<table>
<thead>
<tr>
<th>WORKPIECE LENGTH (mm)</th>
<th>WHEELHEAD MOVEMENT</th>
<th>TABLE MOVEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>DU 600</td>
<td></td>
</tr>
<tr>
<td>800</td>
<td>DU 800</td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td>DU 1000</td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td>DU 1200</td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td>CGA 270x1600</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>CGA 270x2000</td>
<td>CGX 2000</td>
</tr>
<tr>
<td>2200</td>
<td>CGA 300x2200</td>
<td></td>
</tr>
<tr>
<td>3000</td>
<td>CGP 300</td>
<td></td>
</tr>
<tr>
<td>3500</td>
<td>CGP 400</td>
<td></td>
</tr>
<tr>
<td>4000</td>
<td>CGP 500</td>
<td></td>
</tr>
<tr>
<td>4500</td>
<td>DB 4500</td>
<td></td>
</tr>
<tr>
<td>5000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Orbital machines.**
- **Orbital machines with table movement.**
- **Machines with hydraulic movement of the table.**
The most complete range

AZ具有40年以上在曲轴磨床经验可以称为“曲轴专家”。3000曲轴磨床销往世界各地用于汽车，能源，海洋，机车，工程机械、石油和天然气。

AZ CRANKSHAFT AZ曲轴线是一个完整系列的曲轴磨床从1.5米到14米的曲轴长度。不同型号为满足不同的应用，从生产，售后和修理。根据客户需要，可以提供手动，PLC或数控机床。

CRANKSHAFT SPECIALISTS

More than 40 years of experience in crankshaft grinding machines permits AZ to be called the "crankshaft specialists". 3000 crankshaft grinding machines sold all over the world for automotive, energy, marine, locomotive, earth moving and oil & gas applications.

AZ CRANKSHAFT line is a complete range of crankshaft grinding machines from 1.5 meter to 14 meters of crankshaft length. Different models for different application type first production, aftermarket and repair. Depend on technological level required, manual, PLC or CNC machines can be provided.
REBUILDING line
The rebuilding line is a range of crankshaft grinding machines for the engine rebuilding, for crankshaft from 1.5 meters to 14 meters.

MANUFACTURING line
The manufacturing line is a range of grinding machines designed for high precision works and high volumes production. Machines with the most advanced technology used with CNC control system and equipped with the most innovative measurement systems on the market.
BED

The AZ crankshaft grinding machines beds are made of:
CAST IRON thermically stabilized strong structure with finishing by scraping the contact surface by skill operator in order to secure the highest precision and flatness in the different positions.

COMPOSITAL® a new solution composed by resine-granite mixture filled on welded-steel casing that permit to:

- Keep the temperature constant
- Reduce vibration on the machine
- Dumping improvement
- Strength improvement

一种新的解决方案 COMPOSITAL 由树脂花岗岩石沥青混合料填充焊接钢套管，许可证：

保持温度恒定
减少机床的振动
改善床身
改善强度
WORKHEADS

The workheads are designed with extreme precision both in the traditional system where cross movement ensures an easy and quick adjustment and in the orbital system where we find perfect synchronization with angular encoders. The positioning and repeatability are ensured by linear encoders with “closed loop” system. The workheads move on air cushion.

1. 3爪自动夹紧液压工作头  
   Auto-clamping hydraulic workhead with 3 jaws chucks

2. 重型4爪卡盘工作头  
   Heavy duty workhead 4 jaws chucks

3. 带十字滑块的3爪工作头  
   Workhead 3 jaws chucks with twin cross slide
磨头单元
Grinding head unit

在重型机型DB系列机床的磨头在X轴与静压导轨线性编码器控制下移动。在高生产率的曲轴磨床如DU系列机床磨头移动由X轴和Z轴的直线电机控制移动。
该磨头可以传统移动或随动移动。

随连杆颈随动

随动系统是指砂轮以曲柄销，工件旋转为中心线，不需要其他的设置。

“CHASE THE PIN” Orbital system
The orbital system means that the grinding wheel chases the crankpin, the workpiece rotates on the centerline and is not necessary to have different setup.
The grinding wheels allow to grind any type of materials at different speeds: 33 m/s for silicium and corundum grinding wheels and 120 m/s for CbN grinding wheels.

CNC machines have CNC wheel dresser with diamond roll for dressing the radius and sides of grinding wheels.
The machines produced by AZ perform the most advanced mechatronics solutions. The measurement, the movements, the controls are chosen on the top worldwide leader supplier and their combinations with AZ engineer creativity produce one of the most sophisticated range of products today on the market.

The machine can be supplied with different measurement systems:

- IN-PROCESS GAUGE WITH ROUNDENESS CONTROL FUNCTION
- SHAPE CONTROL SYSTEM
- PROBE FOR DIFFERENT POSITION MEASURING
The queen of AZ production, for crankshaft up to 14 meters long and 25 Ton weight.

- 随动系统  
  Chase the pin

- 同步工作头  
  Synchronized workheads

- 数控砂轮修整器  
  CNC wheel dresser

- 带有电子数显的中心架或带有自动定心的数控中心架。  
  Steady rest with electronic digital readout or cnc steady rest with automatic centering
Heavy duty crankshaft grinding machines

The CG machines are traditional machines suitable for the crankshafts rebuilding up to 6400 mm long. The table moves on bed with “V” and flat guides cover with antifriction treatment.

回转直径 920-1300 mm

工作长度 4100-6400 mm
+ Motorized and synchronized rotation of workheads
+ Manual, PLC or CNC control
+ Twin cross slide for precision crankshaft centering

+ Manual, hydraulic or CNC wheel dresser
+ Conventional grinding wheels
The CGP series is for crankshafts from 1000 to 3500 mm long. The wheelhead movement is orbital and can be configured with automatic working cycle “ground to ground”.

+ 工作头移动的随动系统
  Chase the pin system with table movement
+ 数控砂轮平衡系统
  CNC wheel balancing system
+ 传统的或CBN砂轮
  Conventional or CBN grinding wheel
+ 数控砂轮修整器
  CNC wheel dresser
用于高生产率的数控曲轴磨床
CNC Crankshaft grinding machines for high productivity

高生产率汽车工业用机床。令人难以置信的速度和精度，最新的夹紧和测量技术。本机带有两个独立砂轮架同时动作，同时这是高生产率的最佳解决方案。

- 床身由复合材料制成
  Base made of composital
- 随动系统
  Chase the pin system
- 数控砂轮修整器
  CNC Wheel dresser

Machine for the automotive industry for high productivity. Unbelievable cycle time and precision, the most update technology for clamping and measuring. The machine can have two independent grinding wheel carriages that move simultaneously this is the best solution for high productivity.

- 数控砂轮平衡器
  CNC Wheel balancing system
- 带有双量仪的在线直径测量系统
  In-process diameter measuring system with double fork
Crankshaft grinding machines

Crankshaft grinding machines

The CGA and CGX machines can be manual or CNC. Manual version suitable for crankshaft till 1600 mm. All machines models have integral guarding with sliding doors with **special window to permit the adjustment of steady rest**. Machines with twin cross slide for precision crankshaft centering.

CGA and CGX机型可手动或数控。手动模式适用于长度为1600mm以内的曲轴。所有的机床型号带有整体防护与滑动门的专用窗口并可调整中心架，具有双十字滑块的高精度曲轴定心。

维修
REBUILDING

回转直径
SWING
540-720 mm

工件长度
WORKPIECE LENGTH
1600-3500 mm
+ 机动化及同步化的工作头
Motorized and synchronized rotation of workheads

+ 手动、PLC或数控
Manual, PLC or CNC control

+ 高精度曲轴定心的双十字滑块
Twin cross slide for precision crankshaft centering

+ 手动、液压或数控砂轮修整器
Manual, hydraulic or CNC wheel dresser

+ 传统砂轮
Conventional grinding wheels

① 手动中心架
Manual steady rest

② 数控砂轮修整器
CNC wheel dresser

③ 砂轮表面、侧面及圆弧修整器
Wheel face, side and radius dresser

CRANKSHAFTS GRINDING MACHINES
欧洲制造
意大利制造

AZ spa
via dell’elettronica 20
36016 Thiene (VI) ITALY

T +39 0445 575543
F +39 0445 575756
info@azspa.it
版权©AZ 2017本文档，在没有AZ公司书面许可下，任何部分不得转载，复制，改编，或以任何形式或任何方式没有明确的书面许可从AZ SPA信息给出了BAS。 这本小册子印刷时，随着我们的机器技术水平的提高，我们会对名称，设计，技术规格，设备等会有相应的变更。

AZ Copyright © 2017 No part of this document may be reproduced, copied, adapted, or transmitted in any form or by any means without express written permission from AZ spa. The informations given is based on the technical levels of our machine at the time of this brochure going to print. We reserve the right to further develop our machines technically and make name, design, technical specifications, equipment etc. modifications.