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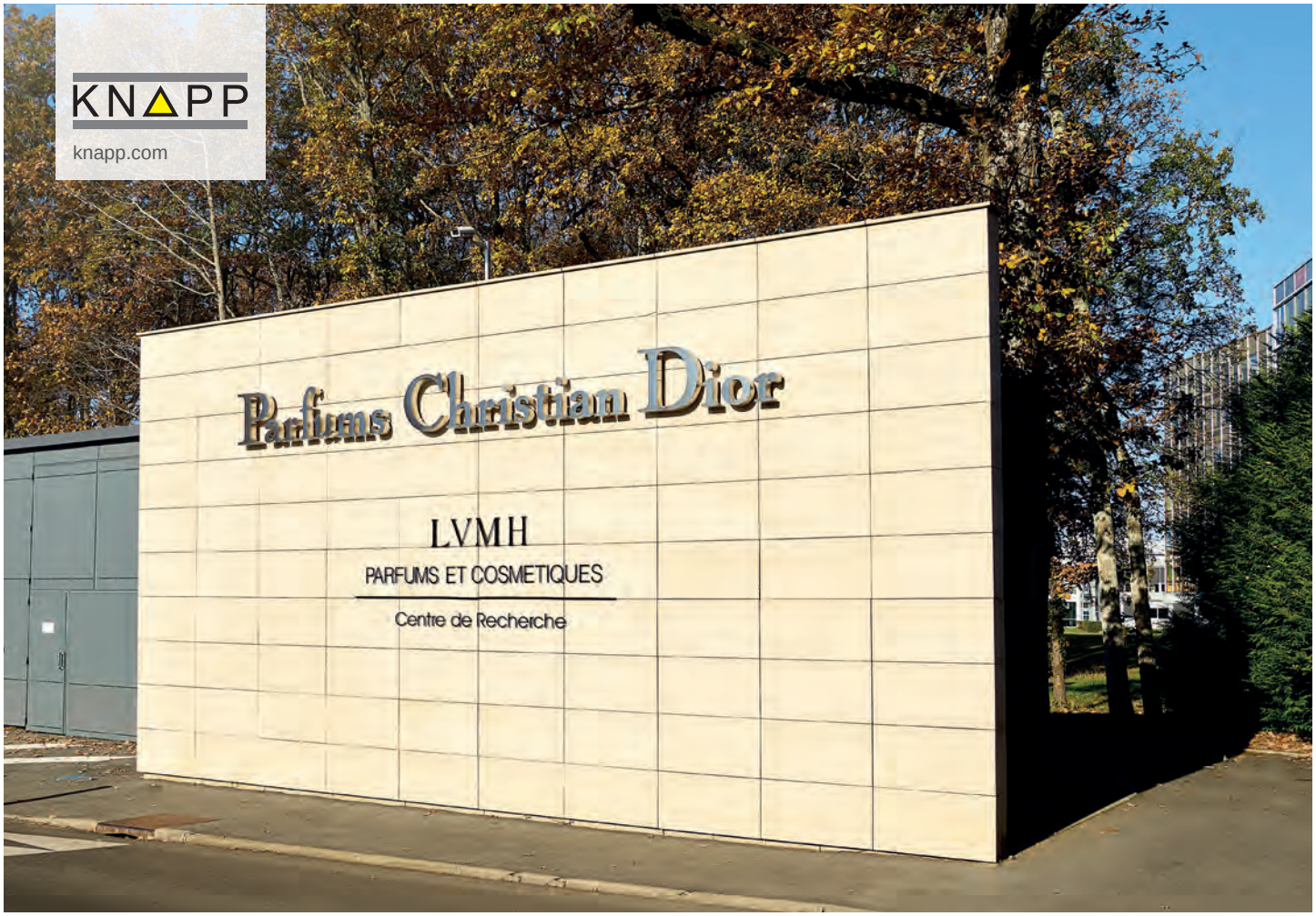


The latest designer automation

Parfums Christian Dior belongs to the **LVMH group** (Moët Hennessy – Louis Vuitton) and sells exclusive **scents and cosmetics** all over the world. The **production site** in **Saint-Jean-de-Braye** in the Orléans region is the main production location for Parfums Christian Dior. From here, the group distributes products branded **Christian Dior, Benefit** and **Make Up Forever**. The central warehouse also supplies the regional warehouses in the USA, Russia, Asia and the Middle East. The distribution centre in Saint-Jean-de-Braye also supplies all retail locations in Europe, and fulfils all purchases made through the website dior.com. Parfums Christian Dior chose to collaborate with KNAPP to create **capacity for further growth** and to automate their **work processes** with state-of-the art automation technology.

Christian Dior
PARFUMS

Location	Saint-Jean-de-Braye (45) France
Sector	Retail, perfumes, cosmetics
In operation since	Autumn 2018
Application	Omni-channel distribution
	Central distribution centre for Europe
	Supplies regional distribution centres in the USA, in Russia, Asia and the Middle East
Project highlights	Highly automated, efficient processes thanks to robotics
	System installed during on-going warehouse operation
	Employees enjoy optimum ergonomics

We chose KNAPP because from the start it simply felt right – the team was very much in tune with our specific requirements. They really understood our complex processes and created a highly efficient automation solution to meet our needs.

Olivier Sorbe, Logistics Manager for Europe, the Middle East and Africa (EMEA)

Intelligent automation for added value

The Parfums Christian Dior company has been using automation for their production in Saint-Jean-de-Braye for a while. The next logical step was to automate and optimize the processes in the distribution centre as well, to facilitate further company growth.

The aim was to optimize the following processes with intelligent automation technology:

- **Omni-channel fulfilment:** Delivery to regional warehouses and points of sale
- Handling **full cases and single items**
- **Automatic labelling**
- **Handling different carton sizes**
- **Storing orders temporarily** and creating **perfect sequences** for dispatch and palletizing
- **High storage density and direct storage of full cases**
- **Depalletizing and palletizing** goods and orders **automatically;** assembling mixed pallets

When designing omni-channel solutions, it is crucial to keep in mind that the goods flows must not affect each other. At Parfums Christian Dior, there are two flows of goods – one for full cases and one for single item picking. The goal was to transform the complex requirements of each into a unique, simple and efficient solution.

Brice Gaujard, Director of Sales KNAPP France

There were also a number of other requirements to be considered in designing the solution:

- **Fast order processing:** Next-day delivery of purchased goods
- **Performance:** The requirement was 64,000 order lines per day and 14,600 full cases per day.
- **Highest quality:** Gentle handling for high-end articles, zero-error strategy for order processing
- **Flexibility:** Despite the high degree of automation, processes must remain very flexible, for example, palletizing and depalletizing.
- **Optimum ergonomics:** Parfums Christian Dior strives to provide pleasant working conditions for employees. The new solution was designed with the express purpose of optimizing workflows and reducing long walking distances and heavy lifting to a minimum.
- **Working hours:** An important requirement was to retain a five-day work week and to eliminate the night shift. Two-shift operation (16 hours) is reserved for times of peak load.
- **Gentle handling:** Parfums Christian Dior's high-end range of goods must be handled gently during automatic processing and stored securely.
- **Capacity for growth:** The company expects a stock growth of approximately 8 percent per year.
- **Limited space:** The new automation solution had to be merged with the existing solution. The goal was to achieve the highest possible picking performance, using the limited space available.

9 robots

1 automatic warehouse system

8 goods-to-person work stations

1 intelligent software solution

Efficient omni-channel fulfilment

Integrating all the new automation technology into our existing warehouse with its space constraints – and all during ongoing operation – was a formidable challenge. Close cooperation and transparent communication throughout the project allowed the teams to master this challenge successfully.

Olivier Sorbe, Logistics Manager for Europe,
the Middle East and Africa (EMEA)

Intelligent automation solution for special requirements

(1) Goods-in

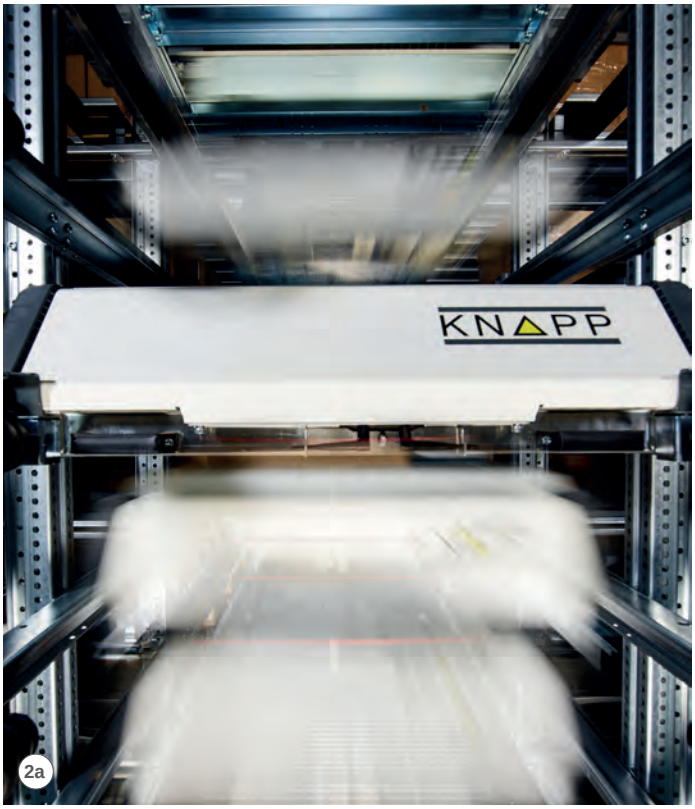
Automatic depalletizing and master data capture
Unmixed and mixed pallets arrive in the goods-in area from the production area located right next door. A total of two robots depalletize the cartons fully-automatically. Intelligent image recognition technology records the weight and dimensions of each carton during depalletizing and transmits this data to the warehouse management system. This lays the groundwork for **error-free processes** starting in goods-in. The depalletizing robots place the full cases directly onto the conveyor system. Small cartons are placed on trays. The cartons and trays are automatically conveyed to the OSR Shuttle™ central storage system and stored there.

Manual goods-in processes
The solution includes manual goods-in work stations in addition to the fully-automatic goods-in processes. Here, goods that can‘t be handled by robots are prepared manually for storage in the OSR Shuttle™.

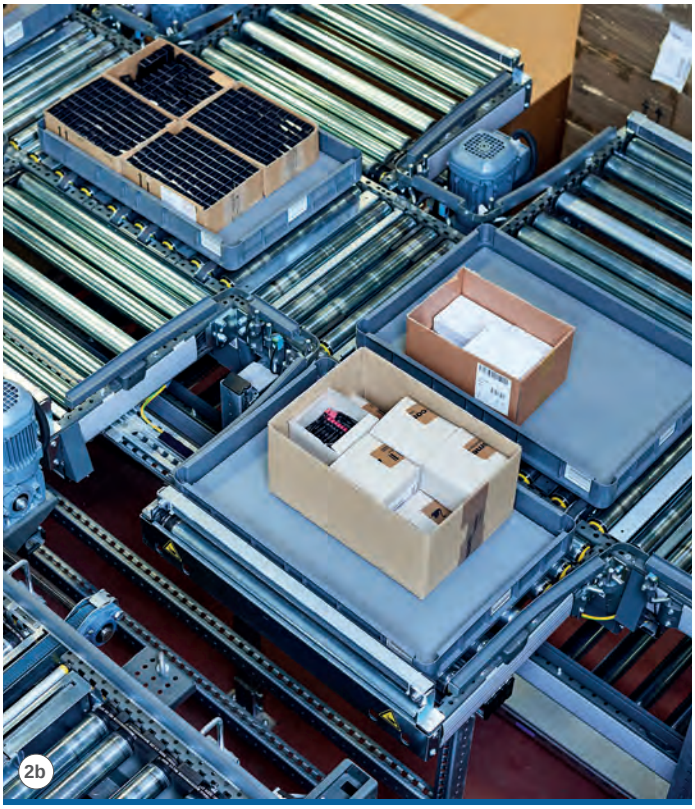
- ★ **Fully-automatic depalletizing of mixed and unmixed pallets**
- ★ **Image recognition technology captures master data automatically**
- ★ **Manual goods-in process for special goods**

(1a) Full cases used to be **depalletized** manually. Today, special depalletizing robots carry out this strenuous task.

(1b) The robots place larger cartons directly onto the conveyor system, while smaller cartons are placed on trays. This increases the storage density in the OSR Shuttle™



2a


2b

2a The **heart of the solution:** All goods are stored centrally in one location, the OSR Shuttle™ automatic storage system.

2b **The brain of the solution:** The software KiSoft selects the perfect spot for each article. The system always knows where each article is and can retrieve it immediately.

2 Storage

Entire article range stored centrally
At the heart of the warehouse is the OSR Shuttle™ automatic storage system. It holds both full cases and open cartons for single item picking. For each carton or tray, the software selects the perfect spot in the rack system. This ensures that the system always knows where every single **article is for immediate retrieval.**

A system with room for growth
The OSR Shuttle™ automatic storage system is 50 metres long and 30 metres wide. At the moment, there are 7 rack line systems with 38,190 load unit locations. Containers and trays with dimensions up to 600x400x320 mm can be stored double-deep in the system. As Parfums Christian Dior estimates that **stock (SKU) will expand by 8 percent** each year, 3 rack line systems with 16,416 load unit locations can be added to the OSR Shuttle™ as required. This provides plenty of room for future growth.

Temporary storage of orders
The OSR Shuttle™ at Parfums Christian Dior is more than just a storage system – it can also store completed orders temporarily. When all the goods for an order are available, they can be automatically retrieved from the rack system and made ready for dispatch. Buffering orders this way brings the advantage of **separating order processing from dispatch.** As a result, resources are used much more efficiently.

- ★ **Entire article range stored centrally**
- ★ **Complete transparency and immediate access to every article**
- ★ **Direct storage of cartons**
- ★ **Temporary storage of orders for efficient use of resources**
- ★ **Optimal storage density thanks to double-deep storage**
- ★ **A system with room for growth: 3 rack line systems can be added**

3a The **goods-to-person principle** optimizes manual picking: The goods are always presented at a convenient height and in the correct sequence.

3b **Intelligent software-supported process** thanks to easyUse: Source container, target container and required quantity are displayed. Taking the order structure and the high quality standards required into account, up to 250 order lines can be processed per hour at each work station.

3c **One-touch handling:** Each article is handled only once during picking. The employee takes the article from the source carton and places it into the dispatch carton.

3d **Continuous workflow:** The employee confirms that an order is completed by pushing a button. The carton is automatically taken away and the next carton is supplied immediately.

3 Goods-to-person picking

Ergonomics, performance and efficiency

There are **eight ergonomically designed goods-to-person work stations** for efficient manual single item picking. The goods-to-person principle means that the goods are presented to the employees in the **correct sequence** and at a **convenient height**. The **easyUse user interfaces** on touch screens, designed to be intuitive, help to achieve error-free order processing. This guarantees that the **manual picking procedure is both ergonomic and efficient**. In addition, the Pick-it-Easy work stations are specially adapted to the requirements of Parfums Christian Dior and are perfect for handling their small, lightweight beauty products. Every hour, 2,100 order lines can be processed at the Pick-it-Easy work stations.

Every article in the system is accessible

The Pick-it-Easy work stations are connected to the OSR Shuttle™ with a pre-zone. Each work station can access every article in the system at any time. This ensures that orders can be processed continually and efficiently at each work station. The Pick-it-Easy work stations also allow for **efficient one-touch handling**: The articles are picked directly from the source cartons into the dispatch cartons. Each article is therefore handled only once before being shipped.

For me, one of the major successes in this project was how the manual picking procedure was optimized. Our employees now work hand-in-hand with ultramodern automation technology. All the work processes are ergonomic, and software guidance reduces errors to a minimum.

Olivier Sorbe, Logistics Manager for Europe, the Middle East and Africa (EMEA)

- ★ **Goods-to-person picking means optimized single item picking**
- ★ **Pick-it-Easy: Ergonomic, efficient and error-free working**
- ★ **All articles are accessible: Each work station can access every article from the OSR Shuttle™**
- ★ **Intelligent software-guided processes using touch screens**

Assembling mixed pallets is an important process for the cosmetics retail sector. When done by hand, it takes a lot of time and errors are common. Robots, in combination with our intelligent packing arrangement calculation software, bring huge advantages here. Our solutions have efficiently automated this process, important for Parfums Christian Dior, boosting quality and performance for the long term.

Brice Gaujard, Director of Sales KNAPP France

④ Dispatch preparation

Automatic labelling and perfect sequencing
Full cases are retrieved directly from the OSR Shuttle™ and prepared for dispatch. Step one is to **label the cartons**. Step two is to arrange them in the correct **perfect sequence for automatic palletizing.** Automating these two process steps was a crucial requirement for Parfums Christian Dior and was successfully realized.

★ **Fully-automatic labelling of full cases**
★ **Perfect sequence created fully-automatically**
★ **Efficient dispatch preparation**

④ Labelling full cases is an important process for the cosmetics retail sector. At Parfums Christian Dior, this process is now efficiently automated: The correct label is applied to each carton as it passes by.


MISCELLANEOUS
ID 8000
CONSUMER COMMODITY


2 goods flows
1 mission
making complexity simple
for Parfums Christian Dior

5 There is a perfect place for each carton on the pallet: The special software KiSoft Pack Master calculates the ideal packing arrangement, resulting in a stable, well-packed pallet.

5 Dispatch

Palletizing robots make the dispatch processes efficient
The **three robots** in dispatch efficiently palletize most of the orders. This has significantly boosted efficiency in dispatch while at the same time reducing the physical strain on the employees – robots now do most of the heavy lifting. The employees only need to manually palletize the small proportion of goods that can‘t be handled by the robots.

KiSoft Pack Master creates the perfect pallet arrangement
The **intelligent software** that calculates packing arrangements also **optimizes automatic palletizing**. The software calculates the ideal packing arrangement for each pallet and transmits this information to the robots. Packing requirements such as “stack heavy articles before light ones” can be fulfilled automatically. The robots place each carton in its predetermined location, wrap the pallets and supply them for dispatch.

This project turned out to be quite an adventure for me. We worked closely with the KNAPP team to realize the project successfully within 18 months. The key to our success was open communication and professional, cordial collaboration in every project phase.

Olivier Sorbe, Logistics Manager for Europe, the Middle East and Africa (EMEA)

- ★ **Automatic palletizing**
- ★ **Assembling mixed pallets**
- ★ **Efficient automatic dispatch processes**
- ★ **Robots reduce physical strain on employees in dispatch**
- ★ **Stable pallets thanks to calculated packing arrangement**

Watch this video to see more details of the omni-channel warehouse at Parfums Christian Dior, and hear what Olivier Sorbe and Brice Gaujard have to say about their successful collaboration.

Number of shifts	2
Order lines per day	64,000
Load unit locations in the OSR Shuttle™ automatic storage system	38,190 load unit locations; containers with various insertion bins; dimensions: 600x400x220/320 mm
Volume per day	14,600 cartons per day
Order lines per Pick-it-Easy work station per hour	250 lines per hour; integrated weighing during order processing
Robots with Vision technology	4 robots for depalletizing mixed pallets 2 robots for special labelling 3 robots for palletizing mixed pallets

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