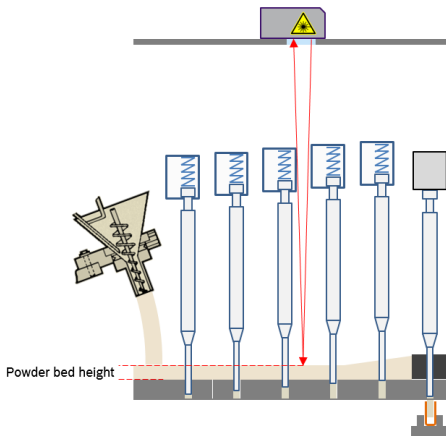


FDA requirement: safe, reliable and robust production.

SYNTEGON SOLUTION

The PAT Classic is integrated in the new capsule filling platform GKF 720. The following explains the features of Process Analytic Technology.

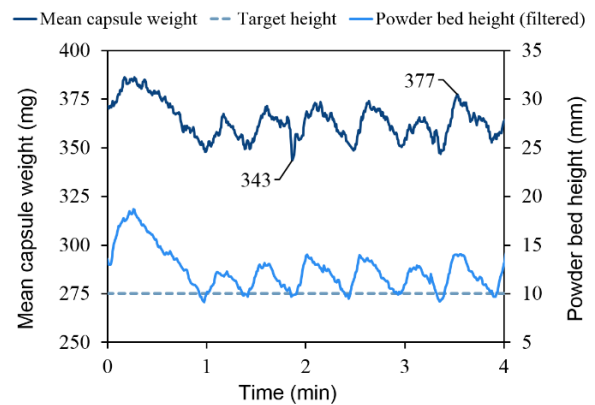
POWDER BED HEIGHT MONITORING



Schematic of the laser measurement of powder bed height. Delivers the possibility to directly monitor the powder bed height.

Option: Automatic regulation of powder bed height (through auger speed) and thereby improvement of filling weight accuracy.

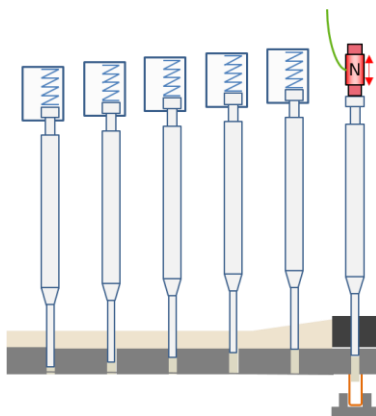
- Detailed insight into powder bed height, which is a critical process parameter
- Sensor outside of the product area
- Simplifies process development



An example of the influence of powder bed height. In this special application (low powder bed height, bad flowing product) the powder bed level needs to be controlled accurately to ensure a good filling process.

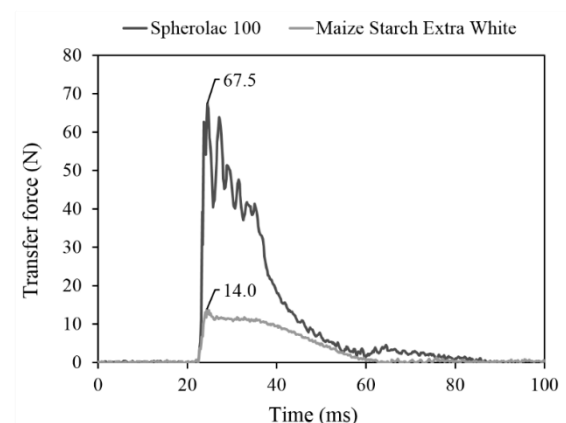
- Increases yield, reduces product waste during the machine start-up
- Easily adjustable refill strategy for powder

TRANSFER-FORCE DETECTION



Schematic of the transfer force measurement. With this option, transfer forces can be measured in both directions: Positive force needed to push the powder plug out of the dosing disk and negative force to pull the pin back into its upper position.

- Sensor for process monitoring
- Data mining (batch report)
- Supports formulation development
- Adjustment and identification of critical process parameters

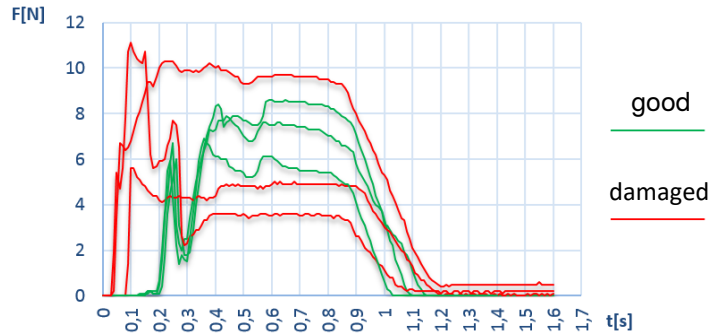


Transfer forces of two excipients, maize starch and lactose. One shows a significantly higher transfer force. In both experiments, the same process parameter settings were used.

- Helps optimize the formulation
- Detection of sticking and accumulating product in dosing bores and on transfer pins
- Increases machine safety: Automatic alert when exceeding a critical transfer force

Our focus is on your product. Our solutions for your filling needs.

CLOSING-FORCE DETECTION



Examples of capsule defects:

1. Dimples in capsule body
2. Capsule slicer
3. Parts of capsule cap flipped to the inside
4. Parts of capsule cap broken off

Different measured closing forces.

Green: Capsules with no defect.

Red: Capsules with closing defect.

By analyzing 100% of the closing forces, deviations from "good" classified capsules can easily be identified (e.g. spliced capsules)

Statistical monitoring of the closing process
Ejection of capsules that are out of closing force range

Technical data GKF 720

Output	43.500 capsules/h
Segment bores:	5
Machine cycles	Max. 140 cycles/min
Dosing systems	Powder, Pellet, (Micro-)Tablet, Micro- dosing, Liquids, Combinations



More Questions?

You also have processes for optimization?

Please contact us. Our "Engineering Pharmaceutical Service" team will be available with all our experience of over 50 years:

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