

Determination of Optimum Unit Load Size of the AGV in an Electronics Assembly Production System

Hark Hwang⁺, Soo Yong Kim⁺⁺ and Seong Woo Moon⁺

+ Department of Industrial Engineering, Korea Advanced Institute of Science and Technology

++ Department of Industrial Engineering, Pusan National University of Technology

Abstract

This paper deals with the problem of determining an optimum unit load size of automated guided vehicle(AGV) in an electronics assembly production line. It is assumed that an AGV delivers assembly parts to each workstation from a miniload automated storage/retrieval system and a conveyor line transports subassemblies between workstations. Two types of operating policies of the AGV system are proposed. For each policy, a nonlinear mathematical model is formulated. Based on the characteristics of the objective function and feasible region, a solution algorithm is developed, which finds an optimum unit load size. To illustrate the models, problems are chosen and solved.

Key words: unit load size, AGV, assembly production line, miniload AS/RS