

CJECT^{TWO}

Data Sheet



Ciject[®] Two—RTM/VRTM Injection Machine

The Ciject Two is based around a powerful modular touch-screen PLC enabling the addition of a wide range of options and control functions. The Ciject Two features an unrivalled level of control with simplicity of operation.



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Key Features

- > Available with mix ratios to suit polyester/vinylester, epoxy or phenolic systems.
- > Mixed output from 0.1 kg up to 10 kg per minute dependent on material viscosity.
- > Advanced seal technology preventing leaks without the need for lubrication.
- > Fully enclosed cabinet with full operator control.
- > Unique pivoted pump mounting allowing easy access to entire pump assembly for maintenance.
- > Purpose designed A and B component piston pumps for high reliability and simple maintenance.
- > Unique B component monitoring system.
- > B component system which includes a return isolation valve to provide additional process security.
- > Automatic mix-head mounted on adjustable boom.
- > Low volume, non-pressurized mix-head flush system to ensure simple and quick cleaning.
- > Inline A component filter allowing cleaning without removing the loading hose from material.
- > B component filtration which also allows cleaning.
- > Storage area for B component material and solvent.
- > Stainless steel drum trolley optimized for easy loading of a standard 200 kg A component material barrel.
- > Training and technical support available on request.

Control System Features

- > Modular Siemens PLC.
- > 7" HMI colour screen.
- > Easy to use interface allowing quick setup and safe operation.
- > Wireless display capability; access the machine status or settings remotely whilst the machine is in operation.
- > Tank module connectivity which allows the equipment to interact with an external material tank, control the tank environment and material conditioning.
- > Build multiple stage injections into a recipe; ramping speeds, pressures or B component percentages at different stages of injection.
- > Store over 100 Injection recipes.
- > Password protection for settings and recipes.
- > Machine log of user actions and alarms.
- > Display of average flow rates during injection.
- > 2 x IMPS inputs included as standard allowing in-mould pressure control.
- > Ratio distance sensor which allows accurate and fast measurement of the injection process.
- > Solvent level sensor that detects when the solvent tank is empty.
- > Automatic recirculation feature with user programmable timers.
- > Adjustable 'Gel' alarm which indicates when flushing is required.
- > Adjustable 'Stall' alarm which indicates when machine has stalled.

Specifications

Material Viscosity Range	Up to 5,000 cPs *for material viscosity above 5,000 cPs please contact Composite Integration
Injection Pressure Setting Range	-1 to 9 bar (G)
Pre-set Injection Volume	0.1—1000 L or continuously
Injection Rate	0.1—8 L/min *dependent on material viscosity

Ratio Range

Polyester	0.5—4%
Phenolic	1—8%
Epoxy 2:1	100:12.5—100:50
Epoxy 1:1	100:25—100:100



Process

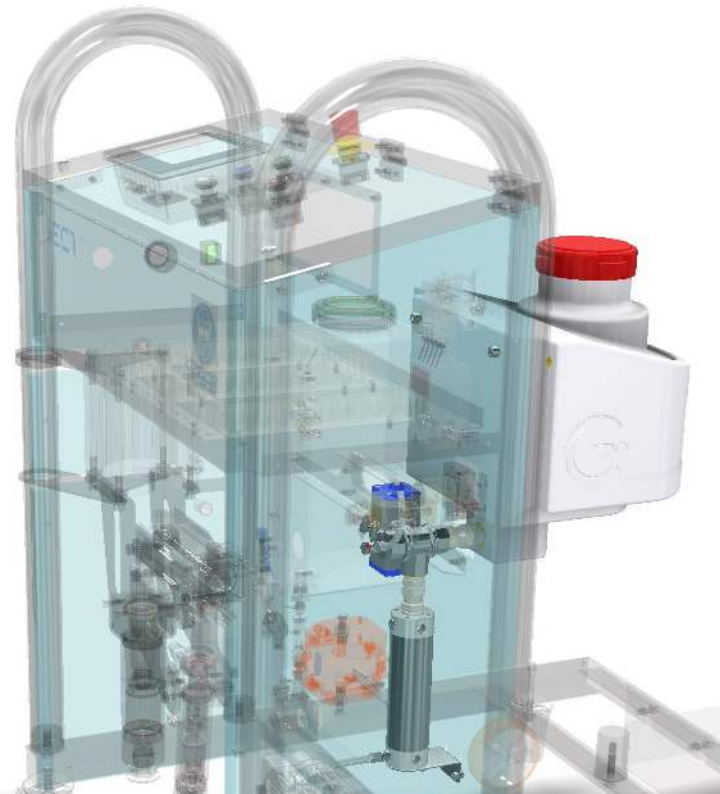
RTM	✓
VRTM	✓
Infusion	✓
Material	Epoxy, Phenolic, Polyester or Vinylester

Control

Pressure	PID pressure control
Pressure Sensor	-1 to 19 bar (G)
Parameters	Programmable injection quantities and speeds
Program Storage	100+ pre-settable programs

Operating Conditions

Noise Output	< 70 dB
Humidity	20—75% non-condensing
Storage Temperature	0—60°C
Operating Temperature	0—45°C
Maximum A Component System Temperature	50°C



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Power Requirements

Electrical Supply	110—230V AC, 50/60Hz
Internal Fuse	3.15A, 20 mm cartridges
Power Connection	16A 1P+NE appliance inlet
Air Supply Standard	8 bar 600 L/min — dry, non-lubricated
Air Supply Limits	6—8 bar

Safety and Monitoring

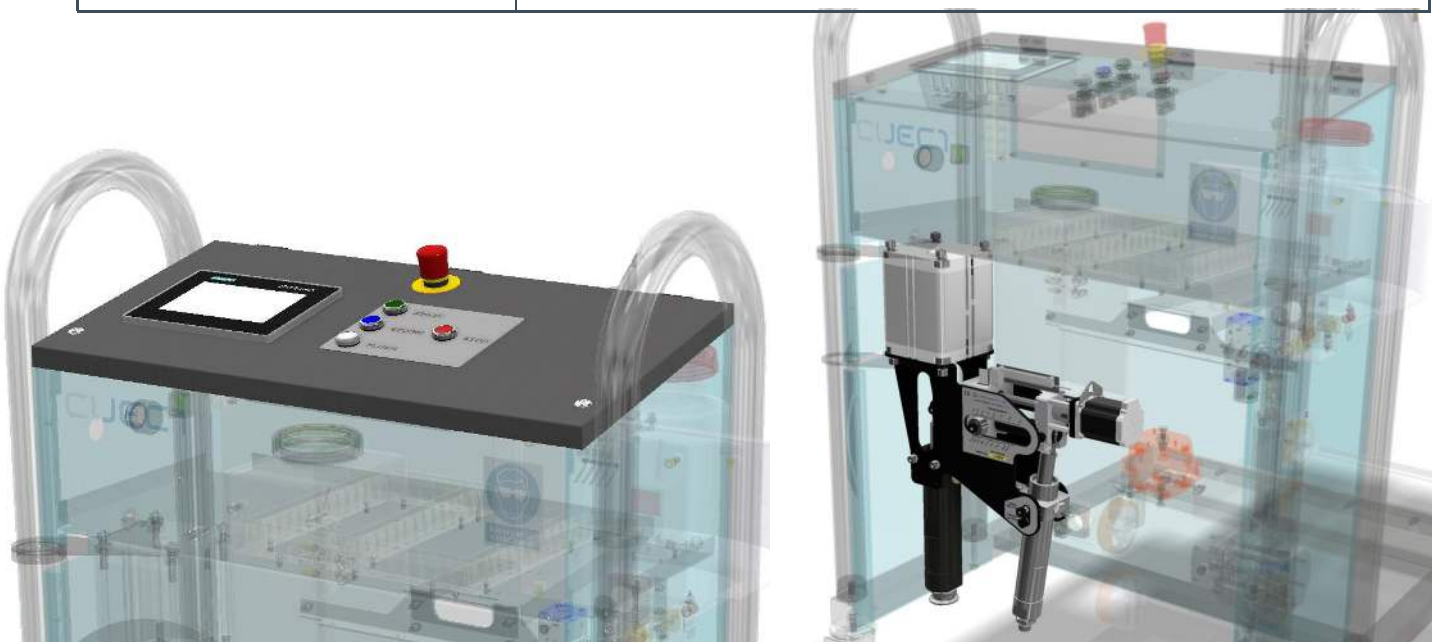
Catalyst Monitoring	Detects low pressure
Stall Alarm	Audible alarm
Gel Alarm	Settable alarm to alert when flushing is required

Dimensions

Height	1,650 mm
Width	1,100 mm
Length	1,100 mm
	*1,750 mm with drum trolley
Weight	100 kg
Maximum Shipping Weight	125 kg
	*dependant on shipping options

Design Life and Servicing

Nominal Service	1 calendar year
Design Life	10 years



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Specification Sheet — Ciject® Two

Machine Options

Polyester Version	0.5 — 4.0%
Epoxy Version 2:1	100:12.5 — 100:50
Epoxy Version 1:1	100:25 — 100:100
Phenolic Version	1 — 8%

Standard Features

Solvent Level Sensor	
B Component Level Sensor	Applies to Polyester/Vinylester versions only
IMPS Input	2 x inputs
Ratio Distance Sensor	
Wireless Display Capability	
Data Logging	
Pre-Injection Vacuum Test	Automatically measures mould vacuum to give a “pass/fail” feedback

Available Options

High-Flow Mix-Head	Optimises material flow
High-Flow Hose (IBC Type)	Maximises machine output with standard configuration for connecting to IBC
Flow Meters: Polyester/Vinylester	Sophisticated flow sensing system based on gear type flow meters
Flow Meters: Epoxy	Sophisticated flow sensing system based on gear type flow meters
Motorised Component Ratio System	Automatic motorised servo control of B component material level
Drum Trolley	Stainless steel drum trolley suitable for 200 L material drum
Inline PID Heater: A Component	PID temperature control up to 60°C
Inline PID Heater: B Component	PID temperature control up to 60°C
Fixed B Component Tank	Polyester/Vinylester version — 10 litre
Fixed B Component Tank: Phenolic	10 litre
RFID	Mould recognition system
IMPS Input Module	Monitoring of and control from additional 4 x IMPS sensors
Thermocouple Monitoring Module	Additional PLC module to enable monitoring of up to 6 x K-type thermocouples

Associated Parts

IBC Connection Kit: A Component Feed	Connects Ciject machine to IBC for A component material
IBC Connection Kit: B Component Feed	Connects Ciject machine to IBC for B component material
IBC Heater	240V flexible jacket with quick release buckles to heat 1000 L bulk container
Barrel Heater	240V flexible jacket to heat 200 litre material barrel up to 80°C.
Flush Waste Container	25 litre



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