

A belt bucket elevator consists of a head with the drive pulley, the Shoe with driven pulley, an endless belt with buckets and pipe sections. The upper part of the head drum to the right is limited by the height H, and the top is a parabola that crosses the horizontal and vertical axis of a driving pulley of the conveyer at the points e, d, the coordinates of which are determined from the relation:

$$H = \frac{V_a^2}{2g}, X_{\max} = \frac{r_a \sqrt{r_a^2 + h^2}}{h}, y_{\max} = \frac{r_a^2}{2 \cdot h} + \frac{h}{2}.$$