

NOTOL

plant for the production of solid dosage forms

technical data on the plant

— Total surface area 30,160 m²

Production area 13%

Area for technical purposes
and warehousing

(5,263 pallet places) 64%

Non-production area

(offices, corridors
for visitors) 23%

— Annual capacity

3.5 billion tablets,
coated tablets and
capsules

— Value of investment

Over € 150 million





Technical planning and construction

The entire project was prepared by Krka's project team in cooperation with internationally recognized domestic and foreign companies, experienced in pharmaceutical engineering, logistics, and system for managing and recording of the production processes. Leading Slovene and foreign performers and suppliers were engaged.

The greatest investment

The new plant Notol for the production of solid dosage forms is Krka's greatest investment in manufacture of finished pharmaceutical products. It represents the modern production philosophy through which we have realized our established aims:

- to increase production capacities,
- to attain greater flexibility of the production which takes place in spatially and climatically completely separate areas,
- to ensure a high level of protection and safety of products and staff with production processes in closed systems, and to prevent cross contamination,



to optimize transport and _____
to rationalize warehousing
capacities by using
standard containers,

to optimize the ratio _____
between clean production
areas and technical surfaces,
thus rationalizing the costs
of construction and
maintenance,

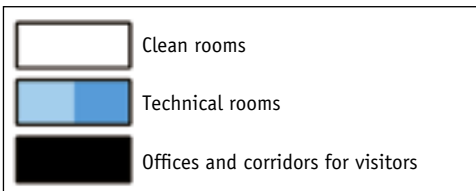
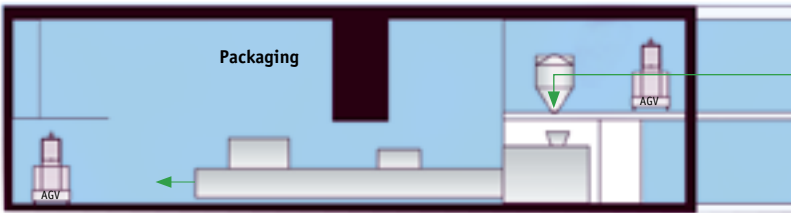
to automate production _____
and transport processes.



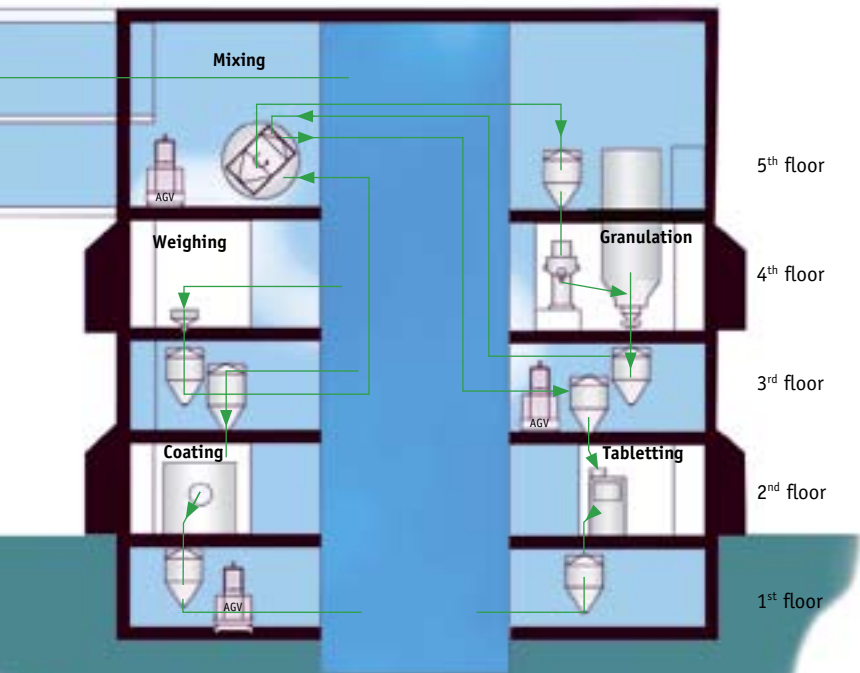
The concept of the plant

Notol comprises three interconnected buildings:

- production building
- administrative-reception centre, and
- packaging building



The concept of the vertical flow of material, the introduction of standard containers, and the automation of internal transport, indicate the state-of-the-art approach to organization and management of production.



The production building, the heart of which is production of bulk products, has five floors, two of which are production and three technical floors. In the centre of the construction is an automated high-bay warehouse which reaches up through all the floors. On the production floors, all phases of production from weighing to bulk products are carried out. The technical floors are designed for technological and technical installations and for internal transport.



The production is computer-supported, with an efficient multi-level system which guides and controls technology, cleaning of the production equipment and transport of all materials carried out with automatically guided vehicles (AGV).

production process



The first phase of production is the receipt of raw materials, which are transferred to the temporary warehouse through the delivery and identification area.

The weighing, through the connecting station, is carried out directly into the container on the lower floor. After raw materials being weighed, the container is dispatched by automated transport for homogenization or mixing. After the procedure the mixture in the container is ready for the following production phase – granulation.

The granulation procedure prepares the mixture for compression into tablets. The powdery substances are processed with a solution of a bonding material in granulators. The dry granulate is then sieved into a container and additives for tableting are added. The tableting mixture is now ready for tableting.



The tableting is performed on highly efficient, computer-controlled tableting machines, equipped with automatic units for in-process control. The machines have the capacity to compress from 100,000 to 300,000 tablets per hour.

Tablets can be film coated.
Coating can provide activity
of the medicine at an
exact site in the body,
controlled release of the
active substance, protection
against humidity and light,
and also concealing of
unpleasant taste.



The packaging of bulk products is carried out on automated lines, fitted with individual control systems which ensure the flawless quality of the finished product.

The packaging premises are interconnected with the other buildings and also, via a special transport corridor, with the central warehouse for finished products in the neighbouring building.

The supply of the packaging materials and the transfer of finished products is ensured by means of automatically guided vehicles.



technical support

In modern pharmaceutical factories, the air-conditioning system is of exceptional importance. Controlled temperature, humidity, direction of flow and cleanliness of the air are essential for good manufacturing practice and basic conditions for the production. Adequate air-handling systems protect the products and ensure safe and healthy environment for the employees.



The distribution and supply of the technological media (drinking water, purified water, compressed air, steam, etc.) are automated and under constant supervision by the central control system.

quality and safety

The competitiveness of a company, and hence the associated business success, are increasingly dependent on adherence to the world quality standards, and also on being equipped with modern environment-friendly technology, as well as adjusting swiftly to market changes. During technical planning and construction of the plant Good Manufacturing Practice and the safety and ecological standards were strictly followed. The highest quality and most up-to-date materials and technologies were installed.



Pharmaceutical production is extremely demanding, and must therefore constantly keep up with world standards. In Notol, these requirements can be met thanks to the new concept of production which ensures quality, efficacy and safety of our medicines.

Notol plant for the production of solid dosage forms is an important step towards the realization of our strategic aims, and will contribute to Krka's further penetration on the demanding world markets.





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Production: Krka, d. d., Novo mesto

Design: Movera d.o.o

Photography: Uroš Deu

Printed by: Gorenjski tisk

Third edition, September 2007