IsoMet™ 4000 & 5000
Linear Precision Saws

BUEHLER
Solutions for Materials Preparation, Testing and Analysis
IsoMet™ 4000 & 5000 Linear Precision Saws

IsoMet Family
The IsoMet 4000 & 5000 Precision Saws cut materials with minimal specimen deformation and low kerf loss. The IsoMet 4000 & 5000 saws feature a manual blade positioning knob that accelerates set-up while clamping a specimen in a large unrestricted workspace. A wide selection of vises allow the user to precisely section virtually any material including metals, ceramics, composites, cements, laminates, plastics, electronic components, and biomaterials.

Features and Benefits
• Large open workspace workspace provides excellent visibility during cutting and unrestricted access while clamping the specimen
• Linear feed mechanism with variable feed rate sections even the most delicate specimens
• Automated sectioning enhances lab productivity
• Versatile vising and blade options provide optimal sectioning for any shape specimen
• Manual blade positioning for quick setup and retraction
• SmartCut system monitors and adjusts feed rates to enhance surface quality and prevent damage to specimen or machine
The IsoMet™ 4000 and 5000 saws have vises which hold long samples for slot cutting applications with 11-2692 (shown) and cutting samples on an angle.

Stainless Steel Single Saddle Chuck 11-2683 firmly grips rods for transverse sectioning.

Fastener vise 11-2687 securely holds heat treated fasteners.

Applications:
- Ferrous & Non-Ferrous Materials:
  - Stainless Steels
  - Aluminum
  - Biomedical Alloys
  - Ceramics
  - Copper Base Alloys
  - Integrated Circuit Materials
  - Magnesium
  - Metal Matrix Composites
  - Minerals
  - Plain Carbon Steel
  - Plastics
  - Refractories
  - Stainless Steels
  - Thermal Spray Coatings
  - Titanium
  - Tool Steels

- Precision Longitudinal Cuts and Slot Cutting on Long Samples:
  - Bones
  - Fasteners
  - Fossils
  - Implants
  - Tubing
  - Turbine Blades

For more information, call toll-free 1-800-BUEHLER (1-800-283-4537) or visit our website at www.buehler.com
The IsoMet 5000 has an automatic positioning system with a 2µm accuracy. The blade retracts automatically.

Coolant hose doubles as a clean-out hose for easy maintenance. Internal recirculating tank can be cleaned without removing the blade.

The IsoMet 4000 has a manual 1µm sample positioning via a precision micrometer. The blade advances automatically and is retracted manually.

The 11-2740 (shown) can grind to target to prepare thin sections.

IsoMet™ 5000 can store 55 program methods for cutting various material types. For example, cup grindings 11-2740 can grind to target to prepare thin sections.

The IsoMet 5000 has an automatic positioning system with a 2µm accuracy. The blade retracts automatically.

Adequate coolant volume and positioning is critical for high quality cutting, especially when using an abrasive blade (shown). The IsoMet 4000 & 5000 saws flood the blade with a full 0.7 gal/min [3ℓ/min]. The coolant tracks with the blade as it cuts.

The 11-2696 Automatic Dressing System dresses the blade prior to and during operation to optimize cutting conditions, prolong blade life and provide the best cut surface.
## Specifications

<table>
<thead>
<tr>
<th></th>
<th>IsoMet 4000</th>
<th>IsoMet 5000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operation</strong></td>
<td>Automatic with constant feed rate or SmartCut™ process control</td>
<td>Automatic Linear Blade Feed and Retraction</td>
</tr>
<tr>
<td><strong>Cutting Action</strong></td>
<td>Linear blade feeds automatically into workpiece</td>
<td>Automatic Linear Blade Feed and Retraction</td>
</tr>
<tr>
<td><strong>Motor Power</strong></td>
<td>1.25Hp [950W]</td>
<td></td>
</tr>
<tr>
<td><strong>Feed Rate</strong></td>
<td>0.05-0.75in/min, 0.01in increments [1.2-19mm/min, 0.2-0.3mm increments]</td>
<td></td>
</tr>
<tr>
<td><strong>Blade Speed</strong></td>
<td>200-5000rpm in 50rpm increments</td>
<td></td>
</tr>
<tr>
<td><strong>Programmable Cutting Length with Auto Shut-off</strong></td>
<td>0.01-8in, 0.01in increments [0.25-200mm, 0.25mm increments]</td>
<td>0.01-8in, 0.01in increments [0.25-200mm, 0.25mm increments]</td>
</tr>
<tr>
<td><strong>Electronics</strong></td>
<td>Microprocessor controlled</td>
<td></td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>240 x 64 pixel Liquid Crystal Display (LCD) with backlighting</td>
<td></td>
</tr>
<tr>
<td><strong>Touch Pad Controls</strong></td>
<td>Membrane keypad with tactile feedback buttons</td>
<td></td>
</tr>
<tr>
<td><strong>Process Prompts</strong></td>
<td>“Warning Hood Open”; “Blade Pinched”; “Distance Remaining”; “Emergency Stop”; “Arm Limit”</td>
<td></td>
</tr>
<tr>
<td><strong>Languages</strong></td>
<td>English, French, German, Portuguese, Spanish, Chinese, Japanese, Korean</td>
<td></td>
</tr>
<tr>
<td><strong>Wafering Blade Diameters</strong></td>
<td>3-8in [75-200mm]</td>
<td>5-7in [125-180mm]</td>
</tr>
<tr>
<td><strong>Abrasive Blade Diameters</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Coolant Systems</strong></td>
<td>Built-in Recirculating System, 0.9gal [4ℓ]; Optional External Recirculating System, 7gal [26.4ℓ]</td>
<td></td>
</tr>
<tr>
<td><strong>Flow Rate</strong></td>
<td>0.7gal/min [3ℓ/min]</td>
<td></td>
</tr>
<tr>
<td><strong>Main Power</strong></td>
<td>[85-264VAC, 50-60Hz, 1 phase] / [120VAC, 5amp, 600W] / [240VAC, 2.3amp, 570W]</td>
<td></td>
</tr>
<tr>
<td><strong>Safety Features</strong></td>
<td>Emergency Stop; Magnetic Safety Interlock</td>
<td></td>
</tr>
<tr>
<td><strong>Other Features</strong></td>
<td>Cutting chamber clean-out hose; Manual Blade Positioning Knob</td>
<td></td>
</tr>
<tr>
<td><strong>Cutting Envelope</strong></td>
<td><strong>Maximum Diameter of Sample:</strong> Cutting capacity of up to 2.75in [70mm], dependent upon vising options</td>
<td><strong>Maximum Rectangular Sample:</strong> 6 L x 2 D x 0.5in H [150 x 50 x 13mm] with 8in [203mm] blade</td>
</tr>
<tr>
<td><strong>X-axis Working Space</strong></td>
<td>16 L x 4 D x 4in H [406 x 102 x 102mm]</td>
<td></td>
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<tr>
<td><strong>Y-axis Working Space</strong></td>
<td>10 L x 8 D x 4in H [250 x 102 x 203mm]</td>
<td></td>
</tr>
<tr>
<td><strong>Programming</strong></td>
<td>Retains last settings</td>
<td>20 Customizable Methods and 35 Preset Buehler Methods, for a variety of materials including ferrous metals, non-ferrous metals, ceramics and geological specimens</td>
</tr>
<tr>
<td><strong>Sample Position Settings</strong></td>
<td>0-0.9842in, 0.0025in increments; [0-24mm, 10μm increments]</td>
<td>0-0.9842in, 0.0008in increments [0-25mm, 2μm increments]</td>
</tr>
<tr>
<td><strong>Serial Cut Quantity</strong></td>
<td>1 - 100</td>
<td></td>
</tr>
<tr>
<td><strong>Blade Thickness Settings</strong></td>
<td>0.000in, 0.006in, 0.012in, 0.015in, 0.020in, 0.025in, 0.030in, 0.035in [0.000mm, 0.150mm, 0.305mm, 0.381mm, 0.508mm, 0.635mm, 0.762mm, 0.889mm]</td>
<td>0.000in, 0.006in, 0.012in, 0.015in, 0.020in, 0.025in, 0.030in, 0.035in</td>
</tr>
<tr>
<td><strong>Compliance</strong></td>
<td>Accordance with EC Directive(s)</td>
<td></td>
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</tbody>
</table>
**IsoMet™ 4000 and 5000**

- Simple to operate, automatic precision saw
- SmartCut™ adjusts feed rate to eliminate damage to system or sample
- Rotating vise for larger samples
- IsoMet 5000 includes cup grinding capabilities and 55 preprogrammed methods
- Compatible with external recirculating system
- 1.25Hp motor

(Includes 7in [178mm] IsoCut™ Blade for sectioning ferrous alloys and superalloys, 7" abrasive wheels, T-slot table, automatic dressing system, dressing stick, Cool 2 Fluid, 2 sets of flanges and the following chucks: irregular specimen, single saddle and 1.25in [32mm] round specimen)

Available in the following voltage/frequency:

**IsoMet 4000**
- 11-2680 [85-264VAC, 50/60Hz]
- 11-2681 [85-264VAC, 50/60Hz] Saw only
- 11-2675 [85-264VAC, 50/60Hz] with external recirculation system

**IsoMet 5000**
- 11-2780 [85-264VAC, 50/60Hz]
- 11-2781 [85-264VAC, 50/60Hz] Saw only
- 11-2775 [85-264VAC, 50/60Hz] with external recirculation system

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**IsoMet Precision Saw Accessories**

- 11-1186 Wafer Chuck
- 11-1187 Single Saddle Chuck
- 11-1192 1.38in [35mm] Chuck Padding
- 11-1193 1.75in [44mm] Chuck Padding
- 11-1194 Small Bone Chuck
- 11-1198 Dressing Block Spacer
- 11-2282 3in [76mm] Single Saddle Chuck
- 11-2283 4in [100mm] Single Saddle Chuck
- 11-2284 5in [127mm] Single Saddle Chuck
- 11-2484 27 x 46mm Glass Slide Chuck
- 11-2486 Wafer Chuck
- 11-2488 2 x 3in [50 x 76mm] Glass Slide Chuck
- 11-2494 Large Bone Chuck
- 11-2496 Chuck Padding
- **Flange Set**
  - 11-1192 1.38in [35mm]
  - 11-1191 1.75in [44mm]
  - 11-2678 2in [50mm]
  - 11-2679 2.5in [64mm]
  - 11-2282 3in [76mm]
  - 11-2283 4in [100mm]
  - 11-2284 5in [127mm]
- **Precision Flange Set**
  - 11-2688 3in [76mm]
  - 11-2689 4in [100mm]
  - 11-2690 5in [127mm]
  - 11-2697 6in [152mm]
AcuThin™ Abrasive Wheels for IsoMet™ 4000 and 5000 Precision Saws, 0.5in [13mm] Arbor (qty 10)

Recommended Use | 5in [127mm] | 7in [178mm] |
---|---|---|
Tool Steel, Hard Steel HRC45 & Up | 10-4060-010 | |
Medium hard, soft steel HRC45 & Below | 10-4061-010 | |
Steel, Stainless Steel | | 11-4207-010 |
Hard, soft non-ferrous materials | | 11-4217-010 |

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### Recommended Use

<table>
<thead>
<tr>
<th>Recommended Use</th>
<th>3in [76mm]*</th>
<th>4in [102mm]</th>
<th>5in [127mm]</th>
<th>6in [152mm]</th>
<th>7in [178mm]</th>
<th>8in [203mm]</th>
<th>Stick</th>
</tr>
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<tr>
<td>15HC - Metal Matrix Composite, PCBs, Bone, Ti, TSC</td>
<td>11-4225</td>
<td>11-4227</td>
<td>11-4228</td>
<td>11-1190</td>
<td>11-2490</td>
<td>11-10067</td>
<td>11-4254</td>
</tr>
<tr>
<td>5LC - Soft, Friable Ceramics, Composites with Fine Reinforcing, CaF₂, MgF₂, Carbon Composites</td>
<td>11-4295</td>
<td>11-10069</td>
<td>11-4295</td>
<td>11-1190</td>
<td>11-2495</td>
<td>11-10069</td>
<td>11-4295</td>
</tr>
<tr>
<td>CBN LC - Fe, Co, Ni based alloys and superalloys</td>
<td>11-10070</td>
<td>11-4264</td>
<td>11-4265</td>
<td>11-4266</td>
<td>11-4267</td>
<td>11-4268</td>
<td>11-1190</td>
</tr>
<tr>
<td>CBN HC - Fe, Co, Ni based alloys and superalloys</td>
<td>11-5264</td>
<td>11-5265</td>
<td>11-5266</td>
<td>11-5267</td>
<td>11-5268</td>
<td>11-1190</td>
<td>11-2490</td>
</tr>
<tr>
<td>Cup Grinder for Ferrous Material (IsoMet™ 5000 only)</td>
<td>11-2720</td>
<td>11-2720</td>
<td>11-2720</td>
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<tr>
<td>Cup Grinder for Non-Ferrous Material (IsoMet™ 5000 only)</td>
<td>11-2730</td>
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<tr>
<td>Cup Grinder for Ceramic &amp; Geological Materials (IsoMet™ 5000 only)</td>
<td>11-2740</td>
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</tbody>
</table>

* 3in [76mm] blades are recommended for use with Precision Table 11-2694-160/250

**SO** - Special Order. Items may have long lead times and minimum orders.

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**For a complete listing of consumables, please refer to our Buehler Buyer’s Guide or contact your local Buehler Sales Engineer. Buehler continuously makes product improvements; therefore technical specifications are subject to change without notice.**

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**Sectioning**

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<th>Grinding &amp; Polishing</th>
<th>Imaging &amp; Analysis</th>
<th>Hardness Testing</th>
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<tbody>
<tr>
<td>SimpliMet</td>
<td>EcoMet</td>
<td>AutoMet</td>
<td>OmniMet</td>
<td>Wilson® Hardness</td>
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