distortions. In order to determine the developed static forces, the armature is considered to be fed by an ideal current inverter, see currents' profiles in Fig. 3.

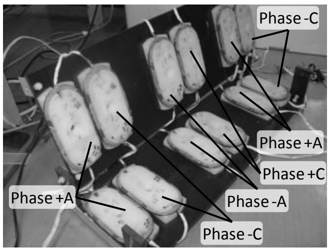

Fig. 2. Test armature built by a three-phase double stator, assembled for experimental measurements. Phase B is not implemented as is not necessary for static measurements, as later discussed.

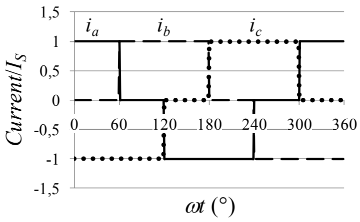

Fig. 3. Normalized armature's three-phase currents with amplitude I_S, generated by an ideal current inverter. i_a, i_b and i_c are currents from phases A, B and C, respectively.

3.2 Mover

The mover, comprising excitation, is built by two HTS Y-123 ($Y_{1.6}Ba_2Cu_3O_{7-x}$) bulks, with, see Fig. 4, magnetized prior to motor's operation. Sand-pile model [19] is used in order to numerically determine trapped flux, considering constant current according to Bean's model [20]. These already demonstrated results consistent with experiments [21]. Considering a 5.2507800 kA/cm^2 critical current, see later, and single domain bulks, the computed components of trapped flux, in a plane at 2 mm from bulk's surface, are shown in Fig. 5. The mover is represented in Fig. 6.

4 Numerical Determination of Developed Forces

In order to calculate the developed forces due to the interaction of armature currents with amplitude I_S and trapped fields, Laplace's law is applied to excitation,