



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.





Abrasive Cutter Vises Accessories

Single Piece Sliding Vises

Speed Clamping Vise



Size: Medium
Part Numbers: Left: 10-3544
 Right: 10-3545
Max Opening: 2.75" [70mm]
Clamping Plate: 3.2" x 1.4"
 [80 x 35mm]
T-Nuts: 12mm or 14mm



Size: Large
Part Numbers: Left: 10-3546
 Right: 10-3547
Max Opening: 7.3" [185mm]
Clamping Plate: 3.1" x 3.5"
 [78 x 89mm]
T-Nuts: 12mm or 14mm

MetKlamp VIII S



Part Numbers: Left: 95-C1821S
 Right: 95-C1822 S
Max Opening: 2.08" [53mm]
Clamping Plate: 1.75" x 2.25"
 [45 x 58mm]
T-Nuts: 12mm

Two Piece Sliding Vises

Sliding Vise Kit



Size: Medium
Part Numbers: Left: 10-3540
 Right: 10-3541
Clamping Plate: 2.36" x 3"
 [60x76 mm]
T-Nuts: 12mm*

Size: Large
Part Numbers: Left: 10-3542
 Right: 10-3543
Clamping Plate: 2.95" x 4.23"
 [74 x 107mm]
T-Nuts: 12mm*
 *14mm conversion kits are available
 Medium: 10-3548
 Large: 10-3549

Specialty Vises

Chain Clamping Kit



Application: For clamping very large or irregularly shaped samples
Part Number: 46-0030

Fastener Vise



Application: For longitudinal sectioning of fasteners. Must be held with either Single Piece (recommended) or Two Piece Left Hand Sliding Vise.
Max Opening: 1.6" [40.6mm]
Part Number: 95-C1702

Vertical Clamping Vises

Vertical Clamping Kit



Size: Small
Part Numbers: 10-3531
Clamping Height: 2.3" [58mm]
Reach: 2.1" [54mm]
T-Nuts: 12mm
Size: Large
Part Numbers: 10-3523
Clamping Height: 4" [102mm]
Reach: 2.4" [61mm] + 3.5" [90mm]
 with extension (included)
T-Nuts: 12mm and 14mm

Riser Blocks

Small: 10-3532; 2.4" [60mm]
 Large: 10-3528; 2.9" [74mm]



Vee Block Clamp Kit

T-Nuts: 12mm and 14mm
Part Number: 10-3527



Horizontal Clamp

T-Nuts: 12mm and 14mm
Part Number: 10-3526



Adjustable Vee Blocks

T-Nuts: 12mm and 14mm
Part Number: 10-3525





Abrasive Cutter Consumables



Abrasive Blades

Buehler's Abrasive Blades are designed to provide high quality sectioning results with no burning and minimal surface deformation. This can reduce the amount of grinding & polishing required later in the preparation process.

Efficient Cutting with Extended Life

An abrasive blade wears down during cutting to expose new abrasive particles and maintain efficient cutting. However, too fast of a wear rate leads to shortened blade life. Buehler's blades have been designed to balance this wear rate to maintain efficient cutting while extending blade life.

Resin Bond vs Rubber Bond

Buehler's line of abrasive blades includes both rubber bonded and resin bonded blades. While both provide high quality cutting, there are some differences between them. Rubber bonded blades may be thinner for some applications, but emit a burnt rubber odor while cutting. Resin bonded blades offer similar performance with a reduced odor.

Abrasive Blades Selection, 1.25in [32mm] Arbor (Qty 10)

[Blade Thickness is listed under Part Number] **Rubber Bond** = **Resin Bond** =
SiC Cutting Particle = **Al₂O₃ Cutting Particle** =

| Recommended Use | 10in [254mm] Chop/Linear | 12in [305mm] Chop/Linear | 14in [356mm] Chop/Linear | 16in [406mm] Chop/Linear |
|--|---|--|--|-------------------------------|
| Superalloys, General Steel, Non-Ferrous | 12-4205-010 0.051in [1.3mm] | 12-4405-010 0.055in [1.4mm] 10-31205-010 0.08in [2mm] | 12-4305-010 0.063in [1.6mm] | 10-31605-010 0.125in [3mm] |
| Ferrous materials >HRC60 | 10-4210-010 0.083in [2.1mm] 102509P 0.06in [1.5mm] | 12-4110-010 0.09in [2.3mm] 103009P 0.08in [2mm] 10-31218-010 0.08in [2mm] | 10-4310-010 0.075in [1.9mm] 103509P 0.098in [2.5mm] | 10-31610-010 0.125in [3mm] |
| Ferrous materials HRC50-60 | 10-4212-010 0.083in [2.1mm] 10-31014-010 0.06in [1.5mm] | 10-4412-010 0.105in [2.7mm] 10-31212-010 0.08in [2mm] | 10-4312-010 0.09in [2.3mm] 103509P 0.098in [2.5mm] | 10-31612-010 0.125in [3mm] |
| Ferrous materials HRC35-50 | 10-4216-010 0.083in [2.1mm] 102510P 0.06in [1.5mm] 10-31014-010 0.06in [1.5mm] | 12-4116-010 0.105in [2.7mm] 103010P 0.083in [2.1mm] 10-31218-010 0.08in [2mm] | 12-4305-010 0.063in [1.6mm] 103510P 0.098in [2.5mm] | 10-31616-010 0.125in [3mm] |
| Ferrous materials HRC15-35 | 10-4220-010 0.067in [1.7mm] 102511P 0.06in [1.5mm] | 12-4120-010 0.105in [2.7mm] 103011P 0.079in [2mm] | 12-4305-010 0.063in [1.6mm] 103511P 0.098in [2.5mm] | |
| High Speed Steel, Stainless Steel, Carburized Steel | 102508P 0.063in [1.6mm] | 103008P 0.079in [2mm] | 103508P 0.102in [2.6mm] | |
| Delicate Cutting | 10-4227-010 0.032in [0.8mm] | | | |
| Titanium Alloys, Zirconium Alloys, Ductile Materials | 10-4245-010 0.063in [1.6mm] 102507P 0.06in [1.5mm] | 12-4145-010 0.087in [2.2mm] 103007P 0.079in [2mm] | 10-4345-010 0.063in [1.6mm] 103507P 0.098in [2.5mm] | |
| Non-Ferrous Materials (Aluminum, Copper, Brass), Very Soft Ferrous Materials | 10-4250-010 0.063in [1.6mm] 102512P 0.06in [1.5mm] | 103012P 0.079in [2mm] | 10-4350-010 0.087in [2.2mm] 103512P 0.098in [2.5mm] | 10-31650-010 0.125in [3mm] |



AcuThin™ Blades (Qty 10)



For certain applications, it is important to minimize the amount of damage done to the sample during sectioning. The AcuThin series offers thin blades that have been developed to minimize the area of cutting thus reducing the amount of damage to the sample. These blades utilize a rubber bond and allow for precise, delicate abrasive sectioning with minimal surface damage. [Blade Thickness is listed under Part Number]

| Recommended Use | 9in [230mm] | 10in [254mm] | 12in [305mm] Chop | 14in [356mm] Chop |
|--------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------|
| General Use <HRC45 | 102301 0.032in [0.8mm] | 102501 0.04in [1mm] | 10-4360-010 0.032in [0.8mm] | 10-3501 0.063in [1.6mm] |
| Ferrous Materials >HRC45 | 10-4161-010 0.025in [0.635mm] | 10-4261-010 0.025in [0.635mm] | 10-4361-010 0.025in [0.635mm] | 103502 0.105in [2.7mm] |

Abrasive Blades Selection, 1.25in [32mm] Arbor (Qty 10)

[Blade Thickness is listed under Part Number] Rubber Bond = Resin Bond =
SiC Cutting Particle = Al₂O₃ Cutting Particle =

| Recommended Use | 12in [305mm] Orbital | 14in [356mm] Orbital | 16in [406mm] Orbital | 18in [457mm] Orbital |
|--|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Superalloys, General Steel, Non-Ferrous | 12-4405-010 0.055in [1.4mm] | 12-4305-010 0.063in [1.6mm] | 12-5605-010 0.075in [1.9mm] | 12-5805-010 0.1in [2.5mm] |
| Ferrous materials >HRC60 | 12-4410-010 0.105in [2.7mm] | 12-4310-010 0.105in [2.7mm] | 12-5610-010 0.125in [3mm] | 12-5810-010 0.153in [3.8mm] |
| Ferrous materials HRC50-60 | 12-4410-010 0.105in [2.7mm] | 12-4310-010 0.105in [2.7mm] | 12-5612-010 0.125in [3mm] | 12-5816-010 0.153in [3.8mm] |
| Ferrous materials HRC35-50 | 12-4416-010 0.105in [2.7mm] | 12-4316-010 0.105in [2.7mm] | 12-5616-010 0.125in [3mm] | 12-5816-010 0.153in [3.8mm] |
| Ferrous materials HRC15-35 | 12-4420-010 0.105in [2.7mm] | 12-4320-010 0.087in [2.2mm] | 12-5616-010 0.125in [3mm] | 12-5816-010 0.153in [3.8mm] |
| Titanium Alloys, Zirconium Alloys, Ductile Materials | | | 12-5645-010 0.075in [1.9mm] | |

Diamond & CBN Blades for Abrasive Cutters

[Blade Thickness is listed under Part Number] 1.25in [32mm] Arbor (Qty 1)



| Recommended Use | Blade Type | 10in [250mm] | 12in [300mm] | 14in [350mm] |
|--|------------|-------------------------------|------------------------------|-------------------------------|
| General Use | Diamond | 114610E 0.051in [1.3mm] | | |
| Hard Materials | Diamond | 114810E 0.047in [1.2mm] | 103056 0.055in [1.4mm] | 114814E 0.059in [1.5mm] |
| Ceramic and Petrographic samples | Diamond | 114710E 0.047in [1.2mm] | 103053 0.087in [2.2mm] | 114714E 0.059in [1.5mm] |
| Plastics and Polymers | Diamond | 102557 0.049in [1.25mm] | | |
| General use, hardened steel, HRC55 and Up | CBN | | | 103551 0.079in [2mm] |

Precision Cutter Accessories



IsoMet® High Speed Cutter Accessories

Single Saddle Chuck



Large Single Saddle Chuck holds specimens up to 1.5in [38mm] from 2 point

11-2661

Double Saddle Chuck



Securely holds specimens up to 1.5in [38mm] from 2 points

11-2662

Mount Chuck



Stainless steel chuck holds mounted samples

11-2666 1.25in [30mm]
11-2667 1.5in [40mm]

Fastener Chuck



Holds specimens from 0.04in [1mm] to 2in [50mm] for longitudinal sectioning

11-2687

Large Bone Chuck



Ideal for clamping bone, plastics, or other semi-rigid specimens up to 2in [50mm] in diameter

11-2494

T-Slot Bed



Additional T-slot for positioning vises

11-2707

Sliding Vise



6in [152mm] maximum opening, use requires flange to be 2in [50mm] or less, requires T-slot bed

11-2669

Rapid Rail Post



Use with Rapid Rail

11-2660

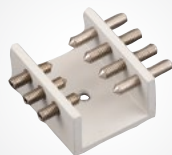
Small Vertical Clamp



Clamps specimens up to 58mm in height

460022

Irregular Specimen Chuck



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

11-1185

Recirculating System 7gal [27L]



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

11-2640

IsoMet® Precision Cutter Flanges

Aluminum Flange Set

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]

Stainless Steel Flange Set

11-2688* 3in [76mm]
11-2689* 4in [102mm]

**Recommended for the IsoMet High Speed*



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

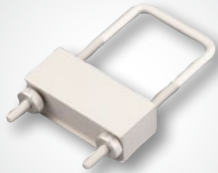
Vacuum Chuck



Holds specimens mounted to glass slides to chuck with vacuum force

11-1188

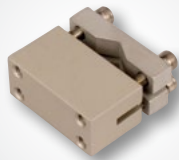
Small Bone Chuck



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

11-1194

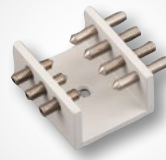
Double Saddle Chuck



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

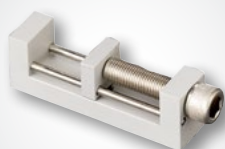
Table Saw Splash Guard



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

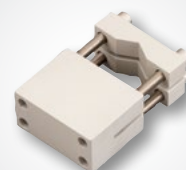
Swivel Arm Accessory



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

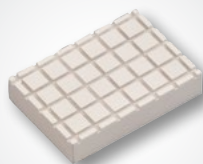
Glass Slide Chuck



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 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 general sectioning of ferrous and non-ferrous materials | | | 11-4215 0.020in [0.5mm] | |
| IsoMet 15HC - Blades for routine use, metal matrix composites, PC boards, bone, titanium, thermal spray coatings | 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, boron nitride, silicon nitride | | | 11-4225 0.02in [0.5mm] | |
| IsoMet 15LC - Hard and brittle materials, structural ceramics, glass, electronic substrates, alumina, zirconia, 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 - Ferrous materials, nickel, cobalt, lead-based alloys and super alloys | 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 | | | 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 general sectioning of ferrous and non-ferrous materials | 11-4237 0.025in [0.6mm] | 11-4238 0.035in [0.9mm] | 11-1190 11-2490 |
| IsoMet 15HC - Blades for routine use, metal matrix composites, PC boards, bone, titanium, thermal spray coatings | 11-4247 0.025in [0.6mm] | 11-4248 0.035in [0.9mm] | 11-1190 11-2490 |
| IsoMet 20LC - Hard tough materials, structural ceramics, boron nitride, silicon nitride | 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 - Ferrous materials, nickel, cobalt, lead-based alloys and super alloys | 11-5267 0.025in [0.6mm] | 11-5268 0.035in [0.9mm] | 11-1190 11-2490 |
| * 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 |
|--|---------------------------------|---------------------------------|-----------------|--------------------|
| 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 |

*IsoMet High Speed Pro Only

Additional Precision Cutting Consumables

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

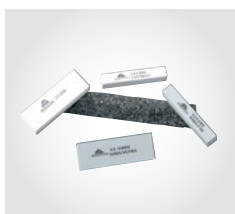


For IsoMet High Speed and High Speed Pro

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