PREMRON EBS

ENCLOSED BELT SYSTEM

Your. Environmentally Friendly conveyor system

THE SYSTEM

The Premron EBS Closed Conveyor System uses a rubber 2ply reinforced belt that is formed not as a trough, but as an enclosed pouch shaped as a 'tear drop'. The belt has triangular wedges profi led on both edges, allowing the pouch to be suspended between a pair of idlers, enclosing the 'pay load' and ensuring 'Dust Free' conveying.

Instead of having a single high cost/high powered drive, the system has multi-low powered, low cost, drives that are controlled and strategically placed along the Belt, resulting in very low belt tensions.

This allows the Premron EBS Closed Conveyor System to have:

- The ability to negotiate tight turns at a small radius.
- No costly transfer towers required for change in conveyor direction, which also cuts out dust/spillage issues at transfer stations.
- Ability to run the conveyor around existing plant and equipment on site in various orientations (supported or suspended).
- Conveyor can travel up steep inclines (36degree).
- Payload is totally enclosed ensuring dust free conveying; no spillage, odour control (hazardous product containment) and ingress of rain which alleviates ENVIRONMENTLY FRIENDLY CONVEYING.
- Carry and return strands of belt can be loaded in both directions and can follow diff erent routes.
- Light weight structures (minimal costs) (average weight = 200kg/m).
- Ability to be mounted off existing structures.
- Minimal civil infrastructure (if any) / None of the 'traditional' heavy drive footings required.
- Very small gravity take-up assemblies required (nominally 300kg mass)
- Self tracking and minimal belt stretch, reduced wear and fatigue; all attributes that reduce belt maintenance.
- Ease of conveyor extension or re-directional change (can be skid mounted).
- Ability for low cost belt extension or re-routing via a simple hot vulcanise splice similar to a normal traditional trough belt splice.
- Low capital cost of system as well as low stores inventory required for the conveyor (all components are standard).

TECHNICAL SPECIFICATIONS

CONVEYOR BELT

Currently the belt is manufactured in two (2) sizes:

• 800 Series (800mm wide) • 1400 Series (1400mm wide)

The Belts contains a two (2) ply Fibre reinforcement and factory molded triangular wedge profi les on both edges. (There is no steel cord or cable in our system) as the steel tends to 'delaminate' from the rubber, causing catastrophic failure.

The belt is available in:

- Abrasive Resistant Rubber (ARR)
- Heat Resistant Rubber (HRR)
- Chemical Resistant Rubber (CRR)
- Fire Resistant Rubber (FRAS)

NOTES

1. Minimum diameters are also applicable to Bend and Tensioning Pulleys.

2. Space allowance for carrying and return belts are approximately as follows: 800mm belt - 900 width x 750 depth and 1400mm belt - 900 width x 1050 depth.

The above technical information is intended as a guide for engineers to carry out preliminary study to see if the Premron EBS is for their requirements. Please feel free to refer any technical queries not covered above, to the Premron EBS Team. We will also assist without obligation, in the preparation of any layouts of existing or new plants to determine suitability.

EBS Belt				Capacity @1m/s	Capacity @2m/s	Capacity @3m/s	Minimum Radius Curve (Belt Loaded)			Transition Length at Load Point		Minimum Pulley Dia (1)		Turnover Section
Series mm	Width mm	Thick mm	Wgt/m kg	Volume	Volume	Volume	Horiz. mm	Convex mm	Concave mm	Opening mm	Closing mm	Head mm	Tail (2) mm	Transition Length mm
800	800	5	8	40m3/hr	80m3/hr	120m3/hr	8000	45000	45000	1800	1800	800	1600	7000
1400	1400	5	14	150m3/hr	300m3/hr	450m3/hr	16000	90000	90000	3200	3200	1200	1600	11000

IDLER STATIONS

Idler Stations are made from a solid, low cost housing that mounts a pair of standard conveyor idler rollers (cantilever design). The Idler Rollers are fitted with Single Row Deep Groove Precision Ball Bearing that are 'closed for life' (no maintenance) and carries a B10 Bearing Life. The Inside Rollers fi tted on a curve are manufactured from high grade HDPE giving better Belt wear on corners. Each Idler station is located between 800-1000mm apart and may carry an addition idler roller mounted to the top of the belt wedge profile to ensure correct tracking.

DRIVE STATIONS

The system has multi drives located at calculated positions along the belt. They are generally 1.0-1.5kw drives and are set in matched pairs on either side of the belt. They are mounted from a low cost, light weight drive housing, which includes pre-set spring tensions that apply even pressure to the drive wheels, that run on the belt wedge profi le. The Drives are controlled via Inverters thru a PLC system that evenly load share all drives across the Belt. Some Drives are fi tted with a brake to ensure fast stoppage in an emergency and/or anti-run back.

SAFETY/MAINTENANCE

The conveyor system is installed with a series of 'safety-pull wires' for personnel protection. At ground level the system can be fully guarded and interlocked according to the site requirements. Rip belt sensors are also placed along the belt to detect unforseen occurrances. On the pulley we can monitor belt speed via rotation sensors. A inline weigh scale system can also be fitted. As the system is low maintenance we don't require full personnel access along the belt. This can be done cost effectively and safely via a 'elevated' work platformas all components above ground level are 'man handable' (low mass).

PULLEYS

The system contains a Head Pulley (discharge) and Tail Pulley (take-up) which is similar design to a standard trough belt conveyor with the diff erence being a tapered end section to allow the belt wedge profi le to locate. Due to the low belt tensions the pulleys are light weight, contain smaller bearings and low cost. The Head Pulley is mounted horizontal while the Tail Pulley mounted vertically and contains the gravity take-up trolley/counter weight assembly. A belt cleaner can be easily mounted on the Head pulley, though it is not important as a product carryover does not eff ect the performance of the belt, but may eff ect the thru –put of the product (tph) in certain applications and medium.

LOADING STATION

The Belt is loaded via a 'Dust Free' Loading Station. The system gently opens the conveyor belt by splitting the wedge profile and carrying each wedge separately apart to an open position via UHMW Slides. The product is loaded onto the belt via a fi xed displacement feed system (chain/screw conveyor; rotary valve or similar). The lower part of the belt is supported via impact rollers and then carried forward where the wedge profi le is returned to its closed 'sealed' position. The Load Station is fi tted with a level detection sensor to ensure the belt cannot be over loaded.

TURN KEY PROJECTS

Premron EBS have a full Design and Manufacturing facility in Gladstone, Qld, Australia and can off er a full turn-key project to its clients.

This Includes:

- Design, P&ID, Proposal and Detail Drawing utililising the latest ACAD and Invertor 3D Modelling software.
- Project Management from Order thru to Commissioning
- All Components, Feed System, Discharge Bins, Hoppers, Silos, Chute Work, Supports, Guarding, Platforms, Walkways and Structures.
- All Drives, Inverters, PLC, Control Cabinets (MCC); abling and Instrumentation
- On Site Civil, Mechanical, and Electrical Installation
- Dry and Wet Commissioning
- Operation and Maintenance Manuals

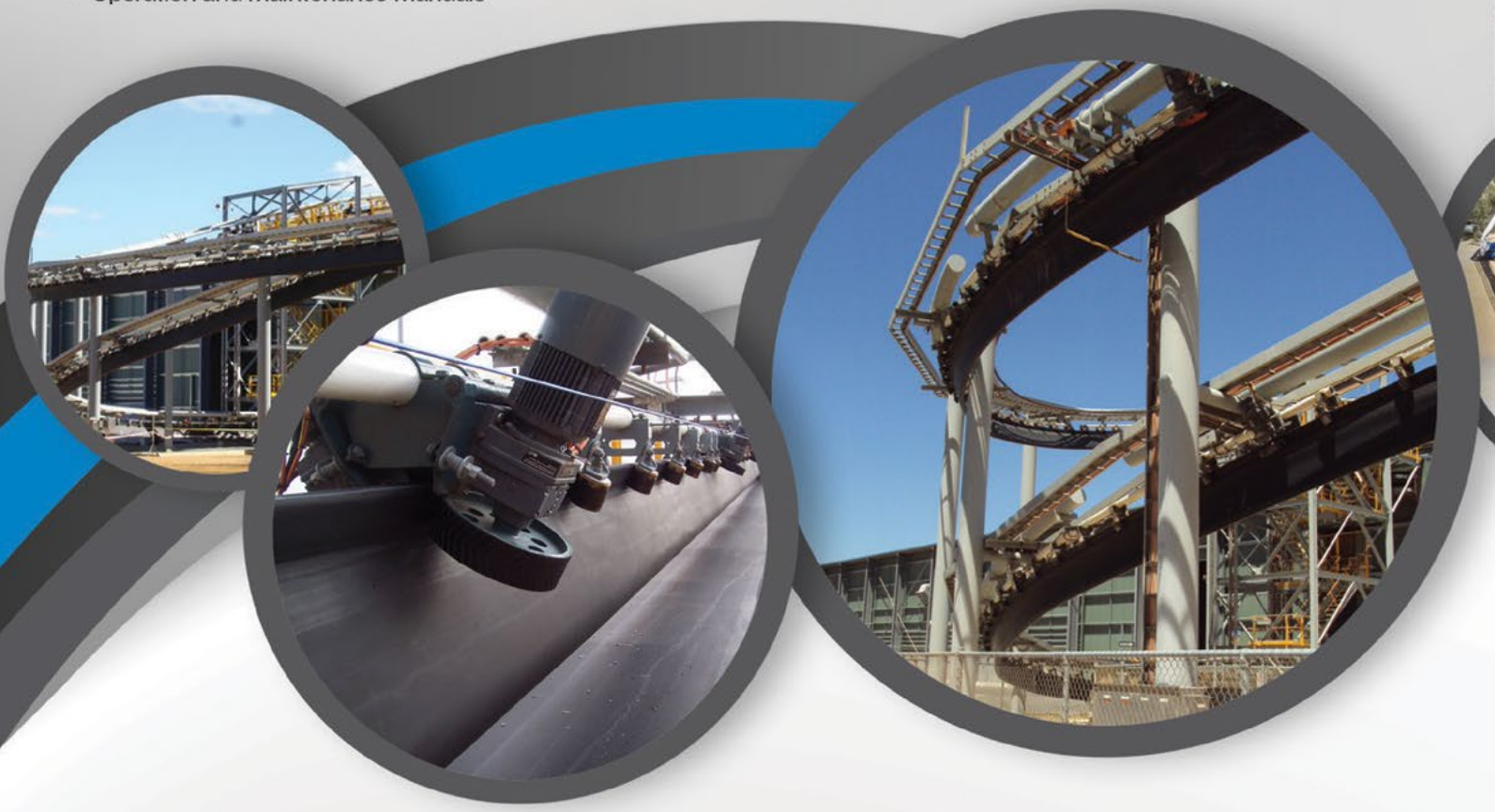
INDUSTRIES TO BE AVANTAGED

- METALLIFEROUSE MINING (Gold/Zinc/Nickel/Diamonds)
- ALUMINA REFINING (Bauxite/Alumina/Hydrate/Limestone/Coal)
- ALUMINIUM SMELTING (Alumina/Carbon/Petro-Coke)
- MAGNESITE ORE MINING and REFINING (Magnesite/Magnesia)
- CEMENT and LIME PLANTS
- SALT HARVESTING
- RARE EARTH MINING
- POWER GENERATION (Fly-Ash/Coal)
- RECYCLE PLANTS (Glass/Pulp and Paper/Refuge/Woodchip)
- FOOD and ANIMAL PRODUCT
- SUGAR REFINING

See Also:

- Premron CHS
- Enclosed Belt Conveyor

We recommend for a no obligation free quote/proposal you contact the Premron EBS sales team.



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