

Laboratory Tablet Press **102i**

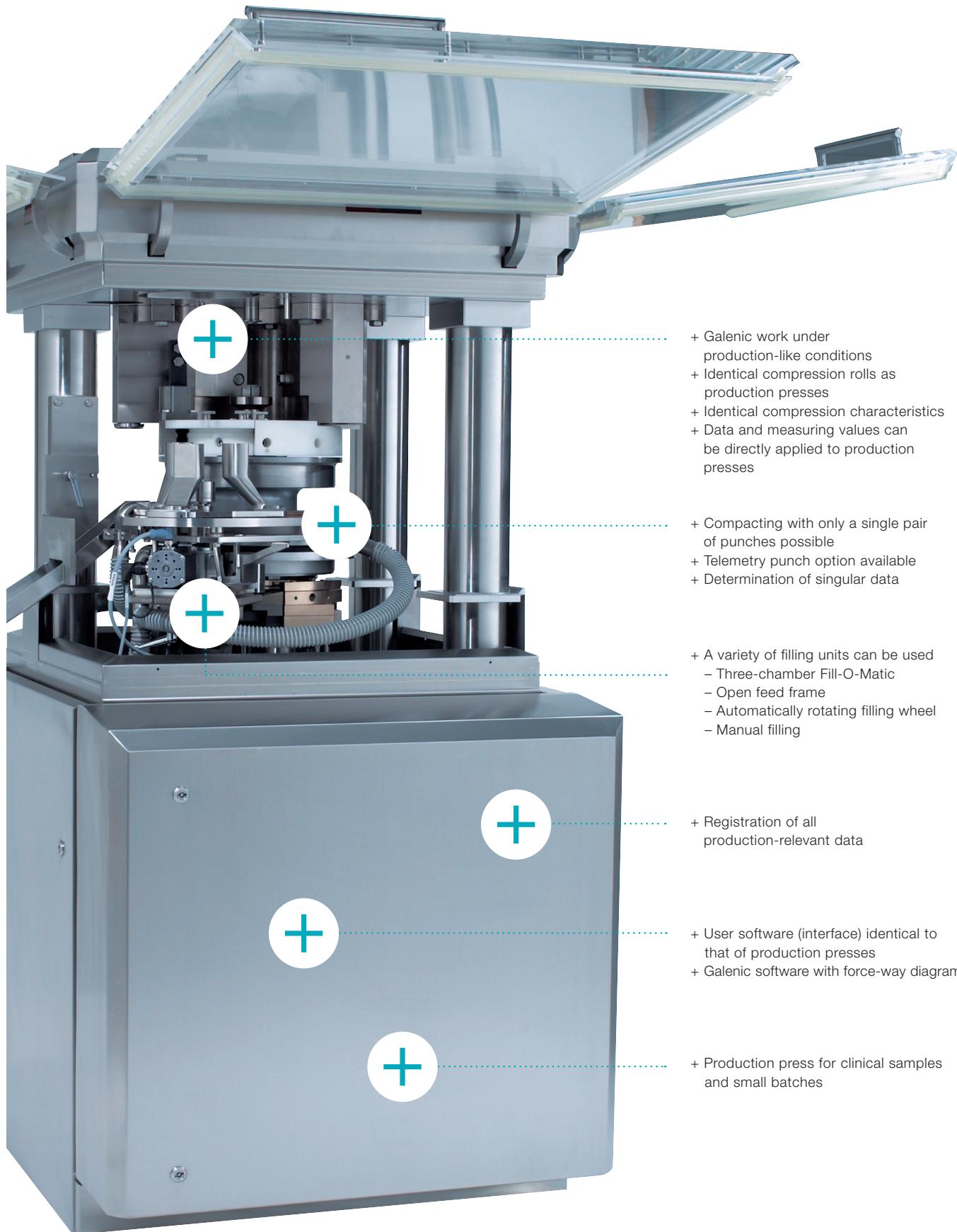
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be efficient



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- + Galenic work under production-like conditions
- + Identical compression rolls as production presses
- + Identical compression characteristics
- + Data and measuring values can be directly applied to production presses

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

- + A variety of filling units can be used
 - Three-chamber Fill-O-Matic
 - Open feed frame
 - Automatically rotating filling wheel
 - Manual filling

- + Registration of all production-relevant data

- + User software (interface) identical to that of production presses
- + Galenic software with force-way diagram

- + Production press for clinical samples and small batches

Galenic production-like conditions

Direct scale-up

Single/Double/Triple layer

Galenic work is of the greatest importance for the entire pharmaceutical industry. Work must proceed rapidly and with tight focus, so that new products can be brought as quickly as possible from the development phase into industrial production. The scale-up must proceed quickly to achieve an early market presence.

Thanks to its close contact with pharmaceutical companies, Fette Compacting is well aware of the high pressures of both cost and time in Galenic development. The new 102i research and development press was specially developed for these applications. It permits, at an attractive cost, Galenic work under conditions similar to those of production, as well as the pressing of small batches.

Whenever high-precision Galenic production needs to be brought quickly and immediately to production presses, the 102i will be the first choice – with ideal results that can be carried over to production.

- + Two and three layers can also be pressed



FEATURES	BENEFITS
+ Galenic works under production-like conditions	+ Direct scale-up
+ Registration of all production-relevant data	+ Production parameters can be directly applied to production presses
+ Process-oriented laboratory press	+ Reduced scale-up costs
+ Pitch circle and compression roll diameter identical to production presses	+ Dwell times transferable to production presses
+ Compacting with only a single pair of punches	+ Determination of singular data
+ Two and three layers can also be pressed	+ Galenic results also applicable to double and triple layer rotary presses
+ Only very small quantities of pressing material are needed with manual filling	+ Saving of expensive products during preliminary tests
+ User interface identical to the one for production presses	+ Easy handling because user is already familiar with the operating system
+ A variety of filling options can be used	+ Adaptable to every Galenic or production task
+ Production press for clinical samples and small batches	+ Wide range of applications
+ Upgradable to 1200i	+ Utilization as production press
+ Combined B and D turret	+ Maximum tablet flexibility



Galenic under production-like conditions replaces the scale-up

Galenic on a production 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 construction and design of 102i identical to the 1200i production press

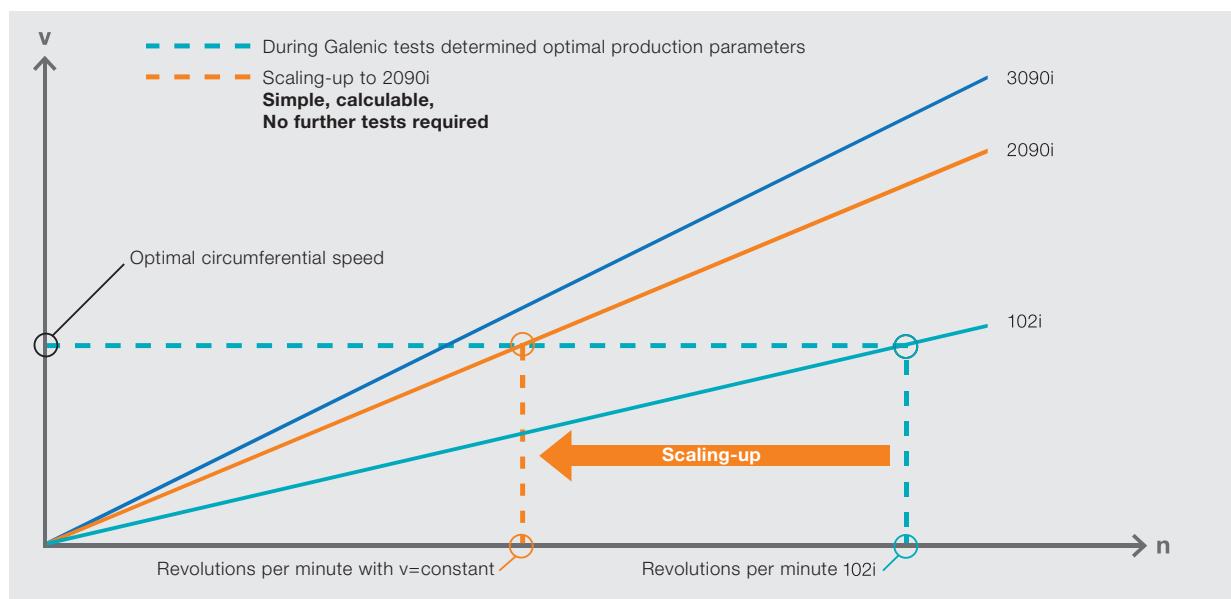
- + Galenic data can be adopted on all Fette Compacting production presses
- + Identical feeding and filling equipment
- + The granulate can be supplied and filled under the production conditions
- + Identical dwell time
- + Measurement of the main compression force the same on all Fette Compacting machines

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" touch-screen
- + Screen-driven operation with a clear structure for intuitive learning



Special Galenic functions

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
- + 6 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 on production process are used
- + The turret can be fully or partially tooled up, or the fitting may be mixed – any product quantity can be specified

Compacting with only a single pair of punches

- + If only one pair of punches is fitted, the upper and lower punches can optionally be directly fitted with force sensors for data acquisition – data is transferred over a wireless telemetry system
- + In case of manual filling only very small quantities of pressing material are needed

Data evaluation under production-like conditions

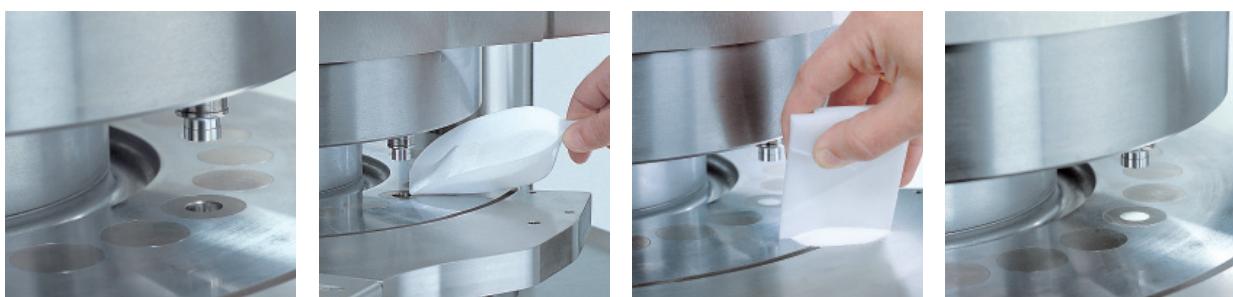
- + Direct force flow vertical to the load cell
- + Calibrated pressure load cell for maximally precise measurements
- + Extremely precise determination of punch position using an encoder

Complete upgrade to a production 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 and transferable results



Manual filling for single punch compression



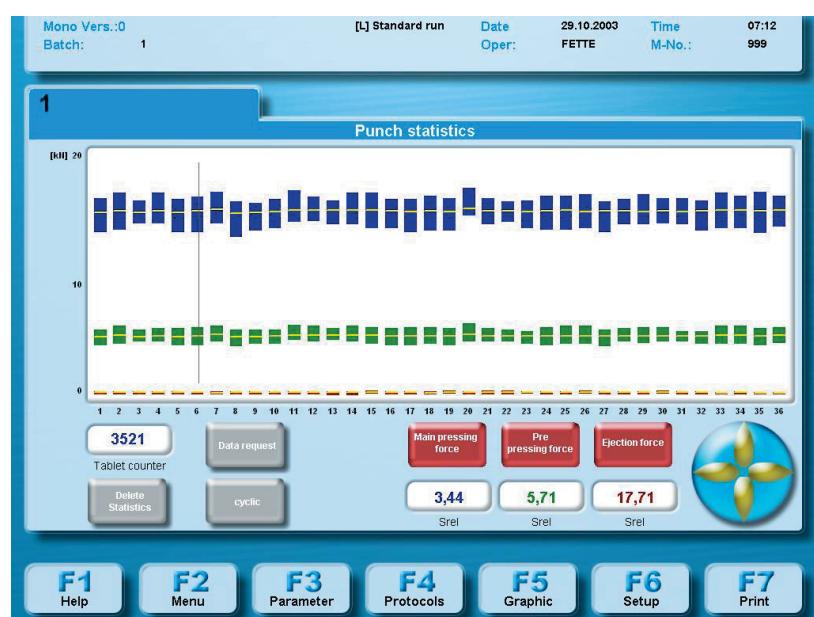
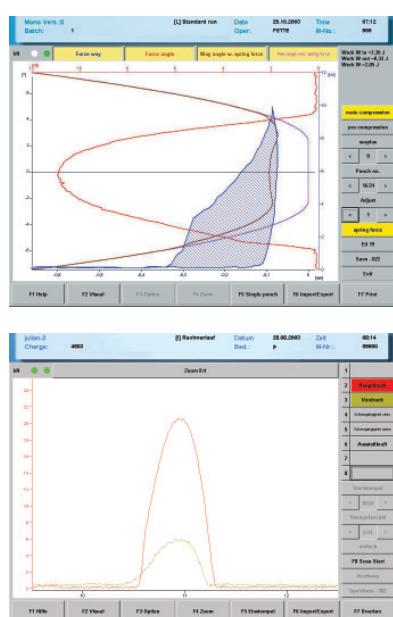


The Galenic package – 102i

- + 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-Makro 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 output in text form



Optimized filling equipment, Single/Double/Triple layer products

World-wide unique multi-layered pressing

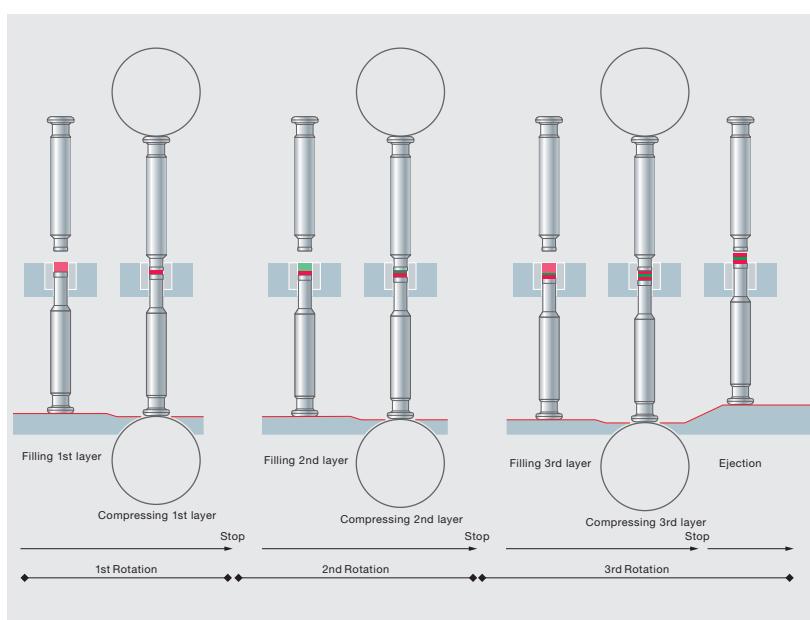
- + Optional fitting with a Galenic-Fill-O-Matic with up to 50 % reduced volume
- + With the proven three-chamber system small quantities can be compressed automatically
- + Fill-O-Matic with sealing segments for different tablet diameters that can be changed without tools – easier refitting – minimized product loss
- + Pressing double and triple layer tablets with automatically rotating filling wheel – small quantities 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



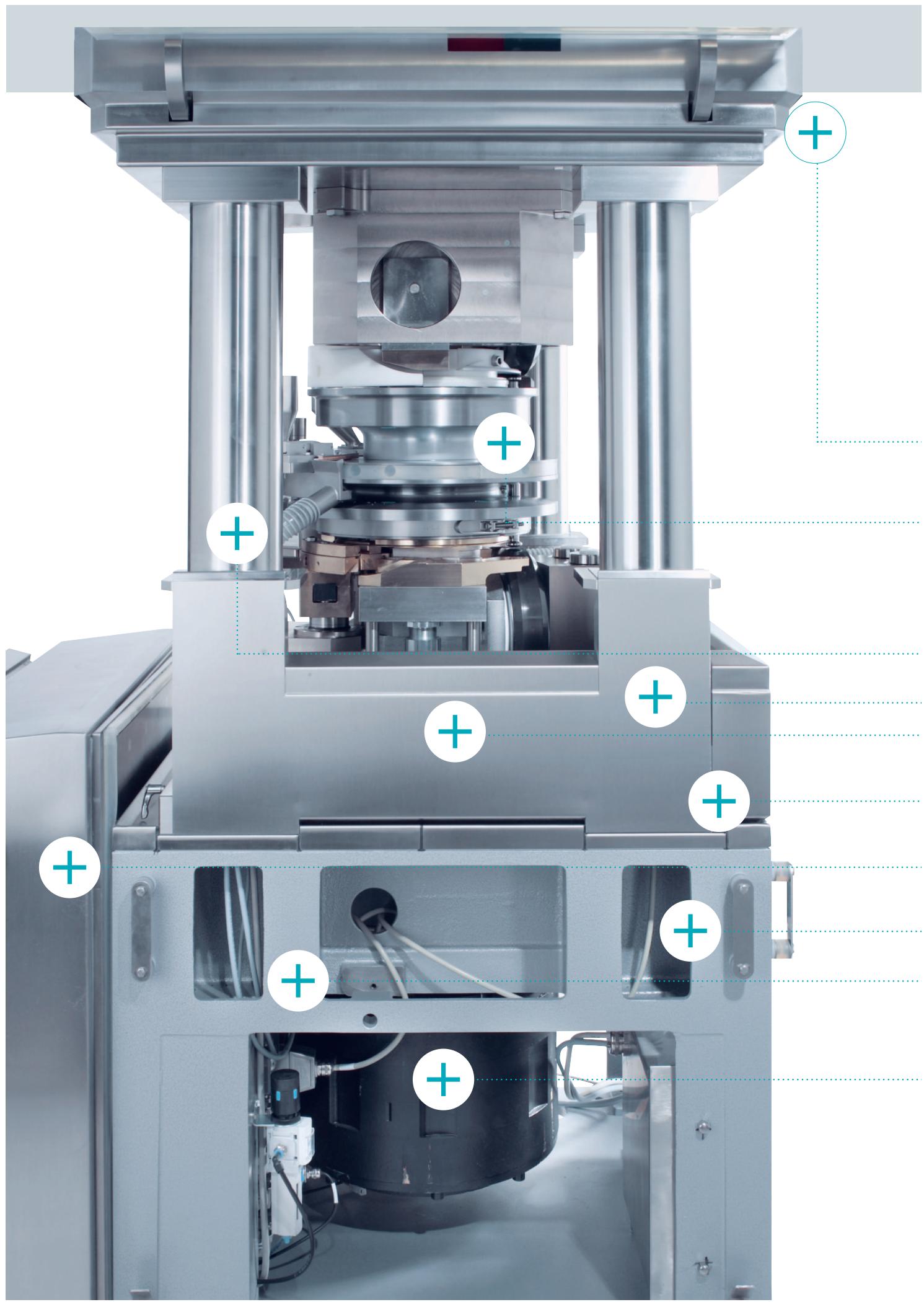
Three-chamber Fill-O-Matic



Automatically rotating filling wheel



Triple layer compression



The press structure

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

- + Precision turret mounting – exchangeable turret principle for dies and segment turrets
- + Turrets identical to those on production presses

- + Encapsulated compression area – reduced noise and dust

- + Smooth surfaces – easily cleaned

- + Machine can be retrofit as a 1200i without any drilling or major modifications

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

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

- + 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 %



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Proven and reliable technology, integrated control



Dust extraction for multi-layer tablets

Standards and optional fitting adopted from production 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 double and triple layer tablets
- + Optional lubrication pump with drive
- + Can be fitted with almost all features of a 1200i – can be upgraded to a production press
- + Optional Fill-O-Matic with proven three-chamber system

Integrated control unit

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



Technical data – 102i

NUMBER OF PUNCH STATIONS	6 DIES	6 DIES	16 (8+8) DIES	20 DIES	20 DIES
Punch type	EU 19	EU 1"	EU 19 + EU 1"	EU 1"	EU 1" - 441
	TSM 19	TSM 1"	TSM 19 + TSM 1"	TSM 1"	
	B	D	B / D	D	D
Tablet output/h***	min	9.000	9.000	24.000	30.000
	max	43.200	36.000	96.000	120.000
Max. pre-compression	kN	80	80	80	80
Max. compression force	kN	80	80	80	80
Max. tablet diameter	mm	16	25	16/25	25
Max. filling depth	mm	18	22	18/22	18 (22)
Max. tablet thickness	mm	8,5	8,5 (11)	8,5 (11)	8,5 (11)
Pitch circle diameter	mm	280	280	280	280
Turret revolutions per minute *** in laboratory operation	min ⁻¹	25–120	25–100	25–100	25–100
	max	150	100	100	100
Die diameter	mm	30,16	38,1	30,16/38,1	38,1
Die height	mm	22,22	23,8	22,22/23,8	23,8
Punch shaft diameter	mm	19	25,35	19/25,35	25,35
Punch length	mm	133,6/133,35	133,6/133,35	133,6/133,35	133,6
Upper punch pen. depth	mm	1–4 (8)	1–4 (8)	1–4 (8)	1–4 (8)
Weights	kg	Tablet press approx. 2500 kg – Operator terminal max. 100 kg			
Power supply data		Operating voltage 400–480V, 3Ph, 50/60Hz, Total fusing 35 A, Power consumption 4,5 kW			

21 DIES	24 SEGMENTS	24 DIES	30 SEGMENTS	30 DIES	32 DIES	45 SEGMENTS
EU 1"-441	EU 1"	EU 19	EU 19	EU 19	EU 19	FS12
	TSM 1"	TSM 19	TSM 19	TSM 19	TSM 19	
		B		BB	BBS	
31.500	36.000	36.000	45.000	45.000	48.000	67.500
126.000	144.000	172.800	216.000	216.000	230.400	324.000
80	80	80	80	80	80*	25**
80	80	80	80	80	80*	25**
25	25	16	18	13	11	11
22	22	18	22	18	18	18
8,5 (11)	8,5 (11)	8,5	8,5	8,5	8,5	8,5
280	280	280	280	280	280	280
25–100	25–100	25–120	25–120	25–120	25–120	25–120
100	100	150	150	150	150	150
-	-	30,16	-	24	22	-
-	-	22,22	-	22,22	22,22	-
25,35	25,35	19	19	19	19	12
133,6	133,6/133,35	133,6/133,35	133,6/133,35	133,6/133,35	133,6/133,35	133,6
1–4	1–4	1–4 (8)	1–4 (8)	1–4 (8)	1–4 (8)	1–4

* Tools only permit up to 70 kN

** FS12 punches only permit up to 25 kN

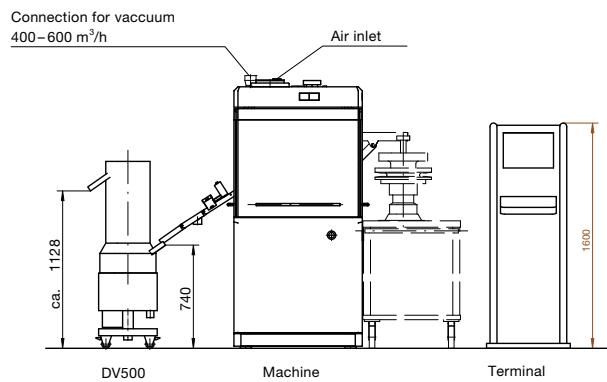
*** During production processes

Due to technological advances we reserve the right of alteration.

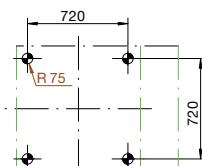
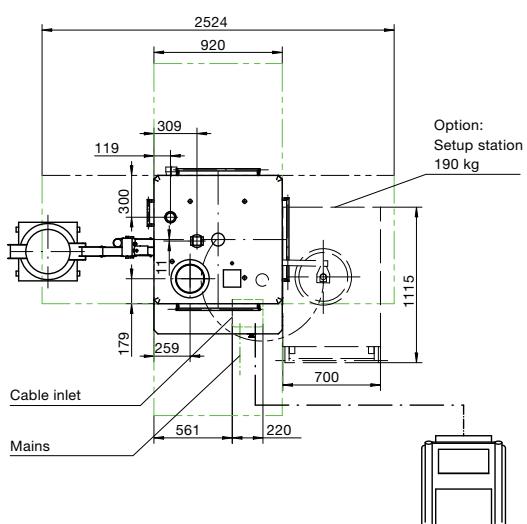
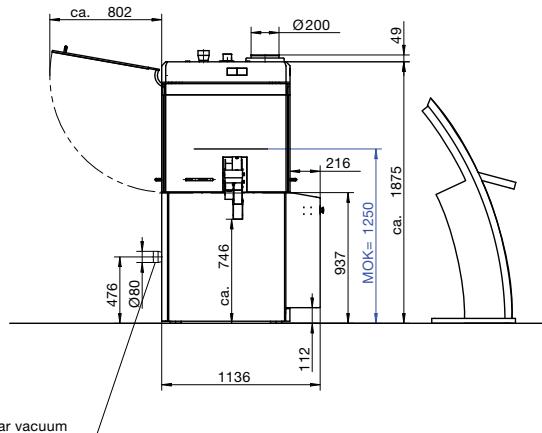


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Floor plan – 102i



Option:
Connection for rear vacuum



Foundation loading
20 kN

Main
400/440/480 V – 50–60Hz

Connection
4x6mm² – on floor
4x10mm² – cable conduit

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