Precision wet abrasive cut-off machine

The BRILLANT 220 is a compact, user-friendly precision wet abrasive cut-off machine. It can be fitted with up to three automatic axes (X, Y, Z) and several cutting modes for maximum flexibility and ideal use of space.

CONTROL
All axes can be controlled with a joystick. The built-in electronic control with its simple and clearly defined touch screen display enables easy programming, storage and loading. During the automatic cutting process all parameters such as feed speed, cutting force etc. can be monitored and modified.

CONSTRUCTION
Openings on both sides of the solid aluminium construction allow sectioning of long or continuous parts up to Ø 70 mm. The cutting chamber which is illuminated by energy-saving LED is easily accessible through a sliding front door and the side door with safety interlock. The cutting wheel is water cooled by versatile jointed hoses on both sides.

AXES
The Brillant 220 is standardly equipped with automatic vertical cut-off (Y-axis, 80 mm) and definable regulated travel for large cutting wheels. The horizontal movement (X-axis, 210 mm) is available in automatic or manual mode. In combination with optional cross-feed (Z-axis, 80 mm) it allows maximum flexibility for precise, soft touch cutting.
Precision wet abrasive cut-off machine

CUTTING MODES
Step and diagonal cut optimize the operating angle for gently cutting.
The step cut divides the sample in layers and is especially suited for large parts and bulky materials.
The diagonal cut is recommended for asymmetrical specimens; this is done by combining vertical and horizontal cut modes.

FEED CONTROL
The feed adjusts automatically to different thickness and hardness of materials. The feed speed is variable.

PULSED CUTTING
In pulsed cutting mode the feed speed is interrupted and continued in opposite direction periodically.
This helps the wheel stay sharp and allows coolant to flush the point of contact, clearing debris and keeping the material cool.
The characteristic, pulsed cutting in definable intervals can be switched on to every cutting mode.

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PRECISION CROSS FEED
The automatic cross feed with serial cutting function produces precise parallel cuts of 1 µm (0.001 mm) in equal or varied sizes.
The preselected cut-off wheel thickness is automatically included in the process.
The integrated Z-axis can also be used as a precision cross feed for pot wheels (thin cuts).

LASER
With line laser you can display the scheduled cut on the sample.
This helps to define the exact cutting position.

CLAMPING TOOLS
The Brilliant 220 is equipped with the innovative ATM-easy-clamping system.
This makes changing and adjusting of clamping tools very easy and supersedes fixing by T-slots.
All clamping tools, e.g. Fast Lock Vice 50, 60, 80, X-Clamp, Vacuum Vice and Rotavice can be fitted with the Easy-clamping system.

SHARPENING DEVICE
Diamond cutting wheels and pot wheels can be dressed easily with the sharpening device. It is manually operated by a lever from outside and during the operation sequence.
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**BRILLANT 220**

**BASIC MODULE**

- Order No.: M1890000
  - automatic Y-axis
  - openings on the left and right for continuous long parts
  - sliding door
  - table made of stainless steel
  - electronic control with clear LCD
  - electronic travel measuring
  - cutting force dependent feed-control
  - automatic pulsed cutting
  - step cut, diagonal cut
  - program storage
  - direct positioning via joystick (all automatic axes)
  - current safety standard with door interlock (safety protection)
  - optimal cutting chamber with LED illumination
  - solid aluminium construction, powder coated
  - e-Lab-ready

**POWER SUPPLY**

- Equipment 1: 230 V/50 Hz (1Ph/N/PE)
  - Order No.: A1890000
- Equipment 2: 110 V/60 Hz (1Ph/N/PE)
  - Order No.: A1890001

**ARBOUR SIZE**

- Equipment 1: Fixed shaft fitting
  - Arbour size: Ø 12.7 mm
    - Order No.: A1890002
- Equipment 2: Quick-change system
  - on request

**TABLE DRIVE**

- Equipment 1: X-axis manual (handle)
  - Order No.: A1890004
    - Travel X-axis: 210 mm
    - Precision: 0.1 mm
- Equipment 2: X-Axis automatic
  - Order No.: A1890005
    - Travel X-axis: 210 mm
    - Precision: 0.1 mm

**CROSS FEED Z-AXIS**

- Equipment 1: without Z-axis
  - Order No.: A1890008
  - Travel Z-axis: 80 mm
    - Precision: 0.1 mm
- Equipment 2: Z-axis manual (handle)
  - Order No.: A1890009
  - Travel Z-axis: 80 mm
    - Precision: 0.001 mm
- Equipment 3: Z-axis automatic
  - Order No.: A1890010
  - Travel Z-axis: 80 mm
    - Precision: 0.001 mm
Precision wet abrasive cut-off machine

**BRILLANT 220**

**ACCESSORIES**

**RECIRCULATION COOLING SYSTEM**

» no voltage selection required

» controlled by cut-off machine

Order No.: A1800160

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
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<tbody>
<tr>
<td>Tank</td>
<td>15 ltr.</td>
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<tr>
<td>Pump</td>
<td>8 ltr./min, 24 V</td>
</tr>
<tr>
<td>WxHxD</td>
<td>400x220x300 mm</td>
</tr>
<tr>
<td>Height incl. pump</td>
<td>~ 350 mm</td>
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</tbody>
</table>

Order No.: A5800494

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Tank</td>
<td>45 ltr.</td>
</tr>
<tr>
<td>Pump</td>
<td>8 ltr./min, 24 V</td>
</tr>
<tr>
<td>WxHxD</td>
<td>366x540(640) x610 mm</td>
</tr>
</tbody>
</table>

**CENTRIFUGAL SEPARATOR**

» to remove coolant mist

» increases quality of illumination

» exhauster power 180 or 215 m³/h, depends on power supply

400 V/50 Hz (3Ph/PE)

Order No.: Z1820009

480 V/60 Hz (3Ph/PE)

Order No.: Z1820012

220 V/60 Hz (3Ph/PE)

Order No.: Z1820011

**SAMPLE COLLECTOR**

Order No: Z1800002

» stainless steel, incl. fixing screws

**SHARPENING DEVICE**

Order No.: A1890012

» for dressing diamond and pot wheel

**OPTION**

**ROTATION TOOL**

on request

» tool with vertical rotary feed, parallel to wheel

» angle input via software control

**LASER ALIGNMENT AID**

Order No.: A1890011

» laser line to visualize the cutting line

» laser class 1

Mobile with insertion mechanism
für System Lab cabinets

» 2-chamber-pvc-compartment 45 Ltr.

» inlet sieve and filter bag

Order No.: A5800494

**SHARPENING DEVICE**

Order No.: A1890012

» for dressing diamond and pot wheel
Precision wet abrasive cut-off machine

SPECIFICATIONS

Max. cutting capacity Ø 75 mm (depends on cut-off wheel)
Cut-off wheel 75 – 203 mm/8"
Arbour size Ø 12.7 mm

VERTICAL / HORIZONTAL MOVEMENT (X-/Y-AXIS)
Table WxD 300 x 210 mm (8 mm T-slot)
Feed 0.005 – 3 mm/sec
Precision 0.1 mm
Vertical movement (Y-axis) 80 mm
Horizontal movement (X-axis) 210 mm

CROSS FEED (Z-AXIS)
Table WxD 280 x 210 mm (8 mm T-slot)
Feed 80 mm
Precision 0.001 mm (1 µm)

Variable speed 300 – 5000 rpm in steps of 100 rpm
Motor cut-off wheel 0.75 kW, S1-mode
Connected load 2.3 kVA
Power supply 1 230 V/50 Hz (1Ph/N/PE)
2 110 V/60 Hz (1Ph/N/PE)
WxD 710 x 570 x 485 mm
Cutting chamber 405 x 500 mm
Weight ~ 82 kg