

ABSTRAK

PT. MBG Putra Mandiri adalah perusahaan yang bergerak dibidang manufaktur. Tata letak fasilitas di perusahaan ini tidak tetap yang artinya tata letak fasilitas yang ada di perusahaan ini berubah-ubah, perubahan tata letak fasilitas yang dilakukan oleh perusahaan biasanya tidak menggunakan metode tertentu. Produk-produk yang paling sering diproduksi perusahaan ini yaitu *valve*, *assy gripper*, *assy blower*, dan *flexible hoser*. Produk-produk tersebut memiliki kesamaan dalam proses produksinya yang secara tidak langsung menyebabkan jarak antar departemen lebih jauh sehingga *material handling* dan biaya *material handling* lebih mahal.

Menurut Hadiguna & setiawan (2008) salah satu ciri tata letak *group technology* yaitu dalam proses produksinya terdapat kesamaan, hal tersebut terjadi di PT MBG Putra Mandiri dimana produk-produknya memiliki kesamaan dalam proses produksinya sehingga tata letak dengan *group technology* dengan metode *Cellular Manufacturing System* diusulkan sebagai dasar penentuan tata letak baru di perusahaan ini.

Hasil pengolahan data menunjukkan bahwa berdasarkan pengelompokan mesin dengan metode *Single Linkage clustering (SLC)* terdapat dua kelompok mesin, jarak *material handling* tata letak awal 1463,48m. jarak *material handling* tata letak usulan sebesar 858.41m dengan selisih sebesar 605,07m. Biaya *material handling* tata letak awal sebesar Rp 225.376/hari, biaya *material handling* tata letak usulan sebesar Rp132.196/hari yang menghasilkan selisih sebesar Rp 93.180/hari.

Kata kunci: *Cellular manufacturing system*, *group technology*, *Material handling*, *Single linkage clustering (SLC)*, Tata letak fasilitas.

ABSTRACT

PT. MBG Putra Mandiri is a company operated in manufacturing. The facility layout in the company is not fixed, which means the existing facility layout in the company's changing, the changing of facility layout conducted by the company typically does not use a particular method. The products are most often produced of this company that valve, assy gripper, assy blower, and flexible hoser. These products have similarity in its production process, which indirectly cause further distances between departments so that material handling and material handling costs are more expensive.

According Hadiguna & Setiawan (2008), one of characteristic of group technology layout that there are similarities in its production process, it happens in PT MBG Putra Mandiri where its products have similarities in their production process so that the group technology layout with Cellular Manufacturing System method proposed as the basis for determining the new layout in this company.

The results of data processing showed that by grouping machines with Single Linkage Clustering (SLC) method, there were two groups of machines, material handling distance within the initial layout of 1463,48m. Material handling distance of proposal layout was 858,41m with the difference of 605,07m. The material handling cost of initial layout was Rp225.376/day, the material handling cost of proposal layout was Rp132.196/day resulted in difference of Rp 93.180/day.

Keywords: *Cellular manufacturing system, group technology, material handling, Single linkage clustering (SLC), facility layout.*