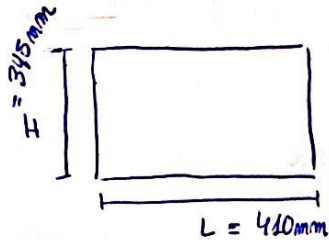
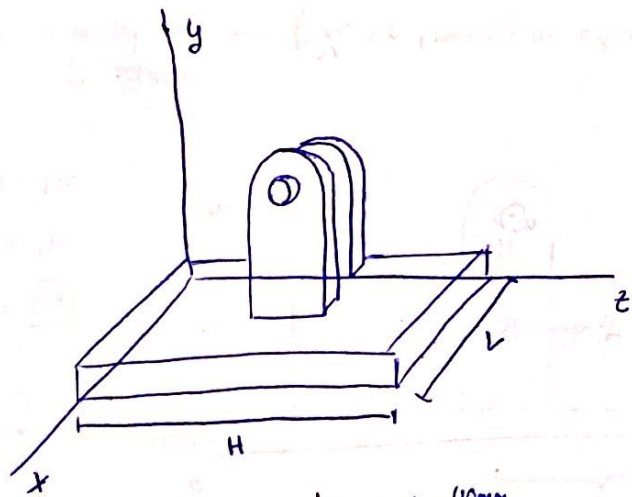
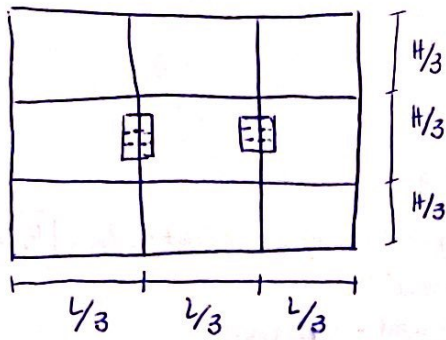
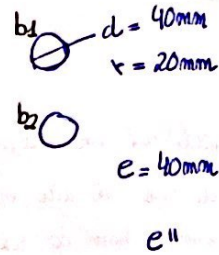
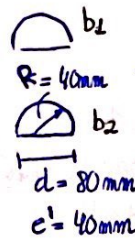
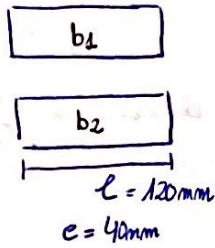


(3D)

(grau) $E = 121.5 \text{ mm}$ 

AREAS	$A = H \cdot L \cdot E$	+	$A = h \cdot l \cdot e$	+	$2 \cdot A = 2 \cdot \frac{\pi \cdot R^2}{2} \cdot e'$	-	$2 \cdot A = 2 \cdot \pi \cdot r^2 \cdot e''$
$\underline{x} \rightarrow$	$L/2$		$L/3$		$L/3$		$-2L/3$
$\underline{y} \rightarrow$	$E/2$		$E+h/2$		$E+h+\frac{4R}{3\pi}$		$-E+h$
$\underline{z} \rightarrow$	$H/2$		$H/2$		$H/2$		$-H/2$

$$(CG) \rightarrow C_G = (x, y, z)$$

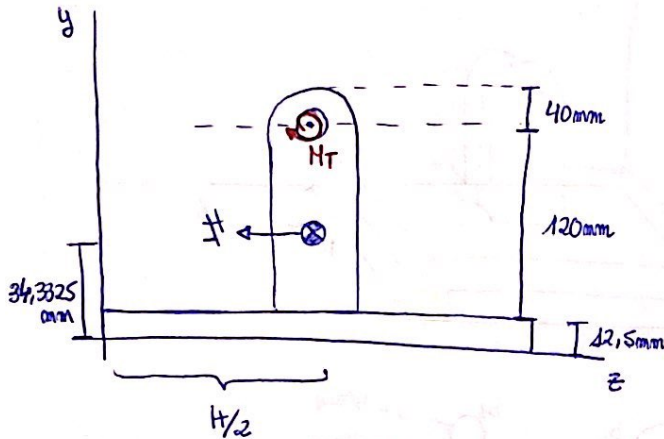
$$\overline{x}_{cg} = \left[\frac{L}{2} \right] \rightarrow \text{per simetria !!!}$$

$$\overline{y}_{cg} = \frac{(E/2) \cdot (H \cdot L \cdot E) + 2 \cdot (E+h/2) \cdot (h \cdot l \cdot e) + (E+h+\frac{4R}{3\pi}) \cdot (\frac{\pi \cdot R^2}{2} \cdot e') + (E+h+\frac{4R}{3\pi}) \cdot (\frac{\pi \cdot R^2}{2} \cdot e') - 2 \cdot (E+h) \cdot (\pi \cdot r^2 \cdot e'')}{(H \cdot L \cdot E) + 2 \cdot (h \cdot l \cdot e) + 2 \cdot (\frac{\pi \cdot R^2}{2} \cdot e') - 2 \cdot (\pi \cdot r^2 \cdot e'')}$$

$$= [34,3325 \text{ mm}]$$

$$\overline{z}_{cg} = \left[\frac{H}{2} \right] \rightarrow \text{per simetria !!!}$$

$C_4 \left(x = \frac{L}{2}, y = 34,3325\text{mm}, z = H/2 \right) \rightarrow$ Ho passem a 2D per calcular el parell que ha de aplicar el motor !!!



$$F_T = m_T \cdot g$$

$$M_T = m_T \cdot g \cdot d$$

$$\overline{M_T} = (5\text{kg}) \cdot 9,81\text{m/s}^2 \cdot 85,67 \cdot 10^{-3}\text{m} = \boxed{4,20\text{N}\cdot\text{m}}$$

\rightarrow aproximació !!!

pes panell solar + estructura !!

$\rightarrow \approx 2\text{Kg}$

W

\Rightarrow El motor ha de realitzar un recorregut de 180° per seguir el sol. $\rightarrow 180^\circ = \pi\text{rad}$

Son unes (46h) de sol al dia en època de més sol.

\rightarrow aproximació hores de sol al dia !!!

$$\theta = \omega \cdot t \rightarrow \overline{\omega} = \frac{\theta}{t} = \frac{\pi\text{rad}}{46\text{h}} = \boxed{5,454 \cdot 10^{-5}\text{rad/s}} \rightarrow \text{Velocitat mínima del servo !!!}$$