

## APPLICATION SOLUTIONS

**Subject:**

Production of double layer dental cleaner effervescent tabs which runs on a KILIAN RX tablet press with 1.800Tabs/h

**Goal:**

Increased machine output speed on a KILIAN Synthesis 700 2G (estimated average output speed for different products 2.000Tabs/h)

**Challenge / conditions:**

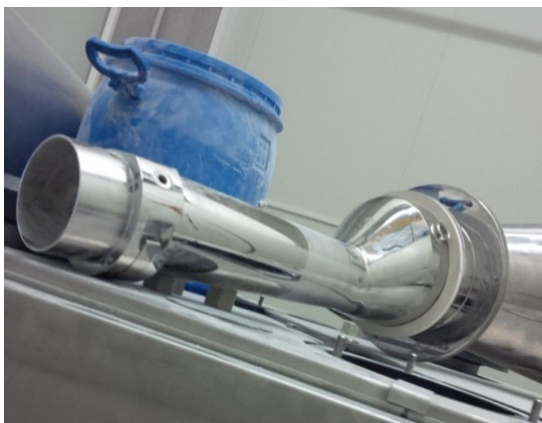
**Powder characteristics:**

- Moisture sensitive product
- Poor flowability of the powder
- Abrasive powder
- Clean separation between both layers

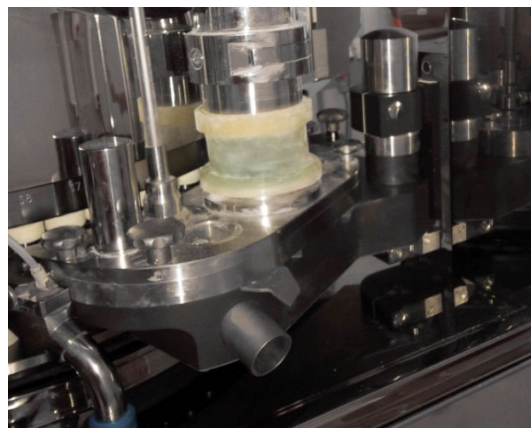
**KILIAN design proposal:**

**Material and design adapted to product:**

- Special conical feeding tube
- Modification on lower part of fill shoe housing with special inlet
- Fill shoe with customized paddle wheel
- Separate speed adjustment of paddle wheels
- High rotation speed of paddle wheels
- Modification on upper part of fill shoe housing for better venting
- Special tool design with bounded dies
- Custom control and catcher cam at lower cam track
- Special parameters for torque drive



*Conical filling tube for better product flow*



*Fill shoe with chimneys for better de-aeration*

**Result:**

Trials were done on a Synthesis 700 2G in bi-layer configuration equipped with a special 55 station turret, bounded dies and F441 punches. The tablet diameter was 23.8mm, 17°C room temperature and humidity under 20%. We run the machine with 1.0kN PP, 8.0kN MP on PS1 and 37kN PP, 70 to 80kN MP for the final compaction. The relative standard deviation for the main compaction force was between 2-3%. With these settings we achieve up to 2.500Tabs/h using a custom 6mm fill cam.

**Additional applications:** Any moisture sensitive, poor flowing, double layer products.