

## ICE BREAKING TECHNOLOGY

### From Bulk to Bag – Versatile Packing line brings rewards for Peacock Salt

#### **Application:**

Packing Line for Salt, aggregates and Corrosive Chemicals

#### **Client:**

Peacock Salt, Ayr, Scotland

#### **Product Packed:**

Mined rock salt, sea salt, manufactured salts, aggregates

#### **Bag Type:**

Plastic – made and filled from roll of printed flat film

- Gusseted and non gusseted bags
- 5-10 kg bags, handles made by machine
- 15, 20, 25 kg bags pillow or gusset

#### **Bagging Rate:**

Pillow shaped bags 900 bags/per hour

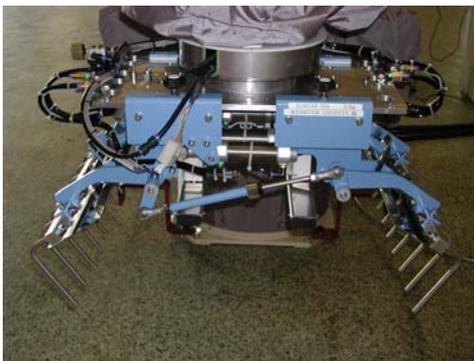
Gusseted bags 650-700 x 25 kg bags per hour



'Peacock Salt's De-icing salt is packed into bags ranging from 5-25kg'



The Okura robot palletises 5-25kg bags  
Below: A close up of the 'self-adjusting'  
Robot bag hand



#### **System Comprising:**

- Duplex electronic net weigh scales
- FFS CV3080 form fill seal bagging machine
- Bag Flattener and Conveyors
- Okura A1600 Palletising Robot
- Pallet Conveyor System
- Uniwrap 300 AE rotating arm pallet wrapper (for waterproof cover)
- Guarding and integrated control system

#### **Why Did Peacock Salt Select Webster Griffin?**

- Because the system from Webster Griffin can deliver the following benefits:-

- **Economical to bag & operate** – the new high-speed bagging line does not require constant attention – it is overseen by the fork lift truck driver from the warehouse (original semi-automatic bagging line required 3-4 operators).
- **Efficiency** – minimal downtime is lost between product and bag size change overs' with the new line).
- **Versatility** – Weighers, bagging machine, robot and pallet wrapper are pre-programmed for different bag sizes, palletising patterns, pallet sizes. Therefore Peacock can respond to customers' orders immediately.
- **Minimise warehouse space** – because the line is versatile, Peacock is able to pack on demand, therefore they hold low stock levels and save warehouse space.
- **Suitability for purpose** – Corrosive resistant design with minimal moving parts requiring minimal maintenance and routine cleaning – such as the vertical form filled seal bagging machine and robot palletiser.
- **Corrosive resistant construction** – stainless steel product contact parts, nut and bolts, conveyor or rollers, anti-corrosion epoxy paint finish, exclusion of brass and aluminium parts, IP65 electrics and cabling (splash and dust proof).
- **Reliability** – Peacock needed a system to operate 2 shifts / day throughout the winter.

### *Full Case Study on Peacock Salt Installation:*

#### **Bad weather mustn't stop the salt from getting through**

Established in 1874, and entering the winter maintenance market in 1948, Peacock Salt is one of the UK's longest established suppliers of de-icing salt, their annual supply tops 350,000 tonnes. Of paramount importance is the reliability of their supply chain – ensuring that local authorities and maintenance contactors can keep the roads open and safe during the harsh Scottish winters.

With this goal in mind Peacock recently invested in a state-of-the-art depot in the Port Ayr, Scotland, including a wharf with ship unloading facilities covered stock pile facility, warehouse, modern versatile packing line and customer call centre.

Gregory Marshall, Assistant Managing Director, comments that the summers can be quiet but as the days get shorter and the temperature drops, Peacock receive over 200 calls per day – taking orders for anything from 100 tonnes to a single 5kg bag.

#### **125 years of Experience**

Peacock have traded in salt for more than 125 years, offering rock, sea and manufactured salt from around the world.

The depot in Ayr is the hub of their de-icing salt activities, owing to the efficiency of their new operation, many customers have already found that they no longer need to maintain large stock piles of salt, but this is only half the story as many don't realise that reducing cost, improving effectiveness and minimising wastage starts with finding precisely the correct salt for their needs.

Peacock are committed to serving their customers needs, they have built a robust logistics network which has proven to be a match for the worst of the British winters. They also believe that their survival is based on being able to deliver the salt to the customer in the quantity or package he specifies – bulk tanker, big bag or sacks from 1.5 kg to 2.5 kg.

#### **From Bulk to Bag**



The salt is shipped from Mediterranean suppliers in ocean-going bulk carriers and unloaded at the Port of Ayr. Different grades of salt are stock piled in Peacock's purpose built warehouse adjacent to the new high-speed Webster Griffin Packing and Palletising Line.

Dumper trucks load the salt into a stainless steel lined pit from where it is extracted and conveyed into the hopper above the bagging machine.



*Form-Fill-Seal bagging. High Speed packing of 5-25kg bags*

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## Packed with Performance

The new packing system was selected for ease of maintenance, reliability and flexibility. The line works as one integrated packing unit automatically self adjusting at the "press of a button" for different bag weights and sizes.

Peacock pack different grades of salt into- 5 and 10 kg bags with handles, 15 kg and 25 kg bags. The line packs at a rate of 900 bags per hour for 2 shifts per day during the winter months and one shift per day in the spring and summer.

The line is overseen by Jim Laird, the fork lift truck driver who twice a day loads a 600 kg roll of plastic film onto the bagging machine, keeps the empty pallet magazine stocked with pallets, ensures that the stretch wrapper does not run out of film, removes wrapped pallets from the end of the line and loads them onto waiting transport.

The old semi-automatic line at Peacock Salt's Glasgow depot required three, sometimes four operators.

The new line is operated solely by Jim Laird. Jim received training from David Shell, Webster Griffins Project Commissioning Engineer. David Shell was responsible for the factory testing, on site installation, setting up and fine tuning of the line. Jim enjoys the responsibility and in turn has been able to train other operators.

*Jim Laird, left, mans the packing line solo*



## Automation Right Down the Line

Two NWG-E high speed electronic scales alternately weigh and discharge the nominated charge of salt into the filling tube of the bagging machine. The bag is formed, filled and then sealed on a CV2080 bagging machine. The CV2080 is a 'vertical or ' flat film ' Form Fill Seal (FFS ) machine it packs continuously making and filling bags from a reel of flat printed film which it forms into a tube - when sealing the top of the first bag the bottom of the next bag is made.

Peacock chose this concept because, apart from being flexible, it has far fewer moving parts than a machine that formed and filled bags from a tubular roll of film.

The CV 2080 vertical FFS bagger has few moving parts which means minimal exposure to the corrosive effect of salt, this results in less wear and tear, reducing down-time and time lost on maintenance and cleaning.

Filled bags are micro-perforated allowing the excess air to be squeezed out as they pass through the 1.8m long bag flattener. The gap between the upper and lower belt on the bag flattener is electronically adjustable so that the degree of compression can be fine tuned to suit the bag size. Flattened bags are conveyed to the palletiser.

An Okura A1600 Robot Palletiser has proven to be perfect for this application, equipped with Okuras OXPA 'Easy Tech' programming system the robot can be programmed by Peacock Salt for new bag sizes and palletizing patterns. With memory for 127 different programs, Peacock saves every new program that they load onto the machine so that it can be called up at the press of a button when needed.

A stack of 15 empty pallets is held in a magazine and dispensed ,on demand ,one by one .During the five second change over period, bags are accumulated on the interface conveyers between the bagging machine and the robot bag pickup conveyer.

Loaded pallets are automatically wrapped with stretch film ,during wrapping a plastic sheet is cut to size and placed on the top of the stack - providing a water proof package. Wrapping the pallet gives them stability and provides water proof protection, ensuring that the bags arrive at the customer clean and dry.

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## Technology Brings Benefits

It is impressive how Peacocks Salt have embraced the latest technology which has more than lived up to their expectations. Integrated command of the whole packing line is provided by the parent controller which is in constant communication with every device in the system house. A colour touch screen provides a graphic display of the line, making it easy for the operator to identify and interrogate the reason for a stoppage or alarm signal.

The parent controller ensures that each item of equipment in the line operates as one co-ordinated unit – individual machines are equipped with their own dedicated control screens, used when setting up the machine for new products, bag sizes, bag weights and film types. For example, the Form Filled Seal bagging machine has its own touch screen control panel which is used for in-depth fault finding, and even reminds the operator when routine maintenance is due.

## Speed and Flexibility Boosts Business

Versatility combined with a high packing rate means that it is now cost effective for Peacock Salt to pack small, specialised batch runs as well as long production runs.

On a conventional automatic bagging line changing from one bag size to the other could take one or two hours. With the Webster line switching to a different product is instantaneous and from a 5 kg to a 25 kg bag takes 20 minutes – enabling Peacock to meet changes in customer demands swiftly.

Another benefit is that without the new robot bagging line, Peacock Salt would need to double or quadruple the amount of pre-packed salt held in stock in order to be able to satisfy customers order promptly.



*Robot palletiser self adjusts for different bag sizes / palletising patterns – no changing of parts required.*

*CD : Available on request*

*Layout Drawing of System: Available on request*

With the new Turn-key line from Webster Griffin, a finished pallet is ready for despatch within 2.7 minutes!



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