

DATASHEET

CIJECT³

INTRODUCTION

A machine designed for RTM and Direct Infusion processes in a laboratory or prototyping environment, providing maximum flexibility with a wide range of thermoset resin systems.



KEY FEATURES

- Advanced pressure-pot machine designed for pre-mixed or single component resin systems.
- Compatible with a wide range of single and multi part resin systems.
- 27 Litre pressure vessel to suit 5 kg or 10 kg manufacturer containers.
- PID controlled resin heating to ensure optimum process parameters. Optional upgrades for full heating available.
- Integrated vacuum pump to enable material degassing and mould evacuation.
- Closed loop PID pressure control. Automatic, regulated tank pressure to achieve desired pressure in mould.
- Modular Siemens PLC with HMI screen, easy to use interface allowing quick set-up and safe operation.
- Integrated load weighing platform with readout on HMI screen. Measuring range of 0 — 10 kg (± 0.001 kg resolution).
- Mechanised castellated lid mechanism for easy opening/closing and secure locking.
- Datalogging of machine and process parameters, time stamped, and logged to a SD/USB drive, in CSV format (includes pressure, temperature, resin weight, external sensors).
- Secomea Remote Support: SECOMEA communication system. Permits remote support and upgrades by Composite Integration. Operates on ethernet, Wi-Fi or 4G network with full security certification.

MACHINE RESIN SYSTEMS

Standard Options	Description	Product Number
Standard Machine		XE-3000-002

MACHINE UPGRADES

Standard Options	Description	Product Number
Pressure Vessel Heating	PID controlled heating option — base heater and vessel band heater. Maximum temperature 120°C.	-01
Heated Output Hoses	Electrical heating of pipework and associated fittings. Maximum temperature 120°C.	-04
Tank Stirring	Electrically driven agitator.	TBC
Mould Monitoring — Pressure Control	Closed loop PID pressure control. Automatic, regulated tank pressure to achieve the desired pressure in the mould. Includes 4 x 0 — 10V analogue inputs displayed on HMI screen. Does not include IMPS pressure sensors. IMPS and leads can be selected from machine accessories/related products.	-15
Mould Monitoring — Temperature	Includes inputs for 4 remote K-type thermocouples. Does not include any thermocouples, please contact CI for further information.	-16

MACHINE UPGRADES (continued)

Standard Options	Description	Product Number
Through-Lid Viewing Camera	Illuminated viewing camera mounted through vessel lid to visually monitor interior of vessel. Output displayed on HMI.	TBC

MACHINE ANCILLARIES/RELATED PRODUCTS

Related Products	Description	Product Number
IMPS Pressure Sensor	0 — 4 bar (absolute) with MIL Spec 26482 6 Pin Connector. Output: 0 – 10V Max. Operating Temperature: 85°C	XE-0050-008
IMPS Lead Assembly — 3m	Connect a XE-0050-008 sensor with MIL-Spec connection directly to a machine IMPS Input.	XE-0060-05
IMPS Lead Assembly — 10 m	Connect a XE-0050-008 sensor with MIL-Spec connection directly to a machine IMPS Input.	XE-0060-06
IMPS Lead Assembly — 25 m	Connect a XE-0050-008 sensor with MIL-Spec connection directly to a machine IMPS Input.	XE-0060-07
Injection Valve	Connects CIJECT equipment to a typical RTM mould, ensuring reliable and clean operation. Includes spares kit.	XE-0015-01-
Flush Waste Tank	25 L tank for the secure collection of waste material from injection valve waste outlet or machine outlet hose during the cleaning cycle.	XE-0030

TECHNICAL SPECIFICATION

General	
Product Dimensions	L: 1.6 m x W: 1.0 m x H: 2.0 m
Product Weight	500 kg
Maximum Shipping Weight	Dependent on shipping options
Nominal Service	1 calendar year
Design Life	10 years

Mechanical	
Injection Pressure Setting Range	0.1 — 7.5 bar (absolute)
Injection Rate	Dependent on connections
Material Viscosity Range	5 — 20,000 cPs
Vacuum Pump Capacity	16 m³/hr flow rate. < 5 mbar ultimate vacuum
Injection Hose Length	2 m standard *other lengths are available on request.
Agitation	Servo motor driven 316 stainless steel stirrer. 5 — 100 RPM.

TECHNICAL SPECIFICATION (continued)

Control	
Pressure	PID controlled process pressure
Pressure Sensor Type	0 — 4 bar (absolute)
Machine Parameters	Programmable injection quantity and pressure
Program Storage	100+ pre-settable programs

Safety & Monitoring	
Over Temperature	Programmable temperature limits through HMI and additional over temperature relay for resin temperature (pre-set to machine limit).
Over Pressure	Programmable over pressure limits through HMI and additional mechanical overpressure valve.
Exhaust Venting	All fumes are vented to a common manifold point which is to be connected to the workshop extraction system.

Power Requirements	
Power Connection	32A 3P+NE appliance inlet
Electrical Supply	415V AC, 50/60 Hz
Supply Fusing Required	32A
Internal Fuses	3.15A (24V) 20 mm cartridges
Air Supply Standard	8 bar 600 L/min — dry, non-lubricated
Air Supply Limits	6 — 8 bar

Operating Conditions	
Maximum Material Temperature	120°C
Ambient Operating Temperature	0 — 45°C
Storage Temperature	Ambient conditions 23°C ±10
Humidity	20 — 75% non-condensing
Noise Output	< 70 dB