COMPOSITE INTEGRATION

DATASHEET

VRTM TEST PANEL TOOL

INTRODUCTION

A tool for Education, Technical Centre's, Materials Companies and a wide range of end users to reliably and conveniently evaluate various fibre and resin combinations moulded into an accurate flat panel of variable thickness.

Designed to be robust and simple to use, the glass face also enables easy observation of resin flow and interaction with the fibre pack. An in built thermocouple permits accurate temperature measurement and resin pressures at both inlets and outlets can be recorded by adding a pressure sensor kit. Data can be collected simultaneously using a CIDAQ data logging system.

Perfect for anyone who wants to observe the VRTM process whilst making composite panels, this tool can be used with an almost unlimited range of fibre and resin systems.

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KEY FEATURES

- 500 x 500 mm aluminum/glass vacuum clamped heated test panel tool with variable cavity thickness. 1, 2, 4, 10 mm shim plates as standard (one shim supplied with tool. Additional shims available to order). Non standard thickness shim plates available upon request (1 — 15 mm).
- The upper tool face is 19 mm thick heat toughened glass in a supporting steel framework. This allows full observation of the injection process.
- The upper face is hinged and supported on gas struts for easy operation.
- The mould is clamped using vacuum and may be used at low injection pressures up to 0.5 bar (gauge).
- Tool configuration enables injection via peripheral, central or edge to edge injection gates.
- Electrically heated up to 80°C with full PID control (lower tool).
- Includes 1 x 'near-surface mounted' K type thermocouple for connection to customer readout or data acquisition unit.
- Includes an air ejection system, to aid part removal.
- Includes protective jacket for thermal insulation and operator protection at elevated temperatures.
- Includes 2 x 2 L stainless steel inline resin traps mounted to frame for vacuum pump protection.

TOOLING VERSIONS

Tool Type	Description	Product Number
VRTM Test Panel Tool	500 x 500 mm aluminum vacuum clamped heated test panel tool with variable cavity thickness.	XM-5101

TOOLING THICKNESS OPTIONS

1 shim included with standard specification. Custom shim options between 1 — 15 mm available upon request (custom shim thickness tolerance ±0.1 mm).

Standard Options	Description	Product Number
1 mm Shim Plate	(±0.1 mm tolerance)	-02
3 mm Shim Plate	(±0.15 mm tolerance)	-04
4 mm Shim Plate	(±0.24 mm tolerance)	-05
10 mm Shim Plate	(±0.36 mm tolerance)	-07

TOOLING ANCILLARIES/RELATED PRODUCTS

Related Products	Description	Product Number
Pressure Sensor Kit	Includes standard 0—4 bar (0-10V output) pressure sensor and installation kit.	TBC
IMPS Readout Unit	Power & display unit for pressure sensors (not required if CIDAQ unit specified).	XE-0053

TOOLING ANCILLARIES/RELATED PRODUCTS (continued)

Related Products	Description	Product Number
CIDAQ System	Data acquisition unit including PC software (PC not included).	XE-9999-028
Injection Valve	Connects CIJECT equipment to a typical closed mould, ensuring reliable and clean operation.	XE-0015-01-
Inline Resin Trap	2 L stainless steel vacuum resin trap.	XE-0213-
8 mm O/D PTFE Resin Feed Pipe	2 m length (pack of 10).	TBC
Reusable Inline Clamp	Manual clamp to shut off resin feed/vent lines.	MP-85-0015
Replacement Mould Seal Kit	Replacement inner and outer mould seal kit	TBC

TECHNICAL SPECIFICATION

General	
Product Dimensions	L: 1.3 m x W: 1.2 m x H: 1.0 m
Product Weight	250 kg
Maximum Shipping Weight	Dependent on shipment options
Nominal Service	Dependent on usage/materials used
Design Life	10 years

Mechanical	
Tool Type	VRTM
Clamping Method	Peripheral vacuum
Construction	Aluminum base with glass top
Operating Temperature Range	15 — 80°C
Maximum Pressure	0.5 bar gauge

Cavity Upper Face	
Glass Specification	19 mm heat toughened
Glass Flatness Tolerance	±0.25 mm

Cavity Lower Tool Block	
Cavity Dimensions	500 x 500 mm (nominal)
Panel Thickness Adjustment	Insertable flange shim plates
Cavity Depth Range	1 — 15 mm ***dependent on standard/custom shim options**
Cavity Depth Tolerance	Dependent on shim selection

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TECHNICAL SPECIFICATION (continued)

Ports	
Injection Port	Port suitable for injection valve or 8mm pipe insert, central or edge/ peripheral.
Vent Port	Ports suitable for 8 mm pipe inserts, central or edge/peripheral.

Electrical Heating	
Maximum Temperature	80°C
Heated Zones	Cavity lower tool plate
Power Requirement	230V 50 Hz 16A 1P+N+E