

## **ABSTRACT**

*PT. GD Indonesia (Generate Differences Indonesia) is a manufacturing company from Bologna, Italy. This company field of designing and making a cigarette maker. During process of making machines PT. GD Indonesia often have problems, which was for procurement of spare parts. In Practice PT.GD not using particular methods, but just do planning based on estimates and the experience of several people.*

*One of the problem faced by this company is the control of spare part machine. This research is done in three phases, which are actual calculation, determine of inventory policy, and sensitivy calculation. The fist phase is actual calculation to know how much total inventory cost generated by company. The second phase is inventory policy, aims to design an inventory policy that is optimal to applied in the company based on the minimum total inventory cost criterion.*

*In this research, with a known amount of spare part to supplier, the actual condition of inventory system at PT. GD Indonesia result in a total inventory cost of Rp 1.210.243.494. While using Q Models resulted Rp 1.135.475.986. Calculations using proposed method resulted efficiency amounting to Rp 74.767.509 or amounting to 6,2%. The Third phase is sensitivy calculation, aims to find out how big impact of changes in the variables that affect the total inventory cost. The variabel is demand, ordering cost, and holding cost. Sensitivity analysis performed for the increase and decrease of 5 – 10%. The selection of the range of 5 – 10% are chosen based on the value of inflation during the last 5 years.*

*Keywords : Inventory, EOQ Joint Replenishment, Efficiency, Sensitivity*