



Whitepaper

A New Dimension in Movable Conveyors for Bulk Solids Handling

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While a variety of movable conveyor systems has been in use for many years the introduction of the totally mobile conveyor occurred only recently. The development and application of automatic guidance control technology has made total conveyor mobility possible. Experience with existing totally mobile conveyors in bulk material handling has established their practical and economic viability. Studies show that the system offers great potential in adding substantial flexibility in the design of a variety of bulk materials handling projects in several industries. Totally mobile conveyors offer particular promise in working large areas, reduction of system capital cost operation with soft or unstable materials, and reduction of stockpile dust emissions. With operational and economic advantage proven, the door is open to general application.

Over the years, many belt conveyors have been designed for some degree of mobility. The requirement of transporting material to or from a moving face, to or from a fixed conveyor system gives rise to the need for mobility. This is a basic material handling problem which is most simply solved with mobile haul units such as trucks or scrapers. However the economics of belt conveying make movable conveyor systems attractive and many types of movable conveyors have been used.

Perhaps the most common movable conveyor system consists to two movable conveyors a shiftable conveyor and a bandwagon. A two-part system is used to reduce the production lost in moving the shiftable conveyor. The mobile bandwagon provides a flexible link between the shiftable conveyor and the working face allowing a greater range of face advance before movement of the shiftable conveyor is required.

Rigid frame movable conveyors mounted on tires are also in use. They generally require a well graded surface to operate on and are restricted in length by the size and weight of structure required to resist bending and twisting forces.

The 'link' type movable conveyor is another concept which has been used. This type consists of frame sections pinned at the ends and mounted on tires or crawlers. The movement of link type conveyors usually requires multiple tractors to achieve the speed of movement desired and considerable alignment adjustment is needed. These problems have limited them to relatively short lengths.

Cascading of short conveyors is yet another method of achieving a degree of conveyor mobility.

Many variations or combinations of these systems have also been used. Recently a new type of movable conveyor has been placed in operation which is totally mobile and can be moved in a very short time. This totally mobile conveyor (TMC) makes extensive use of proven automatic control technology.