

ABSTRAK

Penelitian ini bertujuan untuk meningkatkan kualitas produk Under Bracket HK590 di PT. Intermesindo Forging Prima dengan menerapkan metode *DMAIC* (*Define, Measure, Analyze, Improve, Control*) dalam pendekatan *Six Sigma*. Latar belakang penelitian didasarkan pada tingginya tingkat *reject* produk yang mencapai rata-rata 5,5% pada tahun 2023, melebihi standar perusahaan sebesar 1%. Jenis cacat dominan yang ditemukan adalah *underfill* (77%), *setting dies* (14%), dan lengket (5%). Tahap *Define* mengidentifikasi masalah utama dan *Critical to Quality* (CTQ). Tahap *Measure* menghitung kinerja proses menggunakan peta kendali P (*P-Chart*) dan nilai *DPMO* (*Defect Per Million Opportunities*), menunjukkan rata-rata level sigma sebesar $4,62\sigma$. Tahap *Analyze* menggunakan Diagram *Fishbone* untuk mengidentifikasi akar penyebab cacat, yaitu faktor manusia, mesin, material, dan metode. Tahap *Improve* mengusulkan perbaikan seperti pelatihan operator, pemeliharaan mesin berkala, dan standarisasi prosedur. Tahap *Control* merekomendasikan monitoring rutin dan evaluasi untuk memastikan keberlanjutan perbaikan. Hasil penelitian menunjukkan bahwa penerapan metode *DMAIC* efektif dalam mengidentifikasi dan mengurangi cacat produksi. Dengan implementasi usulan perbaikan, diharapkan tingkat *reject* dapat menurun hingga memenuhi target perusahaan, sekaligus meningkatkan efisiensi dan kepuasan pelanggan.

Kata Kunci: *DMAIC, Six Sigma, Peningkatan Kualitas, Under Bracket HK590, Forging.*

ABSTRACT

This research aims to improve the quality of the Under Bracket HK590 product at PT. Intermesindo Forging Prima by applying the method DMAIC (Define, Measure, Analyze, Improve, Control) in approach Six Sigma. The research background is based on the high level of reject products that reached an average of 5.5% in 2023, exceeding the company standard of 1%. The dominant type of defect found was underfill (77%), setting dies (14%), and sticky (5%). Stage Define identify the main problems and Critical to Quality (CTQ). Level Measure calculate process performance using P control charts (P-Chart) and value DPMO (Defect Per Million Opportunities), shows an average sigma level of 4.62σ . Stage Analyze using diagrams Fishbone to identify the root causes of defects, namely human, machine, material, and method factors. Improve propose improvements such as operator training, regular machine maintenance, and standardization of procedures. Control recommends regular monitoring and evaluation to ensure the sustainability of improvements. The results of the study indicate that the application of the method DMAIC effective in identifying and reducing production defects. By implementing the proposed improvements, it is hoped that the level of reject can decrease to meet company targets, while increasing efficiency and customer satisfaction.

Keywords: DMAIC, Six Sigma, Quality Improvement, Under Bracket HK590, Forging.