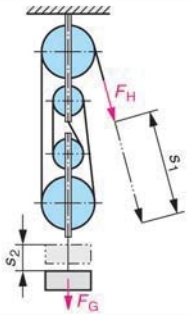
FÁLKINN ÍSMAR

Vogarstöng, vægi, kraftbreytar *lever, moment of force, force converter*

Margskorin blökk



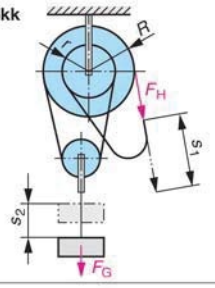
$$F_H \cdot \eta = \frac{F_G}{n}$$
$$s_1 = n \cdot s_2$$

$$F_H = \frac{F_G}{n \cdot \eta} \qquad n = \frac{F_G}{F_H \cdot \eta}$$

$$F_G = F_H \cdot \eta \cdot n \qquad \eta = \frac{F_G}{F_H \cdot n}$$

F_H : Handkraftur
F_G : Þyngd
n : Fjöldi rúlla/skurða
s_1 : Færsla átaks
s_2 : Færsla þunga
η : Nýtni

Mismunablökk



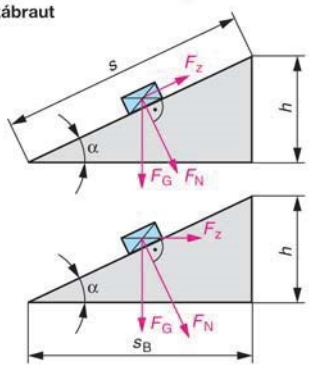
$$F_H \cdot \eta = \frac{F_G}{2} \cdot \frac{R - r}{R}$$
$$s_1 = 2 \cdot s_2 \cdot \frac{R}{R - r}$$

$$F_H = \frac{F_G \cdot (R - r)}{2 \cdot R \cdot \eta}$$

$$F_G = \frac{F_H \cdot 2 \cdot R \cdot \eta}{R - r}$$

F_H : Handkraftur
F_G : Þyngd
R : Radíi stærri rúllu
r : Radíi minni rúllu
s_1 : Færsla átaks
s_2 : Færsla þunga
η : Nýtni

Skábraut

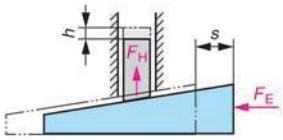


$$F_z \cdot s \cdot \eta = F_G \cdot h$$
$$F_z \cdot \eta = F_G \cdot \sin \alpha$$
$$F_N = F_G \cdot \cos \alpha$$

$$F_z \cdot s_B \cdot \eta = F_G \cdot h$$
$$F_z \cdot \eta = F_G \cdot \tan \alpha$$
$$F_N = \frac{F_G}{\cos \alpha}$$

F_Z : Togkraftur
F_G : Þyngd
F_N : Þverkraftur
s : Lengd skábrautar
h : Hæð skábrautar
α : Halli
η : Nýtni
s_B : Grunnflötur skábrautar

Kíll

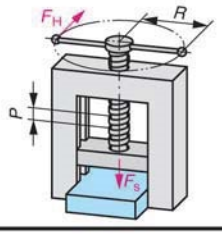


$$F_E \cdot s \cdot \eta = F_H \cdot h$$

$$F_E = \frac{F_H \cdot h}{s \cdot \eta} \qquad F_H = \frac{F_E \cdot s \cdot \eta}{h}$$

F_E : Kílkraftur
s : Færsla kíls
F_H : Lyftikraftur
h : Lyftihæð
η : Nýtni

Þvinga



$$F_H \cdot 2 \cdot R \cdot \pi \cdot \eta = F_s \cdot P$$

$$F_H = \frac{F_s \cdot P}{2 \cdot R \cdot \pi \cdot \eta}$$

$$F_s = \frac{F_H \cdot 2 \cdot R \cdot \eta \cdot \pi}{P}$$

F_H : Handkraftur
F_s : Kraftur í stefnu skrúfuáss
R : Átaks-armur
P : Stigun
η : Nýtni
π : 3,14159…