

BULK **HANDLING** REVIEW

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REVIEW

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Concetti supplies packing line to seed supplier

The Germinal Group recently installed a complete Concetti automatic bag filling, palletising and pallet wrapping line at its site near Lincoln in the UK.



Germinal GB is a leading supplier of forage and amenity seeds to the wholesale agricultural trade and the amenity sector in the UK. Germinal is a seventh-generation family owned and operated business, originally formed in 1825.

The new line is intended to produce weighments of between 5Kg and 25Kg into open mouth flat plastified bags of various sizes at a minimum rate of 500 bags per hour. Plastified bags are laminated paper with an internal PP coating. These are then closed by plain sewing.

The Concetti line begins with a small product feed hopper and net weigher for precision dosing of the weighments. An agitator in the feed hopper ensures consistent product flow and a gravity feed-gate with brushless-motor drive gives precise, programmable control over the gate aperture size for accurate feeding across the entire weight range, handling a wide variety of bulk densities from 0.25 to 0.45 Kg/Litre.

Filling is carried out by a Concetti IGF600, a fully enclosed system fitted with a three-stack empty bag magazine that can be replenished without stopping the line.

According to Concetti's publicity: "The IGF600 can place, fill and close the bag without losing control of the mouth, which is gripped positively throughout the entire process, giving a consistent and reliable operation with a neat and secure closure."

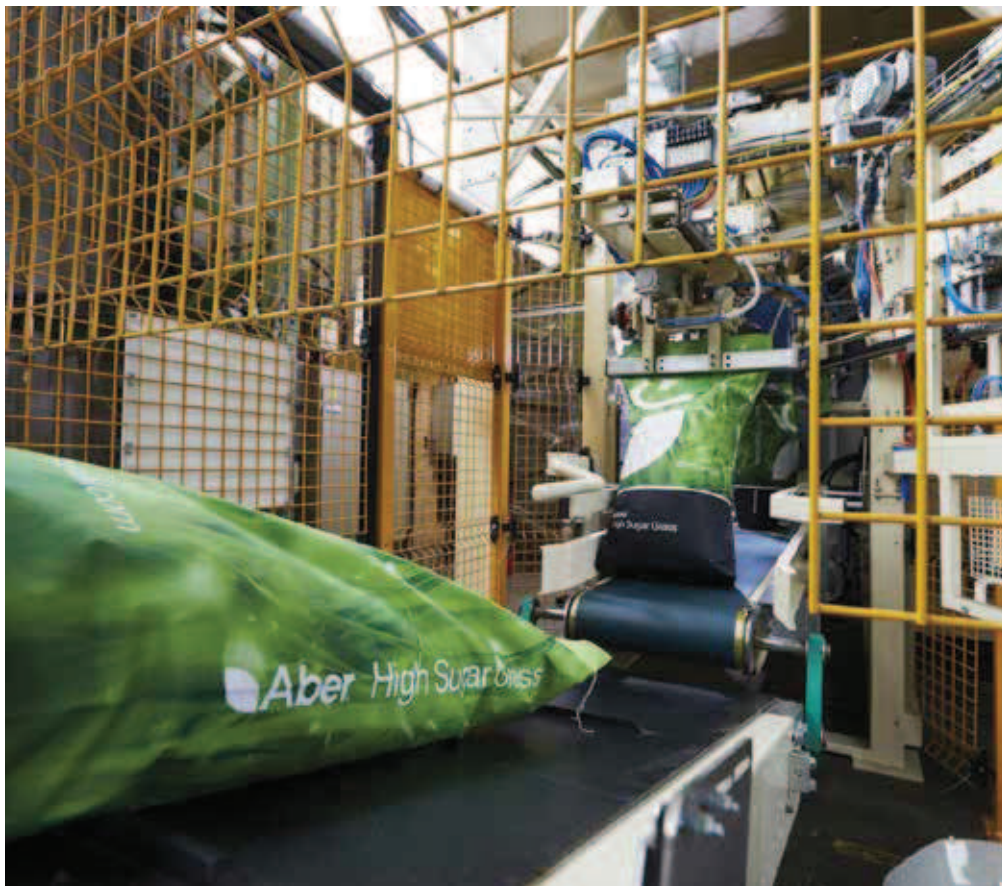
A vibrator helps to compact the contents prior to the closing operation. The sewing head is fitted with a dynamic feed-in mechanism and a thread control device automatically stops the system if the thread runs out or breaks.

Proper labelling and certification is vital in the seed sector. Concetti supplied an applicator for pre-printed fan fold labels that are computer generated off-line by Germinal.

The applicator separates labels from a continuous fan fold stack, which are then fed automatically and securely sewn into the closure. After closing, the bags are turned, laid flat and conveyed to the palletiser label uppermost, passing over a detector on the way to make sure each bag is properly closed.

Adjustments to bag length and width in the IGF are made automatically by servomotors under control of the PLC. No





spanner adjustments need to be made for different bag sizes.

A PS3A robot, which Concetti says is its most flexible and widely used palletiser, carries out the automatic palletising operation.

“Equipped with a gripper head but also a stripper plate system with layer conformation as well as top layer compression it offers the flexibility of a robot in pattern forming combined with the neat stacking qualities of a layer palletiser,” said Concetti. Each layer is formed on the stripper plate, while programme controlled motorised side conformation plates square the layer accurately before it’s deposited onto the waiting pallet. A compression cycle applied to the top of the stack ensures a firm and level base for each new layer.

The palletiser has an automatic pallet dispenser able to handle pallets from 1200 x 800mm up to 1500 x 1200mm with a capacity of 15 pallets maximum. Length and width adjustment are made manually but pallets are automatically centred afterwards to ensure a consistent datum position. Programmes for 3, 4, 5 and 7 bags per layer are provided and pallets can be stacked up to 2800mm high and 1500Kg in weight.

Loaded pallets are conveyed to an automatic rotating arm stretch wrapper fitted with adjustable power pre-stretch film carriage, top clamp and top sheet dispenser where the pallets are wrapped to protect and secure the loads for warehousing and transportation. Between the palletiser and wrapper, for maximum operational flexibility, an infeed/removal station permits unwrapped pallets to be removed after palletising or fed in prior to wrapping. Finished pallets are conveyed out to a section of gravity roller conveyor ready for the forklift truck.

In terms of control, a network links all the different items and programme changes are made for the whole line from a single position at the IGF600 controller’s touch screen. Selecting a new programme automatically changes or updates the weighing controller to give a new target weight and at the same time the IGF600’s servomotors set up the closing line for the new bag dimensions. The palletiser programme is also automatically

changed to suit the new layer pattern.

“All this is achieved in less than 90 seconds with no spanner adjustments involved, eliminating the risk of operator set up errors and allowing quick changeovers between programmes,” said Concetti.

If necessary, and only if a new pallet size is involved, the empty pallet dispenser is quickly adjusted manually by hand-wheel to the new dimensions.

The IGF600, palletiser and stretch wrapper all use Siemens PLCs and the same TP700 type of touch screen. Safety fences and interlocked access is provided for the whole installation and complies fully with the EU Machinery Directive 2006/42/CE.

“Sourcing the line from a single supplier like Concetti enables it to be fully assembled in the factory and acceptance tested with the client’s own products, bags and pallets before despatch,” said Concetti’s publicity. “This ensures there are no unforeseen problems during installation and commissioning, which as a result are completed quickly and efficiently leaving plenty of time for operator and maintenance training.”

Matt Stevens, operations manager for Germinal GB, said, “A lot of time and re-

search was invested before a decision was made on which machine and supplier Germinal would proceed with on our packing line project.

“In the end we chose Concetti and are very pleased we did. The line has vastly improved our production capabilities. One employee is capable of achieving three times the throughput of our old production line which was previously operated by two members of staff.” ■

