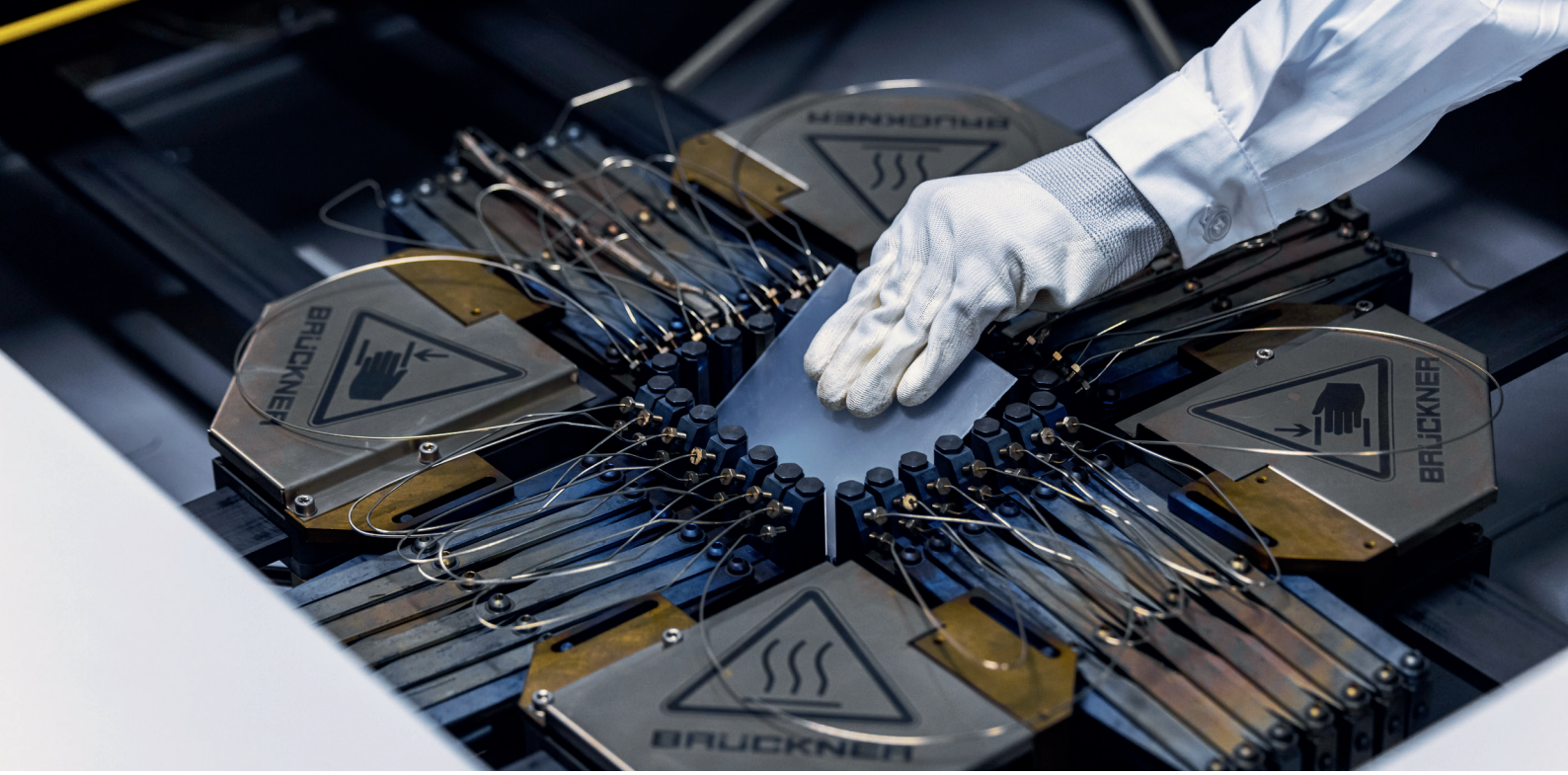
BRÜCKNER
MASCHINENBAU

Lab Stretcher

KARO® 5.0



Advanced Film Development for Technical & Packaging Applications

How to accelerate innovation with laboratory film stretching?

With our laboratory stretching frame KARO® 5.0 for mono- and biaxial film orientation, films and sheets can be tested quickly, easily, and cost-effectively — in both sequential and simultaneous stretching modes. In our globally unique Brückner Technology Center, we use the KARO® 5.0 for our own development work as well asfor customer trials across the technical and packaging film industries.
Typical users include resin producers, film manufacturers, universities, and research institutes.

The KARO® 5.0 is also available for rental on an hourly basis, offering maximum flexibility and easy access to professional film development and testing capabilities.

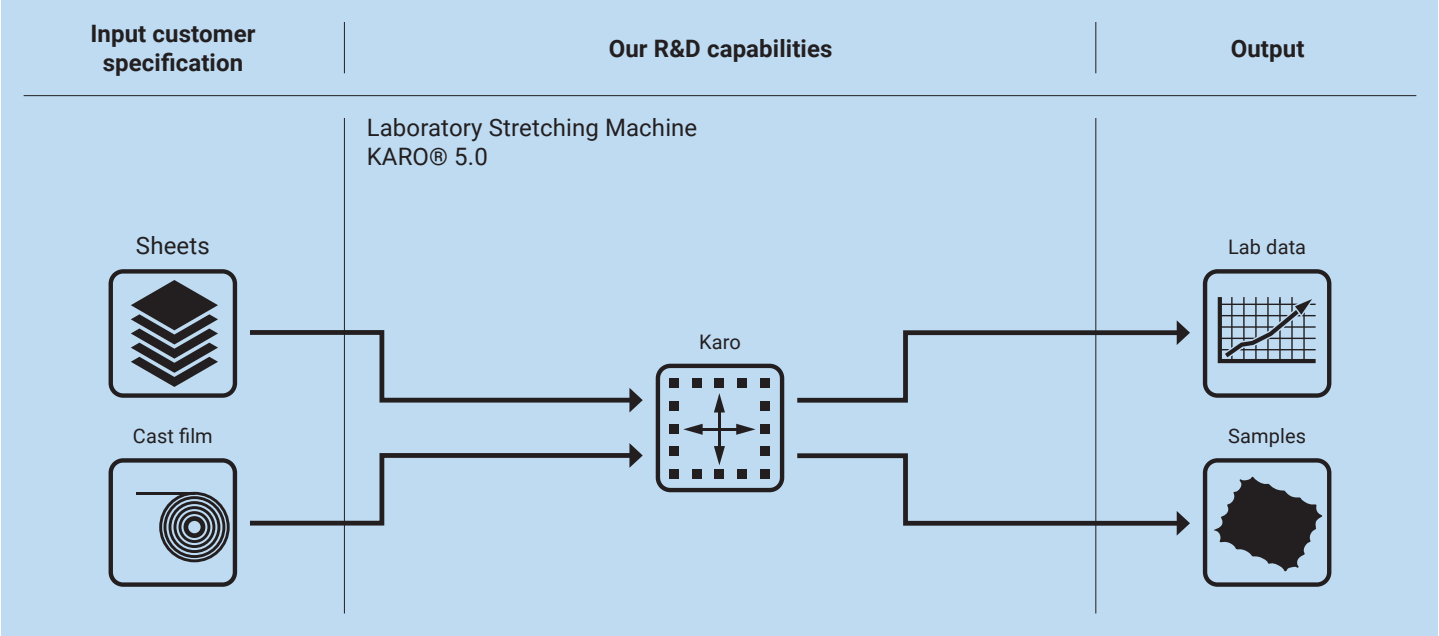
A wide range of use cases

- Film & material development
- Skin layer & additive testing
- Process condition identification
- Mechanical film characterization
- Raw material quality assurance
- Small batch production

Watch your KARO®

Scan to discover!

Basic unit, ready for operation:		Options
Operation module	**Electrical system**	Oven module 3
2 ovens, 300 °C: ▪ Stretching module ▪ Annealing module **5 clips** configuration	▪ PLC control system ▪ Firewall server ▪ PC data acquisition software package ▪ Stretching force measuring ▪ Displacement measuring ▪ IR film temperature measuring	4 x 7 clips configuration Active oven and clip cooling High temperature version 400 °C 2nd IR film temperature measuring Additional diffusor sizes Air pressure amplifier Power transformer Additional gripper plates



Technical data		
Recommended initial sample size: ▪ 5 clip configuration ▪ 7 clip configuration	**Recommended sample size:** 90 x 90 mm 115 x 115 mm	**Resulting stretching ratios:** 1 : 10.4 1 : 7.7
Max. stretched sample size	750 x 750 mm (inclusive clamping area)	
Max. sample thickness	20 – 5,000 µm	
Stretching speed	1 – 700 %/sec. (5 – 500 mm/sec.)	
Max. operating temperature	300 °C (HT: 400 °C), hot air heating system	
Stretching force per axis	2,000 N	
Machine dimensions: ▪ two oven design ▪ three oven design	L x W x H [m] 5.9 x 2.0 x 1.8 7.5 x 2.0 x 1.8	Weight [kg] 4,700 5,900

Designed for Flexibility.
Engineered for Your Film Innovation.

Live data during trial
Real-time visualization of all process and film parameters for immediate insights.

Intuitive & easy machine control
User-friendly HMI layout ensures fast setup, safe operation, and smooth trial workflows.

Perfect process control
Optimized temperature balance across all zones ensures high repeatability and consistent results.

Eight hours of effective testing per day
Long, uninterrupted trial windows enable comprehensive recipe and process development.

Accurate & reliable film temperatures
Circulating air ovens guarantee uniform and stable film temperatures during heating.

Realistic multi-zone stretching conditions
Moving stretching system simulates industrial film line conditions with zone-specific temperatures.

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