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Service (sector) Refractive Surgery - Ocular Bioengineer N° CEP

### **A portable system to inject and remove silicone oil from the eye 1**

Carlos G. Arce 2, João Alberto Holanda-de-Freitas 3 1 Dr. C. G. Arce has financial interest in the device shown in this paper 2 Associate Voluntary Researcher, Ocular Bioengineer Sector, Department of Ophthalmology, Paulista School of Medicine, Federal University of São Paulo (UNIFESP/EPM) 3 Professor and Chairman, Department of Ophthalmology, School of Medicine, Pontific Catholic University of São Paulo, Sorocaba, and Director, Holanda de Freitas Eye Clinic, Campinas, SP. Purpose: To report a portable system to inject and remove silicone oil from the eye. Methods: The system consists in a hand piece with a micro-motor and a without-end screw that pushes or pulls the rubber plunger of commercially available syringes with silicone oil. A pedal controls the forward and backward motion and the speed of piston. Results: The hand piece was stable, without vibration, easy handled, light enough, and it may be used with a single battery or with electricity. A controlled and secure intraocular injection or active aspiration of silicone oil was achieved without the dependence of a more complex and expensive vitrectomy units or pumps. This system was reliable using either the infusion port or directly through a sclerotomy, without most of difficulties usual for manual injection or passive removal. This equipment was tested for the iatrogenic retinal detachment done to relocate the macula Conclusions: Since its introduction in 2000, several retina surgeons in Brazil are using this system demonstrating that it is time and cost saving, secure, and trustworthy.