



# Gansons Material Handling Solution: Process Automation in Packaging of Low Bulk Density Ingredients for a Food Company

## Background

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Vacuum transfer systems are beneficial for contained transfer of powders and bulk materials through suction via specific pipes. The material is transferred from a source to the process specified at the customer's end. The majority of these systems involve time-dependent transfer of the substance to vacuum receivers. At the end of this sequence, the discharge valve opens, and the material is conveyed into the process.

## Challenge

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A global food company approached Gansons for one of their processes wherein confined transfer from sifting to packaging was required for certain low bulk density ingredients. Previously, the company was performing manual operation to achieve this goal, which led to product wastage, physical intervention and ultimately affected the quality and packaged quantity of the final product.

## Project Aim

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The main aim of the customer was to achieve complete automation from sifting to packaging to prevent losses during material handling and reduce human intervention. Gansons proposed the use of a vacuum transfer system (VTS) wherein the entire process would be monitored via a programmable logic controller (PLC) for ease of operation.

## Gansons Solution

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Gansons designed the VTS system for the client by considering parameters such as substance bulk density, product type and characteristics, conveying distance, conveying rate, compatibility with material of construction of process equipment and room



dimensions of the work area. A pictorial representation of the vacuum transfer system supplied by Gansons is shown in Figure 1.

At the beginning of the process, the material is sifted and stored in an intermediate product container (IPC). Further, the material is transferred from IPC to two packing machine hoppers via food-grade pipes with the help of a single blower and diverter mechanism (Figure 2).

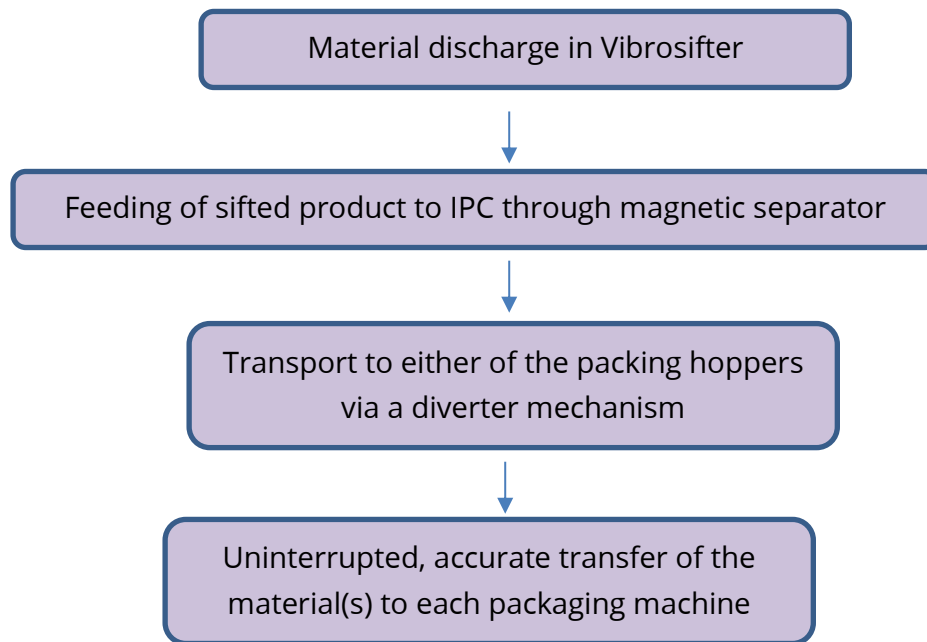
Level sensors were provided in IPC as well as in each hopper of the packaging machine to ensure continuous material movement for packing purpose without any manual intervention. A provision was also given in the program to operate a single packaging machine in case of breakdown or maintenance of either of the packaging machines.

Figure 1: Vacuum Transfer System Supplied by Gansons





Figure 2: Process Flow Diagram for Material Transfer System



Process automation resulted in 67% reduction in labour cost owing to the requirement of a single person for PLC operation. Additional advantages include accurate material dosing to downstream equipment, minimal wastage and low dust generation under hygienic conditions.

## Conclusion

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The use of Gansons material handling solution assisted the client in achieving complete process automation for the desired operation. Hence, the use of this system reduced errors, minimized wastage, reduced labour cost and decreased the risk of product contamination.

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