

Time for automation

FRENCH SILO AND EQUIPMENT MANUFACTURER, ESTEVE IS A FAMILY-OWNED COMPANY WITH A LONG TRADITION. IT IS COMMITTED TO THE AUTOMATION OF RAW MATERIALS SUPPLY FOR BULK, MEDIUM AND MINOR COMPONENTS. BAKING+BISCUIT INTERNATIONAL TALKED TO **JACQUES ESTEVE**, COMMERCIAL ACTIVITIES MANAGER, AND **PATRICK ESTEVE**, TECHNICAL ACTIVITIES MANAGER, ABOUT DEVELOPMENTS IN BULK HANDLING TECHNOLOGY FOR THE BAKING INDUSTRY



++ Jacques Esteve (left) and Patrick Esteve

+ bbi: Less than two generations ago, the largest European bakers were buying their raw materials in sacks. To what extent has the use of automatic silos and dosing installations been developed up to the present time and what are the current size limits for this type of installation for raw materials?

+ Patrick Esteve: It is now out of the question for a manufacturer to work without a silo. The quantities involved would require so much manual labor input that the impact on the costs of the materials would be counterproductive. The difficulties of delivery, particularly unloading, have meant that it has been the millers themselves who have pushed their clients towards bulk deliveries. The manufacturers are aware of the advantages and relevance of an automatic feed system: less labor, lower raw material costs, stock management, real time traceability and improved hygiene and safety conditions.

Another aspect concerns the automation of medium and micro products. Some finished products, such as batch bread, include up to twenty ingredients! It is therefore critical to be able to constantly dose these products automatically and set up records in order to ensure the conformity and traceability of the finished products. Our installations incorporate automatic feeds and management of medium and micro ingredients at rates of 20 – 80 batches per hour!

The final aspect relates to procedures that comply with GFSI (Global Food Safety Initiative), ISO or FDA approved standards. These standards require complete traceability of both materials and operations. Batch tracking is essential to be able to ensure production traceability at all times, to know which batches have been used for a specific production order and to manage changes between two batches of material stored in the same silo.

ESTEVE offers different solutions for supervision depending on the level of integration:

- + Total or partial automation based on the TIA (Totally Integrated Automation) principle for formulating, planning and tracking production**
- + PC based recipe weighing solutions to produce uniform records**
- + Manual 'in-line' weighing as identification points with barcode readers and printers**
- + Solutions that are fully integrated with weighing equipment, touch sensitive terminals, readers and printers**
- + Data integrated into the company management software (ERP)**

+ bbi: Most of ESTEVE's clients are in the food industry. What proportion of your sales volume do bakeries represent?

+ Jacques Esteve: Bakeries represent about 1/3 of our sales. The other sectors are mixed but generally include baby food and the food sector.

+ bbi: Which geographic markets are the most important for ESTEVE?

+ Jacques Esteve: Our home market, France, is the leader and provides great variety through its complexity. During the last ten years, our territorial growth has focused on Europe and North America using a network of qualified representatives.

+ bbi: How important are Eastern Europe and Russia for ESTEVE? Are you present in these markets?

+ Jacques Esteve: Our presence in Eastern Europe is increasing constantly thanks to the efforts of our local representatives. However, you won't find ESTEVE in all of the countries of Eastern Europe; our strategy is to develop a long term presence using representatives selected for their technical competences and their ability to develop and manage projects, not only to ensure their implementation but also to support the client throughout the equipment's working life – which is a very long-term relationship given the reliability of our systems!

+ bbi: In your opinion, what are the most significant developments in raw material logistics for bakeries?

+ Patrick Esteve: The first revolution was the incorporation of horizontal flows for transferring raw materials: up until then, the technology could only carry raw materials by vertical

flows, i.e. gravity feed. With the development of pneumatic systems, raw materials could be carried over distances of 20 to 200 meters at rates of 1 to several tons per hour whilst not denaturing the product and without any cross-contamination. ESTEVE was one of the pioneers of pneumatic aspiration transfer technologies.

The second evolution was the inclusion of the need for total traceability of material flows: materials and operations. We have been working intensively on this subject at ESTEVE for the last 10 years and now have an expertise and technological leadership that lets us advise clients and anticipate their needs.

+ bbi: Two years ago, ESTEVE developed an automatic dosing system for small and medium volume ingredients including liquids, eggs and oil. Has this system been accepted by the industry?

+ Patrick Esteve: The HSD (or High Speed Dosing System) is mainly aimed at multi-line manufacturers where manufacturing is complicated or where the production rates do not allow the use of an automatic in-line solution for medium volume ingredients. This unique system allows preparation rates of up to 80 batches per hour for recipes containing 4 – 6 products, on average. The HSD is mainly used by major groups or manufacturers using shift work who can amortize their equipment faster.

+ bbi: What are the keystones of this new development?

+ Patrick Esteve: This system was designed to meet the needs of a specific client who had problems related to staff reliability where quality and dosing repeatability requirements were not always satisfied resulting in some products being forgotten, coupled with clients who required effective traceability.

+ bbi: What is the importance of cross-contamination in the development of silos and dosing systems?

+ Patrick Esteve: Firstly, the client must be made aware that the problem of contamination, whether visual, allergen or other, has to be dealt with at the design stage and depends on the type of product being produced. In some cases, transfers must be separated and some dosing workstations have to be dedicated. A typical example: organic products must be completely separated from standard products.

+ bbi: Is it possible to quantify the labor saving that has been made possible by these systems or are they intended to improve working conditions?

+ Jacques Esteve: Labor savings can be quantified by the direct automation of tasks that were previously manual but there has also been a massive increase in the ergonomics of workstations to eliminate musculoskeletal problems and allergic reactions through inhaling raw materials, coupled ▶

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++ figure 1
State of the art automation for minor ingredients

with improvements in working conditions and operator health. All these factors contribute to lower absenteeism and a general reduction in labor costs.

+ bbi: What are your priorities and the reasons for your choices of raw materials, carried as powder using a screw or hydraulic system?

+ Patrick Esteve: Raw materials can be carried in different ways: screw, pneumatic, vibrating tunnel or fluidization. There is no universal system and each system can be used in the same site depending on the products to be carried, the required rates and the contamination and cleaning constraints.

However, the pneumatic system is the only solution for carrying material over long distances whether by pressure (blowing) or aspiration (vacuum) and these two systems are the most widely used in the sector because they combine hygiene, reliability and low maintenance.

+ bbi: Can you link your systems to the company's management system?

+ Patrick Esteve: Completely! This is central to our approach which covers not only formulation but also planning, traceability and data incorporation into supervision systems. The connection to the company ERP, whether GD Edward, SAP, etc., means that production data can be consulted and changed in real time.

+ bbi: What is the value, for ESTEVE, of modernizing existing factories with silos? Do you think the effort is worthwhile?

+ Jacques Esteve: Yes. We recommend this effort for two reasons: firstly, to ensure that the equipment complies with the legislation (ATEX) and hygiene (internal HACCP, safety screening, etc.), and secondly to update the automation. This will result in considerably better performances for an obsolete installation (productivity can be increased by as much as 25% in some cases), whilst making it easier to incorporate the concept of traceability monitoring and documentations (MAO), etc. Our recent experience in retro-fitting and re-vamping have ensured the reputation of our IT department. We were recently contracted to conduct the retrofit of the biggest Eastern Baltic factory in Europe.



++ figure 2
Manufacturing of aluminum silos

+ bbi: Craft bakeries are always faced with the problem of whether to use fully automated plants and save costs or to plump for partly automated equipment and more flexibility. What would you recommend and what are the criteria for your recommendation?

+ Patrick Esteve: Speaking of the situation in France, automation is limited to the delivery of flour to the mixer. The lack of space prevents greater use of automation. Additionally, in 99% of cases, the baker is financed and advised by the millers; consequently their installations remain very simple and are unrelated to what happens in the industrial sector.

+ bbi: In terms of iba, where would ESTEVE position its business development? In which direction is it heading?

+ Jacques Esteve: ESTEVE is a designated manufacturer and assembler of turnkey solutions including computerized data flow management. Our specialty is the automatic supply of raw materials.

Our strategy, as a manufacturer, is to avoid sub-contracting wherever possible, in order to guarantee control of the quality and immediate reaction in case of problems.

Additionally, the aim is to develop a global reputation in the industrial bakery sector. We are genuinely different from our competitors and our success is based on listening, service, the durability of our systems and our technological leadership in automation and IT solutions.

+ bbi: ESTEVE exhibited at Europain and will be present at the next iba, in 2009. How important are these two trade fairs for ESTEVE and what other exhibitions will ESTEVE be present at?

+ Jacques Esteve: IBA has become our profession's major event. This show complements Europain and these are the two events which cannot be missed. Running parallel, we are also present at numerous local events where we are represented by our local representatives in each country. We recently participated at Interpack and you will be able to meet our experts very soon at Modern Bakery Moscow 2008, and IPA in Paris.

+ bbi: Thank you for the interview. +++



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