

## APPLICATIONS

WINGS AND STABILIZER, FUSELAGE, OTHER STRUCTURE PARTS

## JIGS AND ASSEMBLY LINES

M. Torres offers a wide range of Conventional and Automated Assembly Tooling that covers all possible market demands.

- Not automated conventional tooling. - Consists of assembly tooling that has no automation. They are stiff and dedicated for a specific aircraft part assembly. They are assembled at geometrical condition with the use of laser trackers.

- Automated tooling. - This type incorporates an additional step in assembly tooling, as they integrate solutions created for specific parts with a automation that provides better flexibility and accuracy of production processes, together with drilling, riveting, etc. They are mainly focussed to wings, fuselage and final assembly.

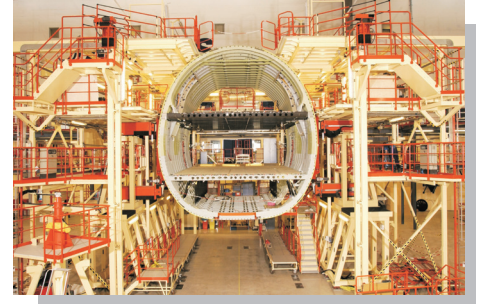
- Moving lines. - M. Torres offers turn key moving lines, where newer constant and lean production work flows can be implemented in comparison with conventional aircraft production processes, improving substantially cycle time.

Up to now the experience has been applied to fuselage assembly and equipment but it can be offered for wing or final assembly lines.

- M.Torres Positioning System. - M. Torres Positioning System has been designed to provide the appropriate solution on the demand of a new generation of assembly installations which are flexible, reconfigurable and equipped with "On line" measurement systems. It reduces significantly cycle time while producing constant and traceable high quality standards.

The MTPS provides the capability of highly accurate positioning and adjustment of the different individual components that conform the aircraft assembly. This position adjustment capability can be performed in the 3 Cartesian axes in a very simplified and easy to operate way, thus providing great flexibility and versatility for the assembly without the need of any specific geometry fixture.

The MTPS provides a high flexible solution for different aircraft parts assemblies as Fuselage, Wings, Horizontal and Vertical Stabilizers, as well as Wings, VTP & HTP to fuselage integration.



## TECHNICAL CHARACTERISTICS

The Main Technical characteristics of the M.Torres Positioning System are:

Six (6) to sixty (60) controlled axis assembly systems.

Interpolated Movement capabilities.

External on line measurement system.

Laser tracker (Leica, Faro).

Indoor GPS.

Positioning accuracy: +/-0.1mm.

Positioning processes:

Theoretical positioning.

As built positioning.

Hole to hole alignment.

Best fit operations.



## REFERENCES

- A340 fan cowls assembly jig
- C17 fuselage transfer car
- Dornier 728 Wing assembly line.
- A380 HTP assembly line.
- A380 Section 13, 18&19 moving line.
- A320 family moving line
- Falcon 7X assembly line.
- A380 Section 13 and 18 Assembly Cell.
- B787 Horizontal Tail Plane Integration Cell.
- A400M Wing Integration Cell

