

The Innovator Speaks by Leslie D. Dunn [Mech Doctor]

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Illustration 1:

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Products and Services:

1. **DunnEasy Idler** (Conveyor Cassette Idler Assembly)

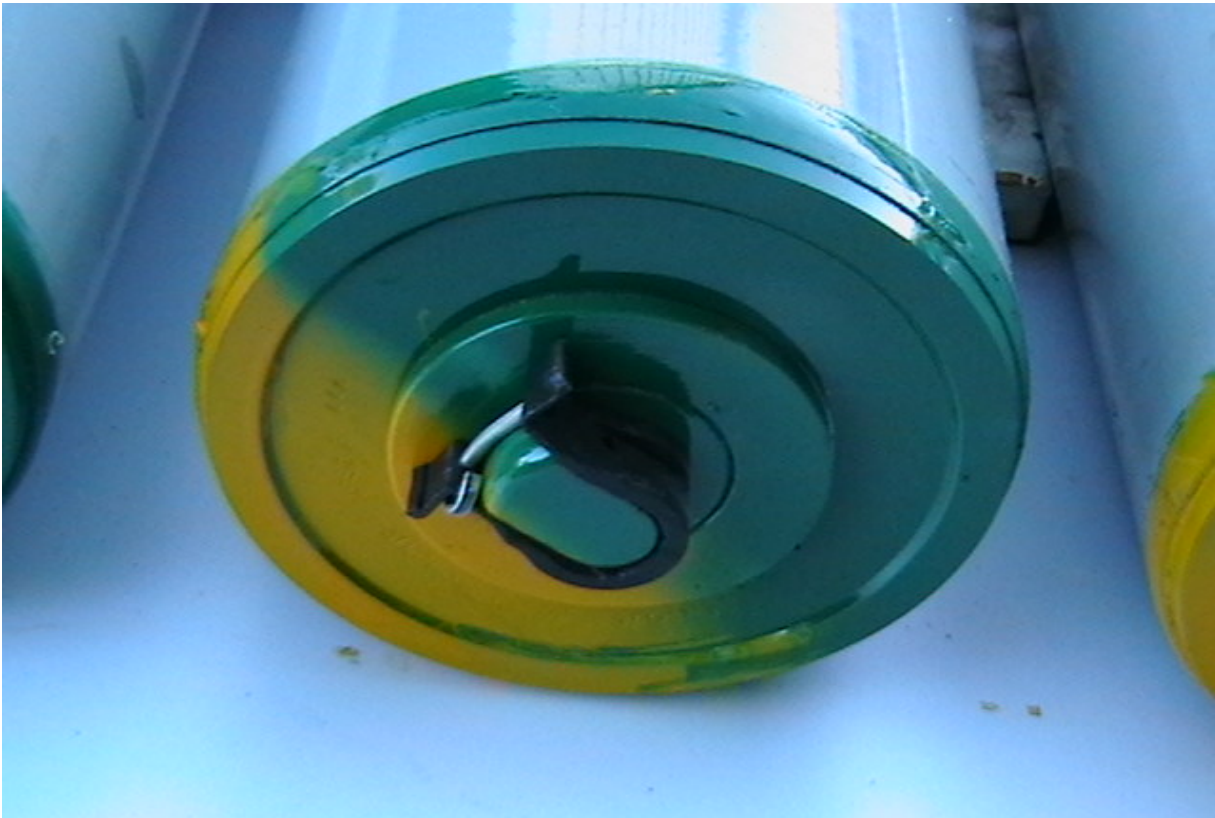


Illustration 2:

35 Degree 76"(Inch) Stainless Steel with standard rolls fitted and 10 degree 1800mm S/S fitted as a return set in demonstration frame at Machinery expo in September 2009.

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2. OneFits Roll (Conveyor Idler Roller)



Illus

tration 3:

OneFits Roll with Cema 'B' to Cema 'D' Adaptor [Black] in Livery Colours Green & Gold.

3. DunnSimple Structure (Conveyor Modular structure)

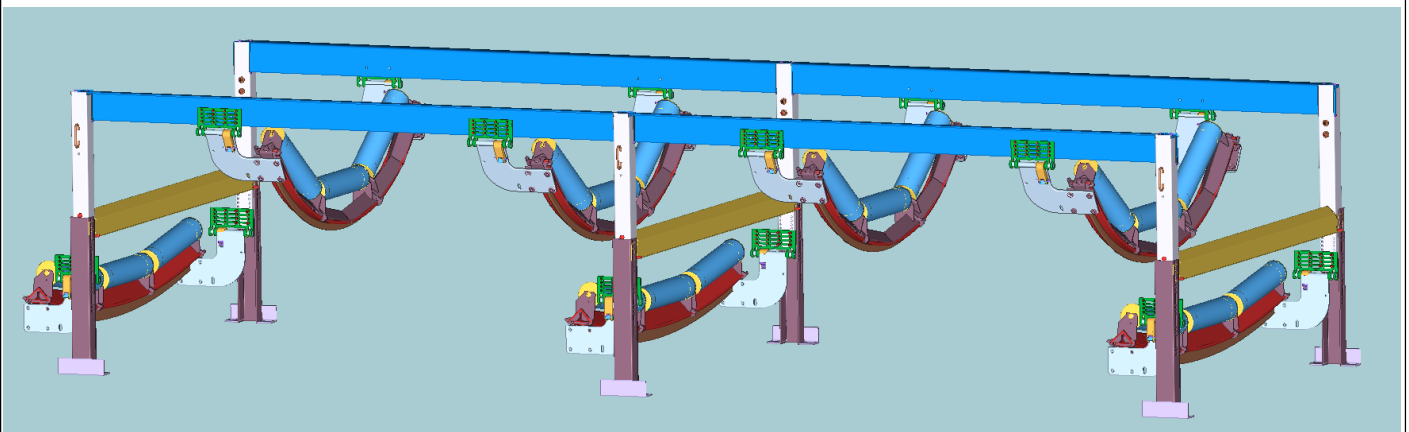


Illustration 4:

Modular Pin lock Ground or Hanging Structure comes in totally 'Layflat Packages' in 3 to 6 metre lengths for surface & underground applications. Up to 1,000 metres structure per underground mine trailer. Certain technology aspects are under patent application and will be formally launched.

The products are aimed primarily at **Occupational Health & Safety solutions** with **VAT(Value Added Technology)**. Secondary priority and tertiary solution are **Cost benefits** that flow from **GST(Great Simple Technology)** 'That Just Works'.

Services includes consulting, training & project overviews.

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Markets of Interest: The main industries are the bulk materials handling being Mines- Coal, Metalliferous, Quarrying, Port Authorities & Agricultural.

The Technology is also very much an export of technology to the World.

There are further Technologies that will be complimentary to these existing products and will also be developed as products for Local and International markets.

Tamec Services range of **DunnEasy Idlers** addresses the bulk materials handling industry issues. The innovative DunnEasy Conveyor Idler Assembly is my answer to the manner in which the Materials Handling System designers and manufacturers fail to 'Look Outside the Square'.

Most conveyor system designers(Not All) in the bulk materials handling industry have been working on the principal of get it going as quickly as possible and as cheaply as possible then pass on upgrades to the owner after handover. The consulting engineers are also cutting costs by using the bare minimum required to meet the system tender parameters and also failing to look at how the individual conveyors interface with other conveyors and equipment.

This has resulted in more than 80% of the installations that I have witnessed as inferior when addressing the issues of Workplace Health & Safety, Ongoing Maintenance with huge costs combined with gross failure of some to be able to be maintained with the systems having no access or large equipment required to do maintenance, and reduced productivity due to downtime.

It has become apparent that many of these systems are being designed overseas or by local design engineers who are young and lack hands-on experiences of actual environments in which the systems operate. In many cases, I have found that the Client was actually sold light weight and inferior systems not recommended for the 'Fit for Purpose(FfP)' of heavy ore because it was a cheap alternative that would get the mine running. The owners then had to buy new systems after a number of years at greatly increased value combined with horrendous maintenance costs when the system should have been 'FfP' to be minimally maintained till the 'End of Mine Life'.

As a Conveyor Technologist, I have been to many countries to install and commission conveyor systems and correct design errors which I have always maintained should have been designed out at drafting level instead of costly modifications to make the system 'FfP' when the installation was being undertaken.

As of 2009, I have also introduced a conveyor roll known as '**OneFits Roll**' which is Patent Application Numbers [# 2009 900 877 & # 2009 900 370] in the process of being Brand Named "**OneFits**". The roll has taken over 23 years to perfect through R&D and Trial & Error so that it fulfills all the elements I required to be met. These included of having only one roll head of each diameter to fit all the roll criteria for a set belt width, ie:- there exists only 3, 3 1/2, 4, 4 1/2, 5, 6, 7, 7 5/8, 8 & 9 Inch, Greater Diameters available, (Metric size equates) diameter rolls for the belt width so reducing the inventory holding of a store system. Every head (2 per roll or a single end mounted head roll) have only a single rated {exceeds largest CEMA range having an integrated bearing and stub axle shaft} with all the shaft mounting styles accommodated by slip-on adaptors or catenary link for 'Sausage String Rolls'(Garland Set).

Other Comments:

The OneFits Roll is the culmination of more than 24 years of R&D and is being formally launched at QME. The roll will feature a proprietary Stainless Steel shell tubing specially developed and that will suit the harsh environments that rolls are now subjected to on a daily basis. It is expected that the robustness of the Head End design along with the technology of 'Analogy' "An A380 Jumbo-Jet technology in a Tiger moth bi-plane", and a superior Stainless Steel shell will vastly extend longevity of the rolls and reduce maintenance and power consumption which will make it the 'OH&S Lean, Green, Energy Efficient Idler Roll machine'.

Exhibition Stand Number at QME 2010 [Mackay 27th 29th July]:- Stand **5042**

See You at the EXPO.

Les Dunn – Innovator & Consultant to Tamec Services

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Do you have erratic tracking of your conveyor belts?

1. Does the belt run(Track) true as per installation commissioning but wanders off into structure for no apparent reason?
2. Does it track differently during high humidity or wet atmospheric conditions?
3. Does the belt track off during sunlight hours and differently during cloudy or night time conditioned?

The reasons might be due to some of the following issues.

1. Is the shell of the idler roll too smooth as in Aluminium, Stainless Steel 304/309/316/318L, Polypropylene, Glass fibre or Painted with non-friction coatings, then the friction required to maintain the idler roll rotating action may be insufficient causing 'Flat-Spotting' due to higher than normal 'Rim Drag' . Subsequent belting covers damage when the sharp worn razor edges peel the covers.
2. The Friction also is necessary to guide control train(Track) the belting within the tolerances laid down in the specifications of +/-2.5% of belt width.
3. Smooth surface shell tubing aids in dispersion of buildup clinging to the roll but this has to weighed up against the detriment to maintain rotational actions of the roll and the control training/tracking of the belting.
4. Steel shell tubing has good frictional qualities but is subject to corrosion 'Oystering' or straight out 'Rotting' and usually in the vicinity of the welded in end(Head Discs), Some manufacturers have opted for galvanized finished shell tubing but this in reality has exacerbated the 'Rotting' action. The rolls then part off within weeks due to high sulphur or salt atmospheric conditions the rolls operate in such as 'Coal Mines, Metalliferous Mines, Port Authorities'. I believe the galvanizing is burnt to powder form and the 'Bi-Metallic galvanic action' combined with moisture and sulphur(Acid) electrolytically erodes the steel.
5. Belting training (Tracking) in even new installations does not have every idler set and roll in those idler sets, square to the true 'Centreline' of the conveyor from loading to discharge ends. During commissioning, the idler sets are bumped forward or back on one side to train(Track) the belting to run close to true centre. Roll Bearings may be tighter on one side roll which also causes a breaking action pulling the belt to that side. So it is that the rolls need not necessarily be rotating true as square to the true centreline which can and does cause erratic belting tracking.
6. Rolls supplied also are delivered in a not so true 'criteria' of TIR and Balance causing belt flapping, bounce, harmonics and noise which reduces continuous frictional contact between the shell surface & with the belting covers which then allows the belting to skip and slide over the roll shell which is theoretically(actually) rotating at a slightly slower rpm than the actual belt speed should indicate.
7. From the items above, ENERGY is drawn from the conveyor as a whole to create Audible Noise, Belt Bounce, Belt Flapping, Harmonic Noise characteristics, Structural Flexing and Twisting, Vibrations transmitted to all associated structures and these can total upwards of 50% or more over the ideal conveyor installation energy needs. This can be true as gained as referred studies and personal experience of

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working on many thousands of conveyors which has proved to me as necessarily a consequence of old technologies still being supplied in today's markets.

SOLUTION:-

The **OneFits** Roll is fitted with a concentrically true Proprietary Stainless Steel Shell Tubing that maintains a 'Tea Stain' corrosion at very much reduced corrosion rates over the whole shell and is not welded to the proprietary end '**OneFits**' (Heads), thus the roll is not prone to 'Oyster or severe corrosion' that is caused by welding or other climatic conditions.

As the roll shell does not create a belting flap or bounce, the roll has a much better chance of continuous frictional contact with the belting covers for control and this also reduces the power requirements as the belting no longer has to cope with varying line tensions.

OneFits will also reduce noise as the tubing is in a balanced state with minimal TIR. This also reduces belting failure rates.

OneFits Rolls in production will be as 'Weigh Scale' rolls without the need for surface machining and balancing.

The **OneFits** Roll will have less build-up on the surface of the shell which causes mis-tracking belting.

The **OneFits** Roll will also cater for High Humidity which causes the belting to aquaplane opposite the tracking direction of the trained direction of the rolls. This is one of the main causes of the conveyor structure rubbing damage caused by the belting edges contacting both sides. Rubbing damage also damages the belting and carcass and is a main cause of splice ripping & strips off the belting edges.

As the **OneFits** Roll is so technically advanced, and the energy sapping detrimental forces have been reduced dramatically or eliminated altogether, the power and energy savings would be greatly enhanced also, then it is conceivable that large savings in monetary terms and environmental savings combined with Government Carbon Credits incentives and community credence as environmentally centered would be further accepted for the company's image.

OneFits Specifications is available on request.

DunnEasy Idler demonstration can be arranged on request.

These comments are my own and not necessarily those of the Licencee/s but they are taken from my experiences over my working life in the Materials Handling Systems Industries.