

## FLEXIBILITY: THE KEY TO SUCCESS

At TESA, series of workpieces are changed 15 times a day on a Tornos MULTIDECO!



To find out more about this incredible fact, decomagazine went on site to investigate.

### An international group

Four people and five centimetres of freshly fallen snow welcomed us to TESA, a company that is part of the ASSA ABLOY group. Working in the security business, the company's main advantage is being able to provide a complete set of services and products and always keeping pace with the technology required to achieve their objectives. In other words,

the company invents security solutions and then develops or learns how to master the technology needed to turn these challenges they have created for themselves into reality. TESA has four production units in Spain, where they manufacture lock cylinders under their own brand and for other manufacturers, security doors and many other security systems for the private and public sectors.

We visited the production unit in Irun (Spain), where lock cylinders and electronic locks are manufactured. Our welcome party consisted of Mr. Fernando Santos, head of the cylinder operations centre,

Mr. Imanol Dadie, head of cylinder assembly and the bar turning workshop, Mr. David Pérez, R&D cylinders project manager and Mrs Béatriz Serrat Collar, head of communications.

## Production equipment: Flexibility is the key word

**decomagazine (dm): You have a very diverse fleet of machines to manufacture your parts...**

**M. Fernando Santos:** Not that many, actually. We have several different machines from several manufacturers but for one particular technology, we feel that having one close partner we can count on is more important than being 'spread out' over a range of different manufacturers.

**dm: For bar turning, single spindle as well as multispindle, you have chosen Tornos... for which reasons?**

**FS:** The choice of Tornos machines goes back a long way at TESA. In 1999, we belonged to the English Williams group and all purchasing decisions went through them. We already knew at the time that Tornos products and solutions would be the best for

us... but our English partner turned down our investment plan seven times. We tried and tried again, convinced that this solution was the best for our customers (a second company value, we will come back to this later). Now, eight years later, TESA's history and success have demonstrated that our tenacity was totally justified!

**dm: Such a conviction is not so commonplace. What was it based on?**

**FS:** That's easy. It was a question of being the only machine on the market capable of finishing our parts in a reasonable time.

**dm: You mentioned parts. In lock manufacturing, what kind of parts do you make and what sort of challenges do you face?**

**M. Imanol Dadie:** They are cylinder parts that mainly require capacity for a large number of operations. As security is becoming a more and more sensitive subject, it should be noted that parts are also becoming more and more complex. Every year, we have to devise ever more ingenious solutions, to be able to continue manufacturing these parts from start to finish on our production equipment.



Left to right: Messrs. Fernando Santos, head of cylinders business unit, Imanol Dadie, head of the bar turning workshop and José Luis Arsuaga, MultiDECO specialist.



Overview of the bar turning workshop... cleanliness and tidiness are everywhere.

**dm: How have you managed to keep up with this development on your machines?**

**ID:** We started working with Tornos DECO turning machines and I have to say that at the beginning we were not using the machines to their full capacity. Tool positions would remain empty. Today, it's a 'juggling act' to get parts finished.

**dm: How is your workshop set up? What types of part do you machine on single-spindle and multispindle?**

**ID:** We have a very active research and development department and as our philosophy entails working closely with our customers to find highly specific solutions, we must have machines on which we can change production set ups very easily. For this type of requirement, we work with DECO single-spindle turning machines. Each new series is prepared while we are working on the previous one. This way, when we finish a machining process, the operator can immediately change the tools and the program (which has also been predefined to save time) and start production up again. This approach can be applied on series of up to 4000 parts. For larger series runs, we have two solutions, the subcontract part of production or the switch to our multispindle operation.

**dm: So you subcontract part of your production?**

**ID:** In actual fact we started looking for subcontractors when we used to work four shifts on the DECO machines... as we were severely short of capacity for manufacturing prototypes and small series for our customers or our own R&D department. These days we still produce 90 % of our parts in-house.

**dm: Before moving on to multispindles, how did you feel about the flexibility of DECO machines?**

**FS:** Flexibility is a difficult topic because you always have to take into account the size of the job lots, productivity and the time needed for changeovers. In our case, where series are very short, we prefer machines with more tools, even if cycle times are a little longer because changeovers are a lot shorter if tools don't have to be changed!

As far as our processes are concerned, we actually have two parallel flows. Special parts require several separate and different operations per series. Today, we have about 150 DECO programs at our disposal. This enables us to look for genuinely optimised solutions borne out of our considerable experience. Larger, more «classical» production runs are manufactured on MULTIDECO.



**dm: Do you ever change category and move from one process to another?**

**M. Santos et M. Dadie:** Yes that can happen. Manufacturing processes are validated on mono and can be transferred to multi if necessary.

**dm: How do you ensure flexibility on multispindles? Changing production set ups so often doesn't seem possible.**

**ID:** I agree. We don't change set ups. We have another strategy... (Editor's note: Dear reader, we are about to be told a secret!)

In general we work by families where each part has more or less the same diameter. Then the machine is equipped to maximum capacity, always with standard tools. To carry out these changeovers, we simply change the program and can start a new part which requires the same tools already in position.

**dm: Aren't there any technical limitations?**

**ID:** We have had to develop a new bar stop, which is more suited to our requirements in terms of production times, but apart from that, no. The TB-DECO can work miracles in the hands of our engineers.

**dm: And what do you do if you have to integrate a new part?**

**ID:** We have roughly 100 MULTIDECO programs ready for use at our disposal, but it's true that for a completely new part, production has to be in line with the set up on the machine. It's not always fastest in terms of cycle times, but the time saved during the production changeover is, in our case much more significant.

**Just in time?**

**dm: Does this flexibility allow you to work «just in time»?**

**FS:** Our philosophy is definitely not to have a large stock of finished parts. So we work with minimum stocks in certain sectors. In particular within the automotive sector where it's not possible to ensure zero stock.

The difference between single spindle and multispindle machines is such that just in time is easier on the multispindles. The single spindle workshop tends more towards special manufacturing and it's harder to ensure just in time. This is, however, all part of our

«internal goings on» because if necessary, we can produce small stocks to guarantee a just in time delivery which is very important in our customer relations.

**dm: Flexibility, in particular with Tornos products, seems to be one of your selling points today. How do you integrate it into your daily business?**

**Mme Serrat Collar:** Flexibility is actually a tool of one of our core values which is «the interest in our customer and his challenges». Whether it's a question of technical development or very tight delivery times, we have to be flexible.

### Strong values working for the company

**dm: Before going into more detail about this value, can you give us some others?**

**SC:** We have three core values that guide everything we do. It's called the ASSA ABLOY group's Diamond strategy. These are exactly the same values which have guided us since the creation of TESA. They are innovation, customer proximity and appropriacy of the proposed solution as well as cost efficiency and return on investment.

**dm: Aren't they fairly commonplace?**

**SC:** They may be simple values, but they are applied throughout the whole company and believe me, these are formidable levers. TESA is genuinely customer focused. All employees of the company have a responsibility and actively collaborate towards the best strategy to adopt in order to reach their goals.

**dm: Like when you invested in the DECO as M. Santos was saying?**

**SC:** Exactly! Our colleagues and the management all feel at home within the company and there is no impenetrable bureaucracy to hold back the good ideas.

**ID:** Recently, we were faced with a technical challenge when we had to produce a small ring with a wall thickness of 0.3mm diameter. And in this case, there's no point giving up, and trying to allocate blame. The job just has to be done. This is all part of our culture... and we know that every one of the employees will find what it takes to succeed.

**dm: You must have highly skilled personnel in your organization. How do you provide training?**

**FS:** As far as training is concerned, we are in an area where the population is very technically minded



DECO production unit. The equipment and tools ready to be fitted for machining the next series can be seen in the foreground.



tispindles, we separated the tasks between programming and operating the machine. Because we don't change tools between production set ups, we have specialists by sector.

For machining, materials and other technologies, we work closely with technical educational institutions and universities. Our strong desire is to be at the cutting edge of technology to be able to find the right answers to the ever increasing demands of our customers.

**dm: We have talked at length about customer relations because it is one of your core values. We have highlighted the value of quality personnel and their drive to find the «perfect» solution for their customers ... can it be said that it is people who make the difference rather than machines?**

(Editor's note: for that matter, this region is also known as «little Switzerland») and we deliver an advanced level of training. In fact, for single spindles, the operators are also the programmers and they are experts on all aspects of the machines. They receive part of their training in Moutier and a part in Granollers in the Tornos subsidiary in Spain. For mul-

**ID:** Of course machines are important. Ingenuity has to be based on effective tools. Once machines are taken out of the equation, that's when the human element can make the difference. In this context our culture and our history are important.

This brings us to the subject of training and putting it into practice. When the DECO machines were



The «Bechler unit» consisting of two DECO 20a machines.

### TESA in numbers

Foundation of TESA: 1941

Number of employees: 750

Irun plant

Creation: 1970

Number of employees: 393

«Bar turning» section: 100% Tornos machines

Annual production capacity:

- Locks: 4 million
- Cylinders: 10 million
- Electronic locks: 250'000

Certifications: ISO 9001, ISO 14001

### Assa Abloy in brief

Strategic plan: Diamond 2010: 3 keys to growth:

- Innovation
- Customer proximity and appropriacy of proposed solution
- Efficiency and return on investment

World leader in the security sector

100 companies in 40 countries

Over 30 000 employees

### Kaizen. What is meant by this strange term?

In Japanese, the word «KAIZEN» means improvement, without big investments, by involving everyone from directors to operators and above all using collective common sense. The Japanese principle is based on small improvements, made day after day but continuously. It is a gradual and gentle process.

Kaizen is not a revolutionary method. Much more a state of mind that is put in place and kept alive by the involvement of all the personnel.

installed, some of our colleagues were on alternate hours, four hours in production and four hours in training (and vice versa). This was to ensure an immediate and most possible efficient transfer.

### dm: The second value is innovation. What can you tell us about that?

**SC:** The world is always changing. The requirements of ever more intelligent and complex security systems drive us on to continuously improve everything we do if we want to remain at the cutting edge. For this reason, our engineering and design department is always looking for new solutions, original ideas and can rely on DECO to convert these ideas into real products in an instant.

**M. David Pérez:** On a R&D level, it's highly motivating because we are always having to improve!

### dm: And as far as efficient investments are concerned?

**FS:** For us, everything is based on flexibility and rational industrial organisation. We do a lot of work on added value. Finally, the first value – innovation – is the only one that can guarantee the second – the turn key solution. The third is an element which is vital if we want to ensure the company's long-term future.

**SC:** We introduced «Kaizen» (Editor's note: see paragraph at end of article) as a tool from the diamond strategy (applying the values). This enabled us to identify all our processes in even more detail and to really focus the company on the customer. It has to be said that this was done in a way to always maintain our colleagues' flexibility and proactivity when putting forward their ideas.

### dm: We saw a little earlier that you produce roughly 10% externally. What about the assembly of finished products?

**ID:** Assembly takes place, for the most part, externally then the products return to TESA for everything to do with commercialisation and distribution.

## A customer oriented future

### dm: Coming back to production and DECO machines, how do you envisage the future?

**M. Santos, M. Dadie and M. Pérez:** For TESA, flexibility is the key word. A machine with 40 or 50 tools would be our dream. We would be able to



The production site in Irun is the head office of TESA in Spain.

apply the same strategy on single spindle and this way, be even more flexible for our customers.

For us, floor space is not really an issue. Such a machine could be bigger. A well-ventilated machining area would be more important. For TESA, the future is today an integral part of our values and we will continue applying them.

**dm: To conclude, 8 years after this investment in Tornos machines, what are your feelings on the subject?**

**FS:** As I said before, this investment has proved extremely valuable and is in fact at the foundation of TESA's success today. Tornos machines are a risk free investment!

**dm: After three hours of interview and company visit (see photos), TESA leaves you with an impression of great professionalism and of a company that really listens and has a genuine concern for its customers. I am a simple journalist and I felt like I was being treated like an important customer. It's definitely one of the company's strengths... Unfortunately I was not**

**in a position to test the second, I did not have a technical challenge to put to them... but you can bet that if that was the case, I would have had the same positive impression.**



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