

MTorres R&D Center, one year in operation

In February 2012 was inaugurated MTorres R&D Center for composites materials lamination, located in the company headquarters (Torres de Elorz, Spain).

■ The over 8 millions euro investment made, which includes the latest in automated fiber placement, is fully aligned with the company strategy to focus on the development of capital equipment solutions, and the aim of offering to the market a platform available for new lamination concepts.

During this last year in operation, several highly reputed international customers and composite fiber manufacturers have visited the R&D facility in order to carry out lamination tests. The range of projects developed for new processes and materials has included prototype fabrication, AFP benchmark layup trials and new dry fiber materials testing. The results have been successful achieving expectations, as all of the companies have recognized the professionalism and perfect environment provided by the new facility and MTorres staff during the development of the trials.

MTorres R&D Center is equipped with a TORRESFIBERLAYUP gantry machine of 10 meter in the longitudinal axis, 4.5 meter in the traverse axis and 15 meter in the vertical axis, which allows a wide variety of test and parts to layup. The gantry is fitted with two rams, one incorporates a 16



Clean room overview.

torw ¼" standard head and the other one is ready to house any other type of head or end-effector to laminate different types of materials and formats, ranging from out of autoclave to dry fabric, thermoplastics, etc. Furthermore, a headstock-tailstock system is also available to laminate revolution parts.

For 2013, the demanding list of projects scheduled for the R&D Center symbolize

the result of MTorres continuous efforts to meet the market, following a strategy open not only for aerospace but also for other industrial sectors such as wind blade manufacturing or automotive. The R&D Center of MTorres shows the result of the growth over the last decade, and exploits MTorres market-leading expertise in composite manufacturing system to expand its global operations.

UPCOMING AEROSPACE TRADE SHOWS THAT MTORRES WILL BE PRESENT IN:

- JEC COMPOSITES EUROPE**
Paris | March 12, 13, 14 2013
- SME COMPOSITES AERODEF**
Long Beach, CA, USA | March 19-21 2013
- 7TH INTERNATIONAL CFK VALLEY STADE CONVENTION**
Stade, Germany | June 11-12 2013
- LE BOURGET**
Paris | June 17-23 2013
- JEC COMPOSITES ASIA**
Singapore | June 25,26,27 2013
- SAE AEROTECH**
Montréal, Quebec, Canada | September 24-26 2013
- JEC COMPOSITES AMERICAS**
Boston | October 2,3,4 2013

Pacifica Engineering Experiences Recent Growth

Since its foundation in 1995, Pacifica Engineering has been a Key Supplier for Boeing Puget Sound. Tool Engineering and Stress Analysis was the primary focus of Pacifica for their first 9 years

It was the peak of the Boeing 777 program, and there were numerous programs within Boeing that kept the staff of 12-15 people very busy.

Then, in 2005, Pacifica achieved their ISO-9001 certification, in order to be a Tier 1 supplier to Boeing 787 Program. This new opportunity marked the true beginning of Pacifica's design-build capability. The Main Landing Gear Loader, Boeing Optimized Transporter, and Underwing Workstands are just a few of nearly a hundred turn-key projects Pacifica has delivered to Boeing. Pacifica is now AS9100C certified.

The experience gained in early design-build projects for Boeing quickly enabled Pacifica to succeed at providing customers such as ATK, General Dynamics, Messier-Dowty, Spirit Aerosystems, and more recently, Bell Helicopter and Embraer, with turn-key products that include the engineering, fabrication, installation and test of the tools and equipment.

"In the last two years, we have seen our engineering staff size grow from about 30 to almost 65, in order to support all of the Customer's needs that are out there", says Mark Irby, Director of Corporate Accounts, who has been with Pacifica for 15 years. "There does not seem to be an end to all the current opportunities in Aerospace".

The recent acquisition of Pacifica Engineering by MTorres has discovered



Employees at the headquarters of Washington celebrated the agreement.

many synergies, and opportunities. Both companies enjoy a strong positive reputation throughout the industry, and will continue to further solidify our position within the Aerospace sector, making our joint companies a strong candidate for both current and future Customers. The state of our company is strong as we continue to see success domestically and in winning packages domestically.

Our assembly facility in the Seattle area will provide us further opportunities for growth as we continue to face the challenges of the Aerospace market. As we continue to face these challenges, we strongly believe that with the leadership of our Executive Teams and through the process of integration and planning, the MTorres Group will remain a strong force for many years to come.

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Torresdrill. Benefits talk

Based on the results achieved since many years in the aerospace industry, the TORRESDRILL, one of the MTorres leading brands, has done his way to the top



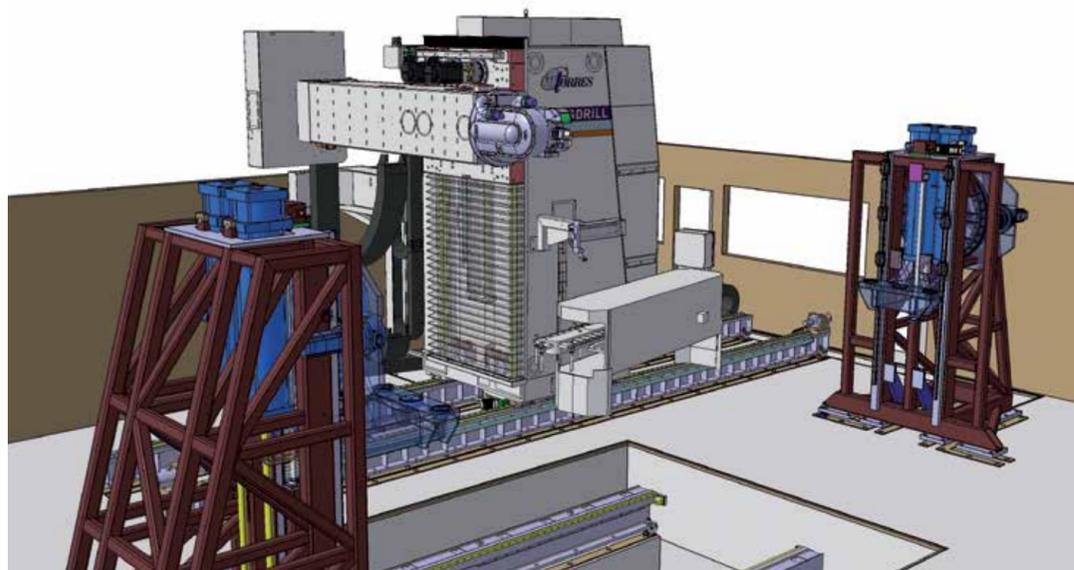
MTorres launches new website!

www.mtorres.es



Boeing chooses MTorres to supply the Contour Tape Layer Machines to manufacture the horizontal stabilizer of the B787-9 Dreamliner





Torresdrill. Benefits talk

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Since the late 90s, the TORRESDRILL has been selected by a wide variety of customers looking for accurate and fast drilling and countersinking. But it is in particular with stacks of different materials, like titanium, carbon fiber, stainless steel, aluminum, etc, where MTorres drilling and countersinking technology pays for.

Recently, the TORRESDRILL had twins. It has been selected by both, Airbus and Embraer for drilling one of the most critical structural components, the pylon, for their emblematic programs, Airbus A320 Neo, and Embraer E-Jets, as well as Embraer KC-390.

Specifically designed for the precise requirements of the pylon application, the TORRESDRILL opens a door to the "one way assembly", to meet the very demanding needs of the process.

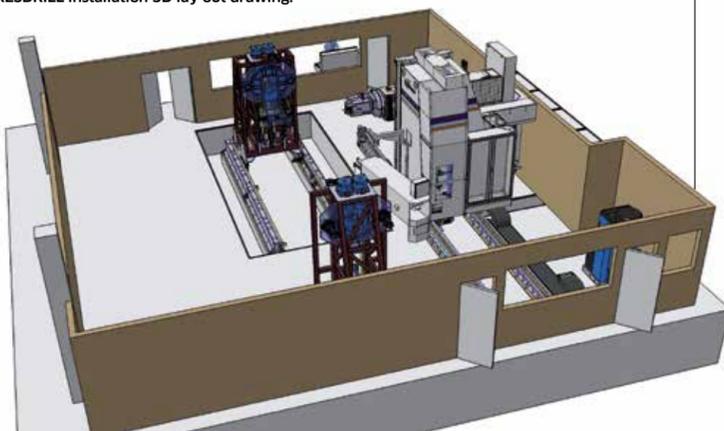
In both cases it is a fully automatic solution, that respects the hole position tolerance and use local references to drill the holes.

The work for the first lean drilling cell will be carried out at Airbus St Eloi, (France) the only center of excellence for pylons within Airbus.

The second will be in production, in Eugenio de Melo at São José dos Campos, Brazil.

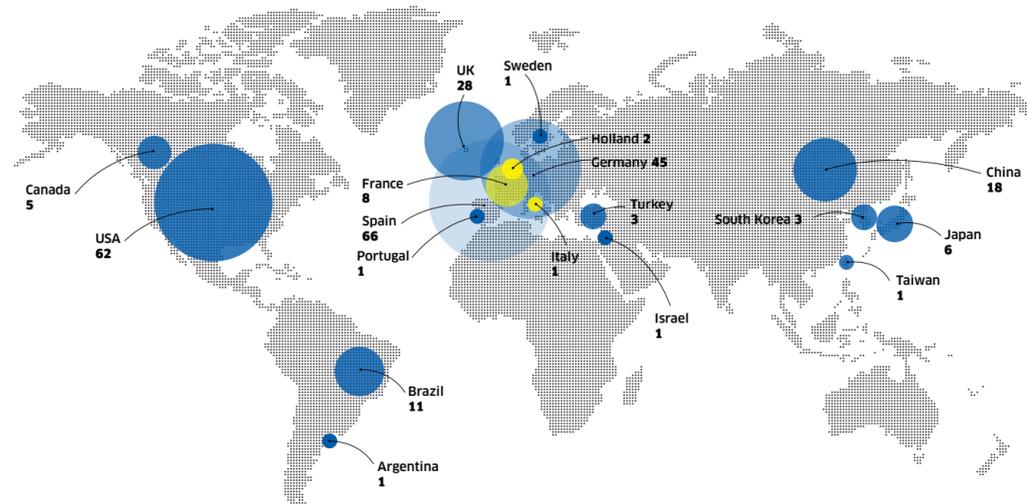
The performance of the TORRESDRILL started in a balanced design, in a robust and durable architecture to support the necessary strong forces, as well as its unique pressure foot and foot pad design, which allows reducing cycle time, while increasing accuracy in the drilling and countersinking process.

TORRESDRILL installation 3D lay out drawing.



These two contract awards consolidate MTorres position on supporting the aeronautic industry, with reliable automation and well proven solutions. We are proud that AIRBUS and Embraer trusted us again to accompany them in these new projects which confirm MTorres capacity to provide complete solutions and the commitment to its customer's new challenges.

Aerospace market evolution



Historically, when we began our business activity at the Aerospace sector, we started focusing on the customers we perceived as the most likely ones, of course for us to be successful. At that time those customers were CASA (currently Airbus Spain) and DASA (currently Airbus Germany).

■ Right after we did the first business with them we extended our focus to Boeing. And we got Boeing as a customer soon after.

The result was that our first customer was Airbus both, in Spain and Germany, becoming Boeing our second one.

All that happened at our very initial steps into the Aerospace Sector, between 1988 and 1992.

Next step for us after this remarkable beginning -considering that virtually nobody in the industry even knew about our existence and we were already doing business with the two largest players- was to extend as much as possible the customer base. This is always a logic and natural intent to minimize the risks associated with the fact of doing business with a limited number of customers, in this case two, even if they are the largest ones.

This is how our adventure in this sector commenced, increasing constantly our presence at the potential customers both in Europe and the USA, creating step by step a name, generating a brand and accumul-

ing a bunch of customer references very relevant for the future.

While we were reasonably successful establishing ourselves at the European and US markets during the 90's, we realized that the potential customers from other areas of the world were going to become increasingly relevant for the industry, and therefore for us.

Our reaction to this perception in the mid 90's took us to start working, step by step, on establishing the basis to generate future opportunities at customers which, at that time, were not yet in a position as to acquire our products, but we felt they would reach such a position sometime in the near or no so near future. This task, very long and tedious due to the absolute lack of short or even mid-term results, started at the second half of the 90's but it was strengthened and deepened mainly during the first half of the past decade. The results of those efforts started returning in 2005 when we started doing business in Asia (Korea, Japan and China) to follow with an increasing level of success in Brazil and more recently in Russia and Taiwan. On this very same focus, we very recently added a new customer in Argentina.

But this is of course the never ending story and we have now promising prospective customers in Malaysia, Indonesia, India, Saudi Arabia, Emirates, etc.

All this confirms to us that the market changes we somehow perceived a few

years ago, are actually going on, partly determined by the stronger and stronger outsourcing policy that the industry big ones, Boeing and Airbus, are actually implementing lately, what obliges us to be commercially active and present at places we originally never thought would have to be but that soon became promising for us. Some or those places promising for us a few years ago are now very positive and strong market realities for us.

In addition to the Boeing and Airbus programs, there are now other aircraft makers launched programs ongoing and it is our duty to be present on those programs too. Well, we are present on them and we shall keep on being present at any aircraft program worldwide.

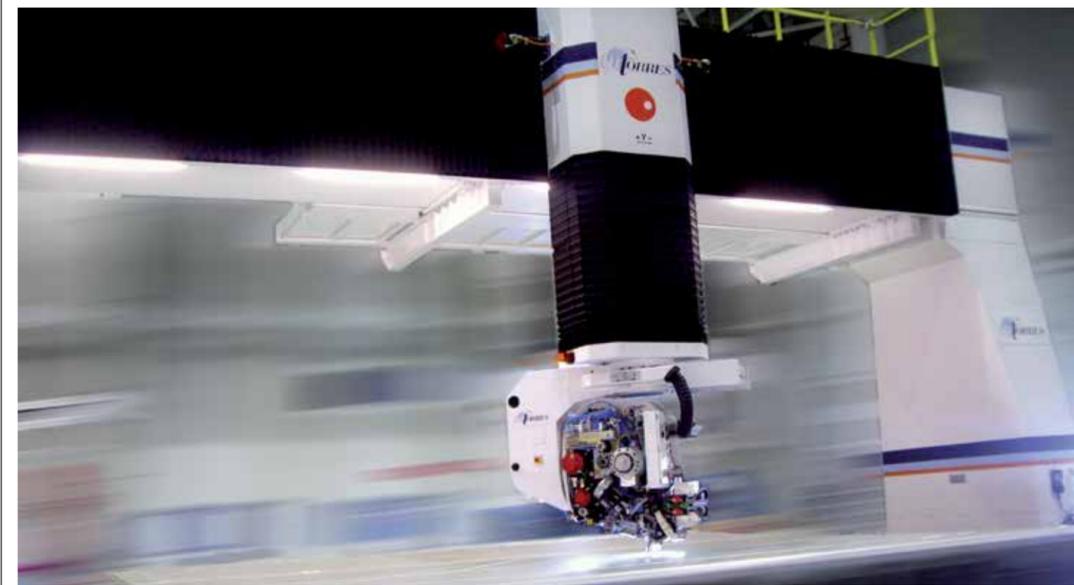
This picture shows us the market evolution, permanent change, constant instability, which are facts of human and social reality. The same applies to a market or an industrial sector, continuously changing, sometimes faster than the human societies than created and develop them.

The conclusion is that markets, as well as the people and societies in which they act, keep on changing on a permanent basis. This is the fact and it is our duty to adapt ourselves to the change, anticipate it early enough to be ready for it when it actually happens in order to keep a leading position, anywhere in the world and throughout the company history.

This is the challenge.

Boeing chooses MTorres to supply the Contour Tape Layer Machines to manufacture the horizontal stabilizer of the B787-9 Dreamliner

The machines will be installed on the new Boeing's facility in West Jordan, Utah



TORRESLAYUP machine.

Aircraft maker Boeing Co. has chosen MTorres to supply the machines to manufacture the components of the B787-9 horizontal stabilizer.

The new TORRESLAYUP machines will be installed and operating by mid-2014.

NEW BOEING'S FACILITY IN UTAH

Boeing will grow their composite manufacturing capability in Utah (USA). The components of the horizontal stabilizer of the B787-9 Dreamliner will be manufactured in Boeing's new 850,000 sq ft facility in West Jordan, Utah (located within Salt Lake County).

"The site we've chosen is an ideal location to add composite manufacturing capability focused on Boeing's key business strategies," said Ross R. Bogue, vice president and general manager of Boeing Fabrication. "This new facility will provide a real competitive advantage in our

supply chain by expanding our internal composite capabilities."

LEADING MANUFACTURER OF TAPE LAYER MACHINES

There are many TORRESLAYUP machines currently in production, manufacturing composite components for different Boeing's programs all around the world.

However, this is the first time Boeing selects the MTorres tape layer machines to be installed on a Boeing's plant. It is also very meaningful the fact that these machines will be installed on the Boeing's new strategic composite manufacturing plant.

This is therefore a key milestone that places MTorres as the world's leading manufacturer of automated tape layer machines.

FLEXIBILITY MEANS PRODUCTIVITY

MTorres is known for our flexibility to adapt our equipment to the special needs

from every customer as well as for our process of continuous improvement of our products to be always at the forefront of the technology.

On this line, there are two main features that make the difference currently on the TORRESLAYUP machines: the automatic head changer and the multitape head technology.

The head can be automatically changed in less than 2 minutes, allowing the TORRESLAYUP machine to use different tape configuration and/or different materials without requiring any manual operation.

The multitape technology allows laying up several courses simultaneously, increasing drastically the machine productivity.

The combination of these two features gives the highest flexibility and the highest productivity that can be found on the market for an automated tape layer machine.