

Vertical Screw Conveyors | Vertical Screw Pump | Vertical Screw Conveyor Design

Vertical screw conveyors:



A vertical screw conveyor conveys material upward in a vertical path. It requires less space than some other types of elevating conveyors. Vertical screw conveyor can handle most of the bulk materials provided there is no large lump. The maximum height is usually limited to 30m.

A vertical screw conveyor consists of a screw rotating in a vertical casing. The top bearing for the screw shaft must be designed to stand against radial and thrust loads. A suitable inlet port at the lower end and a discharge port at the upper end of the casing are provided. Feeding a vertical screw conveyor

deserves careful consideration. Most materials are fed to the vertical conveyor by a straight or offset horizontal feeder conveyor. The ideal operation of a vertical screw conveyor is to have a controlled and uniform volume of material feeding.

Uneven feeding and start stop operation may adversely affect the performance of the vertical screw conveyor in terms of speed, capacity and horse power.

Average capacities and speeds of vertical conveyor

Nominal diameter of screw in mm	Capacities in m ³ /hr	Speed of screw
150	10	Up to 400 RPM
250	35	300 RPM
300	75	250 RPM
400	170	200 RPM

Vertical screw conveyors or some special design of vertical screw conveyor finds wide application in ship unloading.



Practical experience with these conveyors has shown that the resistance factor for vertical conveyors is higher than those of the horizontal conveyors. Resistance factor λ may be taken as 5.5 to 7.5 for grains. 6.5 to 8.3 for salt.

Source:

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