Allrounder for production-related galenics

102i

www.fette-compacting.com
A variety of filling options available
– Three-chamber Fill-O-Matic
– Open feed frame
– Automatically rotating filling wheel for multi-layer
– Manual filling

Compacting with only a single pair of punches possible
+ Telemetry punch option available
+ Determination of singular data

+ Capturing of all production-relevant data
+ User software (interface) identical to that of tablet presses for production
+ Galenic software with force-way diagram

+ Tablet press for clinical samples and small batches

TECHNOLOGY stands for everything we offer in production technology – from tablet presses and capsule filling machines through process equipment to tableting tools and format parts.

SERVICE covers all the services related to machines, process equipment and installations such as spare parts supply, plant modernization and technical field service department.

COMPETENCE is the overarching idea behind all our process-related services. This includes training, product trials, application and Performance Consulting as well as engineering.
Do you want to quickly move new products from development to industrial production? Then the 102i by Fette Compacting is the perfect choice for you. Do you want to test your formulas under production conditions, compress small batches or create clinical samples? The 102i can be changed over to the entire functional spectrum – including the option of producing 2-layer and 3-layer tablets. All of the galenic results can be transferred 1-to-1 to serial production, eliminating the need for costly scaling-up.

If you want to take the next step, the 102i offers you unique security on your investment due to its basic design. It can easily be converted to a 1200i production machine without difficulty.

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### FEATURES

<table>
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<th>Gallenic data under production-like conditions</th>
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<td>Process-oriented laboratory press</td>
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<td>Pitch circle and compression roll diameter</td>
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<td>2- and 3-layers can also be pressed in laboratory scale</td>
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<tr>
<td>Only very small quantities of material are needed with manual filling</td>
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<td>User interface identical to the one for tablet presses</td>
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<td>A variety of filling options can be used</td>
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<td>Upgradable to 1200i</td>
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<td>Combined B and D turret</td>
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### BENEFITS

<table>
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<th>Direct scale-up</th>
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<tr>
<td>Production parameters can be directly transferred to tablet presses</td>
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<tr>
<td>Reduced scale-up costs</td>
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<td>Dwell times transferable to tablet presses</td>
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<td>Determination of singular data</td>
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<tr>
<td>Galenic results also applicable to bi- and triple-layer rotary presses</td>
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<tr>
<td>Saving of expensive products during preliminary tests</td>
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<tr>
<td>Easy handling because user is already familiar with the operating system</td>
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<tr>
<td>Adaptable to every Galenic or production task</td>
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<tr>
<td>Wide range of applications</td>
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<tr>
<td>Utilization as tablet press</td>
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<tr>
<td>Maximum tablet flexibility</td>
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Galenic under production-like conditions replaces the scale-up

Galenic on a tablet press reduces the time to market

- The 102i is oriented from the very beginning towards industrial production
- Conventional Galenic work often takes classical steps, demanding a great deal of time and resources

Basic design of 102i identical to the 1200i tablet press

- Galenic data can be adopted on all Fette Compacting tablet presses
- Identical feeding and filling equipment
- Granulate can be supplied and filled under production conditions
- Identical dwell time
- Same Measurement of the main compression force on all Fette Compacting machines

Tableting technology reduced to the functions that are most important for Galenic work

- Optimal cost-performance ratio

Optimal operation characteristics

- Access and cleaning from four sides through wide-opening window flaps – fast, time-saving refitting
- User-friendly operating panel with integrated 15" touchscreen
- Screen-driven operation with a clear structure for intuitive learning

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**Diagram:**

- **Galenic tests determined optimal production parameters**
- **Scaling-up to 2090i**
  - Simple, calculable, No further tests required
- **Optimal circumferential speed**
- **Revolutions per minute with v=constant**
- **Revolutions per minute 102i**
- **3090i**
- **2090i**
- **102i**

**Scaling-up**
**Variable turrets for different application areas**

- Tablet press can be set up with an exchangeable die or segment turret – maximum flexibility and optimum time-saving
- 12 different turrets with 6 to 45 punch stations
- Turrets can be used for development or small production quantities such as clinical batches
- Turrets identical to those used in production process
- Production press

**Compacting with only a single pair of punches**

- If only one pair of punches is fitted, the filling of the die can be done either manually or automatically. Exactly after one revolution, all recorded measuring points are displayed and evaluated on the operating computer (HMI)
- In case of manual filling only very small quantities of pressing material are needed

**Data evaluation under production-like conditions**

- Direct force flow vertical to the force transducer
- Calibrated pressure force transducer for maximally precise measurements
- Extremely precise determination of punch position using an encoder

**Complete upgrade to a tablet press possible**

- Production of small batches

**NIR technology**

- Can optionally be fitted with a sensor holder for NIR to determine the content uniformity of each single tablet
- Preparation of tablets for NIR calibration models under real production conditions
- Improved production processes through transferable analytical results

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**Manual filling for single punch compression**
The Galenic Package

+ Up to 8 measuring channels possible, 5 channels are fitted to display the force progression of: main compression force, pre-compression force, ejection force, upper and lower punch tightness

+ Display of all punches in a full rotation – comprehensive, punch-specific summary

+ Optional punch graph and statistics for each individual punch – comprehensive information about each individual punch and the associated forces

+ Force progressions accurately assigned to each punch by means of encoder and calculation of the vertical punch positions – precisely comprehensible values

+ Force-way diagram of main and pre-compression force for each punch and for each rotation of every punch – detailed display of values

+ Calculation of the mechanical work per tablet

+ Zoom function for x and y displays – examination of values in detail

+ Data export as CSV file

+ Evaluation of exported CSV data via Galenic-Excel-Macro on press-independent computers

+ Comparison of up to 10 different data records possible

+ Optional data export and import via storage media or network – improved supplementary data evaluation

+ Automatic encoder null position adjustment – easy operation

+ Printing via external printer – all results, tables and graphs can be printed
World-wide unique multi-layer compression

+ Optional fitting with a Galenic Fill-O-Matic with up to 50% reduced volume

+ With the proven three-chamber system small quantities can be compressed automatically

+ Fill-O-Matic with sealing segments for different tablet diameters that can be changed without tools – easier refitting – minimized product loss

+ Compression of bi- and triple-layer tablets with automatically rotating filling wheel – small quantities for galenic research can be pressed automatically – unique on the world market

+ For multi-layer tablets, the ejection cam is automatically positioned before the last pressing procedure – complete, patented procedure for multi-layer tablets – automatic ejection, even of multi-layer tablets

+ Single-tablet pressing with manual filling – very small quantities can be pressed under production-like conditions

Triple-layer compression
The Press Structure

+ Ease of access – large window flaps on all four sides
+ Unique sealing concept – exchangeable double-lipped seals

+ Modular design with separation into four sections
  – head section
  – compression compartment
  – middle section
  – drive area

+ Reduced noise emission
+ Low space requirement
+ Very compact construction

+ Hermetically sealed electrical cabinet integrated into the press

+ Encapsulated compression area – reduced noise and dust
+ Smooth surfaces – easily cleaned
+ Can be upgraded to a 1200i without any major modifications

+ Optimized mechanical strength – FEM-calculated
  + Extremely robust, vibration-damping housing

+ Direct torque drive
  + Torque drive assembled directly to the drive shaft – no gears – maintenance-free
+ Power consumption reduced up to 50 %

+ Precision turret mounting – exchangeable turret design for dies and segment turrets
  + Turrets identical to those on tablet presses

+ Hermetically sealed electrical cabinet integrated into the press

+ Modular design with separation into four sections
  – head section
  – compression compartment
  – middle section
  – drive area

+ Reduced noise emission
+ Low space requirement
+ Very compact construction
Proven and reliable technology, integrated control

Standards and optional fitting adopted from tablet presses

+ Adjustment of main compression via an eccentric unit above and a servo motor below – easy adjustment
+ Upper pre-compression set through manually adjusted cam segment – improved tablet properties – visible setting
+ Optional pre-compression station for a development process identical to production
+ Optional dust extraction unit
+ Optional tablet chute with reject gate
+ Ejection force measurement for single-, bi-, and triple-layer tablets
+ Optional lubrication pump with motor
+ Can be fitted with almost all features of a 1200i – can be upgraded to a tablet press
+ Optional Fill-O-Matic with proven three-chamber system

Integrated control unit

+ Hermetically sealed electrical cabinet integrated into the tablet press, controller in the press
  – no extra electrical cabinet required
  – very low space requirement
  – dust-proof setup, GMP-conformance
+ Direct control of all motor driven adjustments on the tablet press – fast reaction
+ Highly sensitive measurement points
  – high-speed data transfer to the evaluation unit and operator interface via TCP/IP
Dimensions

Connection for vacuum cleaner 400–600 m³/h

Air inlet

Machine 2020 kg

Terminal

Option:
Connection for vacuum cleaner on rear

Foundation loading 20 kN

Cable L = 3 m

Cable inlet

Mains

Option:
Service care 190 kg

Main 400/440/480 V – 50/60 Hz

Anschluss
4 x 6 mm² – on floor
4 x 10 mm² – cable conduit
## Technical Data

<table>
<thead>
<tr>
<th>Die (D) / Segments (S)</th>
<th>D</th>
<th>D</th>
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<td>16 (8+8)</td>
<td>16 (8+8)</td>
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<td>Punch type</td>
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<td>FS19® / EU19</td>
<td>FS19® / EU19</td>
<td>EU1®</td>
<td>EU1® / EU1®-441</td>
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<td></td>
<td>TSM1®</td>
<td>TSM1®</td>
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<td>Tablet output units/h</td>
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<tr>
<td>min.</td>
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<td>9,000</td>
<td>24,000 (12,000)</td>
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<td>max.</td>
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<td>Max. compression force 1*</td>
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<td>Max. compression force 2*</td>
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<td>Max. tablet diameter</td>
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<td>Max. filling depth 1st layer</td>
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<td>Pitch circle diameter</td>
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<td>Turret rotation speed min.</td>
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<td>max. (laboratory operation)</td>
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<td>Die-/segment height</td>
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<td>Punch shaft diameter</td>
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<td>Punch length Upper/lower punch</td>
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<td>Upper punch insertion depth</td>
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<tr>
<td>Dimensions</td>
<td>mm</td>
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<tr>
<td>Weight</td>
<td>kg</td>
<td>Tablet press 1,700 – 2,500 kg, operating terminal 100 kg</td>
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<tr>
<td>Electrical supply parameters</td>
<td></td>
<td>Operating voltage 400 – 480 V, 50/60 Hz, power consumption 8.4 kW</td>
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</tbody>
</table>

Theoretical values or technical limits: These can vary in practice, according to product and application.
Tablet thickness is a size dependent on product and can strongly vary.
* limited by punch properties; ** multi-layer-operation

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<td>FS19*/EU19 FS*/EU19 TSM19 B</td>
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