Optimization of the Parameters of the Linac Buncher, V.G. RUDYCHEV, S.A. PISMENESKY, KhSU - The method has been developed to optimize the fundamental and complex frequency buncher parameters. It is found the analytical expression for the one stage buncher. The effect of the beam and buncher parameters fluctuations on phase bunch size is investigated. It is showed that the factors line in accordance to their importance: HF field frequency, injection voltage, voltage of the resonator. The investigations have been worked out for double and three cavity's bunchers. It is showed that the parameters of buncher working on fundamental harmonic depend on initial phase and field amplitude relation. The role of space charge and nonlinear effects has been investigated.