

ABSTRAK

Casting wheel adalah salah satu jenis velg yang digunakan pada kendaraan bermotor baik roda dua maupun lebih. Dalam proses pembuatannya, banyak metode yang digunakan salah satunya metode *low pressure die casting*. Proses produksi *casting wheel* pada *line* mesin *low pressure die casting* Isuzu SP-1C menggunakan bahan baku utama paduan Aluminium (Al), Magnesium (Mg) dan Stronsium (Sr). Pengecekan dilakukan pada tahap pencampuran paduan Aluminium (Al), Magnesium (Mg) dan Stronsium (Sr) hingga proses *scanning* menggunakan mesin *x-ray* setelah *casting wheel* dicetak. Proses produksi pada *line* mesin *low pressure die casting* Isuzu SP-1C masih mengalami beberapa kendala diantaranya *defect* produk 2% dari jumlah produksi tiap bulanya. Tujuan utama dari penelitian ini adalah menganalisis faktor-faktor penyebab terjadinya *defect* baik dari segi material, proses produksi, hingga proses pengecekan atau *quality control*. Dari penelitian pada proses produksi *casting wheel* 2% *defect* yang terjadi adalah *defect kajiri/cacat permukaan kasar*, *disc ware* dan *airlocks* atau *bubbles*. Dimana perbedaan temperatur antara temperatur tuang *molten* dan temperatur die yang terlalu jauh merupakan faktor utama yang menyebabkan *defect* tersebut. Sedangkan *over hardness* dapat terjadi karena tingkat kekerasan pada *casting wheel* yang terlalu tinggi sebelum memasuki proses *heat treatment*. Sehingga dengan memonitor dan memperbaiki temperatur pada proses *casting* serta pengujian *hardness level* sebelum proses *heat treatment* akan dapat menurunkan jumlah *defect* yang terjadi.

Kata Kunci: *Casting Wheel*, *Defect*, *Low Pressure Die Casting*, Aluminium, Temperatur

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**DEFECT ANALYSIS IN THE CASTING WHEEL PRODUCTION PROCESS
ON THE LOW PRESSURE DIE CASTING MACHINE LINE ISUZU SP-1C**

ABSTRACT

Casting wheel is one type of wheel that is used on motorized vehicles, both two and more wheels. In the manufacturing process, many methods are used, one of which is the low pressure die casting method. The casting wheel production process on the Isuzu SP-1C low pressure die casting machine line uses the main raw materials of aluminum (Al), Magnesium (Mg) and Strontium (Sr) alloys. Checks are carried out at the mixing stage of Aluminum (Al), Magnesium (Mg) and Strontium (Sr) alloys to the scanning process using an x-ray machine after the casting wheel is casted. The production process on the Isuzu SP-1C low pressure die casting machine line is still experiencing several problems, including product defects 2% of the total production each month. The main purpose of this research is to analyze the factors that cause defects in terms of materials, production processes, to the checking process or quality control. From research on the casting wheel production process 2% defects that occur are kajiri defects / rough surface defects, disc ware and airlocks or bubbles. Where the temperature difference between the molten casting temperature and the die temperature is too far away is the main factor that causes the defect. Meanwhile, over hardness can occur because the hardness level of the casting wheel is too high before entering the heat treatment process. So that by monitoring and improving the temperature in the casting process and testing the hardness level before the heat treatment process will be able to reduce the number of defects that occur.

Keywords: Casting Wheel, Defect, Low Pressure Die Casting, Aluminum, Temperature