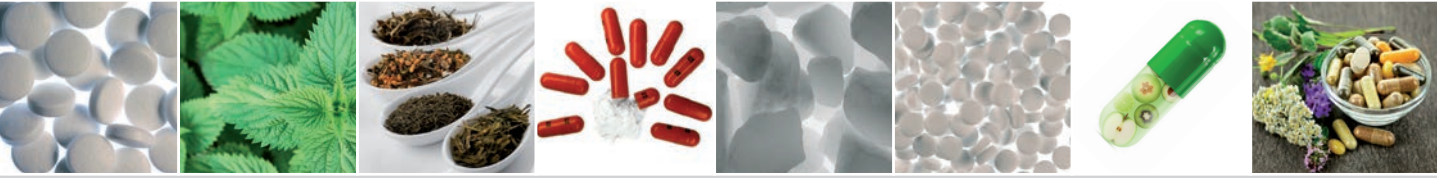


Compaction and granulation machine for the pharmaceutical industry

WP 200 Pharma



Alexanderwerk

WP 200 Pharma:

Compaction and granulation machine for the pharmaceutical industry

The Alexanderwerk WP 200 Pharma is especially designed as a production model, which meets the highest requirements and standards of the pharmaceutical industry. With a throughput up to 500 kg/h (Lactose) the WP 200 Pharma can be used for the production of a large range of products in small batches as well as for the compaction and granulation of single products in a continuous operation.

Moreover the machine is equipped as standard with the patented Combi-Vent-Feeder®. Through the improved de-aeration more raw material can be processed in a given period, which leads to a more profitable operation.

Because of its modular design, the process technology can be almost completely disassembled without special tools. Due to its cantilever bearing design the rollers can be easily replaced and cleaned, which provides an efficient and flexible production. To ensure a compact design, the control and operation units are integrated in an external control cabinet (1).



The design and construction is orientated on the strict requirements of pharmaceutical industry and provide the following advantages:

- cGMP design
- consistent separation between process material and technical equipment
- rollers in cantilever design
- integrated two-stage rotor fine granulators in Diagonal-Design®
- made completely of high quality stainless steel
- non-metallic parts FDA approved
- automated PLC
- URS-conformity as required
- tool free disassembly



Options:

- circumferential side seals (3)
- WIP (Wash in Place)
- 21 CFR Part 11
- containment solution with isolator-technology
- additional roller surfaces (smooth/grooved/knurled/squared or a desired combination) (2)
- suction water cooling
- hopper with level limit switch
- pneumatic conveyor for raw material/final granule
- mobile machine base
- through-the-wall-design



Applications

For many years pharmaceutical companies as well as specialized providers all over the world have been using solutions supplied by Alexanderwerk to produce tablets, capsules, life science products, flavours, instant powders, intense sweeteners and many more.

Why Alexanderwerk?

Vertical roller arrangements

Instead of using a plug screw, Alexanderwerk works with a vertical roller arrangement, which allows greater control of feed flow without the influences of gravity. Moreover, side seal losses can be separated from the compacted material and can be added back to the raw material, if required. This leads to a minimization of fine material in the finished product without having any negative influence on the consistency and composition of the batch.

Combi-Vent-Feeder®

Through feeding via the patented Combi-Vent-Feeder®, the air, which is displaced during the compaction process, is allowed to escape properly by generating an air flow in the opposite direction of the product feed. This leads to a uniform feed of raw material into the screw. Furthermore, the second hopper can be used to recycle undersize and oversize granule, which can be consistently and homogeneously added back to the raw material.

Two-stage granulation in Diagonal-Design®

Rotor screen granulators are commonly used in the chemical, food and pharmaceutical industry for sizing of soft to medium hard products. Alexanderwerk has developed a patented granulator in Diagonal-Design®, which raises the capacity up to 100 % by increasing the effectiveness of the working area of the screen. This leads to a doubling of throughput and in turn to a very gentle granulation with minimal fines generation. Additionally investment costs are reduced and the quality of the final product is increased.

All-round support

Beginning with the manufacture and followed by delivery, installation supervision, implementation, maintenance and on-site assistance – Alexanderwerk is at your service.

Keeping at the forefront of technology

The processing of pharmaceutical products places extremely high demands on the techniques used and must often be linked with individual and innovative solutions. For many years international pharmaceutical companies have been relying on the planning, construction and production of our advanced machines and customized designs as well as on our individual adaptations. In addition we can also support our customers in the area of plant construction. To offer the best possible solution for our customers, we provide the combination of our own and third-party components from a single source. We are ready to face the challenge!

Trial/Test center

To guarantee the optimal processing of each product, Alexanderwerk offers its test center for different tests and process developments. This can be done in the presence of the customer as well as independently through Alexanderwerk. In both cases the customer is given a detailed test report to provide a better basis for further decisions.

Please feel free to contact us – we will be pleased to support you!





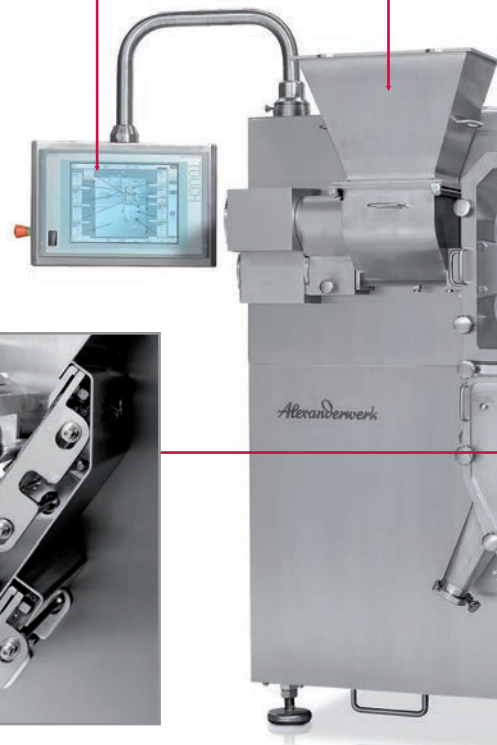
Functions and features of WP 200 Pharma

The processing principle of roller compaction and granulation is relatively straight forward. However, only the use of modern production technology in connection with highly-developed feeding and control technology enables an accurate and economic production of high quality granules.



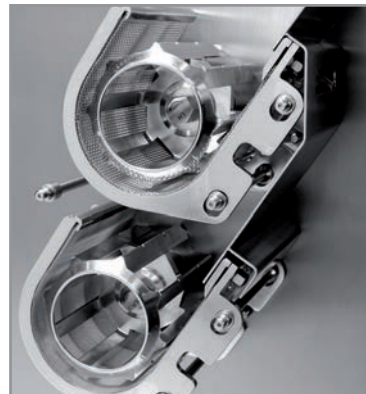
Interface for comprehensive control

The modern control and advanced technology of WP 120 Pharma enables a stable, fully controlled, continuous process whereby the compaction pressure and roller gap are kept constant while the automatic feed control will compensate any physical fluctuations in the product. Process parameters such as throughput, flake density, compacting pressure, roller RPM and others can be precisely and repeatably adjusted.



Two-stage granulation for small tolerances

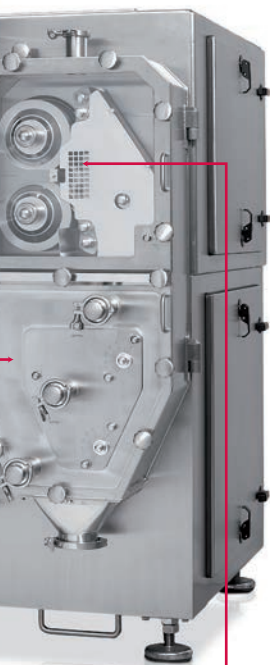
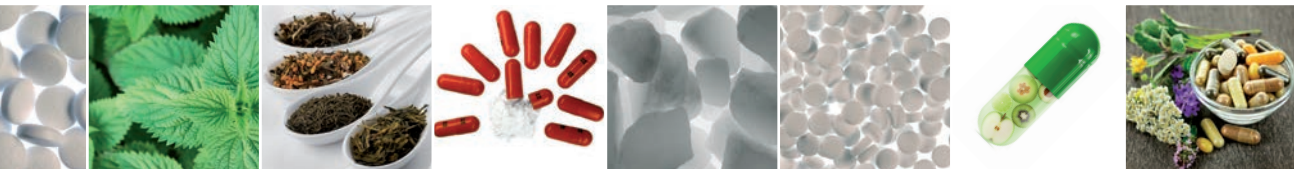
After pre-crushing the flakes are much larger than the oversize of the end product. Only in the Diagonal-Design®, two-stage granulation unit consisting of pre-granulation and fine-granulation, the final size of the granules can be achieved within previously defined tolerances. Moreover, it provides a very gentle granulation as well as an optimal utilization.



Pre-crushing for optimal further processing

Granules are characterized by a defined grain size, which varies between a fixed upper and lower limit (undersize and oversize). Depending on product properties the compacted product often leaves the compaction area as flakes. The pre-crusher breaks the large flakes into smaller pieces suitable for handling in the downstream granulator.





Patented screw feeding via Combi-Vent-Feeder®

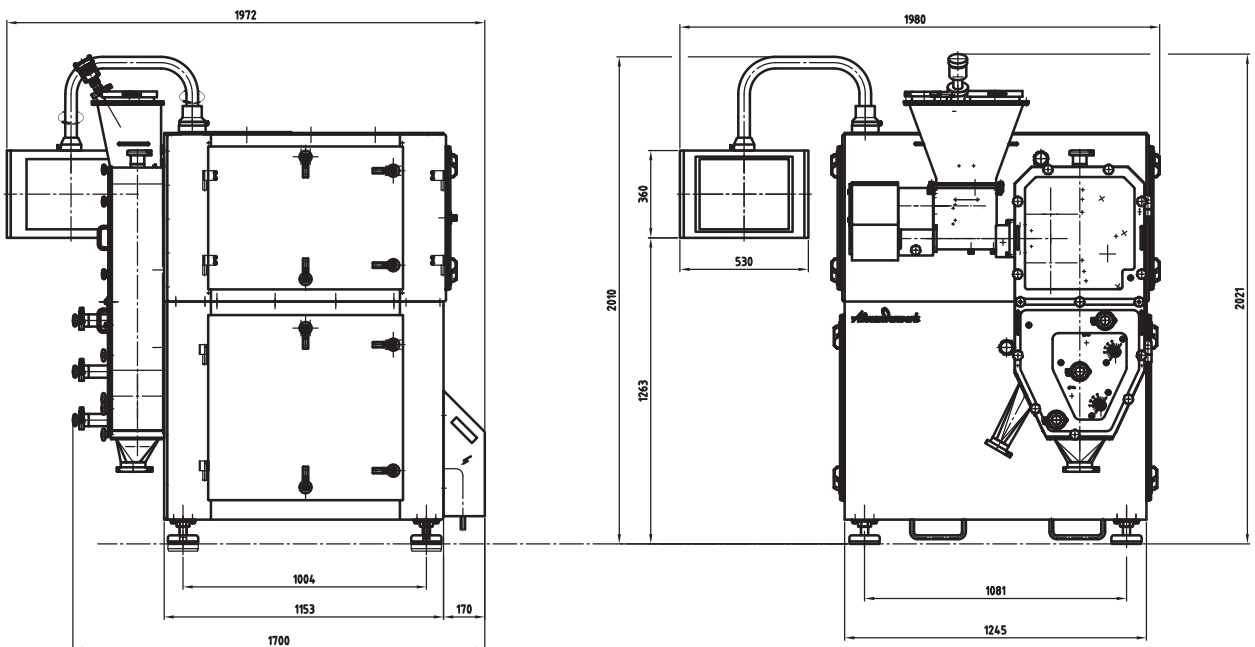
Through feeding using the patented Combi-Vent-Feeder®, the air, which is displaced during the compaction process, is allowed to escape properly through the second chamber of the feed hopper without disruption of the feed. This leads to a uniform feed of raw material into the rollers. Furthermore the second hopper can be used to recycle undersize and oversize granule, which can be homogeneously added to the raw material, if required. In addition, the feeding unit can be assisted by using a vacuum system, which provides a minimal product layer on the inside of the screw casing. This greatly improves the processing of fluidizing products with low bulk density.

Individualized compaction unit

The thickness of the flakes (compacted material) produced on the roller compactor is measured by position transducers and kept constant by a roller gap control unit. The pressure force, a reference value for the degree of compaction, is variably adjustable by the hydraulic system. In case of possible fluctuations in the bulk weight, these are compensated by the screw speed. Furthermore there are different roller combinations available to ensure the optimal compaction. Depending on the product, roller patterns (knurled, grooved, knurled and grooved, smooth and squared) in different widths are available. An optional circumferential side seal design prevents excessive side seal powder leakage during compaction, which can lead to an increased quality of the granule and a minimization of undersize, fine material.

Technical data

roller diameter	200 mm
roller width	75 mm
throughput, continuous operation	500 kg/h (Lactose)
maximal pressure force	20 kN/cm
maximal roller gap	5 mm
maximal roller speed	38 rpm
weight	approx. 2,050 kg
weight control cabinet	approx. 400 kg
dimensions	1,700 mm x 1,340 mm x 1,860 mm
dimensions control cabinet	800 mm x 600 mm x 2,100 mm



Alexanderwerk: The Compaction People

Alexanderwerk is a world leader in producing advanced compaction and granulation solutions for the pharmaceutical and chemical industry. For over 125 years Alexanderwerk has been dedicated to its customers and offers a wide range of custom made solutions. From stand-alone equipment to complete integrated, state of the art compaction plants – we aim to exceed our customer expectations by meeting the markets growing demand for higher quality and higher performance equipment.

So, whatever you need, just ask the people behind the technique.