ABSTRAK

Penelitian ini membahas kecacatan pada proses pelapisan logam produk pengencang klip radiator di PT. Pilarco. Tujuan penelitian adalah mengidentifikasi jenis cacat dominan, faktor penyebab, dan memberikan rekomendasi perbaikan kualitas. Data primer meliputi data kuantitatif seperti jumlah produksi, jenis cacat, serta hasil wawancara menggunakan FMEA. Data sekunder mencakup literatur terkait metode *Six Sigma*, DMAIC, dan FMEA. Hasil penelitian menunjukkan cacat buram sebagai jenis dominan (42%), diikuti cacat gores (32%) dan titik hitam (26%). Dari Tabel DPMO dan nilai sigma produk pengencang klip radiator menunjukkan bahwa tingkat DPMO sangat *fluktuatif*, dimana terdapat titik DPMO yang paling tinggi yaitu sebesar 38.194 dengan kapabilitas sigma paling rendah 3,27 dan nilai DPMO paling rendah yaitu 8.130 dengan kapabilitas sigma paling tinggi 3,90. Penyebab utama cacat meliputi faktor mesin, metode, dan lingkungan kerja. Mesin yang kotor pada proses *plating* dan *activating* menyebabkan produk buram dan berjamur. Selain itu, suhu berlebih pada proses *drying oven* menimbulkan titik hitam, sementara pengaturan barang yang kurang efektif menyebabkan goresan dan kerusakan fisik lainnya. Dari hasil perhitungan tabel RPN didapat bahwa cacat buram pada pengencang klip radiator mendapat nilai yang paling tinggi yaitu sebesar 175, cacat gores 100 poin dan cacat titik hitam 75 poin. Untuk meningkatkan kualitas *plating*, disarankan perusahaan mempekerjakan tenaga ahli *plating* untuk mengawasi proses *electroplating*. Perusahaan juga perlu memperhatikan SOP, pengecekan berkala, dan pemeriksaan kualitas. Selain itu, perlu diterapkan jadwal perawatan rutin pada mesin dan area kerja guna meminimalkan kecacatan dan meningkatkan kualitas produk secara maksimal.

Kata Kunci : Pengencang Klip Radiator, DPMO, DMAIC, RPN

ABSTRACT

This research discusses defects in the metal plating process for radiator clip fastener products at PT. Pilarco. The aim of the research is to identify the dominant types of defects, causal factors, and provide recommendations for quality improvement. Primary data includes quantitative data such as production quantities, types of defects, as well as interview results using FMEA. Secondary data includes literature related to Six Sigma, DMAIC, and FMEA methods. The results showed opaque defects as the dominant type (42%), followed by scratch defects (32%) and black dots (26%). From the DPMO table and sigma values for radiator clip fastener products, it shows that the DPMO level is very fluctuating, where there is the highest DPMO point, namely 38,194 with the lowest sigma capability of 3.27 and the lowest DPMO value, namely 8,130 with the highest sigma capability of 3.90. The main causes of defects include machine factors, methods and work environment. Dirty machines during the plating and activating process cause the product to become blurry and moldy. In addition, excessive temperatures during the oven drying process cause black spots, while ineffective setting of items causes scratches and other physical damage. From the results of the RPN table calculations, it was found that the opaque defects on the radiator clip fasteners received the highest score, namely 175, scratch defects 100 points and black spot defects 75 points. To improve plating quality, it is recommended that companies employ plating experts to supervise the electroplating process. Companies also need to pay attention to SOPs, periodic checks and quality checks. In addition, it is necessary to implement a routine maintenance schedule for machines and work areas to minimize defects and improve product quality to the maximum.

Keywords: Radiator Clip Fastener, DPMO, DMAIC, RPN