

SINGLE AXIS DRIVE MOTOR (CLOCK DRIVE) FOR GERMAN EQUATORIAL MOUNT

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ABSTRACT

A clock drive is becoming popular among amateur astronomer especially in Malaysia. With the price of digital dropping, more people are talking up astrophotography. Hence, the clock drive is used to track celestial object during long-exposure shots.

The German Equatorial Mount (GEM) is the most preferred mount locally because of its stability and ease of use. The mount allows the telescope to be pointed at any direction in the sky. The details of this mount will be mentioned in detail later.

This report is about the Single Axis Clock Drive for German Equatorial Mount (GEM), its cost in manufacturing, its theory behind it and the outcomes. Advantages and disadvantages of this particular clock drive design will be mentioned also.

The Single Axis Clock Drive design is made up of 2 man parts. The PCB where it holds the control circuit and the stepper motor with the reduction gears mounted on the GEM. The build, function and usage of both PCB and stepper motor are included in this report.

Beside the GEM mount, the basic fundamental about the stepper will also be touched on later. It will cover the basic types and operation of a stepper motor.