

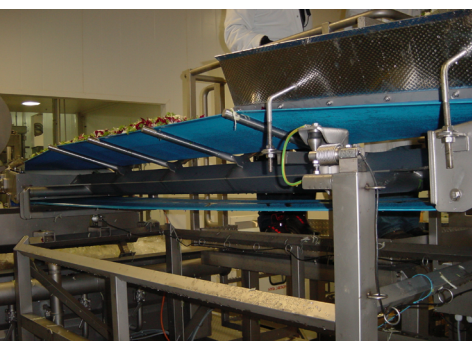
The preparation of fresh mixed salads

Processing of a vulnerable product

The mechanical assembling of mixed lettuce requires ingenuity. Because how do you mix lettuces for salads all with the same composition without causing a botch? Food Technology Noord-Oost Nederland B.V. (FTNON) and PENKO developed a solution

The different types of salads fresh from the country are washed and cut. Subsequently out of these types a mixture must be made and packed. Because of their structure the types of salad allow limited mixing actions. Moreover cut salads are airy, it has a low density. The structure is irregular, making controlled conveying difficult. Intensive mixing does not work because the product is vulnerable. Moreover, the composition of each package has to be equal.

In practice giving each type of salad its own belt conveyor and each conveyor its own, adapted to the mixture, speed, proved in practice to be unsatisfactory. The irregular behaviour of the mixture created irregular combined mixtures. Even stagnation was not noticed, resulting into incomplete mixtures. The lettuce was not working along with controlling the layer thickness. Moreover, stagnation was on tape not observed, causing incomplete mixtures arose. So conveying based on volume proved to be the wrong way.



a weight sensor mounted under the belt conveyor



in spite of the relatively high mass of the belt conveyor a system with a weight controller could be realized.

Weighing equipment

The solution had to be found in the exact determination of the quantity of lettuce on the belt conveyor with weighing equipment.

When the conveyors dose each type of salad with the correct mass flow per unit of time, perfect salad mixtures are the end product. Problem is belt conveyors are relatively heavy and lettuce is light. With the sensors of PENKO and the accompanying instrumentation this can be realized anyway.

The PENKO FLEX series has a high internal resolution of 24 bits and a high measurement speed of 1600 readings per second. The combination of belt conveyors



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with weighing sensors and the accompanying instrumentation offers almost immediately after the start up a perfect mixture, the company says. Up to four weighers can be used and the salad manufacturer needs to enter the salad formula into the control system just once.

FTNON.

Food Technology Noord-Oost Nederland B.V. (FTNON) started over 50 years ago with the production of machines for the food processing industry. The company designs innovative total concepts for the processing of potatoes, vegetables and fruit. FTNON has offices in Almelo, Delft, Horst, Salinas (USA) and Shanghai (China) and employs approximately a staff of 110 persons.