The Stripping Foil Test Stand in the Linac4 Transfer Line

W. Weterings, C. Bracco, R. Noulibos, Y. Sillanoli, P. van Trappen, CERN, Geneva, Switzerland.

Abstract

The 160 MeV H^- beam from the Linac4 linear accelerator, presently under construction at CERN, will be injected into the 4 superposed rings of the PS Booster (PSB) with a new H^- charge-exchange injection system. It will comprise of a stripping foil, where ~98% of the H- will be converted into protons by stripping off the electrons. To gain experience with these very fragile foils, test different foil materials and thicknesses, lifetime of the foils and foil holders, the foil changing mechanism as well as the interlocking functions, it has been proposed to permanently install a stripping foil test stand in the Linac4 transfer line. This will allow tests already from 2015, prior to the final installation in the PSB, with a 160 MeV H- Linac4 commissioning beam. This paper describes the mechanical design of the system and discusses the test possibilities and parameters.