

BUEHLER® Apex® System

- Apex® M & B Quick-Change Magnetic System *Allows Hassle Free Application and Reuse of any PSA Backed Cloth, Paper or Magnetic Backed Consumable*
- Apex® Diamond Grinding Discs (DGD) *Provide Long Wear, Fixed Abrasive Surface. Excellent for Hard Materials, Ferrous Metals, Aluminum, Ceramics, Glass, Thermal Spray Coatings and More*
- ApexHercules® Rigid Grinding Discs *Along with an Applied Abrasive Offer Superb Edge Retention and Flatness*
- Apex® Storage Cabinets *protect other Apex System Components, Cloths, and Papers From Contamination*



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 a contamination free storage of your surfaces between uses?

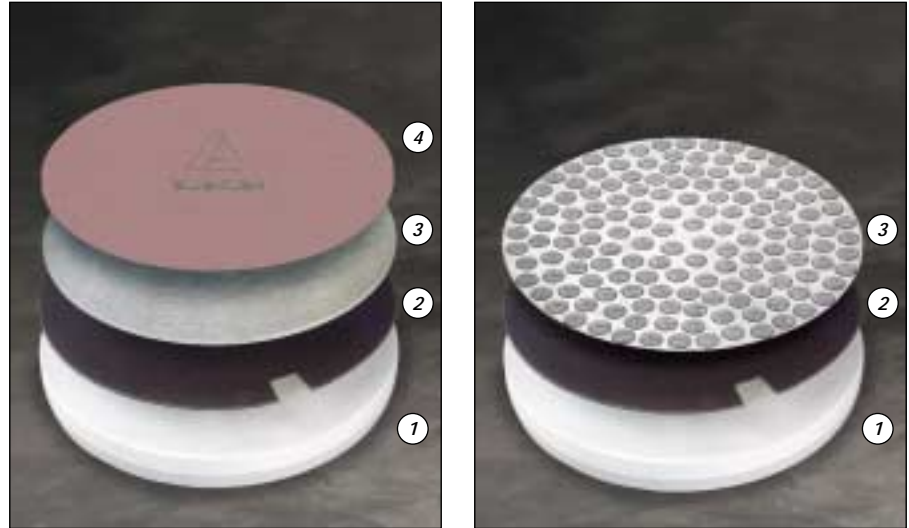
The Apex® System of engineered products solves all these needs!

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 to which you attach your cloth or grinding surface
- The 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

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 directly



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).

- Long life - up to 200 sample holders
- Corrosion resistant

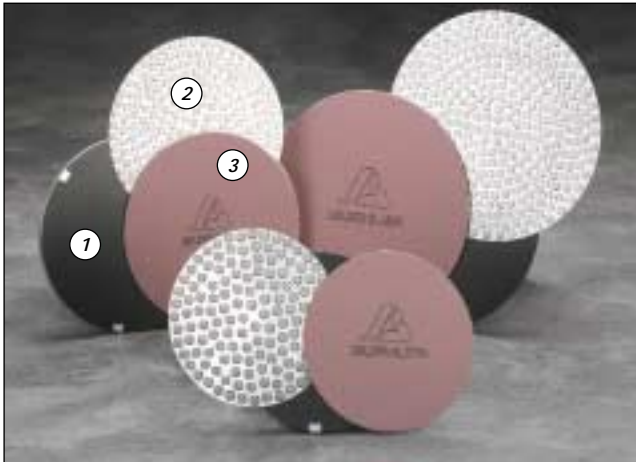
Apex® Diamond Grinding Disc (DGD)

- Use with Apex M & B Quick Change Magnetic System
- Versatile system works on aluminum, ferrous materials, ceramics, thermal spray coatings, glass, tungsten carbide, cast irons, titanium, superalloys, and more
- Long wear, fixed abrasive 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 to use

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™.



(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" (300mm), left. Apex Storage Cabinet (19-06-06) for 8" (200mm) and 10" (250mm) discs and platens, right.

Methods for Apex DGD Discs

Aluminum

(for 1¼" (32mm) specimens. Adjust force slightly to specimen size)

Surface	Time	Force	RPM	Direction
Apex DGD 30 micron	3:00	5lbs.	240-300	Contra
Apex DGD 6 micron	3:00	5lbs.	240-300	Contra
Apex DGD 3 micron	3:00	5lbs.	240-300	Contra
MicroCloth® with MasterPrep™	2:00	6lbs.	120-150	Contra

Contra = Platen and specimen holder rotate in opposite directions

Cast Iron

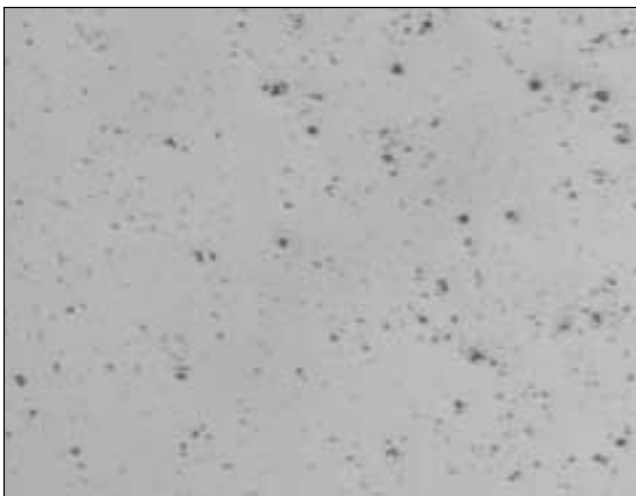
(for 1¼" (32mm) specimens. Adjust force slightly to specimen size)

Surface	Time	Force	Platen Speed RPM	Direction	Head Speed RPM*
Apex DGD 30 micron	3:00	5lbs.	300	Contra	120
Apex DGD 6 micron	3:00	5lbs.	300	Contra	120
Apex DGD 3 micron	3:00	5lbs.	300	Contra	120
ChemoMet® with MasterPrep™	2:00	4lbs.	120	Comp	60

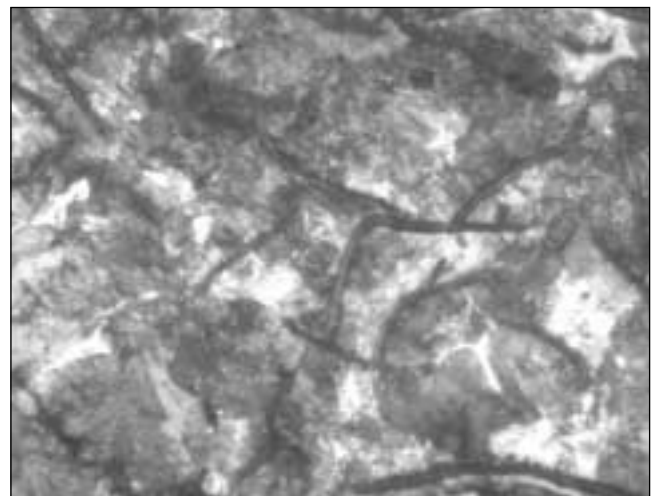
Contra = Platen and specimen holder rotate in opposite directions

Comp = Complementary (platen and specimen holder both rotate in the same direction)

* For grinder/polishers without variable speed heads adjust times if needed.



Aluminum Specimen, 100X



Unmounted cast iron specimen prepared on BuehlerVanguard™ 2000 Fully Automatic Preparation System, etched with 2% Nital, 50X.

Methods for Apex DGD Discs

Medium Steel

(for 1¼" (32mm) specimens. Adjust force slightly to specimen size)

Surface	Time	Force	Platen Speed RPM	Direction
Apex DGD 30 micron	5:00	6lbs.	300	Contra
Apex DGD 6 micron	5:00	6lbs.	300	Contra
Apex DGD 3 micron	3:00	6lbs.	300	Contra
ChemoMet® with MasterMet®	2:00	6lbs.	150	Contra

Contra = Platen and specimen holder rotate in opposite directions

Ceramic

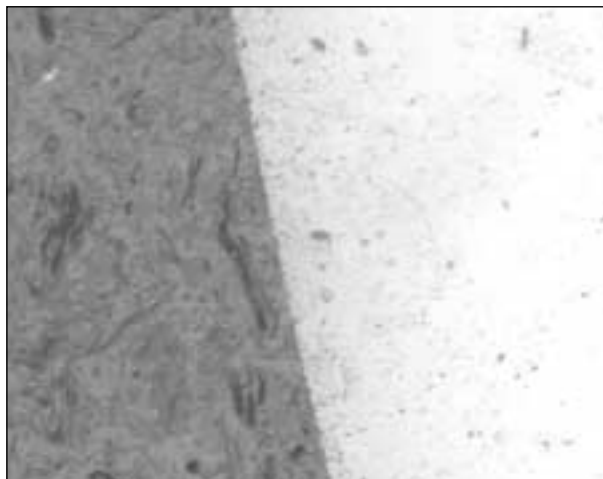
(for 1¼" (32mm) specimens. Adjust force slightly to specimen size)

Surface	Time	Force	Platen Speed RPM	Direction
Apex DGD 40 micron	3:00	5lbs.	300	Contra
Apex DGD 9 micron	3:00	5lbs.	300	Contra
Apex DGD 6 micron	3:00	5lbs.	300	Contra
Apex DGD 3 micron	3:00	5lbs.	300	Contra
TexMet® with MasterMet®	4:00	10lbs.	150	Contra

Contra = Platen and specimen holder rotate in opposite directions



Medium Carbon Steel Approximately 500X. Prepared on EcoMet® 3/
AutoMet® 2



Dense Ceramic Specimen. Approximately 200X. Prepared on
EcoMet® 3/AutoMet® 2. Mounted in PhenoCure™, 1.25".

Apex Diamond Grinding Discs

	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 Quick-Change Magnetic System

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

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

Additional Accessories

BuehlerVanguard Platen, for use with Apex M & B Quick Change Magnetic System63-1008
 Apex Lift Tool, Extra1330S50

For a complete listing of consumables, please refer to our Consumables Buyer's Guide. Buehler continuously makes product improvements; therefore, technical specifications are subject to change without notice.



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