

ambition

A publication for

AMBiT
PROJECTS LIMITED

Potato Pick & Place line feed system

As part of a complete potato processing line Ambit have designed, manufactured and installed an innovative pick and place line feed system, for a major potato processor.

Design criteria, was for batches of potatoes to be accurately placed onto a conveyor feeding a cooker.

Automatic and continuous placement of up to 84 potatoes per batch positions them in a monolayer without piggybacking and with minimum contact.

Other criteria, was for minimal operator intervention and a production requirement of 24 hours a day 6 days a week.

The feed system comprised of a **Crate Lift and Tip** able to be loaded by pallet truck with 500-kilo crates. A **Surge Hopper** provided a controlled feed through a **Vibratory Conveyor**, which sorted the potatoes into lanes. A control device separated the individual potatoes and placed them onto a conveyor of indented platens.

The platens indexed under the **Pick and Place** arrangement where batches, in a set pattern, were picked up and transferred to the feed conveyor.

The moving parts of the system, where safe design is paramount, are enclosed with electrically interlocked cage guarding. These provided safe access for clean down, hygiene and maintenance.



CAMS AND GUIDE PLATEN
- part of the pick & place system



SURGE HOPPER OUTLET
- providing a regulated feed into the line



LIFT AND TIP
- designed for 500-kilo crates of potatoes



POTATOES POSITIONED - accurate positioning under the pick and place mobile head



PICK AND PLACE GUARDS
- the heavy - duty lifting and mobile frames are fully encased within electrically interlocked cage guarding

THIS EDITION OF AMBITION INCLUDES:

- Insect removal from salad leaves
- Weigh feed system
- Site installations
- Produce Drying (Brussels)
- Oil Weir System
- Did you know?

Insect Removal from salad leaves

Most producers of packed salad believe that the removal of foreign bodies and insects from salad leaves is a multi-stage process.

Ambit provide complete wash systems for salad leaves, which combines gentle washing with effective three stage insect removal. Feeding the wash system would be vibratory screening conveyors, to add another step in the foreign body removal process.

The vibrators have an amplitude and frequency that causes the leaves to 'dance' over the perforated screens. Screens with large holes are suitable for the removal of 'moths, wasps and beetles' while the finer screen will handle 'ladybirds' and 'firebugs'.

Balancing the screen size with the anticipated contaminants reduces the product loss on small leaves.

Our customer writes,

"We had a total of 5 customer complaints for products that contain salad leaf from beginning of April until the end of September.

This compared with 50 complaints for the same type of product the year before. This is a testimony to the effectiveness of the insect removal features on the system.

We also tested the system on a batch of aphid-infested Cos lettuce we received – we did a count before and after washing and concluded that approximately 99% of the aphids had been removed.

We are very pleased with the system and its performance".



TRIAL INSECTS
- used to test the effectiveness of combined vibrators and washers



AMBIT SALAD LEAF WASHER
- high water to product ratio ensures good wash and separation



PRODUCT DISCHARGING FROM WASHER
- Ambit washer providing gentle wash and insect removal



WATERCRESS ON MEDIUM SIZE SCREEN
- watercress can be passed over all screen sizes but a medium screen when leaves are small.

Weigh feed system

Weighed feeding of product into a process line, enables operators to keep an even rate, which will not overload downstream equipment. It is a useful tool in providing readout on reaching batch weight, important when a mix of product is being processed.

The set weights and totalizing functions enable management to set target weights and get a summary of amounts processed during any production period or shift.

The unit is robust and able to operate in the wet conditions found in many food processing plants. In addition to the information screen on the units programmer, large easily seen digital readouts can be placed where operators or line supervisors can see it from a distance.



MIXED LEAFY SALAD ON THE WEIGH BELT - the system can handle light products.



WEIGH FEED CONVEYOR & WEIGH BELT WITH READOUT
- operators know when the correct batch weight has been reached and the weigh cell will withstand hygiene and clean down

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Safe Contractor On-site Installations

The recent installation of a 6 tonne replacement cooker drum saw a lift of 20 metres into the side of a breakfast cereal plant. Any lift has to be carried out safely but high lifts with heavy loads need expertise and a detailed study of the weather forecast. High wind and inclement conditions can cause delay, but safety is paramount.

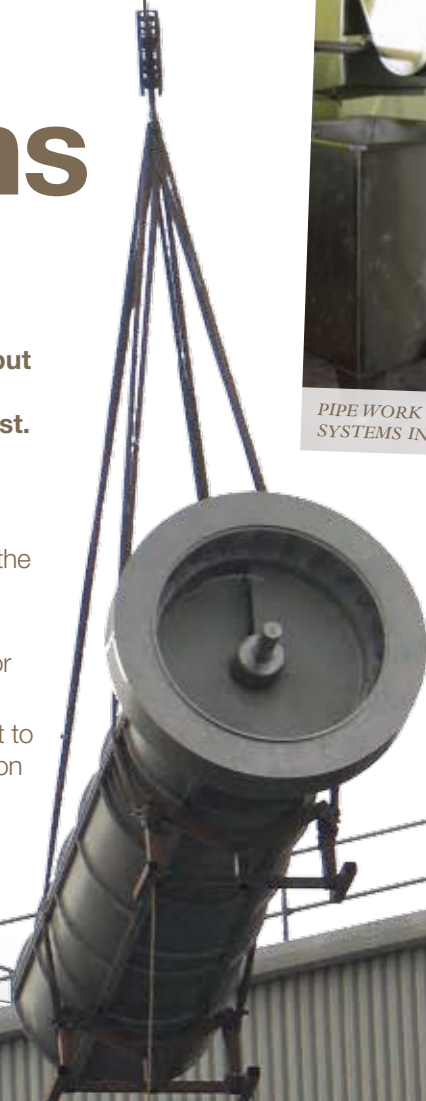
All installations are risk assessed and have a Method Statement compiled for the guidance of the installation crew.

Being accredited a 'Safe Contractor' gives Ambit customers confidence that any installation large or small will be efficiently and safely managed.

As part of its on site services of capital equipment to food producers, Ambit also provides the installation of service pipework for water, process product, steam and air.



PIPE WORK FOR PUMPING SYSTEMS INSTALLATION



COOKER DRUM LIFT - a full risk assessment and method statement precedes the work on site precedes.



AIR RECEIVERS



AREA	DATE	TASK OF ACTIVITY	HAZARD	RISK	ASSESSOR	PEOPLE	FREQ
Access from						TR	2
Swarf/Dust						TR	2
Drilling/Grinding						TR	0
Working at height						AE	6
Welding/Grinding						TR	4
Fall from height						TR	0
Fire						TR	0
Fall from steps						TR	2
Explosion						PLT	1
						AE	0



APRON FEEDER BEING LOADED

PEOPLE: 1) AE= ALL EMB
2) CON = CONT
3) TR = TRADES
4) VIS = VISITOR
5) PLT = PLANT

Produce **Drying**

Harvesting in wet weather gave problems to a vegetable packer especially through the winter on Brussels sprouts.

As part of a complete re-organized packing line Ambit provided a unit to remove surface moisture before product went to grading and packing. The drying is achieved by passing a monolayer of product on a blue mesh conveyor fitted with a belt shaker, air knives and suction plenums.

The shaker helps to achieve an even spread of product and shakes off water droplets. The air knives and suction plenums strip off most of the remaining surface moisture. Mounted above the conveyor is strip lighting to assist operators when manually inspecting. The fans are mounted remote from the conveyor on the outside of the pack house wall.



AMBIT STAINLESS STEEL FANS - Fans serving the air knives and suction plenums

CONVEYOR WITH AIR KNIVES AND SUCTION PLENUMS - air knives and plenums are all adjustable to provide a perfect balance



DID YOU KNOW

Ambit Projects home town Kings Lynn, laying at the base of the wash on the River Great Ouse, has always played an important part in this country's seafaring history.



Historical figures, from the past such as Admiral Lord Nelson, explorers searching for the North West Passage like Captain Vancouver and the Pilgrim Fathers came from or passed through the port of Lynn.

These, and others association with the town are celebrated by an information dial with names and dates, on the quay close to the famous customs house.

The quay at Lynn would have been a forest of masts, spars and furled sails. With its maritime historical past, King's Lynn is well worth a visit, and while here why not call in and see us!



KINGS LYNN QUAY SIDE - reading the names and dates, gives a real link to our maritime history

Hot Oil Weir System

In order for the frying time of a buoyant confectionary product to be reduced it was required to pass under a weir of hot oil at 180 degrees centigrade.

Ambit's design provides an even unbroken curtain of oil and enables the weir depth and flow to be easily adjusted. This feature provides production with the fine adjustments the product demands.

A set of guides ensured the product was kept separated, ensuring that the entire top surface received an even coating of oil.

The oil pump was mounted within the framework with the suction pipe drawing oil from the fryer. The delivery provided a diffused feed into an adjustable set of troughs, ensuring the even oil curtain.

The whole weir assembly is mounted on grooved wheels running on a track mounted over the fryer. When not required for production the unit is removable and runs onto a specially designed mobile trolley.

Supplied complete with plug in electrical controls.

OIL WEIR - the oil weir giving an even curtain with controlled flow



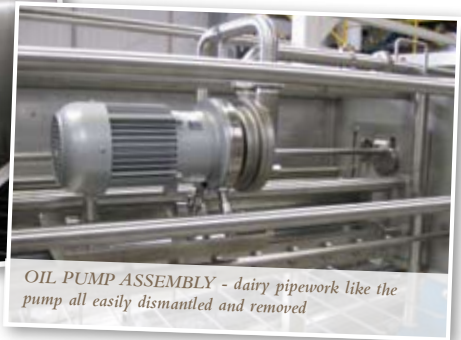
OIL WEIR SYSTEM INSTALLED - travel locking and guide raising and lowering handles easily accessible on the side of the unit



END VIEW WITH COVERS - dismantlable covers for cleaning once unit is removed from over the fryer



OIL PUMP ASSEMBLY - dairy pipework like the pump all easily dismantled and removed



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