

Collar Deflection Measurements of Short 50 mm Magnets

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Attached are tables and plots of the collar diameter measurements from short 50 mm SSC dipoles DSA321 (following disassembly after testing), 322 (fourth assembly), 324, 325 and 327. Earlier measurements, of DSA320, 322 (first three assemblies), and 323, are unreliable and are not included here. Measurements were made of diameters at five different azimuthal locations and vertically across the two sets of collar-tooling alignment flats as shown in Fig. 1. For most of the magnets measurements were also made of an unstressed collar pack. A pair of collar packs (upper and lower) was assembled by inserting keys in the key slots and holding the upper and lower packs apart with a pair of tapered wooden blocks. Two sets of measurements were made on this pack.

The data for the five magnets is shown in the attached tables. The raw diameters are tabulated first followed by the measurements of the unstressed pack. The latter are then compared with nominal values computed from the collar drawing and with a standard set of measurements that Imre Goncy and I made of one undeflected collar pack. The second page of each magnet's data table gives the radial deflections relative to the "standard" measured undeflected collars. Averages and standard deviations are given for each column of deflection data and separately averaging over "redundant" sets of measurements, e.g. +120 and -120. The 850 diameters were remeasured for DSA325 to check reproducibility. The average diameter differed by -0.4 mils with a standard deviation of 0.8 mils and a range from -2.0 to +1.0 mils between the two sets of measurements. Figures 2-6 are plots of the radial deflections as a function of position along the collared coil.

DSA321 Collared Coil

Measurements (after unyoking) made 5/14/91 by Elroy and Manny

----- Collared Coil Diameters -----							
z (in.)	A-1 (-12o)	A-2 (12o)	B (52o)	C (84o)	D (128o)	E (Left)	F (Right)
2	5.3515	5.3485	5.3175	5.3145	5.3185	3.757	3.756
5.5	5.35	5.349	5.318	5.315	5.319	3.756	3.757
8.5	5.3505	5.348	5.317	5.316	5.32	3.7585	3.7575
11.5	5.35	5.3495	5.319	5.3165	5.319	3.758	3.757
14.5	5.3505	5.35	5.319	5.3155	5.3185	3.757	3.7565
17.5	5.3495	5.35	5.3185	5.3155	5.3185	3.757	3.7585
20.5	5.3495	5.3495	5.3175	5.314	5.318	3.755	3.757
23.5	5.3515	5.35	5.317	5.315	5.32	3.757	3.757
26.5	5.351	5.3495	5.318	5.3155	5.319	3.756	3.759
29.5	5.351	5.3505	5.319	5.316	5.319	3.7565	3.7585
32.5	5.3505	5.349	5.319	5.317	5.3195	3.758	3.7575
35.5	5.35	5.35	5.319	5.3165	5.3195	3.7565	3.758
38.5	5.3495	5.348	5.3175	5.315	5.3195	3.7565	3.756
42	5.35	5.349	5.318	5.315	5.319	3.7565	3.7565
Avg	5.3504	5.3493	5.3181	5.3155	5.3191	3.7568	3.7573
Sigma	0.0007	0.0008	0.0008	0.0008	0.0006	0.0009	0.0009

--- Undeflected Collar Diameters ---							
A-1 (-12o)	A-2 (12o)	B (52o)	C (84o)	D (128o)	E (Left)	F (Right)	

Avg
Sigma

--- Nominal undeflected diameters (from the drawing) ---
 5.3508 5.3508 5.3117 5.3042 5.3117 3.750 3.750

--- "Standard" measured undeflected diameters ---
 5.352 5.352 5.313 5.3055 5.313 3.7505 3.7505

--- Measured - Standard undeflected diameters ---

Nominal
Standard

DSA321 Collared Coil

Measurements (after unyoking) made 5/14/91 by Elroy and Manny

--- Collared Coil Radial Deflections -----							
	A-1	A-2	B	C	D	E	F
z(in.)	(-12o)	(12o)	(52o)	(84o)	(128o)	(Left)	(Right)
2	-0.0002	-0.0018	0.0023	0.0045	0.0028	0.0033	0.0028
5.5	-0.0010	-0.0015	0.0025	0.0048	0.0030	0.0028	0.0033
8.5	-0.0007	-0.0020	0.0020	0.0053	0.0035	0.0040	0.0035
11.5	-0.0010	-0.0013	0.0030	0.0055	0.0030	0.0038	0.0033
14.5	-0.0007	-0.0010	0.0030	0.0050	0.0028	0.0033	0.0030
17.5	-0.0013	-0.0010	0.0028	0.0050	0.0028	0.0033	0.0040
20.5	-0.0013	-0.0013	0.0023	0.0043	0.0025	0.0023	0.0033
23.5	-0.0002	-0.0010	0.0020	0.0048	0.0035	0.0033	0.0033
26.5	-0.0005	-0.0013	0.0025	0.0050	0.0030	0.0028	0.0043
29.5	-0.0005	-0.0007	0.0030	0.0053	0.0030	0.0030	0.0040
32.5	-0.0007	-0.0015	0.0030	0.0058	0.0033	0.0038	0.0035
35.5	-0.0010	-0.0010	0.0030	0.0055	0.0033	0.0030	0.0038
38.5	-0.0013	-0.0020	0.0023	0.0048	0.0033	0.0030	0.0028
42	-0.0010	-0.0015	0.0025	0.0048	0.0030	0.0030	0.0030
	(-12o)	(12o)	(52o)	(84o)	(128o)	(Left)	(Right)
Avg	-0.0008	-0.0013	0.0026	0.0050	0.0030	0.0032	0.0034
Sigma	0.0003	0.0004	0.0004	0.0004	0.0003	0.0005	0.0005
Avg	-0.0011		0.0028			0.0033	
Sigma	0.0004		0.0004			0.0005	

DSA322 Collared Coil (4th Assembly)
Fourth assembly; measurements made 3/29/91

----- Collared Coil Diameters -----							
z(in.)	A-1 (-12o)	A-2 (12o)	B (53o)	C (85o)	D (127o)	E (Left)	F (Right)
2	5.352	5.351	5.317	5.315	5.319	3.759	3.757
5.5	5.354	5.353	5.318	5.314	5.318	3.757	3.756
8.5	5.353	5.354	5.317	5.317	5.317	3.756	3.756
11.5	5.352	5.352	5.316	5.315	5.317	3.756	3.756
14.5	5.354	5.353	5.318	5.314	5.319	3.758	3.757
17.5	5.353	5.355	5.318	5.314	5.318	3.757	3.755
20.5	5.352	5.353	5.317	5.313	5.318	3.756	3.755
23.5	5.353	5.353	5.318	5.315	5.318	3.755	3.758
26.5	5.354	5.353	5.319	5.315	5.318	3.755	3.759
29.5	5.353	5.354	5.318	5.314	5.317	3.756	3.760
32.5	5.353	5.354	5.317	5.314	5.318	3.755	3.759
35.5	5.353	5.352	5.317	5.313	5.317	3.755	3.758
38.5	5.353	5.353	5.317	5.314	5.316	3.755	3.758
42	5.353	5.354	5.317	5.314	5.317	3.755	3.757
Avg	5.3530	5.3531	5.3174	5.3144	5.3176	3.7561	3.7572
Sigma	0.0007	0.0010	0.0008	0.0010	0.0008	0.0013	0.0015

--- Undeflected Collar Diameters ---							
	A-1 (-12o)	A-2 (12o)	B (53o)	C (85o)	D (127o)	E (Left)	F (Right)
	5.352	5.352	5.311	5.291	5.311	3.748	3.746
	5.353	5.3520	5.312	5.294	5.313	3.748	3.748
Avg	5.3525	5.3520	5.3115	5.2925	5.3120	3.7480	3.7470
Sigma	0.0007	0.0000	0.0007	0.0021	0.0014	0.0000	0.0014

--- Nominal undeflected diameters (from the drawing) ---
5.3508 5.3508 5.3117 5.3042 5.3117 3.750 3.750

--- "Standard" measured undeflected diameters ---
5.352 5.352 5.313 5.3055 5.313 3.7505 3.7505

--- Measured - Standard undeflected diameters ---
Nominal 0.0017 0.0012 -0.0002 -0.0117 0.0003 -0.0020 -0.0030
Standard 0.0005 0.0000 -0.0015 -0.0130 -0.0010 -0.0025 -0.0035

	--- Collared Coil Radial Deflections -----							drv/dstr
	A-1	A-2	B	C	D	E	F	0.4
z(in.)	(-12o)	(12o)	(53o)	(85o)	(127o)	(Left)	(Right)	Stress
2	0.0000	-0.0005	0.0020	0.0048	0.0030	0.0043	0.0033	11.9
5.5	0.0010	0.0005	0.0025	0.0043	0.0025	0.0033	0.0028	10.6
8.5	0.0005	0.0010	0.0020	0.0058	0.0020	0.0028	0.0028	14.4
11.5	0.0000	0.0000	0.0015	0.0048	0.0020	0.0028	0.0028	11.9
14.5	0.0010	0.0005	0.0025	0.0043	0.0030	0.0038	0.0033	10.6
17.5	0.0005	0.0015	0.0025	0.0043	0.0025	0.0033	0.0023	10.6
20.5	0.0000	0.0005	0.0020	0.0038	0.0025	0.0028	0.0023	9.4
23.5	0.0005	0.0005	0.0025	0.0048	0.0025	0.0023	0.0038	11.9
26.5	0.0010	0.0005	0.0030	0.0048	0.0025	0.0023	0.0043	11.9
29.5	0.0005	0.0010	0.0025	0.0043	0.0020	0.0028	0.0048	10.6
32.5	0.0005	0.0010	0.0020	0.0043	0.0025	0.0023	0.0043	10.6
35.5	0.0005	0.0000	0.0020	0.0038	0.0020	0.0023	0.0038	9.4
38.5	0.0005	0.0005	0.0020	0.0043	0.0015	0.0023	0.0038	10.6
42	0.0005	0.0010	0.0020	0.0043	0.0020	0.0023	0.0033	10.6
Avg	0.0005	0.0006	0.0022	0.0044	0.0023	0.0028	0.0034	11.1
Sigma	0.0003	0.0005	0.0004	0.0005	0.0004	0.0006	0.0008	1.3
Avg	0.0005		0.0023			0.0031		
Sigma	0.0004		0.0004			0.0007		

DSA324 Collared Coil

Measurements made 4/16/91 by Manny & Elroy

Undeflected pack measurements not found

----- Collared Coil Diameters -----							
z(in.)	A-1 (-12o)	A-2 (12o)	B (53o)	C (85o)	D (127o)	E (Left)	F (Right)
2	5.355	5.354	5.317	5.316	5.319	3.756	3.757
5.5	5.355	5.355	5.318	5.314	5.318	3.757	3.756
8.5	5.356	5.353	5.318	5.316	5.319	3.757	3.757
11.5	5.355	5.354	5.319	5.316	5.319	3.756	3.757
14.5	5.355	5.355	5.319	5.315	5.319	3.756	3.757
17.5	5.355	5.355	5.318	5.315	5.319	3.758	3.756
20.5	5.355	5.355	5.318	5.314	5.318	3.757	3.757
23.5	5.354	5.355	5.319	5.314	5.318	3.757	3.756
26.5	5.355	5.355	5.318	5.314	5.319	3.757	3.758
29.5	5.355	5.355	5.318	5.314	5.318	3.756	3.757
32.5	5.356	5.356	5.318	5.314	5.319	3.757	3.756
35.5	5.354	5.355	5.318	5.314	5.318	3.757	3.757
38.5	5.354	5.355	5.318	5.313	5.318	3.756	3.758
42	5.354	5.354	5.318	5.313	5.318	3.756	3.755
Avg	5.3549	5.3547	5.3181	5.3144	5.3185	3.7566	3.7567
Sigma	0.0007	0.0007	0.0005	0.0010	0.0005	0.0006	0.0008

--- Undeflected Collar Diameters ---							
A-1 (-12o)	A-2 (12o)	B (53o)	C (85o)	D (127o)	E (Left)	F (Right)	

Avg	ERR	ERR	ERR	ERR	ERR	ERR	ERR
Sigma	ERR	ERR	ERR	ERR	ERR	ERR	ERR

--- Nominal undeflected diameters (from the drawing) ---							
5.3508	5.3508	5.3117	5.3042	5.3117	3.750	3.750	

--- "Standard" measured undeflected diameters ---							
5.352	5.352	5.313	5.3055	5.313	3.7505	3.7505	

--- Measured - Standard undeflected diameters ---							
Nominal	ERR	ERR	ERR	ERR	ERR	ERR	ERR
Standard	ERR	ERR	ERR	ERR	ERR	ERR	ERR

DSA324 Collared Coil

--- Collared Coil Radial Deflections -----								drv/dstr
	A-1	A-2	B	C	D	E	F	0.4
z(in.)	(-12o)	(12o)	(53o)	(85o)	(127o)	(Left)	(Right)	Stress
2	0.0015	0.0010	0.0020	0.0053	0.0030	0.0028	0.0033	13.1
5.5	0.0015	0.0015	0.0025	0.0043	0.0025	0.0033	0.0028	10.6
8.5	0.0020	0.0005	0.0025	0.0053	0.0030	0.0033	0.0033	13.1
11.5	0.0015	0.0010	0.0030	0.0053	0.0030	0.0028	0.0033	13.1
14.5	0.0015	0.0015	0.0030	0.0048	0.0030	0.0028	0.0033	11.9
17.5	0.0015	0.0015	0.0025	0.0048	0.0030	0.0038	0.0028	11.9
20.5	0.0015	0.0015	0.0025	0.0043	0.0025	0.0033	0.0033	10.6
23.5	0.0010	0.0015	0.0030	0.0043	0.0025	0.0033	0.0028	10.6
26.5	0.0015	0.0015	0.0025	0.0043	0.0030	0.0033	0.0038	10.6
29.5	0.0015	0.0015	0.0025	0.0043	0.0025	0.0028	0.0033	10.6
32.5	0.0020	0.0020	0.0025	0.0043	0.0030	0.0033	0.0028	10.6
35.5	0.0010	0.0015	0.0025	0.0043	0.0025	0.0033	0.0033	10.6
38.5	0.0010	0.0015	0.0025	0.0038	0.0025	0.0028	0.0038	9.4
42	0.0010	0.0010	0.0025	0.0038	0.0025	0.0028	0.0023	9.4
	(-12o)	(12o)	(53o)	(85o)	(127o)	(Left)	(Right)	
Avg	0.0014	0.0014	0.0026	0.0045	0.0028	0.0031	0.0031	11.2
Sigma	0.0003	0.0004	0.0003	0.0005	0.0003	0.0003	0.0004	1.3
Avg	0.0014		0.0027	0.0045		0.0031		
Sigma	0.0003		0.0003	0.0005		0.0004		

DSA325 Collared Coil

Measurements made 4/9/91 by K.C. and D.M. (collared coil)

Measurements made 4/2/91 by D.McAuliff & P.Schmidt (undeflected collars)

Remeasured 84o dimension 4/10/91 by D.McAuliff et al

----- Collared Coil Diameters -----									
z(in.)	A-1 (-12o)	A-2 (12o)	B (52o)	C (84o)	C (84o-Re)	D (128o)	E (Left)	F (Right)	C(Re)-C
2	5.3555	5.354	5.317	5.317	5.316	5.319	3.757	3.756	-0.0010
5.5	5.356	5.354	5.3175	5.3165	5.3155	5.3195	3.757	3.757	-0.0010
8.5	5.355	5.3545	5.318	5.317	5.315	5.319	3.7575	3.757	-0.0020
11.5	5.355	5.354	5.319	5.3175	5.316	5.32	3.758	3.758	-0.0015
14.5	5.3545	5.355	5.318	5.315	5.3145	5.3185	3.757	3.758	-0.0005
17.5	5.3555	5.3545	5.317	5.315	5.314	5.3195	3.756	3.757	-0.0010
20.5	5.355	5.355	5.318	5.3145	5.3145	5.319	3.7575	3.7575	0.0000
23.5	5.3545	5.355	5.319	5.315	5.3155	5.319	3.757	3.758	0.0005
26.5	5.3545	5.354	5.3185	5.315	5.315	5.32	3.757	3.758	0.0000
29.5	5.355	5.355	5.318	5.315	5.3145	5.319	3.756	3.757	-0.0005
32.5	5.355	5.355	5.319	5.3155	5.316	5.319	3.7575	3.758	0.0005
35.5	5.355	5.355	5.318	5.315	5.315	5.319	3.7575	3.7575	0.0000
38.5	5.3555	5.355	5.318	5.315	5.3145	5.319	3.7575	3.757	-0.0005
42	5.354	5.354	5.3175	5.314	5.315	5.318	3.7565	3.7565	0.0010
Avg	5.3550	5.3546	5.3180	5.3155	5.3151	5.3191	3.7571	3.7573	-0.0004
Sigma	0.0005	0.0005	0.0007	0.0011	0.0006	0.0005	0.0006	0.0006	0.0008

--- Undeflected Collar Diameters ---							
	A-1 (-12o)	A-2 (12o)	B (52o)	C (84o)	D (128o)	E (Left)	F (Right)
	5.352	5.354	5.314	5.303	5.311	3.749	3.748
	5.352	5.354	5.313	5.304	5.311	3.750	3.749
Avg	5.3520	5.3538	5.3135	5.3035	5.3110	3.7490	3.7485
Sigma	0.0000	0.0004	0.0007	0.0007	0.0000	0.0007	0.0007

--- Nominal undeflected diameters (from the drawing) ---
5.3508 5.3508 5.3117 5.3042 5.3117 3.750 3.750

--- "Standard" measured undeflected diameters ---
5.352 5.352 5.313 5.3055 5.313 3.7505 3.7505

--- Measured - Standard undeflected diameters ---
Nominal 0.0012 0.0030 0.0018 -0.0007 -0.0007 -0.0010 -0.0015
Standard 0.0000 0.0018 0.0005 -0.0020 -0.0020 -0.0015 -0.0020

DSA325 Collared Coil

Measurements made 4/9/91 by K.C. and D.M. (collared coil)

Measurements made 4/2/91 by D.McAuliff & P.Schmidt (undeflected collars)

--- Collared Coil Radial Deflections -----										drv/dstr
	A-1	A-2	B	C	C	D	E	F		0.4
z(in.)	(-12o)	(12o)	(52o)	(84o)	(84o-Re)	(128o)	(Left)	(Right)	Stress	
2	0.0018	0.0010	0.0020	0.0058	0.0053	0.0030	0.0033	0.0028	14.4	
5.5	0.0020	0.0010	0.0023	0.0055	0.0050	0.0033	0.0033	0.0033	13.8	
8.5	0.0015	0.0013	0.0025	0.0058	0.0048	0.0030	0.0035	0.0033	14.4	
11.5	0.0015	0.0010	0.0030	0.0060	0.0053	0.0035	0.0038	0.0038	15.0	
14.5	0.0013	0.0015	0.0025	0.0048	0.0045	0.0028	0.0033	0.0038	11.9	
17.5	0.0018	0.0013	0.0020	0.0048	0.0043	0.0033	0.0028	0.0033	11.9	
20.5	0.0015	0.0015	0.0025	0.0045	0.0045	0.0030	0.0035	0.0035	11.3	
23.5	0.0013	0.0015	0.0030	0.0048	0.0050	0.0030	0.0033	0.0038	11.9	
26.5	0.0013	0.0010	0.0028	0.0048	0.0048	0.0035	0.0033	0.0038	11.9	
29.5	0.0015	0.0015	0.0025	0.0048	0.0045	0.0030	0.0028	0.0033	11.9	
32.5	0.0015	0.0015	0.0030	0.0050	0.0053	0.0030	0.0035	0.0038	12.5	
35.5	0.0015	0.0015	0.0025	0.0048	0.0048	0.0030	0.0035	0.0035	11.9	
38.5	0.0018	0.0015	0.0025	0.0048	0.0045	0.0030	0.0035	0.0033	11.9	
42	0.0010	0.0010	0.0023	0.0043	0.0048	0.0025	0.0030	0.0030	10.6	
	(-12o)	(12o)	(52o)	(84o)	(84o-Re)	(128o)	(Left)	(Right)		
Avg	0.0015	0.0013	0.0025	0.0050	0.0048	0.0031	0.0033	0.0034	12.5	
Sigma	0.0003	0.0002	0.0003	0.0005	0.0003	0.0003	0.0003	0.0003	1.3	
Avg	0.0014		0.0028				0.0033			
Sigma	0.0003		0.0004				0.0003			

DSA327 Collared Coil (1st assembly)
 Measurements made 5/7/91 by Manny & Elroy
 Undelected pack measurements made 4/22/91 by MN and DM

----- Collared Coil Diameters -----							
z(in.)	A-1 (-12o)	A-2 (12o)	B (53o)	C (85o)	D (127o)	E (Left)	F (Right)
2	5.355	5.354	5.318	5.316	5.320	3.7575	3.757
5.5	5.354	5.354	5.318	5.314	5.318	3.7555	3.756
8.5	5.353	5.354	5.318	5.315	5.318	3.757	3.756
11.5	5.353	5.353	5.318	5.315	5.318	3.7565	3.757
14.5	5.354	5.353	5.318	5.315	5.318	3.7565	3.756
17.5	5.352	5.353	5.318	5.314	5.318	3.755	3.756
20.5	5.352	5.353	5.318	5.314	5.318	3.7555	3.756
23.5	5.354	5.354	5.319	5.316	5.319	3.7585	3.758
26.5	5.355	5.355	5.319	5.315	5.319	3.756	3.758
29.5	5.353	5.353	5.319	5.314	5.318	3.7565	3.755
32.5	5.352	5.354	5.319	5.315	5.318	3.7565	3.757
35.5	5.352	5.353	5.318	5.314	5.318	3.755	3.755
38.5	5.353	5.353	5.318	5.314	5.318	3.755	3.756
42	5.354	5.355	5.318	5.314	5.318	3.7565	3.756
Avg	5.3532	5.3534	5.3181	5.3146	5.3183	3.7563	3.7562
Sigma	0.0010	0.0007	0.0005	0.0007	0.0006	0.0010	0.0009

---- Undelected Collar Diameters ----							
	A-1 (-12o)	A-2 (12o)	B (53o)	C (85o)	D (127o)	E (Left)	F (Right)
	5.351	5.351	5.312	5.304	5.312	3.750	3.750
	5.352	5.3515	5.312	5.304	5.312	3.749	3.750
Avg	5.3513	5.3513	5.3118	5.3040	5.3118	3.7493	3.7498
Sigma	0.0004	0.0004	0.0004	0.0000	0.0004	0.0004	0.0004

---- Nominal undelected diameters (from the drawing) ----
 5.3508 5.3508 5.3117 5.3042 5.3117 3.750 3.750

---- "Standard" measured undelected diameters ----
 5.352 5.352 5.313 5.3055 5.313 3.7505 3.7505

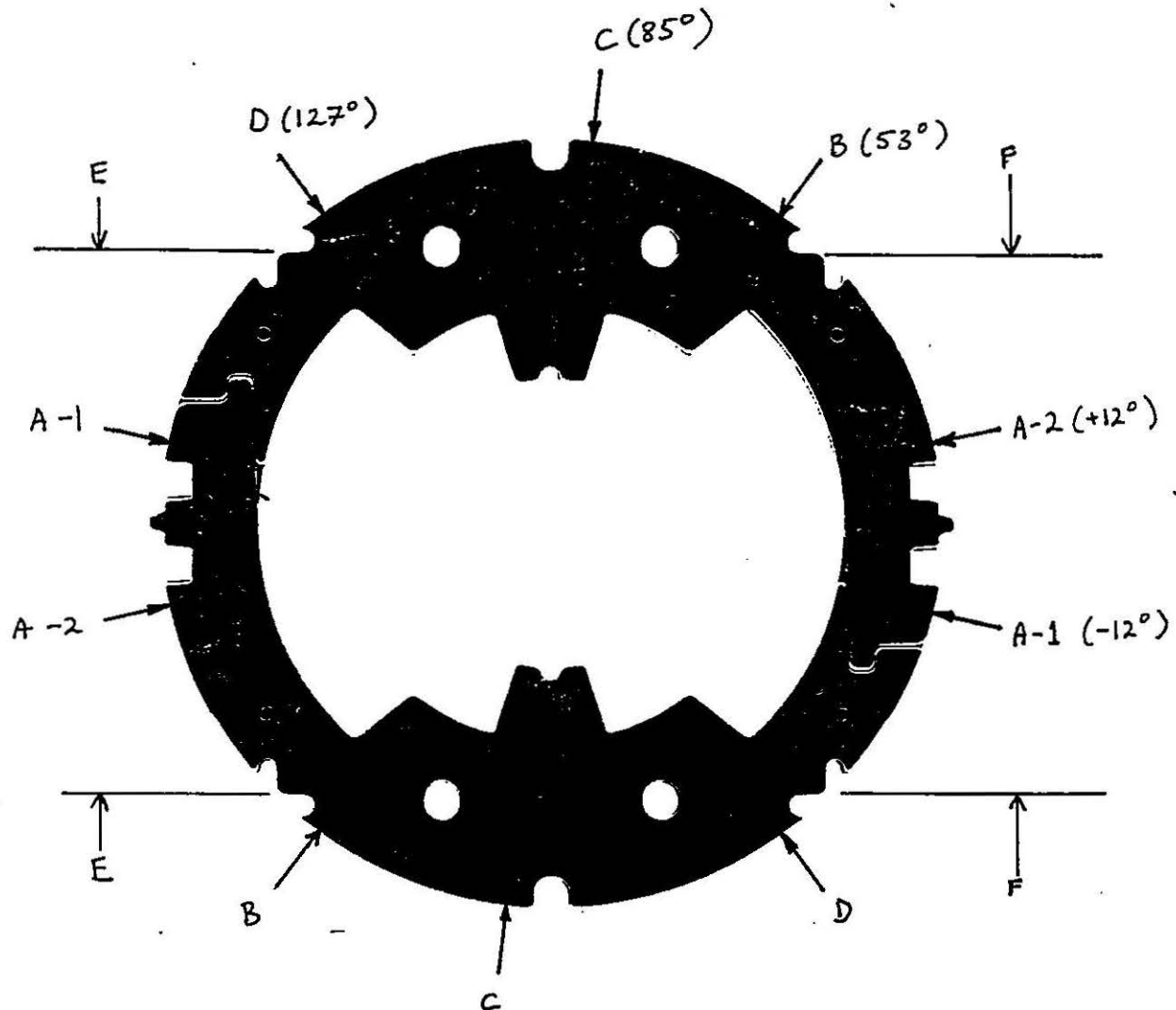
---- Measured - Standard undelected diameters ----
 Nominal 0.0005 0.0005 0.0001 -0.0002 0.0001 -0.0007 -0.0002
 Standard -0.0007 -0.0007 -0.0012 -0.0015 -0.0012 -0.0013 -0.0007

--- Collared Coil Radial Deflections -----								drv/dstr
z(in.)	A-1 (-12o)	A-2 (12o)	B (53o)	C (85o)	D (127o)	E (Left)	F (Right)	0.4 Stress
2	0.0013	0.0008	0.0025	0.0053	0.0035	0.0035	0.0033	13.1
5.5	0.0008	0.0010	0.0025	0.0043	0.0025	0.0025	0.0028	10.6
8.5	0.0005	0.0008	0.0025	0.0048	0.0025	0.0033	0.0025	11.9
11.5	0.0005	0.0005	0.0025	0.0048	0.0025	0.0030	0.0030	11.9
14.5	0.0010	0.0005	0.0025	0.0045	0.0025	0.0030	0.0028	11.3
17.5	0.0000	0.0005	0.0023	0.0043	0.0023	0.0023	0.0028	10.6
20.5	0.0000	0.0003	0.0023	0.0043	0.0025	0.0025	0.0028	10.6
23.5	0.0010	0.0010	0.0028	0.0050	0.0030	0.0040	0.0035	12.5
26.5	0.0015	0.0013	0.0030	0.0048	0.0030	0.0028	0.0038	11.9
29.5	0.0003	0.0005	0.0028	0.0043	0.0025	0.0030	0.0023	10.6
32.5	0.0000	0.0008	0.0030	0.0048	0.0025	0.0030	0.0030	11.9
35.5	0.0000	0.0003	0.0025	0.0043	0.0025	0.0023	0.0023	10.6
38.5	0.0005	0.0005	0.0023	0.0043	0.0025	0.0023	0.0025	10.6
42	0.0010	0.0013	0.0023	0.0043	0.0025	0.0030	0.0028	10.6
Avg	0.0006	0.0007	0.0025	0.0045	0.0026	0.0029	0.0028	11.3
Sigma	0.0005	0.0003	0.0003	0.0003	0.0003	0.0005	0.0004	0.8
Avg	0.0006		0.0026			0.0029		
Sigma	0.0004		0.0003			0.0005		

DSA322 Assembly Experiment Plan

III. Second assembly

- 4) Measure collared coil diameters at the angular locations specified on the figure below. Measure the coil at the positions along the length of the coil specified on the table on the next page and record the data there. (These correspond to two sets of measurements per standard collar pack, two sets on the strain gauge pack and one set each on the two end packs.)



Collared Coil Viewed From the Lead End

Measurements are to be made approximately 1/8 inch from the nearest feature that breaks the circular outer surface: the key slots for dimensions A-1 and A-2, the lifting fixture features for dimensions B and D and the instrumentation wire slot for dimension C.

Figure 1

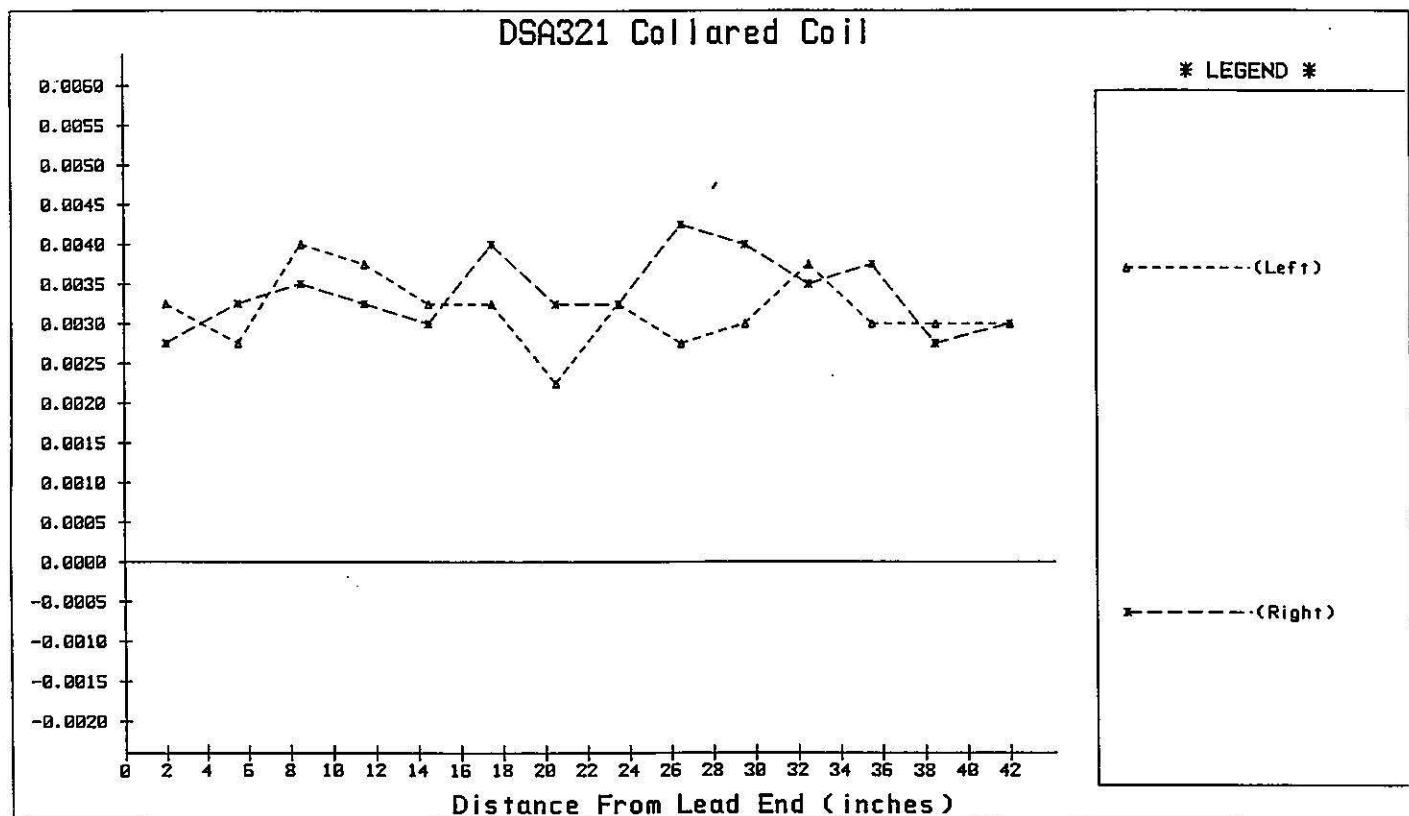
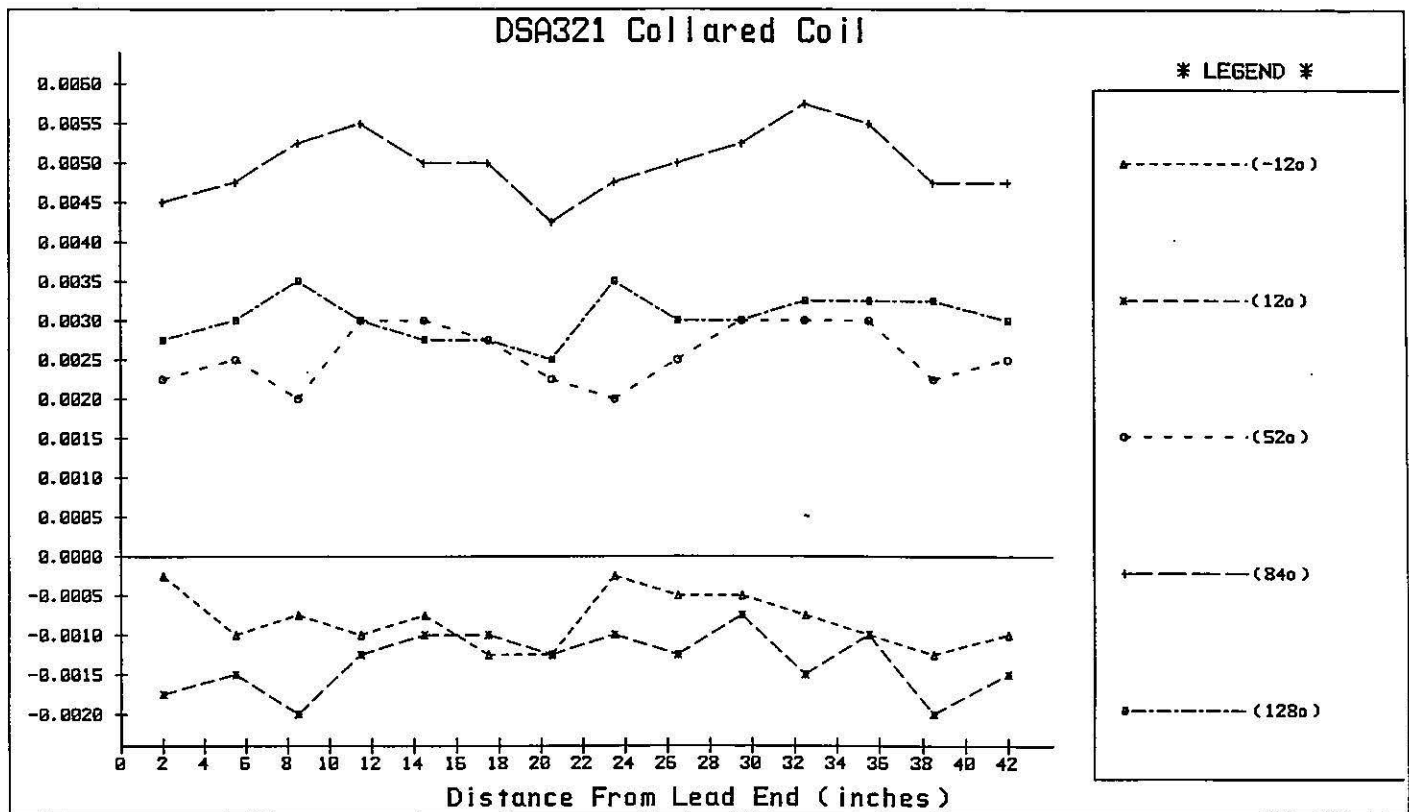


Figure 2

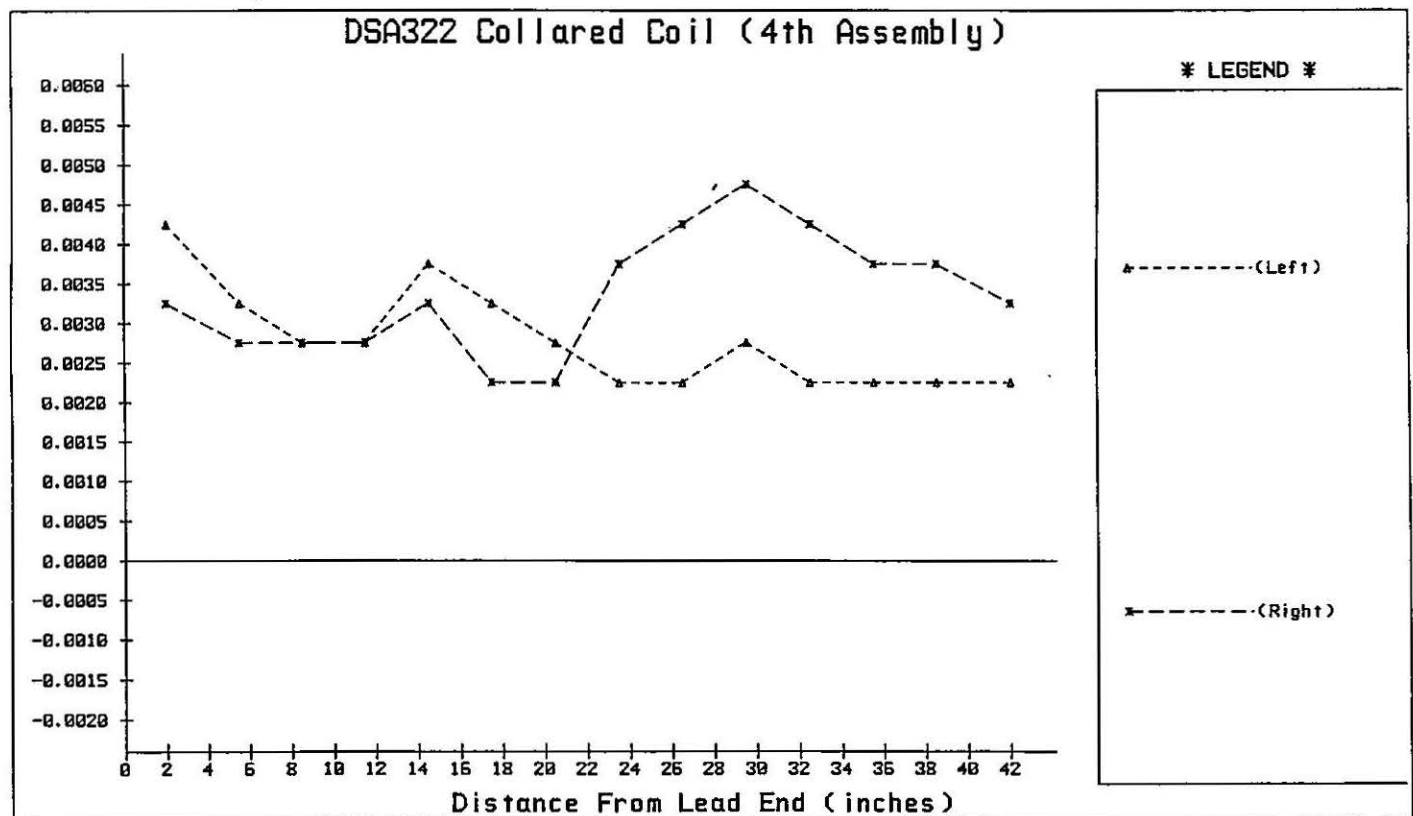
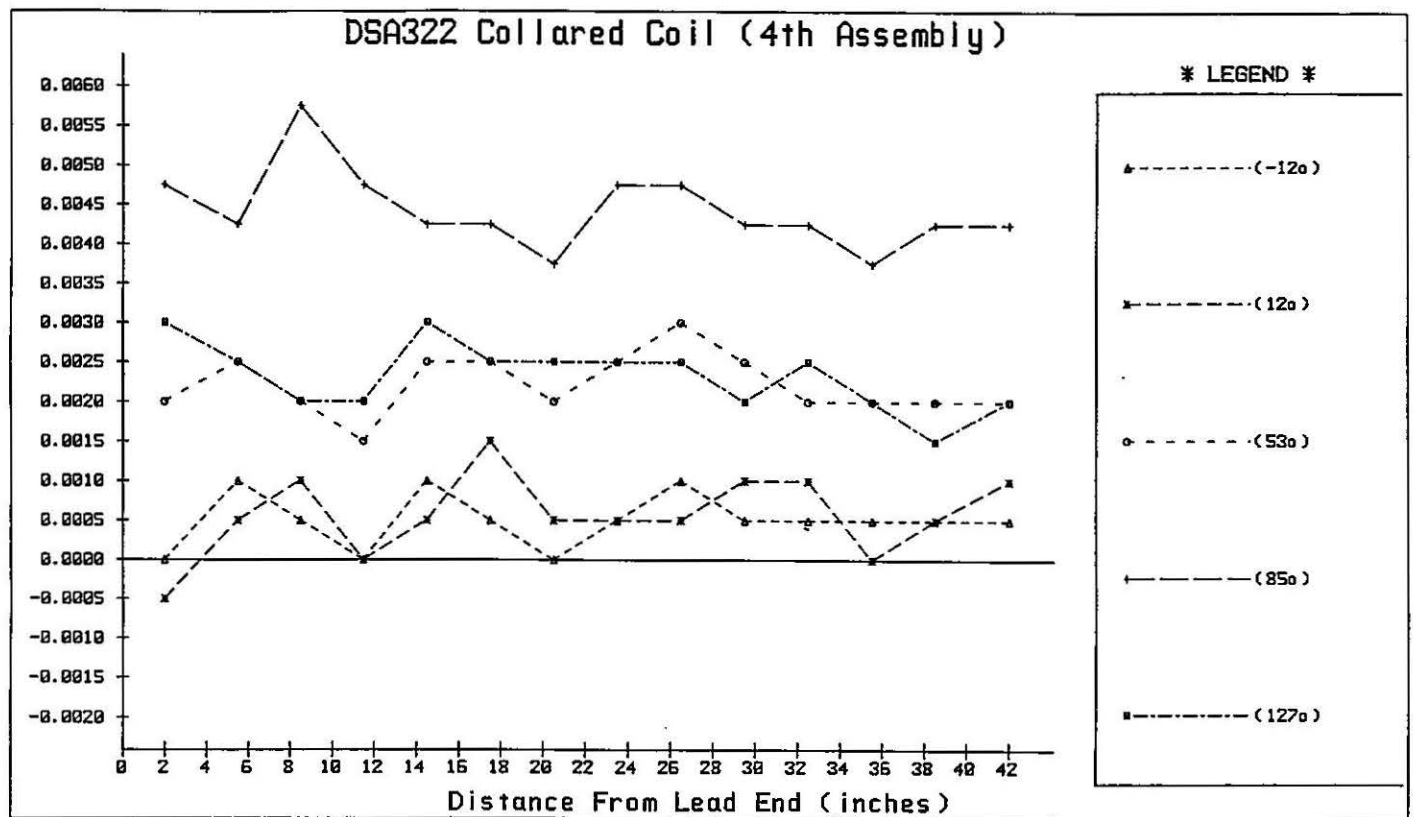


Figure 3

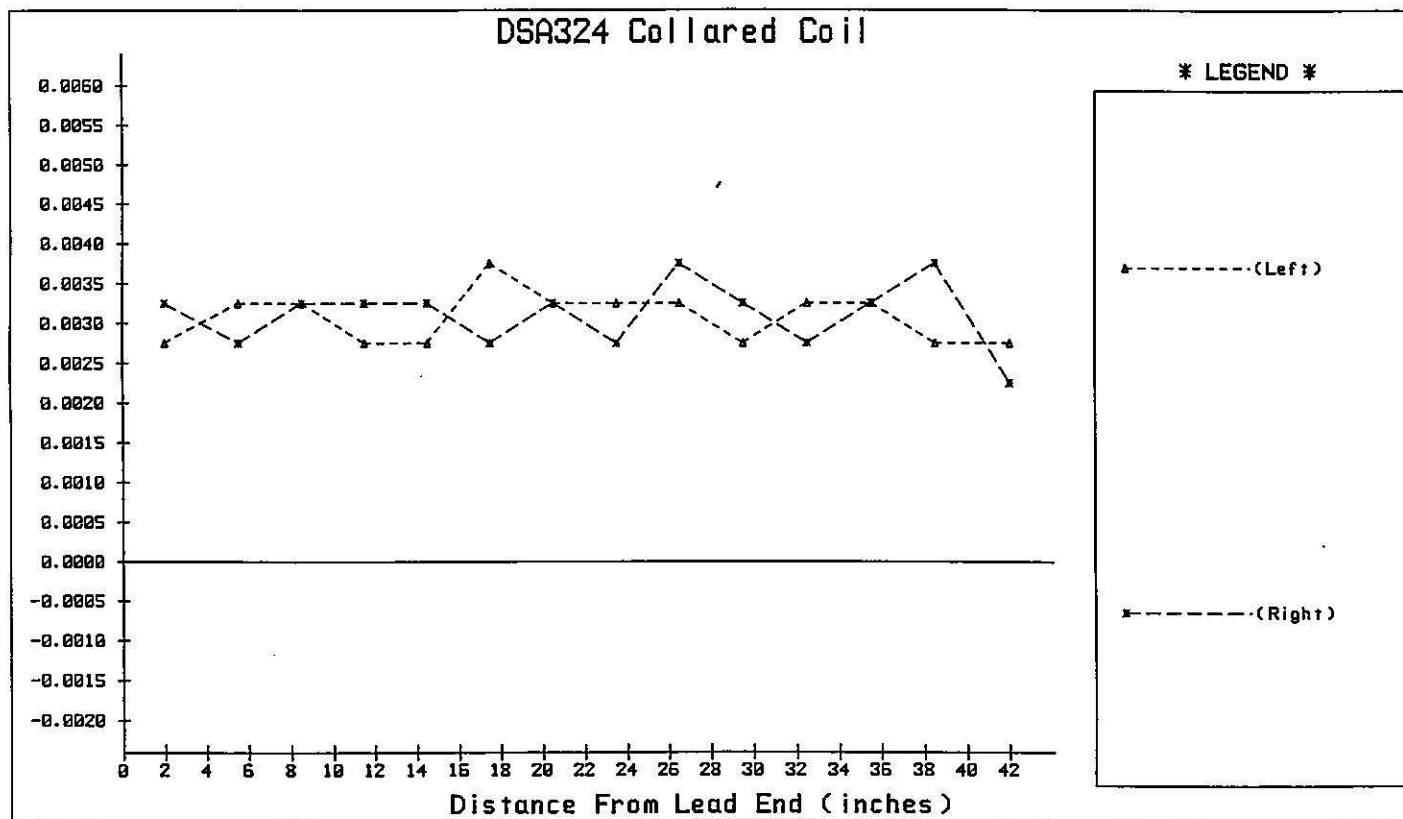
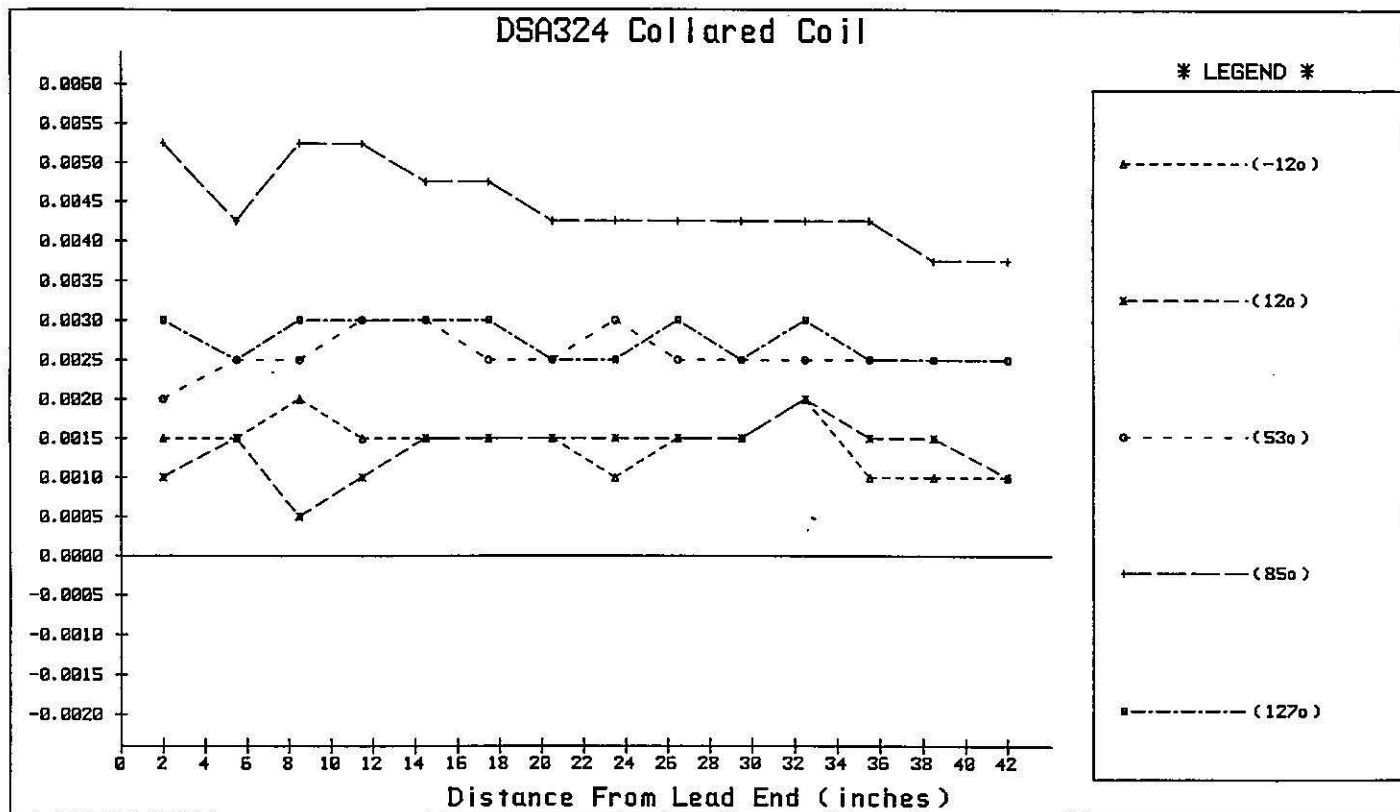


Figure 4

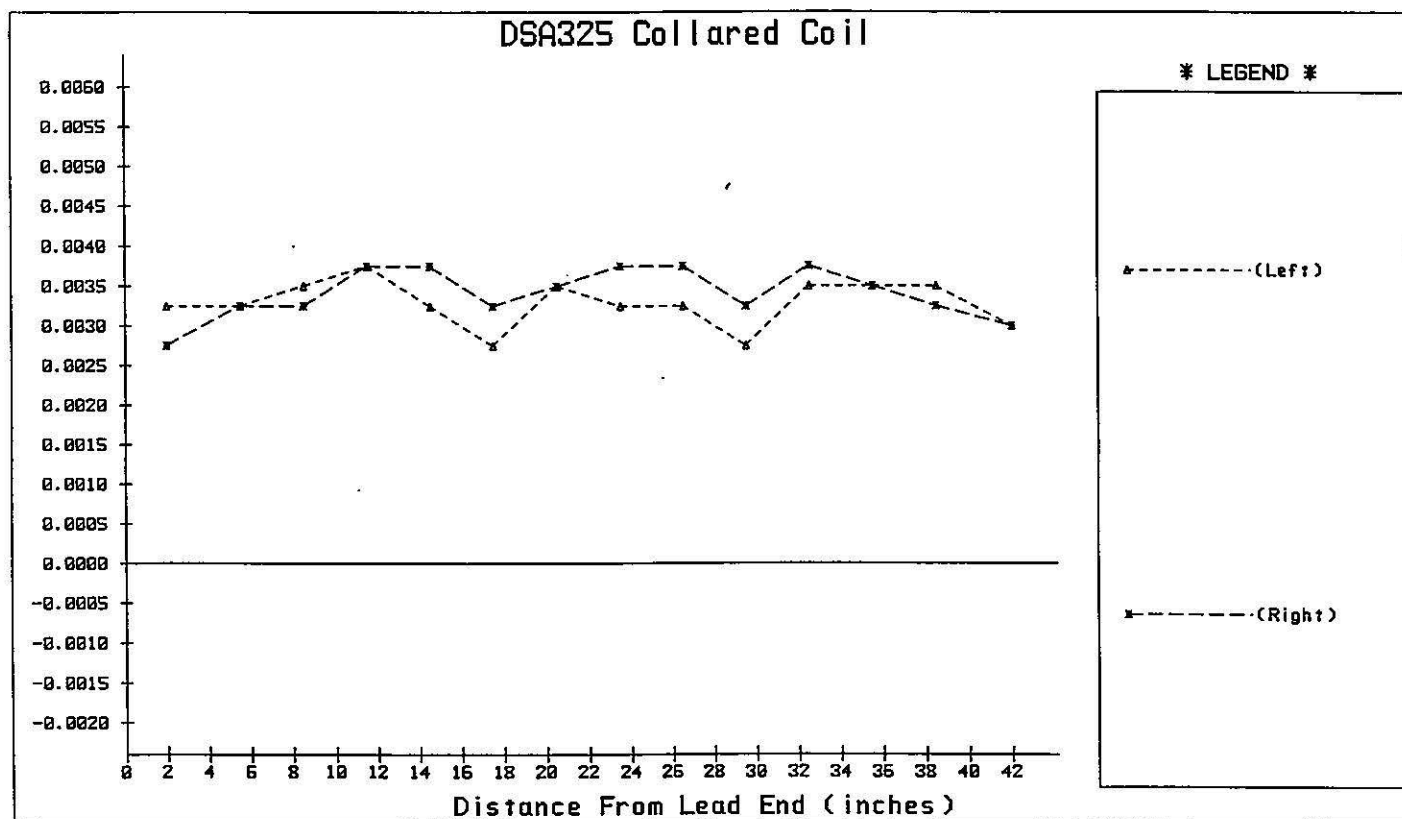
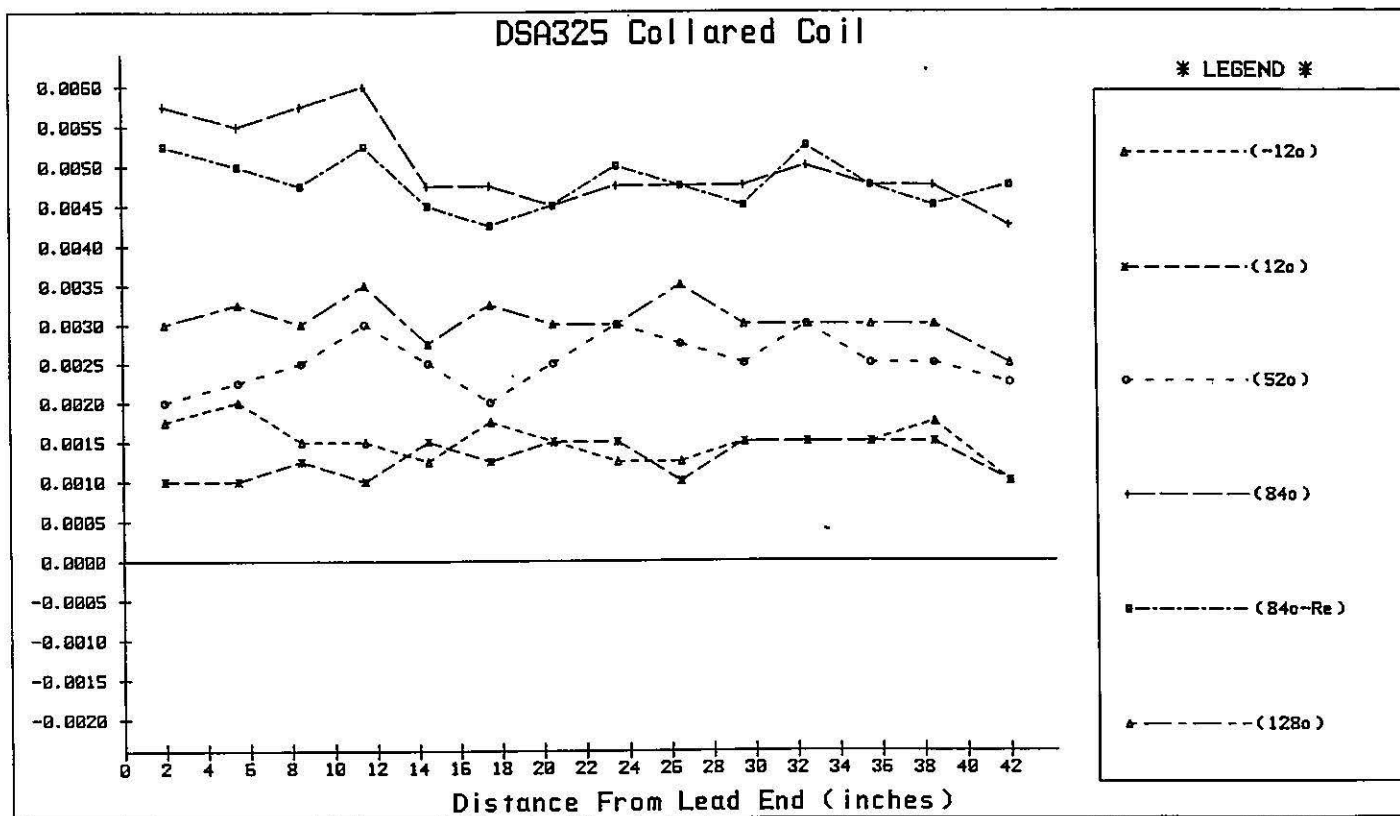


Figure 5

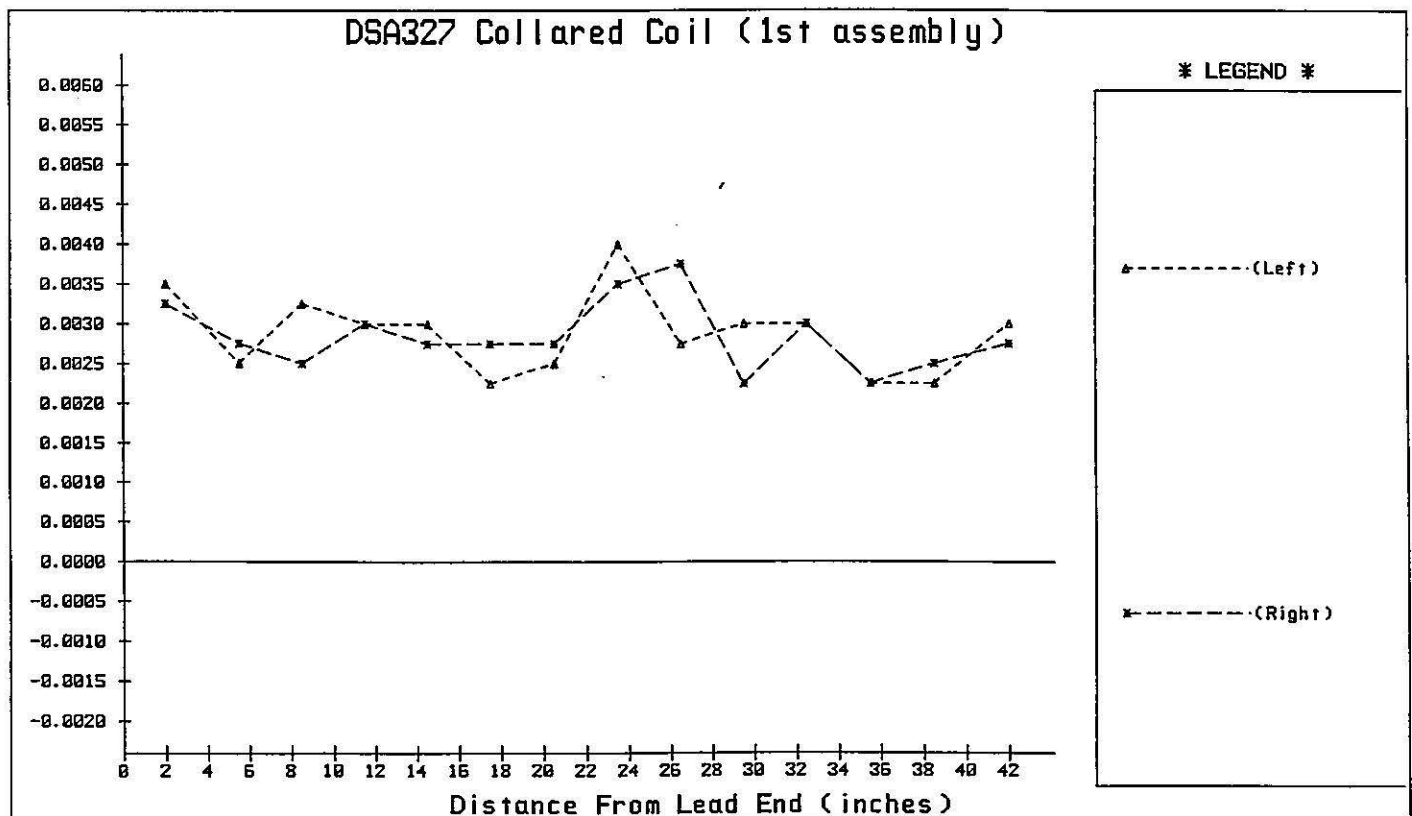
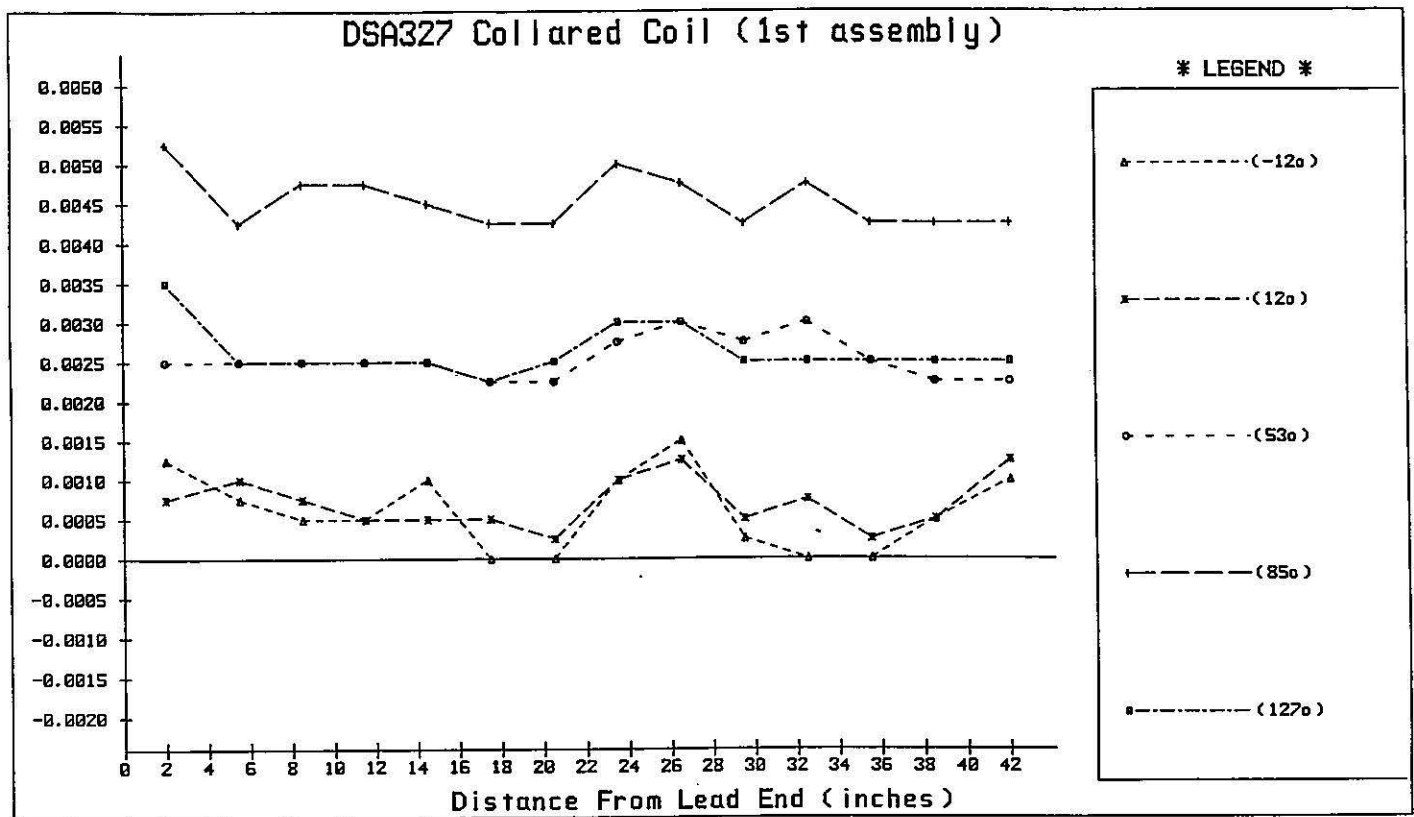


Figure 6