Metso Rope Conveyor

Introducing the very latest development in Long Distance Conveying, the Metso MRC Cable Belt® Conveyor.

With 60 years of operating experience, transporting a wide range of materials, Cable Belt rope driven conveyors have earned a reputation for reliability and low operating cost. In most cases, the Cable Belt is employed as the primary link in the transportation chain and the longest single flight conveyors in the world today are Cable Belt systems. The MRC Cable Belt Conveyor builds on the proven technology of the older Cable Belt designs.

**Most Robust Conveyor**

The principle advantage of the MRC Cable Belt is its ability to reliably negotiate tight curves even on long distance, high capacity systems. The MRC Cable Belt Conveyor can negotiate very difficult topography in a single flight with minimal disturbance to the environment and without intermediate transfers. The more difficult the route, then the better the opportunity for the MRC Cable Belt approach. The MRC equipment is very robust and is designed to minimize maintenance costs. Elimination of intermediate transfer points adds to this advantage.

Capacity ranges up to 6000 mtph are possible. The MRC Cable Belt concept is best suited to applications where conveyor lengths exceed 1km and the topography or possible right-of-way restrictions demand close attention to route selection. The tougher the application, the more likely that the MRC Cable Belt technology will provide the best solution.

**Features and Benefits:**

- Environmentally Friendly
- Unmatched Reliability
- Competitive Capital Costs
- Lower Installed Costs
- Lower Operating and Maintenance Costs
- Lower Installed Power
- Conveyor Lengths From 1,000 Meters to Over 50,000 Meters
- Conveyor Capacities to 6,000 mtph
- Horizontal Curves Down to 400 Meter Radius
- Two Way Transportation
- Can Be Made Reversible
- Easily Extended
- In-House Engineering
- Project and Materials Management
- Continuous R&D Program
- Global 24 Hour Service Support
- Global Spare Parts Availability
Route Selection and System Design

Minimum Radius Curves
A vigorous and continuous commitment to Research and Development has allowed the MRC Cable Belt to maintain its leading edge as the most robust, reliable, cost effective and environmentally friendly means of long distance conveyor transportation. The introduction in the mid 1990’s of the revolutionary ‘Belt Curve Units’ enables the MRC Cable Belt to become the only conveyor capable of secure, low radius, horizontal curves without compromising the design capacity or ability to achieve long single flights. In turn, the ability to accommodate these low radius curves allowed a completely new approach to route selection defeating what once were considered impossible solutions.

The unique MRC Cable Belt concept of separating the driving and carrying mediums provides the ability to separate the belt and ropes at strategic points in order to control, contain and steer the ropes through tight horizontal and vertical curves allowing the belt (and material) to follow. Traditionally, the horizontal and vertical curves are restricted by the tensions apparent within the conveyor at increments along its length and the corresponding topography of the ground. These tensions are particularly sensitive to uneven loading of the conveyor and intermittent loads can create substantial problems on conventional conveyors.

The MRC Cable Belt is the only conveyor that can achieve secure, low radius, horizontal curves, regardless of the loading condition without compromising the ability to traverse the long distances.

Maximum Range Conveyor
In most cases, the long distances can be achieved with a single drive. However, the introduction of multiple drive technology (intermediate drive) without the need to transfer the material on the top or bottom belts, has enhanced the ability to cover even longer single flight distances than ever thought possible. Intermediate drives are spaced at calculated intervals within the conveyor to accommodate load sharing and operating conditions. By using the unique ability to separate the drive and carrying mediums, there is no interruption in the flow of material on the top or bottom belts.

The comprehensive system design that is required on all major conveyor installations is available within our own organization. This ensures that total responsibility remains with the OEM supplier and is not subcontracted out to a third party.

The emphasis on lowest total life of mine cost providing the maximum return on investment has focused the development of the MRC Cable Belt.
Maximum Return Conveyor

Most applications that are appropriate for a MRC Cable Belt solution have long project lives and we offer a lifetime of after sales parts and service support through a range of service solutions. Our dedicated teams of service personnel in strategic locations, ensure a rapid response to our customers’ needs.

Most projects that involve this type of equipment go through various stages of evaluation over an extended period to determine a suitable Return on Investment. Metso can assist throughout this process by providing the following in depth services.

Studies

Large conveyors demand large capital investments, and in almost all cases, detailed studies are carried out to determine the right mode of transport for the particular application. The objective being to answer the three overriding questions on all major transportation projects:

- How much does the equipment cost?
- How much will it cost to install?
- How much will it cost to operate and maintain?

Metso can provide the range of expertise to answer these questions. We can provide estimates on installation hours, earthwork cut and fill volumes, concrete quantities and elevated structures. We can provide a comparison of different transport systems highlighting the benefits of the MRC Cable Belt.

Preliminary Engineering

Need to quantify the extent of work or prepare specifications? Metso can help by providing preliminary engineering for a modest fee that can be rolled over into the project if we are favored with the final solution.
Partnering Agreements
In today’s business climate, the need to find the most cost effective solutions has lead many companies to consider entering into single source partnering agreements. These take the form of an open book type approach wherein the customer agrees to a level of profit beforehand. If additional savings are made, both parties share the benefits. If cost overruns occur, they are the responsibility of the supplier with no risk to the customer. Additional savings are apparent to both parties by not having to mount and evaluate multiple bidding and marketing exercises.

Maintenance Contracts
Want to guarantee that your investment is risk free? Let Metso maintain the equipment for you. Long term maintenance contracts put the onus back onto the supplier to ensure that the equipment works to specification and meets the expected performance. Metso has the tools and resources to provide this long term and, if required, lifetime commitment.

Long Term Parts Agreements
We can structure long term parts agreements to guarantee parts availability and take care of possible obsolescence of components in the future. Product improvements will automatically be brought to your attention and implemented as agreed.

Integrated Solutions
Every long distance conveyor has to be fed at the loading end and feed something at the discharge end. Metso can cross reference and supply this equipment in most cases within our own organization. Truck dumps, rail car dumpers, crushers and screens, apron feeders, wobbler feeders, stackers and reclaimers or whatever the application calls for can be integrated into the overall solution to provide total system responsibility.

This concept can be extended to incorporate entire Greenfield Projects covering the range of equipment from raw material to finished product.
MRC Cable Belt Conveyors Are Different

Minimum Rotating Components

MRC Cable Belt Conveyor: typical support spacing 6 m top line, 12 m bottom line = 30 support pulleys per 30 m.
Troughed Idler Conveyor: typical support spacing 1.2 m top line, 3 m bottom line = 85 idler rolls per 30 m.
Pipe Conveyor: typical support spacing 1.5 m top line, 3 m bottom line = 180 idler rolls per 30 m.

No belt wander due to tension variations, alignment error or off-center loading.
MRC Cable Belt conveyor positively tracked by belt to cable shoeforms.

No loss of belt capacity through curves.

Less absorbed power and cover wear due to material disturbance in transit.
Cable Belt Conveyor belts have continuous support from steel cables; no local belt deflection in material path.
Troughed Idler Conveyor belts have intermittent idler support; idlers cause local belt deflection in material path.
MRC Cable Belt Conveyors use continuous drive cables and a single drive unit.

Troughed Idler Conveyors use two belts and two drive units.

MRC Cable Belt Conveyor belts are reinforced by transverse coated steel wires to provide the lateral strength needed to carry the material. As all longitudinal tensile forces are carried by the external drive cables, the belt cannot be ripped along its length. Mechanical joints are used in all cases; installed at the factory on original equipment. These joints can be made in the field in approximately 30 to 40 minutes.

Steel cord troughed idler conveyor belts are reinforced by longitudinal tensile wires and in almost all cases have vulcanized joints which require careful preparation in the field. These belts can be ripped along their length which typically leads to the inclusion and maintenance of sophisticated rip detection systems.

On a typical 10 km conveyor, the number of high tension splices in the MRC Cable Belt would be 4 to 6, where as in the steel cord belt, there may be as many as 50.
Expect results

Expect results is our promise to our customers and the essence of our strategy. It is the attitude we share globally. Our business is to deliver results to our customers to help them reach their goals.