

BUEHLER[®]

Apex[®] System

- *Apex[®] System Family Includes:*
 - *Apex[®] Quick-Change Magnetic System*
 - *Apex[®] MagnoSys*
 - *Apex[®] Diamond Grinding Discs (DGD) & DGD Color*
 - *ApexHercules[™] H & S Rigid Grinding Disc*
 - *Apex[®] Storage Cabinets*
- *Practical Solutions for Your Laboratory!*
 - *Combine Family Components for Ultimate Versatility*



BUEHLER

PRELIMINARY DRAFT


EMERSON
Industrial Automation

Innovative System Approach Offers Practical Solutions

Do you need multiple pieces of silicon carbide papers to planar grind your specimens? Do you need a simple and environmentally friendly way to attach and reattach your grinding surfaces and cloths to a platen? Do you need contamination free storage of your surfaces between uses?

The Apex® System of engineered products solves all these needs!

Apex® M & B Quick Change Magnetic System

- Two component system that can be used on any conventional platen
- Apex M Magnetic Disc is a reusable, long-life magnetic substrate with a pressure sensitive adhesive (PSA) layer to attach directly to the platen
- Apex B Bimetallic Plate multi-layer design is ferromagnetic on the side that attaches to the Apex M and nonmagnetic on the side you attach your cloth or grinding surface to
- Patented Apex B also prevents accumulation of magnetic polishing debris on grinding surfaces
- Eliminates the need for more than one platen
- Makes use and reuse of surfaces as simple as 1-2-3

Apex® MagnoSys

- Economical, convenient quick-change magnetic system for use when magnetic polishing debris is not a concern
- Aluminum platen already equipped with the MagnoFix magnetic disc - no assembly required
- Apex MagnoMet and MagnoPad (Teflon coated) are thin metallic plates for use with any PSA backed cloth or grinding surface
- Use with either the MagnoDisc or the MagnoFix



Left) Apex Quick-Change Magnetic System - Platen (1), Apex M (2), Apex B (3), and Polishing Cloth (4). Right) Apex Quick-Change Magnetic System - Platen (1), Apex M (2), and ApexHercules DGD (3).

Apex® Diamond Grinding Disc (DGD)

- Versatile system works on aluminum, ferrous materials, ceramics, thermal spray coatings, glass, tungsten carbide, cast irons, titanium, superalloys, and more
- Long wear, resin-bonded, fixed abrasive surface provides high removal rates with superb edge retention and flatness
- Durable enough for unmounted specimens
- Choose from 10 micron sizes to cover from initial grind to rough polish
- Just add water and use
- For ordering convenience, available with or without an Apex® MagnoMet
- The consumable of choice for the PowerPro's Zaxis™ Macro Material Removal System

	PSA Backed Magnetic Substrate Available	Magnetic Platen Available	Bimetallic Plate Available	Teflon Coating Available	Available up to 14" (356mm)	Stronger Magnet
Apex® M & B Quick-Change System	X		X		X	X
Apex® MagnoSys	X	X		X		

Comparison between Apex M & B Quick-Change System and Apex MagnoSys



(1) Innovative magnetic-based system includes Apex M (shown mounted to standard platen), (2) ApexHercules H and (3) Apex DGD (shown mounted to Apex B). Provides the strength to hold during grinding/polishing operations, yet releases quickly with the Apex Lift Tool.



Apex Storage Cabinet (19-06-09) for all discs and platens up to 12" (305mm), left. Apex Storage Cabinet (19-06-06) for 8" (203mm) and 10" (254mm) discs and platens, right.

Apex® DGD Color

- Long wear, resin-bonded, fixed abrasive surface provides high removal rates with superb edge retention and flatness
- Bonding characteristics allow these discs to be used on a wide variety of materials, including softer materials such as brass and copper
- Just add water and use
- Color coding helps identify surface
- For ordering convenience, available with or without an Apex® MagnoMet
- Available in the following colors and approximate micron sizes: Red (75), Purple (55), Yellow (35), White (15) and Blue (8)
- The consumable of choice for the PowerPro's Zaxis™ Macro Material Removal System

ApexHercules™ H & S Rigid Grinding Discs

- Improves efficiency by reducing processing steps
- Use with MetaDi® and MetaDi® Supreme Diamond Suspensions
- Superb specimen flatness and edge retention
- Attaches to Apex M, MagnoDisc or MagnoFix directly
- Long life - up to 200 sample holders
- Corrosion resistant

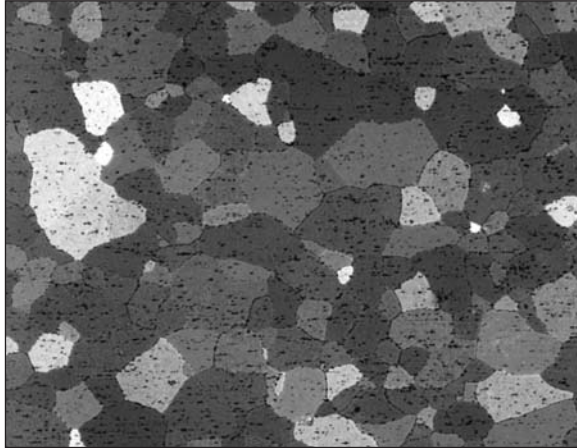
Apex® Storage Cabinets

- Secure and organize your surfaces and platens
- Lockable
- Sturdy plastic construction
- 6 storage slots (4 additional available on 19-06-09)

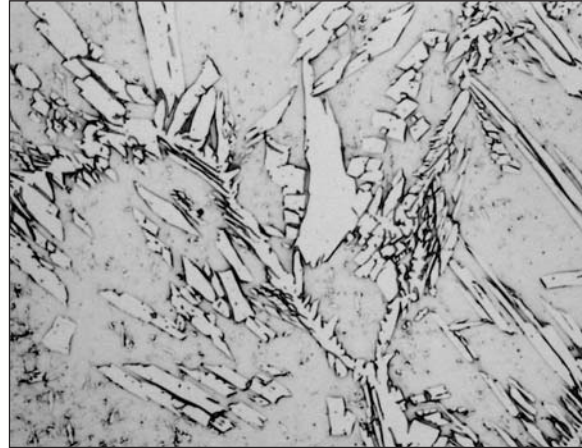
Think of all the possibilities...because we have a million of them™.

	Fixed Diamond Abrasive	With & Without MagnoMet	10 Sizes Available	Suitable for Unmounted Specimens	Color Coded	Best for Soft Materials	Just Add Water	Available up to 14" (356mm)
Apex® Diamond Grinding Discs (DGD)	X	X	X	X			X	
Apex® DGD Color	X	X		X	X	X	X	X

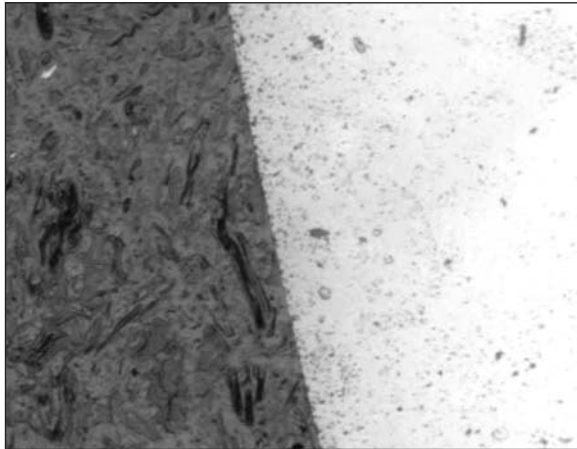
Comparison between Apex® Diamond Grinding Discs (DGD) and Apex® DGD Color



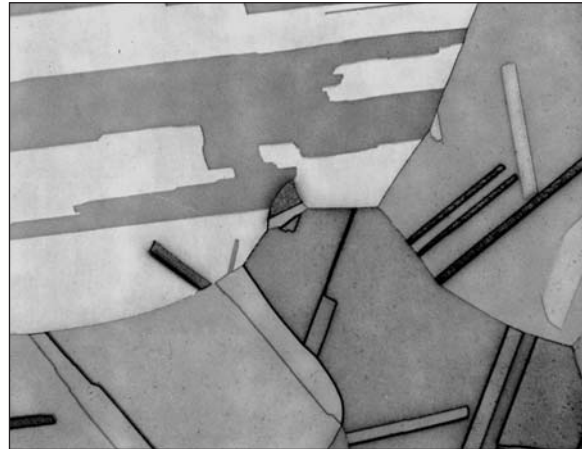
Al 6005 Specimen etched with Barker's Reagent and prepared using: Apex DGD 30 μ m, Apex DGD 6 μ m, Apex DGD 3 μ m and MicroCloth[®] with MasterPrep[®]. 5X.



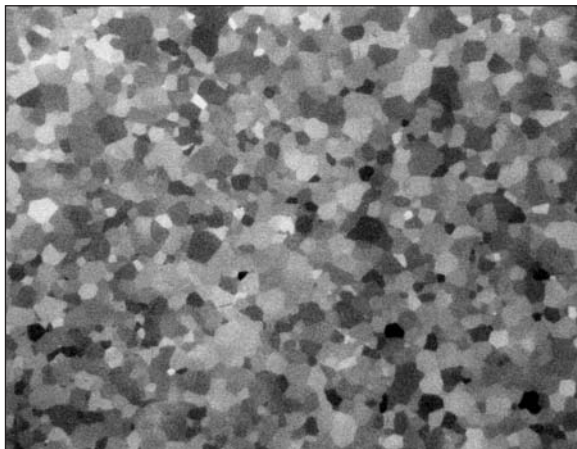
Duplex Stainless Steel, etched with Groesbeck's Reagent and prepared using: Apex DGD 30 μ m, Apex DGD 6 μ m, Apex DGD 3 μ m, and ChemoMet[®] with MasterPrep[®]. 50X.



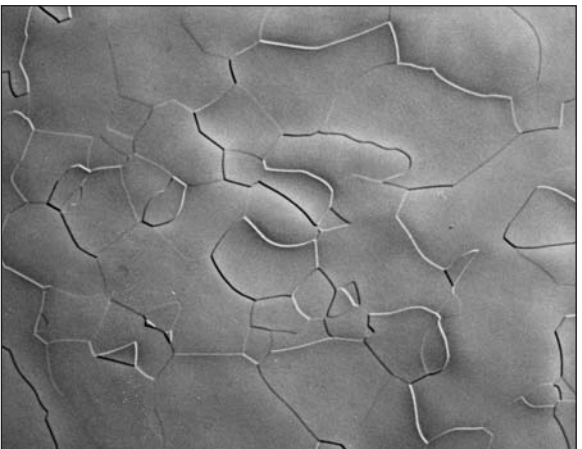
Flat and damage free ceramic specimen prepared using: Apex DGD 40 μ m, Apex DGD 9 μ m, Apex DGD 6 μ m, Apex DGD 3 μ m, and TexMet[®] 1000 with MasterMet[®]. 200X.



Cu 99.99%, prepared using: Apex DGD Color Yellow, UltraPol[™] with 6 μ m MetaDf[®] Supreme, TexMet[®] 1500 with 3 μ m MetaDi Supreme, TexMet 1500 with 1 μ m MetaDi Supreme and ChemoMet[®] with MasterPrep[®], etched with Waterbury-Stacks solution, 50X.



Ti 99.999% prepared using: Apex DGD Color Yellow, UltraPol[™] with 9 μ m MetaDf[®] Supreme, and MicroCloth[®] with MasterMet[®], as polished, viewed with polarized light, 200X.



Ta 99.99% prepared using: Apex DGD Color Yellow, UltraPol[™] with 9 μ m MetaDf[®] Supreme, TexMet[®] 1500 with 3 μ m MetaDf[®] Supreme, and ChemoMet[®] with MasterMet[®], etched with 560mL HF, 10 mL HNO₃, 50 mL wter, 100X.

Apex Quick-Change Magnetic System

Recommended purchase: 1 Apex M Disc per platen and as many Apex B Plates as needed for your laboratory cloths and grinding surfaces.

Apex M Discs - PSA

Type	Size	Catalog Number
Magnetic Disc	8" (203mm)	41-2739-608-001
Magnetic Disc	10" (254mm)	41-2739-610-001
Magnetic Disc	12" (305mm)	41-2739-612-001
Magnetic Disc	14" (356mm)	41-2739-614-001

Includes one Apex Lift Tool

Apex B Plates

Type	Size	Catalog Number
Bimetallic Plate	8" (203mm)	41-2739-208-001
Bimetallic Plate	10" (254mm)	41-2739-210-001
Bimetallic Plate	12" (305mm)	41-2739-212-001
Bimetallic Plate	14" (356mm)	41-2739-214-001

Apex MagnoSys

Type	Size	Catalog Number
Apex MagnoDisc - Aluminum Platen with MagnoFix Installed	8" (203mm)	162071
	10" (254mm)	162571
	12" (305mm)	163071
Apex MagnoFix - PSA Backed Magnetic Disc	8" (203mm)	162070
	10" (254mm)	162570
	12" (305mm)	163070
Apex MagnoMet Metallic Plate	8" (203mm)	162072
	10" (254mm)	162572
	12" (305mm)	163072
Apex MagnoPad Teflon Coated Metallic Plate	8" (203mm)	162073
	10" (254mm)	162573
	12" (305mm)	163073

Apex Diamond Grinding Discs (DGD)

Micron	8" (203mm)	10" (254mm)	12" (305mm)
165 micron	41-5008	41-5010	41-5012
125 micron	41-5108	41-5110	41-5112
70 micron	41-5208	41-5210	41-5212
45 micron	41-5308	41-5310	41-5312
30 micron	41-5408	41-5410	41-5412
15 micron	41-5508	41-5510	41-5512
9 micron	41-5608	41-5610	41-5612
6 micron	41-5708	41-5710	41-5712
3 micron	41-5808	41-5810	41-5812
0.5 micron	41-5908	41-5910	41-5912

Apex Diamond Grinding Discs, with 1 Apex MagnoMet included

Micron	8" (203mm)	10" (254mm)	12" (305mm)
165 micron	41-6008	41-6010	41-6012
125 micron	41-6108	41-6110	41-6112
70 micron	41-6208	41-6210	41-6212
45 micron	41-6308	41-6310	41-6312
30 micron	41-6408	41-6410	41-6412
15 micron	41-6508	41-6510	41-6512
9 micron	41-6608	41-6610	41-6612
6 micron	41-6708	41-6710	41-6712
3 micron	41-6808	41-6810	41-6812
0.5 micron	41-6908	41-6910	41-6912

Apex DGD Color

Color	8" (203mm)	10" (254mm)	12" (305mm)	14" (356mm)
Red	41-3508	41-3510	41-3512	41-3514
Purple	41-3608	41-3610	41-3612	41-3614
Yellow	41-3708	41-3710	41-3712	41-3714
White	41-3808	41-3810	41-3812	41-3814
Blue	41-3908	41-3910	41-3912	41-3914

Apex DGD Color, with 1 Apex MagnoMet included

Color	8" (203mm)	10" (254mm)	12" (305mm)	14" (356mm)
Red	41-4508	41-4510	41-4512	41-4514*
Purple	41-4608	41-4610	41-4612	41-4614*
Yellow	41-4708	41-4710	41-4712	41-4714*
White	41-4808	41-4810	41-4812	41-4814*
Blue	41-4908	41-4910	41-4912	41-4914*

* Includes an Apex B instead of an Apex MagnoMet

ApexHercules H & S Rigid Grinding Discs

Type	Size	Catalog Number
ApexHercules H (for materials ≥ 20HRC, 236HV)	8" (203mm)	41-2740-308-001
ApexHercules H	10" (254mm)	41-2740-310-001
ApexHercules H	12" (305mm)	41-2740-312-001
ApexHercules H	14" (356mm)	41-2710-314-001
ApexHercules S (for materials < 20HRC, 236HV)	8" (203mm)	41-2740-408-001
ApexHercules S	10" (254mm)	41-2740-410-001
ApexHercules S	12" (305mm)	41-2740-412-001
ApexHercules S	14" (356mm)	41-2740-414-001

Apex Storage Cabinets

19-06-06 Apex Storage Cabinets for 8" (203mm) and 10" (254mm) discs and platens (Exterior dimensions 11³/₄" x 12³/₄" x 12¹/₁₆" (W x H x D) or 298mm x 325mm x 370mm)

19-06-09 Apex Storage Cabinets for all discs and platens up to 12" (305mm) (Exterior dimensions 13³/₁₆" x 12¹/₈" x 13" (W x H x D) or 335mm x 320mm x 320mm)

19-06-10 Four additional shelves for 19-06-09

Additional Accessories

BuehlerVanguard Platen, required for use with Apex M & B Quick Change Magnetic System63-1008

Apex Lift Tool, Extra1330S50

Buehler continuously makes product improvements; therefore, technical specifications are subject to change without notice.

For a complete listing of Buehler equipment and consumables, please refer to our Buehler Consumables and Equipment Buyer's Guide.

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*For metallurgical equipment produced by BUEHLER LTD. USA

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