A Scanning Magnet for a Microtron Beam Line Dedicated to Radiation Processing, S. AXINEXCU, D. CATANA, IAP Bucharest; I. PANAITESCU, Romanian Academy - The parameters of a scanning magnet to use the 17-orbit microtron from the Institute of Atomic Physics, Bucharest, are presented. The maximum magnetic induction is 0.15 T with a polar piece surface of 120 x 120 sq cm. To simplify the supply circuit, the coil is fed with a sinusoidal waveform, frequency 50 Hz, much less than the repetition frequency of the electron pulses, 400 Hz. Computations proved that in this case the non-uniformities of the current distribution in the sample to be irradiated are up to 30%, which is unacceptable. Using a third harmonic component, 150 Hz, with an amplitude of 6% from the amplitude of the fundamental (50 Hz), the non-uniformities of the current distribution are of less than 10%. The use of the scanning magnet allows a beam cross-section of 5 x 40 sq. cm at the output window with a beam average power of 0.5 kW at a 10-MeV electron energy.