Given an area-preserving diffeomorphism $\psi$ of a closed annulus which is a rotation near the boundary, we can define an “action function” from the annulus to the reals which captures the dynamics of $\psi$. We study this action function via a filtration on embedded contact homology introduced by Hutchings, which is applied after realizing $\psi$ as the Poincaré return map of a global surface of section for the Reeb flow on a contact three-manifold. (Received September 22, 2017)