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Capture of a high density field reversed configuration in a flux conserver P.E. SIECK, T.P. INTRATOR, G.A. WURDEN, X. SUN, R.J. CORTEZ, W.J. WAGANAAR, Los Alamos National Laboratory — A physics demonstration of Magnetized Target Fusion (MTF) is being pursued by a collaborative team from Los Alamos National Laboratory and Air Force Research Laboratory. The approach is to form a high density Field Reversed Configuration (FRC), translate it into a liner, and adiabatically compress the FRC by imploding the liner. Capture of the FRC in the liner is critical to the success of the experiment. Several interesting phenomena are possible. The FRC can undergo heating when it bounces off the end mirror. Also, partial capture of the FRC can occur such that a smaller FRC remains captured while some plasma and magnetic energy ejects from the liner. Magnetic mirrors at both the upstream and downstream ends of the capture section help to determine the prominence of these behaviors. The translation and capture regions of the experiment are instrumented with flux loops and surface magnetic field diagnostics. Plans will be presented for internal magnetic field probes in these regions. Implications for optimum capture geometry for compression experiments will be discussed. This work is supported by the Office of Fusion Energy Sciences, and DOE/LANL contract DE-AC52-06NA25396.

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