

TS-SSC 90-079 November 5, 1990

MEMO TO: R. Bossert, J. Carson, S. Delchamps, N. Hassan, S. Gourlay,

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M. Wake

FROM:

Jim Strait

SUBJECT:

Keying of DC0303: Strain Gage Data

The keying of DC0303 appears to have been quite successful. DC0303 has two strain gage packs located 1 at the points where the sum of the coil sizes in the four inner coil quadrants are largest ("LE") and the smallest ("RE"). No regard was taken of the outer coil sizes in making the location assignment.

Strain gage data, averaged over the four inner and outer gages at each of the two locations, is displayed in Fig. 1 and Tables Ia and Ib. Several features of the data are worth noting. Despite considerable differences while the coil was in the press, the final prestress is similar if the inner and outer coils at the two locations. The average inner and outer coil prestresses are 8.6 kpsi and 8.5 kpsi respectively. The gage pack at the "high" spot has a lower apparent inner coil prestress than that at the "low" spot. The cause of this is unknown but could result from differences in the outer coil size. It could also be an instrumental effect resulting from, for example, imperfect shimming of the strain gage beams.

The coil stress averaged over the inner and outer coils, is plotted in Fig. 2. The data are quite linear for the "RE" pack, but less so for the "LE" pack. The fit slope $d\sigma/dP_{\rm V}$ in shown in Tables Ia and IIb. For the "RE" pack the slope does not depend sensitively on the fit region and indicates that about 80% of the coil stress at the mid-plane is transferred to the pole. For the "LE" gages the inferred stress transfer varies from 79% to 93% as the minimum pressure of the fit varies from 1 kpsi to 4 kpsi.

Footnote

[1] W. Koska, TS-SSC note to be published.

DS0303 KEYING

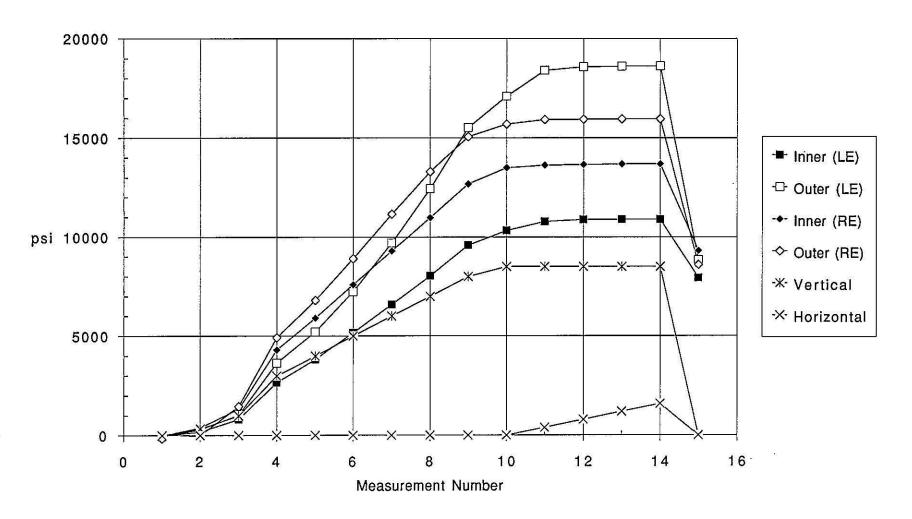


Figure 1

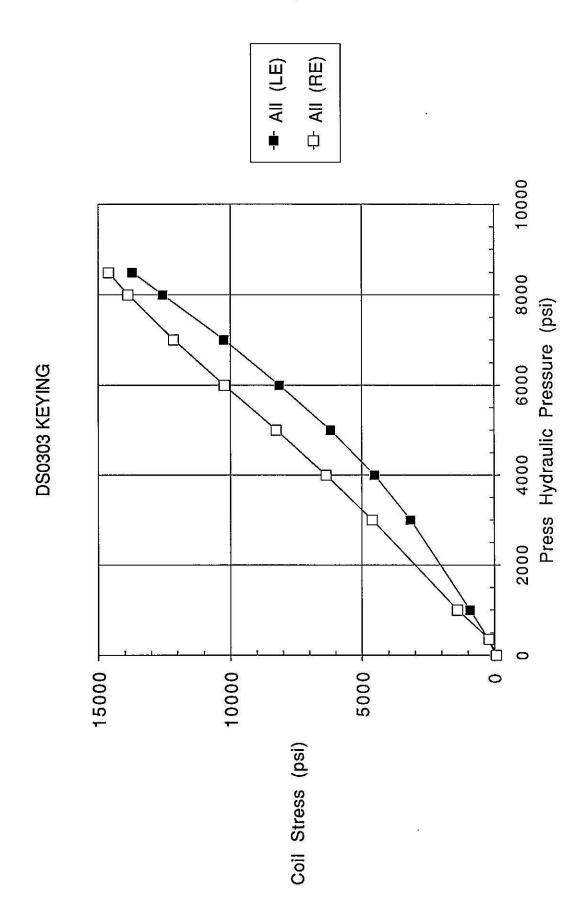


Figure 2.

Table Ia

	Α	В	С	D	E	F	G	н	ı	J	К	L	М
1												Tarko toko	
2							i					H. H.	50
3											C3	C2	C1
4				GAGENO.	TYPE	COIL	Quadrant	Gage Facto	R0 (Ohms)	AO	A1	A2	A3
5				1038	Active	Inner	1	2.02	350.170		2.6E+00		0.00000
6				1034	Active	Inner	2	2.02	350,044	-88.6	1.3E+00	3.76E-03	0.00000
7				267	Comp.	Inner	1&2	2.02	350.330				
8				1043	Active	Inner	3	2.02	350.389	135.7	1.3E+00	3.43E-03	0.00000
9				1044	Active	Inner	4	2.02	350.436	-64.7	6.5E-01	3.76E-03	0.00000
10				264	Comp.	Inner		2.02	350,328				
11	3			66	Active	Outer		2.02	350.441	-70.7	3.8E-01	5.16E-03	0.00000
12				67	Active	Outer	2	2.02	350.151	-38.3	9.3E-01	5.17E-03	0.00000
13				254	Сотр.	Outer	1	2.02	350.290				
14				307	Comp.	Outer	L	2.02	350.235				
15				86	Active	Outer	3	2.02	350.426		9.6E-01		0.00000
16				85	Active	Outer			350.618		1.9E+00	3,11E-03	0.00000
17				300	Comp.	Outer		2.02	349.895				
18				301	Comp.	Outer	4	2.02	349.764				
19		8										UNG-074	
20						11.3.	(Kalifia		C-" C	- September 1		1/04===-1/25	
21			Can di	Data	Dear		lic Pressure Horizontal	Ave	rage Coil St			d(Stress)/dPv Outer	All
23	-		Seq #	Date	Press				Outer (LE) -51	-31	Inner	Cuter	AII
24	-	200 1422	2	11/1/90	0	0 350	0	-11 182	298				
25		8	3	11/1/90	0	1000			1028		0.97	1.12	1.05
26		M C	4	11/1/90	0	3000			3650		0.92	1.31	1.12
27	(S) 		5	11/1/90	0	4000			5205			1.55	1.36
28			6	11/1/90	ō	5000			7236		1,33		1.68
29	300		7	11/1/90	ol	6000			9706		1,43		1.95
30		10.000	8	11/1/90	0	7000				10239	1.44	2.74	2.09
31			9	11/1/90	0	8000					1.56	3.07	2.31
32		18	10	11/1/90	0	8500					1.49		2.32
33		12	11	11/1/90	0	8500	400			14596		8001100000	3890 339
34			12	11/1/90	0	8500	800	10879	18589	14734			
35			13	11/1/90	0	8500	1200	10905		14764	70.00 0576003000	200	
36			14	11/1/90	0	8500				14768			~
37			15	11/1/90	0	0	0	7931	8848	8389			
38							1						
39						fit d	(stress)/dPv				1≤Pv≤8.5 k		
40		-						1.45	2.67	2.06	4≤Pv≤8.5 k	psı	
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58				1500							N. S. 188		
59		300											
60												1	

DS0302 RE
Table Ib

	Ā	В	С	D	E	F	G	H	I	J	K	L	М
1	PSI AVE	RAGING F	ORMULA	S CORRECTI	ED 10-23-90								
2					ø			1000				L	
3											C3	C2	C1
4				GAGE NO.	TYPE	COIL	Quadrant	Gage Facto		AO	A1	A2	A3
5				1032	Active	Inner	1	2.02	349.833	37.1	1.9E+00		0.00000
6				1017	Active	Inner	2	2.02	349.839	-0.2	2.2E+00	3.24E-03	0.00000
7				286	Comp.	Inner	1&2		349.526				
8				1047	Active	Inner	3	2,02	350.554	-40.2	3.5E+00	3,33E-03	0.00000
9		2000		1048	Active	Inner	4	2.02	350,583	-123.8	4.7E+00	3.54E-03	0.00000
10				310	Comp.	Inner	3&4	2.02	350.290			,	
11				1040	Active	Outer	1	2.02	349.799	-307.3	4.1E+00	4.40E-03	0.00000
12		10 V		1035	Active	Outer	2	2.02	349.914	12.9	3.8E+00	3.84E-03	0.00000
13				302	Сотр.	Outer		2.02	350.147				
14				284	Сопр.	Outer		2.02	349.799				
15				1034	Active	Outer	3	2.02	350.044	-88.6	1.3E+00	3.76E-03	0.00000
16			Value of the National Control	1033	Active	Outer	4	2.02	349.701				
17		ê		311	Comp.	Outer	3		350.444				
18				253	Comp.	Outer	4	2.02	350.055				
19					25							**********	
20										-			
21							lic Pressure		rage Coil St	ess		(Stress)/dPv	
22			Seq #	Date	Press		Horizontal		Outer (RE)	All (RE)	Inner	Outer	All
23			1_1_	11/1/90	0	0	0			-88			
24			2	11/1/90	0	350	0			204			
25			3	11/1/90	0	1000				1399			
26			4	11/1/90	0	3000			4918	4609	1.48	1,73	1.61
27			5	11/1/90	0	4000				6359	1.61	1.89	1.75
28			6	11/1/90	0	5000				8255	1.68	2.11	1.90
29			7	11/1/90	0	6000				10228	1.70	2.25	1.97
30			8	1/1/04	0	7000				12141	1.68	2.14	1.91
31		D 8	9	11/1/90	0	8000				13883	1.72	1.77	1.74
32		E8	. 10	11/1/90	0	8500	0			14602	1.62	1.26	1.44
33	. Aeroconten	i de la companya de l	11	11/1/90	0	8500				14778	30 30	NAMES OF THE PARTY	950TA
34			12	11/1/90	0	8500				14805		A	the de wife
35		0	13	11/1/90	0	8500				14821			10.000
36			14	11/1/90	0	8500				14827			
37			15	11/1/90	0	0	0	9307	8607	8957			· ·
38													
39	1	1				fit d	stress)/dPv				1≤Pv≤8.5 kj		
40						3		1.69	2.01	1.85	4≤Pv≤8.5 k	psi	
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43				1									
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