



CASE STUDY: Manufacturing of Nutraceuticals

HANDOUT

PROCESS DESCRIPTION

The client is a large and well-known supplier of nutraceutical products worldwide. The process includes systems for powder handling (such as conveying, dosing, feeding and discharging) feeding of blenders as well as feeding of the filling lines.

Customer requirements

- ⇒ 10 min cycle time – 15,000 kg/hr production capacity in two blender lines
- ⇒ Pneumatic feeding of 10 powder filling lines (two high speed filling lines, three double filling lines and five single filling lines)

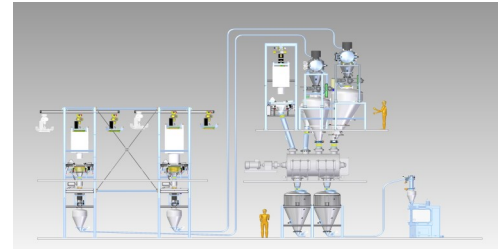


Fig: Example of a similar system for one blender line

PROCESS STEP 1: Scope of Supply for Blender Feeding and Super Sack Discharge

- ◆ 2 Super Sack Unloading Stations for Main Ingredient 1
- ◆ 2 Super Sack Unloading Stations for Main Ingredient 2
- ◆ 4 Pneumatic Conveyors ProClean Conveyor 700
- ◆ 2 Super Sack Unloading Stations for Minor Ingredients
- ◆ Weighing Hoppers
- ◆ 2 Blenders
- ◆ Piping, Wiring, Etc.
- ◆ 4 Super Sack Filling Stations
- ◆ Dedusting Units
- ◆ Controls

FUNCTIONAL DESCRIPTION

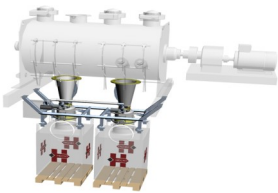


Fig right: Super sack filling

First the super sacks with main ingredients are unloaded. Afterwards the product is further transported to weighing, dosing units and several hoppers by means of the ProClean conveyor. For additional ingredients there is also a super sack unloading station installed above the blender. The next step is the charging of main ingredients and additional substances into the blenders. As a final step of the first process, the blenders are discharged after the product was mixed into super sacks.

PROCESS STEP 2: Scope of Supply for Charging of Filling Station

- ◆ 2 High Speed Filling Lines
- ◆ 3 Double Filling Lines,
- ◆ 5 Single Filling Lines
- ◆ 1 Big Bag Discharging Station per Filling Line
- ◆ 25 ProClean Conveyors of different sizes for feeding the Filling Lines

FUNCTIONAL DESCRIPTION

- ⇒ Discharging of finished products from super sacks (from blenders and fluid bed dryers)
- ⇒ Feeding of filling lines by keeping a constant product level using the ProClean Conveyors.

Fig High speed filling line

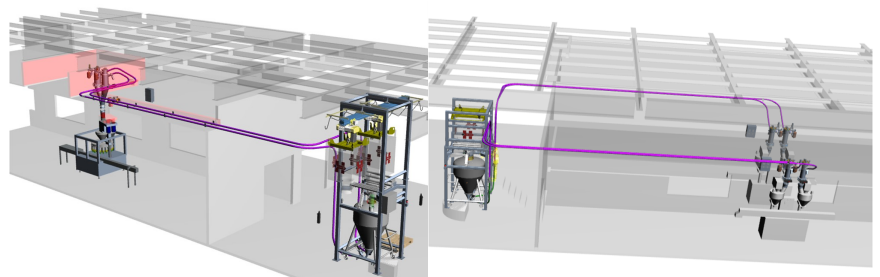


Fig: Double filling line