



OAK RIVER TECHNOLOGY



DC100 BROCHURE & TECHNICAL SPECIFICATIONS



FEATURED PRODUCT: DC100

The DC100 Medical Device Dip-Coating System is designed exclusively for SurModics' Advanced Hydrophilic Coatings applied to medical devices. This system has a compact footprint, two-station, rotary platform with a load/dip/dry station in parallel with a dry/cure station to maximize manufacturing productivity.



Ease of Use

- Intuitive hardware controls
- Automated part loading/unloading for ergonomics
- UV-filtered dip and cure chamber windows for full-process view
- Interlocks and keyed doors for operator safety

Flexibility

- Customizable part fixturing and solution reservoir options
- Compact footprint with casters for easy placement
- Modular design for feature add-ons and upgrades
- Compatibility with a clean coating process

Ease of Servicing

- Access panels and doors for maintenance and servicing
- Commercial PC-based controls & components
- Robust mechanical and controls system design
- Auto-generated process logs aid in trouble-shooting



Unique 'C-Tube' design accommodates a full 180cm product and 175cm coat length contained within a compact 8' machine for full flexibility



Automated fixture actuation for ergonomically assisted loading as low as 4'10" off the ground

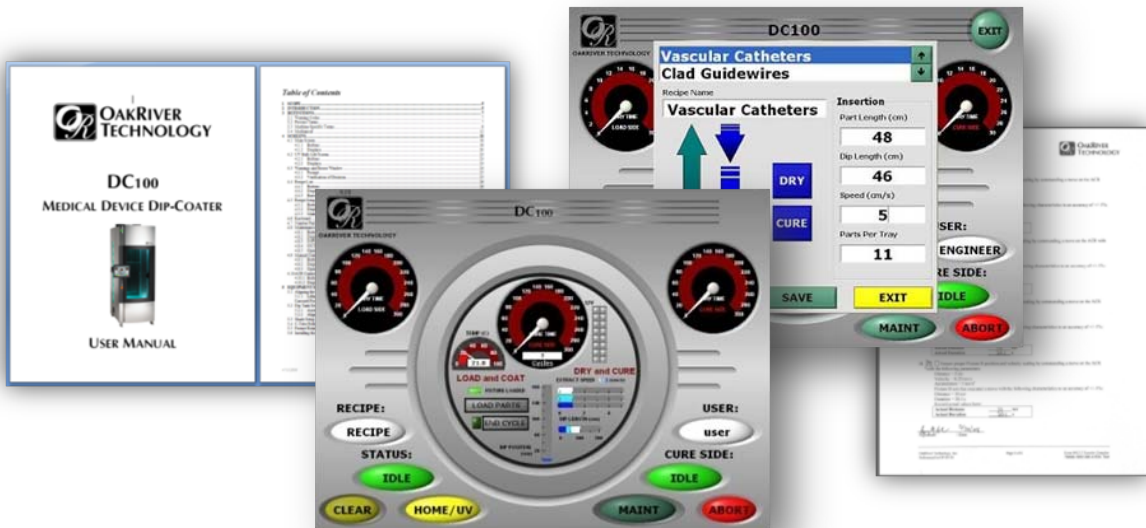


Description	Specification
<i>Process Capabilities</i>	
Maximum Part Length	180cm
Maximum Coat Length	175cm
Maximum Part Diameter	3/8"
Maximum Batch Size	11 (22 maximum parts in process)
<i>Operation</i>	
Load height	Adjustable down to 5' (less any fixturing length)
Loading Ergonomics	Pneumatically actuated fixtures, Press-and-hold button-controlled lowering Single press button-controlled lifting,
HMI	15" VGA Touchscreen
Monitor Height Range	43 – 56" (Ergotron arm)
Front Window Height Range	27 – 81"
Cure Chamber Window Height Range	17-71"
<i>Air Flow</i>	
Maximum Exhaust Flow Rate	1650cfm (3, 550cfm fans; 2 adjustable)
Maximum Input Flow Rate	910cfm (1, 30cfm fan – adjustable; 3, 110cfm fans – 2 adjustable; 1, 550cfm fan; 5 filters (4 fan vents, 1 passive vent)
Air Filters	Polyester (disposable), Expanded Aluminum (cleanable) Standard commercial sizes
Fan Speed Adjustability	0%, 40-100% of maximum cfm
<i>Dip Tank</i>	
Maximum Coating Solution Reservoir Volume	2.85L
Funnel Dimensions	0.4 – 2.75"
Estimated Tube Change-Out Time	0.5 – 1hr
C-Tube Life	200 cycles recommended (Tested up to 600 cycles)
C-Tube Pressure Rating	6psi
<i>Curing</i>	
Part Curing Distance to UV lamps	Less than 12"
UV Lamp Warm-Up Time	20 minutes
UV Lamp Controllability	Individual lamp standby and on/off Individual lamp power supplies and fault detection
UV Bulb Life	500hrs before drop to 75%
<i>Motion Control</i>	
Insertion/Extraction Rate Range	0.5 – 10cm/s
Controllable Extraction Zones	Up to 3 separate extraction speeds
Dip Tank Speed Repeatability	± 0.005 cm/s
Position Repeatability	± 0.001 cm
Rotation speeds	5-60rpm
Spacing between parts locations	3+"

Description	Specification
<i>Electrical/Pneumatics</i>	
Voltage	208VAC
Frequency	60Hz
Phases	3
Wires	5
Full-Load Current	60A
Largest Load	10A
Short Circuit	5000A
Air Pressure	80psi
<i>Dimensions</i>	
Height	94"
Width	34"
Depth	50"
Working Height	97"
Working Width	56"
Working Depth	104"
Weight	1500 lbs
<i>Materials/Construction</i>	
Process-Exposed Materials	Stainless steel, anodized aluminum
UV Resistance	Polane-painted frame, Aluminized conduit, Kevlar sleeving
Debris Generation Resistance	Sealed stage/bearings, PTFE wear plates, contained/guarded gearing/pulleys
<i>Controls</i>	
Controller	Advantech PC with XP Pro, Parker ACR9030
Ethernet Ports	1 (Front Panel)
USB Ports	1 (Front Panel)
I/O Module	Wago
Software Platform	Visual Basic 6, Windows XP Pro OS
Software Access Levels	3: Operator, Technician, Engineer
<i>Safety</i>	
Windows	UV filtered and tinted glass
UV Measurements	ACGIH Guidance, "Threshold Limit Values and Biological Exposure Indices" (Pub. No. 0206)
E-Stops	1 (Front Panel)
Keyed Access	Main electrical enclosure, rear maintenance door, auto/maintenance modes
Interlocks	Safety interlocks on front and rear maintenance doors Safety interlock sensors on carousel door
<i>Sensing/Monitoring</i>	
Lifetime Monitoring	UV bulbs, c-tubes, Limit approaching warning and limit reached alarms
Temperature Sensing	Omega Type K Thermocouple
UV Intensity Monitoring (Optional Radiometry System)	Delta Ohm DO 9721 Radiometer, Delta Ohm LP 9021 UVA Probes
Calibration	Radiometry – Yearly, Thermocouple – Yearly

DIP-COATING SOFTWARE: DIPPRO™

The DipPro software is custom-developed and created in-house for easy and intuitive operation of the OakRiver DC100 dip-coating equipment. Designed to be compatible with a variety of recipes and processes.



Ease of Use

Intuitive controls with visual cues for all key machine states
Touch-screen, menu-driven PC interface
Operator, Technician, and Engineer access levels

Flexibility

Recipe-driven for customizable process control parameters
Maintenance modes to control of individual components
Modular design for easy configuration to specific needs

Reliability

Explicit error messages and prompts
Sensing of all actuation positions
Feedback and logging of process and system information