

*"Ku persembahkan Tugas Akhirku untuk
keluargaku : Bapak Ibu Sumardiyono dan
Wiwik Pertiwi*

*Sebagai wujud rasa terima kasih atas cinta dan kasih
sayang yang telah diberikan kepadaku."*

ABSTRACT

PT. Yamaha Indonesia Motor Manufacturing (YIMM) which is one of the PMA (foreign investment) companies which is engaged in assembling and manufacturing of motorcycle spare parts with Yamaha brand. PT. YIMM is also one company that focuses on quality improvement as the key competitive advantages. In order to produce a quality product PT.YIMM creates a special division that handles about the quality of the Quality Assurance Division. By the end of 2009, the number of reject rate, which is owned by the crank shaft has passed the 15% tolerance limit with the Department of Quality.

Based on these problems, the proposal of improvements by using Six Sigma methods is built. Six Sigma refers to the effort of continuous improvement dramatically towards zero defect. This method aims to reduce the level of variation and defects in the production process, to produce products with better quality. Using Six Sigma methods, the root problems that cause defect products can be found, so that improvements can be done to avoid similar problems in the

future. In this research, four stages of Six Sigma, Define, Measure, Analyze, and Improve are conducted. Define phase is the determination of Six Sigma projects, the mapping process, and the formulation of the Critical to Quality (CTQ). In the measure phase, the measurements of process stability and the sigma value were taken in output level. In the analyze phase, carried out the stability analysis, sigma-value analysis, and cause-effect analysis to identify causes factors of defects. In the improve phase, carried out the proposal of defect's improvements and the priority of improvements which can be used as a reference by the company.

Based on research results, obtained two critical aspects that affect the quality (CTQ) crank shaft products, dimensions and visual. There are seven types of processes that have the greatest contribution to the numbers generated reject rate, external grinding, internal grinding, turning, hobbing, drilling, the centering and pitch NG. Factors that cause of the flaw are that there are new operators, damage to the engine, and tools, methods of installation of the wrong raw materials and raw materials that do not fit the standard.

Key words : defects, CTQ, six sigma

ABSTRAK

PT. Yamaha Indonesia Motor Manufacturing (YIMM) merupakan salah satu perusahaan PMA (Penanaman Modal Asing) yang bergerak di bidang perakitan sepeda motor dan pembuatan suku cadang (*spare part*) merk Yamaha. PT. YIMM juga merupakan salah satu perusahaan yang fokus kepada peningkatan kualitas sebagai kunci keunggulan bersaing. Untuk menghasilkan produk yang berkualitas PT.YIMM membuat suatu divisi khusus yang menangani tentang kualitas yaitu *Quality Assurance Divission*. Hingga akhir tahun 2009, angka *reject rate* yang dimiliki oleh *crank shaft* telah melewati batas toleransi 15% yang ditetapkan Departemen Mutu.

Berdasarkan permasalahan tersebut, dicoba untuk membuat usulan perbaikan dengan menggunakan metode Six Sigma. Six Sigma mengacu pada upaya perbaikan terus-menerus secara dramatis untuk menuju tingkat kegagalan nol (*zero defect*). Metode ini bertujuan untuk mengurangi tingkat variasi dan produk cacat pada proses produksi, sehingga dapat dihasilkan produk dengan kualitas yang lebih baik. Dengan menggunakan metode Six Sigma, dapat