$$B = 0.5 T$$
,
 $H = \frac{B}{\mu_0} = 397887 A/m$
 $H * 0.02m = I = 7958A$

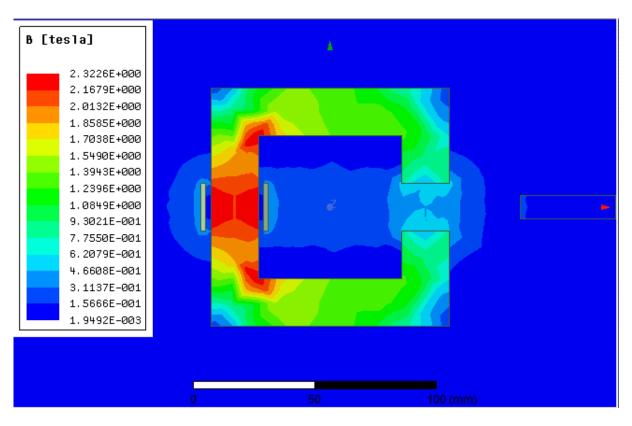
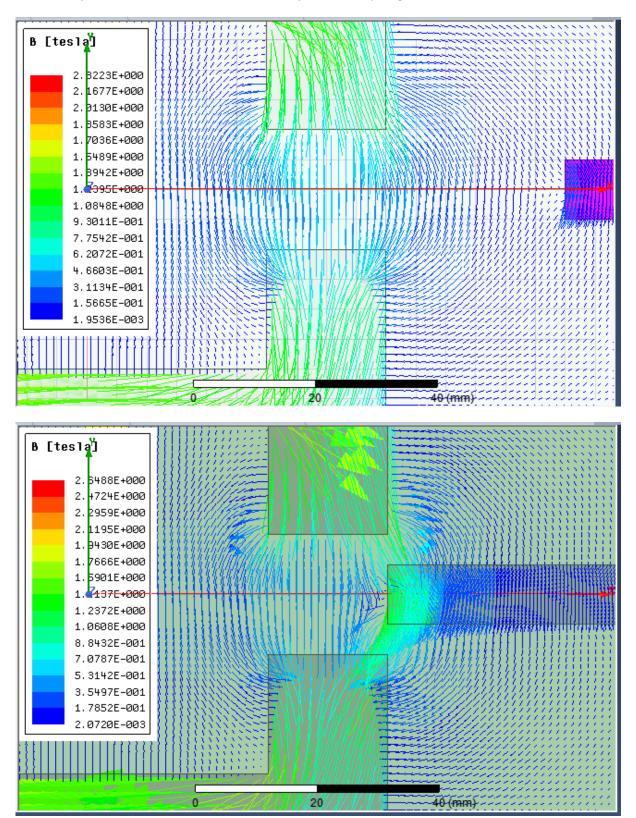
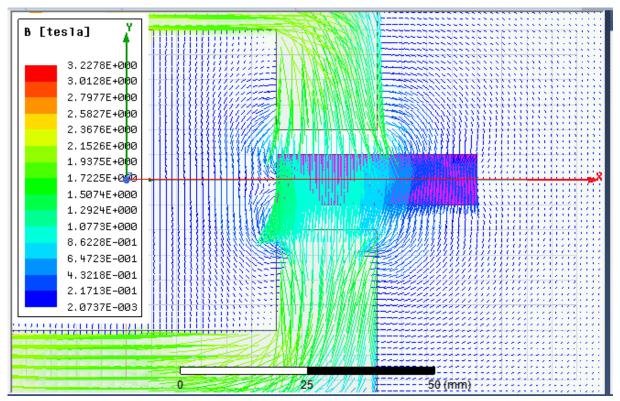


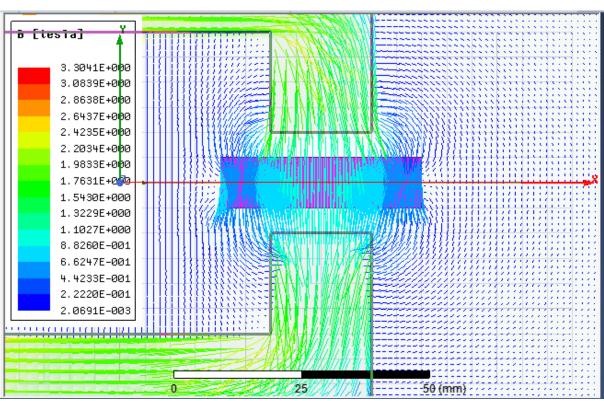
Figure 1: flux density magnitude

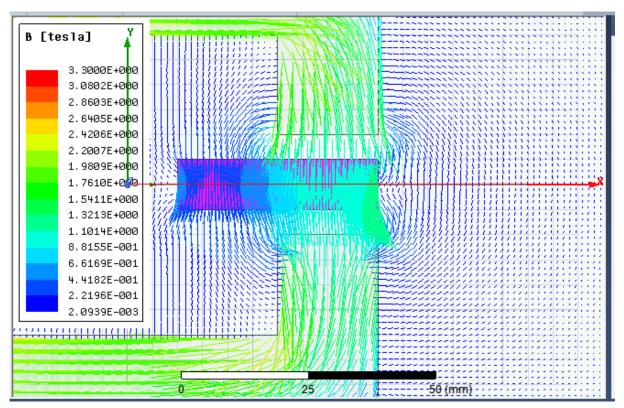
Approximately, 0.5 T is seen in the air gap.

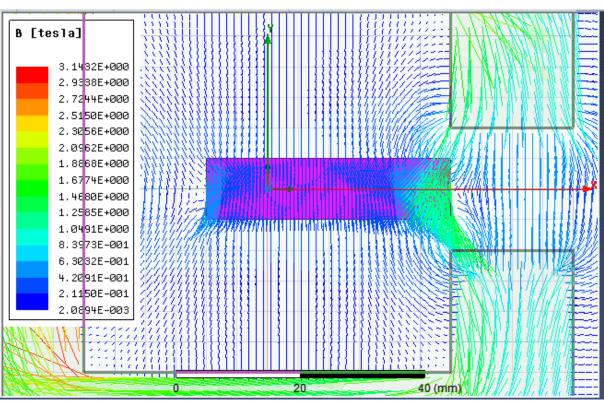
Flux density vectors are as follows for different positions of plunger.

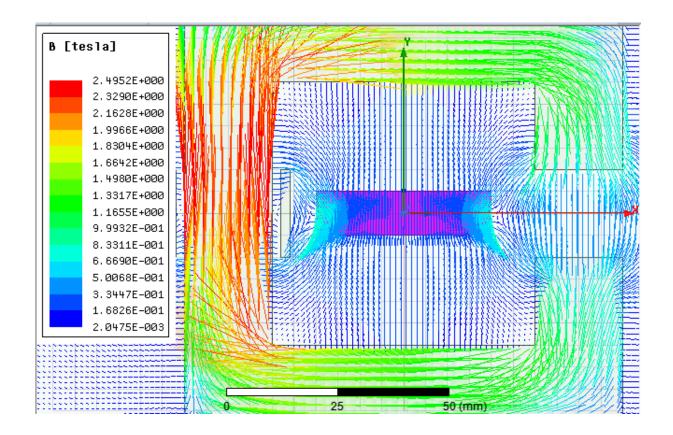












Force densities on the plunger are as follows:

