This diploma thesis deals with the creation of a methodology for selection of hand workers in engineering industry, with a focus on ability tests. At the beginning, the processes that take place before assembling of a selection tool are described. It is a job analysis and creation of job descriptions and qualification profiles. Then there is a process of identification of required capabilities and creation of competency profiles. Common methods of analysis and description of tool creation and their use are mentioned for both of these processes. Further, the work deals with the description of methods, which are used during the selection process with emphasis on psychodiagnostic tests. Relevant psychometric characteristics and rules for the test usage and evaluation are mentioned there. Next section describes specifics of hand workers selection. The practical section describes creating of a specific methodology for selection for the position operator in the production. Working conditions at a given position are approximated, job is analyzed, competency profile created and a selection tool (group of tests) designed. The selection tool consists of two ability tests, which were normalized to a sample of operators prior to being put into practice. Manual dexterity test was accustomed to the conditions of the position. The third part of the selection methodology is a selection interview. Last but not least the diploma thesis describes benefits and limitations of the new methodology, which are already evident, and includes also improvement suggestions. After its introduction into practice the new methodology helped to a better time and methodological efficiency of selection process and to a greater objectivity of selection results evaluation.