CCS series | Contained Compaction System
Dry Granulation

Leading Particle Processing Technologies

The Fitzpatrick Company
The CCS Roll Compaction Series from Fitzpatrick

The Fitzpatrick Chilsonator™ is the Ideal Roll Compaction System for Dry Granulation Pharmaceutical Powders

→ **Improve Compact Uniformity & Density**
  Minimize the degree of ungranulated material to improve downstream powder flow characteristics with a unique pre-compression feed system and precision real-time roll gap control

→ **Enhance Operator Safety & Product Containment**
  Best-in-class containment features, including WIP (wash-in-place) capabilities and in-wall designs, helps achieve full containment with minimal investment

→ **Minimize Maintenance & Production Downtime**
  Fewer parts with easy access for teardown and cleaning, lead to faster changeovers and a simplified parts inventory

→ **Accelerate Scale-Up & Reduce Development Costs**
  Fitzpatrick’s application expertise, lab capabilities, support services and scalable equipment parameters ensures faster and more reliable development and scalability
**Improve Compact Uniformity & Density**

**Independent, Two-Screw Feed Design**

- **Eliminates the need for vacuum deaeration**
  Independent pre-compression screw removes air from most powders prior to the compaction process.

- **Reduces ungranulated bypass**
  Separate speed control of the pre-compression screw leads to more uniform density and minimizes the degree of ungranulated material passing through the compaction zone without the need for higher roll forces.

**Innovative Compaction System**

- **Improves compact uniformity and density**
  Real-time roll gap feedback control and precision parallel floating rolls ensure a more uniform compact for improved downstream particle flow.

- **Enhances continuous process stability and scalability**
  Direct roll force measurement with integrated load cell and PID control loop allows for a more accurate and repeatable compact density.

**Optimized Granulation Process**

- **Controls particle size distribution and minimizes fines**
  A greater degree of rotor/screen designs allows for an optimized milling process, leading to tighter PSD ranges.

- **Handles a wider range of powders**
  The selection of milling options also allows for the handling and optimization of a wide range of applications, including even the hardest compacts.

**Bar rotor for slow-speed "crushing" of compact**

**Knife rotor for "in air" impact of harder compacts**
The CCS Series is designed to fully contain all product in the processing and receiving sections of the machine. This tightly sealed design allows for the optional product containment system (PCS) to be added at the discharge. The PCS draws a slight vacuum in the process environment to provide maximum containment.
Optional WIP System
(Wash-in-Place)
CCS SERIES | Contained Compaction System

Minimize Maintenance & Production Downtime

→ Fewer parts to remove during production cycles, allowing for:
  • Faster Changeover
  • Faster Cleaning
  • Less downtime
  • Less inventory for maintenance parts

→ Easy roll shell removal

→ Hydraulic system spreads rolls for cleaning

→ Double lip seal ensures technical area remains sealed while primary seal is removed for cleaning

→ Components conveniently disassemble from the machine or can be removed as a unit for remote disassembly

→ Fully automated controls
  • Automatic operation of all components from the operator interface
  • Fully instrumented with convenient display
  • Batch reporting, historical trending and event logging
  • 21 CFR part 11 capable (optional)
  • Multiple levels of password security
With our industry-leading compaction technology and application expertise, Fitzpatrick is the ideal partner at every stage, from preliminary analysis to full production.

- **Our lab service assists in determining if your product is a candidate for roll compaction**

- **Preliminary analysis covers several variables, including moisture tests and pressure vs. density curves**

- **We offer CCS220 rental units or in-house Lab Services to help optimize the compaction process parameters for your powders**

- **The CCS220 is ideal for pilot validation and easily scales to larger production units**

- **All CCS units offer the same diameter rolls, allowing for a more reliable scale-up to a production model, either a CCS720 or CCS1025**

- **Fitzpatrick offers extensive validation and qualification services**

- **Worldwide support ensures your process will keep running to specification**