

ABSTRACT

Measuring plasma weight Measuring plasma does not match the weight, which causes the plasma measurements do not match those required by the operator. The purpose of this study is to design a bagpress that is equipped with a loadcell sensor. The contribution of this study is a system that can extract blood and plasma components first, then automatically for complete blood preparation (RBC), platelet poor plasma (PPP), platelet rich plasma (PRP), Buffy-Coat (BC) and Platelets (PLT) from Plasma or Buffy-Coat. So that plasma can be known accurately, blood samples that already exist in plasma can be obtained between plasma and serum, plasma weight can be obtained with 5 settings namely 10, 20, 30, 40, and 50 grams. Loadcell sensor implements heavy plasma and uses IC ATMega 328 as a microcontroller. For reading the data, the HX 711 module is used as a converter of analog data into digital data, then as a driving force a 24V DC motor is used. In the 10 gram weight setting, an error value of 0.04% was obtained, in the 20 gram weight setting a 0.02% error value was obtained, in the 30 gram weight setting an error value of 0.013%, in the 40gram weight setting an 0.015% error value was obtained, and in the setting 50 gram weight obtained an error value of 0.004%. The results showed that heavy plasma measurements had an average error value of 0.025%. The results of this study can be applied to the bagpress system to improve accuracy, improve work, and ensure complete automation with versatility and ease.

Keywords: *BagPress, Loadcell type singlepoint, HX711, DC motor*

