Fermilab

TS-SSC-91-148

Shim size of DSA328 [1]

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August 2, 1991

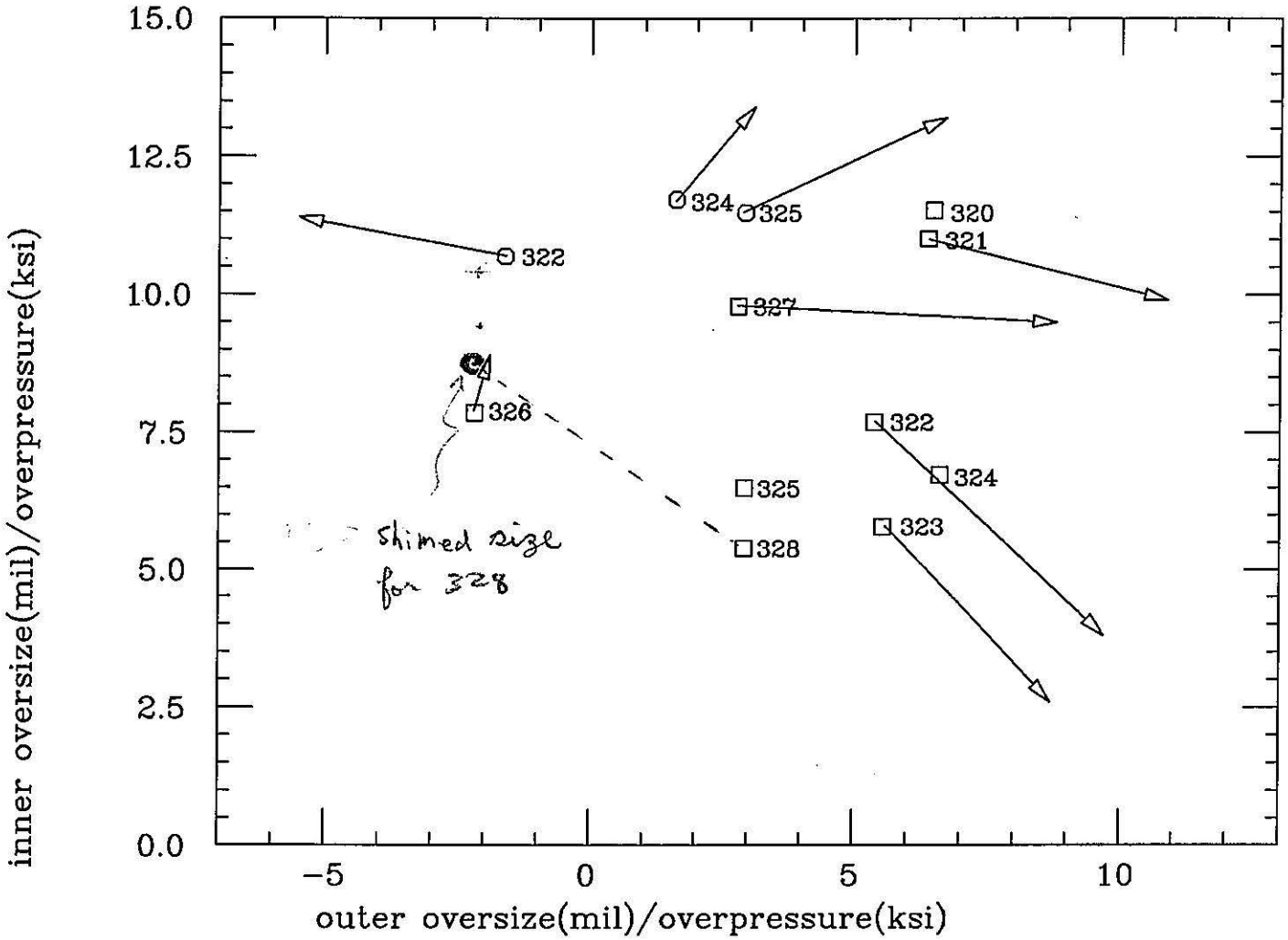
DSA328 is going to be assembled using 1M50-122, 1M50-123 which have ALL-KAPTON insulated wedges for inner coil. These coils are measured considerably smaller than previous coils. This may be either (1) lower friction of KAPTON made even pressing of coils or (2) smaller thickness of 2 layers of 1-mil KAPTON which replaced the glass-epoxy tape made the size smaller.

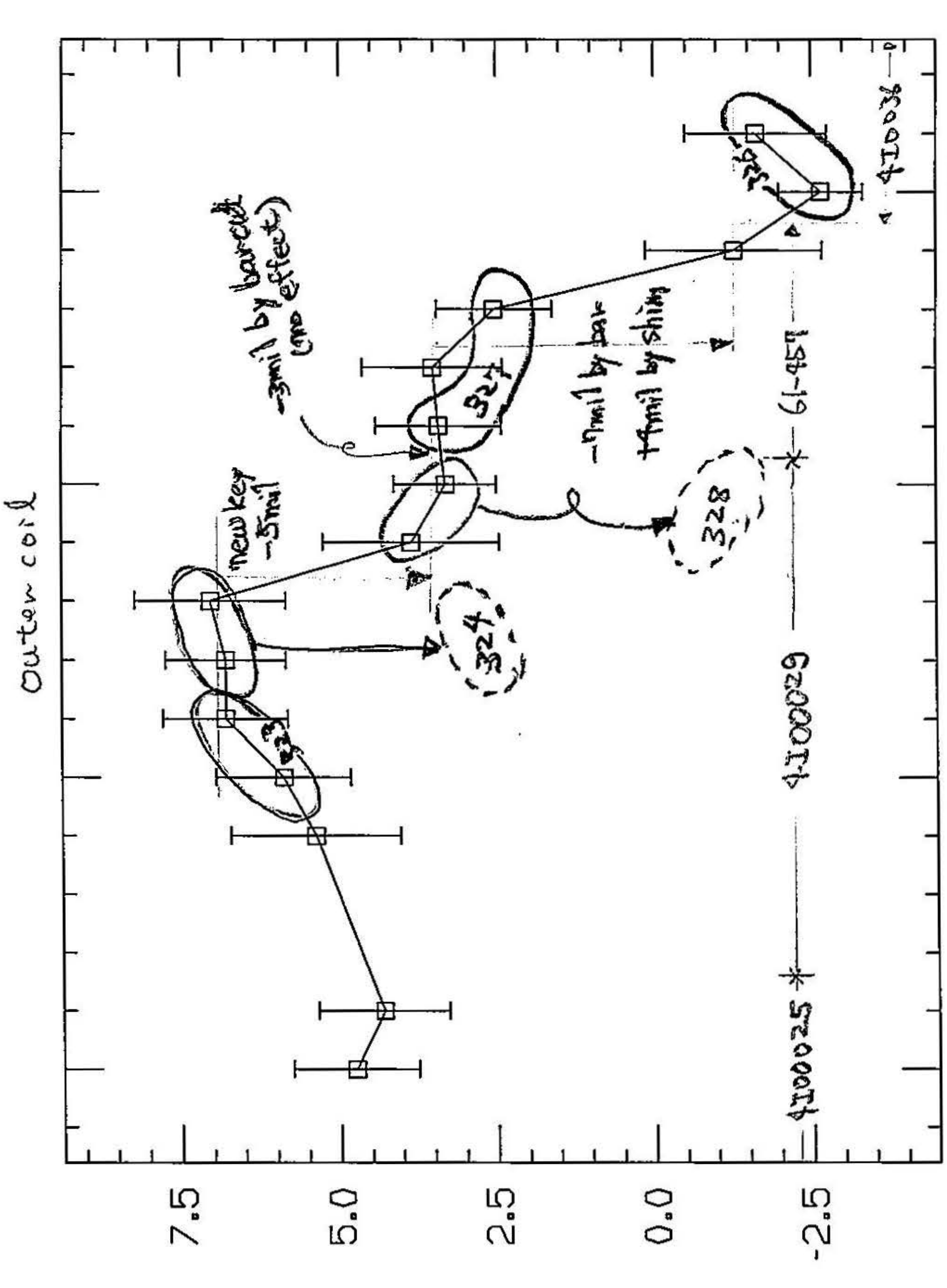
In any case, for the assembly of this magnet with combination of outer coils 1M50-219 and 1M50-220, which are the left over from DSA325, it is necessary to have a collaring shim operation.

Attatched figures show the coil size situation of DSA328 in comparison with other magnets. My choice of shimming is to **remove one layer of 5-mil KAPTON from outer coil pole and add one layer of 3-mil KAPTON to the inner pole**. This should make the preloading of the coils similar to that of DSA326.

4 to 5 mil addition of the curing shim for the inner coil has to be considered. Probably addition of the curing shim will be required when we use all-KAPTON wedges in outer coils.

[1]Distribution: R.Bossert, J.Carson, S.Delchamps, I.Gonczy, S.Gourlay, W.Koska, M.Kuchnir, M.Lamm, G.Pewitt, R.Sims, J.Strait


15.0
12.5
10.0
7.5
5.0
2.5
0.0
−5
0
5
10
inner oversize(mil)/overpressure(ksi)
outer oversize(mil)/overpressure(ksi)
322
324
325
320
321
327
326
325
328
322
324
323
shimed size
for 328


Outer coil
new key
-5mil
-3mil by barcut
(no effect)
-7mil by bar
+4mil by shim
323
324
327
328
4J00025
4J00029
61-457
7.5
5.0
2.5
0.0
-2.5
210
215
220
225

Inner Coil