

SECTIONING

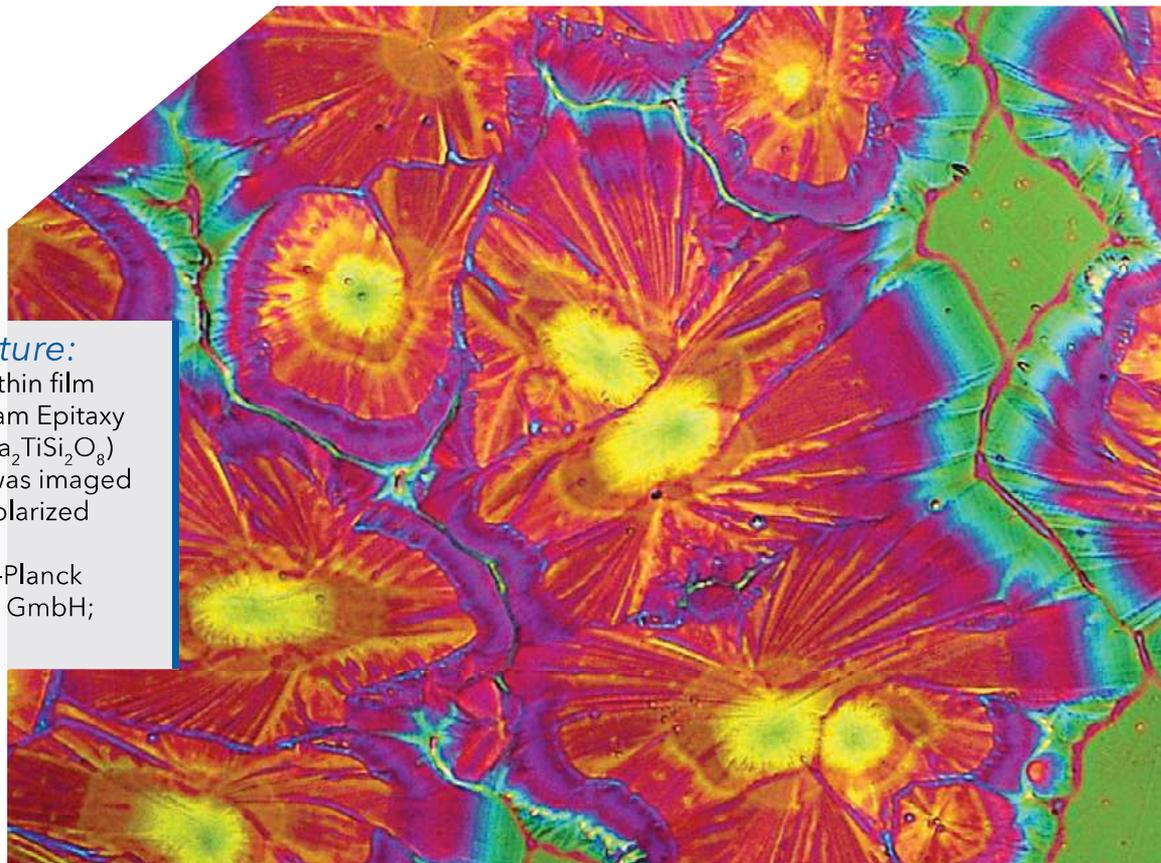
A full range of abrasive and precision saws, blades, and vises for cutting any material

Specimen preparation for microstructural examination starts with a quality cut. The proper equipment with firm and stable vising minimizes the depth of deformation on the sample surface. The abrasive and precision saws save time by limiting the number of steps needed to analyze samples after sectioning.

Featured Microstructure:

Surface of a 300nm BaTiO₃ thin film deposited by Molecular Beam Epitaxy on Silicon. The Fresnoite (Ba₂TiSi₂O₈) formed during deposition was imaged at 200x mag. under cross polarized light.

~ Angelika Bobrowski; Max-Planck Institut für Eisenforschung GmbH; Düsseldorf, Germany





Precision Cutters

Excellent Cut Quality for Delicate Samples

Sectioning tools capable of cutting virtually any material including metals, composites, cements, laminates, plastics, electronic devices and biomaterials.



IsoMet™ High Speed

The IsoMet High Speed and IsoMet High Speed Pro are benchtop precision cutters. These machines enable variety in sample preparation to best fit each sample process with automatic cutting capabilities. Quick sample placement or adjustments are achieved in seconds with the rapid rail and tool-less vising system. Sample capacity is 2.8in [71mm] diameter with blade speeds of 200-5000 RPM.

Additional IsoMet High Speed Pro Features

Automatic Dressing System

- Maintain consistent cut quality between and during cutting with the automatic dressing system.

Rapid Alignment Laser

- Minimize setup time by rapid visual alignment with the IsoMet High Speed Laser.

Precise Cut Alignment [Z-Axis]

- Align precise cuts quickly by using the 3 axis variable movement of the blade.

Model	Part Number	Voltage/Frequency
IsoMet™ High Speed Pro	11-2700	100 - 240VAC, 50-60Hz
IsoMet™ High Speed	11-2600	100 - 240VAC, 50-60Hz

Dimensions: 24in [609.6mm]W x 30in [762mm]D x 36in [914.4mm]H open
19in [482.6mm]H closed

Weight: 157lbs [71kg]



Precision Cutters

Precision with Flexibility

The IsoMet product family is capable of cutting with precision via a gravity fed or automatic movement. The IsoMet family provides great versatility in holding all types of sample shapes and configurations.

IsoMet™ 1000

The IsoMet 1000 is a precision sectioning saw is designed for cutting various types of materials with minimal deformation. Targeted for delicate parts by only using gravity fed force.

**6in diamond blade, 3in flanges, single saddle chuck and mount chuck included*



RPM ranges from 100-975 to provide cut quality for varied materials

Part Number	Voltage
11-2180	85-264VAC, 50/60Hz

Dimensions: 15.5in [394mm]W x 20.25in [514mm]D x 24.5in [622mm]H open
12in [305mm]H closed

Weight: 56lbs [25kg]

IsoMet™ Low Speed

The IsoMet Low Speed is a precision sectioning saw designed for cutting various types of materials with minimal deformation. Targeted for delicate parts by only using gravity fed force.

Includes 4in IsoMet Blade, assorted weights, dressing stick, flanges and the following chucks: single saddle, irregular specimen and wafer



RPM ranges from 0-300 to provide cut quality for varied materials

Part Number	Voltage	Units
11-1280-160	115VAC, 50/60Hz	Inches
11-1280-170	115VAC, 50/60Hz	Millimeters
11-1280-250	230VAC, 50/60Hz	Millimeters

Dimensions: 10.5in [267mm]W x 12in [305mm]D x 25.5in [571mm]H

Weight: 25lbs [11.3kg]

SECTIONING

Tips, Tricks & Techniques



For the best performance from your Precision Cutter System:

- Always tightly clamp your sample
- Use double saddle chucks for long parts such as rods
- Do not hand dress blades
- Mount spheres, unusual shapes and friable materials
- Use the largest flange for your blade and specimen
- Soft, gummy materials can build up on the blade during the cut and may require dressing while sectioning these materials.



Precision Cutter Accessories

IsoMet™ Low Speed Cutter Accessories

Goniometer



Positions specimen along 3 axis

11-2381

Manual Feed Control Dressing Chuck



Enables blade dressing without removing the sample fixture

11-1196

Splash Guard Kit



Prevents lubricant from splashing out of saw

11-1199

IsoMet™ Low Speed Cutter & 1000 Accessories

Swivel Arm Assembly



Swivels to position specimen cutting surface perpendicular to blade (replaces support arm provided with cutter)

11-1181

Bar & Tube Chuck



Securely holds end of a bar tube up to 2in [50mm] long and 0.5in [13mm] in diameter

11-1184

Wafer Chuck



Use mounting wax, 40-8150 or 40-8145 to glue specimens to wafer chuck 1.125 x 2in [29 x 51mm]

11-1186

Vacuum Chuck



Holds specimens mounted to glass slides to chuck with vacuum force

11-1188

Small Bone Chuck



Ideal for clamping bone, plastics, or other semi-rigid solids up to 1.5in [32mm] in diameter

11-1194

Double Saddle Chuck



Small Double Saddle Chuck that securely holds specimen up to 0.875in [22mm] from 2 points

11-1183

Irregular Specimen Chuck



Adjusts to hold irregular shaped specimens up to 1in [25mm] in diameter

11-1185

Single Saddle Chuck



Holds specimens up to 0.75in [19mm] in diameter

11-1187

Mount Chuck



Aluminum chuck holds mounted samples 1-1.25in [25-32mm]

11-1189



Precision Cutter Accessories

IsoMet™ 1000 Accessories

Rotating Chuck Assembly



Rotates specimen chuck to increase the maximum cutting depth of the blade

11-2181

Table Saw Attachment



Transforms gravity fed IsoMet 1000 into convenient table saw

11-2182

800 gram Weight Set



Additional weights for gravity fed saws

11-2183

Goniometer



Positions specimen along 3 axis

11-2185

Table Saw Splash Guard



Catches splashing lubricant when used in conjunction with the Table Saw Attachment (11-2182)

11-2186

Fastener Chuck



Holds specimen from 0.96in [24.5mm] to 2in [50mm] for longitudinal sectioning

11-2482

Swivel Arm Accessory



Swivels to position specimen cutting surface perpendicular to blade (replaces provided support arm)

11-2184

Double Saddle Chuck



Large Double Saddle Chuck that securely holds specimen up to 1.5in [38mm] from 2 points

11-2483

Glass Slide Chuck



Holds 27 x 46mm, 1 x 2in, or 1 x 3in glass slides

11-2484

Wafer Chuck



Use mounting wax (40-8150) to glue specimens to wafer chuck 1.75 x 2.5in [44 x 64mm]

11-2486

Single Saddle Chuck



Medium Single Saddle Chuck holds up to 1in [25mm] specimen

11-2487

Glass Slide Chuck



Holds 2 x 3in glass slides

11-2488

Mount Chuck



Holds mounted samples 1.5in [40mm]

11-2489



Precision Cutter Accessories

IsoMet™ High Speed Cutter Accessories

<p>Single Saddle Chuck</p> 	<p>Double Saddle Chuck</p> 	<p>Mount Chuck</p> 	<p>Fastener Chuck</p> 
<p>Large Single Saddle Chuck holds specimens up to 1.5in [38mm] from 2 point</p> <p>11-2661</p>	<p>Securely holds specimens up to 1.5in [38mm] from 2 points</p> <p>11-2662</p>	<p>Stainless steel chuck holds mounted samples</p> <p>11-2666 1.25in [30mm] 11-2667 1.5in [40mm]</p>	<p>Holds specimens from 0.04in [1mm] to 2in [50mm] for longitudinal sectioning</p> <p>11-2687</p>
<p>Large Bone Chuck</p> 	<p>T-Slot Bed</p> 	<p>Sliding Vise</p> 	<p>Rapid Rail Post</p> 
<p>Ideal for clamping bone, plastics, or other semi-rigid specimens up to 2in [50mm] in diameter</p> <p>11-2494</p>	<p>Additional T-slot for positioning vises</p> <p>11-2707</p>	<p>6in [152mm] maximum opening, use requires flange to be 2in [50mm] or less, requires T-slot bed</p> <p>11-2669</p>	<p>Use with Rapid Rail</p> <p>11-2660</p>
<p>Small Vertical Clamp</p> 	<p>Irregular Specimen Chuck</p> 	<p>Recirculating System 7gal [27L]</p> 	
<p>Clamps specimens up to 58mm in height</p> <p>460022</p>	<p>Adjusts to hold irregular shaped specimens up to 1in [25mm] in diameter</p> <p>11-1185</p>	<p>Increases cutting fluid capacity to 7gal [27L] at 1.25gal/min [4.7L/min] 16in [406mm]W x 20in [508mm]D x 15in [381mm]H</p> <p>11-2640</p>	

IsoMet™ Precision Cutter Flanges

	<p>Aluminum Flange Set</p> <p>11-1192 1.38in [35mm] 11-1191 1.75in [44mm] 11-2679 2.5in [64mm] 11-2282 3in [76mm] 11-2283 4in [102mm] 11-2284 5in [127mm]</p>		<p>Stainless Steel Flange Set</p> <p>11-2688* 3in [76mm] 11-2689* 4in [102mm]</p> <p><i>*Recommended for the IsoMet High Speed</i></p>
---	--	---	---



Precision Cutter Consumables



Precision Sectioning Blades for IsoMet™ Cutters, 0.5in [12.7mm] Arbor (Qty 1)

[Blade Thickness is listed under Part Number]

Recommended Use	3in [76mm]	4in [102mm]	5in [127mm]	6in [152mm]
Use with Saws	All	All	All	1000 IsoMet High Speed
IsoMet 30HC - Polymers Rubber, Soft Gummy Materials			11-4239 0.030in [0.76mm]	
IsoMet 20HC - Aggressive Sectioning of Metals			11-4215 0.020in [0.5mm]	
IsoMet 15HC - Metal Matrix Composite, PCBs, Bone, Ti, TSC	11-4243 0.006in [0.15mm]	11-4244 0.012in [0.3mm]	11-4245 0.015in [0.4mm]	11-4246 0.02in [0.5mm]
IsoMet 20LC - Hard tough Materials, Structural Ceramics			11-4225 0.02in [0.5mm]	
IsoMet 15LC - Hard Brittle Materials, Glass, Al ₂ O ₃ , ZrO ₃ , Concrete	11-4253 0.006in [0.15mm]	11-4254 0.012in [0.3mm]	11-4255 0.015in [0.4mm]	11-4276 0.02in [0.5mm]
IsoMet 10LC - Medium to Soft Ceramics, Glass Fiber Reinforced Composites	11-4283 0.006in [0.15mm]		11-4285 0.015in [0.4mm]	
IsoMet 5LC - Soft, Friable Ceramics, Composites with Fine Reinforcing, CaF ₂ , MgF ₂ , Carbon Composites	11-4293 0.006in [0.15mm]		11-4295 0.015in [0.4mm]	
IsoCut CBN - Fe, Co, Ni based alloys and superalloys	11-4263 0.006in [0.15mm]	11-5264 0.012in [0.3mm]	11-5265 0.015in [0.4mm]	11-5266 0.02in [0.5mm]
Cup Grinder for Ceramic & Geological Materials (IsoMet 5000 only)			11-2740	

* All Blades (Except 30HC) come with a Dressing Stick included. The Part Numbers shown in the table can be used for re-ordering the Dressing Sticks.

Recommended Use	7in [178mm]	8in [203mm]	Dressing Stick*
Use with Saws	1000 IsoMet High Speed	IsoMet High Speed Pro only	
IsoMet 30HC - Polymers Rubber, Soft Gummy Materials	11-4241 0.03in [0.76mm]	11-4242 0.035in [0.9mm],	Blade should not be dressed
IsoMet 20HC - Aggressive Sectioning of Metals	11-4237 0.025in [0.6mm]	11-4238 0.035in [0.9mm]	11-1190 11-2490
IsoMet 15HC - Metal Matrix Composite, PCBs, Bone, Ti, TSC	11-4247 0.025in [0.6mm]	11-4248 0.035in [0.9mm]	11-1190 11-2490
IsoMet 20LC - Hard tough Materials, Structural Ceramics	11-4227 0.025in [0.6mm]	11-4228 0.035in [0.9mm]	11-1190 11-2490
IsoMet 15LC - Hard Brittle Materials, Glass, Al ₂ O ₃ , ZrO ₃ , Concrete	11-4277 0.025in [0.6mm]	11-4279 0.045in [1.1mm]	11-1190 11-2490
IsoMet 10LC - Medium to Soft Ceramics, Glass Fiber Reinforced Composites	11-4287 0.02in [0.5mm]	11-4288 0.045in [1.1mm]	11-1290
IsoMet 5LC - Soft, Friable Ceramics, Composites with Fine Reinforcing, CaF ₂ , MgF ₂ , Carbon Composites			11-1290
IsoCut CBN - Fe, Co, Ni based alloys and superalloys	11-5267 0.025in [0.6mm]	11-5268 0.035in [0.9mm]	11-1190 11-2490
Cup Grinder for Ceramic & Geological Materials (IsoMet 5000 only)			

* All Blades (Except 30HC) come with a Dressing Stick included. The Part Numbers shown in the table can be used for re-ordering the Dressing Sticks.



Precision Cutter Consumables



AcuThin™ Abrasive Blades for IsoMet™ Precision Cutters, 0.5in [12.7mm] Arbor (Qty 10)

[Blade Thickness is listed under Part Number]

Recommended Use	5in [127mm]	7in [178mm]	150mm	200mm
Use with Saws	IsoMet High Speed	IsoMet High Speed	IsoMet High Speed	IsoMet High Speed Pro Only
Tool Steel, hard steel, HRC45 & Up	10-4060-010 0.019in [0.48mm]			
Medium hard, soft steel, HRC45 & Below	10-4061-010 0.019in [0.48mm]			
Steel, Stainless Steel		11-4207-010 0.030in [0.76mm]		
Hard, soft non-ferrous materials		11-4217-010 0.030in [0.76mm]		
Tough materials and general use			1015998E 1mm	1020998E 1.5mm

IsoCut™ Fluid



Oil based coolant only for use with the IsoMet Low Speed Saw or any saw with a maximum speed of 500rpm

11-1193-032 1qt [0.95L]
11-1193-128 1gal [3.8L]

Glossy



Clear paste for keeping cutter windows clear

109003 2oz [60mL]

ReciClean™



Cleaner for recirculation systems

109004 1.25gal [4.75L]

Cool 3 Fluid



Water miscible fluid concentrate. Dilute coolant to 1:25 to 2:25, with water.

10-6001 33.8oz [1L]
10-6004 1gal [4L]
10-6010 2.6gal [10L]

Dressing Wheel



For IsoMet High Speed and High Speed Pro

11-2655 20 HC, 15HC, 20LC, 15LC, CBN HC, and CBN LC blades

11-2656 10 LC and 5LC blades

Dressing Sticks



11-1190 3 x 0.5 x 0.5in [76 x 13 x 13mm] for 20HC, 15HC, 20LC, 15LC, CBN LC and CBN HC precision blades

11-2490 3 x 1 x 1in [76 x 25 x 25mm] for 20HC, 15HC, 20LC, 15LC, CBN LC and CBN HC precision blades

11-1290 3 x 0.5 x 0.5in [76 x 13 x 13mm] for 10LC and 5LC precision blades