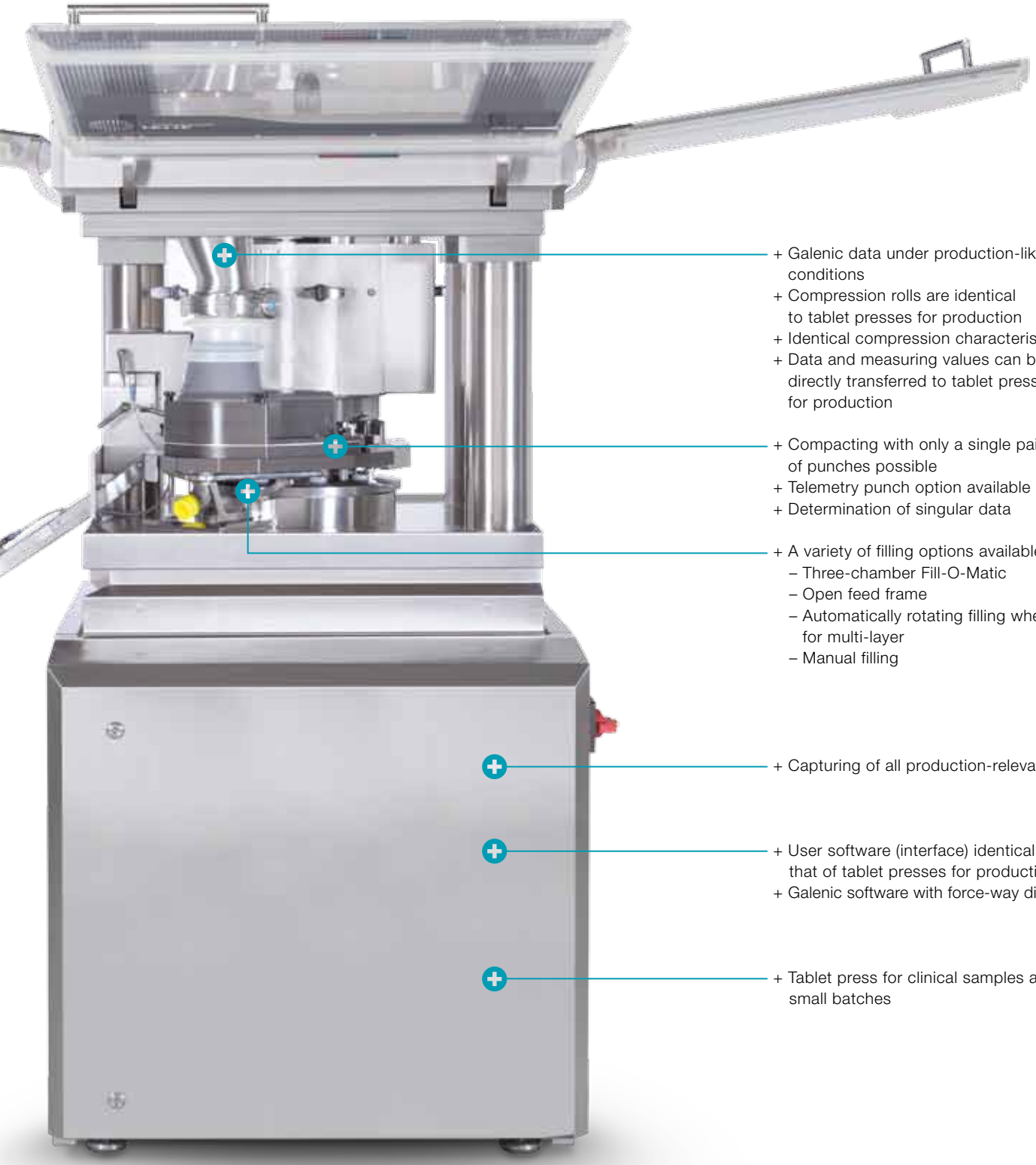
Allrounder for production-related galenics

102i

www.fette-compacting.com

TECHNOLOGY
COMPETENCE
SERVICE

FETTE COMPACTING
be efficient



+ Galenic data under production-like conditions
+ Compression rolls are identical to tablet presses for production
+ Identical compression characteristics
+ Data and measuring values can be directly transferred to tablet presses for production

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

+ A variety of filling options available
  – Three-chamber Fill-O-Matic
  – Open feed frame
  – Automatically rotating filling wheel for multi-layer
  – Manual filling

+ 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

EFFICIENCY GUIDE

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.

Galenic production-like conditions
Direct scale-up
Single-/Bi-/Triple-layer

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.

FEATURES	BENEFITS
+ Galenic data under production-like conditions	+ Direct scale-up
+ Capturing of all production-relevant data	+ Production parameters can be directly transferred to tablet presses
+ Process-oriented laboratory press	+ Reduced scale-up costs
+ Pitch circle and compression roll diameter identical to tablet presses	+ Dwell times transferable to tablet presses
+ Compacting with only a single pair of punches	+ Determination of singular data
+ 2- and 3-layers can also be pressed in laboratory scale	+ Galenic results also applicable to bi- and triple-layer rotary presses
+ Only very small quantities of material are needed with manual filling	+ Saving of expensive products during preliminary tests
+ User interface identical to the one for tablet 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
+ Tablet press for clinical samples and small batches	+ Wide range of applications
+ Upgradable to 1200i	+ Utilization as tablet press
+ Combined B and D turret	+ Maximum tablet flexibility

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

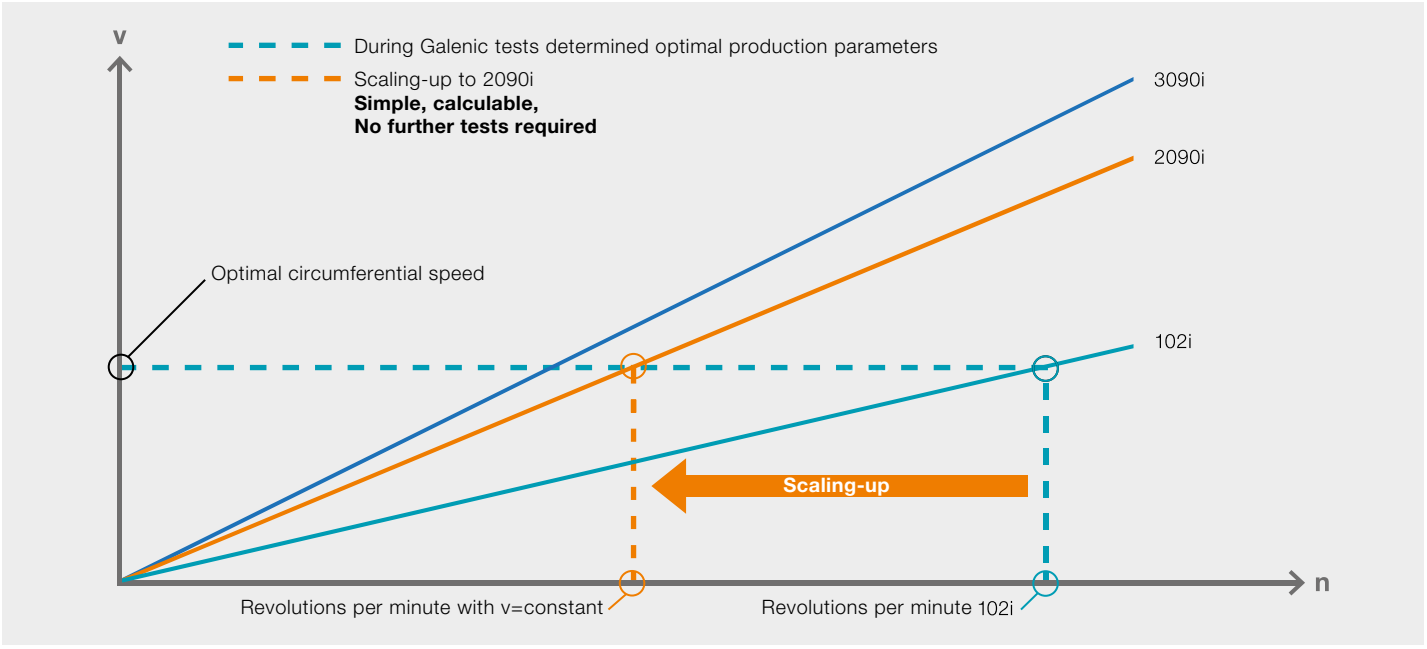
+ Optimal cost-performance ratio

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



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
+ 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

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

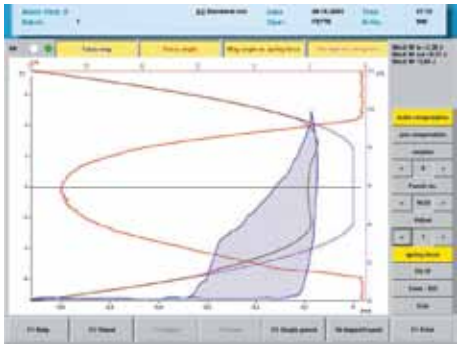
+ Evaluation of exported CSV data via Galenic-Excel-Macro on press-independent computers

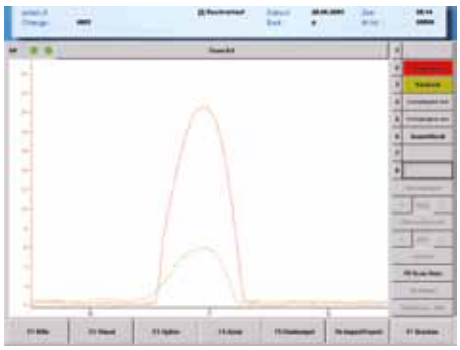
+ Comparison of up to 10 different data records possible

+ 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





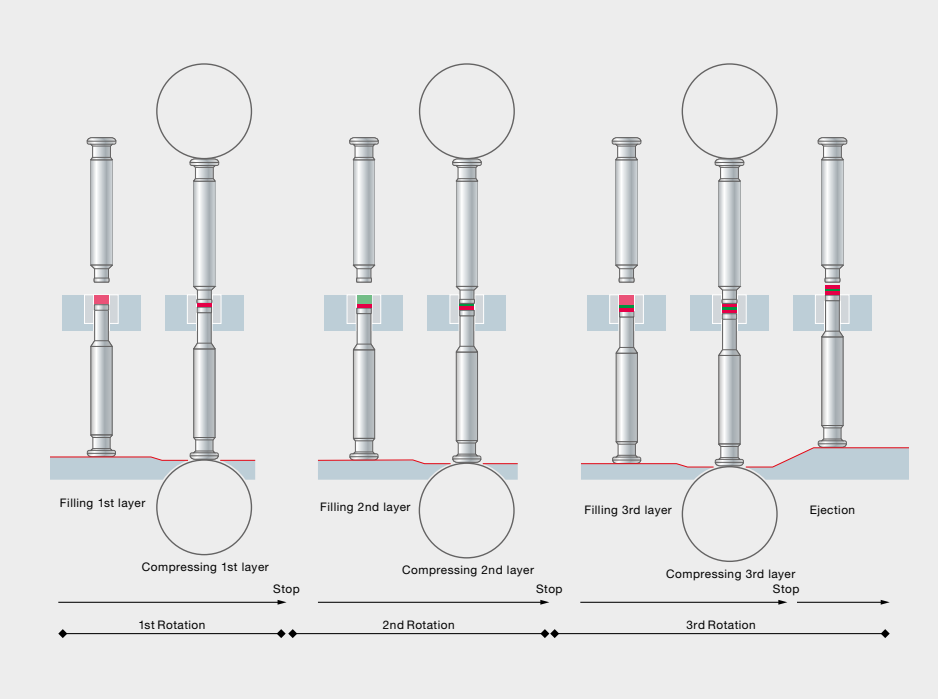
Optimized Filling Equipment Single-/Bi-/Triple-Layer Products

World-wide unique multi-layer compression

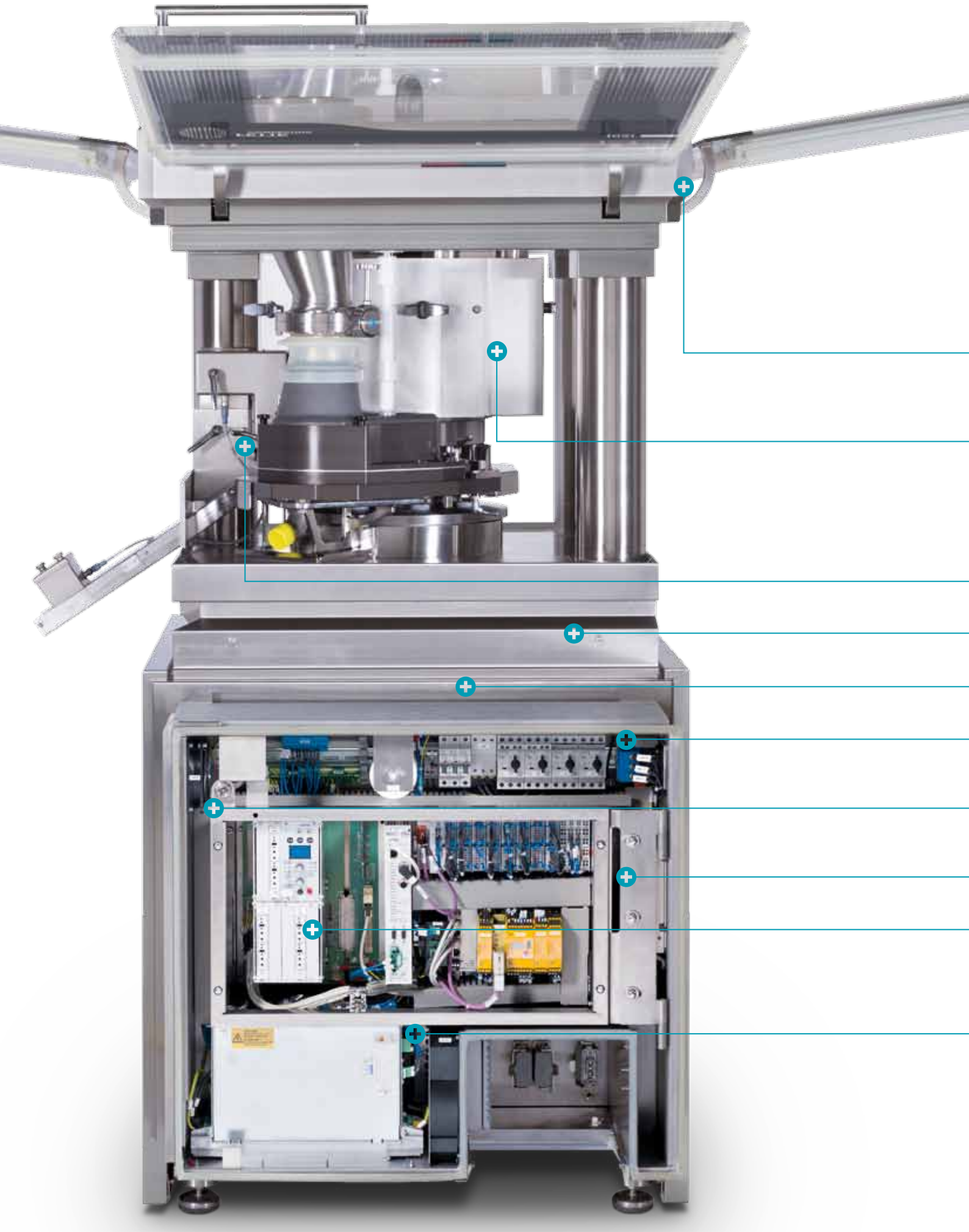
+ Optional fitting with a Galenic Fill-O-Matic with up to 50 % reduced volume
+ With the proven three-chamber system small quantities can be compressed automatically
+ Fill-O-Matic with sealing segments for different tablet diameters that can be changed without tools – easier refitting – minimized product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

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 design for dies and segment turrets
+ Turrets identical to those on tablet presses

+ Encapsulated compression area – reduced noise and dust

+ Smooth surfaces – easily cleaned

+ Can be upgraded to a 1200i without any major modifications

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

+ Hermetically sealed electrical cabinet integrated into the press

+ 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 %

Proven and reliable technology, integrated control

Dust extraction for multi-layer tablets

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

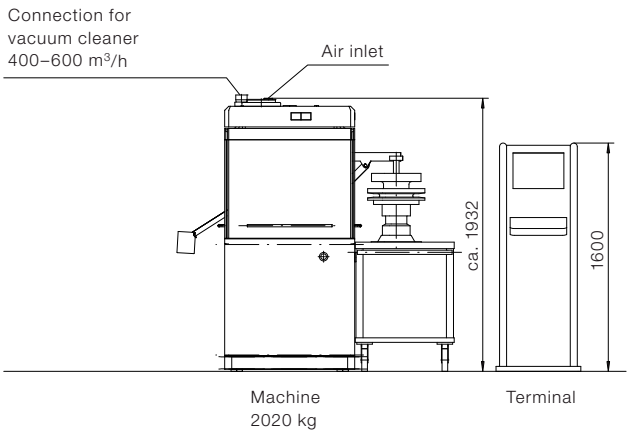
Integrated control unit

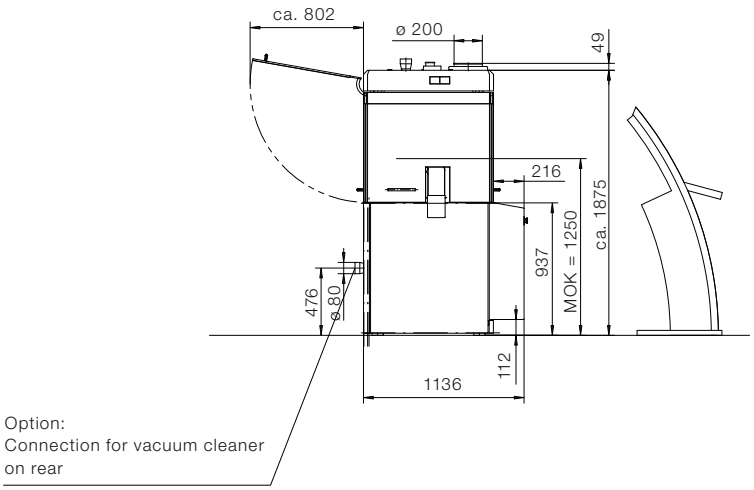
+ Hermetically sealed electrical cabinet integrated into the tablet press, controller in the press
  – no extra electrical cabinet required
  – very low space requirement
  – dust-proof setup, GMP-conformance

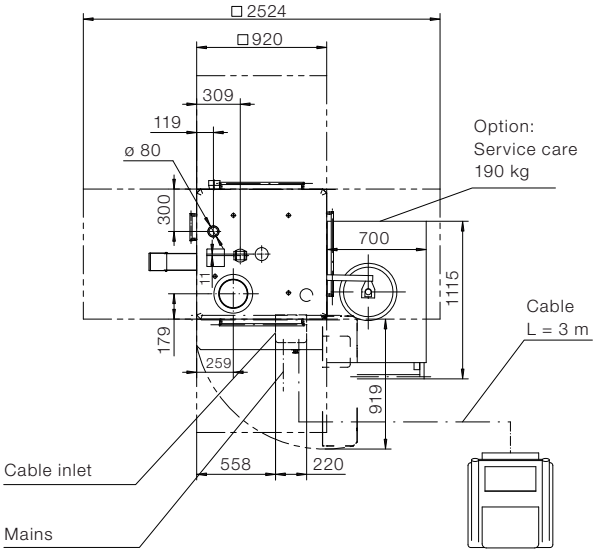
+ Direct control of all motor driven adjustments on the tablet press – fast reaction

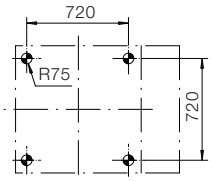
+ Highly sensitive measurement points
  – high-speed data transfer to the evaluation unit and operator interface via TCP/IP

Dimensions









Foundation loading
20 kN

Main
400/440/480 V – 50/60 Hz

Anschluss
4 × 6 mm² – on floor
4 × 10 mm² – cable conduit

Technical Data

Die (D) / Segments (S)		D	D	D	D	D
Number of punch stations		6	6	16 (8+8)	16 (8+8)	20
Punch type		FS19®/ EU19 FS®/ EU19 TSM19 B	EU1" TSM1" D	FS19®/ EU19 FS®/ EU19 TSM19 B	EU1" TSM1" D	EU1"/EU1"-441 TSM1" D
Tablet output units/h	min.	9,000	9,000	24,000 (12,000)	24,000 (12,000)	30,000
	max.	43,200	36,000	96,000 (48,000)	96,000 (48,000)	120,000
Max. compression force 1*	kN	80	80	80	80	80
Max. compression force 2*	kN	80	80	80	80	80
Max. tablet diameter	mm	16	25	18	25	25
Max. filling depth 1st layer	mm	20	22	20	22	22
Pitch circle diameter	mm	280	280	280	280	280
Turret rotation speed min.	min^{-1}	25	25	25	25	25
max. (laboratory operation)	min^{-1}	120 (150)	100 (100)	100 (100)	100 (100)	100 (100)
Die diameter	mm	30.16	38.1	30.16	38.1	38.1
Die-/segment height	mm	22.225	23.8	22.225	23.8	23.8
Punch shaft diameter	mm	19	25.35	19	25.35	25.35
Punch length Upper/lower punch	mm	133.6 (133.35)	133.6 (133.35)	133.6 (133.35)	133.6 (133.35)	133.6 (133.35)
Upper punch insertion depth	mm	1– 4 (8**)	1– 4 (8**)	1– 4 (8**)	1– 4 (8**)	1– 4 (8**)
Dimensions	mm	920 × 1,136 × 1,875				
Weight	kg	Tablet press 1,700 – 2,500 kg, operating terminal 100 kg				
Electrical supply parameters		Operating voltage 400 – 480 V, 50/60 Hz, power consumption 8,4 kW				

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

D	D	D	S	S	S	S
32	30	24	21	24	30	45
FS19® / EU19 FS® / EU19 TSM19 BBS	FS19® / EU19 FS® / EU19 TSM19 BB	FS19® / EU19 FS® / EU19 TSM19 B	EU1"-441	EU1" TSM1"	FS19® / EU19 FS® / EU19 TSM19	FS12®
48,000	45,000	36,000	31,500	36,000	45,000	67,500
230,400	216,000	172,800	126,000	144,000	216,000	324,000
80	80	80	80	80	80	33
80	80	80	80	80	80	33
11	13	18	25	25	18	11
20	20	20	22	22	22	22
280	280	280	280	280	280	280
25	25	25	25	25	25	25
120 (150)	120 (150)	120 (150)	100 (150)	100 (150)	120 (150)	120 (150)
22	24	30.16	–	–	–	–
22.225	22.225	22.225	25	25	25	25
19	19	19	25.35	25.35	19	12
133.6 (133.35)	133.6 (133.35)	133.6 (133.35)	133.6	133.6 (133.35)	133.6 (133.35)	133.6
1–4 (8**)	1–4 (8**)	1–4 (8**)	1–4 (8**)	1–4 (8**)	1–4 (8**)	1–4 (8**)

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