Manual Handling of Loads Supported by a Body-worn Lifting Aid

Abstract:
As a result of demographic change, new assistance systems are presently becoming increasingly important for people. An advantage of the use of assistance systems in the field of manual handling is to reduce the loads acting on the human body. At the same time, the working conditions of manual activities can be improved by such a system and the possibility guarantees injury-free work. Thus, older people can work longer in their profession. These advantages can be combined in an ergonomic body-worn lifting aid adapted to the individual anatomy of the human body. In addition to presenting the actual motivation for the research in the area of assistance systems to support lifting and carrying loads, the approach of the development of this new lifting aid is described in detail. The procedure will be regarded especially from an ergonomic point of view. The consideration of ergonomic aspects is very important so that such a support system fixed to the human body does not disturb the employee during the tasks to be performed. An analysis of the loads with a biomechanical human model can be used so that the assistance system can be optimally adapted to the human body and the different anthropometries.