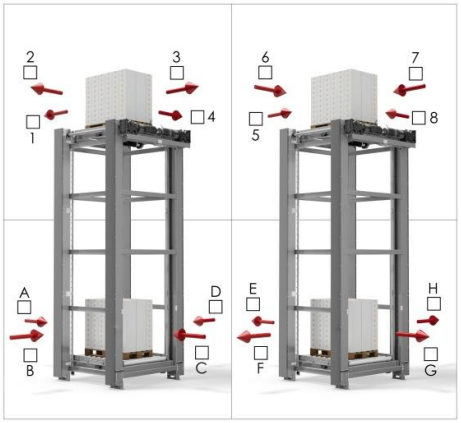
Why does Qimarox not apply counterbalance-weights to its vertical product- and pallet elevators?

Counterbalancing

Disadvantages



- When using a counter weight, it is not possible to have pallet in- and outfeed from all sides of the vertical conveyor. This means that the vertical conveyor cannot be simply integrated within your system and cannot be easily reused if your factory lay-out changes.
- Additional material costs: costs for the counterbalance weight, guidance and strengthening the 4-column structure.
- Additional engineering costs: every configuration needs additional engineering, because it must be engineered according to the weight of the pallet.
- Service costs: on the long term, all the extra moving parts and safety equipment require extra maintenance.

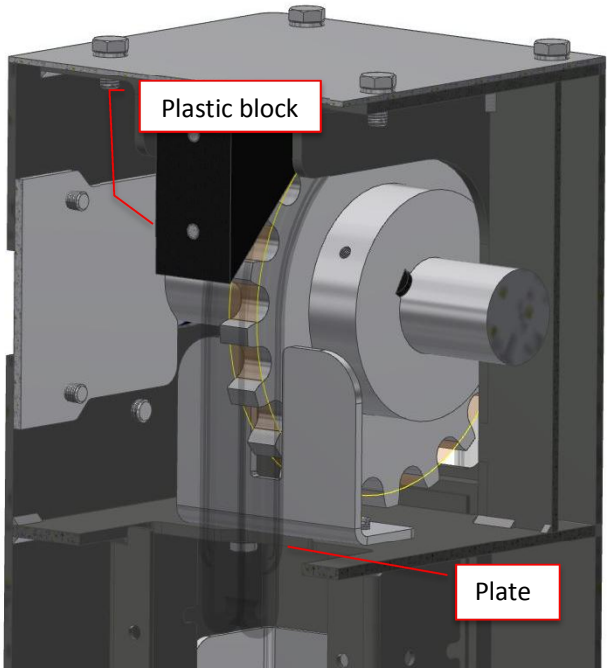
Advantages

- Low energy consumption: this is *only* possible with a descending configuration (not in combination with a palletiser). It can be equipped with a lighter drive and regenerating power is also possible. Unfortunately, in most configurations we use the pallet-lift for elevating.

Chain-tensioning

Without balance weight

Tensioning will be performed by the weight of the chain. To prevent the chain from ‘sticking’ to the chain wheel, a plate is mounted to block the chain and to guide it downwards. To prevent the chain from slipping on the chain wheel, a plastic block is mounted.

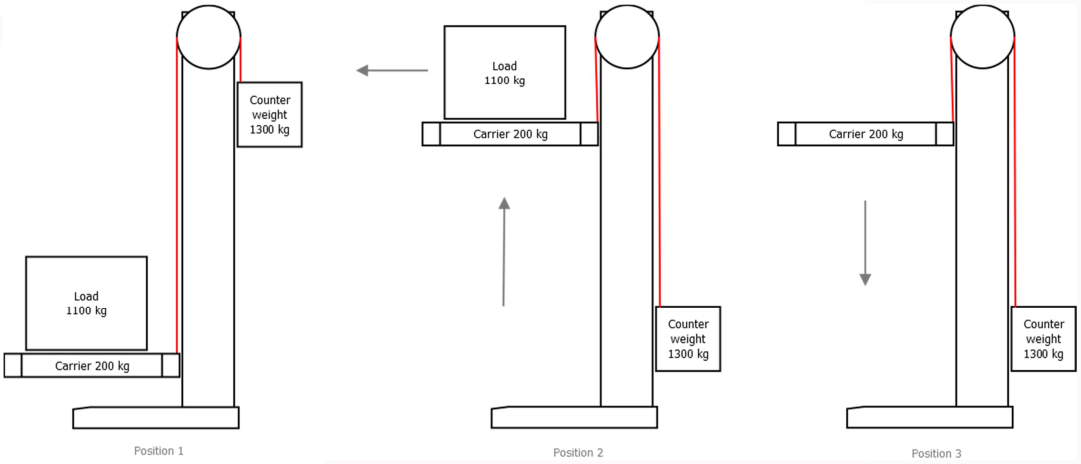


Example 1

Specifications

Pallet load	1100	kg
Carrier	200	kg
Counter weight	1300 kg	

In the situation down below the weight of the carrier and load is equal to the weight of the counterbalance. During lifting (position 2) there is not much force needed to lift the pallet. But after feeding out the pallet load , to descend the carrier you still need enough power to lift the residual weight of the counterbalance. Also the chain and axles must withstand twice as much force.



Example 2

Specifications

Pallet load	1100 kg	
Carrier	200 kg	
Counter weight	200	kg

In this example, the weight of the carrier is equal to the weight of the counterbalance. But the difference in weight (with or without counterbalance) is significantly low, a lighter drive is possible but the energy consumption is not very much less. Not placing a counterbalance will save space, an additional safety system and maintenance costs.