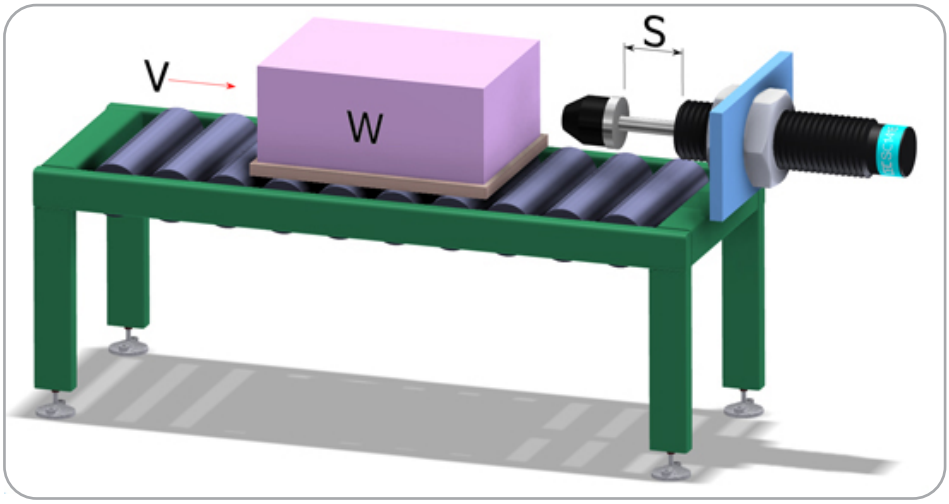
APPLICATION EXAMPLES

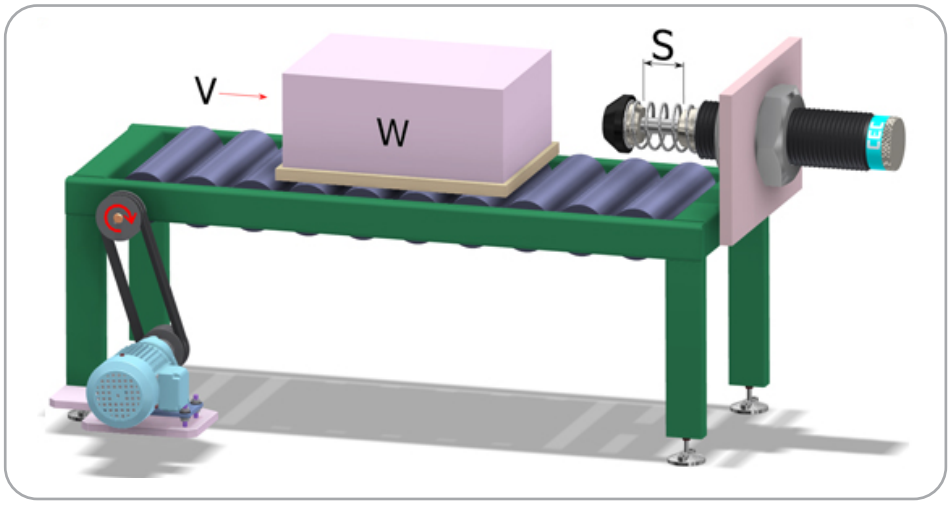
ex. 1 Horizontal Impact without Propelling Force

(Application)	(Formulas and Calculation)	
W = 20 kg	E1 = 0.5 x W x V2	E1 = 0.5 x 20 x 12 = 10 Nm
V = 1 m / s	E2 = 0	E2 = 0
C = 1000 / Hr	E3 = E1 + E2	E3 = 10 + 0 = 10 Nm / C
	E4 = E3 x C	E4 = 10 x 1000 = 10000 Nm / Hr
	We = W	We = 20 kg
		Model SC1415-1 is adequate



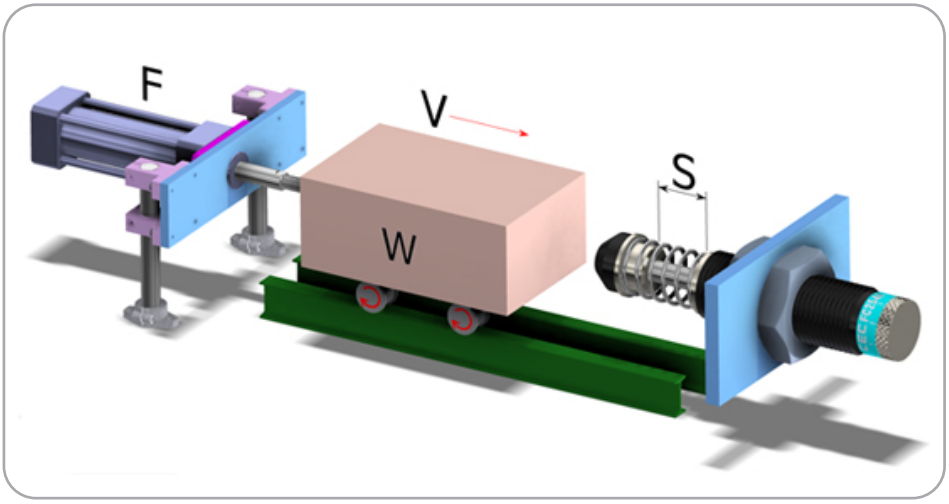
ex. 2 Horizontal Impact with Conveyor Driving

(Application)	(Formulas and Calculation)	
W = 10 kg	E1 = 0.5 x W x V2	E1 = 0.5 x 10 x 12 = 5 Nm
V = 1 m / s	E2 = W x μ x g x S	E2 = 10 x 0.25 x 9.81 x 0.01 = 0.25 Nm
C = 600 / Hr	E3 = E1 + E2	E3 = 5 + 0.25 = 5.25 Nm / C
S = 0.01 m	E4 = E3 x C	E4 = 5.25 x 600 = 3,150 Nm / Hr
μ = 0.25	We = 2 x E3 / V2	We = 2 x 5.25 / 12 = 10.5 kg
		Model SC1210-2 is adequate



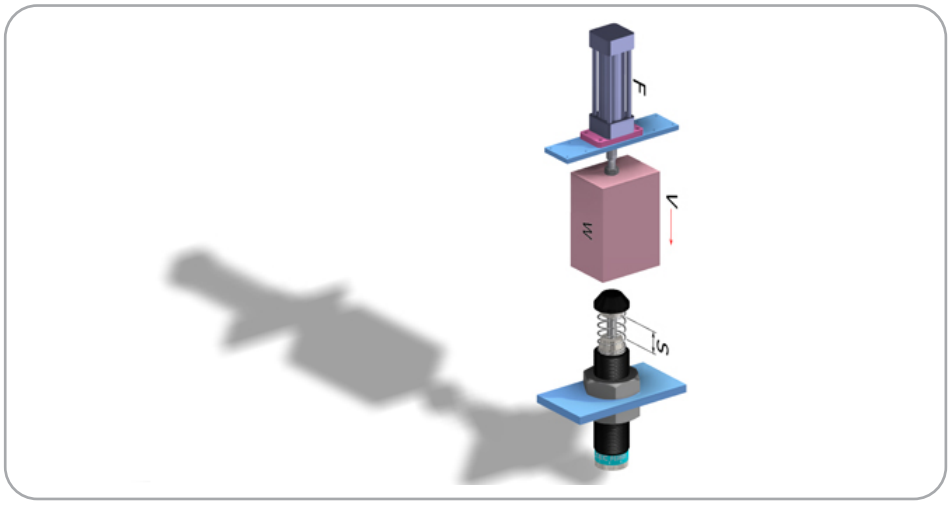
ex. 3 Horizontal Impact with Propelling Force

(Application)	(Formulas and Calculation)	
W = 50 kg	E1 = 0.5 x W x V2	E1 = 0.5 x 50 x 12 = 25 Nm
V = 1 m / s	E2 = F x S	E2 = 1000 x 0.04 = 40 Nm
F = 1000 N	E3 = E1 + E2	E3 = 25 + 40 = 65 Nm / C
C = 500 / Hr	E4 = E3 x C	E4 = 65 x 500 = 32500 Nm / Hr
S = 0.04 m	We = 2 x E3 / V2	We = 2 x 65 / 12 = 130 kg
		Model FC2540 is adequate



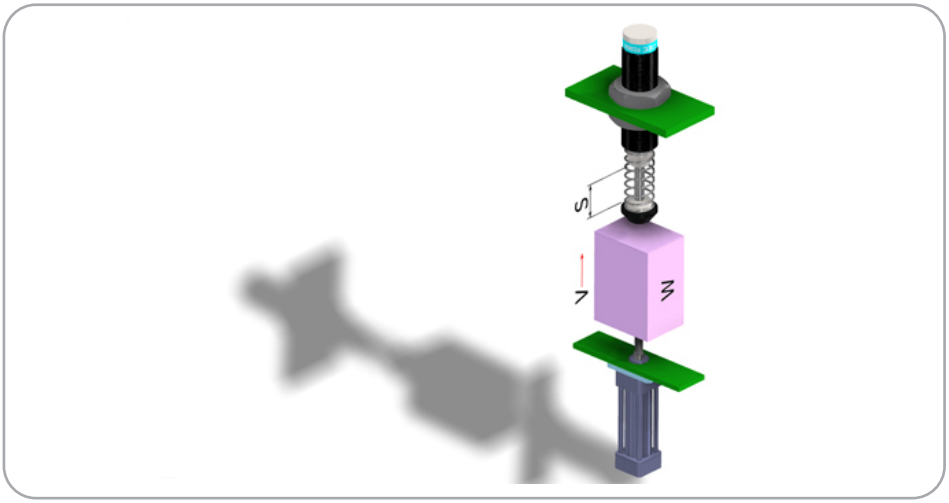
ex. 4 Vertical Impact with Force from Top to Bottom

(Application)	(Formulas and Calculation)	
W = 100 kg	E1 = 0.5 x W x V2	E1 = 0.5 x 100 x 12 = 50 Nm
V = 1 m / s	E2 = (F + W x g) x s	E2 = (1200 + 100 x 9.81) x 0.25= 54.5 Nm
F = 1200 N	E3 = E1 + E2	E3 = 50 + 54.5 = 104.5 Nm / C
C = 400 / Hr	E4 = E3 x C	E4 = 104.5 x 400 = 41800 Nm / Hr
S = 0.025 m	We = 2 x E3 / V2	We = 2 x 104.5 / 12 = 209 kg
		Model FC3625 is adequate



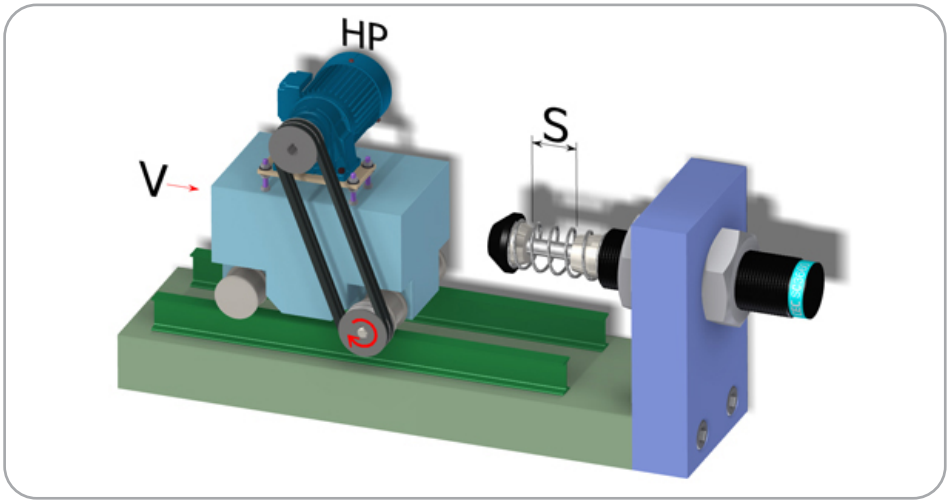
ex. 5 Vertical Impact with Force from Bottom to Top

(Application)	(Formulas and Calculation)	
W = 200 kg	E1 = 0.5 x W x V2	E1 = 0.5 x 200 x 0.52 = 25 Nm
V = 0.5 m / s	E2 = (F - W x g) x s	E2 = (3000 - 200 x 9.81) x 0.05 = 51.9 Nm
F = 3000 N	E3 = E1 + E2	E3 = 25 + 51.9 = 76.9 Nm / C
C = 500 / Hr	E4 = E3 x C	E4 = 76.9 x 500 = 38450 Nm / Hr
S = 0.05 m	We = 2 x E3 / V2	We = 2 x 76.9 / 0.52 = 615.2 kg
		Model FC3650 is adequate



ex. 6 Horizontal Impact with Motor Driving

(Application)	(Formulas and Calculation)	
W = 50 kg	E1 = 0.5 x W x V2	E1 = 0.5 x 50 x 1.52 = 56.25 Nm
V = 1.5 m / s	E2 = 1000 x HP x ST x S / V	E2 = 1000 x 2 x 2.5 x 0.06 / 1.5 = 200 Nm
ST = 2.5	E3 = E1 + E2	E3 = 56.25 + 200 = 256.25 Nm / C
HP = 2 KW	E4 = E3 x C	E4 = 256.25 x 100 = 25625 Nm / Hr
C = 100 / Hr	We = 2 x E3 / V2	We = 2 x 256.25 / 1.52 = 227 kg
S = 0.06 m		**Model SC3660-2 is adequate**

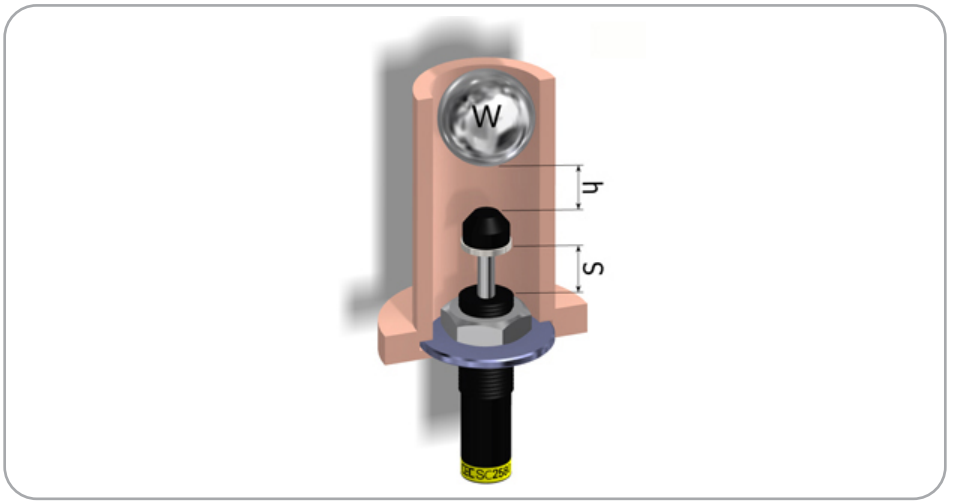


ex. 7 Free Fall Impact

(Application)
W = 300 kg
h = 0.5 m
C = 300 / Hr
S = 0.08 m

(Formulas and Calculation)
E1 = W x g x h
E2 = W x g x s
E3 = E1 + E2
E4 = E3 x C
Vs = $\sqrt{2 \times g \times h}$
We = 2 x E3 / V2

E1 = 30 x 9.81 x 0.5= 147 Nm
E2 = 30 x 9.81 x 0.08 = 23.5 Nm
E3 = 147 + 23.5 = 170.5 Nm / C
E4 = 170.5 x 300 = 51150 Nm / Hr
Vs = $\sqrt{2 \times 9.81 \times 0.5}$ = 3.1 m /s
We = 2 x 170.5 / 3.12 = 35.5 kg
Model SC2580-1 is adequate

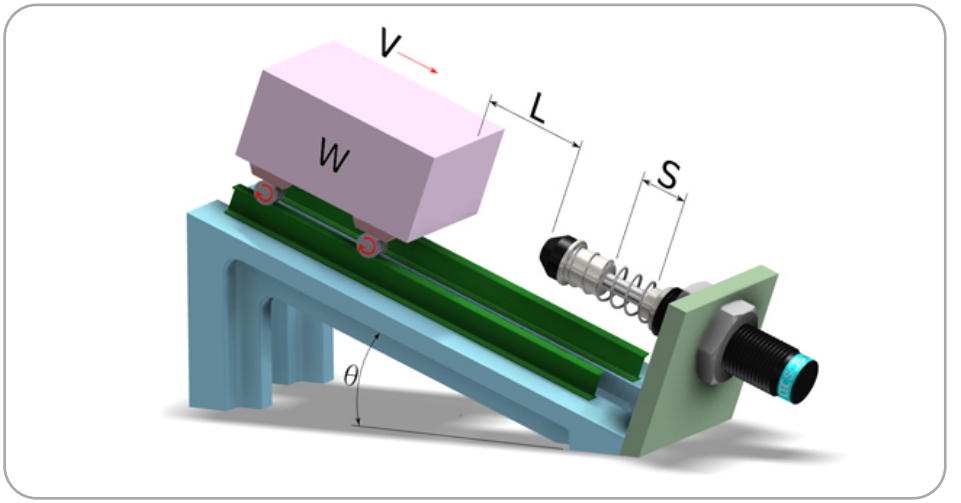


ex. 8 Free Moving Load Down an Inclined Plane

(Application)
W = 30 kg
L = 1
θ = 30°
S = 0.04
C = 250 / Hr

(Formulas and Calculation)
Vs = $\sqrt{2g \times L \times Sin8}$
E1 = 0.5 x W x V2
E2 = W x S x Sinθ
E3 = E1 + E2
E4 = E3 x C
We = 2 x E3 / V2

V = $\sqrt{2 \times 9.81 \times 0.5 \times 0.5}$ = 2.2 m/s
E1 = 0.5 x 30 x 2.22 = 72.6 Nm
E2 = 30 x 0.04 x 9.81 x 0.5 = 5.9 Nm
E3 = 72.6 + 5.9 = 78.5 Nm / C
E4 = 78.5 x 250 = 19625 Nm / Hr
We = 2 x 78.5 / 2.22 = 32 kg
Model SC2540-1 is adequate



ex. 9 Rorary with Propelling Force

(Application)
W = 100 kg
V = 1.1 m / s
T = 2000 Nm
S = 0.06 m
RT = 1.25 m
RS = 0.8 m
C = 100 / Hr

(Formulas and Calculation)
E1 = 0.25 x W x V2
E2 = (T x S) / RS
E3 = E1 + E2
E4 = E3 x C
Vs=(VT x RS) / RT
We = 2 x E3 / Vs2

E1 = 0.25 x 100 x 1.12 = 30.3 Nm
E2 = 2000 x 0.06 / 0.8 = 150 Nm
E3 = 30.3 + 150 = 180.3 Nm / C
E4 = 180.3 x 100 = 18030 Nm / Hr
Vs = 1.1 x 0.8 / 1.25 = 0.7 m / s
We = 2 x 180.3 / 0.72 = 736 kg
Model SC3660-3 is adequate