

ABSTRACT

PT. Coppal Utama Indomelt is a company engaged in metal casting, aluminum, copper, and steel to make parts or the initial frame of a product that the company needs to manufacture industrial tools. Metal casting with disamatic method is the main process used at PT. Coppal Utama Indomelt besides that, because the disamatic process is a process that can produce large quantities at the same time compared to other methods, one of the types of products produced by PT. Indomelt Main Coppal is flange 15B. Based on historical data on the number of defects that occurred in the period January 2020 to June 2021, this 15B flange product has the highest number of production and number of defects among other products. Flange 15B is one part of the pipe that functions as a liaison between one pipe and another. Based on historical data on the number of defects in the 15B flange product, the molding process has the highest percentage of 44% of the total number in producing defective products. In the molding process there are two types of defects that have the highest percentage, namely sanddrop of 41% and sintering of 3%. Defects that arise can occur because the production process has not met the CTQ process that has been set by the company. Solving problems using the DMAI approach (Define, Measure, Analyze, Improve) and there are problems in the molding process, namely inappropriate pressure so that the engine thrust is weak due to a torn membrane and an open blow top valve so that the proposed solution is to improve the molding process. is to provide a preventive maintenance scheduling design on disamatic machines in order to minimize the appearance of defects in the molding process. In designing preventive maintenance scheduling, the researcher uses the MTTF (Mean time to failure) and MTTR (Mean time to repair) calculation methods.

Based on the results of the MTTF (Mean time to failure) calculation, the results are 21.65 days for membrane replacement and 35.60 days for repair or lubrication of the upper blow valve so that the results of the preventive maintenance scheduling design on disamatic machines have an interval of 21 days for replacement. membrane and 35 days for repair or lubrication of the blow-up valve after previous maintenance. In the preventive maintenance scheduling design process, a verification process regarding the results of the design and

validation process is carried out to the company to get feedback regarding the results of the preventive maintenance scheduling design. The results of the proposed preventive maintenance scheduling design are expected to minimize the number of defect sand drop and sinter products and to improve the problematic process in the molding process by 70% so that it can increase the sigma level value of 0.208 from 3,441 to 3,648.

Keywords — *DMAI, Flange 15B, Preventive maintenance, CTQ, FMEA*