

# Adjustable Cavity RTM Test Panel Tool

## Data Sheet



### XM-5103: Option Three

500 x 500 mm mechanically clamped RTM test panel tool with a sophisticated screw adjustable cavity thickness mechanism.



## Key Features

- > The lower mould is fixed with a movable peripheral flange plate which allows depth adjustment.
- > The upper face consists of 25 mm heat toughened plate glass in a supporting steel framework to maintain accuracy at positive pressures. This allows observation of the injection process.
- > The upper mould is also available in machined aluminium if upper mould heating or high precision is required.
- > Injection is via a peripheral injection gate with a central vent or vice versa.
- > The lower mould and peripheral flange can be specified with oil or water heating channels or integral electrical heating with the appropriate insulation.
- > The glass upper face is hinged and supported on gas struts for ease of operation.
- > A high temperature air ejector system is included with standard specification.

Specifications	
<b>Type</b>	RTM/VRTM
<b>Clamping Method</b>	Bolted
<b>Construction</b>	Aluminium base
<b>Maximum Pressure</b>	<b>Glass option:</b> 4 bar (G) <b>Aluminium option:</b> 6 bar (G)
<b>Standard Temperature</b>	Unheated
<b>Maximum Temperature</b>	<b>Electrical:</b> 180°C <b>Oil:</b> 150°C

Cavity Upper Face	
<b>Glass</b>	25 mm heat toughened
<b>Glass Flatness Tolerance</b>	±0.5 mm
<b>Machined Aluminium</b>	If upper mould heating is required <b>*for options 06 and 09</b>
<b>Aluminium Surface Flatness Tolerance</b>	±0.1 mm

Lower Tool Cavity Plate	
<b>Cavity Dimensions</b>	500 x 500 mm (nominal)
<b>Cavity Adjustment</b>	Screw adjustment
<b>Cavity Depth Range</b>	2 — 50 mm
<b>Cavity Depth Resolution</b>	Up to ±0.01 mm <b>*dependant on set up</b>



## Ports

<b>Injection Port</b>	2 x peripheral injection port	<b>*or vice versa, these are switchable</b>
<b>Vent Port</b>	1 x central vent	

## Fluid Heating Options

<b>Maximum Heating Temperature</b>	<b>Water:</b> 80°C <b>Oil:</b> 150°C
<b>Heating Zones</b>	<b>Cavity:</b> standard <b>Flange:</b> standard <b>Top:</b> if mould top is aluminium
<b>Heating Capacity:</b>	<b>Water operation:</b> 9 kW <b>Oil operation:</b> 3 kW
<b>Power Requirement</b>	400V 50 Hz 32A 3P+N+E

## Electrical Heating — Standard Option

<b>Maximum Heating Temperature</b>	180°C
<b>Heated Zones</b>	<b>Cavity:</b> standard <b>Flange:</b> standard <b>Top:</b> if mould top is aluminium (options 06 and 09)
<b>Power Requirement</b>	400V 50 Hz 16A 3P+N+E

## Electrical Heating — Advanced Option

<b>Maximum Heating Temperature</b>	180°C
<b>Heated Zones</b>	<b>Cavity:</b> standard <b>Flange:</b> standard <b>Top:</b> if mould top is aluminium (options 06 and 09)
<b>Power Requirement</b>	400V 50 Hz 16A 3P+N+E
<b>Datalogging</b>	USB port as standard Logged to CSV format
<b>Additional Inputs (advanced only)</b>	<b>Option A:</b> 3 x In-mould pressure sensors (IMPS) <b>Option B:</b> 3 x Thermocouples (T/C) <b>*both options can be specified together or separately</b>

## Standard Options

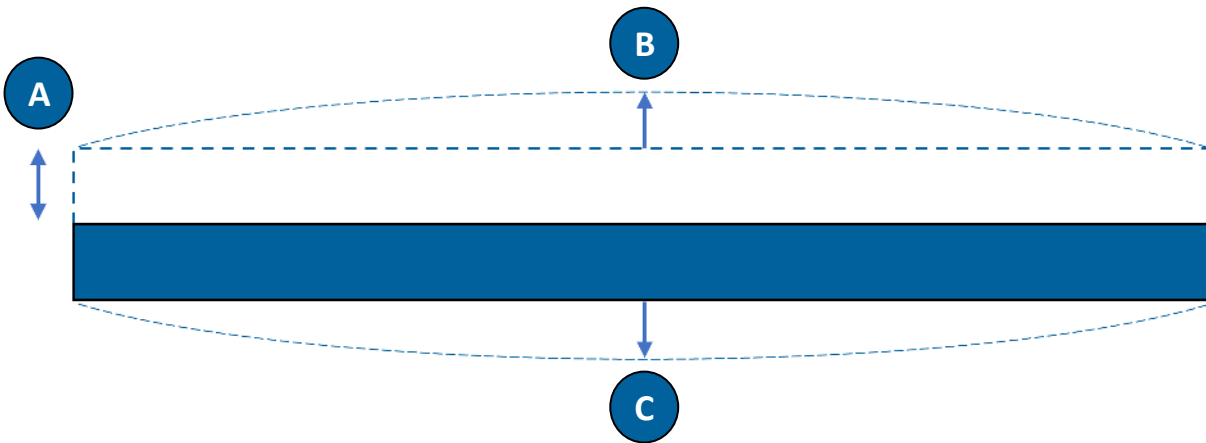
<b>Insulation Blanket</b>	Protective insulation required for moulds operating above 50°C
<b>Universal Sensor Positions</b>	Up to 4 IMPS <b>and/or</b> T/C ports



### Standard Features (included with all options)

<b>Catch Pot</b>	2 litre inline catch Pot with 1 x GEKA fitting for vacuum connection
<b>Ejection</b>	1 x air ejector

### Cavity Stiffness Table



Curing Pressure	Global Thickness Increase (A) (mm)	Deflection at B (mm)	Deflection at C (mm)
<b>0 bar (G)</b>	0.00	0.000	0.000
<b>1 bar (G)</b>	0.05	0.025	0.025
<b>2 bar (G)</b>	0.10	0.050	0.050
<b>3 bar (G)</b>	0.15	0.075	0.075
<b>4 bar (G)</b>	0.20	0.100	0.100
<b>5 bar (G)</b>	0.25	0.125	0.125
<b>6 bar (G)</b>	0.30	0.150	0.150

### Design Life

<b>Dimensions</b>	10 years
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## Specification Sheet — Test Panel Tool: Option Three

Available Options	Notes	Option Number
<b>Adjustable Cavity RTM Test Panel Tool</b> — 500 x 500 mm		XM-5103
<b>Heated Aluminium Upper Mould</b>		01
<b>Sensor Mounting Detail Options</b>		
<b>Sensor Mounting Detail — One Port</b>	One machined hole to accept IMPS or thermocouple Includes blanking plug	21
<b>Sensor Mounting Detail — Two Port</b>	Two machined holes to accept IMPS or thermocouple Includes blanking plug	22
<b>Sensor Mounting Detail — Three Port</b>	Three machined holes to accept IMPS or thermocouple Includes blanking plug	23
<b>Sensor Mounting Detail — Four Port</b>	Four machined holes to accept IMPS or thermocouple Includes blanking plug	24
<b>Heating Options</b>		
<b>Water/Oil Heating Temperature Control Unit</b>		02
<b>Electrical Heating: Standard Control</b>	Lower tool cavity plate and peripheral flange (2 zones)	03-04
<b>Electrical Heating: Standard Control — Third Zone</b>	Required if an aluminium upper tool is specified	06
<b>Electrical Heating: Advanced Control</b>	Lower tool cavity plate and peripheral flange (2 zones)	07-08
<b>Electrical Heating: Advanced Control — Third Zone</b>	Required if an aluminium upper tool is specified	09
<b>Insulation Jacket</b>	If the tool is to be used above 50°C	10
<b>Data Logging</b>	Of cavity plate heating Only available for electrical heating: advanced control	31

### Associated Products

Sensor Inserts	Part Number
<b>IMPS and Insert: 0 to 10 bar pressure sensor — 180°C maximum temperature rating</b>	XA-0500-04
<b>K-Type Thermocouple and Insert</b>	XA-0600-02

