

Memo to: I. Gonzy

From: S. Delchamps

Subject: DS0315 Collaring Shims

The kapton pole shims for DS0315 should be $17 \pm .5$ mils in the inner coils and for the outer coils $5 + .5 - 0.0$ mils. 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 rationale for this choice of shim thicknesses can be seen from the following table, in which are shown the average coil oversize for inner and outer coils, the chosen inner and outer kapton shim thickness, and the pre-yoking inner and outer coil stresses. (For DS0314, the stresses after removal from the keying press are shown.)

	coil size (mils)		shim thickness (mils)		measured stress (kpsi)	
DS0313	11.2	13.7	17.	6.	9.8	13.6
DS0314	10.7	18.4	17.	0.	9.7	6.6
DS0315	12.0	17.7	17.	5.		

The reduction of the outer coil shim in the case of DS0314 caused a clear drop in outer coil prestress, and so I have chosen to restore most of this shim in DS0315. The 17 mil choice for the inner coil in DS0315 is expected to raise the inner coil stress somewhat above the level of DS0314 and DS0313, but this would be desirable in any case.

I have not used the program COIL_SIZE_ANALYSIS this time, since I was not able to obtain consistent results for DS0313 and DS0314 in the "time allotted" by the current schedule for DS0315. I am sure that some version of this program is eventually the way to go, however.

cc: Rodger Bossert
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