Partially automated manufacturing process for 3D FRP hot press parts – AutoHot3D

**Problem**

- The production of curved parts in large numbers currently employing the vacuum infusion process used by the company tfc (tools for composite) is only usable up to a certain point, since the technology has the following restrictions:
  - High proportion of manual production steps, or requiring manual intervention
  - Long curing time of the resin systems (> 8 h) and long cycle times
  - High proportion of consumable materials and only one-sided mould shaping

**Solution**

- Introduction of a partially automated production process for 3D FRP hot press parts at tfc tools for composite
- Creation of a closed value creation chain from the 3D CAD model up to the finished 3D FRP part according to Industry 4.0 principles

**Benefits**

- Considerable reduction in cycle times through the introduction of automated process steps and short hardening times for the FRP parts (< 30 minutes)
- Transition to large-scale series production with > 10,000 parts per year
- Considerable savings in resources, especially of consumable materials
- High surface quality on both sides and high dimensional compliance of the part by using closed mould designs