sodium experiments. For water, O-rings were used.

An approximately 16.8 cm (6.6 in.) shaft, Fig. 3.2 (L) concentric with the outer sphere axis supports and drives the inner sphere. The weight of the internal forcing package is borne by the top lid, with the axial load carried by the inner sphere top bearing and locknut, Fig. 3.2 (M). This bearing is sealed against the fluid by a pair of lip seals directly beneath. The inner sphere top bearing is nominally replaceable *in situ* without disassembling the experiment due to the design[5] of the outer race housing, allowing prompt recovery from any small leak through the seals. The inner sphere, Fig. 3.2 (N), has 1.02 ± 0.005 m (40.1 in.) outer diameter and a wall thickness of approximately 0.2 in. The inner sphere is hollow and liquid-tight. Axial location of the inner sphere with respect to the top bearing and radial location of the bottom of the sphere is provided by a flange integral to the inner shaft, Fig. 3.2 (O), which bolts into the bottom of the removable inner sphere unit. A clamping ring, Fig. 3.2 (P), radially locates the top of the inner sphere. The bottom flange and top clamping ring are sufficient to transmit the torque. The bottom of the shaft is radially located by a bearing, Fig. 3.2 (Q), and a receptacle[6], Fig. 3.2 (R), which mate with a hexagonal bayonet integral with the bottom of the outer sphere, Fig. 3.2 (S). The tip of this bayonet was adjusted to be quite concentric with the rotation axis of the bottom bearing (B) by use of camera magnification and a hydraulic press to slightly slide the sphere flange (D) with respect to the bottom head (C). The final alignment was done to better than 0.4 mm (0.017 in.),

[5] Detailed drawings in the dissertation of S.A. Triana.

[6] We named it Joe, and don't really know what to call it otherwise.