

CONVEYORS

and mechanical handling

NEWS ON THE LATEST CONVEYOR SYSTEMS, FEEDERS
AND PRODUCT HANDLING EQUIPMENT.

GUTTRIDGE

Compact cocoa elevator saves space for Cadbury

Guttridge has supplied Cadbury with a compact combination mobile hopper and screw elevator that overcomes a shortage of space and is able to handle cocoa powder on a new chocolate processing line without the bridging and product build-up often experienced with this material.

The Bulkflo unit meets the Cadbury specification for a unit able to hold 600 litres of cocoa powder in the hopper, tipped from 25kg bags, and discharge powder to a mixer on a 'first-in first-out' basis at a controlled rate, with minimum operator intervention.

It is also designed to minimise airborne dust and satisfy Atex requirements for a Zone 22 environment.

The cocoa powder is discharged from the hopper by a horizontal, variable pitch screw. A frequency inverter enables fine tuning of the discharge rate, while a low level probe linked to an audible alarm provides a signal for hopper refill.

A rigid screw elevator, close-coupled to the hopper discharge screw, feeds the cocoa powder to the mixer at a height of 2 metres. The elevator's steep 70deg incline ensures that the whole system takes up the smallest possible amount of floor space – a key Cadbury requirement, explains Guttridge.

The equipment can be stripped down for cleaning in minutes, thanks to the use of quick-release



Guttridge: Cocoa powder handling system for Cadbury

clamps and slip-fit joints.
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HANSEL UK

Buffer storage can be chilled as part of conditioning

Buffer storage systems to provide a flexible link between production and packaging are the latest product handling systems from Italian manufacturer OPM, represented by Hansel UK.

Available as first in, first out (FIFO) buffers, or first in, last out buffers (FILO), the systems are aimed principally at increasing the efficiency of both process and

packaging plant by providing a steady flow of product, but can also provide further advantages, points out Hansel.

For example, they can be sized to take the entire contents of an

oven, so that it can be emptied safely and valuable product saved in the event of a total downstream failure.

Alternatively they can be chilled so that products held in the buffer are not exposed to adverse conditions. This means that a FIFO type buffer can also act as an extra conditioning zone, since there is a significant, fixed minimum passage time for products going through the system.

OPM builds a range of product conveying and row distribution systems able to take rows of product as they are discharged from an oven or a cooling plant and, following turning or re-pitching as required, feed packaging machinery.

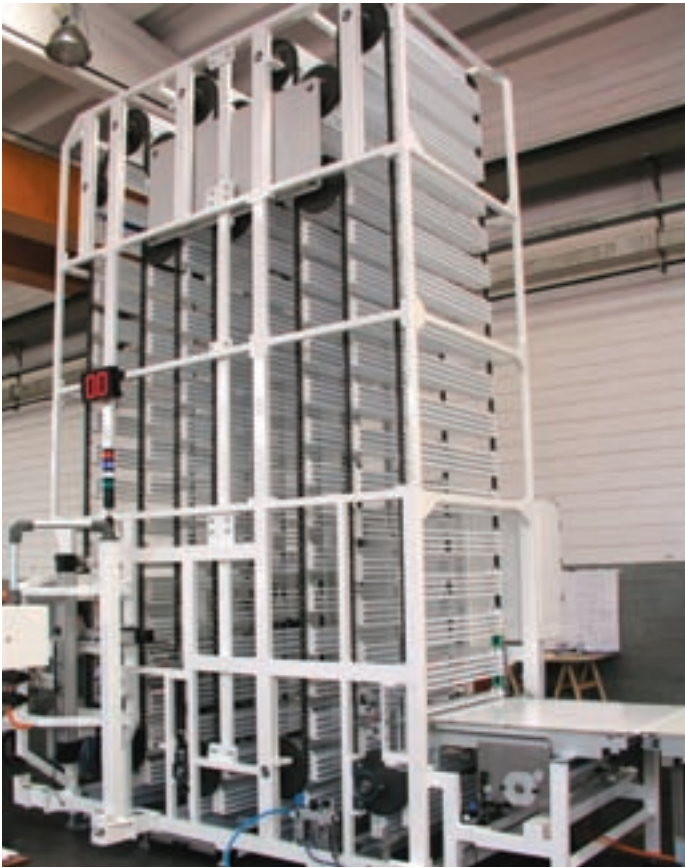
For hygiene, particularly with sticky products, OPM systems are designed so that row take-off stations can be readily retracted for cleaning and maintenance while most conveyor belts can be removed without disassembling the conveyor frames, as a result of the balcony style construction.

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Bradman Lake: The Autowrappers Automatic Distribution System



Hansel UK: OPM buffer stores provide a steady flow of product

BRADMAN LAKE GROUP

Row distribution system offers faster cleaning and changeover

The Autowrappers Automatic Distribution System (ADS) is a new row distribution system which accepts, aligns and feeds products using a height adjustable, single belt feeding process which halves the amount of product transfer.

Product handling and line efficiency are improved, says Bradman Lake, and belt changeover times have also been halved compared with earlier machines.

The ADS is designed on a modular basis and is able to distribute products to a number of packing stations if required. Light guarding in place of conventional metal or plastic guards also helps reduce cost.

Also to reduce cost the conventional belt tracking and alignment system employed on most wide band conveyor systems has been replaced with

longitudinal tracking ribs in the belt that run in tracks on the ADS.

This means that the detection system to monitor belt position and the tracking assembly that keeps the belt central are no longer required.

To simplify belt removal or replacement, the ADS is built with all motors and controls on one side of the unit allowing belts to be removed or maintained from the opposite side.

Subject to the working environment the ADS can be supplied in a standard wipe down, dust proof or full wash down specification.

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SYSPAL

Combiner works in line to create and pitch a single lane

Syspal's Transverger is said to provide a cost effective, fast and reliable alternative to peg and belt converging conveyors for

combining items from a multi-lane infeed into a single stream.

The machine employs intelligent speed control to manage the outfeed from upstream equipment and employs an index facility to transfer product through 90deg, so avoiding the need to turn and separate items mechanically.

There is also a final speed-up section to separate packs prior to downstream operations such as metal detection, checkweighing and labelling.

Syspal says that tests conducted in a production environment have shown the Transverger to have increased production line efficiency by 30 per cent compared with other methods.

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UniTrak: Powder handling system cuts dust for Westway Terminals

UNITRAK POWDERFLIGHT

Aero-mechanical feeder replaces bucket elevator to tackle dust

Faced with dust and cleaning problems, bulk storage, blending and distribution company Westway Terminals has replaced an elderly conventional bucket elevator with a new vertical aero-mechanical conveyor, screw feeder, and bulk bag unloader from UniTrak Powderflight.

Not only was the old bucket elevator suffering from high maintenance costs, but the speed of the buckets dragging through material being handled created excessive dust, waste and cleaning downtime.

Now, however, with the new Powderflight conveyor and screw feeder, and Bagstander bulk bag unloader, all operations are completed at floor level in a much cleaner, more controlled environment. FIBCs can be handled easily by fork truck.

In turn, says UniTrak this has meant that extra mixes can be

completed in each shift while faster turn-around is available for rush orders.

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SPIROFLOW

Flexible screw conveyors feed Smash to packing lines

Following a change in production procedure, Premier Foods, Histon, has bought two Spiroflow FIBC dischargers with four flexible screw conveyors to deliver Smash instant potato to packing lines.

Previously, product made at Histon was held in storage hoppers and then transferred from the production area to the packing hall via an overhead conveyor belt system feeding each of the four main packing lines.

However, processed product is now stored in 2cu metre big bags which are brought to the packing hall by fork truck at the rate of 16 a day.

When lifted into place, the bags sit in the discharger on an annular flexible membrane that forms a dust-tight seal around the base of the bag.

Doors in the dust-tight cabinet below the membrane give access for the neck of each bag to be pulled down through the aperture in the membrane and stretched over an upstanding spigot where the bag spout is held in place by a large O-ring band.

This spigot is the inlet to the collection hopper below each discharger.

With the cabinet doors closed, pneumatic spout closure bars pinch the bag spout above the point at which it is tied. With the interlocked doors open again, operators are able to untie the bulk bag spouts. Once the spouts are untied, the cabinet doors are closed again, the spout closure bars are opened and product then flows into the collection hoppers below.

As product is discharged, and the big bags become ever lighter, springs within the big bag support arms, on each side of the dischargers, raise the bags higher and higher to keep them taut and to ensure maximum discharge of the contents. An alarm indicates when the bags are empty.

Each of the collection hoppers below the two dischargers has bifurcated outlets from which two Spiroflow flexible screw conveyors deliver product to the four packing lines.

A fifth, pre-existing, Spiroflow flexible screw conveyor is used to return good product to one of the packaging machines after it has been recovered from any faulty packaging.

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Spiroflow: New FIBC dischargers handle Smash at Premier Foods

TNA EUROPE

Servo driven conveyor uses less force than vibratory units

TNA's latest Roflo horizontal movement conveyor system is built on a modular basis and requires no discharge gates, which gives easy cleaning and is said to reduce product breakage through reduced drop height into the crossfeeder, give faster product transfer and require less maintenance.

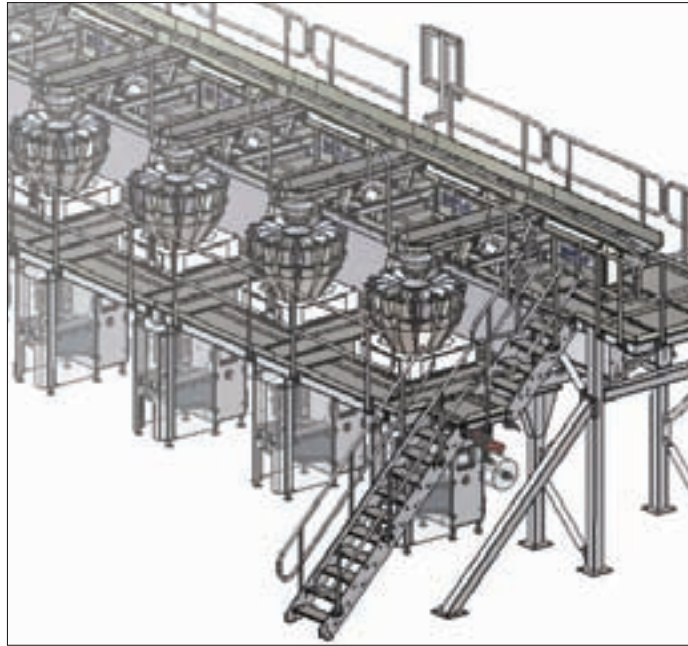
The modular construction means that there are common, interchangeable parts across the system and extra pan sections or lengths of conveyor can be added readily.

Pans themselves are now built in a double skin construction, concealing the reinforcing sections and making exterior cleaning easier, while drive is via servo motors.

This, says TNA, means the drive can be set to provide just sufficient force to move the product and that maximum acceleration is under 0.8g, against the 5-5.5g typical of vibratory feeding systems.

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TNA Europe: Roflo conveyors feeding TNA Robag bagging machines

integration with existing equipment. It can accept cartons up to 400mm long, 250mm wide and 5mm thick, with throughput speeds up to 250 items a minute, depending on size. Product changeovers can be completed in less than five minutes, says Travtec.

Options available include a shingling conveyor, OCV/OCR and label detection vision system, barcode scanner and reject unit.

Typical applications for the TR-750 include promotional video sleeves, loyalty credit cards, pharmaceutical cartons and packs of sliced meats.

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TRAVTEC

Feeder handles carton blanks and blisters for coding

A high speed feeder for off-line coding of cartons and paper is now available from Travtec.

The TR-750 Speed-Feeder handles flat cartons, paper sheets and blister cards for coding by ink jet, laser, labeller or print-apply labeller. The carton is presented to the coder in a horizontal orientation, allowing the top face to be accessed.

The machine can be supplied as a stand-alone system or tailored to customer requirements for

CONVEYOR SYSTEMS

Twin-lane spiral elevator can also provide buffer storage

The twin lane reversible spiral elevator/de-elevator introduced recently by Conveyor Systems provides twin, independently driven feeds, such as to a palletiser, and is particularly suited to dual high speed packing lines.

range of spiral conveyors are said to be providing the canning and bottling industry with an ideal conveying solution, where a smooth continuous flow and high throughput of product is required, either up or down from different floor levels, while occupying minimum floor space.

No special controls are needed and, with just one drive unit, this ensures quick and simple installation, says the company. Load capacity is up to 50kg/metre, and belt widths vary from 200 to 600mm, operating at speeds of 90 metres/min with inclination angles of 3-9deg.

Two leading Scottish distilleries have recently installed spiral conveyors from the company.

One is at the United Distilleries Leven, Fife plant, where it is part of a full case line and, according to Conveyor Systems' project manager Alan Bickerstaff, "the unit's small footprint proved to be the ideal solution to saving valuable floorspace."

"Conveyor Systems also suggested spiral conveying to replace a 7 metre inclined belt conveyor at Allied Distillers in Kilmalid, Dumbarton," he adds.



Conveyor Systems: New twin lane Spiralveyor

"This was so successful in saving space and increasing handling capacity, that two spiral conveyors have now been installed."

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AUTARKY AUTOMATION

Interlocking sections cut conveyor noise by 25 per cent

Noise reductions up to 25 per cent compared with conventional slat conveyors are claimed for the CS SL Stretch Line conveyor made in Germany by Schüco Design Industrial Automation and now available in the UK from Autarky Automation.

Capable of speeds up to 80 metres a minute, the conveyor incorporates a specially developed modular belt, with plastic interlocking finger-shaped



Autarky Automation: CS SL Stretch Line conveyor cuts noise by a quarter

sections, connected by 4mm pins. This simple arrangement can carry loads up to 200kg, yet is flexible and light weight.

Autarky explains that the design of the CS SL belt system reduces the hunting effect normally associated with traditional conveyor chains as they compress and expand where the chains pass around their idler ends.

"Although this effect can be minimised by the use of a centenary, this can be one of the main sources of conveyor noise, with overall conveyor noise or chatter levels typically exceeding 76dB(A) at 40 metres a minute. By comparison, noise levels from the new CS SL conveyor are just 67dB(A) at 40 metres a minute, rising to 75dB(A) at the maximum

rated speed of 80 metres a minute."

Noise levels are reduced still further both by the use of specially developed belt drive and idler sections, with extended wear strips, and extruded aluminium profiles designed to guide and fully capture the belt.

This helps to eliminate risk of damage to the belt and improves operator safety.

Operator safety is also improved considerably where the belt has to turn horizontally or vertically, says Autarky, as the interlocking belt fingers do not protrude or create open joints, which could otherwise form pinch or trap points.

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For full details of all PPMA members able to supply conveyors and associated equipment, consult the PPMA machinery finder service, tel: 020 8773 8111, or visit www.ppma.co.uk