

## ABSTRACT

*Rotator Shaker is one of the mixing device that replaces the sample with reagents by shaking manually. Mixing tube is placed in a container or tube that is placed in such a way that can be rotated on an axis. The resulting turbulence is 360° rotating the sample continuously, mechanically rotated by a motor with a rotation speed of 40, 45, 50, 55, 60 rpm.*

*During the mixing process has been developed with a variety of tools shaker. This tool enabled the manufacture of samples to mix in small amounts.*

*To ease the task of medical personnel in the field laboratory in the mixing process, they invented instruments "Rotator Shaker" AT89S51 microcontroller-based timing which contained 5, 10 and 15 minutes. The end of the mixing process is characterized by sound indicator (buzzer).*

*According to the measurement data timer, error value obtained from the comparison between the measurements on the display with a stopwatch timer in 5 minute measurement error 0.4%, 0.4% error 10 min, 15 min 0.4% error. As for the motor rotation speed of 40 rpm, the error value obtained 0.825%, motor rotation speed of 45 rpm, the error value obtained 0.733%, motor rotation speed of 50 rpm, the value obtained 0% error, motor rotation speed of 55 rpm, the error value gained 0.6% and the motor rotation speed of 60 rpm, the error value obtained 12.55%.*

*Based on the results of measurements of the timer and the motor rotation speed error value obtained is less than 5%.*

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**Keywords:** *Rotator Shaker, Mixing, Timer, Rpm*