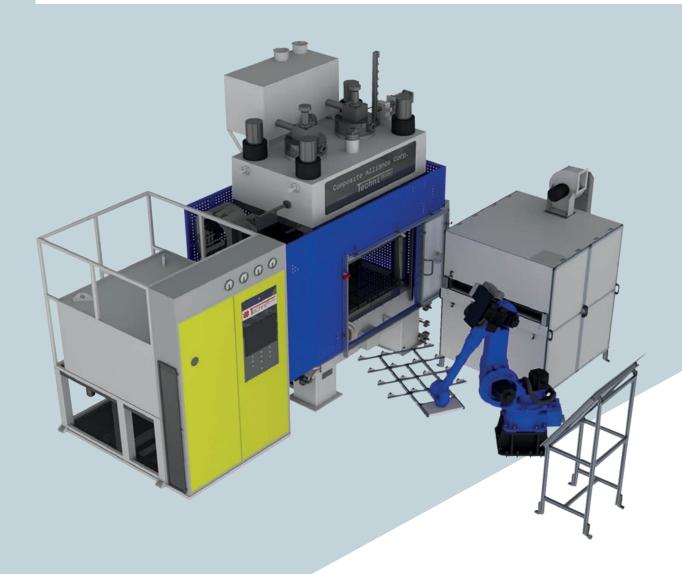
# THERMOPLASTIC WORK-CELLS

Techni-Modul Engineering (TME) offers standard press forming cells for continuous fiber-reinforced thermoplastic composites (TPCs). Complete workstations can be provided including the material transport system, pre-heating ovens, consolidation & forming presses, tooling and fixtures.

Different work-cell configurations are available with various levels of automation depending on applications and throughput. Solutions are offered for laboratory or production, up to very high-volume and for a variety of materials such as PEEK, PEKK, PEI, PPS, PA, PC...



**STEP 1:** Robot transfer of thermoplastic consolidated blanks from storage to IR oven for material heating

**STEP 2:** Transfer of pre-heated blanks from IR oven to press in **5 seconds** approximately

**STEP 3:** Thermo-stamping

**STEP 4:** Robot or manual part demolding or automated mold changing station



CHOICE OF STANDARD SIZES BASED ON PRESS/OVEN DIMENSIONS		REFERENCES		
		TMP 700	TMP 1000	TMP 1500
PRESS & HEATING PLATENS	Platen length (mm)	700	1000	1500
	Platen width (mm)	<i>7</i> 00	1 000	1000
	Platen working area (mm)	500 X 500	800 X 800	1300 X 800
	Max opening height (mm)	800	1000	1000
	Closing force (T)	150 T	300 T	500 T
	Stroke (mm)	700	900	900
	Platen temperature uniformity	± 3°C	± 3°C	± 3°C
IR OVEN	Heating area (mm)	800 X 800	1000 X 1000	1500 X 1200
	Homogeneity area (mm)	e00 X e00	800 X 800	1300 X 1000
	Total heating power (Kw)	2 X 25 KW	2 X 40 KW	2 X 72 KW
	Max working temperature	450 ± 15°C	450 ± 15°C	450 ± 15°C

Robot YASKAWA (ABB or any other brand in option) • For a custom made thermoplastic work-cell, please contact our sales team



#### **AVAILABLE FEATURES**

- Supervision station: material and mold database, data acquisition, process monitoring & production traceability
- Infrared oven multi-zone pre-heating up to 450°C
- Heated platens or integrally heated tools up to 250°C
- Adjustable stamping pressure
- Adjustable daylight opening
- Gripper with integrated suction cup





#### **ADVANTAGES**

- Reliable and repeatable performance
- Rapid cycle automated process
- Simplicity of use and maintenance
- Accurate material positioning
- Heating temperature uniformity
- Optimized human-machine interface
- Advanced tooling and process expertise



### **OPTIONS**

- Material thermal uniformity control
- Automatic mold changer with preheating station
- Automated mold flanging
- Robot de-molding
- Heating platen up to 450°C
- Cooling platen
- Ejection system
- Gripper with holding the material in tension

## TME AT A GLANCE

Techni-Modul Engineering is an industrial engineering company that designs, realizes and implements standardized and turn-key solutions in support of composite parts manufacturing. We provide optimized and innovative composite manufacturing solutions worldwide for various processes and for different functions.

