



cloakroom service

RAUMPLANDESIGN

The automation of logistic services is useful for rationalizing costs and extending their benefits to the users. For automatic work uniform distributors, technological evolution makes access to uniforms possible 24 hours a day.



The interest of industries, hospitals, large hotels and other establishments in installing automatic work uniform distribution systems has increased in recent years. Needs have indeed evolved concerning:

- **New labour market trends** - increase of fixed-term contracts and temporary work; rapid changes in internal company organization.
- **Service cost management** - unequivocal identification of users and items; monitoring of distribution and collection of garments; improvement of uniform turnover rhythm; reduction of garment losses and of the incidence of the cost of labour for uniform distribution.
- **Observance of health rules** - clean uniforms available 24 hours/day, 7 days/week; monitoring of how often uniforms are changed; limited handling of items.

Choosing an automatic work uniform distribution system means giving an appropriate answer to the evolution and increase of such needs.

These systems enable the storage and conveying of hanging garments thanks to single-rail conveyors that interact with the distribution gates where the ready garments are delivered to the users. The handling of the uniforms is controlled by a software logic programmed differently on each system to adapt to the users' requirements and particular features (for example for customized garments, garments by size or a mixed system).

All the garments handled by the system are identified by a coding device such as a barcode or a microchip.



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Operating principles of an automatic distributor

• Garment identification

In order for the system to operate correctly and to enable garment tracking, all items have to be equipped with a microchip. The first time they enter the automatic distribution cycle, the garments have to be identified (registered) by the computerized system.

The distributor can deliver customized garments or garments by size.

In the first case, each user of the automatic distribution system is assigned a certain quantity of personal uniform items which only she or he can wear.

In the second case, each user of the automatic distribution system is assigned a certain model in a certain colour and size.

The distributor can also operate in a mixed way with both customized and size garments.

• User identification

Not only the garments but the users too have to be registered by the computerized system and therefore identified, by a magnetic device such as a badge or electronic key. When registered in the system, each user is assigned a credit, i.e. the maximum number of uniform garments or kits she or he can retrieve.

• Clean garment delivery

The users identify themselves at the ready garment distribution gate by means of their badge; there, a touch screen supplies various information including the different garments available for this user, amongst which to choose from. After confirmation, the system distributes the uniform kit in a time that can vary from 15 to 20 seconds depending on the size of the system.

• Soiled or worn garment collection

The users insert their worn garment(s) through the opening of the soiled garment collection gate without having to identify themselves with their badge. The inserted garment is identified by means of a chip reading antenna, and the software is therefore able to identify the garment and its user and to update the user's credit status.

• Distributor restocking

The cloakroom operator only has to load the batches of garments coming from the laundry onto a screw conveyor connected to the automatic loading device. Thanks to a chip reading antenna placed at the automatic loading station, the software can register the incoming clean garments and transfer them to the storage conveyor.

• Storage conveyor

On medium-sized and large installations, i.e. installations serving more than 700-800 users, a buffer conveyor is often included, used for storing garments and enabling the distribution of garments at any time: indeed, the buffer conveyor continuously feeds the garments onto the distribution conveyors depending on what is missing in order to serve the users who come to collect their uniforms.

• Distribution conveyor

The distribution conveyor is the conveyor connected to the clean garment distribution gate; it supplies the requested garments to the automatic distribution gate where the users collect them.



Experiences made by hospitals, industries, hotels throughout Europe

The features and operation principles of the Metalprogetti automatic system described above are applied to modern automatic work uniform distribution systems installed in many hospitals, industries and hotel groups throughout Europe.

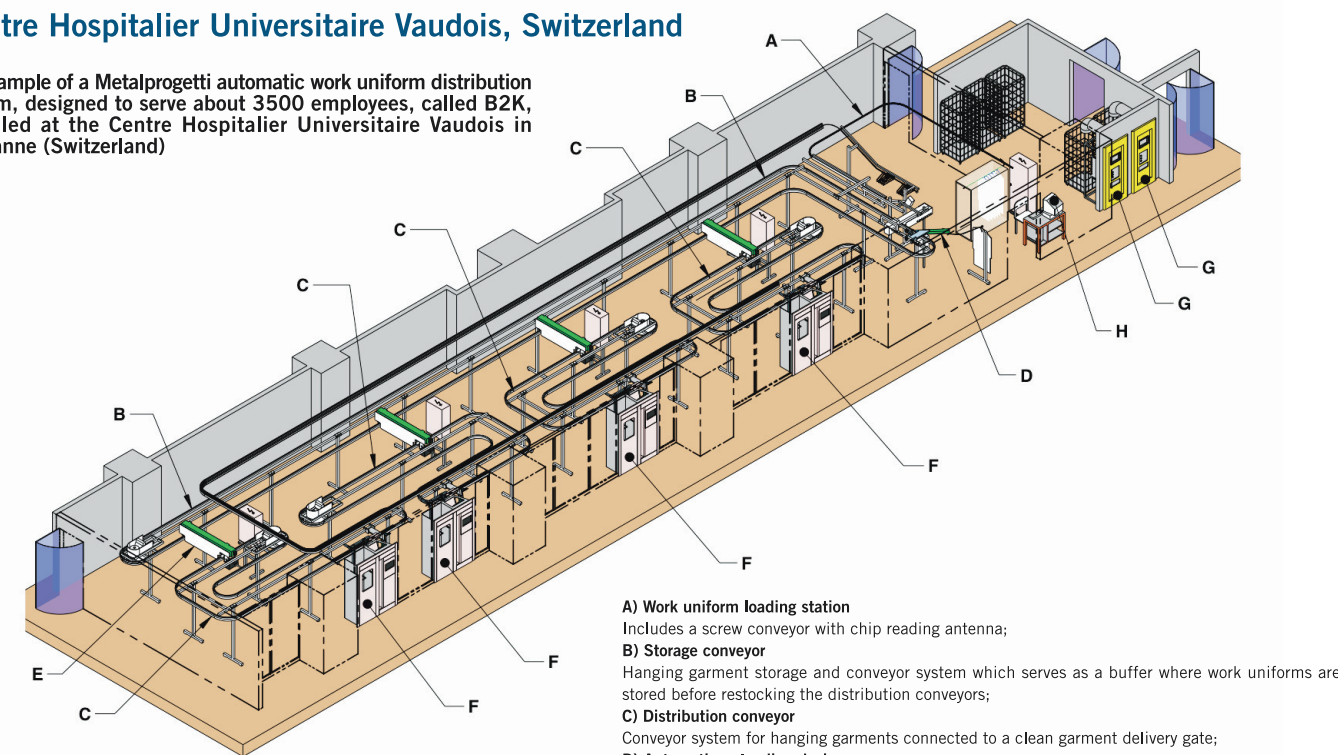
The list alongside gives a few examples with the name of the company, the branch, the country, the year the distribution system was installed and the number of users.

COMPANY	BRANCH	COUNTRY	INSTALLATION YEAR	NUMBER OF USERS*
HUG Geneve	hospital	Switzerland	1996	4.500
Hyatt Hotel	hotel	Germany	1998	450
Brugmann Hospital	hospital	Belgium	2002	3.000
Vu Hospital	hospital	Netherlands	2002	3.500
Eurodisney	hotel	France	2002	1.600
UZ Antwerpen	hospital	Belgium	2003	2.500
Faerch Plast	Industry	Denmark	2003	1.500
Gustave Roissy Institut	hospital	France	2003	1.500
PSA Peugeot Citroën	Industry	France	2003	2.000
AZM Maastricht	hospital	Netherlands	2005	3.500
CHUV Lausanne	hospital	Switzerland	2005	3.500
American Hospital	hospital	France	2006	1.000
Arcelor Group	Industry	France	2006	800
Maersk	Industry	Denmark	2006	3.000
Forli Hospital	hospital	Italy	2007	2.000

*approx.

Centre Hospitalier Universitaire Vaudois, Switzerland

An example of a Metalprogetti automatic work uniform distribution system, designed to serve about 3500 employees, called B2K, installed at the Centre Hospitalier Universitaire Vaudois in Lausanne (Switzerland)



- A) Work uniform loading station**
Includes a screw conveyor with chip reading antenna;
- B) Storage conveyor**
Hanging garment storage and conveyor system which serves as a buffer where work uniforms are stored before restocking the distribution conveyors;
- C) Distribution conveyor**
Conveyor system for hanging garments connected to a clean garment delivery gate;
- D) Automatic unloading device**
Rail where all items to be unloaded off the system go;
- E) Transfer device**
Device used for transferring the garments from the storage conveyor to the distribution conveyors;
- F) Clean garment delivery gate**
The system access point where the users collect their clean work uniforms, equipped with a touch screen and a badge reader;
- G) Soiled garment drop-off**
The system access point where the users drop off their soiled or worn garments, equipped with a chip reading antenna;
- H) Computerized work station**
It supervises the whole system, stores all information about users and garments and supplies statistics on the movements of every single garment.

The conveyors are self-supporting structures consisting of overhead rails supported by beams and support feet in tubular stainless steel supplying stability and solidity, even if the layout has a particular shape adapted to the room where the automatic distribution system is installed; the stainless steel loop that conveys the garments has a series of wheels that run through the rails and, just below, slots in which the hangers are placed.

The space needed for installing a work uniform distribution system for a number of users between 300 and 3000 varies from 0.15 to 0.10 square metres/user, or even less with conveyors on two levels when the height of the room allows it.

Conclusions

The advantages connected to the use of the automatic work uniform distribution systems are of benefit both to the company and to the laundry that supplies the cleaning service, for example:

- rational use of the space available for the work uniform distribution;
- global saving on the cost of labour: the assembly of the different items of a uniform kit and the loading of the garments on the system are fully automatic;
- almost complete elimination of garment losses and therefore of the related costs;
- improved turnover of work uniform stocks;
- control both of service costs and health rules observance thanks to the tracking of every single item;
- extension of the cloakroom service to 24 hours a day, 7 days a week;

- possibility of planning clean work uniform restocking according to which garments are missing on the distributor;
- possibility of printing a whole range of different statistics;
- speed and efficiency in work uniform delivery, even at peak times, using a system with several gates.

One can therefore say that the cloakroom service offered by the manufacturer Metalprogetti Spa represents a useful tool for rationalizing work uniform distribution costs, offering a round the clock service to the users and improving the business relationship between the companies where the systems are installed and the laundries and work uniform rental companies.