A feasibility study is performed to assess the utility of a computer numerically-controlled (CNC) mill for compensator production, for conventional clinical use and for the delivery of intensity modulated beams. Absolute measurements of simple geometric figures are made to examine the accuracy of surface milling. Molds for wedged and stepped surfaces are milled and filled with a molten alloy to produce filters. Both the molds and filters are examined. Results show that the deviation of the filter surfaces from design does not exceed 1.2%. The effective attenuation coefficient is measured for CadFree, a cadmium-free lead alloy, in a 6 MV photon beam. Measurements are taken in phantom at the depth of maximum dose and depth of 10 cm. Field sizes are limited to a maximum of 7x7 cm^2 by the size of the CadFree sheets. The ability of the mill to accurately produce complex surfaces is verified with calibrated Kodak RP film in a 6 MV photon beam. Test phantoms include a bitriangular phantom composed of a 10° wedge and a 30° wedge with a sharp discontinuity at the junction. Dose distributions, measured at the depth of compensation (10 cm) beneath the test phantom and beneath a flat phantom, are compared with those produced by a commercial treatment planning system. The precision and spatial accuracy of the automated milling system will be discussed, and its use for intensity modulated beams analyzed.