

“FABRICATION OF SOLAR POWERED GRASS CUTTER”

Under the Guidance of Er. SATYENDRA KUMAR SINGH

(HEAD OF DEPARTMENT, MECHANICAL ENGINEERING)

ABSTRACT

The design objective is to come up with a mower that is portable, durable, easy to operate and maintain. It also aims to design a self-powered mower of electrical source; a cordless electric lawn mower. The heart of the machine is a battery-powered DC electric motor. It comprises of a system of speed multiplication pulleys which drive the cutting blades and the charging unit comprising of a 12V alternator and a lift mechanism meant to alter the height of cut. This is achieved by means of a system of v-belt pulleys with minimal slip effect; collapsible blades to reduce the common problem of wear. The use of collapsible blades and incorporation of an alternator for recharging the battery make the design unique such that no engine is involved. Performance test gave a cutting efficiency of 89.55% with 0.24kN human effort. Thus, the machine is considered highly efficient and is readily adaptable to different cutting conditions.

In other grass cutter equipment's such as electric lawn there are so many complications like Electricity, Wiring, Efficiency, Ecofriendly etc. So on behalf of these types of equipments we have made solar power grass cutter which is efficient, less noisy and portable.

The basic idea is that we have made grass cutter with electric motor that runs from a 12 volt battery. This battery will be charged using solar panel of 10W. This grass cutter uses a solar based energy source, which is easier to use, more advantageous comparing to other energy source especially for fuel based source of power. But our grass cutter is based on solar because this energy is a renewable energy source and it is easy to work. So we made solar powered grass cutter.

In today's climate of growing energy needs and increasing environmental concern, alternatives to the use of non-renewable and polluting fossil fuels have to be investigated. One such alternative is solar energy. In this solar based grass cutter, the advantage of powering a grass cutter by solar rather than by gasoline is mainly ecological. We have manufactured this



grass cutter because it is very easy method and many overcome produced from this type of grass cutter.

The solar-powered objective is to come up with a mower that is portable, durable, easy to operate and maintain. It also aims to design a solar-powered mower of electrical source with a central cutter motor. The heart of the machine is a battery powered DC electric motor. It is also useful method for our lawn mower. The present technology commonly used for trimming the grass is by using the manually handle device. In this project we have made solar based grass cutter for trimming the grass. The device consists of linear blade which is operated with the help of the Motor the power supply for the motor is by using battery. The battery can be charge by using power supply and solar panel.

				
ABHIJEET KUMAR	BHEEM PRAKASH	JITENDRA GAUTAM	VIRENDRA KUMAR	RAM VIJAY RAO