

ABSTRAK

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Judul : Usulan Peningkatan Kualitas Pada Produk *Joint 3/8"* Dengan Pendekatan *Lean Six Sigma* Di PT. Intermesindo Forging Prima
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PT. Intermesindo Forging Prima (PT. IMFP) adalah perusahaan yang bergerak di industri manufaktur, salah satu produk yang dihasilkan yaitu produk *Joint 3/8"*. Selama proses produksi *Joint 3/8"* masih terjadi pemborosan yaitu *waste defect* dan *waste waiting*. Dalam menyelesaikan masalah ini peneliti menggunakan pendekatan metodologi *Define, Measure, Analyze, Improve* dan *Control* (DMAIC) dari *Lean Six Sigma*, untuk mencari penyebab dan menemukan peluang perbaikan guna meminimalisir *waste*. Penggambaran aliran fisik dan informasi yang terjadi pada proses produksi *Joint 3/8"* digunakan *Value stream mapping* (VSM). Berdasarkan hasil analisa *Current VSM* dan *Future VSM* diperoleh *value added* sebesar 3.221 detik, dan nilai *lead time* sebelum perbaikan sebesar 25.866 detik dan sesudah perbaikan sebesar 7.066 detik, sehingga didapatkan nilai *process cycle efficiency* sebelum perbaikan sebesar 12% dan hasil perbaikan sebesar 46% dan tergolong *lean*. Kemudian hasil perhitungan *Defect per Million Opportunities* (DPMO) dan nilai sigma didapatkan sebesar 2.411 dan 4,28. Kemudian dilakukan analisis akar penyebab *waste* dengan menggunakan diagram *fishbone*. Usulan perbaikan dengan pendekatan *kaizen* yang diberikan adalah melakukan *training* kepada operator pada bagian *forging* dan membuat jadwal pelatihan atau *training* karyawan pada bagian *forging* yang dapat dilakukan per tiga bulan selama periode satu tahun, pembuatan Instruksi Kerja (IK) standar penyemprotan *dies*, menambah satu operator pada bagian *forging* untuk penyemprotan *dies*, membuat Instruksi Kerja (IK) terhadap cara pemasangan struk atau baut *dies* ke mesin *forging*. Selanjutnya menambahkan alat pelindung pernapasan disebabkan karena lingkungan kerja yang tidak nyaman. Apabila usulan perbaikan tersebut diterapkan, maka akan terjadi peningkatan *level sigma* dengan target 4,40 sigma, penurunan *lead time* sebesar 18.800 detik, dan usulan perbaikan ini meningkatkan nilai *Process Cycle Efficiency* sebesar 34%.

Kata kunci : PT. IMFP, DMAIC, *Lean Six Sigma*, *Value stream mapping* (VSM), *Process Cycle Efficiency*, *Defect per Million Opportunities* (DPMO)

ABSTRACT

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PT. Intermesindo Forging Prima (PT. IMFP) is a company engaged in the manufacturing industry, one of the products produced is the product Joint 3/8". During the Production process Joint 3/8" there is still waste, namely waste defect and waste waiting. In solving this problem, the researcher uses the Define, Measure, Analyze, Improve and Control (DMAIC) methodology from Lean Six Sigma, to find causes and find opportunities for improvement to minimize waste. The description of the physical flow and information that occurs in the production process is Joint 3/8" used Value stream mapping (VSM). Based on the analysis results of Current VSM and Future VSM, the value added is 3.221 seconds, and the value lead time before repair is 25.866 seconds and after repair is 7.066 seconds, so that the process cycle efficiency value before repair is 12% and the repair result is 46% and is classified as lean. Then the results of the calculation of Defects per Million Opportunities (DPMO) and sigma values obtained are 2.411 and 4.28. Then do the analysis of the root causes of waste using a diagram fishbone. The proposed improvement with the approach kaizen given is to train operators in the section forging and make a training schedule for training employees in the section. forging which can be carried out every three months for a period of one year, making standard work instructions (WI) for spraying dies, adding one operator to section forging for spraying dies, making Work Instructions (WI) on how to install receipts or bolts dies to the machine forging. Furthermore, adding respiratory protective equipment is caused by an uncomfortable work environment. If the proposed improvement is implemented, there will be an increase in the level of sigma with a target of 4.40 sigma, a decrease in lead time of 18.800 seconds, and this proposed improvement will increase the value of Process Cycle Efficiency by 34%.

Keywords : PT. IMFP, DMAIC, Lean Six Sigma, Value stream mapping (VSM), Process Cycle Efficiency, Defects per Million Opportunities (DPMO)