

Oleo pneumatic tensioner for belt conveyors

Hidracar during his 49 years of experience, has designed and constructed oleo pneumatic tensors in order to absorb the tension's peaks in conveyor belts.

The oleo pneumatic tensioner consists in:

1-Oleo hydraulic cylinder.

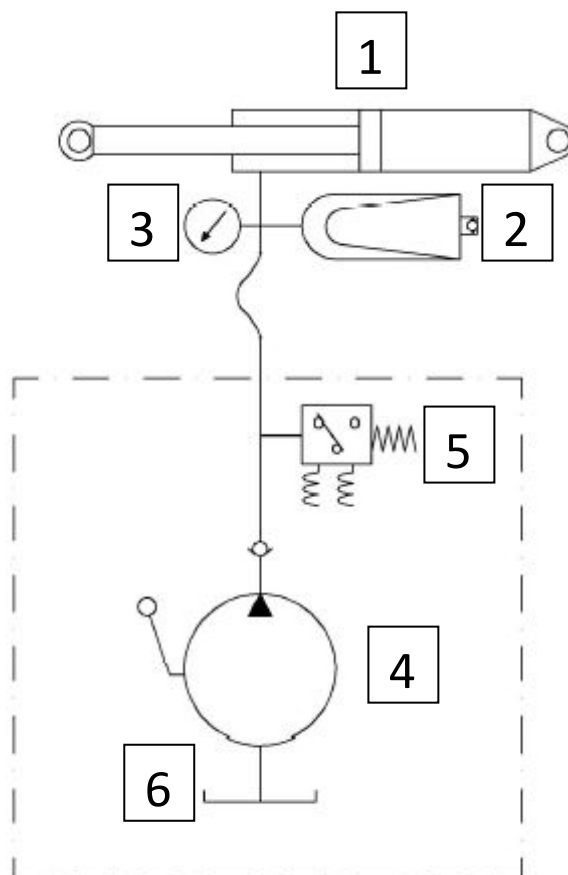
2-Oleo pneumatic accumulator.

3-Preussure gauge with scale in kilograms of force.

4-Hand hydraulic pump to pressurize the closed oil inside the cylinder and the accumulator.

5-pressure switch to give an electrical signal of forces.

6-Tank oil.



Characteristics of the system:

Two sizes:

Maximum forces $\begin{cases} \text{CT55: 60KN} \\ \text{CT80: 120KN} \end{cases}$

Stroke length: 150mm

(For other forces and/or stroke length, please consult)

Example images:



How does it work?

-Conveyor empty of material.

The pressure gauge with scale in kg-f (3) indicates the correct tension force. The cylinder rod is in its half stroke.

-The conveyor starts to be charged. The distance between the axis of the two drums is reduced. The cylinder rod is extended and an amount of oil inside of the cylinder (1) goes into the accumulator (2) compressing the gas (N₂) inside and increasing its pressure. When the pressure (force) arrives at a fixed precalculated value, then the pressure switch/pressure transducer (5) gives the electrical signal to move the wagon (4) in B direction with the electrical tensor (6).

-The tension (force) is reduced, the rod is compressed into the cylinder, the pressure inside the circuit goes down. The switch disconnects the electrical contact and the wagon stops or moves to A direction to keep the minimum tensile tension.

When the conveyor is full of material the situation is repeated until it arrives at the balance.

As a resume, the system is like a spring, but with much more possibilities of regulating the forces.

The main advantage of this system is that it permits the smooth increase of forces and eliminates the instantaneous peaks of forces due when the belt passes from 0 to a determinate speed.

