

Description of the **APOSTORE**
pharmaceutical Store with
commissioning robot



APOSTORE 1000

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1. Introduction

APOSTORE commissioning robots are the outcome of many years of experience in the field of commissioning technology for pharmacies. As a result of our close ties with this particular field and our technical competence, we have been able to develop a system that will fulfil the most discerning future demands of pharmacies. These commissioning robots are characterised by the following features:

- Minimum space requirements
- High packing density
- High commissioning speed
- Convenient and safe storage
- Modular flexibility
- Simple individual connection with the pharmacy's EDP system and stocks management systems

Right from the outset **APOSTORE** provides an all-embracing after-sales services for pharmacies, and this is maintained for many years after the actual purchase. Opting to co-operation with **APOSTORE** incurs a complete range of services, including:

- Economic efficiency analyses
- Finance planning
- Leasing offer
- Connection to the pharmacy's EDP system and/or stocks management system
- Staff training
- Integration consulting
- Individual installation planning
- Full-service maintenance agreements

The modular extendable **APOSTORE** commissioning system is individually adapted to the requirements of your pharmacy.

Point-of-sale counters are either located on a different floor or far away from the **APOSTORE** automatic commissioning system, will be interlinked by conveyors, lifts and chutes. Careful, individual planning ensures that the conveying facilities are routed in keeping with the space conditions in the given pharmacy.

The **APOSTORE** project engineer records detailed measures of the automatic commissioning robot's location and the connection with the sales counters.

2. Functional description

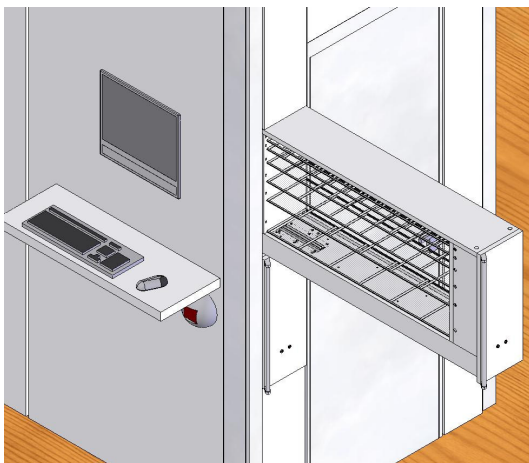
The basic equipment of an APOSTORE pharmaceuticals store with commissioning robot for pharmacies consists of

- An acquisition station with intake desk
- A handling robot fitted with 4 servo-axes
- A shelving system for three-dimensional storage of packs, tubes and containers.

2.1. Manual Input

The articles are identified by manual scanning and they are placed in intake drawer. Is there any need to enter the expiry date in the database the colour of the display screen changes. Then the expire date has to be entered in the terminal.

The packages are simply manual put into one of the drawer's shelf by the user. The selected shelf is identified automatically by the electronic control. As far the first drawer is filled up the user has to close the drawer and can follow up the intake procedure on the second drawer. During filling up the second drawer the robot takes the article from the first drawer and place them in the final position on a glas shelf bord. All articles in drawers are well knowned by the system. Therefore the robot is free to pick up article to store them on an optimal place within the shelves or he can operate an imidiately output request on a package from the drawer. Meanwhile filling the second drawer the first drawer will be emptied by the robot. The exchange of the two drawer allows a conti-nuosly stock filling.



intake drawer

For large quantities the APOSTORE 1000 can be equipped up to 4 drawers.

If something is not plausible the pack is immediately returned to the special discharge outlet.

2.2. Product range

With the Apostore gripper technique a large range of products can be handled. The more packs are in the machine, the more time is left for customer service.



Cellophane packs



large range of square packs



Round packs



glasses in separate packs

The robot search best places to store the packages. To optimize the space equal and unequal packages are stored behind or next to each other.

The **APOSTORE** gripper allows direct dispensing of each package even the last package in the channel without time losses and package swap.

In case of many equal packages on stock the user can select if the articles should be stored in different channels (chaotic stock) or in sort clean shelf channels. With the multi pick operation many articles from sort clean channels can be dispensed in one movement. This decies the movements and increase the output performance.

2.3. Article output



All packs, also those which are embossed, bundled and/or wrapped in film, are safely handled on both sides of the shelves by the commissioning robot grippers. The store is operated by the first-in/first-out principle. With multiple-depth storage, the gripper directly accesses the required pack and withdraws it as the first pack safely and quickly without any transfer operation.

The unmatched high packing density is achieved by several different packs behind each other without any loss of commissioning performance. The APOSTORE automatic commissioning system is the only one of its kind to feature a so-called multi-pick function, i.e. that one commissioning robot dispenses all packs in one movement if there is a request for several packs.

2.4. Article transport

The packs are transported by conveying lines, lifts and chutes to the sales counter where they slide down to a convenient level for effortless removal.

APOSTORE produce a wide range of products for the article transport. The planning will be done in close cooperation with the pharmacist or his architect.

3. Technical data

3.1. *Equipment dimension*

Installation length:	4,60 – 11,60 m modular extension within 50 cm module
Installation width:	approx. 1,27 m
Installation height:	1,9 m - 3,60 m modular extension within 10 cm steps

3.2. *Pack Dimensions*

Length:	min. 35 mm – max. 195 mm
Width:	min. 15 mm – max. 140 mm
Height:	min. 15 mm – max. 120 mm
Weight:	max. 1.200 g

Cubic packs, also if embossed, bundled and/or wrapped in film, Articles in other shapes are placed in external packs available from **APOSTORE** for automatic intake and withdrawal.

3.3 *Storage capacity*

Storage capacity is individual calculated by installation length and height of the equipment and will be adapted to the pharmacy requirements.

3.4 *Dispensing capacity*

Manual intake:	2 – 4 Seconds/Pack
Automatic output:	7 – 11 Seconds for a single pack 4 – 6 Seconds/Pack with multipick function

The indicated output performance is to understand without additional transfer time on individual conveyors between the APOSTORE and the point of sales. With multipick function the performance increase in accordance to the number of packs which will be delivered with one movement.

3.5 Marginal conditions

Approvals

The APOSTORE commissioning robot fulfils the Machine Guideline 89/392/EEC. The CE Conformity Certificate gives you the certainty that all our equipment conforms to the requisite DIN and Accident Prevention Regulations. A TÜV approval certificate (official German inspectorate) of the installation is not required.

Ambient conditions

The APOSTORE commissioning robot is designed for operation under normal room conditions. The customer must install the corresponding ventilation equipment for the commissioning robots.

Electrical connection

The APOSTORE commissioning robot is operated by 3-phase 400 V alternating current.

Delivery time

Approx. 3 months after the order has been clarified

4. System components

4.1. Equipments

The APOSTORE commissioning system consists of the following components:

- a) Modular **shelving** consisting of two 25 cm rack bays. The shelf modules are 50 cm and 100 cm wide.
- b) The commissioning robot is a handling device with swivelling two jaw gripper for the following functions:
 - multiple depth intake and dispensing with direct access to each package (without package swap)
 - multi pick operation (several different packages within one movement)
 - greatest spectrum of different packages
- c) Two intake drawers with scanner and check measurements
- d) Two discharge outlets
- e) An integrated **discharge station** at the intake area for special outputs such as faulty packs (e.g. all expired use-by articles) and special orders (e.g. for deliveries to nursing homes, etc.)
- f) Die elektrische Steuerung und Software umfasst:
 - Installation control for parallel operation of two commissioning robots, with signal lamps, emergency off, main switch and circuit-breaker
 - Industrial PC computer with mirror disc and UPS (unbreakable Power supply) for shut down operation
 - 1 Touchscreen operator terminal with keyboard and mouse
 - Ethernet TCP/IP network connection to customer's stock management system
 - ISDN/DSL Router for remote access and remote control
 - Software for dynamic store and access servicing
 - Software für den DFÜ-Remote-Zugang
 - Software for Offline operation of a separate remote terminal e.g. to operate the installation in the event of a failure of the stock administration system
 - **Multipick** software (when several packs are discharged with a single picking operation)
- g) Illumination lights
- h) Electronic monitoring of the access door

5. Scope of deliveries and services

- Pharmacy consultations to implement an automatic commissioning system with optimised flow of stocks
- Locating and installation plans (integration into the interior furnishing and planning, and execution of all construction measures by the client)
- Planning, co-ordination, installation and commissioning the mechanical and electrical equipment
- Packing and transporting the supplied equipment to the point of installation
- Planning the conveying equipment between the automatic commissioning system and the withdrawal point (without local building and cladding work, in so far as nothing else is offered)
- 2-day training and instruction of the operating personnel after the commissioning work has been completed
- APOSTORE service technician for standby (optional)

6. Service and maintenance agreement

The conclusion of a service agreement is necessary for safety reasons and to ensure smooth operation.

This agreement covers the following aspects:

- Access to all resources of the APOSTORE After-Sales Service
- Inspections according to the check list (twice a year):
 - Maintenance of equipment
 - Adjustments and new settings
 - Diagnosis to optimise operation
- Maintenance work (once a year, possibly coupled with inspections)
Exchanging small and wearing parts in accordance with the maintenance plan
- Spare parts stocking
- Hotline to remedy faults and clarify technical questions or other matters during the service period.
- Guaranteed reaction time: In the event of orderly written or faxed notification of faults, APOSTORE guarantees that rectifying measures will be initiated locally within the shortest time possible, but at the latest within 24 hours.
- Computer maintenance (once a year) carried out in conjunction with inspection and/or maintenance work.
- Annual software updates to maintain and improve the functional performance of the contract object, possibly carried out in conjunction with inspections and/or maintenance work.
- All repair work arising within normal, orderly operation, and the elimination of faults.
- Travel expenses
- Small and wearing parts, as well as auxiliary and operating materials

The services are carried out by experienced APOSTORE personnel at the point of installation if this cannot be accomplished by remote servicing (by remote data transmission or over the telephone).

Finally the **APOSTORE 1000** is a powerful system in your pharmacy to give you more time for an individual business with your client.

Improve your results and get success using the **APOSTORE** Know-How with all the advantages of the **APOSTORE 1000** gripper and multi pick operation.

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