



ENGINE REBUILDING EQUIPMENT  
MACCHINE PER LA RICOSTRUZIONE DEL MOTORE  
**CONROD GRINDING-BORING**  
RETTIFICA-ALESATURA BIELLE



**CONROD GRINDING-BORING MACHINES**  
**RETTIFICATRICI-ALESATRICI PER BIELLE**

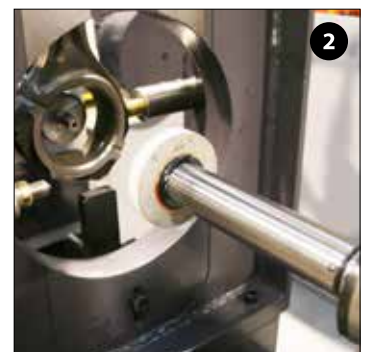
**BR**



**650-1000**

[www.azspa.it](http://www.azspa.it)

- 1 Electric control panel
- 2 Grinding spindle
- 3 Handwheel for the rotation eccentricity setting of the wheel spindle
- 4 Handwheel with diamond-holder tube for the grinding wheels dressing
- 5 Handwheel with tubes for the lateral clamping of the conrod
- 6 Handwheel for the transversal placement of the conrod holder column
- 7 Lever for the inversion of the table automatic feed
- 8 Boring spindle



## **BR650-1000**

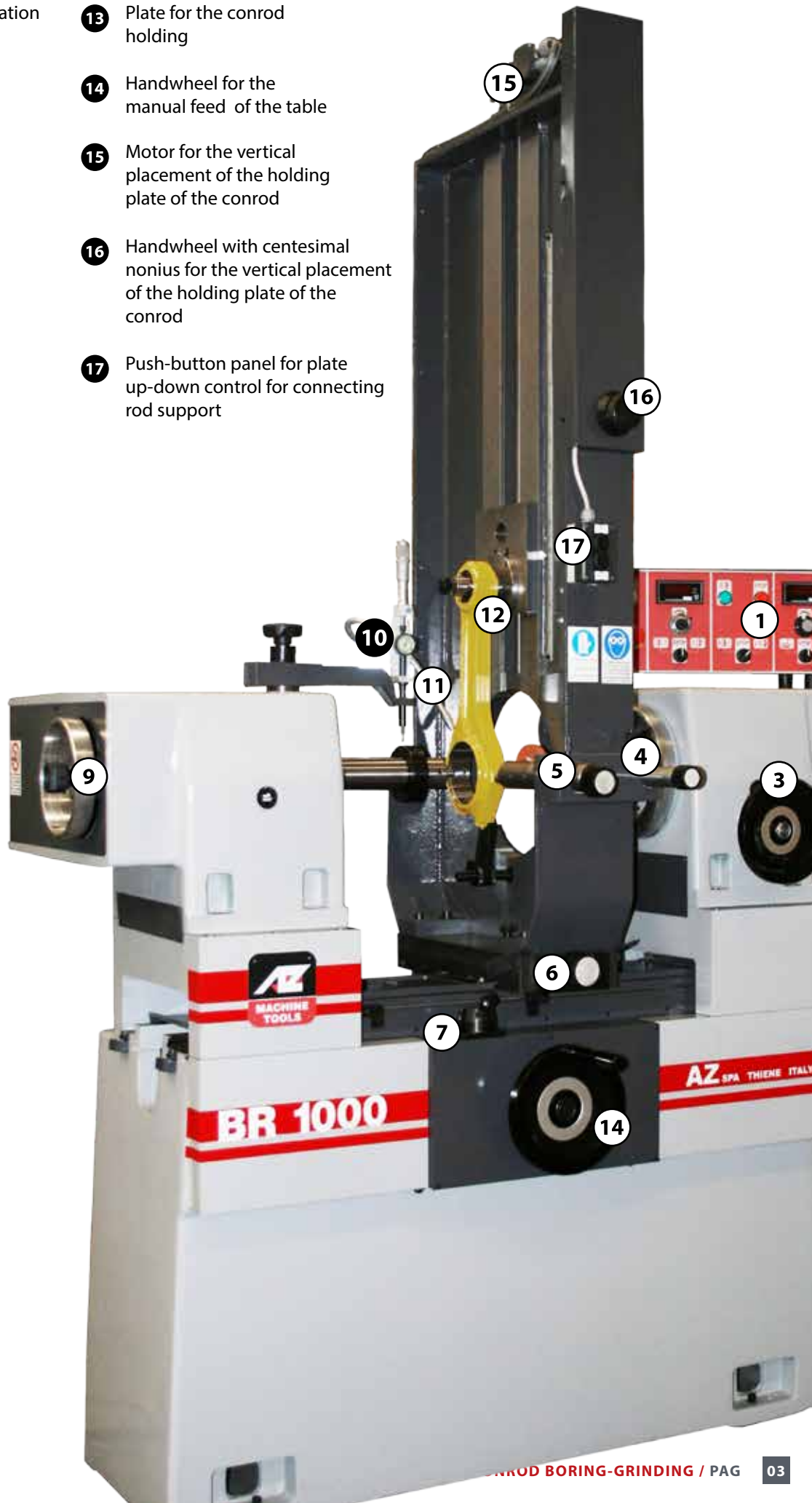
■ VARIABLE SPEED FOR:

- **FEED TABLE**
- **BORING**
- **GRINDING**

■ LOW VOLTAGE ELECTRIC CONTROL 24 V

- 9 Handwheel for the manual rotation of the boring spindle
- 10 Boring tool setting device
- 11 Nozzle with cock for coolant
- 12 Expansible spindle for the conrod clamping

- 13 Plate for the conrod holding
- 14 Handwheel for the manual feed of the table
- 15 Motor for the vertical placement of the holding plate of the conrod
- 16 Handwheel with centesimal nonius for the vertical placement of the holding plate of the conrod
- 17 Push-button panel for plate up-down control for connecting rod support



## STANDARD EQUIPMENT

### ■ BR650

**Electronic variable speed drive for boring and grinding**

**AZ252** Set of no. 7 grinding wheels for cast iron and steel

**AZ935** Set of no. 8 tools

Grinding wheel dresser (diamond excluded)

**AZ734** Tool setting device

**AZ732** Centering device without dial gauge

**AZ390** 3 liters of coolant liquid

Coolant system

+ *Service tools*

+ *Operating manual*

### Dial gauge for standard equipment

**AZ708** Dial gauge  $\varnothing 40$  mm

**AZ708P** Inches dial gauge  $\varnothing 1.57$ in resol 0.001in

**AZ721** Tool measuring instrument in mm

**AZ721P** Tool measuring instrument in inches

**320333** Millesimal dial gauge  $\varnothing 38$ mm

### ■ BR1000

**Electronic variable speed drive for boring and grinding**

**AZ520** Boring Head from  $\varnothing 110$  to 160 mm

**AZ530** Boring Head from  $\varnothing 160$  to 210 mm

**AZ531** Boring Head from  $\varnothing 210$  to 250 mm

**AZ254** Set of no. 12 grinding wheels for steel and for cast iron

**AZ935** Set of no. 8 tools

Grinding wheel dresser (diamond excluded)

**AZ734** Tool setting device

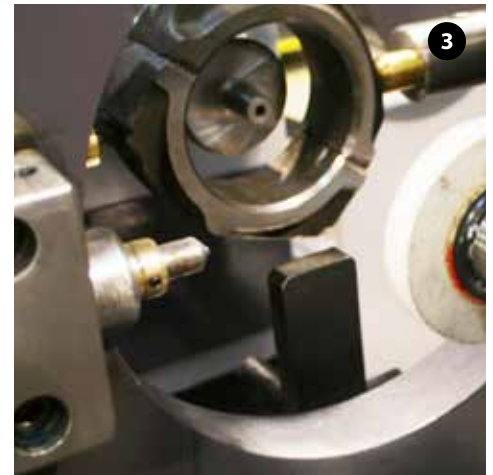
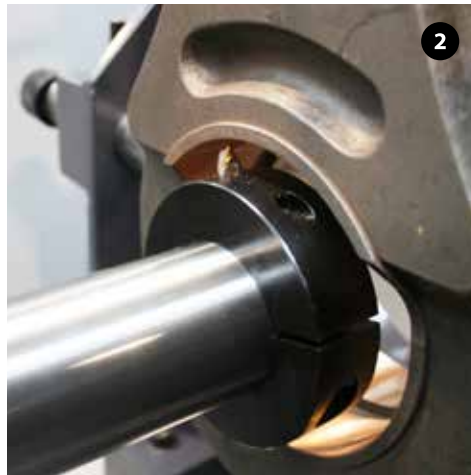
**AZ732** Centering device without dial gauge

**AZ390** 3 liters of coolant liquid

Coolant system

+ *Service tools*

+ *Operating manual*



1. AZ732 CENTERING DEVICE
2. BORING HEAD
3. WHEEL DRESSER
4. BORING HEAD (standard only in BR1000)
5. SET OF TOOLS FOR BORING
6. GRINDING WHEEL
7. AZ721 CALIBRATING DEVICE
8. AZ734 TOOL SETTING DEVICE

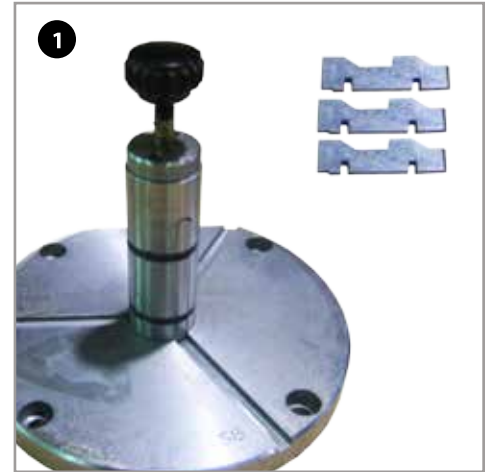


## EXPANDING SPINDLES

- AZ741** Expanding mandrel for conrods clamping from  $\varnothing 23$  to 37 mm
- AZ742** Expanding mandrel for conrods clamping from  $\varnothing 37$  to 76 mm
- AZ743** Expanding mandrel for conrods clamping from  $\varnothing 76$  to 160 mm

**AZ744** Expanding arbor for con-rods clamping from  $\varnothing 160$  to 250 mm  
(only for BR1000)

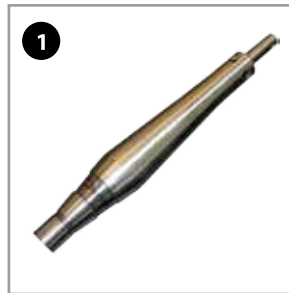
- 1. AZ741
- 2. AZ742
- 3. AZ743
- 4. AZ744



## BORING SPINDLES

- AZ521** Boring spindle from  $\varnothing 14$  to 29 mm
- AZ536** Boring spindle  $\varnothing 38$  mm
- AZ537** Boring spindle  $\varnothing 59$  mm

- 1. AZ521
- 2. AZ536
- 3. AZ537



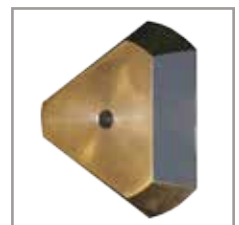
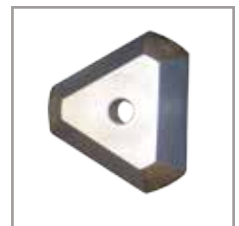
## GRINDING SPINDLES

- AZ528** Grinding spindle from  $\varnothing 30$  to 65 mm
- AZ529** Grinding spindle from  $\varnothing 65$  to 250 mm

- 1. AZ528
- 2. AZ529



## AZ630 CENTERING CONES



## RECOMMENDED EQUIPMENT

### ■ BR650

**AZ411** Diamond and rest 0,40 kt  $\varnothing$ 12 mm  
**AZ854** Rod alignment checking fixture  
**AZ708** Dial gauge  $\varnothing$ 40 mm  
**AZ708P** Inches dial gauge  $\varnothing$ 1.57in resol 0.001in

### ■ BR1000

**AZ411** Diamond and rest 0,40 kt  $\varnothing$ 12 mm  
**AZ854** Rod alignment checking fixture  
**AZ708** Dial gauge  $\varnothing$ 40 mm  
**AZ708P** Inches dial gauge  $\varnothing$ 1.57in resol 0.001in

## OPTIONAL EQUIPMENT

### ■ BR650

**AZ711** Inner gauge for bushing from  $\varnothing$ 35 to 105 mm without dial gauge  
**AZ714** Inner gauge from  $\varnothing$ 100 to 220 mm without dial gauge  
**AZ707** Dial gauge diam 60 mm resolution 0.01mm  
**AZ707P** Inches dial gauge  $\varnothing$ 2.36 in resolution 0.0005 in  
**AZ520** Boring head from  $\varnothing$ 105 to 160 mm  
**AZ832** Grinder for tools complete with sharpening support  
**AZ786** Linear encoder for 1-axis and digital readout

### ■ BR1000

**AZ711** Inner gauge for bushing from  $\varnothing$ 35 to 105 mm without dial gauge  
**AZ714** Inner gauge from  $\varnothing$ 100 to 220 mm without dial gauge  
**AZ707** Dial gauge diam 60 mm resolution 0.01mm  
**AZ707P** Inches dial gauge  $\varnothing$ 2.36 in resolution 0.0005 in  
**AZ832** Grinder for tools complete with sharpening support  
**AZ796** Linear encoder for 1-axis and digital readout



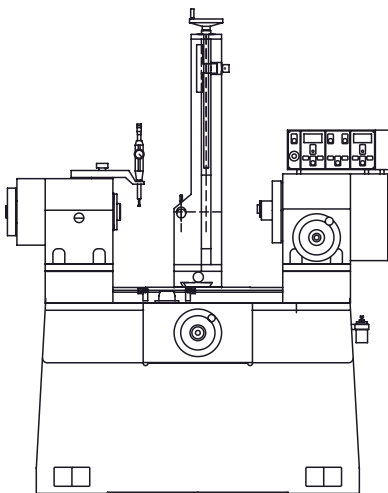
1. AZ854 ROD ALIGNMENT CHECKING FIXTURE
2. PROTECTION CONFORMING TO CE NORMS
3. INNER GAUGE
4. DIGITAL READOUT 1 AXIS
5. GRINDER FOR TOOLS
6. DIAMOND FOR WHEEL DRESSER

## TECHNICAL SPECIFICATIONS

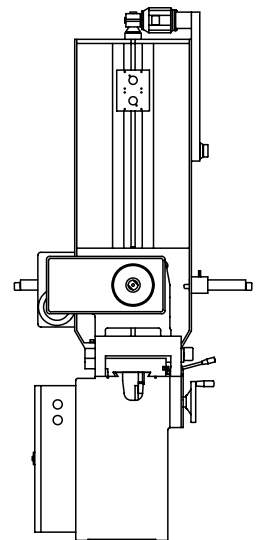
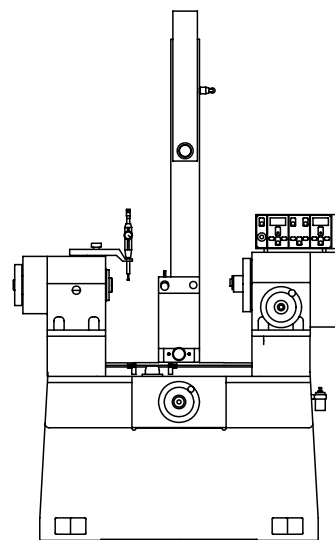
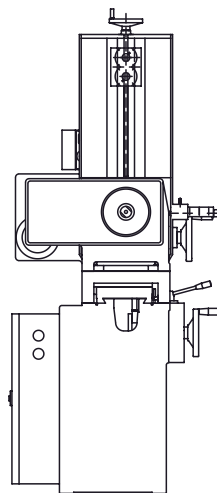
	<b>BR650</b>	<b>BR1000</b>
<b>WORKING CAPACITY</b>		
Boring capacity (min. and max. dia.)	15-160 mm / 0,6"-6,19"	15-250 mm / 0,6"-9,84"
Grinding capacity (min. and max. dia.)	30-160 mm / 1,19"-6,29"	30-250 mm / 1,19"-9,84"
Min. and Max. con-rod center distance	160-650 mm / 6,29"-25,59"	160-1000 mm / 6,29"-39,37"
Height of spindle C/L over table	150 mm / 5,9"	380 mm / 14,96"
<b>SPEEDS AND FEEDS</b>		
Boring spindle adjustable speeds	0-1200 RPM	0-1200 RPM
Grinding spindle adjustable speeds	2500-9000 RPM	2000-9500 RPM
Grinding spindle revolution speeds	80-160 RPM	80-160 RPM
Radial grinding travel (max. eccentricity of wheel C/L)	12 mm / 0,5"	12 mm / 0,5"
Max. table traverse	420 mm / 16,5"	420 mm / 16,5"
Variable automatic table speed on both sides	0-165 mm/min	0-165 mm/min
<b>MOTOR RATINGS</b>		
Motor, feed change	0,75 KW	0,75 KW
Motor, boring head	1,5 KW	1,5 KW
Motor, planetary movement of grinding head	0,5-1 KW	0,5-1 KW
Motor, spindle grinding head	1,1 KW	1,1 KW
Motor, cooling system	0,12 KW	0,12 KW

## DIMENSIONS

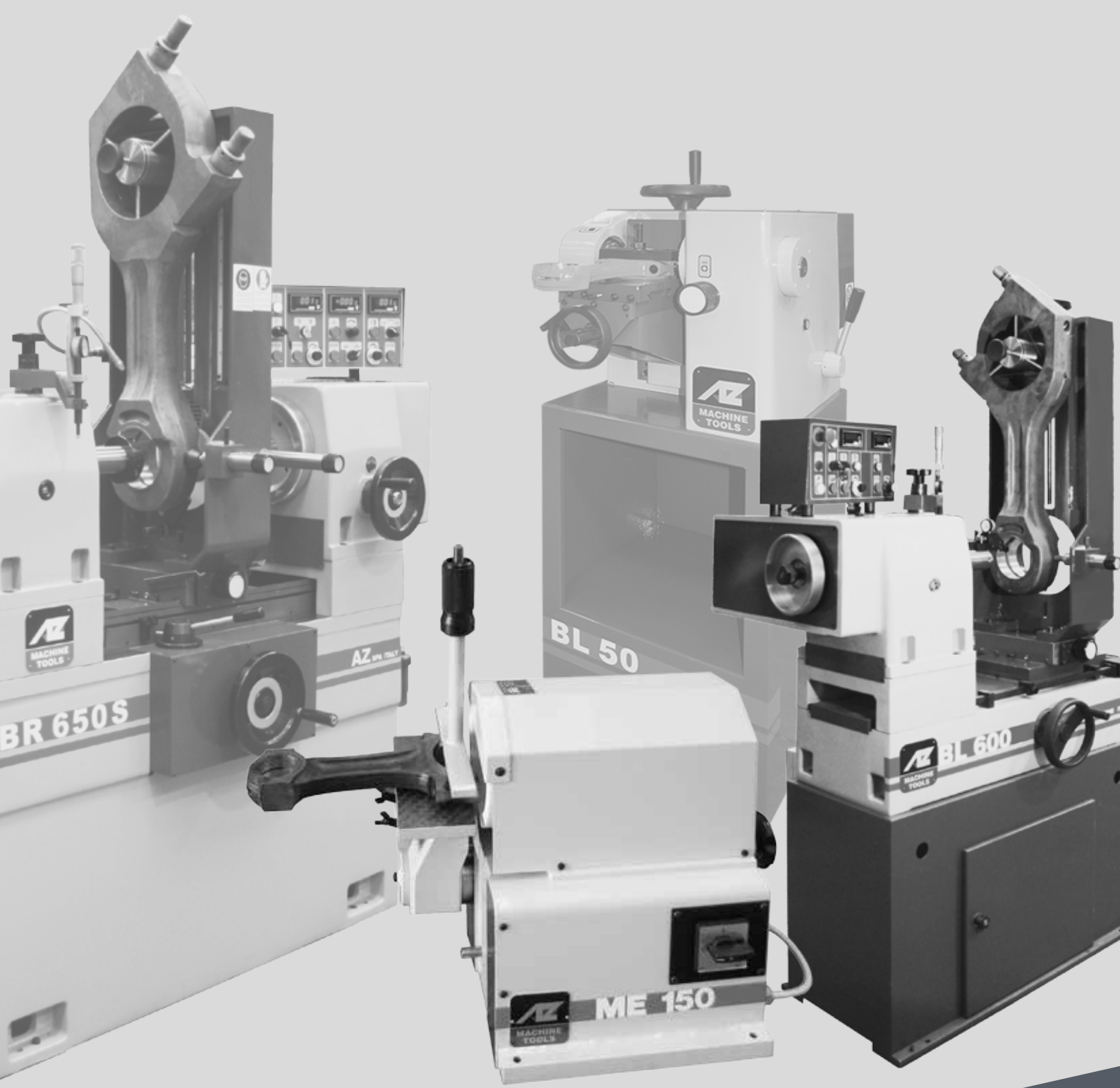
### ■ BR650



### ■ BR1000



	<b>BR650</b>	<b>BR1000</b>
Length	1700 mm	1700 mm
Width	900 mm	1160 mm
Height	2110 mm	2610 mm



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DEL MOTORE ENDOTERMICO

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