Concerning that many production tasks are still mainly manual, examining typical workloads at production sites is a challenging task. Currently, workspace design is evaluated by experts, filling ergonomic evaluation sheets by estimation of postures and loads. The use of motion capture systems could improve the evaluation process of body postures to achieve accurate data and detailed results on working postures. With regard to the automotive industry motion capturing should be used to analyze movements while performing assembly line tasks, to identify critical postures and to reduce risks of upper limb disorders due to suggesting enhancements of working stations as well as working tasks. This study compares the use of two different motion capture systems (one optical based system: Vicon Nexus; one inertial based system: MyoMotion Noraxon) for the automotive production. 11 participants inserted two fuel pipes and six plugs of different sizes at a selected workplace which was part of the pivot assembly line at an automotive OEM. The results of Vicon and Noraxon were implemented in an ergonomic assessment worksheet to identify critical postures of the upper limb throughout the entire working cycle. Systems were compared due to the results out of the ergonomic evaluation. Furthermore results of the wrist joint angles, calculated with the MyoMotion system, and typical plug insertion forces, measured with a load cell, are presented. Results of Vicon and Noraxon do not differ significant for the summed up value of the ergonomic evaluation. No strain of the neck is identified for the selected tasks. Percentage of work above shoulder height differs between 43 -70