VacTechniche
PROBLEM SOLVED

# Desk Carbon Coater – DCR



## DCR

**Desk Carbon Coater**

# VacTechniche Ltd.

Address: Moondarra, Gorsethorn Way, Hastings TN35 4BQ

Tel: +44 (0)1424 814411

E-mail: sales@vactechniche.com

Web: www.vactechniche.com

**For technical and applications advice including online order for spares and consumables parts please visit www.vactechniche.com**

## Disclaimer

The components and packages described in this document are mutually compatible and guaranteed to meet or exceed the published performance specifications. No performance guarantees, however, can be given in circumstances where these component packages are used in conjunction with equipment supplied by companies other than VacTechniche Ltd.

# Desk Carbon Coater DCR



**Desk Carbon Coater is a swift user friendly compact carbon fiber coating system suitable for sample preparation for analysis by scanning electron microscopy (SEM), Transmission electron microscopy (TEM), and Energy-Dispersive X-Ray diffraction (EDX).**

## Features

### Hardware:

- **Two-stage, direct drive rotary vane pump 6 $m^3$/h (can be ordered or purchased separately)**
- **500 W switching DC power supply for carbon fiber deposition**
- **1.2 kW high-current DC power supply for carbon rod deposition (Optional)**
- **Quartz crystal thickness monitor with precision of 1 nm and resolution of 1 Å**
- **Automatic venting valve**
- **Sample rotation, height, and tilt adjustable**
- **Planetary sample holder (Optional)**
- **Easy-to-change specimen stages (Rotation stage as standard)**

- **Two-year warranty**
- **CE conformity**

### Automation:

- **Intuitive touch screen to control the coating process and rapid data input**
- **User friendly software, updatable via network**
- **Semi-full automatic carbon fiber/rod deposition process**
- **Repeatable and programmable coating process in the automatic mode**
- **Pulsed or flash carbon fiber coating modes**
- **Pulsed carbon rod coating modes**
- **Automatic carbon fiber/rod deposition according to the set thickness value**
- **Records and plots coating parameters graphs**
- **Storing coating recipes for repeatable depositions**

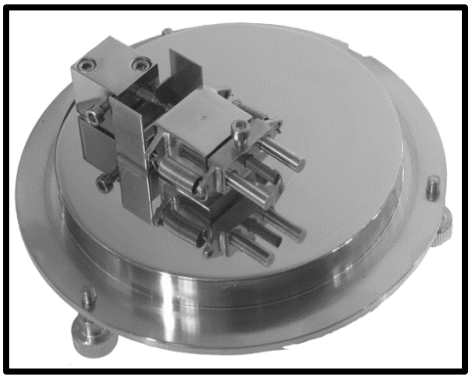
## Pulsed Carbon Fiber Evaporation

**The desk vacuum carbon coater is able to perform pulsed carbon fiber evaporation. Short pulses provide more controlled deposition and significantly reduces the number of debris associated with traditional carbon deposition.**



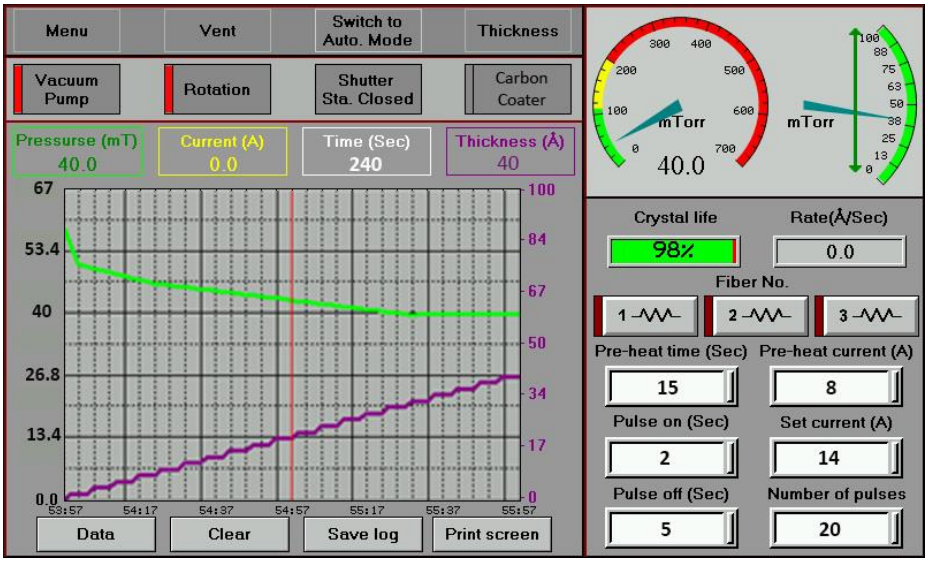
## Carbon Rod Evaporation (Optional)

**The desk high vacuum carbon coater could be equipped with carbon rod evaporator head (Optional). For this case an external 0-100 A high current power supply should be used instead of the internal high current power supply which is designed for carbon fiber evaporation.**



# Touch Screen Control

**Desk carbon coater is equipped with a 7" colored touch screen with full automatic control using a user-friendly software to control and adjust the deposition process data. The vacuum and coating sequence information can be observed as digital data or curves on the touch screen. The last 300 coatings information is saved on the history page and can be transferred to PC by a USB port on the device.**




# Sample Holder Stages



**Standard Sample Stage**

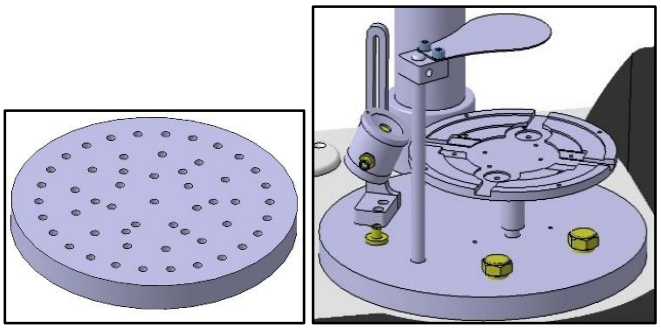


**Rotary Planetary Sample Stage**

**The DCR can be equipped with different sample stage configurations depending on the user requirements. The standard sample stage is rotatable with adjustable height and angle and can be changed easily. The rotary planetary sample stage is a good choice for uniform coating of porous specimens (Optional).**

### Newly Designed Sample Holder

**A new 4-inch rotating sample holder with an optional gear offset is designed for the system to increase the deposition area and the number of coating stubs in a run.**



## Applications

- **Deposition of carbon for SEM, FE-SEM, EDX, and TEM sample preparation**
- **Conductive layers**
- **TEM grid plasma treatment for improved hydrophilicity (Optional)**

## Specifications

- **Modular design**
- **Real-time plots of coating parameters**
- **Max. power consumption: 2 kW**

## Options and Accessories

- **Head and external power supply for carbon rod**
- **High voltage power supply for glow discharge plasma treatment**
- **Quartz crystal sensor**
- **Planetary rotation**
- **Spare cylindrical vacuum glass chamber**
- **Carbon fiber thread**
- **Sealing gaskets**

# Detailed Features

| | |
|---|---|
| **Dimensions** | 470 × 480 × 370 mm (H × W × D) |
| **Weight** | 24 Kg (without pump) |
| **Vacuum Chamber Dimension** | Borosilicate Glass, 170 mm Dia× 140 mm Height |
| **Display Screen** | 7” Diagonal (16:9) 800×480 High Color- Graphic TFT- LCD |
| **Data Transfer** | USB Port – For Transferring the data and graph to PC |
| **Carbon fiber** | Carbon fiber thread diameter: 0.8 mm (Thicker fiber is not recommended) |
| **Carbon rod** | Carbon rod diameter: 3.2 mm |
| **Sample Holder Dimension** | Standard holder with 60 mm Dia., can contain:<br>• 23×9.6 mm stubs or<br>• 14×12.7 mm stubs or<br>• 5×19 mm stubs<br>Sample holder with 100mm Dia. with Offset gear box can contain 40×12.7 mm stubs (optional) |
| **Chamber’s Lid** | Made of Aluminum/SST with triple carbon fiber (thread) holder or a rod holder |
| **Thickness Sensor** | |
| **Specification** | Crystal thickness gauge with sensor, Silver coated crystal quartz, oscillator |
| **Resolution** | ±1 Angstrom |
| **Accuracy** | ±1 nanometer |
| **Vacuum Equipment** | |
| **Vacuum Pump** | Two-stage rotary vane (can be ordered or purchased separately) |
| **Vacuum gauge range** | $10^{3}$-1×$10^{-3}$ Torr |
| **Final Vacuum** | 30×$10^{-3}$ Torr (depends on the vacuum pump) |
| **Process** | |
| **Carbon Coating** | Pulsed and Flash mode carbon fiber coating<br>Pulsed mode carbon rod coating |
| **Glow Discharge Plasma (Optional)** | • TEM grid plasma treatment<br>• Enhancing surface hydrophilicity |
| **Service and other Information** | |
| **Electric Power Supply** | HC: 24V, 20A (Carbon fiber evaporation)<br>HC: 12V, 100A (Carbon rod evaporation) |
| **Shutter** | 1 piece |
| **Electrical Inlet** | Inlet: 220-240V, 50/60Hz; or 110V, 50/60Hz * |

*** Single-phase AC power with appropriate earth connection is required.**