2006 Part I Q2 Exp

A tokamak's purpose is to confine ions at a high temperature. It does this with a toroidal configuration, and a high toroidal magnetic field. However, due to particle drifts, particles would drift out with only a toroidal magnetic field, so a poloidal magnetic field is required to produce a rotational transform. The poloidal field is generated by a toroidal plasma current.

$B \sim 5\,T$

$I \sim 2\,MA$

$T \sim 20\,keV$

$n \sim 10^{20}\,m^{-3}$