



Case Study

A Combination Weighing and Batching System at Novartis

The Company

Customer

The Pharmaceuticals Division
of Novartis

Location Beijing, China

Application

A combination weighing
and batching system

Industry

Pharmaceutical sector

Year 2009

Products

IF PharmaLine, Combics series,
Floor scales and CombicsPro

At present, Novartis in China has invested more than 330 million U.S. dollars and employs nearly 3,500 people in Beijing, Shanghai and other cities in China. In this country alone, Novartis has seven companies and an extensive R&D center. In 2008, Novartis earned over 33 billion yuan in total sales in China. At the same time, Novartis China has also actively promoted social welfare activities, and won a number of corporate social responsibility awards.



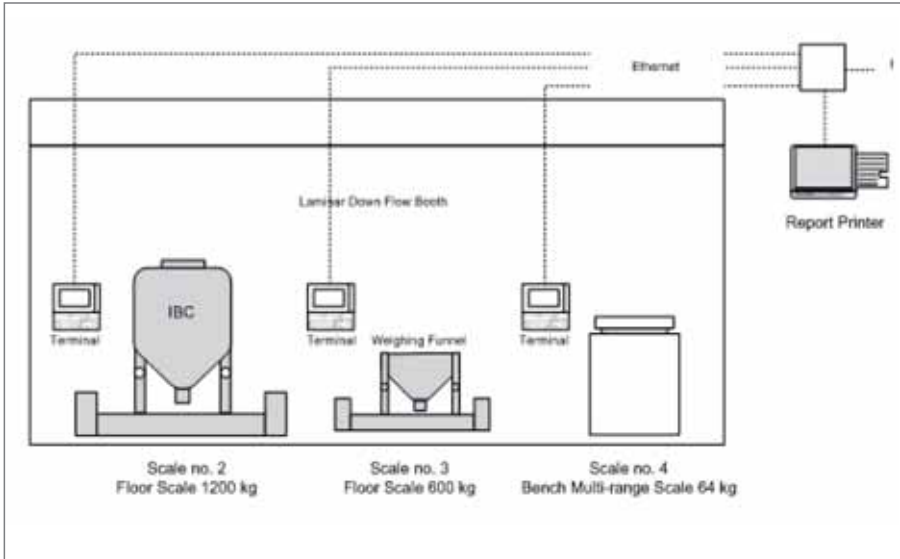
The process and requirement

In a pharmaceutical factory, weighing and batching are essential steps: different raw materials need to be weighed accurately, then mixed according to specific proportions. This requires a sophisticated weighing and batching system.

Novartis Beijing planned to add a batch production line to increase its output of artemisinin, which is used to cure malaria. Its requirements entailed a weighing system that could be later integrated into the company's network environment. The weighing system contemplated had to include a stainless steel scale with a 1,200 kg capacity and a 200 g readability, a stainless steel scale with a 600 kg capacity and a 50 g readability, and a high-resolution stainless steel with a 60 kg capacity and a 0.1 g readability. A perfect solution meeting all these requirements had to be found.

The previous batching system met the company's basic weighing needs, but, due to its relatively high platform and a slope of nearly 1 meter, required two workers together to push the hopper onto the scale for weighing. This not only took up considerable space, it also meant hard manual labor. Another disadvantage was that the hopper had to be lifted manually for removal. Because Novartis frequently weighs powder and the former scale had lots of corners or crevices where contaminants could collect, the scale was difficult to clean. We have to understand that the scale located in a cleanroom not only needs to meet accuracy requirements, but also withstand a strict cleaning regiment. The weighing instruments must be cleaned after each set of weighing tasks that are specific for an individual job order has been completed in order to avoid contamination of subsequent orders by accidental transfer

of materials. The underside of the scales and the bottom of the pit or floor below the scale must be cleaned because these are more prone to contamination.

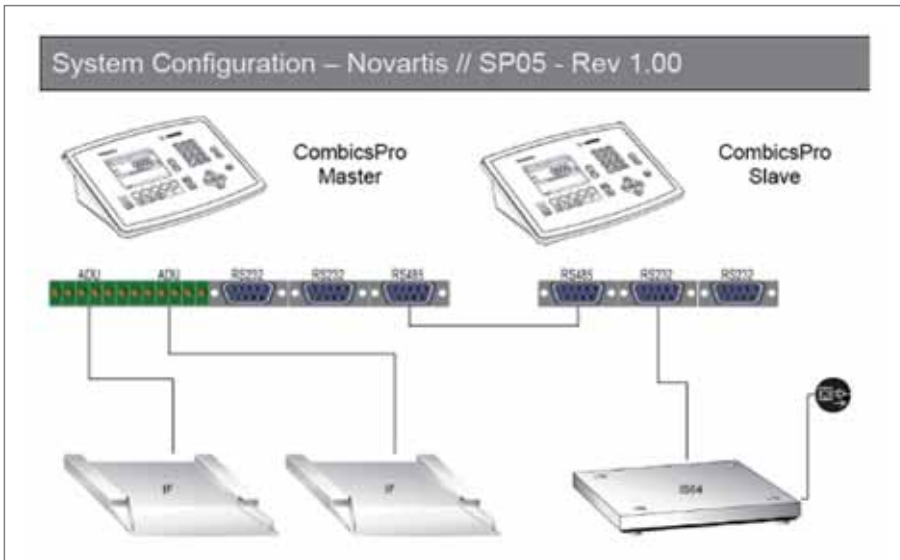


Weighing System in Dispensing Department

The solution

Sartorius sales and technical experts made a deep impression on the Beijing Novartis Pharmaceutical's technical experts. After studying the Novartis "User Requirements Specification" file and its process, Sartorius specialists offered Novartis a combination weighing and batching solution that was approved by the manager of the Engineering Department at Novartis.

- IF PharamLine with a capacity of 1,200 kg and a readability of 200 g and one with a capacity of 600 kg and a readability of 50 g; both feature a low profile specially designed for the pharmaceutical industry
- Combics series scale with a capacity of 60kg and a readability of 0.1 g
- Scales with a capacity of 1,200 kg and 600 kg use a CombicsPro controller.
- Scales with a 60 kg capacity and an additional Combics Pro controller.
- Two CombicsPro can be connected via the RS-485 interface.



Sartorius solution



Low profile with 25 mm platform

Indicator on the stainless steel wall



Photo taken on site after installation and commissioning of the system

Conclusion

Sartorius designed and installed a combination weighing and batching system featuring a low-profile, 25 mm high stainless steel platform. This makes it so much easier for one worker, instead of the former two, to move the hopper onto the scale. The lift-deck system on the IF PharmaLine has ideal features that facilitate thorough cleaning: open frame design for easy cleaning and disinfection; corners and crevices are minimized to eliminate areas where bacteria can collect; large platform equipped with a gas-pressure actuated lift-deck system to permit effortless cleaning underneath the platform. Moreover, as we know very strict hygiene regulations are applied in the pharmaceutical and medical device industries, Sartorius offered Novartis stainless steel scales with an electropolished surface finish. The reason is that these smooth surfaces on the scale are easy to keep clean. Electropolishing meets the strictest hygiene requirements, because electropolished

surfaces are so smooth that neither micro-organisms nor the residues they use as nutrients can take hold. Moreover, the scales' electropolished finish is highly corrosion-resistant and can withstand even the most aggressive cleaning agents used in sterile environments. Most important, the Sartorius combination solution gives Novartis an automatic batching system in reserve, as the Combiics Pro updated with batch management software enables automated batching in the future.

"I've never seen such advanced floor scales and indicators with a batch management system. Now for us, work is a pleasure," said Mr. Wei Lei, who is the senior engineer responsible at Novartis for measurements at the company's workshop



Ideal IF PharmaLine lift-deck system

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