

Food Packaging Gets Help From VCL Assisted 1210 Controller

by Kerry Green - Curtis Instruments, UK Ltd.

Throw away packaging, whether it be for potato chips, pre-pack vegetables or your favourite fast food, is something we don't give a second thought about. But for one man, Matt Payne owner of Torros Ltd of Norfolk, England its big business.

The raw materials for packaging such as PVC film, is delivered to food processing plants in 500Kg reels formed around various sized cores.. Once delivered it is loaded on to automatic machines where it can be spliced and welded before being used on the form-fill-and-seal packaging lines. Matt Payne has been involved with the packaging industries for over 10 years, initially supplying Reel Splicers but then responding to the needs of his customers by developing highly specialised material handling equipment.

500Kg reels besides being incredibly heavy for manual manipulation are also an extremely awkward shape for conventional lifting equipment. Traditional methods of handling the reels more often than not resulted in reel edge damage resulting in a high level of scrap material and loss of revenue. "It became obvious from the damage incurred, that a new type of handling concept was required", says Matt.

Matt took a step back and drew on his engineering background to develop a custom set of electrically operated jaws that, once fed into the core of the reel, opened out to offer a secure attachment without any physical contact with the valuable packaging film. The complete reel handling machine not only needed to secure the reel, but also needed to lift and rotate it while being highly manoeuvrable, enabling the reel to be transported to the designated area in the factory. To achieve this the machine needed to be battery powered and Matt turned to the Market Leaders in battery powered equipment, Curtis Instruments (UK) Ltd.

Curtis Instruments (UK) Ltd, a European subsidiary of Curtis Instruments Inc. of Mt Kisco USA, listened carefully to Matt's exact requirements before proposing an integrated solution that would give controllable power exactly where it was needed. In order to carefully regulate the motor torque for the grip function, a model 1210 PM motor speed controller was selected. This controller could accept the operator inputs from the pendant control and via its internal microprocessor controlled PWM (Pulse Width Modulation) power regulation circuit it could deliver the precise amount of power required to actuate the jaw mechanism. Too little power and the weight of the reel would tear it off the jaws, too much and the reel core would be punched out into the film. Curtis worked closely with the R&D team at Torros to produce a complete systems integrated package that not only controlled the grip, but also the reel rotate function and also charged the battery and monitored its status to ensure products reliability and longevity.



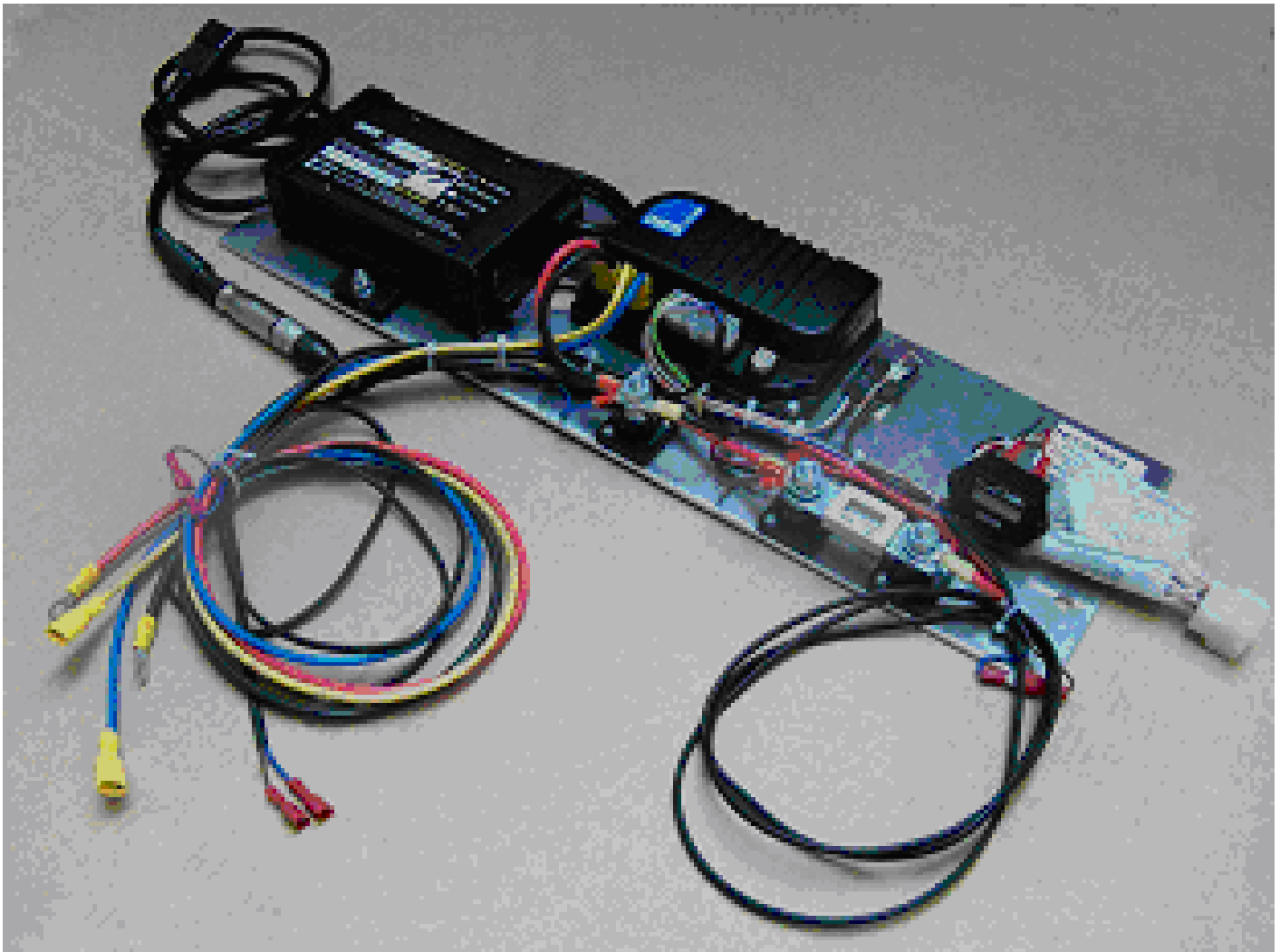
EX500 utilising the latest technology from Curtis Instruments to safely manipulate a 500Kg reel of PVC. Besides giving safe handling, removing the risk of personal injury, the EX500 offers a fast payback time due to single operator operation and reduced machine loading times.

With many Torros Reel Handlers now operating throughout the UK, Matt explains that "it is the total support from Curtis, through the design and pre-production phases, that has really made the finished product a market leader".

The success of the reel handler control system led Matt into new areas of development and again by taking his customers Health and Safety considerations to heart, Torros have developed a revolutionary new product, the Index Lifter.

The Index Lifter removes the repetitive back breaking task of end of line box packing, where as soon as one box is filled an operator has to stack another box on top and begin the task again. The problem here was that the operator began by filling a box on the floor, steadily increasing in height with each additional box until the maximum safe height was reached. This repeated twist, bend and place operation is a major concern for any management team concerned with the health and safety of its workers.

With the Torros Index lifter, the box is held at the optimum height for the production line operative. At the press of a button the box is lowered an exact amount to allow the next box also to be filled at the optimum height for the operative. "This system has led to a reduction in repetitive strain injuries (RSI), less sick leave and greater productivity for my customers", states Matt.



Integrated Control Panel

- *1210 PM controller 24V @ 45A
Microprocessor Multimode*
- *1604FV High Frequency Programmable Battery Charger*
- *906T Battery Discharge Indicator*
- *1310 Vehicle System Controller with Custom Vehicle
Control Language*

Kerry Green the Technical Sales Manager at Curtis Instruments (UK) Limited says “ Matt’s challenge is not uncommon in the Materials Handling Industry. It’s exactly why our research establishment at Curtis PMC in California developed the 1310 system controller and VCL (vehicle control language). With this technology we can take “off the shelf” encoders and motor controllers, process their control signals in our 1310 using easily developed VCL, and deliver a fully integrated product. It’s fast, simple and reliable without the huge cost of a bespoke system. We are using the same technology on fork trucks, towbarless aircraft tow tractors and Arial platforms around the world”.

Listening carefully and working together with their customers to give outstanding result is a common goal that is shared by both Torros Ltd and Curtis Instruments staff around the globe.

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