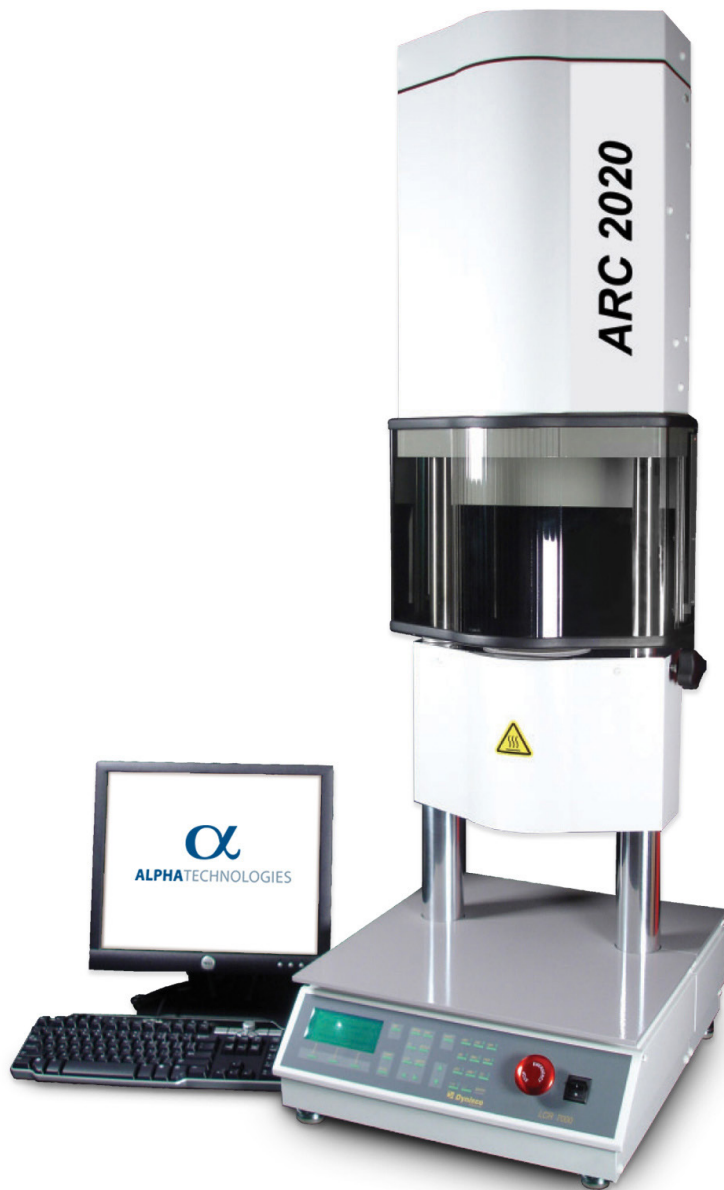


ARC2020

Capillary Rheometer



Measuring the viscosity and die swell of rubber and thermoplastic elastomers at high shear rates



- ▶ The ARC2020 is a capillary rheometer designed to test and collect information about viscosity and die swell of mixed rubber and thermoplastic elastomers at high shear rates. This information can be used to predict rubber behavior in processes with high shear rates such as injection molding.



ALPHATECHNOLOGIES

Testing Features



- Measures the viscosity and die swell of rubber and thermoplastic elastomers at high shear rates from 1 to 29,000 sec⁻¹
- High maximum piston force of 15 kN
- Laser micrometer for die swell measurement
- 12.7 mm (0.5 inch) barrel for easy rubber sample loading

Performance



- Predicts processability of mixed rubber used in calendaring, milling, extrusion, and molding
- Good test sensitivity to mixing errors or compound changes
- Suitable for quality control or research and development

Options



- Easy Change Barrel for Plastics (9.5505 mm diameter)
- Die Diameters:
 - 0.75 mm – 2 to 29,000 sec⁻¹
 - 1.00 mm – 1 to 14,000 sec⁻¹
 - 1.50 mm – 0.2 to 4000 sec⁻¹
 - 2.00 mm – 0.1 to 1400 sec⁻¹
- Die L/Ds: 1 to 30
 - 0.75 mm – 2 to 29,000 sec⁻¹
 - 1.00 mm – 1 to 14,000 sec⁻¹
 - 1.50 mm – 0.2 to 4000 sec⁻¹
 - 2.00 mm – 0.1 to 1400 sec⁻¹
- Die L/Ds: 1 to 30

Specifications



Testing Standard:	ASTM D5099	Measured Data:	Pressure, force from load cell, ram rate, time, extrude diameter
Temperature Range:	Ambient to 350°C (662°F)	Calculated Data:	Shear stress, shear rate, % die swell, Bagley correction, Rabinowicz correction
Barrel Length:	229mm (9 in)		
Ram Rate:	0.03 to 650 mm/minute (0.001 to 23.6 in/minute)	Electrical:	100/110/120/130 VAC ±10%, 60 Hz ±3, 10-amp single phase 200/220/240/260 VAC ±10%, 50 Hz ±3, 5-amp single phase
Crosshead Force:	0 to 15 kN (0 to 3370 lbf) ±0.5% F/S	Dimensions:	Width 49 cm (19 in), height 150 cm (59 in), depth 56 cm (22 in)
Pressure:	0 to 140,000 kPa (0 to 20,000 psi)	Weight:	Net 136 kg (300 lb), gross 160 kg (350 lb)
Calibration:	Automatic		

ARC 2020 Principal of Operation

