

ABSTRACT

Takt time is the time available to make a product unit from the initial process until the final process becomes finished product then a few seconds later followed by other finished product. Takt time is affected by an increase in the amount of production capacity. In Painting Shop takt time accelerated from 93 seconds/unit to 90 seconds/unit to support productivity in PT PT Toyota Motor Manufacturing Indonesia Karawang Plant 1 due to soaring consumer demand.

However, when takt time accelerated to 90 seconds/unit must be analyzed to the problems that occur when takt time changed in Painting Shop. Problem analysis starts from indentifying 4M (machine, material, man, methode). The results of problem identification was found that there was an increase of workload in line Sealer and line ED Inspection with the increase of MPEFF (Man Power Efficiency) value in line Sealer 107,15 % and line ED Inspection 105,07 %. In line ED Inspection the increase of MPEFF value is influenced by high defect number that is 36 defect in that line which cause cycle time up and not standart. While in line Sealer the increase of MPEFF value is caused by average cycle time in each post line Sealer above takt time. To overcome the problems that occur need improvement on both line that is line ED Inspection improvement is done by decreasing NV to defect down so that the value of MPEFF line ED Inspection down, while on the line Sealer need to do balancing job and addition of 2 MP to reduce the value of MPEFF in the line Sealer.

After improvement of existing problems in the line ED Inspection and line Sealer, there is a decrease in the value of MPEFF on both lines is 75,15 % in line ED Inspection and 96,6 % in line Sealer. Decrement of MPEFF value indicates that the workload in line ED Inspection and line Sealer is decreasing and according to standart.

Keyword : *takt time, cycle time, defect, MPEFF, improvement.*

INTISARI

Takt time adalah waktu yang tersedia untuk membuat satu unit produk dari proses awal sampai proses akhir menjadi produk jadi kemudian beberapa detik kemudian disusul oleh produk jadi lainnya. *Takt time* dipengaruhi oleh peningkatan jumlah kapasitas produksi. Di *Painting Shop* *takt time* dipercepat dari 93 detik/unit menjadi 90 detik/unit untuk menunjang produktivitas di PT Toyota Motor Manufacturing Indonesia Karawang Plant 1 akibat melonjaknya permintaan konsumen.

Namun ketika *takt time* dipercepat menjadi 90 detik/unit harus dilakukan analisa masalah yang terjadi ketika *takt time* diubah. Analisa masalah dimulai dari mengidentifikasi 4M (*machine, material, man, methode*). Hasil identifikasi didapatkan bahwa terjadi kenaikan beban kerja di *line Sealer* dan *ED Inspection* dengan meningkatnya nilai MPEFF (*Man Power Efficiency*) di *line* tersebut yaitu *line Sealer* 107,15 % dan *line ED Inspection* 105,07 %. Di *line ED Inspection* kenaikan nilai MPEFF dipengaruhi oleh jumlah *defect* yang tinggi yaitu 36 *defect* yang ada pada *line* tersebut yang mengakibatkan *cycle time* naik dan tidak standart. Sedangkan di *line Sealer* kenaikan nilai MPEFF disebabkan oleh rata-rata *cycle time* di setiap pos *line Sealer* diatas *takt time*. Untuk mengatasi masalah yang terjadi perlu dilakukan *improvement* pada kedua *line* tersebut yaitu *line ED Inspection improvement* dilakukan dengan menurunkan NV agar *defect* turun sehingga nilai MPEFF *ED Inspection* turun, sedangkan pada *line Sealer* perlu dilakukan *balancing job* dan penambahan 2 MP untuk menurunkan nilai MPEFF di *line Sealer*.

Setelah dilakukan *improvement* terhadap masalah yang ada di *line ED Inspection* dan *line Sealer*, terjadi penurunan nilai MPEFF pada kedua *line* tersebut yaitu 78,88% di *line ED Inspection* dan 96,6% di *line Sealer*. Penurunan nilai MPEFF menandakan bahwa beban kerja di *line ED Inspection* dan *line Sealer* turun dan sesuai standar.

Kunci : *takt time, cycle time, defect, MPEFF, improvement.*