

Abstract Submitted
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Modifications to the HIT-SI Flux Conserver P.E. SIECK, W.T. HAMP, T.R. JARBOE, G.J. MARKLIN, B.A. NELSON, R.G. O'NEILL, A.J. REDD, R.J. SMITH, G.L. SUTPHIN, J.S. WROBEL, University of Washington — Operation of the HIT-SI helicity injectors leads to a family of field lines that are not driven directly by the injector voltage. These fields are analogous to the closed toroidal fields inside the current sheet of a bubble-burst coaxial gun, but the asymmetric injector geometry on HIT-SI allows these field lines to exit the flux conserver through the midplane diagnostic gap. Furthermore, as relaxation activity arises in the vessel, toroidal modes can push field into this gap. Open field lines are helicity-dissipating¹ and should be avoided. A copper strap has been installed across the diagnostic gap. This modification makes the flux conserver more complete, reducing the quantity of helicity-dissipating flux. The effect of the strap on the magnetic structure of the plasma will be shown. The strap will be replaced with localized current-carrying bridges to restore diagnostic access through the gap. A design for these bridges will be presented.

¹T. R. Jarboe and B. Alper, Phys. Fluids **30** (4), p. 1177, 1987

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