



SYNTEGON
PROCESSING & PACKAGING

Tablet Presses.

Pharma Solid.

5.800

employees

66.000

machines in the installed base

Count
on it.

30

locations

160

years of experience

1.4 billion

euros annual sales

1.100

service specialists

1.800

patented inventions

Syntegon Technology is your reliable partner for process and packaging technology in the global pharmaceutical and food industries. Whether you are an aspiring start-up or a global market leader, we offer intelligent and sustainable solutions for everyone.

Individual machines, systems or services – as a full-service provider, we take responsibility right up to fully integrated end-to-end solutions. Fields of application in the pharmaceutical industry are the production, processing, filling, inspection and packaging of liquid and solid active ingredients in all common

packaging materials. In the food industry, we offer solutions for the primary and secondary packaging of dry, liquid and frozen food as well as process technology for the production of confectionery.

We are at your side from project planning, development and implementation to comprehensive digitization, qualification and validation services. In addition, you always have access to our worldwide network of service specialists who support you throughout the entire machine life cycle.

TPR Tablet Press Series – ideal for the tablet compression of pharmaceutical and nutra- ceutical products.

The TPR series consists of tablet pressing machines, designed with renowned Syntegon quality and an excellent price/performance ratio.

It answers the growing need for high efficiency, easy maintenance and operation machines – from R&D and pilot up to high volumes.



FlexiTab*	TPR 200	TPR 500	TPR 700
Research & Development	Pilot		
	Low to Medium Volume		Medium to High Volume

*For details please refer to our FlexiTab XL flyer.

TPR 200 Tablet Press

A highly flexible tablet press for both R&D and small to medium size production batches

The highly efficient TPR 200 is part of Syntegon's tablet press series. Thanks to a small footprint, it is economic and very compact. The TPR 200 is capable of producing approx. 230 000 tablets per hour. This easy to operate, simple to clean and robust rotary tablet press has a high flexible specification and is designed to improve Overall Equipment Effectiveness (OEE). The TPR 200 range of functions is optimized to suit all tablet manufacturers.



FAST AND EASY CLEANING

Ideal for small to mid-size production batches, the press offers a compact, hygienic and easy to clean design, which minimizes the production area allowing fast and simple cleaning to cGMP standards. With the addition of the exchangeable turret option, productivity is increased and uptime maximized.

PATENTED TECHNOLOGY

Benefits by using the innovative integrated die plate patented by Syntegon:

- Approx. 25 % higher output capacity
- Improved yields
- Simple and fail-safe set-up
- Fast cleaning

Used in conjunction with the exchangeable turret, the integrated die plate provides increased flexibility, higher yield and over all reduced changeover times.

POWDER FEEDING SYSTEMS

The modular and ergonomic designed powder feeding system offers a two or three paddle design with single or individually controlled paddle speeds and turning direction. A choice of rectangular or round paddle blades, as well as a simple and repeatable feeder set-up help increase the range of materials to be compressed.

BI-LAYER TABLETING

The TPR 200 also proves flexible through its ability to produce bi-layer tablets with a set of conversion parts. Designed to ensure clear demarcation and no cross contamination between layers, the control system provides both first layer sampling capability and individual layer weight control.

Specifications

TPR 200	Standard Die						Integrated Die	
Number of Stations	4x4	8x8	20	25	30	32	25	30
Punch type	4x4 B/D****	8x8 B/D****	20 D	25 B	30 BB	32 BBS	25 D***	30 B
PCD [mm]	280	280	280	280	280	280	280	280
Max. turret speed [rpm]	100	100	100	120	120	120	100	120
Max. output – tablets per minute (setpoint)	400	800	2000	3000	3600	3825	2500	3600
Max. output * – tablets per hour	24 000	48 000	120 000	180 000	216 000	229 500	150 000	216 000
Max. tablet diameter [mm]	25/16**	25/16**	25	16 **	13	11	25	16 **
Max. primary compression force (kN)	50	50	50	50	50	50	50	50
Max. main compression force (kN)	100	100	100	100	100	100	100	100
Max. filling depth [mm]	18	18	20	18	18	18	20	18

* The output depends on tablet size and product characteristics

** Larger tablets possible on request

*** Higher output possible on request, depending on punch geometrie and product characteristics

**** Reduced output with R&D turret setup max. 60 rpm and runtime max. 4 h/day



RESEARCH AND DEVELOPMENT

For research and development two turret versions are available, combining either 4 B stations and 4 D stations or 8 B stations and 8 D stations.

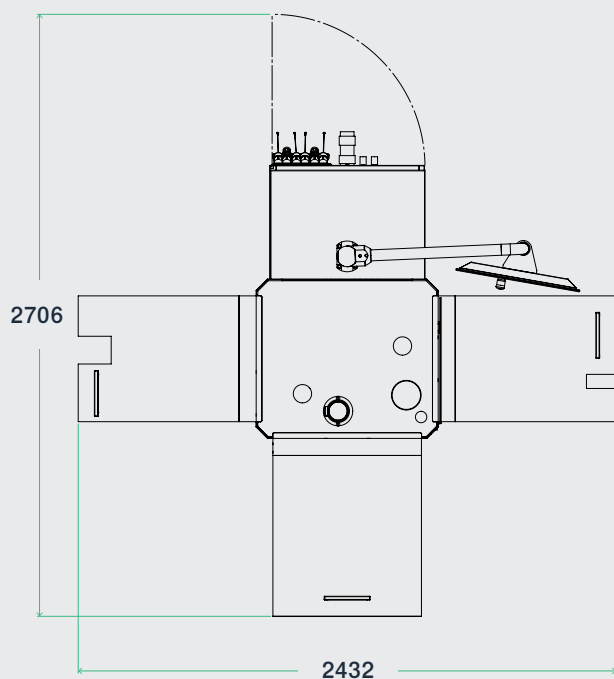
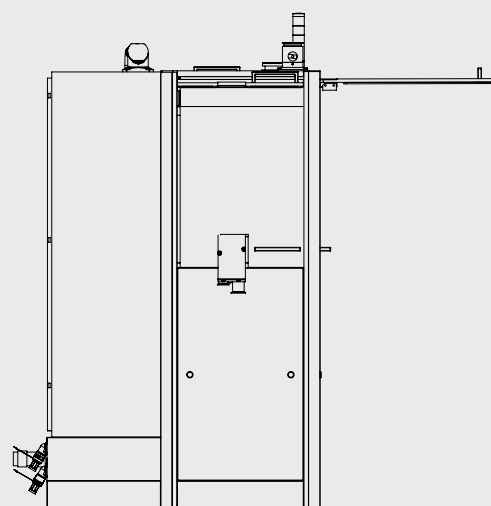
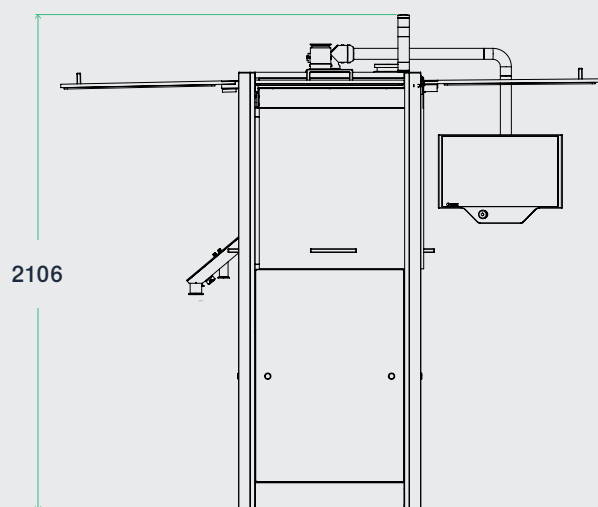
The modular Data Acquisition System (DAQ) is capable of measuring and presenting a wide range of data including compression and ejection forces. This is a valuable tool for the evaluation of powder and granule behavior during compression.

TPR 200 – YOUR BENEFITS

- ❑ Fastest changeover from product A to product B
- ❑ Excellent feeder technology in two and three paddle execution
- ❑ Life cycle cost extremely low
- ❑ Best in class OEE
- ❑ Designed for effective cleaning
- ❑ State-of-the-art, off-the-shelf Beckhoff controls, Syntegon software package running on Windows 10
- ❑ Best process “visibility”
- ❑ Best tablet quality due to stress-free “True Flow” discharge system
- ❑ MUPS-ready (Multiple Unit Pellet System) machine and feeder execution



TPR 200 Tablet Press



Subject to technical changes.
All units of measurement in mm.

TPR 500 Tablet Press

**A highly flexible tablet press
for medium and large production batches**

The TPR 500 is the optimal solution for high productivity and quality combined with excellent usability. Reduced maintenance and cleaning efforts due to the hygienic design, as well as fast and easy changeover gives you more time for your production. The TPR 500 assures high output and yield capabilities, providing you with a highly cost-effective price/performance ratio.



TPR 500 – YOUR BENEFITS

- ❑ Fastest change-over from product A to product B
- ❑ Excellent feeder technology in two and three paddle execution
- ❑ Life cycle cost extremely low
- ❑ Best in class OEE
- ❑ Designed for effective cleaning
- ❑ State-of-the-art, off-the-shelf Beckhoff controls, Syntegon software package running on Windows 10
- ❑ Best process “visibility”
- ❑ Best tablet quality due to stress-free “True Flow” discharge system
- ❑ MUPS-ready (Multiple Unit Pellet System) machine and feeder execution

FULLY REMOVABLE TURRET WITH FAST CHANGEOVERS

Accomplish a turret removal in only ten minutes without removing the upper and lower punches and their associated cam tracks, and complete product changeovers in less than one hour. Rely on the TPR 500 for faster and easier changeovers and outstanding productivity. Changeovers made easy.



OUTSTANDING HYGIENIC DESIGN

The TPR 500 is designed for ease of use, good accessibility and reduced cleaning efforts. The two-level production zone ensures a consequent separation of the production and technical areas – even when the turret is removed, giving you more time for production.

HIGH OUTPUT

With a 56 station die table, the TPR 500 can produce more than 400 000 tablets per hour with standard tooling on a very small footprint. Achieving high output has never been easier.



Choice of feeders

POWDER FEEDING SYSTEM

The modular and ergonomically designed powder feeder system offers a two-paddle design with single or individually controlled paddle speeds. A third paddle can be added to assist smooth product flow and specific applications, such as MUPS (Multiple Unit Pellet System) products. The extended length of the feeder ensures excellent content uniformity and weight consistency at low paddle speed but high output for a wide range of compressible materials. Further benefits of the feeder design include a choice of rectangular or round paddle blades and simple, precise and repeatable feeder set-up and high flexibility.

IMPROVED QUALITY

The "True Flow" tablet discharge chute with an optimised take-off angle enables smooth delivery of your tablets with a diameter of up to 25 mm. Shaped and friable tablets, in particular, profit from reduced mechanical stress, leading to less damaged tablets, as well as higher yields and speed.



Removable segmented seal plate

EXCEPTIONAL USABILITY

The TPR 500 is equipped with state-of-the-art controls and software, which meets the GAMP 5 guidelines. It also features a 21 inch HMI with an intuitive operator interface enabling full compliance with 21 CFR Part 11. Experience excellent usability for easy and efficient set up and operation. Tableting made easy!

REDUCED MAINTENANCE

The proven Siemens torque drive is directly connected to the turret, making it suitable for a wide range of rpm. It even maintains high torque at low rpm. Moreover, this drive concept requires no wear and tear parts, which significantly reduces your maintenance efforts.

INTEGRATED DIE TECHNOLOGY

Our unique integrated die technology enables you to produce up to 16 mm tablets in comparison to a maximum of 11 mm tablets, when using a BBS die. Also, you can manufacture over 400 000 tablets per hour instead of just 280 000 with a standard B die – an increase of more than 40 %!

Discharge chute



Specifications

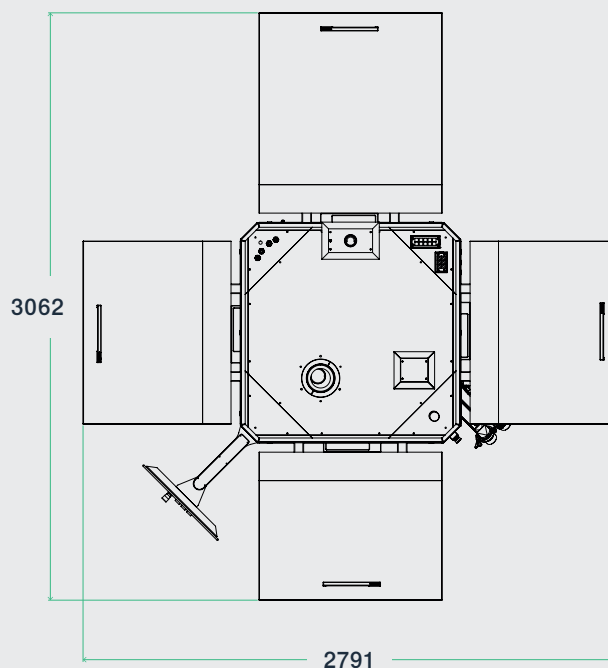
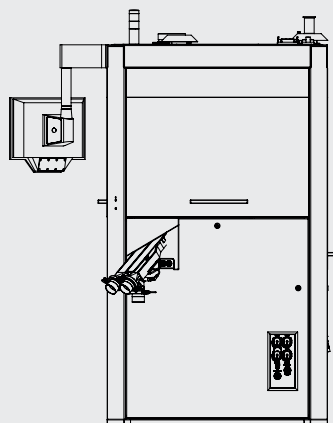
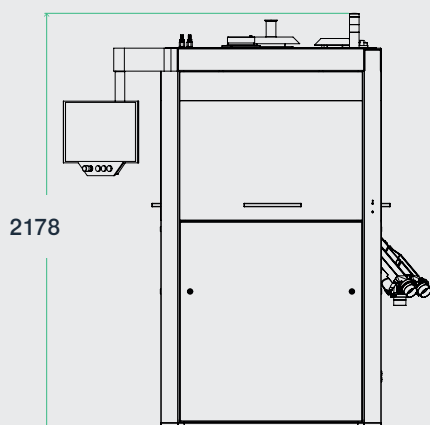
TPR 500	Standard Die					Integrated Die	
Number of Stations	32	32	39	50	56	39	56
Punch type	32 D ***	32 441 ***	39 B	50 BB	56 BBS	39 D ***	56 B
PCD [mm]	470	470	470	470	470	470	470
Max. turret speed [rpm]	100	90	120	120	120	100	120
Max. output – tablets per minute (setpoint)	3200	2875	4675	6000	6700	3900	6700
Max. output * – tablets per hour	192 000	172 500	280 500	360 000	402 000	234 000	402 000
Max. tablet diameter [mm]	25	25	16 **	13	11	25	16 **
Max. primary compression force (kN)	100	100	100	100	100	100	100
Max. main compression force (kN)	100	100	100	100	100	100	100
Max. filling depth [mm]	21	21	18	18	18	21	18

* The output depends on tablet size and product characteristics

** Larger tablets possible on request

*** Higher output possible on request, depending on punch geometrie and product characteristics

TPR 500 Tablet Press



Subject to technical changes.
All units of measurement in mm.

TPR 700 Tablet Press

A highly flexible tablet press for high volume production

The Syntegon TPR 700 is a high speed, double-sided press capable of producing over one million tablets per hour and incorporates the latest technological advances in both hardware and software.



HIGH CAPACITY TABLET PRODUCTION

Designed primarily for high volume production, the robust TPR 700 is easy to operate, simple to clean and has a range of features designed to improve Overall Equipment Effectiveness (OEE). Building on the proven benefits of Syntegon technology, the TPR 700 is suitable for a wide range of products to be compressed, including pharmaceutical, confectionery (mints), nutraceutical (vitamins), medicated lozenges and non-pharmaceutical materials.

FAST PRODUCT CHANGEOVER

Excellent access to the production area is provided by reduced width corner pillars. With our unique two-level production zone, complete segregation between production and technical areas is ensured, even when the exchangeable turret is removed. With the addition of the exchangeable turret option, a wider range of tablet sizes and outputs can be achieved.

POWDER FEEDING SYSTEM

The modular and ergonomically designed powder feeder system offers a two-paddle design with single or individually controlled paddle speeds. A third paddle can be added to assist smooth product flow and specific applications, such as MUPS (Multiple Unit Pellet System) products. The extended length of the feeder ensures excellent content uniformity and weight consistency at low paddle speed but high output for a wide range of compressible materials. Further benefits of the feeder design include a choice of rectangular or round paddle blades and simple, precise and repeatable feeder set-up and high flexibility.



Specifications

TPR 700	Standard Die			
Number of Stations	49	61	73	81
Punch type	49 D ***	61 B	73 BB	81 BBS
PCD [mm]	690	690	690	690
Max. turret speed [rpm]	90	104	104	104
Max. output – tablets per minute (setpoint)	4400	6325	7550	8400
Max. output – tablets per hour per side	264 000	379 500	453 000	504 000
Max. output * – tablets per hour	528 000	759 000	906 000	1 008 000
Max. tablet diameter [mm]	25	16 **	13	11
Max. primary compression force (kN)	100	100	100	100
Max. main compression force (kN)	100	100	100	100
Max. filling depth [mm]	21	18	18	18

* The output depends on tablet size and product characteristics

** Larger tablets possible on request

*** Higher output possible on request depending on punch geometrie and product characteristics

DISCHARGE CHUTE

Our unique “True Flow” tablet discharge chute eliminates tablet damage by reducing mechanical stress at take-off, ensuring a smooth delivery of tablets for improved tablet quality. True Flow provides further benefits:

- ❑ Single station rejection system of tablets up to 25 mm
- ❑ Position of take-off gates eliminates pipe work in the production area
- ❑ Easy repeatable set-up for tablet take-off, particularly useful when using a wide range of different sizes and shapes of tablets



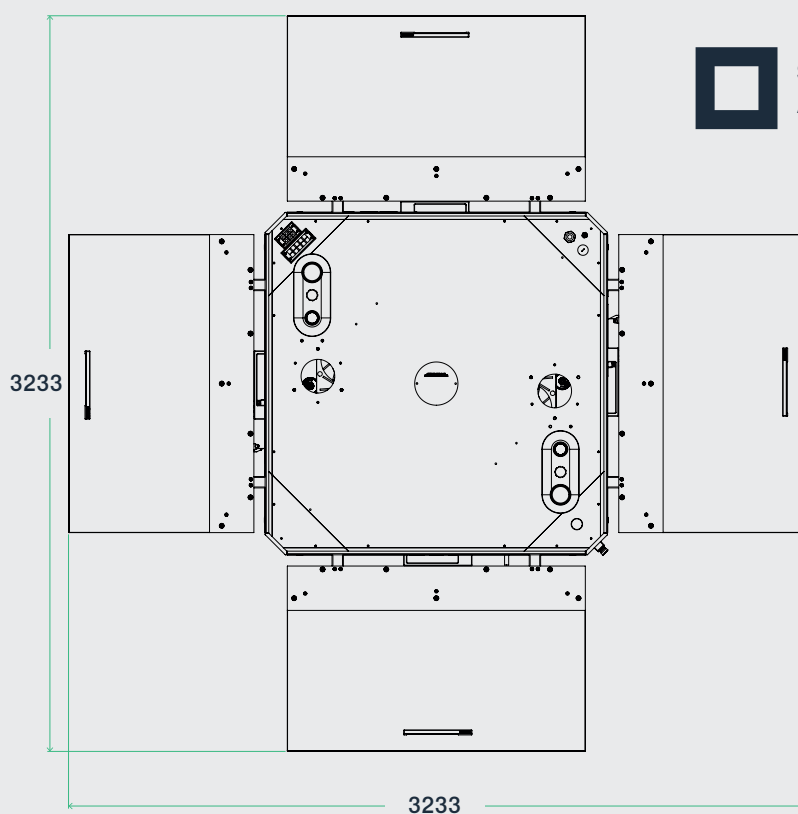
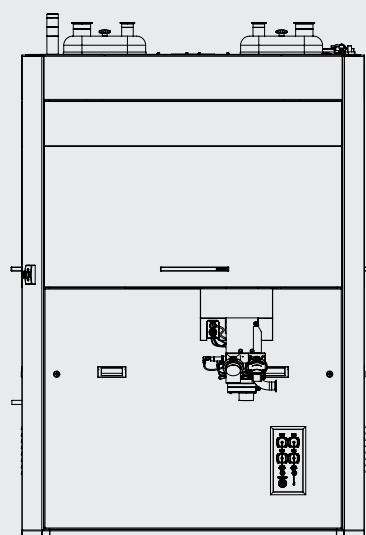
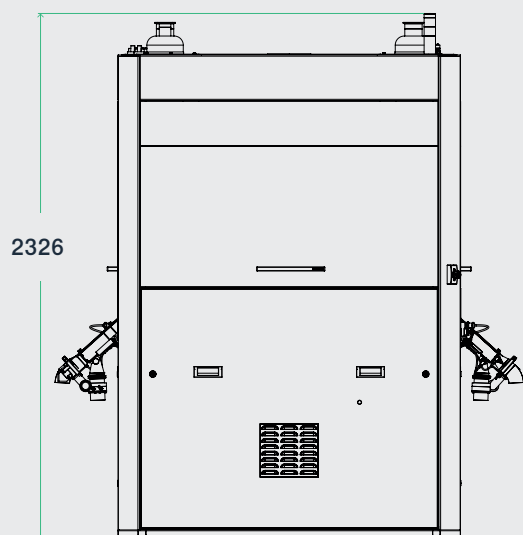
TPR 700 – YOUR BENEFITS

- ❑ Fastest change-over from product A to product B
- ❑ Excellent feeder technology in two and three paddle execution
- ❑ Life cycle cost extremely low
- ❑ Best in class OEE
- ❑ Designed for effective cleaning
- ❑ State-of-the-art, off-the-shelf Beckhoff controls, Syntegon software package running on Windows 10
- ❑ Best process “visibility”
- ❑ Hover transport system available for improved mobility of the press

BI-LAYER TABLETING

The flexibility of the TPR 700 continues to impress with the capability to manufacture bi-layer tablets with a set of conversion parts. Conversion time is extremely quick. The design of the bi-layer system ensures that there is a clear demarcation and no cross contamination between layers. Reduced capacity pressure rolls are available, to increase pre-compression measuring sensitivity. A single layer press can be converted to a bi-layer version, at any time in the future, by means of a retrofit kit.

TPR 700 Tablet Press



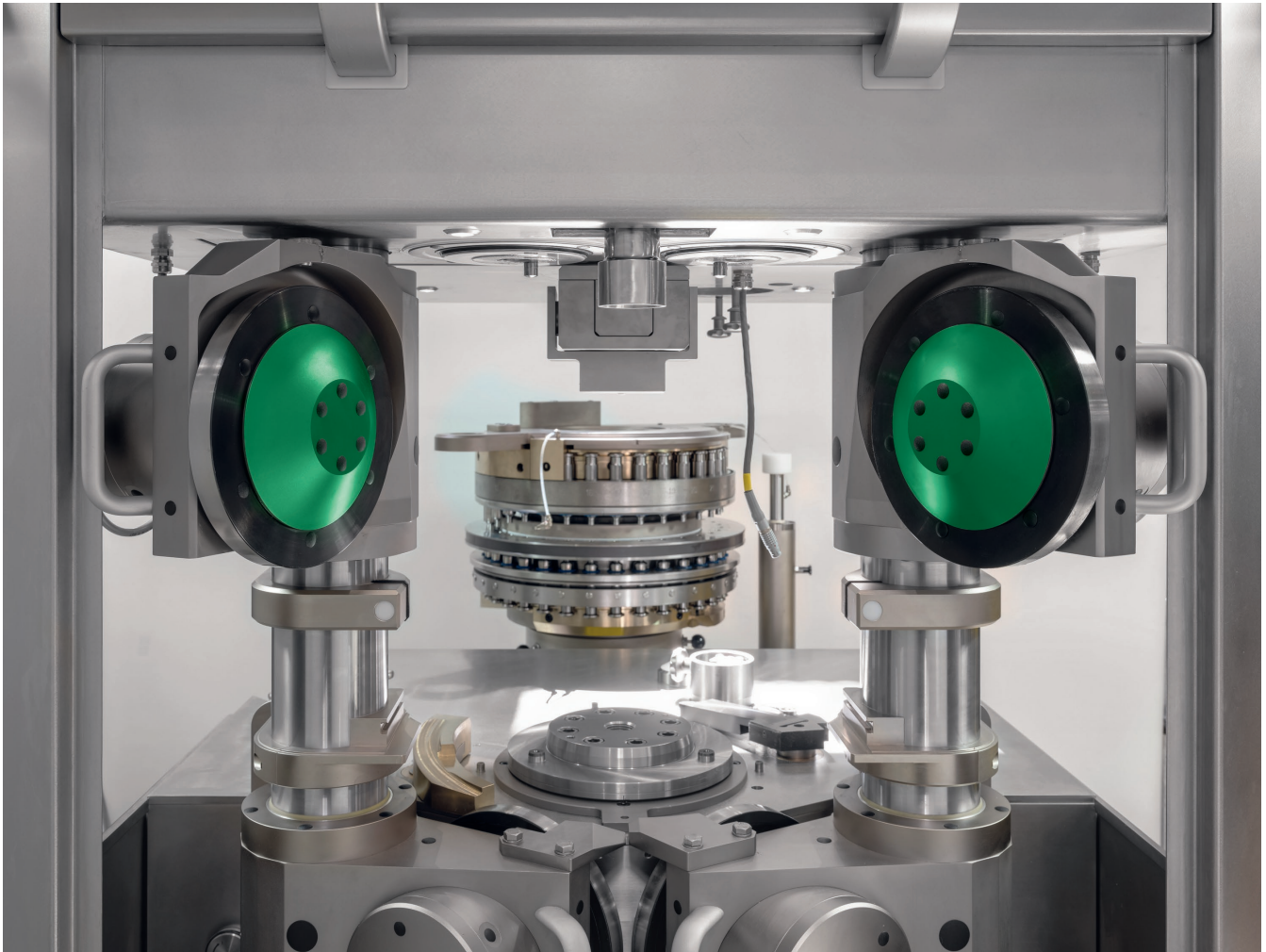
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A photograph of a pharmaceutical manufacturing facility. On the left is a large, stainless steel machine with the SYNTEGON logo. In the center, a worker wearing a blue cleanroom suit, a white face mask, and green gloves is operating a control panel with a large touchscreen display. The background is a clean, white industrial environment.

SYNTEGON

**OSD process technologies from
a single source: From granulation
through tablet compression up to capsule
filling. Get in touch for your solution.**

Common features



Swing open compression rolls for best access for conventional fitting and removing of punches and dies

- ❑ HMI – Syntegon hard- and software off-the-shelf
- ❑ 2 + 3 paddle feeder
- ❑ Turret exchange (TPR 500 + TPR 700):
all punches and cams exchangeable
- ❑ “True Flow” tablet discharge chute
- ❑ Two level production zone for easy cleaning and access

Innovative services tailored to your needs.

A comprehensive service portfolio lays the foundation for smooth production processes. We at Syntegon support you throughout the entire machine life cycle, from spare parts management to digital line optimization. Service agreements are a key element of our portfolio structure. We minimize production risks and maximize the efficiency of your equipment by working with you as equal partners.

Together, we tailor our solutions to your individual needs. You benefit from fixed conditions and guaranteed services.

Our global network of experts supports you with maintenance planning, technical support, and modernizations, as well as operator training and expert services. With our digital solutions, you gain control over your production processes and create transparency on product and machine data – anytime, anywhere. Whether it is switching to sustainable materials or upgrading to automated technologies, together with us you will take the next steps towards the factory of the future.

How can we help you? Please get in touch with us:
www.syntegon.com/services



Connect with our team.



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