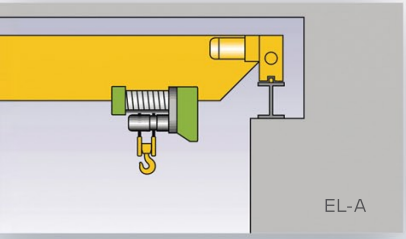
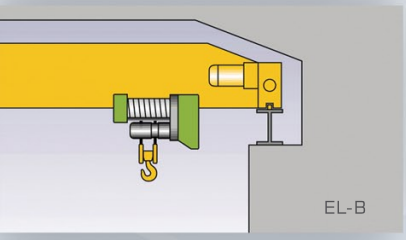
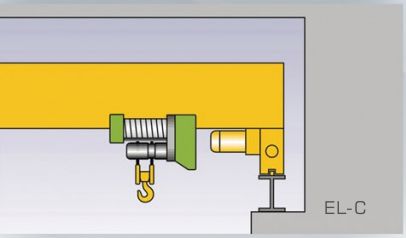
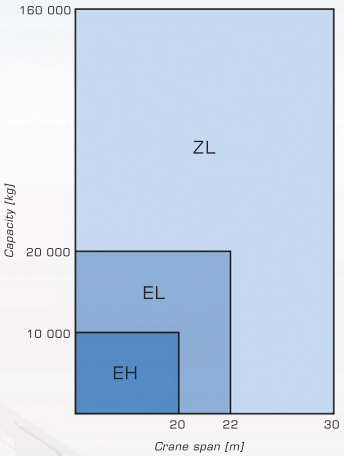
Single girder overhead travelling cranes









The single girder overhead travelling crane is generally the most economic arrangement.

With improving capacity and crane span the cross section of the girder and its deadweight improve as well, thus the installation of stronger runway support is necessary and the potential lifting height of the crane decreases. In the figure on the left we can see in which capacity and crane span range the single girder O.H.T. crane becomes uneconomic and a double girder O.H.T. crane becomes profitable.

The over head travelling cranes generally travel on runways that are fixed to the building's supporting pillars at the two ends of the building, or on columns made for supporting the runway. This arrangement is called over head travelling crane (label: EL).
According to how the end carriage travelling on the runway is linked to the girder we distinguish "top-connected" (EL-A), "bottom-connected" (EL-B) and "mounted" (EL-C) design. The choice of the arrangement helps to flexibly adapt to the requirements for the area covered by the crane, and to the conditions of the building.

The advantage of the EL-A construction can be found in the small difference in height between the top of rail and the top of the crane, which makes the installation of cranes with higher capacity possible, when there is only a small distance between the roof structure and the crane runway.
The advantage of the EL-B construction is besides the small height over all the best possible exploitation of the hook's end positions.
The EL-C construction makes it possible to realize the possibly highest lift besides a low runway and high clearance. (e.g. Girder type EL-CM).

When the runway is fixed to the building's main joist, then we speak of suspension cranes (EH). A suspension crane can cover the whole width of the building; there is even the possibility to install the bracket crane design to perform lifts in rooms neighbouring the building.
In case of higher capacity and crane span the costs for transmitting the loads from the crane to the ceiling get unreal high, therefore the construction is economic only in the range shown in the figure on the left.