

## ABSTRACT

*Autoclave is a device that serves to iron various medical devices. Autoclave is very vital in its use considering the importance of the tool as part of the main production of a hospital, one of which is at the Surabaya Oncology Hospital, where there is an autoclave still working manually. The device suffered damage to the heater, there was no safety in the door lock, chamber or steam generator when overheating, besides the absence of a water level controller so that the user must continue to monitor the water condition at any time. This autoclave type of gravity displacement utilizes the relief of hot water vapor which is moved based on gravity. The temperature determined is 121 ° C and 132 ° C with the time used according to sterilization requirements. The making of this modification tool uses the method of "one group post test design" by treating the tool without measuring the initial state first, the results of the treatment are directly measured without being compared with the control group. The manufacture of modification equipment uses the Siemens S7-200 PLC as the main controller of the entire series. The temperature and time results will be displayed on the HMI. Based on the temperature measurement of the thermocouple puncture, the reading value at the temperature setting of 121 ° C for 15 minutes has an error of -0.003%, at a temperature setting of 132 ° C for 15 minutes it has an error of -0.003%. While the temperature measurement of the calibrator (data logger) obtained the reading value at 133 ° C for 15 minutes had an error of 0.004%. Overall, the performance of the system and based on the results of the calibration that have been carried out states that this modification tool is suitable for use and suitable for use in the sterilization process.*

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**Keywords :** Autoclave, Temperature, PLC, HMI