

Service Machines  
BERKOL Grinder

**Bräcker**

# BERKOL Grinders

and Maintenance Machines for the Roll Shop

Reliable operation, intuitive  
control and easy setting

# BERKOL supergrinder

## OUTSTANDING

## ADVANTAGES



### Optimal Grinding Process

- Specially developed BERKOL grinding disk prevents clogging and thus harmful heat development during grinding
- Integrated measuring system
- Grinding to size or differential grinding
- Sorting function before grinding

### User-Friendly Operation

- Quick conversion to a different roller
- User-friendly interface with touchscreen for easy operator guidance
- Eight languages, including Chinese
- Ergonomic, comfortable working position
- Can run for up to two hours without an operator

### Universal Loading

- Universal loading and unloading in magazines, for 150 axles each
- Working range diameter:  
19 mm – 42 mm

### Swiss Quality

- Robust and reliable
- Reproducible Ra values and high parallel accuracy
- Optimally low downtime rate

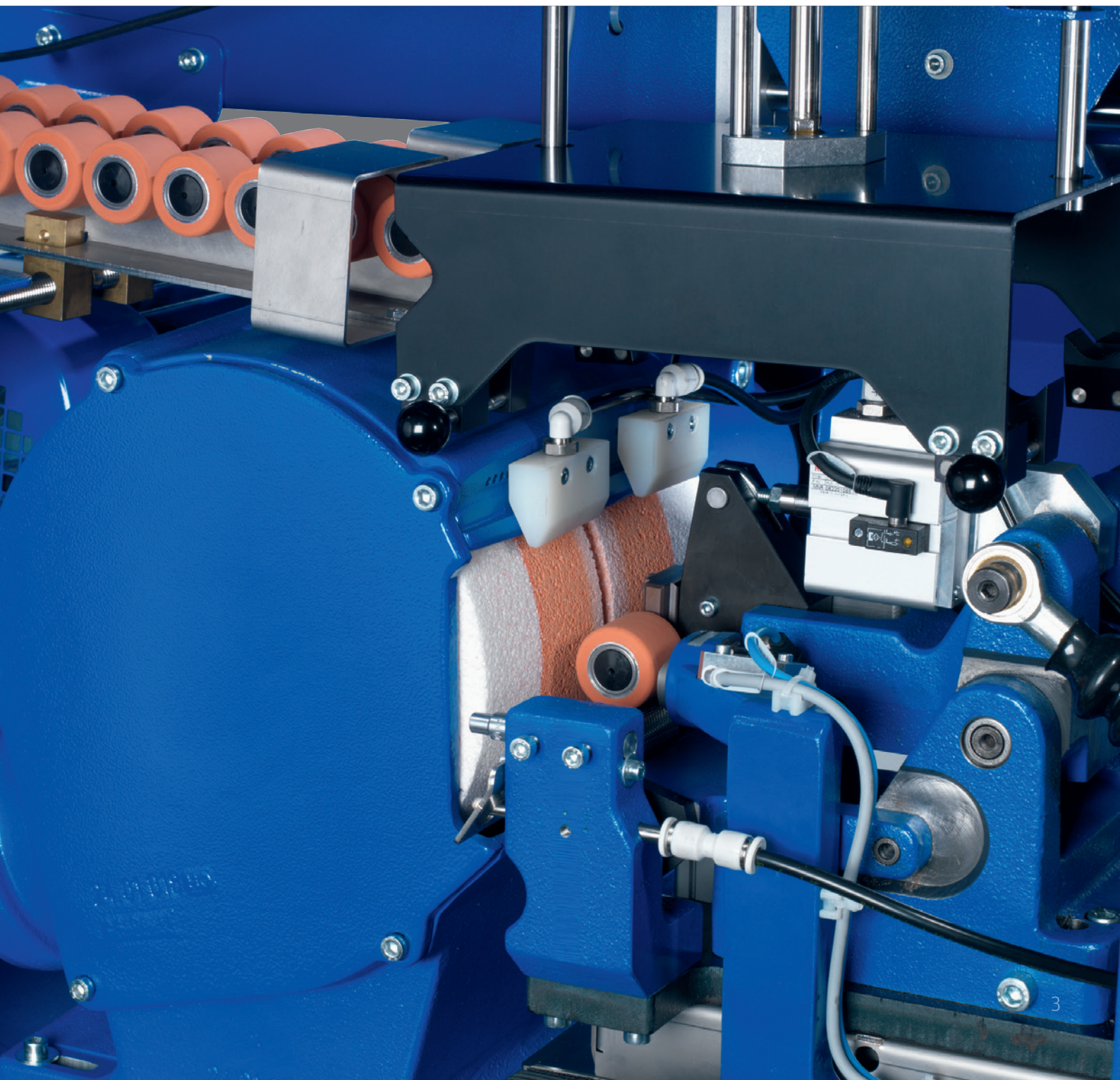


# BERKOL supergrinder

## The fully automatic grinding system

The BERKOL supergrinder (SG) represents the generation of grinding machines that have mastered the art of grinding to perfection.

The design is based on a modular structure. The basic machine SG can be built up to meet the customer specifications using a combination of the various modules as required. The modules consist of the input and output magazine, the measuring system and the Berkolizing unit.

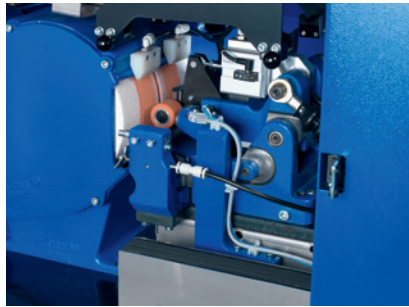


### Module L (Large)



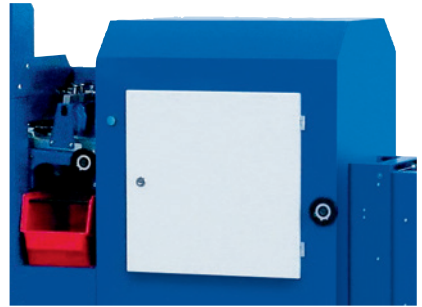
- Large universal loading and unloading magazines
- Can run for up to two hours without an operator (depending on the diameter of the cot and how full the magazine is)
- Loading capacity of up to 450 axles (depending on the diameter of the cot)

### Module M (Measuring)



- Integrated measuring system
- Can be used for differential grinding
- Sorting function before grinding
- Can also be used for grinding to size

### Module B (Berkolizing)



The top roller cots are evenly berkolized directly after grinding with no additional labor effort. This automatic module is electronically controlled and works inline with the grinding process.

Advantages:

- Fewer laps
- Reduced spindle downtime
- Fewer damaged cots
- More economical production

## BERKOL supergrinder – Continuation of a Success Story

The state-of-the-art BERKOL machines are designed for minimum energy consumption. They are equipped with user-friendly touchscreen panels that provide operation guidance in a wide range of languages. The grinding capacity is up to 350 top rollers per hour.



BERKOL high-performance grinding stone



Machine is operated using the user-friendly touchscreen panel



Multi-language operator guidance



# Grinding Technology

## The surface finish of the cots directly affects yarn quality

The quality of the cots can only be ensured for their entire lifetime if the cots are maintained properly. This maintenance includes regular grinding, optimal surface roughness and where necessary surface treatment of the freshly ground cots. Optimal care will result in perfectly smooth running, minimum lap formation and a lower ends down rate.

The grinding interval is determined by the cover quality, the cot shore hardness, the application and the specific quality requirements. The optimal surface roughness depends on the cover material, the application and the climate. The surface roughness has a particularly strong influence on the lap formation tendency of the cover. Good results were obtained with an average roughness (Ra) between 0.8 and 1.0 µm.

The maintenance intervals for top rollers are higher in compact and air-jet spinning. This because the drafting process for compacting systems wears out the cots on the front-line top rollers faster than in conventional ring spinning.

In any case, the removal rate should not be too low: Otherwise, old rubber material remains on the “ground” surface, leading to variations in surface hardness and cot flatness. The grinding depth should be between 0.2 and 0.3 mm in diameter.

Application	Cover type	Yarn count range	Grinding interval h Regular spinning	Grinding interval h Compact spinning
Ring spinning machine delivery top roller	Up to 70 shore A	Fine	1 250 – 1 750	625 – 875
	70 – 75 shore A		1 500 – 2 000	750 – 1 000
	76 shore A and above		2 000 – 2 500	1 000 – 1 250
The grinding intervals for the feed top rollers can be doubled	Up to 70 shore A	Medium	1 000 – 1 500	500 – 750
	70 – 75 shore A		1 250 – 1 750	625 – 875
	76 shore A and above		1 750 – 2 250	875 – 1 125
	Up to 70 shore A	Coarse	Not recommended	Not recommended
	70 – 75 shore A		1 000 – 1 500	500 – 750
	76 shore A and above		1 250 – 1 750	625 – 875
Covers from 70 shore A and above are recommended for the delivery top roller in compact-spinning machines. For softer covers, the grinding interval must be 20 – 30% shorter.				
Roving frame delivery top rollers	Up to 70 shore A		2 500 – 3 000	1 250 – 1 500
	70 – 75 shore A		3 000 – 3 500	1 500 – 1 750
	76 shore A and above		3 500 – 4 000	1 750 – 2 000
Draw frame	Up to 70 shore A		500 – 750	250 – 375
	70 – 75 shore A		500 – 750	250 – 375
	76 shore A and above		550 – 750	275 – 375
Combing: detaching roller drafting system delivery top	67 shore A		1 500	750
	67 shore A		1 500	750
	80 – 82 shore A		1 500 (check)	750 (check)
rollers open end-spinning	80 shore A		1 500	750

# BERKOL multigrinder

## OUTSTANDING

## ADVANTAGES



### All in One

- Automatic grinding for all axis dimensions
- Working range diameter 19 mm – 140 mm
- Max. distance between centers 490 mm

### Proven BERKOL Technology

- Superior grinding results for optimal yarn quality
- Integrated measuring system
- Sorting function before grinding

### Quick Changeover

- Settings can be easily adjusted for different grinding tasks
- No tools required
- Grinding to size or differential grinding

### Minimal Energy Consumption

- Lowest power consumption in the industry

# BERKOL multigrinder

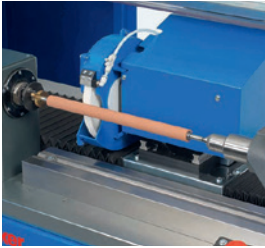
## All-in-one grinder

The entire range of top rollers and long cots used in a spinning mill can be processed using just one single machine. Any center-guided top-roller design can be ground fully automatically on the BERKOL multigrinder. A grinding capacity of up to 150 top rollers per hour can be achieved, while the BERKOL multigrinder can be left unattended for as long as 30 minutes.

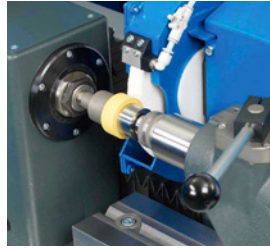
In addition, long cots with an axis length of up to 490 mm can be ground in a semi-automatic mode. By combining these two applications into a single grinding machine, only one grinding system is required in each mill.



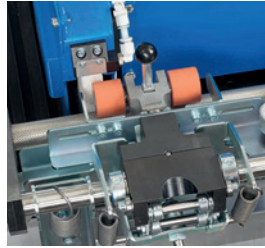
## For all types of top rollers and long cots



Semi-automatic grinding of preparation cots with a diameter between 19 and 140 mm and a max. length of 490 mm



Semi-automatic grinding of air-jet and OE rollers



Optional semi-automatic grinding of cots using an auxiliary grinding device

## Intuitive operation



Touchscreen with easy multi-language user guidance and teaching mode. 50 grinding procedures can be stored

## BERKOL multigrinder MGLQ automatic grinding system

Grinding unit for the semi-automatic grinding of preparation cots and for the automatic grinding of spinning and roving cots with additional processing control during the grinding process. Universal loading in magazine for 70 axes.



## BERKOL multigrinder MG semi-automatic grinding system

Grinding machine for semi-automatic grinding of preparation cots, OE nipping rollers (grinding on a mandrel) and taper grinding for special uses such as detaching rollers for combers. Optional grinding with top roller attachment for top rollers used in roving, ring and air-jet spinning.





	supergrinder modules				multigrinder	
	supergrinder	M	L	B	MGLQ	MG
<b>Work programs:</b>						
Automatic	yes	yes	yes	yes	yes	no
Manual grinding	no	no	no	no	yes	yes
Can also be used for grinding to size	yes	yes	yes	yes	yes	yes
Differential grinding	no	yes	no	no	yes	no
Sorting	no	yes	no	no	yes	no
Dressing	semi-automatic					
Unattended operation	up to 1 hour	-	up to 2 hours	-	up to 30 minutes	-
Load capacity (dia. 32)	up to 150 axles	-	up to 450 axles	-	up to 75 axles	-
Grinding accuracy	rubber surfaces with Ra > 0.5 and rotary accuracy greater than 0.02 mm					
Area of application	ring, roving, air-jet				ring, roving, air-jet	long cots, OE nipping rollers. Optional grinding attachment for top rollers used in roving, ring and air-jet spinning.
<b>Working range:</b>						
Min. diameter	19 mm				24 mm	24 mm* 19 mm for long cots
Max. diameter	42 mm				42 mm (90 mm*)	90 mm* 140 mm for long cots
Max. axle length	190 mm				170 mm for center-guided top rollers (automatic grinding)	500 mm for long cots (semi-automatic grinding)
Machine control	pneumatic/PLC/step motor driven					
Control panel	touchscreen					
Language	German, English, Chinese, Italian, Spanish					
Fault diagnosis	self-diagnosis on display					
Berkolizing	no	no	no	yes	no	no
<b>Tools:</b>						
Standard	included in the price					
Safety	fully fuse protected in accordance with CE standard					
Grinding disk size	diameter 200 mm width 200 mm			diameter 225mm width 20 mm		
Grinding disk quality	BERKOL special grinding disk					
Maintenance/servicing	extremely low maintenance					
Suction	1 500 m <sup>3</sup> /h (separate unit)					
Space required	3.5 x 2.2 m	-	+ 1.3 x 2.2 m	+ 0.8 x 2.2 m	3.4 x 2.8 m	2.9 x 2.0 m
Weight	550 kg	-	+ 240 kg	+ 190 kg	910 kg	720 kg
Compressed-air supply	6 - 10 bar					
Air consumption	max. 150 l/min					

\* with grinding attachment

# BERKOL Maintenance Machines

## Presses and lubrication devices



### BERKOLUBE

Pneumatic top-roller lubrication unit for the service workshop. All axially lubricated top rollers can be maintained.

- Amount of grease per bearing adjustable from 0.2 cm<sup>3</sup> to 2.0 cm<sup>3</sup>
- Capacity of 600 to 800 top rollers per hour
- CE-conforming with pneumatic two-hand safety control
- A 25-kg grease container is sufficient for 20 000 to 22 000 top rollers
- Grease standard supply: Klüber Staburags NBU 12/300 KP



### Lubricating unit BOS-01

Manual lubricating unit for all common top rollers used in ring spinning and roving frames



### Pneumatic press PP125-H100

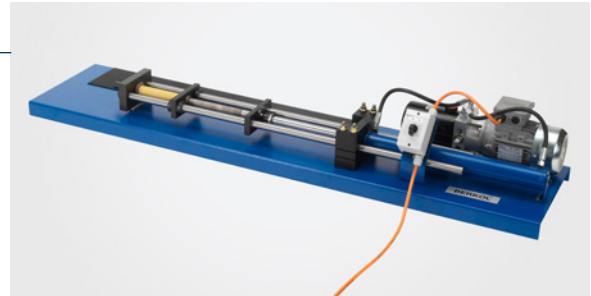
For fitting and removing short aluminum press covers on top rollers used in ring spinning, roving and air-jet spinning, and OE delivery top rollers.

- Press range 20 – 45 mm
- Core diameter 19 – 30 mm
- Cover diameter up to 60 mm
- Press pressure: at 6 bar: 6 500 N  
at 8 bar: 8 600 N
- Operating pressure 6 – 8 bar

## Electrohydraulic press APH50-H500EV

For fitting and removing long aluminum press covers on the top rollers of preparatory machines and combers

- Press range up to 490 mm
- Core diameter up to 35 mm
- Cover diameter up to 80 mm
- Press pressure max. 29 000 N
- Operating pressure 80 – 100 bar



## Roughness tester

For quick and easy regular monitoring of the defined roughness standard.

## Shore a hardness tester

Shore A durometer for determining and monitoring the surface hardness of cots and pressure rollers.



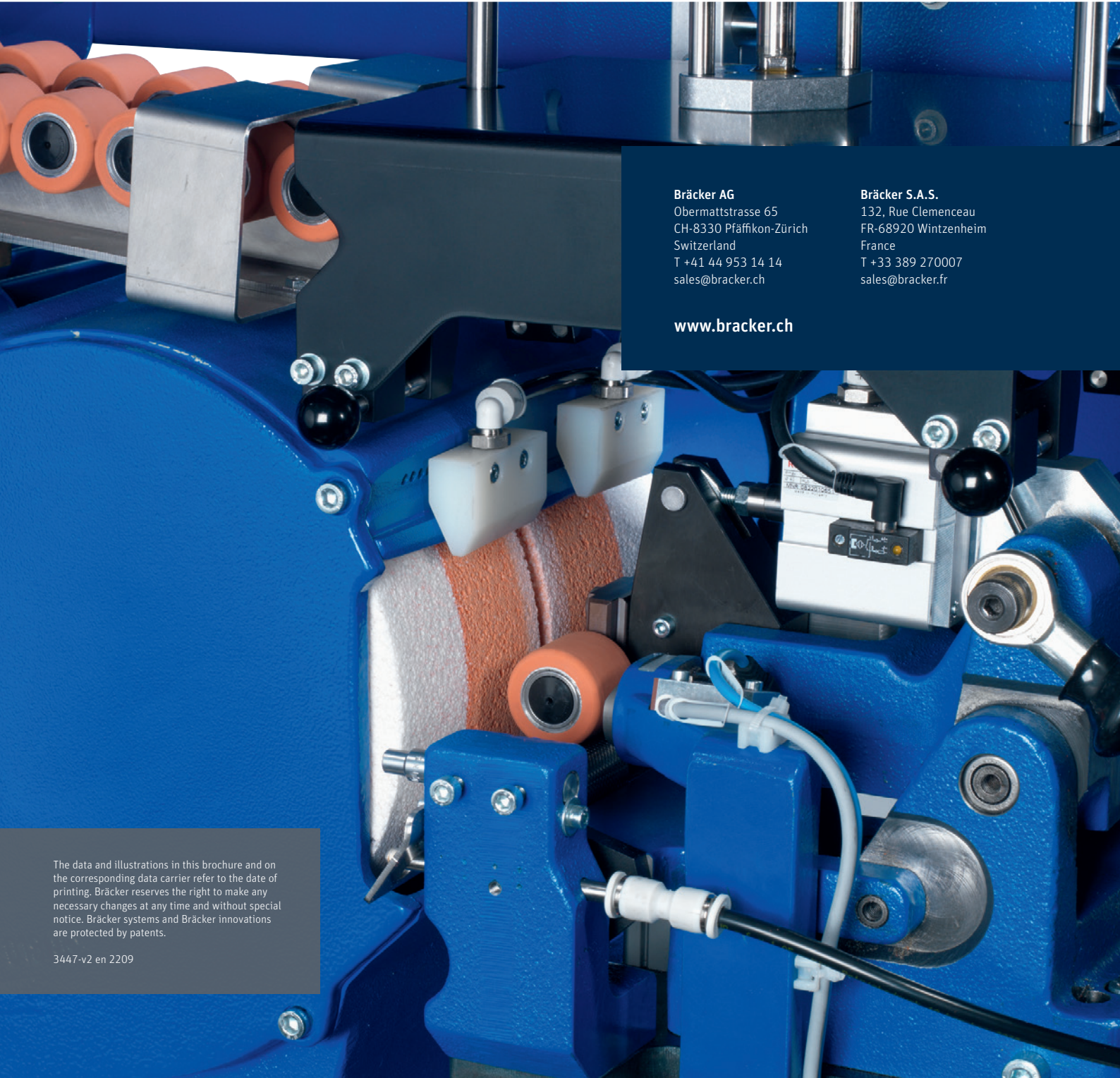
## Concentricity tester

Tests the concentricity and parallelism of top rollers and bearing journals.

Measuring range:

- Roller diameter 20 mm to 100 mm
- Max. roller length 450 mm





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