

SUMMARY

YOGI EKO PRAYITNO, *Mechanical Engineering, Faculty of Engineering, University of Brawijaya, April 2016, The Effect of Increasing Amount of Plates to Brown's Gas Production on Dry Cell Type of HHO Generator, Academic Supervisor : Dr. Eng Denny Widhiyanuriyawan, ST., MT. dan Haslinda Kusumaningsih, ST., M.Eng.*

Dry cell type of HHO generator is an equipment which use to convert water (H_2O) into a mixture of hydrogen (H_2) and oxygen (O_2) gas. They are called HHO gas or Brown's Gas which circulating water is flowed and it isn't in submerged condition. This study aims to determine plate configuration which the result has the greatest productivity. This study was used a 10A Direct Current (DC) with the principle of electrolysis. The solution was used water with a concentration of 1.77% $NaHCO_3$ and a pair of electrodes. HHO generator were used of type A (none), B (one pair), and C (two pair) which indicated the number of plates outside the electrodes. In each of the varied types of neutral number plates, as many as 2,4,6, and 8 pieces. The results showed the more neutral plates, the greater electric power required because neutral plate required electrical power to made electrolysis process. The increasing amount of neutral plates decrease the temperature of the fluid, so the quality of Brown's Gas got better at lower temperatures. HHO generator configuration type C with four neutral plates provided the greatest production than other configuration that was equal to 15 ml/s. HHO Generator C type showed better performance but the difference was not significant. The greatest efficiency was 26.31%. It was gained in C configuration with two neutral plates.

Keywords: *HHO Generator, Water Electrolysis, Neutral Plate and Brown's Gas*

