

## Description of an infrared forming machine for carbon profile



### 1. Purpose of the machine

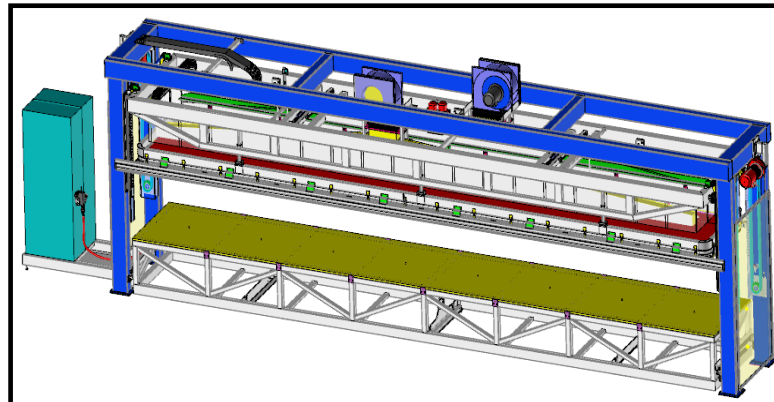
The infrared forming machine provided by Elmetherm for Airbus was designed to produce U and L shaped carbone profiles. We have manufactured three different lines for AIRBUS NANTES.

One line for ATR plane with a preparation area with handling by gantry and a forming area with a hot forming machine and an automatic loading and unloading manipulator which put the tools + laminate directly under the hot forming machine.

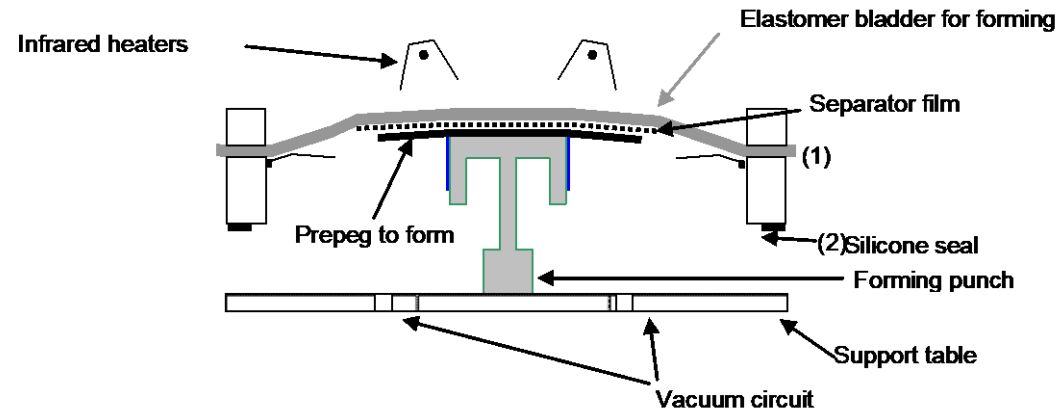
One line for A380 A 400M planes, with a transfer table to load and unload the hot forming machine (similar to your process) then the parts go to a compacting machine used to conform the laminates by mechanical pressure and heating to obtain good shape tolerances and plies coherence.

One line for A350 plane with an automatic line with conveyors for the hot forming and an automatic line for the compacting with the conveyors.

### 2. Layout of a forming machine



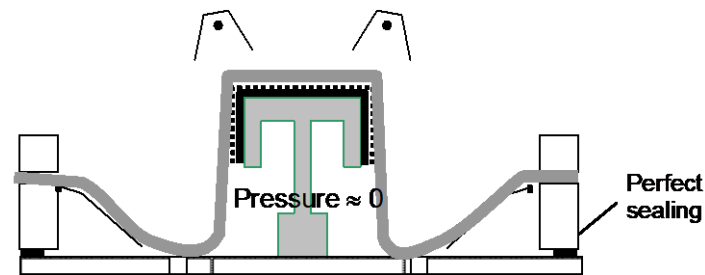
### 3. Schematic diagrams



- the mobile frame lowers to be in contact with the support table. The sealing is perfect.
- The part is heated with infrared elements until the forming temperature.
- the system is put under vacuum and the elastomer bladder goes down due to the depression
- When the vacuum level is reached, the heating is stopped and vacuum maintained
- The part is cooled by blown air during approximately 5 min until 25°C



Process



- the mobile frame goes up and the part is unloaded

4. Layout of a compacting machine

