2550 East River Road, Suite 12204, Tucson, AZ 85718 USA
Email: araca@aracainc.com
www.aracainc.com

RDP-500 Polisher and Tribometer

200-mm single-platen CMP and polishing system, also compatible with 100 and 150-mm wafers, capable of real-time measurement & analysis of:

- **Shear force and down force**
- **Platen, head and conditioner rotational speeds and motor currents**
- **Head and conditioner down forces**
- **Platen cooling water as well as pad surface temperatures**

Manufactured by Fujikoshi Machinery Corporation

Computer-controlled, 20-liter, chemical-resistant, removable tank with impeller mixer, roller pump and level sensor

High flow rate water injection assembly

State-of-the-art safety interlocks and sensors

Data acquisition and download capability

Completely enclosed and sealed polishing chamber with 10 × 10 cm standard tool exhaust port for polishing applications having hazardous gaseous by-products

Intended for process R & D

Conditioner at “home” position

Conditioner at “maximum sweep position”

Specification

Manufacturers	Fujikoshi Machinery Corporation and Araca Incorporated
Wafer Size	200-mm (or smaller)
Wafer Carrier	Pressure = 0.7 to 7 PSI (for 200-mm head) Rotation rate = 20 to 200 RPM Rotation control = Servo motor Head swing width = Max 80 mm (variable swing width and range) Vertical contol= Servo motor
Platen	Φ = 508 mm Rotation rate = 20 to 200 RPM Material = SUS410 Rotation control = Inverter motor
Conditioner	Φ = 100 mm Rotation rate = 20 to 200 RPM Sweep velocity = 0 to 700 mm/sec through 10 independently controlled zones Down force = 2-12 kg.force In-situ conditioning capability
Chemical Delivery Systems	Computer-controlled, 20-liter, chemical-resistant, removable tank with impeller mixer, roller pump and level sensor Flow rate = 10 to 300 cc/min
Pad Water Rinse	Dedicated high flow rate water rinse injector Flow rate up to 3,000 cc/min
Force Sensors	Shear force and down force
Temperature Sensor	Adjustable single-point pad surface IR detector
Data Capture vs. Time (capture frequency at 5 Hz)	Platen rotational velocity Carrier rotational velocity Conditioner rotational velocity, position, oscillation speed and motor current Chemical tank flow rates Shear force and down force Coefficient of Friction (COF) Pad surface temperature
Control and Monitoring	Programmable touch-screen controller for polisher operation
W × L × H	92 × 92 × 186 cm
Weight	1,100 kg
CDA	Minimum pressure = 73 PSI (500,000 Pa) Capacity = 50 liters per minute
Platen Coolant Water	Maximum pressure = 43 PSI (300,000 Pa) Capacity = 15 liters per minute

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