THE TOP REFERENCE IN FILAMENT AUTOMATION
AUTEFA FILAMENTS - SYSTEMS
MADE BY AC AUTOMATION

The Successful Automation in the Chemical Fiber Industry
The engineering office of our company is located close to the histori-
cal town center of Augsburg and integrated into the infrastructure of
the high-tech metropolis Munich with its international airport, pro-
viding connections to our customers all over the world.

With more than 30 years of experience in the field of man-made fi-
ber automation our team is prepared to fulfill all customer demands.
Starting with the Barmag automation department in the early 80s the
focus was to bring maximum benefit and functionality to the cus-
tomer at all times. By offering highly sophisticated textile machinery
in combination with a state of the art automation system, commonly
developed out of one hand for perfect interfacing, the customers al-
ready started to benefit from this “turn-key” supply at a very early
stage.

Meanwhile more than 70 installations have been supplied to custom-
ers all over the world, always providing highest German engineering
quality combined with long term reliability.

When Autefa Automation, a since long reliable partner for Barmag,
took over the business in the mid 90s the world textile market was
booming and the increasing demand for automation in spinning mills
could be satisfied easily with their experience in customized machine
engineering.

The next important step into the future was established by transferring
the filament automation division to AC Automation in the year 2009 from
an Oerlikon subsidiary company.

A dedicated and highly motivated team of engineers, logistics experts
and design specialists with more than 30 years of automation expe-
rience merged with a worldwide network of service stations, coop-
eration partners and sales centers under the new leadership of the
privately owned Atlantic C group of companies.
Multi Doffer – MD1
The MD1, based on Automated Guided Vehicle technology, is a doffing and transportation system for automatic spinning installations combined in one unit. The advantages of this concept are:
- Flexible assignment to spinning lines according to demand
- Highest possible redundancy
- Integrated transportation activity
- Suitable for low room heights

BCF Doffing
The FDD-System was specially designed for the very short running times in a BCF-production and is also able to supply the winder with empty tubes.

DTY-Multi Collector 1 AVG
The MC1 Multi Collector loaded with DTY bobbins heading for the Unloading Buffer. Large safety reels allow safe operations under any working conditions.

Suspended Doffer System – SD1
The SD1 is a doffing system for automatic spinning winders, including automatic winder chuck detection. Optional automatic paper tube donning is available. In order to prevent yarn breaks the doffer master control even considers different parking times of each single winder possibly resulting from different spinning parameters.
DOFFING SYSTEMS FOR SPINNING MACHINES & DOFFING OF TEXTURING MACHINES

Doffing Systems for Spinning Machines
The doffing process is the first step of automatic filament handling lines. Since the doffing system is directly connected to the production machines, its design must adapt in the best possible way to the surrounding operating conditions. This means matching the needs of different winder types as well as granting operator safety in the working areas.

KEY FEATURES
- availability >99%
- laser scanner for maximum operator safety
- unrestricted operator movement due to more than 1 m distance “doffer to winder”

Doffing of Texturing Machines
For the automatic doffing of modern automatic Texturing Machines AC Automation offers the use of a floor based AGV (Automated Guided Vehicle) system. This system does not require any mechanical rails or guiding, which would interfere with the daily manual operations in this area.
By automating the POY supply and the DTY doffing, texturing can easily be connected to POY production via an AC Automation filament intermediate storage. This offers a completely new concept of automation and quality control for plants with POY production and downstream processes, using the advantage of non-stop product tracking starting from the raw material up to the DTY bobbin onto the pallet.

KEY FEATURES
- flexibility
- independent
- highly efficient with loads up to 72 bobbins
- redundancy
BRS-System
A BRS (Bobbin Railway System) carrier loaded with POY bobbins. The over-head transportation offers several advantages like high throughput capacities and no interference with transport ways.

Bobbin Weigher
Precise weight determination of each bobbin in a doff by the fully automatic bobbin weigher including automatic calibration of weighing cells. The precise data allow for weight cross-checking to detect temporarily jumped filaments.

Quality Control
Online bobbin inspection in the visual inspection station. All data is transferred online to the main server of the installation. Thus an immediate feedback signal can be submitted to the production area in case of quality fluctuations.

Multi Feeder System – MF1
The MF1 automatically replaces empty POY cassette creels against full ones at the texturing machine. Its design corresponds exactly to the requirements in the machine aisle.

BRS Loading & Unloading
AUTOMATIC BOBBIN TRANSPORTATION

BRS and AGV
The second step after doffing is the transportation of the bobbins to intermediate storage or in some applications directly to the packing system.

AC automation offers two different basic concepts in order to achieve this functionality:

BRS
Automatic overhead transportation by means of the AC automation Bobbin Railway System (BRS). The Bobbin Railway System is mainly used in combination with the AC automation SD1 doffer system.

AGV
An alternative is the use of floor based Automated Guided Vehicles (AGV). The AGV system applies a combined doffing and transportation function. AGV systems are of advantage especially in plants with low room heights, when it is not possible to install a suspended transportation system in the overhead region safe for the personnel.

KEY FEATURES
- integrated inspection & laboratory
- single platform for data and quality management
- error free data and product tracking
Tilting Unit

The Tilting Unit is our most effective store-in device for highest throughput. The bobbins are taken directly from the monorail system.

Store In/Out Area

The store in/out area type for highest flexibility is equipped with 6-arm jointed robots which are well-known from the automobile industry. These single-robot-cells combine storing-in, storing-out and sorting of the bobbins with a minimum of hardware. Even various tube sizes and diameters can be handled within the same robot-cell without extra equipment.

Multi-Tray Storage

Aisle view of a Multi-Tray Storage providing highest storage capacity with unlimited length and adaptable height up to 11 meters.
MULTI TRAY STORAGE SYSTEM

The third step of an automatic filament handling line is the intermediate storage. Since this field can be considered as the heart of the automatic filament handling system, its design determines an essential part of the flexibility, efficiency and reliability of the entire installation.

Today these successful systems, patented by AC automation are operating in many spinning and texturing production plants around the globe. The Multi-Tray Storage provides several significant advantages in comparison with other available intermediate storage systems.

**KEY FEATURES**

- compact intermediate storage for large bobbin quantities
- fully automatic inventory
- worldwide patented system
Box Array Palletizing
Palletizing of small boxes onto a shipping pallet. Any pattern can be arranged on request due to the flexibility of the modular design concept.

Bobag
Individual film bagging of bobbins suitable for high throughputs. In this case the proven reliability of our machines is in demand.

Wing Pad Cover Robot
Top covering of a filled box with a wing pad. Automatic opening of the folded cartons is integrated in the gripper head.

Dense Packing System
The sensational “Dense Packing System” for DTY bobbins and similar products - using a 6-axis jointed-arm robot, well-known from the automobile industry and highly sophisticated software to place each single bobbin according to a pre-calculated pattern. Optimal usage of the available space guaranteed, regardless of the bobbin’s diameter.

Automatic Packing Robot
The packing robot with automatically adjustable grippers places bobbins onto a pallet. The packing material is handled by a second gripper-head to achieve a higher throughput.
The packing line is the fourth step of an automatic filament handling system. Here the highest degree of customization is required. Therefore it benefits most from AC automations general design concept. The end-user’s requirements regarding bobbin packing and box palletizing are extremely variable. By using well proven strategies AC automation manages to accommodate all packing requirements with minimum hardware efforts.

The packing concepts and the packing machines provide the key to the effective realization of these highly customized systems often resulting in reduction of packing material combined with lower shipment costs.

**Dense Packing System**

The sensational “Dense Packing System” for DTY bobbins and similar products using a 6-axis jointed-arm robot, well-known from the automobile industry, and highly sophisticated software to place each single bobbin in accordance with a pre-calculated pattern. Optimal use of the available space is guaranteed, regardless of the bobbin’s diameter.

**Box Array Palletizing**

Box array palletizing means palletizing of small boxes onto a shipping pallet. Any pattern can be arranged on request due to the flexibility of the modular design concept.

**KEY FEATURES**

- no touch = no damage
- perfectly built even pallets
- human error eliminated
- also available as standalone package with packing from creel cart
Simulation
Dynamic process modelling of complex systems for pretesting under realistic circumstances.

- Layout development and verification by means of latest simulation technology
- Guarantees fulfillment of throughput numbers and functionality as requested by the customer
- Short start-up on site due to possibility of software pretesting

Storage-Retrieval Unit
For storing-in and -out bobbins. Due to an integrated operator stand manual control is also possible.

Building up a High Bay Storage
Assembly of the sandwich panels for a high bay storage. There’s no better way to store your bobbins economically.
HIGH BAY – HIGHLY EFFECTIVE & PALLET FINISHING

**High Bay - Highly Effective**
In order to simplify warehousing, which is often very time and space consuming when done manually, and to integrate the storage management into the automatic product flow, the delivery range is completed by a fully automatic high bay storage system with a connected commissioning sector for truck loading.

**KEY FEATURES HIGH BAY STORAGE**
- integration of local supplies
- direct link to ERP system

**Final Touches in Packing**
The packed pallet is made ready for dispatch in the finishing line i.e. closed, weighed, labeled and finally supplied to the commissioning area via a delivery buffer. Due to open interfaces, every packing suitable for automatic operation can be realized.

In the finishing line one usually finds the following steps:
- Carton covering of pallet
- Top wrap feeding
- Weighing
- Labeling
- Wrapping
- Plastic film strapping
- Shrink hooiding
- Stretch hooiding

**KEY FEATURES PALLET FINISHING**
- no touch = no damage
- perfectly built even pallets
- human error eliminated
- also available as standalone package with packing from creel cart
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INNOVATIVE SOLUTIONS FOR INDIVIDUAL REQUIREMENTS

ATLANTIC C GmbH, the mother company of AC automation, is your partner if you wish to establish logical production processes.

Since 1994 ATLANTIC C has a team of experts of successful project work in plant engineering for the beverage and the food industry as well as for the non-food industry. ATLANTIC C GmbH plans, designs and integrates your filling and packing lines, display automation and storage systems. Additionally the company provides advice in all questions regarding optimization of product flow, investment preparation and cooperation, merging and site evaluations etc.

According to Mr. Rolf Gänz, owner & managing partner of ATLANTIC C GmbH as well as AC automation GmbH, the companies’ main focus lies in finding the ideal solutions for their customers.

New Intralogistic and Design Department

By purchasing an intralogistic department and founding a subsidiary in Augsburg, Germany, in the year 2009 from an Oerlikon subsidiary company, ATLANTIC C GmbH has considerably increased its worldwide activities. The highly specialized filament automation complements the existing know-how with design, database and logistic experts with long-term experience.