Fette Compacting

New P Series

www.fette-compacting.com
www.fette-compacting.cn
Fette Compacting – be efficient!

** Tradition and knowledge**
Fette Compacting, founded in 1908, is the world’s leading provider of integrated solutions for industrial tablet production. The product portfolio offered by the technological and global market leader has been supplemented to include highly efficient capsule filling machines. The company specializes in high-performance machines for the pharmaceutical industry. The company’s head office and global control centre is in Schwarzenbek near Hamburg. Fette Compacting is represented across the globe in more than 40 countries.

Fette Compacting is the only manufacturer of tablet presses, capsule filling machines and tableting tools, operating a global competence network with five fully-equipped and digitally-networked Competence Centers in Germany, the USA, Brazil, India and China. Here customers employees are trained and can perform basic and product trials together with Fette Compacting experts. They can acquire the sort of practical know-how that enhances production safety.

Fette Compacting is part of the LMT Group – a medium-sized, family-owned group of companies. The group also includes LMT Tools, a leading manufacturer of precision tools for industrial processing of construction materials, and the LMT Finance & Shared Services, which is responsible globally for the company’s central functions.

**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.
Fette Compacting recognized the opportunities for internationalization at an early stage. The company has been represented by its own subsidiary company in China since 2004.

All the machines are made in accordance with German standards, and satisfy the specifications of the American FDA (Food and Drug Administration) regulation authority, as well as the requirements of the international cGMP (Current Good Manufacturing Practices). Fette Compacting delivers installations with computer-supported controller that meet the requirements of Title 21 CFR Part 11 (Code of Federal Regulations of the FDA) for electronic documentation.

New P Series: Perfect combination of efficiency and quality
Combining cost-orientation with precision, quality and safety was the guiding principle during development of the P1010, P2020 and P3030 tablet presses manufactured by Fette Compacting in Nanjing. All three machines comply with the regulatory requirements in accordance with cGMP and FDA, are easy to operate and permit flexible production as well as fast format changes. Thanks to a wide range of process equipment, the plants can be optimally adapted to customer requirements. Production output by the P2020 single rotary tablet press accounts for more than 300,000 tablets per hour. With more than a million tablets per hour, the P3030 double rotary tablet press is the fastest machine in its price class. P1010, the latest member of P Series with output more than 200,000 tablets per hour, is ideally suitable for small batch production of mono-layer tablets.
P1010
Upgrade Features
+ New design & functionality
+ Full stainless steel terminal, easy to clean
+ Optimized dust collection system
+ Metal handle for easy cleaning and durability
+ System integration of deduster and in process control
+ On-line tablet weight monitor & control function
+ MES system support

Structure
+ Modular design with enclosed compression area to avoid the risk of cross-contamination, in compliance with cGMP regulations
+ Maximum operating safety
+ Robust design ensure consistent accuracy even over long periods of high pressure
+ Quick-connect for easy disassembly of components, easy for maintenance and repair
+ Full accessibility to the compression zone – double layer window flaps on all four sides

Exchangeable Turret
+ Turret is made in Germany, super precision
+ Highest level of format flexibility
+ Highest output by selecting the most suitable turrets according to different product size
+ Design-patented turrets can be interchanged with cams and tools
+ Significant reduction of down-time by using extra turret complete with cams and toolings
+ Rich options for turret changing are available

Fill-O-Matic
+ Unique three chamber filling system, more than 40 years experience on it
+ Metering wheels can increase powder flowability and uniform density
+ Filling wheels and dosing wheels can precisely fill and dose powder
+ Different options for products with poor flowability, and for minimal product loss

Compression station
+ Main compression roller and pre-compression roller are same size (250 mm, exchangeable)
+ All compression roller are independent mounted, main compression station can offer 80*KN force maximum
+ Roller is made in Germany with special material and technology, longer lifetime

Tablet discharge
+ Each discharge chute includes good tablet channel and reject tablet channel
+ Optional air sorting system, reject single tablet precisely, reduce the product loss
+ Optional sampling gate, easy to take sample and check tablet quality

Electronic control
+ Equipped with advanced VME-bus control system and top class electrical parts, faster and more stable
+ Professional software developed by Fette Compacting, verified by a lot of customers including many MNCs.
+ Ergonomical HMI consisting of a large touch screen, screen-guided interface simplify the operation
+ Structured diagnostic messages for troubleshooting
+ Support FDA 21 CFR Part 11

* Subject to product properties
Upgrade Features
+ New design & functionality
+ Full stainless steel terminal, easy to clean
+ Optimized dust collection system
+ Metal handle for easy cleaning and durability
+ System integration of deduster and in process control
+ On-line tablet weight monitor & control function
+ MES system support

Structure
+ Modular design with enclosed compression area to avoid the risk of cross-contamination, in compliance with cGMP regulations
+ Maximum operating safety
+ Robust design ensure consistent accuracy even over long periods of high pressure
+ Quick-connect for easy disassembly of components, easy for maintenance and repair
+ Full accessibility to the compression zone – double layer window flaps on all four sides

Exchangeable Turret
+ Turret is made in Germany, super precision
+ Highest level of format flexibility
+ Highest output by selecting the most suitable turrets according to different product size
+ Design-patent turret can be interchanged withcams and tools
+ Significant reduction of down-time by using extra turret complete withcams and toolings
+ Rich options for turret changing are available

Fill-O-Matic
+ Unique three chamber filling system, more than 40 years experience on it
+ Metering wheels can increase powder flowability and uniform density
+ Filling wheels and dosing wheels can precisely fill and dose powder
+ Different options for products with poor flowability, and for minimal product loss

Compression station
+ Main compression roller and pre-compression roller are same size (250 mm, exchangeable)
+ All compression roller are independent mounted, each can offer 100 KN force maximum
+ Roller is made in Germany with special material and technology, longer lifetime

Tablet discharge
+ Each discharge chute includes good tablet channel and reject tablet channel
+ Optional air sorting system, reject single tablet precisely, reduce the product loss
+ Optional sampling gate, easy to take sample and check tablet quality

Electronic control
+ Equipped with advanced VME-bus control system and top class electrical parts, faster and more stable
+ Professional software developed by Fette Compacting, verified by a lot of customers including many MNCs
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Upgrade Features
+ New design & functionality
+ Full stainless steel terminal, easy to clean
+ Optimized dust collection system
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+ System integration of deduster and in process control
+ On-line tablet weight monitor & control function
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Structure
+ Modular design with enclosed compression area to avoid the risk of cross-contamination, in compliance with cGMP regulations
+ Maximum operating safety
+ Robust design ensure consistent accuracy even over long periods of high pressure
+ Quick-connect for easy disassembly of components, easy for maintenance and repair
+ Full accessibility to the compression zone – double layer window flaps on all four sides

Exchangeable Turret
+ Turret is made in Germany, super precision
+ Highest level of format flexibility
+ Highest output by selecting the most suitable turrets according to different product size
+ Design-patented turrets can be interchanged with cams and tools
+ Signifisant reduction of down-time by using extra turret complete with cams and toolings
+ Rich options for turret changing are available

Fill-O-Matic
+ Unique three chamber filling system, more than 40 years experience on it
+ Metering wheels can increase powder flowability and uniform density
+ Filling wheels and dosing wheels can precisely fill and dose powder
+ Different options for products with poor flowability, and for minimal product loss

Compression station
+ Main compression roller and pre-compression roller are same size (250 mm, exchangeable)
+ All compression roller are independent mounted, each can offer 100 KN force maximum
+ Roller is made in Germany with special material and technology, longer lifetime

Tablet discharge
+ Two tablet discharge chutes
+ Each discharge chute includes good tablet channel and reject tablet channel
+ Optional first-layer sampling system and sampling gate, easy to check tablet quality
+ Optional air sorting system, reject single tablet precisely, reduce the product loss
+ Optional sampling gate, easy to take sample and check tablet quality

Electronic control
+ Equipped with advanced VME-bus control system and top class electrical parts, faster and more stable
+ Professional software developed by Fette Compacting, verified by a lot of customers including many MNCs
+ Ergonomical HMI consisting of a large touch screen, screen-guided interface simplify the operation
+ Structured diagnostic messages for troubleshooting
+ Support FDA 21 CFR Part 11
## Technical Data

<table>
<thead>
<tr>
<th>P1010</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Die (D)</strong></td>
<td>D D D D</td>
</tr>
<tr>
<td><strong>Number of punch stations</strong></td>
<td>32 30 24 20</td>
</tr>
<tr>
<td><strong>Punch type</strong></td>
<td>EU19 (TSM19) BBS EU19 (TSM19) BB EU19 (TSM19) B EU1*/EU1*-441 (TSM 1*) D</td>
</tr>
<tr>
<td><strong>Tablet output/h</strong></td>
<td>min. 28,800 27,000 21,600 18,000 max. 230,400 216,000 172,800 120,000</td>
</tr>
<tr>
<td><strong>Max. compression force</strong></td>
<td>kN 80* 80* 80* 80*</td>
</tr>
<tr>
<td><strong>Max. pre-compr. force</strong></td>
<td>kN 60 60 60 60</td>
</tr>
<tr>
<td><strong>Max. tablet diameter</strong></td>
<td>mm 11 13 16 25</td>
</tr>
<tr>
<td><strong>Max. filling depth</strong></td>
<td>mm 18 18 18 22**</td>
</tr>
<tr>
<td><strong>Max. tablet thickness</strong></td>
<td>mm 8.5 8.5 8.5 8.5</td>
</tr>
<tr>
<td><strong>Pitch circle diameter</strong></td>
<td>mm 280 280 280 280</td>
</tr>
<tr>
<td><strong>Die table rotation speed</strong></td>
<td>mm⁻¹ min. 15 15 15 15 mm⁻¹ max. 120 120 120 100</td>
</tr>
<tr>
<td><strong>Die diameter</strong></td>
<td>mm 22 24 30.16 38.1</td>
</tr>
<tr>
<td><strong>Die height</strong></td>
<td>mm 22.22 22.22 22.22 23.8</td>
</tr>
<tr>
<td><strong>Punch shaft diameter</strong></td>
<td>mm 19 19 19 25.35</td>
</tr>
<tr>
<td><strong>Punch length</strong></td>
<td>mm 133.6 (133.35) 133.6 (133.35) 133.6 (133.35) 133.6 (133.35)</td>
</tr>
<tr>
<td><strong>Upper punch penet. depth</strong></td>
<td>mm 1–4 1–4 1–4 1–4</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>mm 900 × 1,163 × 1,888</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>Tablet press approx. 2,000 kg, operating terminal approx. 100 kg</td>
</tr>
<tr>
<td><strong>Electrical supply data</strong></td>
<td>Operating voltage 380 – 480 V, 50/60 Hz, power consumption 10 kW</td>
</tr>
</tbody>
</table>

The achievable tablet output is subject to parameters such as the characteristics of the product, the other machine settings and the environmental conditions.

* Subject to product properties
** Application with filling cans ≥22 mm require special attention, especially for high filling depths.

To ensure max. performance and operation safety, special tooling or measures might be required.
The quality requirements for tablet production are constantly increasing. Process equipment from Fette Compacting ensures that your production fully complies with the applicable regulations and effectively reduces the workload of your staff. Extensive automation of all process steps reduces manual intervention and provides for excellent tablet quality.

Your advantages: maximum reliability, the highest quality and efficiency in tablet production.

**Weightmaster 6.2P**
- Fully automatic measurement of tablet weight
- Automatic feedback to Fette Compacting tablet press with stop function
- Precise monitoring of tablet weight within freely adjustable stop limits
- Documented tablet inspection results in your batch report
- 21 CFR Part 11 compliant operation via the operator and password management on the Fette Compacting HMI (Human Machine Interface)
- GMP-compliant design

Optional accessories and process equipment

Handling system  Deduster stand-alone or with metal detector  PKB-II  Tableting Tools
### P2020

<table>
<thead>
<tr>
<th>Die (D)</th>
<th>D</th>
<th>D</th>
<th>D</th>
<th>D</th>
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<tr>
<td>Number of punch stations</td>
<td>47</td>
<td>43</td>
<td>36</td>
<td>30</td>
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<td>Punch type</td>
<td>EU19</td>
<td>EU19 (TSM 19)</td>
<td>EU19 (TSM 19)</td>
<td>EU1*/EU1*,-441 (TSM 1*)</td>
</tr>
<tr>
<td>Tablet output/h</td>
<td>min.</td>
<td>42,300</td>
<td>38,700</td>
<td>32,400</td>
</tr>
<tr>
<td></td>
<td>max.</td>
<td>338,400</td>
<td>309,600</td>
<td>259,200</td>
</tr>
<tr>
<td>Max. compression force</td>
<td>kN</td>
<td>100*</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Max. pre-compr. force</td>
<td>kN</td>
<td>100*</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Max. tablet diameter</td>
<td>mm</td>
<td>11</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Max. filling depth</td>
<td>mm</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Max. tablet thickness</td>
<td>mm</td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
</tr>
<tr>
<td>Pitch circle diameter</td>
<td>mm</td>
<td>410</td>
<td>410</td>
<td>410</td>
</tr>
<tr>
<td>Die table rotation speed</td>
<td>mm⁻¹ min.</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>mm⁻¹ max.</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Die diameter</td>
<td>mm</td>
<td>22</td>
<td>24</td>
<td>30.16</td>
</tr>
<tr>
<td>Die height</td>
<td>mm</td>
<td>22.22</td>
<td>22.22</td>
<td>22.22</td>
</tr>
<tr>
<td>Punch shaft diameter</td>
<td>mm</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Punch length</td>
<td>mm</td>
<td>133.6</td>
<td>133.6 (133.35)</td>
<td>133.6 (133.35)</td>
</tr>
<tr>
<td>Upper/lower punch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper punch penet. depth</td>
<td>mm</td>
<td>1–4</td>
<td>1–4</td>
<td>1–4</td>
</tr>
<tr>
<td>Dimensions</td>
<td>mm</td>
<td>1,200 × 1,450 × 2,010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td>Tablet press approx. 3,600 kg, operating terminal 100 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical supply data</td>
<td></td>
<td>Operating voltage 380–520 V, 50/60 Hz, power consumption 13 kW</td>
<td></td>
<td></td>
</tr>
</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 up to 70 kN;

** Application with filling cams ≥22 mm require special attention, especially for high filling depths.

To ensure max. performance and operation safety, special tooling or measures might be required.
### Die (D)

<table>
<thead>
<tr>
<th>Number of punch stations</th>
<th>79</th>
<th>73</th>
<th>61</th>
<th>49</th>
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</thead>
<tbody>
<tr>
<td>Punch type</td>
<td>EU19 BBS</td>
<td>EU19 (TSM19) BB</td>
<td>EU19 (TSM19) B</td>
<td>EU1*/EU1*-441 (TSM 1*) D</td>
</tr>
<tr>
<td>Tablet output/h</td>
<td>142,200</td>
<td>131,400</td>
<td>109,800</td>
<td>88,200</td>
</tr>
<tr>
<td></td>
<td>max. 1,004,880</td>
<td>700,800</td>
<td>585,600</td>
<td>470,400</td>
</tr>
<tr>
<td></td>
<td>bi-layer max. 502,440</td>
<td>350,400</td>
<td>292,800</td>
<td>235,200</td>
</tr>
<tr>
<td>Max. compression force kN</td>
<td>100*</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Max. pre-compr. force kN</td>
<td>100*</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Max. tablet diameter mm</td>
<td>11</td>
<td>13</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>Max. filling depth mm</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>22**</td>
</tr>
<tr>
<td>Max. tablet thickness mm</td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
</tr>
<tr>
<td>Pitch circle diameter mm</td>
<td>680</td>
<td>680</td>
<td>680</td>
<td>680</td>
</tr>
<tr>
<td>Die table rotation speed</td>
<td>15 mm-1</td>
<td>15 mm-1</td>
<td>15 mm-1</td>
<td>15 mm-1</td>
</tr>
<tr>
<td></td>
<td>max. 106</td>
<td>80</td>
<td>80</td>
<td>80</td>
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<tr>
<td>Die diameter mm</td>
<td>22</td>
<td>24</td>
<td>30.16</td>
<td>38.1</td>
</tr>
<tr>
<td>Die height mm</td>
<td>22.22</td>
<td>22.22</td>
<td>22.22</td>
<td>23.8</td>
</tr>
<tr>
<td>Punch shaft diameter mm</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>25.35</td>
</tr>
<tr>
<td>Punch length mm</td>
<td>133.6</td>
<td>133.6 (133.35)</td>
<td>133.6 (133.35)</td>
<td>133.6 (133.35)</td>
</tr>
<tr>
<td>Upper punch penet. depth</td>
<td>1–4 (8***)</td>
<td>1–4 (8***)</td>
<td>1–4 (8***)</td>
<td>1–4 (8***)</td>
</tr>
<tr>
<td>Dimensions mm</td>
<td>1,370 × 1,620 × 2,073</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Tablet press approx. 4,800 kg, operating terminal 100 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical supply data</td>
<td>Operating voltage 380 – 520 V, 50/60 Hz, power consumption 16 kW</td>
<td></td>
<td></td>
<td></td>
</tr>
</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 up to 70 kN; ** Application with filling cams ≥22 mm require special attention, especially for high filling depths. To ensure max. performance and operation safety, special tooling or measures might be required; *** bi-layer