17M-2011 COIL TYPE: OUTER DATE: 8/17/90 MEAS. BY: SANDERS

coil stress (kpsi) 8.0 8.0 10.0 12.0

average size (mils) 0.0048 0.0037 0.0023 0.0012
sigma 0.0009 0.0012 0.0008 0.0008
minimum 0.0035 0.0021 0.0009 -0.0017
maximum 0.0064 0.0075 0.0038 0.0030
range 0.0029 0.0054 0.0029 0.0047
#points 20 20 20 443

Fit avg = avg_0 + (dI/dsig) * stress

avg_0 = 8.5 dI/dsig = -0.61

----- Magnet Number DC0303 -----
 Data file: ts_ssc_prj\$root:[ts_ssc_prj.data.coil_size]ssc_inner_17m1010.dat
 Coil #: 17M-1010 Coil type: INNER Coil location: Lower Inner
 COIL #: 17H-1010 COIL TYPE: INNER DATE: MEAS. BY: AVERAGE

coil stress (kpsi)	6.0	8.0	10.0	12.0
average size (mis)	0.0054	0.0045	0.0035	0.0025
sigma	0.0014	0.0008	0.0008	0.0011
minimum	0.0005	0.0029	0.0020	-0.0005
maximum	0.0074	0.0062	0.0051	0.0124
range	0.0069	0.0038	0.0031	0.0129
#points	20	20	20	441

Fit avg = avg_0 + (dI/dsig) * stress
 avg_0 = 8.4 dI/dsig = -0.48

stress(kpsi)	6.0	8.0	10.0	12.0	6.0	8.0	10.0	12.0	Coil - Master
Posf Dir	Coil Master	Coil - Master							
1									
2									
3					1.0003	0.9968			0.0085
4					0.9998	0.9968			0.0030
5					1.0003	0.9968			0.0035
6					0.9991	0.9968			0.0023
7					0.9985	0.9968			0.0017
8					0.9992	0.9968			0.0024
9					0.9992	0.9968			0.0024
10					0.9999	0.9968			0.0031
11					1.0004	0.9968			0.0036
12					1.0001	0.9968			0.0033
13					1.0004	0.9968			0.0036
14					0.9999	0.9968			0.0031
15					0.9992	0.9968			0.0024
16					0.9991	0.9968			0.0023
17					0.9991	0.9968			0.0023
18					0.9995	0.9968			0.0027
19					1.0004	0.9968			0.0036
20	UP	1.0074	1.0000	1.0052	0.9990	1.0032	0.9981	1.0009	0.9968
20	DN	1.0044	0.9995	1.0031	0.9985	1.0019	0.9975	1.0009	0.9968
21					0.0074	0.0062	0.0051	0.0041	
21					0.0044	0.0046	0.0044	0.0041	
22					0.9998	0.9968			0.0030
23					0.9992	0.9968			0.0024
24					0.9986	0.9968			0.0018
25					0.9990	0.9968			0.0022
25					0.9995	0.9968			0.0027
26					1.0004	0.9968			0.0036
27					1.0001	0.9968			0.0033
28					0.9994	0.9968			0.0026
29					1.0002	0.9968			0.0034
30					0.9993	0.9968			0.0025
31					0.9982	0.9968			0.0014
32					0.9992	0.9968			0.0024
33					0.9990	0.9968			0.0022
34					0.9993	0.9968			0.0025
35					0.9998	0.9968			0.0032
36					0.9992	0.9968			0.0026
37					0.9978	0.9966			0.0012
38					0.9981	0.9966			0.0015
39					0.9981	0.9966			0.0015
40	UP	1.0005	1.0000	1.0030	0.9990	1.0008	0.9978	0.9978	0.9966
40	DN	1.0028	0.9996	1.0009	0.9985	0.9998	0.9975	0.9987	0.9966
41					0.0005	0.0040	0.0030	0.0012	
41					0.0027	0.0024	0.0023	0.0021	
42					0.9982	0.9967			0.0015
43					0.9988	0.9966			0.0022
43					0.9977	0.9966			0.0011
44					0.9995	0.9968			0.0029
45					1.0000	0.9966			0.0034
46					1.0007	0.9968			0.0041
47					1.0009	0.9966			0.0043
48					1.0003	0.9968			0.0037
49					0.9987	0.9966			0.0021
50					0.9987	0.9966			0.0021
51					0.9984	0.9966			0.0018
52					0.9983	0.9966			0.0017
53					0.9978	0.9966			0.0012
54					0.9983	0.9966			0.0017
55					0.9991	0.9966			0.0025
57					0.9996	0.9966			0.0030
58					0.9994	0.9966			0.0028
59					0.9989	0.9968			0.0023
60	UP	1.0057	1.0000	1.0036	0.9991	1.0014	0.9979	0.9983	0.9966
60	DN	1.0028	0.9995	1.0018	0.9986	1.0001	0.9976	0.9993	0.9966
61					0.0057	0.0045	0.0035	0.0027	
61					0.0033	0.0027	0.0025	0.0027	
62					0.9982	0.9966			0.0016
62					0.9981	0.9966			0.0015
63					0.9987	0.9966			0.0021
64					0.9997	0.9966			0.0031
65					0.9976	0.9966			0.0010
66					0.9981	0.9966			0.0015
67					0.9989	0.9966			0.0003
68					0.9989	0.9966			0.0028
69					0.9998	0.9967			0.0031
70					0.9985	0.9966			0.0020
71					0.9992	0.9966			0.0026
72					0.9995	0.9966			0.0029
73					0.9998	0.9966			0.0027
74					0.9984	0.9966			0.0018
75					0.9988	0.9966			0.0022
76					0.9995	0.9968			0.0027
77					0.9989	0.9966			0.0023
78					0.9988	0.9966			0.0022
79					0.9989	0.9966			0.0023
80	UP	1.0052	1.0000	1.0032	0.9990	1.0011	0.9978	0.9990	0.9966
80	DN	1.0023	0.9994	1.0001	0.9984	0.9999	0.9997	0.9990	0.9966
81					0.0052	0.0042	0.0033	0.0024	
81					0.0029	0.0017	0.0002	0.0024	
82					0.9983	0.9966			0.0017
82					0.9981	0.9966			0.0015
83					0.9985	0.9966			0.0020
84					0.9994	0.9966			0.0028
85					0.9997	0.9966			0.0031
86					0.9992	0.9966			0.0026
87					0.9984	0.9966			0.0018
88					0.9977	0.9966			0.0011
89					0.9993	0.9966			0.0027
90					0.9999	0.9966			0.0033
91					0.9988	0.9966			0.0022
92					0.9992	0.9966			0.0026
93					1.0002	0.9966			0.0036
94					0.9997	0.9966			0.0031
95					0.9990	0.9966			0.0024

96		0.9994 0.9956	0.0028
97		1.0003 0.9956	0.0037
98		1.0002 0.9956	0.0036
99		0.9995 0.9956	0.0030
100 UP	1.0074 1.0000 1.0050 0.9989 1.0028 0.9978	1.0007 0.9956	0.0074 0.0061 0.0060
100 DN	1.0042 0.9996 1.0028 0.9985 1.0016 0.9975	1.0007 0.9956	0.0046 0.0043 0.0041
101		1.0006 0.9956	0.0040
102		1.0009 0.9956	0.0043
103		1.0002 0.9956	0.0036
104		0.9993 0.9956	0.0027
105		0.9989 0.9956	0.0028
106		0.9983 0.9956	0.0017
107		0.9979 0.9956	0.0013
108		0.9983 0.9956	0.0017
109		0.9985 0.9956	0.0020
110		0.9992 0.9956	0.0026
111		1.0003 0.9956	0.0037
112		1.0009 0.9956	0.0043
113		0.9994 0.9956	0.0029
114		0.9996 0.9956	0.0030
115		0.9995 0.9956	0.0030
116		0.9990 0.9956	0.0024
117		0.9990 0.9956	0.0024
118		0.9989 0.9956	0.0023
119		0.9989 0.9956	0.0023
120 UP	1.0052 1.0000 1.0036 0.9990 1.0013 0.9978	0.9992 0.9956	0.0052 0.0046 0.0035
120 DN	1.0029 0.9995 1.0014 0.9985 1.0002 0.9975	0.9992 0.9956	0.0084 0.0029 0.0027
121		0.9976 0.9956	0.0010
122		0.9974 0.9956	0.0008
123		0.9985 0.9956	0.0020
124		0.9993 0.9956	0.0027
125		0.9992 0.9956	0.0026
126		0.9995 0.9956	0.0029
127		0.9998 0.9956	0.0032
128		0.9999 0.9956	0.0033
129		0.9981 0.9956	0.0015
130		0.9986 0.9956	0.0020
131		0.9990 0.9956	0.0024
132		0.9993 0.9956	0.0027
133		0.9995 0.9956	0.0029
134		1.0002 0.9956	0.0036
135		1.0012 0.9956	0.0045
136		1.0012 0.9956	0.0046
137		1.0012 0.9956	0.0046
138		1.0003 0.9956	0.0037
139		0.9993 0.9956	0.0027
140 UP	1.0057 1.0000 1.0037 0.9988 1.0013 0.9978	0.9993 0.9956	0.0057 0.0049 0.0035
140 DN	1.0028 0.9995 1.0014 0.9984 1.0002 0.9975	0.9993 0.9956	0.0038 0.0030 0.0027
141		0.9995 0.9956	0.0029
142		0.9990 0.9956	0.0024
143		1.0001 0.9956	0.0035
144		0.9998 0.9956	0.0032
145		1.0070 0.9956	0.0104
146		1.0003 0.9956	0.0087
147		1.0006 0.9956	0.0040
148		0.9993 0.9956	0.0027
149		1.0006 0.9956	0.0040
150		1.0002 0.9956	0.0036
151		0.9995 0.9956	0.0030
152		0.9980 0.9956	0.0014
153		0.9985 0.9956	0.0019
154		0.9975 0.9956	0.0010
155		0.9999 0.9956	0.0038
156		1.0001 0.9956	0.0035
157		0.9995 0.9956	0.0030
158		0.9975 0.9956	0.0009
159		0.9978 0.9956	0.0012
160 UP	1.0050 1.0000 1.0029 0.9990 1.0007 0.9978	0.9966 0.9956	0.0050 0.0039 0.0029
160 DN	1.0020 0.9995 1.0050 0.9985 0.9996 0.9975	0.9986 0.9956	0.0025 0.0075 0.0021
161		0.9984 0.9956	0.0018
162		0.9974 0.9956	0.0008
163		0.9992 0.9956	0.0026
164		0.9991 0.9956	0.0025
165		0.9991 0.9956	0.0025
166		0.9997 0.9956	0.0031
167		1.0008 0.9956	0.0042
168		1.0002 0.9956	0.0036
169		1.0011 0.9956	0.0045
170		1.0012 0.9956	0.0046
171		0.9996 0.9956	0.0030
172		0.9993 0.9956	0.0027
173		0.9992 0.9956	0.0026
174		0.9995 0.9956	0.0029
175		0.9980 0.9956	0.0014
176		0.9975 0.9956	0.0010
177		0.9977 0.9956	0.0011
178		0.9983 0.9956	0.0017
179		0.9996 0.9956	0.0030
180 UP	1.0056 1.0000 1.0037 0.9991 1.0016 0.9979	0.9994 0.9956	0.0056 0.0046 0.0037
180 DN	1.0030 0.9996 1.0016 0.9985 1.0004 0.9975	0.9994 0.9956	0.0034 0.0031 0.0029
181		0.9985 0.9956	0.0019
182		0.9988 0.9956	0.0017
183		0.9985 0.9956	0.0019
184		1.0000 0.9956	0.0034
185		0.9992 0.9956	0.0026
186		0.9984 0.9956	0.0019
187		0.9989 0.9956	0.0023
188		0.9981 0.9956	0.0015
189		0.9993 0.9956	0.0027
190		0.9986 0.9956	0.0020
191		0.9992 0.9956	0.0026
192		0.9999 0.9956	0.0033
193		0.9996 0.9956	0.0030
194		0.9998 0.9956	0.0030
195		1.0005 0.9956	0.0039
196		1.0090 0.9956	0.0124
197		1.0001 0.9956	0.0035
198		0.9996 0.9956	0.0030
199		0.9989 0.9956	0.0023
200 UP	1.0040 1.0000 1.0019 0.9990 0.9999 0.9979	0.9977 0.9956	0.0040 0.0029 0.0020
200 DN	1.0012 0.9995 0.9999 0.9986 0.9988 0.9976	0.9977 0.9956	0.0017 0.0013 0.0012
201		0.9982 0.9956	0.0016
202		0.9992 0.9956	0.0026
203		0.9979 0.9956	0.0013
204		0.9996 0.9956	0.0030
205		0.9997 0.9956	0.0031
206		0.9993 0.9956	0.0027
207		0.9994 0.9956	0.0019
208		0.9996 0.9956	0.0030
209		0.9990 0.9956	0.0024

210		0.9994 0.9966	0.0028
211		0.9998 0.9966	0.0032
212		0.9997 0.9966	0.0031
213		0.9993 0.9966	0.0027
214		0.9995 0.9966	0.0029
215			
216		0.9994 0.9966	0.0028
217		0.9998 0.9966	0.0032
218		0.9988 0.9966	0.0022
219		0.9989 0.9966	0.0023
220		0.9988 0.9966	0.0022
221		0.9988 0.9966	0.0022
222		0.9982 0.9966	0.0016
223		0.9986 0.9966	0.0020
224		0.9987 0.9966	0.0021
225		0.9988 0.9966	0.0020
226		0.9998 0.9966	0.0032
227		0.9995 0.9966	0.0029
228		0.9994 0.9966	0.0028
229		1.0000 0.9966	0.0034
230		0.9988 0.9966	0.0022
231 UP	1.0050 1.0000 1.0028 0.9991 1.0007 0.9979	0.9986 0.9966	0.0050 0.0037 0.0028 0.0020
231 DN	1.0021 0.9994 1.0007 0.9984 0.9995 0.9976	0.9988 0.9966	0.0027 0.0028 0.0020 0.0020
232		0.9998 0.9966	0.0032
233		0.9997 0.9966	0.0031
234		0.9986 0.9966	0.0020
235		0.9994 0.9966	0.0028
236		0.9994 0.9966	0.0028
237		0.9996 0.9966	0.0030
238		0.9988 0.9966	0.0022
239		0.9989 0.9966	0.0023
240		0.9994 0.9966	0.0028
241		1.0001 0.9966	0.0035
242		1.0004 0.9966	0.0038
243		1.0002 0.9966	0.0035
244		0.9997 0.9966	0.0031
245		0.9993 0.9966	0.0027
246		0.9989 0.9966	0.0023
247		0.9980 0.9966	0.0014
248		0.9983 0.9966	0.0017
249		0.9980 0.9966	0.0014
250		0.9979 0.9966	0.0013
251 UP	1.0059 1.0000 1.0032 0.9990 1.0010 0.9978	0.9988 0.9966	0.0059 0.0042 0.0032 0.0022
251 DN	1.0022 0.9993 1.0008 0.9983 0.9998 0.9976	0.9988 0.9966	0.0029 0.0025 0.0022 0.0022
252		0.9993 0.9966	0.0027
253		0.9996 0.9966	0.0030
254		0.9995 0.9966	0.0029
255		0.9998 0.9966	0.0032
256		0.9999 0.9966	0.0033
257		0.9998 0.9966	0.0032
258		0.9984 0.9966	0.0018
259		0.9983 0.9966	0.0017
260		0.9993 0.9966	0.0027
261		0.9985 0.9966	0.0019
262		0.9988 0.9966	0.0022
263		0.9996 0.9966	0.0030
264		1.0000 0.9966	0.0034
265		0.9993 0.9966	0.0027
266		0.9984 0.9966	0.0018
267		0.9983 0.9966	0.0017
268		0.9988 0.9966	0.0017
269		0.9969 0.9966	0.0003
270		0.9982 0.9966	0.0016
271 UP	1.0052 1.0000 1.0031 0.9990 1.0011 0.9979	0.9987 0.9966	0.0052 0.0041 0.0032 0.0021
271 DN	1.0022 0.9998 1.0008 0.9983 0.9992 0.9975	0.9987 0.9966	0.0029 0.0025 0.0017 0.0021
272		0.9980 0.9966	0.0014
273		0.9980 0.9966	0.0014
274		0.9998 0.9966	0.0032
275		1.0002 0.9966	0.0036
276		1.0004 0.9966	0.0038
277		0.9999 0.9966	0.0033
278		0.9993 0.9966	0.0027
279		0.9994 0.9966	0.0028
280		0.9994 0.9966	0.0028
281		0.9997 0.9966	0.0031
282		0.9977 0.9966	0.0011
283		0.9988 0.9966	0.0022
284		0.9988 0.9966	0.0022
285		0.9982 0.9966	0.0016
286		0.9966 0.9966	0.0000
287		0.9978 0.9966	0.0012
288			
289		0.9978 0.9966	0.0012
290		0.9981 0.9966	0.0015
291 UP	1.0051 1.0000 1.0030 0.9990 1.0008 0.9978	0.9987 0.9966	0.0051 0.0040 0.0030 0.0021
291 DN	1.0024 0.9998 1.0011 0.9983 1.0002 0.9975	0.9987 0.9966	0.0031 0.0028 0.0027 0.0021
292		0.9978 0.9966	0.0012
293		0.9971 0.9966	0.0005
294		0.9980 0.9966	0.0014
295		0.9983 0.9966	0.0017
296		0.9993 0.9966	0.0027
297		0.9998 0.9966	0.0032
298		0.9989 0.9966	0.0028
299		0.9987 0.9966	0.0021
300		0.9988 0.9966	0.0022
301		0.9988 0.9966	0.0022
302		0.9984 0.9966	0.0018
303		0.9996 0.9966	0.0030
304		1.0005 0.9966	0.0039
305		1.0000 0.9966	0.0034
306		1.0005 0.9966	0.0039
307		1.0002 0.9966	0.0036
308		1.0002 0.9966	0.0036
309		0.9990 0.9966	0.0024
310		0.9988 0.9966	0.0022
311 UP	1.0061 1.0000 1.0041 0.9990 1.0017 0.9978	0.9996 0.9966	0.0061 0.0051 0.0039 0.0030
311 DN	1.0033 0.9998 1.0018 0.9983 1.0006 0.9974	0.9996 0.9966	0.0040 0.0035 0.0032 0.0030
312		0.9990 0.9966	0.0024
313		0.9986 0.9966	0.0020
314		0.9978 0.9966	0.0010
315		0.9978 0.9966	0.0012
316		0.9979 0.9966	0.0018
317		0.9978 0.9966	0.0012
318		0.9977 0.9966	0.0011
319		0.9986 0.9966	0.0020
320		0.9978 0.9966	0.0012
321		0.9969 0.9966	0.0008
322		0.9961 0.9966	-0.0005
323		0.9965 0.9966	-0.0001
324		0.9973 0.9966	0.0007

325		0.9978 0.9955	0.0012
326		0.9975 0.9955	0.0010
327		0.9980 0.9955	0.0014
328		0.9976 0.9955	0.0010
329		0.9986 0.9955	0.0020
330		0.9987 0.9955	0.0021
331 UP	1.0048 1.0000 1.0029 0.9990 1.0007 0.9987	0.9987 0.9955 0.0048 0.0039 0.0020 0.0021	0.0021
331 DN	1.0020 0.9992 1.0006 0.9983 0.9996 0.9974	0.9987 0.9955 0.0028 0.0028 0.0022 0.0021	0.0021
332		0.9990 0.9955	0.0024
333		1.0002 0.9955	0.0036
334		0.9997 0.9955	0.0031
335		0.9997 0.9955	0.0031
336		0.9992 0.9955	0.0026
337		0.9998 0.9955	0.0032
338		1.0009 0.9955	0.0043
339		1.0001 0.9955	0.0035
340		1.0002 0.9955	0.0036
341		0.9994 0.9955	0.0028
342		1.0001 0.9955	0.0035
343		0.9999 0.9955	0.0033
344		0.9992 0.9955	0.0026
345		0.9982 0.9955	0.0016
346		0.9985 0.9955	0.0019
347		1.0000 0.9955	0.0034
348		0.9996 0.9955	0.0030
349		0.9991 0.9955	0.0025
350		0.9991 0.9955	0.0025
351 UP	1.0059 1.0000 1.0038 0.9990 1.0017 0.9978	0.9995 0.9955 0.0059 0.0048 0.0039 0.0030	0.0030
351 DN	1.0031 0.9992 1.0017 0.9982 1.0006 0.9975	0.9996 0.9955 0.0039 0.0035 0.0031 0.0030	0.0030
352		0.9984 0.9955	0.0018
353		0.9992 0.9955	0.0026
354		0.9988 0.9955	0.0022
355		0.9992 0.9955	0.0026
356		0.9981 0.9955	0.0015
357		0.9975 0.9955	0.0009
358		0.9979 0.9955	0.0013
359		0.9984 0.9955	0.0018
360		0.9987 0.9955	0.0021
361		1.0000 0.9955	0.0034
362		1.0001 0.9955	0.0035
363		0.9999 0.9955	0.0033
364		0.9989 0.9955	0.0023
365		0.9986 0.9955	0.0020
366		0.9985 0.9955	0.0019
367		1.0003 0.9955	0.0037
368		1.0012 0.9955	0.0045
369		1.0007 0.9955	0.0041
370		0.9996 0.9955	0.0030
371 UP	1.0063 1.0000 1.0044 0.9990 1.0023 0.9978	1.0001 0.9955 0.0063 0.0054 0.0045 0.0035	0.0035
371 DN	1.0041 0.9993 1.0029 0.9983 1.0018 0.9975	1.0001 0.9955 0.0048 0.0046 0.0043 0.0035	0.0035
372		0.9997 0.9955	0.0031
373		0.9994 0.9955	0.0029
374		0.9976 0.9955	0.0010
375		0.9982 0.9955	0.0015
376		0.9984 0.9955	0.0018
377		0.9989 0.9955	0.0023
378		0.9997 0.9955	0.0031
379		1.0006 0.9955	0.0040
380		1.0008 0.9955	0.0042
381		0.9994 0.9955	0.0028
382		0.9988 0.9955	0.0022
383		0.9990 0.9955	0.0024
384		0.9991 0.9955	0.0025
385		0.9989 0.9955	0.0023
386		0.9985 0.9955	0.0019
387		0.9983 0.9955	0.0017
388		0.9994 0.9955	0.0028
389		0.9983 0.9955	0.0017
390		0.9999 0.9955	0.0033
391 UP	1.0060 1.0006 1.0039 0.9990 1.0015 0.9978	0.9995 0.9955 0.0054 0.0049 0.0037 0.0029	0.0029
391 DN	1.0030 0.9993 1.0016 0.9983 1.0004 0.9975	0.9995 0.9955 0.0037 0.0033 0.0029 0.0029	0.0029
392		1.0003 0.9955	0.0037
393		0.9996 0.9955	0.0030
394		0.9977 0.9955	0.0011
395		0.9987 0.9955	0.0021
396		0.9994 0.9955	0.0028
397		0.9989 0.9955	0.0023
398		0.9990 0.9955	0.0024
399		0.9988 0.9955	0.0022
400		0.9981 0.9955	0.0015
401		0.9990 0.9955	0.0024
402		0.9972 0.9955	0.0006
403		0.9982 0.9955	0.0016
404		0.9981 0.9955	0.0015
405		0.9995 0.9955	0.0029
406		0.9998 0.9955	0.0030
407		0.9984 0.9955	0.0018
408		0.9982 0.9955	0.0016
409		0.9978 0.9955	0.0012
410		0.9987 0.9955	0.0021
411 UP	1.0069 1.0000 1.0046 0.9990 1.0025 0.9978	1.0027 0.9955 0.0069 0.0056 0.0047 0.0061	0.0061
411 DN	1.0039 0.9994 1.0024 0.9989 1.0012 0.9975	1.0027 0.9955 0.0045 0.0035 0.0036 0.0061	0.0061
412		1.0005 0.9955	0.0040
413		1.0004 0.9955	0.0038
414		1.0004 0.9955	0.0038
415		0.9979 0.9955	0.0013
416		0.9980 0.9955	0.0014
417		0.9986 0.9955	0.0020
418		0.9987 0.9955	0.0021
419		0.9992 0.9955	0.0026
420		0.9994 0.9955	0.0028
421		0.9998 0.9955	0.0027
422		1.0001 0.9955	0.0035
423		1.0007 0.9955	0.0041
424		1.0000 0.9955	0.0034
425		0.9988 0.9955	0.0022
426		0.9987 0.9955	0.0021
427		0.9988 0.9955	0.0022
428			
429			
430			

Magnet Number DC0303 -----

Data file: ts_ssc_prj\root:[ts_ssc_prj.data.coil_size]ssc_inner_17m1012.dat
Coil # 17M-1012 Coil type: INNER Coil location: Upper Inner
COIL # 17M-1012 COIL TYPE: INNER DATE: 8/7/90 MEAS. BY: SANDERS

AVERAGE

coil stress (kpsi)	6.0	8.0	10.0	12.0
average size (in)	0.0068	0.0052	0.0040	0.0032
sigma	0.0010	0.0009	0.0009	0.0010
minimum	0.0047	0.0038	0.0028	0.0001
maximum	0.0084	0.0071	0.0061	0.0124
range	0.0037	0.0035	0.0033	0.0123
#points	20	20	20	444

Fit avg = avg_0 + (dI/dsig) * stress
avg_0 = 9.4 dI/dsig = -0.53

stress(kpsi)	6.0	8.0	10.0	12.0	6.0	8.0	10.0	12.0	Coil - Master				
Post Dir	Coil Master	Coil - Master											
1					1.0006	0.9966			0.0040				
2					1.0008	0.9966			0.0037				
3					1.0000	0.9966			0.0034				
4					0.9988	0.9966			0.0020				
5					0.9991	0.9966			0.0025				
6					0.9999	0.9966			0.0033				
7					0.9999	0.9966			0.0033				
8					0.9999	0.9966			0.0033				
9					1.0019	0.9966			0.0058				
10					1.0009	0.9966			0.0045				
11					1.0018	0.9966			0.0047				
12					1.0003	0.9966			0.0037				
13					1.0004	0.9966			0.0038				
14					1.0001	0.9966			0.0035				
15					0.9999	0.9966			0.0033				
16					0.9995	0.9966			0.0029				
17					0.9998	0.9966			0.0032				
18					1.0005	0.9966			0.0039				
19					1.0011	0.9966			0.0045				
20	LP	1.0071	1.0000	1.0049	0.9989	1.0025	0.9978	1.0004	0.9966	0.0071	0.0060	0.0047	0.0038
20	DN	1.0041	0.9994	1.0026	0.9984	1.0016	0.9975	1.0004	0.9966	0.0047	0.0042	0.0041	0.0038
21					1.0004	0.9966					0.0038		
22					1.0000	0.9966					0.0034		
23					1.0000	0.9966					0.0034		
24					1.0012	0.9966					0.0045		
25					1.0006	0.9966					0.0040		
26					1.0000	0.9966					0.0034		
27					0.9988	0.9966					0.0022		
28					0.9998	0.9966					0.0032		
29					1.0002	0.9966					0.0036		
30					1.0005	0.9966					0.0039		
31					1.0000	0.9966					0.0034		
32					0.9997	0.9966					0.0031		
33					0.9997	0.9966					0.0031		
34					0.9989	0.9966					0.0023		
35					0.9994	0.9966					0.0028		
36					0.9994	0.9966					0.0028		
37					0.9991	0.9966					0.0025		
38					0.9997	0.9966					0.0031		
39					0.9996	0.9966					0.0030		
40	UP	1.0068	1.0000	1.0048	0.9989	1.0027	0.9979	1.0005	0.9966	0.0068	0.0059	0.0048	0.0039
40	DN	1.0042	0.9994	1.0027	0.9984	1.0015	0.9975	1.0003	0.9966	0.0048	0.0043	0.0040	0.0039
41					0.9998	0.9966					0.0032		
42					0.9995	0.9966					0.0029		
43					0.9989	0.9966					0.0023		
44					1.0004	0.9966					0.0038		
45					1.0011	0.9966					0.0045		
46					1.0016	0.9966					0.0050		
47					1.0013	0.9966					0.0047		
48					1.0008	0.9966					0.0042		
49					1.0002	0.9966					0.0036		
50					1.0005	0.9966					0.0039		
51					0.9998	0.9966					0.0032		
52					0.9986	0.9966					0.0020		
53					0.9995	0.9966					0.0029		
54					0.9996	0.9966					0.0030		
55					1.0000	0.9966					0.0034		
56					0.9998	0.9966					0.0032		
57					1.0004	0.9966					0.0038		
58					1.0011	0.9966					0.0045		
59					1.0013	0.9966					0.0045		
60	UP	1.0084	1.0000	1.0060	0.9989	1.0039	0.9978	1.0013	0.9966	0.0084	0.0071	0.0061	0.0047
60	DN	1.0051	0.9995	1.0037	0.9984	1.0024	0.9975	1.0013	0.9966	0.0056	0.0053	0.0049	0.0047
61					1.0007	0.9966					0.0041		
62					1.0008	0.9966					0.0037		
63					1.0007	0.9966					0.0041		
64					1.0001	0.9966					0.0035		
65					0.9990	0.9966					0.0024		
66					1.0003	0.9966					0.0037		
67					0.9988	0.9966					0.0022		
68					0.9982	0.9966					0.0016		
69					0.9991	0.9966					0.0025		
70					0.9986	0.9966					0.0020		
71					0.9980	0.9966					0.0014		
72					0.9981	0.9966					0.0015		
73					1.0000	0.9966					0.0034		
74					1.0002	0.9966					0.0036		
75					0.9999	0.9966					0.0033		
76					1.0002	0.9966					0.0036		
77					1.0003	0.9966					0.0037		
78					1.0012	0.9966					0.0045		
79					1.0016	0.9966					0.0050		
80	UP	1.0078	1.0000	1.0054	0.9989	1.0031	0.9978	1.0007	0.9966	0.0078	0.0065	0.0053	0.0041
80	DN	1.0042	0.9993	1.0029	0.9988	1.0017	0.9976	1.0007	0.9966	0.0049	0.0046	0.0041	0.0041
81					0.9996	0.9966					0.0030		
82					0.9994	0.9966					0.0028		
83					1.0000	0.9966					0.0034		
84					1.0006	0.9966					0.0040		
85					1.0004	0.9966					0.0038		
86					0.9991	0.9966					0.0025		
87					0.9988	0.9966					0.0017		
88					0.9987	0.9966					0.0021		
89					0.9982	0.9966					0.0016		
90					0.9996	0.9966					0.0030		
91					0.9986	0.9966					0.0020		
92					1.0001	0.9966					0.0035		
93					0.9998	0.9966					0.0032		
94					0.9993	0.9966					0.0027		
95					0.9995	0.9966					0.0029		

96		0.9998	0.9968		0.0032							
97		1.0010	0.9968		0.0044							
98		1.0005	0.9968		0.0039							
99		1.0007	0.9968		0.0041							
100 UP	1.0077	1.0000	1.0053	0.9989	1.0032	0.9979	1.0010	0.9968	0.0077	0.0064	0.0058	0.0044
100 DN	1.0047	0.9994	1.0032	0.9984	1.0021	0.9975	1.0010	0.9968	0.0053	0.0048	0.0046	0.0044
101		1.0012	0.9968				0.0046					
102		1.0007	0.9968				0.0041					
103		1.0005	0.9968				0.0039					
104		0.9991	0.9968				0.0025					
105		0.9993	0.9968				0.0027					
106		0.9992	0.9968				0.0026					
107		0.9987	0.9968				0.0021					
108		0.9983	0.9968				0.0017					
109		0.9988	0.9968				0.0022					
110		0.9993	0.9968				0.0027					
111		1.0005	0.9968				0.0039					
112		1.0010	0.9968				0.0044					
113		1.0009	0.9968				0.0043					
114		1.0004	0.9968				0.0038					
115		0.9998	0.9968				0.0032					
116		0.9996	0.9968				0.0030					
117		0.9997	0.9968				0.0031					
118		0.9993	0.9968				0.0027					
119		0.9998	0.9968				0.0032					
120 UP	1.0064	1.0000	1.0044	0.9990	1.0022	0.9979	1.0000	0.9968	0.0064	0.0054	0.0043	0.0034
120 DN	1.0038	0.9994	1.0022	0.9984	1.0010	0.9976	1.0000	0.9968	0.0044	0.0038	0.0034	0.0034
121		0.9998	0.9968				0.0032					
122		0.9989	0.9968				0.0023					
123		0.9990	0.9968				0.0024					
124		1.0005	0.9968				0.0039					
125		1.0007	0.9968				0.0041					
126		1.0006	0.9968				0.0040					
127		1.0010	0.9968				0.0044					
128		0.9995	0.9968				0.0029					
129		1.0003	0.9968				0.0037					
130		0.9997	0.9968				0.0031					
131		0.9982	0.9968				0.0016					
132		0.9987	0.9968				0.0021					
133		1.0001	0.9968				0.0035					
134		0.9998	0.9968				0.0032					
135		0.9990	0.9968				0.0024					
136		0.9996	0.9968				0.0030					
137		1.0007	0.9968				0.0041					
138		1.0007	0.9968				0.0041					
139		0.9984	0.9968				0.0018					
140 UP	1.0053	1.0000	1.0031	0.9990	1.0011	0.9979	0.9987	0.9968	0.0053	0.0041	0.0032	0.0021
140 DN	1.0028	0.9994	1.0010	0.9985	0.9998	0.9976	0.9987	0.9968	0.0029	0.0025	0.0022	0.0021
141		0.9993	0.9968				0.0027					
142		0.9993	0.9968				0.0027					
143		1.0005	0.9968				0.0039					
144		1.0008	0.9968				0.0042					
145		1.0011	0.9968				0.0045					
146		1.0006	0.9968				0.0040					
147		1.0007	0.9968				0.0041					
148		0.9994	0.9968				0.0028					
149		1.0002	0.9968				0.0036					
150		1.0005	0.9968				0.0039					
151		1.0009	0.9968				0.0043					
152		0.9991	0.9968				0.0025					
153		0.9989	0.9968				0.0028					
154		0.9991	0.9968				0.0025					
155		1.0005	0.9968				0.0039					
156		1.0005	0.9968				0.0039					
157		1.0004	0.9968				0.0038					
158		0.9993	0.9968				0.0027					
159		0.9987	0.9968				0.0021					
160 UP	1.0059	1.0000	1.0038	0.9990	1.0017	0.9979	0.9995	0.9968	0.0059	0.0048	0.0038	0.0029
160 DN	1.0031	0.9994	1.0017	0.9985	1.0006	0.9976	0.9995	0.9968	0.0037	0.0032	0.0030	0.0029
161		0.9995	0.9968				0.0029					
162		0.9987	0.9968				0.0021					
163		0.9986	0.9968				0.0020					
164		0.9996	0.9968				0.0030					
165		0.9999	0.9968				0.0033					
166		0.9994	0.9968				0.0028					
167		1.0005	0.9968				0.0039					
168		1.0003	0.9968				0.0037					
169		1.0002	0.9968				0.0036					
170		1.0004	0.9968				0.0038					
171		1.0009	0.9968				0.0043					
172		0.9997	0.9968				0.0031					
173		1.0009	0.9968				0.0043					
174		0.9995	0.9968				0.0029					
175		0.9986	0.9968				0.0020					
176		0.9988	0.9968				0.0020					
177		0.9980	0.9968				0.0014					
178		0.9982	0.9968				0.0016					
179		0.9984	0.9968				0.0018					
180 UP	1.0058	1.0000	1.0038	0.9989	1.0016	0.9978	0.9976	0.9968	0.0058	0.0049	0.0038	0.0010
180 DN	1.0028	0.9994	1.0014	0.9984	1.0030	0.9975	0.9967	0.9966	0.0034	0.0030	0.0035	0.0001
181		0.9991	0.9968				0.0025					
182		0.9996	0.9968				0.0030					
183		1.0004	0.9968				0.0038					
184		1.0001	0.9968				0.0035					
185		1.0090	0.9968				0.0124					
186		1.0000	0.9968				0.0034					
187		1.0012	0.9968				0.0046					
188		1.0007	0.9968				0.0041					
189		1.0004	0.9968				0.0038					
190		1.0000	0.9968				0.0034					
191		1.0005	0.9968				0.0039					
192		1.0004	0.9968				0.0038					
193		1.0007	0.9968				0.0041					
194		0.9999	0.9968				0.0033					
195		1.0001	0.9968				0.0035					
196		1.0009	0.9968				0.0043					
197		1.0008	0.9968				0.0042					
198		0.9990	0.9968				0.0024					
199		0.9998	0.9968				0.0032					
200 UP	1.0068	1.0000	1.0042	0.9988	1.0020	0.9978	0.9997	0.9968	0.0068	0.0054	0.0042	0.0031
200 DN	1.0031	0.9994	1.0019	0.9984	1.0008	0.9975	0.9997	0.9966	0.0037	0.0035	0.0038	0.0031
201		0.9990	0.9968				0.0024					
202		0.9989	0.9968				0.0023					
203		0.9998	0.9968				0.0032					
204		0.9986	0.9968				0.0020					
205		0.9995	0.9968				0.0029					
206		1.0001	0.9968				0.0035					
207		0.9993	0.9968				0.0027					
208		1.0007	0.9968				0.0041					
209		1.0000	0.9968				0.0034					

210		0.9986 0.9966	0.0020
211		0.9980 0.9966	0.0014
212		0.9994 0.9966	0.0028
213		0.9990 0.9966	0.0024
214		1.0005 0.9966	0.0039
215			
216			
217		0.9998 0.9966	0.0032
218		1.0007 0.9966	0.0041
219		1.0007 0.9966	0.0041
220		0.9995 0.9966	0.0029
221		0.9992 0.9966	0.0026
222		0.9995 0.9966	0.0029
223		0.9980 0.9966	0.0014
224		0.9980 0.9966	0.0014
225		0.9990 0.9966	0.0024
226		0.9992 0.9966	0.0026
227		1.0003 0.9966	0.0037
228		1.0001 0.9966	0.0035
229		0.9992 0.9966	0.0026
230		1.0000 0.9966	0.0034
231 UP	1.0054 1.0000 1.0032 0.9990 1.0010 0.9979	0.9987 0.9966	0.0054 0.0042 0.0031 0.0021
231 DN	1.0024 0.9994 1.0011 0.9984 1.0000 0.9976	0.9987 0.9966	0.0030 0.0027 0.0024 0.0021
232		1.0003 0.9966	0.0037
233		1.0003 0.9966	0.0037
234		0.9990 0.9966	0.0024
235		0.9993 0.9966	0.0027
236		0.9999 0.9966	0.0033
237		0.9994 0.9966	0.0028
238		0.9992 0.9966	0.0026
239		0.9993 0.9966	0.0027
240		0.9993 0.9966	0.0027
241		1.0000 0.9966	0.0034
242		0.9996 0.9966	0.0030
243		0.9994 0.9966	0.0028
244		0.9993 0.9966	0.0027
245		0.9994 0.9966	0.0028
246		0.9997 0.9966	0.0031
247		0.9988 0.9966	0.0022
248		0.9988 0.9966	0.0022
249		0.9995 0.9966	0.0029
250		0.9990 0.9966	0.0024
251 UP	1.0063 1.0000 1.0043 0.9989 1.0020 0.9978	1.0000 0.9966	0.0068 0.0054 0.0042 0.0034
251 DN	1.0033 0.9994 1.0019 0.9984 1.0009 0.9975	1.0000 0.9966	0.0039 0.0035 0.0034 0.0034
252		0.9998 0.9966	0.0032
253		1.0002 0.9966	0.0036
254		1.0003 0.9966	0.0037
255		1.0006 0.9966	0.0040
256		1.0006 0.9966	0.0040
257		1.0007 0.9966	0.0041
258		1.0000 0.9966	0.0034
259		0.9989 0.9966	0.0023
260		0.9994 0.9966	0.0028
261		1.0003 0.9966	0.0037
262		0.9997 0.9966	0.0031
263		1.0003 0.9966	0.0037
264		0.9999 0.9966	0.0033
265		1.0000 0.9966	0.0034
266		0.9989 0.9966	0.0023
267		0.9994 0.9966	0.0028
268		0.9991 0.9966	0.0025
269		0.9983 0.9966	0.0017
270		0.9979 0.9966	0.0013
271 UP	1.0058 1.0000 1.0037 0.9990 1.0015 0.9979	0.9994 0.9966	0.0058 0.0047 0.0036 0.0029
271 DN	1.0030 0.9995 1.0016 0.9985 1.0005 0.9976	0.9994 0.9966	0.0035 0.0031 0.0029 0.0028
272		0.9981 0.9966	0.0015
273		0.9989 0.9966	0.0023
274		0.9986 0.9966	0.0020
275		1.0003 0.9966	0.0037
276		1.0004 0.9966	0.0038
277		1.0015 0.9966	0.0049
278		1.0013 0.9966	0.0047
279		1.0004 0.9966	0.0038
280		1.0001 0.9966	0.0035
281		1.0001 0.9966	0.0035
282		0.9992 0.9966	0.0026
283		0.9986 0.9966	0.0020
284		0.9998 0.9966	0.0032
285		1.0002 0.9966	0.0036
286		0.9993 0.9966	0.0027
287		0.9986 0.9966	0.0020
288			
289		0.9988 0.9966	0.0022
290		0.9990 0.9966	0.0024
291 UP	1.0064 1.0000 1.0042 0.9989 1.0019 0.9978	0.9999 0.9966	0.0064 0.0053 0.0041 0.0033
291 DN	1.0035 0.9994 1.0020 0.9984 1.0010 0.9975	0.9999 0.9966	0.0041 0.0038 0.0035 0.0033
292		1.0000 0.9966	0.0034
293		0.9998 0.9966	0.0032
294		0.9996 0.9966	0.0030
295		1.0003 0.9966	0.0037
296		1.0004 0.9966	0.0038
297		1.0004 0.9966	0.0038
298		1.0008 0.9966	0.0042
299		1.0009 0.9966	0.0043
300		0.9995 0.9966	0.0029
301		0.9991 0.9966	0.0025
302		1.0001 0.9966	0.0035
303		1.0002 0.9966	0.0036
304		1.0004 0.9966	0.0038
305		1.0014 0.9966	0.0048
306		1.0014 0.9966	0.0048
307		1.0010 0.9966	0.0044
308		1.0070 0.9966	0.0104
309		1.0006 0.9966	0.0040
310		1.0001 0.9966	0.0035
311 UP	1.0069 1.0000 1.0048 0.9989 1.0026 0.9998	1.0003 0.9966	0.0069 0.0059 0.0048 0.0037
311 DN	1.0041 0.9995 1.0025 0.9985 1.0019 0.9978	1.0003 0.9966	0.0046 0.0040 0.0048 0.0037
312		1.0001 0.9966	0.0035
313		1.0005 0.9966	0.0039
314		0.9999 0.9966	0.0033
315		0.9993 0.9966	0.0027
316		0.9994 0.9966	0.0028
317		0.9992 0.9966	0.0026
318		0.9991 0.9966	0.0025
319		0.9990 0.9966	0.0024
320		0.9992 0.9966	0.0026
321		0.9986 0.9966	0.0020
322		0.9982 0.9966	0.0016
323		0.9970 0.9966	0.0004
324		0.9968 0.9966	0.0002

325		0.9974 0.9966	0.0009
326		0.9978 0.9966	0.0012
327		0.9978 0.9966	0.0012
328		0.9989 0.9966	0.0023
329		0.9988 0.9966	0.0022
330		0.9993 0.9966	0.0027
331 UP	1.0062 1.0000 1.0041 0.9989 1.0019 0.9978 0.9997 0.9966	0.0062 0.0052 0.0041 0.0031	
331 DN	1.0033 0.9994 1.0019 0.9984 1.0008 0.9975 0.9997 0.9966	0.0039 0.0035 0.0033 0.0031	
332		0.9996 0.9966	0.0030
333		0.9994 0.9966	0.0028
334		1.0006 0.9966	0.0040
335		1.0005 0.9966	0.0039
336		1.0008 0.9966	0.0037
337		1.0002 0.9966	0.0035
338		1.0001 0.9966	0.0035
339		1.0004 0.9966	0.0038
340		0.9997 0.9966	0.0031
341		0.9998 0.9966	0.0032
342		1.0011 0.9966	0.0045
343		1.0003 0.9966	0.0037
344		0.9994 0.9966	0.0028
345		0.9993 0.9966	0.0027
346		0.9989 0.9966	0.0023
347		0.9988 0.9966	0.0022
348		0.9989 0.9966	0.0023
349		0.9998 0.9966	0.0032
350		0.9985 0.9966	0.0019
351 UP	1.0047 1.0000 1.0026 0.9989 1.0006 0.9978 0.9982 0.9966	0.0047 0.0037 0.0028 0.0016	
351 DN	1.0019 0.9994 1.0005 0.9984 0.9992 0.9975 0.9982 0.9966	0.0025 0.0021 0.0017 0.0016	
352		0.9990 0.9966	0.0024
353		0.9994 0.9966	0.0028
354		0.9996 0.9966	0.0030
355		1.0004 0.9966	0.0038
356		0.9998 0.9966	0.0032
357		0.9996 0.9966	0.0030
358		1.0008 0.9966	0.0042
359		0.9997 0.9966	0.0031
360		1.0003 0.9966	0.0037
361		1.0005 0.9966	0.0039
362		1.0019 0.9966	0.0053
363		1.0021 0.9966	0.0055
364		1.0014 0.9966	0.0048
365		1.0003 0.9966	0.0037
366		1.0007 0.9966	0.0041
367		0.9996 0.9966	0.0030
368		1.0000 0.9966	0.0034
369		1.0000 0.9966	0.0034
370		0.9997 0.9966	0.0031
371 UP	1.0053 1.0000 1.0031 0.9988 1.0010 0.9978 0.9988 0.9966	0.0053 0.0043 0.0032 0.0022	
371 DN	1.0024 0.9993 1.0011 0.9983 1.0000 0.9974 0.9988 0.9966	0.0031 0.0028 0.0026 0.0022	
372		1.0000 0.9966	0.0034
373		1.0006 0.9966	0.0040
374		1.0000 0.9966	0.0034
375		0.9984 0.9966	0.0018
376		0.9988 0.9966	0.0022
377		0.9990 0.9966	0.0024
378		0.9996 0.9966	0.0030
379		0.9985 0.9966	0.0019
380		0.9997 0.9966	0.0031
381		0.9990 0.9966	0.0024
382		0.9991 0.9966	0.0025
383		0.9987 0.9966	0.0021
384		0.9984 0.9966	0.0018
385		0.9989 0.9966	0.0028
386		0.9984 0.9966	0.0018
387		0.9991 0.9966	0.0025
388		1.0001 0.9966	0.0035
389		0.9993 0.9966	0.0027
390		0.9999 0.9966	0.0033
391 UP	1.0068 1.0000 1.0044 0.9989 1.0021 0.9978 1.0001 0.9966	0.0068 0.0055 0.0043 0.0035	
391 DN	1.0037 0.9999 1.0022 0.9984 1.0010 0.9975 1.0001 0.9966	0.0038 0.0038 0.0035 0.0035	
392		0.9999 0.9966	0.0033
393		1.0005 0.9966	0.0039
394		1.0008 0.9966	0.0042
395		0.9999 0.9966	0.0033
396		0.9998 0.9966	0.0032
397		1.0005 0.9966	0.0039
398		1.0006 0.9966	0.0040
399		1.0003 0.9966	0.0037
400		1.0003 0.9966	0.0037
401		0.9987 0.9966	0.0021
402		0.9999 0.9966	0.0033
403		1.0003 0.9966	0.0037
404		1.0000 0.9966	0.0034
405		0.9993 0.9966	0.0027
406		0.9995 0.9966	0.0029
407		1.0001 0.9966	0.0035
408		1.0001 0.9966	0.0035
409		1.0001 0.9966	0.0035
410		0.9996 0.9966	0.0020
411 UP	1.0047 1.0000 1.0024 0.9988 1.0006 0.9978 0.9984 0.9966	0.0047 0.0035 0.0028 0.0018	
411 DN	1.0020 0.9994 1.0007 0.9983 0.9996 0.9975 0.9984 0.9966	0.0026 0.0024 0.0021 0.0018	
412		0.9996 0.9966	0.0030
413		1.0004 0.9966	0.0038
414		1.0006 0.9966	0.0040
415		1.0007 0.9966	0.0041
416		1.0000 0.9966	0.0034
417		0.9998 0.9966	0.0022
418		0.9990 0.9966	0.0024
419		0.9985 0.9966	0.0019
420		0.9986 0.9966	0.0020
421		0.9989 0.9966	0.0023
422		0.9990 0.9966	0.0024
423		1.0001 0.9966	0.0035
424		1.0006 0.9966	0.0040
425		0.9991 0.9966	0.0025
426		0.9985 0.9966	0.0019
427		0.9981 0.9966	0.0015
428		0.9979 0.9966	0.0018
429			
430			

Magnet Number DC0303

Data file: ts_ssc_prj\root:[ts_ssc_prj.data.coil_size]ssc_outer_17m2012.dat
Coil #: 17M-2012 Coil type: OUTER Coil location: Lower Outer
COIL #: 17M-2012 COIL TYPE: OUTER DATE: 8/30/90 MEAS. BY: PHILLIPS

AVERAGE

coil stress (kpsi)	6.0	8.0	10.0	12.0
average size (mils)	0.0042	0.0027	0.0014	0.0004
sigma	0.0009	0.0010	0.0010	0.0009
minimum	0.0025	0.0008	-0.002	-0.047
maximum	0.0059	0.0044	0.0032	0.0084
range	0.0034	0.0036	0.0034	0.0081
#points	20	20	20	444

Fit avg = avg_0 + (d1/dsig) * stress
avg_0 = 7.9 d1/dsig = -0.64

stress(kpsi)	6.0	8.0	10.0	12.0	6.0	8.0	10.0	12.0				
Pos# Dir	Coil Master											
1					0.9982	0.9975		0.0007				
2					0.9988	0.9975		0.0011				
3					0.9982	0.9975		0.0007				
4					0.9984	0.9975		0.0009				
5					0.9980	0.9975		0.0005				
6					0.9982	0.9975		0.0007				
7					0.9981	0.9975		0.0006				
8					0.9972	0.9975		-.0003				
9					0.9976	0.9975		0.0001				
10					0.9967	0.9975		-.0008				
11					0.9967	0.9975		-.0008				
12					0.9970	0.9975		-.0005				
13					0.9970	0.9975		-.0005				
14					0.9967	0.9975		-.0008				
15					0.9978	0.9975		0.0003				
16					0.9971	0.9975		-.0004				
17					0.9974	0.9975		-.0001				
18					0.9973	0.9975		-.0002				
19					0.9964	0.9975		-.0011				
20 UP	1.0081	1.0000	1.0007	0.9992	0.9987	0.9984	0.9965	0.9975	0.0031	0.0015	0.0003	-.0010
20 DN	1.0005	0.9997	0.9989	0.9989	0.9981	0.9965	0.9975		0.0008	0.0000	-.0005	-.0010
21				0.0000	0.9975	0.9975			0.0000			
22					0.9969	0.9975			-.0006			
23					0.9972	0.9975			-.0003			
24					0.9969	0.9975			-.0006			
25					0.9980	0.9975			0.0005			
26					0.9990	0.9975			0.0015			
27					1.0009	0.9975			0.0034			
28					0.9994	0.9975			0.0019			
29					0.9983	0.9975			0.0008			
30					0.9977	0.9975			0.0002			
31					0.9982	0.9975			0.0007			
32					0.9986	0.9975			0.0011			
33					0.9986	0.9975			0.0011			
34					0.9986	0.9975			0.0011			
35					0.9975	0.9975			0.0000			
36					0.9980	0.9975			0.0005			
37					0.9984	0.9975			0.0009			
38					0.9981	0.9975			0.0006			
39					0.9986	0.9975			0.0011			
40 UP	1.0043	1.0000	1.0020	0.9991	0.9986	0.9983	0.9928	0.9975	0.0043	0.0029	0.0003	-.0047
40 DN	1.0017	0.9996	1.0000	0.9988	0.9985	0.9980	0.9978	0.9975	0.0021	0.0012	0.0005	0.0003
41					0.9970	0.9975			-.0005			
42					0.9964	0.9975			-.0011			
43					0.9976	0.9975			0.0001			
44					0.9975	0.9975			0.0000			
45					0.9988	0.9975			0.0018			
46					0.9976	0.9975			0.0001			
47					0.9973	0.9975			-.0002			
48					0.9968	0.9975			-.0012			
49					0.9967	0.9975			-.0008			
50					0.9963	0.9975			-.0012			
51					0.9972	0.9975			-.0003			
52					0.9960	0.9975			-.0015			
53					0.9957	0.9975			-.0018			
54					0.9962	0.9975			-.0013			
55					0.9992	0.9975			0.0017			
56					0.9982	0.9975			0.0007			
57					0.9985	0.9975			0.0011			
58					0.9973	0.9975			-.0002			
59					0.9980	0.9975			0.0005			
60 UP	1.0052	1.0000	1.0028	0.9992	1.0009	0.9984	0.9988	0.9975	0.0052	0.0036	0.0025	0.0018
60 DN	1.0028	0.9997	1.0011	0.9990	0.9997	0.9980	0.9988	0.9975	0.0031	0.0021	0.0017	0.0013
61					0.9986	0.9975			0.0011			
62					0.9988	0.9975			0.0008			
63					0.9978	0.9975			0.0003			
64					0.9977	0.9975			0.0002			
65					0.9981	0.9975			0.0006			
66					0.9983	0.9975			0.0008			
67					0.9989	0.9975			0.0014			
68					0.9978	0.9975			0.0003			
69					0.9978	0.9975			0.0003			
70					0.9972	0.9975			-.0003			
71					0.9972	0.9975			-.0003			
72					0.9968	0.9975			0.0013			
73					0.9987	0.9975			0.0012			
74					0.9988	0.9975			0.0008			
75					0.9973	0.9975			-.0002			
76					0.9971	0.9975			-.0004			
77					0.9980	0.9975			0.0005			
78					0.9980	0.9975			0.0005			
79					0.9973	0.9975			-.0002			
80 UP	1.0031	1.0000	1.0005	0.9992	0.9984	0.9983	0.9962	0.9975	0.0031	0.0018	0.0001	-.0013
80 DN	1.0003	0.9998	0.9986	0.9989	0.9973	0.9982	0.9962	0.9975	0.0005	-.0003	-.0009	-.0018
81					0.9970	0.9975			-.0005			
82					0.9979	0.9975			0.0004			
83					0.9988	0.9975			0.0013			
84					0.9972	0.9975			-.0003			
85					0.9970	0.9975			-.0005			
86					0.9976	0.9975			0.0001			
87					0.9985	0.9975			0.0010			
88					0.9979	0.9975			0.0004			
89					0.9979	0.9975			0.0004			
90					0.9976	0.9975			0.0001			
91					0.9984	0.9975			0.0009			
92					0.9970	0.9975			-.0005			
93					0.9976	0.9975			0.0001			
94					0.9982	0.9975			0.0007			
95					0.9992	0.9975			0.0017			

96		0.9990 0.9975	0.0015
97		0.9989 0.9975	0.0014
98		0.9988 0.9975	0.0013
99		0.9986 0.9975	0.0011
100 UP	1.0045 1.0000 1.0021 0.9991 1.0001 0.9983	0.9978 0.9975	0.0045 0.0030 0.0018 0.0003
100 DN	1.0021 0.9997 1.0002 0.9987 0.9990 0.9980	0.9978 0.9975	0.0024 0.0015 0.0010 0.0003
101		0.9973 0.9975	-0.002
102		0.9969 0.9975	-0.006
103		0.9989 0.9975	0.0014
104		0.9977 0.9975	0.0002
105		0.9972 0.9975	-0.003
106		0.9969 0.9975	-0.006
107		0.9978 0.9975	0.0003
108		0.9973 0.9975	-0.002
109		0.9988 0.9975	0.0008
110		0.9987 0.9975	0.0012
111		0.9991 0.9975	0.0016
112		0.9987 0.9975	0.0012
113		0.9988 0.9975	0.0013
114		0.9986 0.9975	0.0011
115		0.9975 0.9975	0.0000
116		0.9982 0.9975	0.0007
117		0.9983 0.9975	0.0008
118		0.9975 0.9975	0.0000
119		0.9985 0.9975	0.0010
120 UP	1.0038 1.0000 1.0019 0.9992 0.9993 0.9983	0.9971 0.9975	0.0038 0.0027 0.0010 -0.004
120 DN	1.0013 0.9997 0.9999 0.9989 0.9982 0.9979	0.9971 0.9975	0.0016 0.0010 0.0008 -0.004
121		0.9972 0.9975	-0.003
122		0.9976 0.9975	0.0001
123		0.9974 0.9975	-0.001
124		0.9971 0.9975	-0.004
125		0.9987 0.9975	0.0012
126		0.9981 0.9975	0.0006
127		0.9985 0.9975	0.0010
128		0.9987 0.9975	0.0012
129		0.9974 0.9975	-0.001
130		0.9973 0.9975	-0.002
131		0.9978 0.9975	0.0003
132		0.9982 0.9975	0.0007
133		0.9985 0.9975	0.0010
134		0.9991 0.9975	0.0016
135		0.9998 0.9975	0.0023
136		0.9988 0.9975	0.0013
137		0.9986 0.9975	0.0011
138		0.9983 0.9975	0.0008
139		0.9992 0.9975	0.0017
140 UP	1.0050 1.0000 1.0028 0.9991 1.0006 0.9984	0.9984 0.9975	0.0050 0.0037 0.0022 0.0009
140 DN	1.0025 0.9996 1.0009 0.9984 0.9995 0.9980	0.9984 0.9975	0.0029 0.0025 0.0015 0.0009
141		0.9980 0.9975	0.0005
142		0.9975 0.9975	0.0000
143		0.9983 0.9975	0.0008
144		0.9988 0.9975	0.0013
145		0.9968 0.9975	0.0013
146		0.9982 0.9975	0.0007
147		0.9969 0.9975	-0.006
148		0.9978 0.9975	0.0003
149		0.9987 0.9975	0.0012
150		0.9985 0.9975	0.0010
151		0.9986 0.9975	0.0011
152		0.9982 0.9975	0.0007
153		0.9985 0.9975	0.0010
154		0.9982 0.9975	0.0007
155		0.9990 0.9975	0.0015
156		0.9979 0.9975	0.0004
157		0.9972 0.9975	-0.003
158		0.9964 0.9975	-0.0011
159		0.9978 0.9975	0.0003
160 UP	1.0025 1.0000 1.0000 0.9992 0.9981 0.9983	0.9959 0.9975	0.0025 0.0008 -0.002 -0.016
160 DN	0.9998 0.9998 0.9982 0.9989 0.9968 0.9981	0.9959 0.9975	0.0000 -0.0007 -0.0013 -0.016
161		0.9954 0.9975	-0.021
162		0.9957 0.9975	-0.018
163		0.9982 0.9975	0.0007
164		0.9978 0.9975	-0.002
165		0.9970 0.9975	-0.005
166		0.9986 0.9975	0.0011
167		0.9991 0.9975	0.0016
168		0.9985 0.9975	0.0011
169		0.9989 0.9975	0.0014
170		0.9988 0.9975	0.0013
171		0.9964 0.9975	0.0009
172		0.9971 0.9975	-0.004
173		0.9971 0.9975	-0.004
174		0.9978 0.9975	-0.002
175		0.9976 0.9975	0.0001
176		0.9961 0.9975	-0.014
177		0.9964 0.9975	-0.011
178		0.9972 0.9975	-0.003
179		0.9973 0.9975	-0.002
180 UP	1.0046 1.0000 1.0023 0.9991 1.0000 0.9983	0.9978 0.9975	0.0046 0.0032 0.0017 0.0003
180 DN	1.0022 0.9997 1.0004 0.9988 0.9990 0.9981	0.9978 0.9975	0.0025 0.0016 0.0009 0.0003
181		0.9972 0.9975	-0.003
182		0.9971 0.9975	-0.004
183		0.9980 0.9975	0.0005
184		0.9983 0.9975	0.0008
185		0.9988 0.9975	0.0005
186		0.9977 0.9975	0.0002
187		0.9974 0.9975	-0.001
188		0.9968 0.9975	-0.007
189		0.9969 0.9975	-0.006
190		0.9965 0.9975	-0.009
191		0.9969 0.9975	-0.006
192		0.9965 0.9975	-0.009
193		0.9962 0.9975	-0.018
194		0.9974 0.9975	-0.001
195		0.9982 0.9975	0.0007
196		0.9988 0.9975	0.0013
197		0.9990 0.9975	0.0015
198		0.9982 0.9975	0.0007
199		0.9967 0.9975	-0.008
200 UP	1.0054 1.0000 1.0031 0.9990 1.0009 0.9982	0.9987 0.9975	0.0054 0.0041 0.0027 0.0012
200 DN	1.0030 0.9996 1.0011 0.9987 1.0000 0.9980	0.9987 0.9975	0.0034 0.0024 0.0020 0.0012
201		0.9990 0.9975	0.0015
202		0.9982 0.9975	0.0007
203		0.9971 0.9975	-0.004
204		0.9979 0.9975	0.0004
205		0.9977 0.9975	0.0002
206		0.9985 0.9975	0.0010
207		0.9990 0.9975	0.0015
208		0.9978 0.9975	0.0003
209		0.9973 0.9975	-0.002

210		0.9976 0.9975	0.0001
211		0.9982 0.9975	0.0007
212		0.9969 0.9975	-.0006
213		0.9982 0.9975	0.0007
214		0.9975 0.9975	0.0000
215		0.9963 0.9975	-.0012
216		0.9963 0.9975	-.0012
217		0.9978 0.9975	0.0003
218		0.9983 0.9975	0.0008
219		0.9976 0.9975	0.0001
220		0.9975 0.9975	0.0000
221		0.9967 0.9975	-.0008
222		0.9971 0.9975	-.0004
223		0.9970 0.9975	-.0005
224		0.9986 0.9975	0.0011
225 UP	1.0037 1.0000 1.0014 0.9992 0.9998 0.9983	0.9971 0.9975	0.0037 0.0022 0.0010 -.0004
225 DN	1.0012 0.9997 0.9993 0.9989 0.9983 0.9981	0.9971 0.9975	0.0015 0.0004 0.0002 -.0004
226		0.9978 0.9975	-.0002
227		0.9976 0.9975	0.0001
228		0.9993 0.9975	0.0018
229		0.9980 0.9975	0.0005
230		0.9981 0.9975	0.0006
231		0.9984 0.9975	0.0009
232		0.9977 0.9975	0.0002
233		0.9970 0.9975	-.0005
234		0.9973 0.9975	-.0002
235		0.9978 0.9975	0.0003
236		0.9994 0.9975	0.0019
237		0.9974 0.9975	-.0001
238		0.9963 0.9975	-.0012
239		0.9958 0.9975	-.0017
240		0.9980 0.9975	0.0005
241		0.9980 0.9975	0.0005
242		0.9986 0.9975	0.0011
243		0.9987 0.9975	0.0012
244		0.9996 0.9975	0.0021
245 UP	1.0050 1.0000 1.0027 0.9992 1.0006 0.9984	0.9988 0.9975	0.0050 0.0035 0.0022 0.0008
245 DN	1.0025 0.9998 1.0008 0.9989 0.9994 0.9979	0.9988 0.9975	0.0027 0.0019 0.0015 0.0008
246		0.9978 0.9975	0.0003
247		0.9972 0.9975	-.0003
248		0.9969 0.9975	-.0006
249		0.9969 0.9975	-.0006
250		0.9976 0.9975	0.0001
251		0.9979 0.9975	0.0004
252		0.9972 0.9975	-.0003
253		0.9971 0.9975	-.0004
254		0.9971 0.9975	-.0004
255		0.9981 0.9975	0.0006
256		0.9975 0.9975	0.0000
257		0.9984 0.9975	0.0009
258		0.9988 0.9975	0.0013
259		0.9972 0.9975	-.0003
260		0.9989 0.9975	0.0014
261		0.9983 0.9975	0.0008
262		0.9984 0.9975	0.0009
263		0.9974 0.9975	-.0001
264		0.9962 0.9975	-.0013
265 UP	1.0030 1.0000 1.0006 0.9992 0.9985 0.9984	0.9969 0.9975	0.0030 0.0014 0.0001 -.0006
265 DN	1.0003 0.9997 0.9987 0.9988 0.9975 0.9981	0.9969 0.9975	0.0006 -.0001 -.0006
266		0.9954 0.9975	-.0021
267		0.9955 0.9975	-.0020
268		0.9978 0.9975	0.0003
269		0.9977 0.9975	0.0002
270		0.9976 0.9975	0.0001
271		0.9975 0.9975	0.0000
272		0.9967 0.9975	-.0008
273		0.9979 0.9975	0.0004
274		0.9980 0.9975	0.0005
275		0.9975 0.9975	0.0000
276		0.9982 0.9975	0.0007
277		0.9987 0.9975	0.0012
278		0.9984 0.9975	0.0009
279		0.9975 0.9975	0.0000
280		0.9988 0.9975	0.0018
281		0.9990 0.9975	0.0015
282		0.9992 0.9975	0.0017
283		0.9988 0.9975	0.0013
284		0.9982 0.9975	0.0007
285 UP	1.0039 1.0000 1.0015 0.9992 0.9998 0.9984	0.9972 0.9975	0.0039 0.0023 0.0009 -.0003
285 DN	1.0014 0.9997 0.9996 0.9989 0.9984 0.9981	0.9972 0.9975	0.0017 0.0007 0.0003
286		0.9974 0.9975	-.0001
287		0.9976 0.9975	0.0001
288		0.9969 0.9975	-.0006
289		0.9977 0.9975	0.0002
290		0.9988 0.9975	0.0013
291		0.9991 0.9975	0.0015
292		0.9978 0.9975	0.0003
293		0.9988 0.9975	0.0005
294		0.9986 0.9975	0.0011
295		0.9989 0.9975	0.014
296		0.9986 0.9975	0.0011
297		0.9975 0.9975	0.0000
298		0.9981 0.9975	0.0006
299		0.9983 0.9975	0.0008
300		0.9982 0.9975	0.0007
301		0.9979 0.9975	0.0004
302		0.9980 0.9975	0.0005
303		0.9976 0.9975	0.0001
304		0.9988 0.9975	0.0008
305 UP	1.0042 1.0000 1.0018 0.9991 0.9998 0.9983	0.9975 0.9975	0.0042 0.0027 0.0015 0.0000
305 DN	1.0021 0.9996 1.0000 0.9988 0.9997 0.9980	0.9975 0.9975	0.0025 0.0012 0.0017 0.0000
306		0.9977 0.9975	0.0002
307		0.9971 0.9975	-.0004
308		0.9964 0.9975	-.0011
309		0.9978 0.9975	0.0003
310		0.9986 0.9975	0.0011
311		0.9981 0.9975	0.0006
312		0.9978 0.9975	0.0003
313		0.9967 0.9975	-.0008
314		0.9978 0.9975	-.0002
315		0.9977 0.9975	0.0002
316		0.9978 0.9975	-.0002
317		0.9977 0.9975	0.0002
318		0.9981 0.9975	0.0006
319		0.9969 0.9975	-.0006
320		0.9970 0.9975	-.0005
321		0.9968 0.9975	-.0007
322		0.9973 0.9975	-.0002
323		0.9971 0.9975	-.0004
324		0.9963 0.9975	-.0012

----- Magnet Number DC0303 -----

Data file: tw_esc_prj\$root:[tw_esc_prj.data.coil_size]esc_outer_17m2011.dat

Coil #: 17M-2011 Coil type: OUTER Coil location: Upper Outer

COIL #: 17M-2011 COIL TYPE: OUTER DATE: 8/17/90 MEAS. BY: SANDERS

AVERAGE

coil stress (kpsi)	6.0	8.0	10.0	12.0
average size (mils)	0.0048	0.0037	0.0023	0.0012
sigma	0.0009	0.0012	0.0008	0.0008
minimum	0.0035	0.0021	0.0009	-0.0017
maximum	0.0064	0.0075	0.0038	0.0030
range	0.0029	0.0054	0.0029	0.0047
#points	20	20	20	443

Fit avg = avg_0 + (dI/dsig) * stress
avg_0 = -8.5 dI/dsig = -0.61

Pos#	Dir	stress(kpsi)	6.0	8.0	10.0	12.0	6.0	8.0	10.0	12.0	Coil - Master		
1							0.9985	0.9975			0.0010		
2							0.9987	0.9975			0.0012		
3							0.9990	0.9975			0.0015		
4							0.9989	0.9975			0.0014		
5							0.9993	0.9975			0.0018		
6							0.9995	0.9975			0.0020		
7							0.9995	0.9975			0.0020		
8							0.9995	0.9975			0.0020		
9							0.9991	0.9975			0.0018		
10							0.9991	0.9975			0.0018		
11							0.9984	0.9975			0.0009		
12							0.9988	0.9975			0.0008		
13							0.9988	0.9975			0.0013		
14							0.9985	0.9975			0.0010		
15							0.9980	0.9975			0.0005		
16							0.9989	0.9975			0.0014		
17							0.9982	0.9975			0.0007		
18							0.9987	0.9975			0.0012		
19							0.9981	0.9975			0.0006		
20	UP	1.0039	1.0000	1.0016	0.9992	1.0000	0.9984	0.9980	0.9975	0.0089	0.0024	0.0016	0.0007
20	DN	1.0016	0.9997	1.0000	0.9999	0.9991	0.9982	0.9982	0.9975	0.0019	0.0001	0.0009	0.0007
21					0.0000	0.9981	0.9975					0.0006	
22							0.9982	0.9975				0.0007	
23							0.9981	0.9975				0.0006	
24							0.9985	0.9975				0.0010	
25							0.9989	0.9975				0.0014	
26							0.9995	0.9975				0.0020	
27							0.9996	0.9975				0.0021	
28							1.0005	0.9975				0.0030	
29							0.9992	0.9975				0.0017	
30							0.9991	0.9975				0.0016	
31							0.9990	0.9975				0.0015	
32							0.9992	0.9975				0.0017	
33							0.9995	0.9975				0.0020	
34							0.9991	0.9975				0.0016	
35							0.9987	0.9975				0.0012	
36							0.9986	0.9975				0.0011	
37							0.9991	0.9975				0.0016	
38							0.9989	0.9975				0.0014	
39							0.9991	0.9975				0.0016	
40	UP	1.0053	1.0000	1.0031	0.9993	1.0011	0.9985	0.9992	0.9975	0.0053	0.0038	0.0026	0.0017
40	DN	1.0029	0.9997	1.0011	0.9990	1.0000	0.9988	0.9992	0.9975	0.0082	0.0021	0.0017	0.0017
41							0.9983	0.9975				0.0010	
42							0.9980	0.9975				0.0005	
43							0.9984	0.9975				0.0005	
44							0.9989	0.9975				0.0009	
45							0.9995	0.9975				0.0014	
46							0.9989	0.9975				0.0020	
47							0.9989	0.9975				0.0014	
48							0.9988	0.9975				0.0014	
49							0.9986	0.9975				0.0005	
50							0.9982	0.9975				0.0007	
51							0.9981	0.9975				0.0006	
52							0.9985	0.9975				0.0010	
53							0.9972	0.9975				-0.003	
54							0.9978	0.9975				-0.002	
55							0.9988	0.9975				0.0008	
56							0.9997	0.9975				0.0022	
57							0.9976	0.9975				0.0001	
58							0.9992	0.9975				0.0017	
59							0.9989	0.9975				0.0014	
60	UP	1.0037	1.0000	1.0017	0.9942	1.0002	0.9985	0.9986	0.9975	0.0037	0.0075	0.0017	0.0011
60	DN	1.0018	0.9997	1.0004	0.9989	0.9994	0.9982	0.9986	0.9975	0.0021	0.0015	0.0012	0.0011
61							0.9994	0.9975				0.0019	
62							0.9994	0.9975				0.0019	
63							0.9992	0.9975				0.0017	
64							0.9988	0.9975				0.0014	
65							0.9986	0.9975				0.0011	
66							0.9991	0.9975				0.0015	
67							0.9992	0.9975				0.0017	
68							0.9992	0.9975				0.0017	
69							0.9990	0.9975				0.0015	
70							0.9988	0.9975				0.0018	
71							0.9987	0.9975				0.0012	
72							0.9988	0.9975				0.0018	
73							0.9988	0.9975				0.0013	
74							0.9996	0.9975				0.0021	
75							0.9993	0.9975				0.0018	
76							0.9983	0.9975				0.0008	
77							0.9988	0.9975				0.0008	
78							0.9988	0.9975				0.0014	
79							0.9992	0.9975				0.0017	
80	UP	1.0048	1.0000	1.0028	0.9992	1.0006	0.9985	0.9991	0.9975	0.0048	0.0035	0.0021	0.0016
80	DN	1.0026	0.9997	1.0009	0.9990	0.9999	0.9983	0.9991	0.9975	0.0029	0.0019	0.0016	0.0007
81							0.9982	0.9975				0.0007	
82							0.9986	0.9975				0.0011	
83							0.9996	0.9975				0.0011	
84							0.9994	0.9975				0.0019	
85							0.9989	0.9975				0.0014	
86							0.9985	0.9975				0.0010	
87							0.9988	0.9975				0.0005	
88							0.9979	0.9975				0.0004	
89							0.9985	0.9975				0.0010	
90							0.9982	0.9975				0.0007	
91							0.9984	0.9975				0.0009	
92							0.9990	0.9975				0.0015	
93							0.9976	0.9975				0.0001	
94							0.9985	0.9975				0.0010	
95							0.9989	0.9975				0.0014	

96						0.9997	0.9975	0.0022
97						0.9999	0.9975	0.0024
98						1.0000	0.9975	0.0025
99						0.9998	0.9975	0.0023
100 UP	1.0056	1.0000	1.0033	0.9992	1.0015	0.9985	0.9998	0.9975
100 DN	1.0033	0.9997	1.0017	0.9985	1.0005	0.9983	0.9986	0.9975
101						0.9990	0.9975	0.0018
102						0.9991	0.9975	0.0018
103						0.9988	0.9975	0.0019
104						0.9996	0.9975	0.0021
105						0.9986	0.9975	0.0018
106						0.9987	0.9975	0.0012
107						0.9982	0.9975	0.0007
108						0.9991	0.9975	0.0018
109						0.9988	0.9975	0.0013
110						0.9987	0.9975	0.0012
111						0.9992	0.9975	0.0017
112						0.9985	0.9975	0.0010
113						0.9988	0.9975	0.0008
114						0.9985	0.9975	0.0010
115						0.9992	0.9975	0.0012
116						0.9989	0.9975	0.0014
117						0.9992	0.9975	0.0017
118						0.9988	0.9975	0.0013
119						0.9987	0.9975	0.0012
120 UP	1.0054	1.0000	1.0038	0.9992	1.0015	0.9985	0.9995	0.9975
120 DN	1.0081	0.9996	1.0014	0.9989	1.0001	0.9988	0.9995	0.9975
121						0.9978	0.9975	0.0003
122						0.9981	0.9975	0.0008
123						0.9977	0.9975	0.0003
124						0.9984	0.9975	0.0009
125						0.9989	0.9975	0.0014
126						0.9994	0.9975	0.0019
127						0.9988	0.9975	0.0013
128						0.9989	0.9975	0.0014
129						0.9999	0.9975	0.0024
130						0.9988	0.9975	0.0014
131						0.9992	0.9975	0.0017
132						0.9986	0.9975	0.0011
133						0.9983	0.9975	0.0014
134						0.9999	0.9975	0.0024
135						0.9997	0.9975	0.0022
136						1.0003	0.9975	0.0026
137						0.9993	0.9975	0.0018
138						0.9993	0.9975	0.0018
139						0.9975	0.9975	0.0000
140 UP	1.0064	1.0000	1.0039	0.9992	1.0021	0.9985	1.0001	0.9975
140 DN	1.0038	0.9996	1.0022	0.9988	1.0009	0.9982	1.0001	0.9975
141						0.9998	0.9975	0.0021
142						0.9988	0.9975	0.0013
143						0.9985	0.9975	0.0010
144						0.9987	0.9975	0.0012
145						0.9991	0.9975	0.0016
146						0.9992	0.9975	0.0017
147						0.9987	0.9975	0.0012
148						0.9997	0.9975	0.0022
149						0.9989	0.9975	0.0014
150						0.9991	0.9975	0.0016
151						0.9990	0.9975	0.0015
152						0.9992	0.9975	0.0017
153						0.9993	0.9975	0.0016
154						0.9998	0.9975	0.0021
155						0.9992	0.9975	0.0017
156						0.9998	0.9975	0.0028
157						0.9984	0.9975	0.0009
158						0.9975	0.9975	0.0000
159						0.9972	0.9975	-0.0003
160 UP	1.0043	1.0000	1.0029	0.9992	1.0005	0.9985	0.9987	0.9975
160 DN	1.0022	0.9997	1.0006	0.9989	0.9995	0.9983	0.9982	0.9975
161						0.9965	0.9975	-0.0100
162						0.9964	0.9975	-0.0011
163						0.9970	0.9975	-0.0005
164						0.9994	0.9975	0.0019
165						0.9982	0.9975	0.0007
166						0.9980	0.9975	0.0008
167						0.9987	0.9975	0.0012
168						0.9999	0.9975	0.0024
169						0.9995	0.9975	0.0020
170						0.9998	0.9975	0.0018
171						0.9986	0.9975	0.0011
172						0.9983	0.9975	0.0006
173						0.9982	0.9975	0.0007
174						0.9988	0.9975	0.0009
175						0.9982	0.9975	0.0007
176						0.9980	0.9975	0.0008
177						0.9982	0.9975	0.0007
178						0.9983	0.9975	0.0006
179						0.9974	0.9975	-0.0001
180 UP	1.0042	1.0000	1.0019	0.9991	1.0001	0.9965	0.9983	0.9975
180 DN	1.0018	0.9997	1.0001	0.9989	0.9992	0.9982	0.9983	0.9975
181						0.9989	0.9975	0.0014
182						0.9988	0.9975	0.0013
183						0.9986	0.9975	0.0011
184						0.9978	0.9975	0.0003
185						0.9987	0.9975	0.0012
186						0.9989	0.9975	0.0014
187						0.9985	0.9975	0.0010
188						0.9983	0.9975	0.0008
189						0.9980	0.9975	0.0005
190						0.9982	0.9975	0.0007
191						0.9982	0.9975	0.0004
192						0.9998	0.9975	0.0011
193						0.9981	0.9975	0.0006
194						0.9979	0.9975	0.0004
195						0.9982	0.9975	0.0007
196						0.9995	0.9975	0.0020
197						0.9991	0.9975	0.0018
198						0.9998	0.9975	0.0028
199						0.9992	0.9975	0.0017
200 UP	1.0043	1.0000	1.0021	0.9992	1.0008	0.9985	0.9988	0.9975
200 DN	1.0020	0.9997	1.0004	0.9990	0.9994	0.9982	0.9986	0.9975
201						0.9985	0.9975	0.0014
202						0.9995	0.9975	0.0024
203						0.9997	0.9975	0.0022
204						0.9976	0.9975	0.0001
205						0.9985	0.9975	0.0010
206						0.9983	0.9975	0.0008
207						0.9978	0.9975	0.0008
208						0.9993	0.9975	0.0018
209						0.9991	0.9975	0.0018

210		0.9985 0.9975	0.0010
211		0.9983 0.9975	0.0008
212		0.9990 0.9975	0.0015
213		0.9983 0.9975	0.0008
214		0.9989 0.9975	0.0014
215		0.9990 0.9975	0.0015
216		0.9982 0.9975	0.0007
217		0.9980 0.9975	0.0005
218		0.9971 0.9975	-0.0004
219		0.9981 0.9975	0.0006
220		0.9990 0.9975	0.0015
221		0.9986 0.9975	0.0011
222		0.9986 0.9975	0.0011
223		0.9980 0.9975	0.0005
224		0.9984 0.9975	0.0009
225 UP	1.0048 1.0000 1.0028 0.9992 1.0004 0.9985	0.9987 0.9975	0.0048 0.0031 0.0019 0.0012
225 DN	1.0022 0.9997 1.0005 0.9988 0.9995 0.9983	0.9987 0.9975	0.0025 0.0017 0.0012 0.0012
226		0.9989 0.9975	0.0014
227		0.9991 0.9975	0.0016
228		0.9976 0.9975	0.0001
229		0.9981 0.9975	0.0006
230		0.9992 0.9975	0.0017
231		0.9991 0.9975	0.0016
232		0.9987 0.9975	0.0012
233		0.9988 0.9975	0.0018
234		0.9991 0.9975	0.0016
235		0.9987 0.9975	0.0012
236		0.9988 0.9975	0.0005
237		0.9986 0.9975	0.0011
238		0.9993 0.9975	0.0018
239		0.9998 0.9975	0.0023
240		0.9975 0.9975	0.0000
241		0.9976 0.9975	0.0001
242		0.9986 0.9975	0.0011
243		0.9990 0.9975	0.0015
244		0.9985 0.9975	0.0010
245 UP	1.0056 1.0000 1.0032 0.9992 1.0014 0.9985	0.9993 0.9975	0.0056 0.0040 0.0029 0.0018
245 DN	1.0029 0.9997 1.0014 0.9989 1.0002 0.9983	0.9993 0.9975	0.0032 0.0025 0.0019 0.0018
246		0.9993 0.9975	0.0018
247		0.9989 0.9975	0.0014
248		0.9986 0.9975	0.0011
249		0.9982 0.9975	0.0007
250		0.9972 0.9975	-0.0003
251		0.9968 0.9975	-0.0007
252		0.9979 0.9975	0.0004
253		0.9983 0.9975	0.0008
254		0.9984 0.9975	0.0009
255		0.9988 0.9975	0.0008
256		0.9982 0.9975	0.0007
257		0.9990 0.9975	0.0015
258		0.9992 0.9975	0.0017
259		0.9998 0.9975	0.0023
260		0.9995 0.9975	0.0020
261		0.9996 0.9975	0.0021
262		0.9990 0.9975	0.0015
263		0.9988 0.9975	0.0013
264		0.9996 0.9975	0.0021
265 UP	1.0048 1.0000 1.0025 0.9992 1.0008 0.9985	0.9988 0.9975	0.0048 0.0033 0.0018 0.0018
265 DN	1.0025 0.9998 1.0005 0.9990 0.9997 0.9982	0.9988 0.9975	0.0027 0.0015 0.0015 0.0013
266		0.9973 0.9975	-0.0002
267		0.9971 0.9975	-0.0004
268		0.9967 0.9975	-0.0008
269		0.9964 0.9975	-0.0011
270		0.9975 0.9975	0.0000
271		0.9988 0.9975	0.0005
272		0.9982 0.9975	0.0007
273		0.9984 0.9975	0.0009
274		0.9972 0.9975	-0.0003
275		0.9978 0.9975	0.0003
276		0.9982 0.9975	0.0007
277		0.9987 0.9975	0.0012
278		0.9983 0.9975	0.0008
279		0.9996 0.9975	0.0021
280		0.9988 0.9975	0.0014
281		0.9983 0.9975	0.0008
282		0.9997 0.9975	0.0022
283		0.9997 0.9975	0.0022
284		0.9996 0.9975	0.0021
285 UP	1.0059 1.0000 1.0037 0.9992 1.0020 0.9983	0.9999 0.9975	0.0059 0.0045 0.0037 0.0024
285 DN	1.0035 0.9996 1.0020 0.9989 1.0007 0.9982	0.9999 0.9975	0.0089 0.0031 0.0025 0.0024
286		0.9991 0.9975	0.0016
287		0.9988 0.9975	0.0013
288		0.9986 0.9975	0.0011
289		0.9981 0.9975	0.0006
290		0.9992 0.9975	0.0017
291		0.9996 0.9975	0.0021
292		0.9997 0.9975	0.0022
293		0.9986 0.9975	0.0011
294		0.9999 0.9975	0.0014
295		1.0000 0.9975	0.0025
296		0.9997 0.9975	0.0022
297		1.0002 0.9975	0.0027
298		0.9989 0.9975	0.0014
299		0.9991 0.9975	0.0016
300		0.9994 0.9975	0.0019
301		0.9986 0.9975	0.0011
302		0.9998 0.9975	0.0011
303		0.9990 0.9975	0.0011
304		0.9990 0.9975	0.0015
305 UP	1.0049 1.0000 1.0029 0.9992 1.0012 0.9985	0.9992 0.9975	0.0049 0.0037 0.0027 0.0017
305 DN	1.0029 0.9996 1.0012 0.9989 1.0000 0.9982	0.9992 0.9975	0.0038 0.0028 0.0018 0.0017
306		0.9997 0.9975	0.0022
307		0.9991 0.9975	0.0016
308		0.9986 0.9975	0.0011
309		0.9988 0.9975	0.0005
310		0.9973 0.9975	-0.0002
311		0.9985 0.9975	0.0010
312		0.9995 0.9975	0.0020
313		0.9993 0.9975	0.0018
314		0.9998 0.9975	0.0015
315		0.9997 0.9975	0.0022
316		0.9996 0.9975	0.0021
317		0.9993 0.9975	0.0018
318		0.9992 0.9975	0.0017
319		0.9987 0.9975	0.0012
320		0.9990 0.9975	0.0015
321		0.9976 0.9975	0.0001
322		0.9976 0.9975	0.0001
323		0.9979 0.9975	0.0004
324		0.9980 0.9975	0.0005

