

6/VII/16

p/w = 'magnets'

Forces on coils & modules in Step IV configuration

NB The PRY is not included.

It will give an additional force towards the end plates on each SS

This will not alter the forces between modules

Forces are in tonnes (9810 N); + means towards + z, i.e. in + beam direction

Accuracy is ~ 0.1 tons

		SSU					FC		SSD					
		E	C	E	M2	M1	FC	FC	M1	M2	E	C	E	
Enter current =>		140	140	140	0	0	63	63						
E	140		-40.6	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C	140	40.5		-36.4	0.0	0.0	-0.3	-0.2	0.0	0.0	0.0	0.0	0.0	
E	140	0.2	36.4		0.0	0.0	-0.3	-0.1	0.0	0.0	0.0	0.0	0.0	
M2	0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
M1	0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
FC	63	0.0	0.3	0.3	0.0	0.0		-24.9	0.0	0.0	0.0	0.0	0.0	
FC	63	0.0	0.1	0.1	0.0	0.0	24.9		0.0	0.0	0.0	0.0	0.0	
M1	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
M2	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
E	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
C	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	
E	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Force/coil (tons)		40.8	-3.8	-36.1	0.0	0.0	24.3	-25.2	0.0	0.0	0.0	0.0	0.0	
Force/module		0.9					-0.9		0.0					<i>Checksum</i> 0.0

Some conditions:

		SSU		FC	SSD			
ECE	Current		Current	ECE	Mode	Additional force	Unbalanced force	Additional force
(Field)	M2	M1		(Field)		SSD	FC	SSU
3T	0	0	0	3T	Sol.	0	0	-0.2
3T	0	0	63	0	Sol.	1.3	-1.3	0
3T	0	0	63	3T	Sol.	1.4	0	-1.5
3T	0	0	100	3T	Sol.	2.2	0.1	-2.3
3T	200	0	63	3T	Sol.	2.8	-1.4	-1.6
3T	0	200	63	3T	Sol.	11.9	-10.4	-1.7
3T	200	200	63	3T	Sol.	13.1	-11.8	-1.8
3T	200	200	172	-3T	Flip	20.8	-20.4	-0.9