Self Generator Free Energy Flywheel

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Abstract - *The objective of this project was to determine the electric power generating associated with alternator connected to rotating flywheel & flywheel rotate by a motor. The electric power generate on the basis of mechanical energy is converted electrical energy by the generator.*

The system operates without any fuel and performs both the motor & alternator functions. It is an energy efficient system as it offers the benefits.

***Key Words*: Energy Efficient System, Generator,   Free Energy, Eco-friendly System, Electrical Energy, etc.**
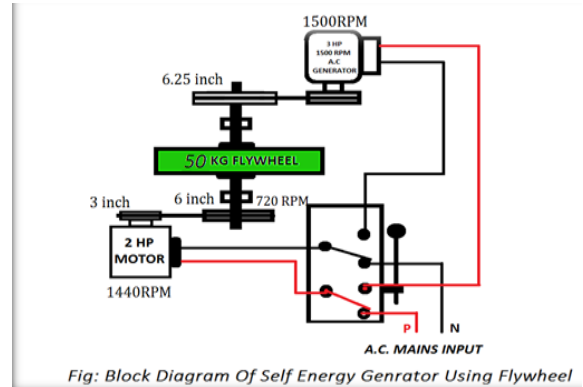
1. INTRODUCTION

The idea of this project explores the possibility of combining three units i.e. Torsional vibrations, Flywheel and Mechanical drive into a single unit, such that the device generates energy.

Free energy means the zero cost energy. Mechanical energy which drives windmill by using the blowing force of wind, or Solar energy in solar cell which is converts into DC current and store in batteries . Other energies obtained are from wind power, water power & telluric power. Free energy generator is used   to generate these types of energy.

This is how we can try to make the environment and a common man comfortable. It is an energy efficient system as it offers the benefits. This can be used for the commercial as well as domestic purposes.

1.1 Working Principle

The objective of this project is to recover energy of flywheel by using principle of energy recovery system from flywheel and produce sufficient energy to run the project set up and also some additional energy to run external power supply.

The project process is inspired from CHAS CAMPBELL's Generator. An AC motor is starts with the help of AC supply.

The shaft   speed varies with help of pulleys with different diameters. After getting maximum speed at generator shaft, the initial AC input supply is replaced by the output supply of generator.

Fig: Block Diagram Of Self Energy Genrator Using Flywheel

2. Motor

 An electric motor is an electric machine that converts electrical energy into mechanical energy.

We Use Single Phase 2 HP Motor 1440 RPM

3. Flywheel

A flywheel is a mechanical device specially designed to efficiently store rotational energy.

We use Lister Engine Flywheel
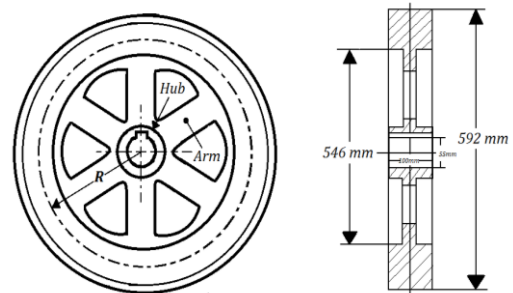
4. $\Delta E = I.\omega^2 C_s$

Fig :- Flywheel

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5. Alternator

An alternator is an electric generator that converts mechanical energy into electrical energy in the form of alternating current.

We Use Single Phase 3HP Alternator 1500 RPM.

6. Bearing

Table -1: Specification of bearing

Specification		
Housing Number	P211	
Bearing Number	UC211-32	
Shaft Size	2 in	
Bolt Size	M16	5 /8 in
Weight	3.6 kg	7.94 lbs
Locking Style	Set Screw Locking	
Set Screw Size	3/8-24UNF	
Grease Fitting	A-R1/8	

7. Design Of V-Belt

2 HP motor   1440 RPM
2 HP = 1.49 Kw
N_1 = 1440 RPM
P_R = 1.49 Kw

1) Design Power : - (T-XV-9/161)

$P_d = P_R \times K_L$
∴ K_L = 1.10 (for motor to the line shaft)(T-XV-2/156)
= 1.49 × 1.10
P_d=1.6405 Kw

2) Belt Designation : - (T-XV-8/160)

With respect to P_d = 1.64 Kw
Belt Designstion B

- Nominal width (w) = 17 mm
- Nominal thickness (t) = 11 mm
- Pulley Diameter (D_1) = 135 mm
- Max Strand used = 9
- Bending stress factor (K_b) = 45.6 × 10³
- Centrifugal tension Factor (K_C) = 4.34

3) Power Capacity per Belt : - (T-XV-9/161)

$$\text{Power/Belt} = (F_W - F_C) \frac{e^{\mu\theta/\sin(\frac{\alpha}{2})}-1}{e^{\mu\theta/\sin(\frac{\alpha}{2})}} \times V_p$$

F_w = (working load) = w^2 = 17^2 **= 289 N**

F_c = (centrifugal tension) = $K_C \left(\frac{V_P}{5}\right)^2$

$V_P = \frac{\pi D_1 N_1}{60} = \frac{\pi \times 135 \times 1440}{60}$ **V_P =10.17 m/s** V_P = 610.728 m/min

Check V_p in a range 300-1500 m/min

∴ V_p is in a range

$F_C = K_C \left(\frac{V_P}{5}\right)^2$ = 4.34× $\left(\frac{10.17}{5}\right)^2$ ∴ **F_C = 17.95 N**

$\frac{N_1}{N_2} = \frac{D_2}{D_1}$

$\frac{1440}{360} = \frac{D_2}{135}$

∴ velocity ratio of v-belt $\left(\frac{N_1}{N_2} = 4\right)$

D_2 = 540 mm

$\theta = \pi - \frac{D_2 - D_1}{c} = \pi - \frac{540 - 135}{135 + 540}$

$(\because C = D_1 + D_2)$

θ = 2.54 rad

Assume, μ = 0.3 & α = 36⁰

Power/Belt = (289-17.95) $\frac{e^{0.3 \times 2.54 /\sin(\frac{36}{2})}-1}{e^{0.3 \times 2.54 /\sin(\frac{36}{2})}} \times$ 10.17

Power/Belt = 2.522 × 10³ Kw

4) Belt tension : -

$$F_1 - F_2 = \frac{P_d}{V_p}$$

$$\frac{F_1}{F_2} = e^{\mu\theta/\sin(\frac{\alpha}{2})}$$

$F_1 = 11.77 \, F_2$

$\boxed{F_2 = 14.9714 \text{ N}}$

$\boxed{F_1 = 176.27 \text{ N}}$

5) Number of Belt : -

$$n = \frac{P_d}{Power/Belt}$$

n = 0.65 $\therefore$ n $\approx$ 1

Total Power = No Of Belt × Power/Belt

Total Power = 2.5224 Kw

6) V-Belt Pulley Detail :- (T-xv-11/163)
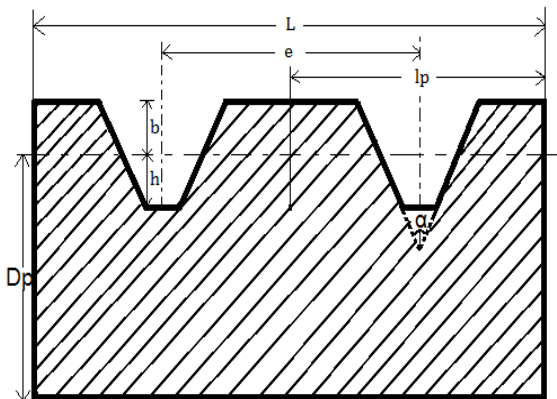

Fig :- V-Belt Pulley Detail

l_p = 14 , b = 4.2 mm , h = 10.8 mm , e = 19 $\pm$ 0.4 , f = 12.5

7) Width Of Pulley :-

W = (n-1) e + 2 f

Where, n = 1 no. of Belt

= (1 – 1) 19.04 + 2 × 12.5

W = 25 mm

8) Length Of Belt :-

$$L = \frac{\pi}{2}(D_1 + D_2) + 2\,C + \frac{(D_1 + D_2)^2}{4\,C}$$

$$= \frac{\pi}{2}(135 + 540) + 2 \times 675 + \frac{(135 + 540)^2}{4 \times 675}$$

L = 2579.0375 mm

8. Advantages

- It is an energy efficient system as it offers the benefits. This can be used for the commercial as well as domestic purposes.
- It does not require skill person.
- low maintenance cost.
- Simple in construction.
- It is very Eco friendly.

9. Aplication

- It is used for domestic purpose.
- It is used in Electric Car.

- It is used for commercial purpose.
- It can get one rid off Power Supply Companies for one time investment.

10. CONCLUSIONS

We have obtained more electrical output which is our free energy. The AC generator have produce extra electricity by using of flywheel from 1 HP motor. The main advantage of Free energy generator using flywheel is that it can generate energy without used of any extra equipment and this free energy generation is non-hazardous and environmental friendly. Can be use in various applications like electric fuel cars ,household, industrial and increase the efficiency of traditional electrical.

12. ACKNOWLEDGEMENT

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