

Kemet

MATERIALOGRAPHIC EQUIPMENT & CONSUMABLES FOR SAMPLE PREPARATION



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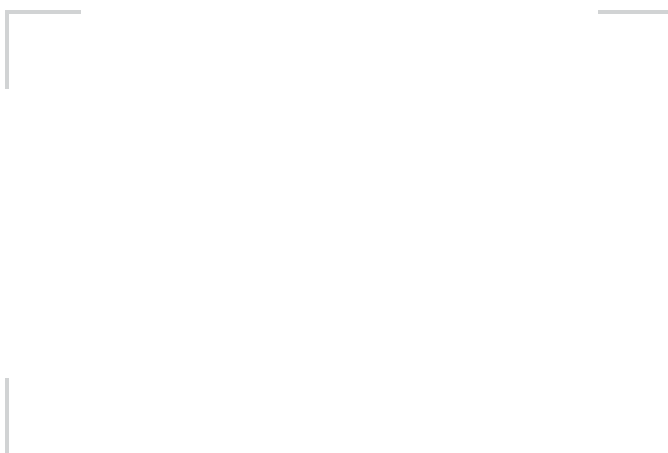
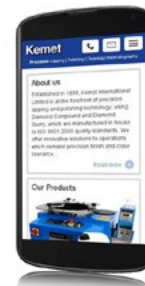
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Kemet Materialographic

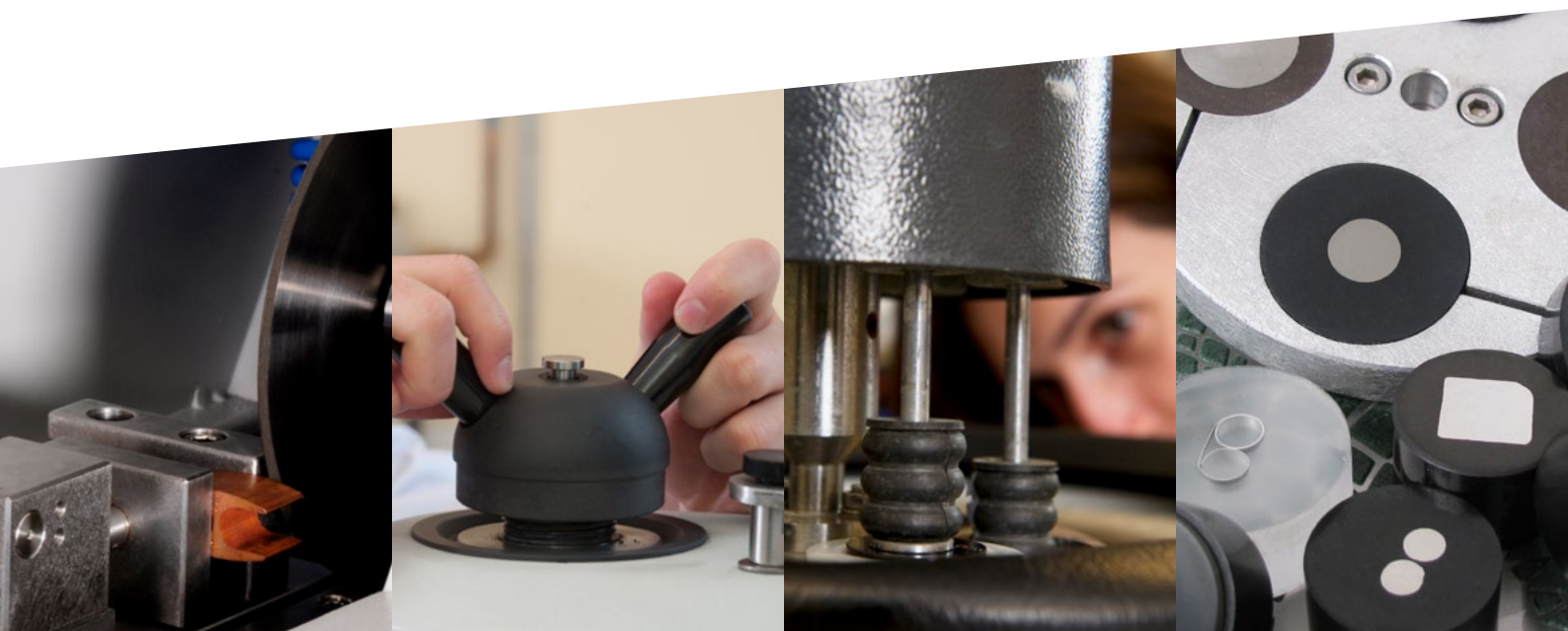
A photograph of a brick building with the 'Kemet INTERNATIONAL LTD' logo mounted on its side. The logo features the word 'Kemet' in a large, blue, sans-serif font, with 'INTERNATIONAL LTD' in a smaller, black, sans-serif font below it. The building is set against a clear blue sky.

Kemet
INTERNATIONAL LTD

Since 1938, Kemet has been at the forefront of diamond abrasive technology, producing quality diamond pastes and suspensions in our purpose built laboratories. ISO 9001:2015 qualified, these products have become the preferred choice for metallurgists and now form a cornerstone to Kemet's well established metallographic sample preparation programme.

In short, Kemet offer a one stop shop for all your cutting, mounting, grinding and polishing requirements at highly affordable prices. A comprehensive range of consumables, supplied from stock, is supported by a price competitive range of sample preparation equipment incorporating the latest features.

Now a truly international organisation, Kemet's activities span the world, spearheaded by our companies in nine countries, all sharing the same commitment to customer support. This, along with more than 80 years' experience in process development, means Kemet can provide you with a complete metallographic and spectrographic sample preparation system tailored exactly to your needs.



Machines & Equipment

Metacut - Abrasive Cut-Off Machine



The Metacut 302 is ideal for preparing metallographic samples, offering efficient, versatile and high-quality cutting.

The machine is designed for wet cutting of large and small, regularly or irregularly shaped workpieces of metallic, ceramic or composite materials.

- Compact and powerful
- Easy and quick operation
- Designed for cutting large and irregular workpieces
- Manually controlled cutting lever
- Maximum safety with electronic brake and interlocking safety device
- Stainless steel cutting bed

A table top, high quality cutting machine suitable for 250mm and 300mm cut off wheels with the capacity to cut solid sections up to 115mm in diameter.

The machine is equipped with a powerful motor, driving the cut-off wheel. The base of the machine is a robust casting and the cutting table is provided with T-Slots so that different clamping sets can be mounted, increasing the versatility. The extra-large cutting chamber and table enables easy clamping of the specimens to be cut, while the side access port permits the sectioning of extra-long workpieces. The quick-clamping devices are easily removable, permitting the installation of conventional clamping tools to hold larger or more intricate workpieces.

The complete system is enclosed in a protective hood with a large shatter proof window and the cutting chamber illuminated with a powerful internal LED light to enable safe observation of the cutting process.

Model	Metacut 302
Cutting Power kW (S1)	3
Cutting Power kW (S3)	4.6
Wheel Speed (rpm)	2800
Operation	Manual
Wheel Diameter (mm)	Ø250 / Ø300
Cutting Capacity, σ (mm)	Ø90 / Ø115
Cutting Capacity, # (mm)	50 x 165 (Ø250)
	50 x 195 (Ø300)
T-Slot table dimension, WxD (mm)	255 x 250
T-Slot dimension (mm)	12
Size, WxDxH (cm)	58 x 68 x 49
Weight (kg)	132
Cooling Unit (l)	60
Voltage	400V-3phase-50Hz



Many sample preparations applications require the sectioning of a specimen from a small or irregularly shaped sample or component part which can create positioning and clamping difficulties. To overcome these, Kemet has a number of special clamping devices, all made from stainless steel, which can be attached to the T-slot bed in seconds for fast and positive clamping in virtually any configuration.

Servocut - Abrasive Cut-Off Machines

The all new Servocut range of machines offer different cutting techniques and methods in the same machine to obtain superior cut surfaces for a broad range of heavy duty cutting applications.

The feed table has a long travel depth making the Servocut machines ideal for cutting long or deep samples in a single pass.

A sliding door provides excellent health and safety benefits while a side access port makes it possible to make transverse sections on long core samples and a stainless steel tray catches small specimens. The precision cutting of this machine can eliminate the need for grinding before lapping the specimen.

A standard 80 mm diameter outlet for fume extraction is at the back of the hood.

The Servocut machines have X-Y-Z triple axes cutting capability:

- Z-axis Chop cutting: The specimen is clamped and the cut-off wheel approaches the specimen.
- Y-axis Table-feed cutting: Feeding the clamped specimen into a rotating cut-off wheel using a T-slotted feed table.
- X-axis Parallel Cutting (optional): Parallel serial sectioning in the x-axis with optional movable x-bed.



Servocut Models	302-AA	302-MM	402-AA	402-MM	502	502-AX	602	602-AX
Max. Wheel Diameter (mm)	Ø300	Ø300	Ø400	Ø400	Ø500	Ø500	Ø600	Ø600
Max. Cutting Capacity (mm)	Ø110	Ø110	Ø150	Ø150	Ø180	Ø180	Ø225	Ø225
Max. Cutting Capacity, HxD (mm)	70 x 200	70 x 200	85 x 350	85 x 350	100 x 400	100 x 400	100 x 500	100 x 500
Z-Axis Travel (mm)	125	125	255	255	350	350	340	340
Y-Axis Travel (mm)	220	220	300	300	380	380	560	560
X-Axis Travel (mm) *	-	-	-	-	-	200	-	540
T-Table Dimension (mm)	495 x 275	495 x 275	550 x 484	550 x 484	764 x 608	(634+200)x608	772 x 710	772 x 710
T-Slot Dimension (mm)	12	12	12	12	12	12	18	18
Cutting Motor Power (S1) (Kw)	4	4	7.5	7.5	11	11	15	15
Wheel Speed (rpm)	600 - 4000	2800	600 - 2400	2200	600 - 2400	600 - 2400	600 - 2400	600 - 2400
Cutting Feedrate (µm/s)	20 - 5000	-	20-5000	-	20 - 5000	20 - 5000	20 - 5000	20 - 5000
HMI Touch Screen	7 inch	-	7 inch	-	7 inch	7 inch	10 inch	10 inch
Chop Cutting, Z-Axis	Auto	Manual	Auto	Manual	Auto	Auto	Auto	Auto
Table Feed Cutting, Y-Axis	Auto	Manual	Auto	Manual	Auto	Auto	Auto	Auto
Parallel Cutting, X-Axis *	-	-	-	-	-	Standard	-	Standard
Multi Target Cutting **	-	-	-	-	-	-	-	Standard
Table Oscillating Cutting	Standard	-	Standard	-	Standard	Standard	Standard	Standard
Rapid Pulse Cutting	Standard	-	Standard	-	Standard	Standard	Standard	Standard
Smart Feed Control	Standard	-	Standard	-	Standard	Standard	Standard	Standard
Step Cut; Segment Cut; Diagonal Cut ***	Optional	-	Optional	-	Optional	Optional	Optional	Optional
Automatic Cleaning System	-	-	Optional	-	Optional	Optional	Optional	Optional
Central Lubricating System	-	-	-	-	-	-	Optional	Optional
Size WxDxH (cm)	94x99x76	94x99x76	114x112x169	114x112x169	140x134x185	140x134x185	184x173x236	184x173x236
Weight (kg)	250	250	600	600	1100	1100	1600	1600
Recirculation Cooling Unit (l)	80	80	135	135	150	150	200	200
Voltage	400V-3phase-50Hz							

* Automatic Parallel cutting available for 302 and 402 machine models -AA-AX and -MA-AX

** 'Multi Target Cutting' for cutting up to 10 different clamped specimens on the table to be cut automatically in one cycle.

*** Optional cutting methods for heavy-duty cutting applications. **Diagonal Cut:** For increased cutting capacity. **Step Cut:** For extra hard materials. **Segment Cut:** For difficult and complex shaped materials.

Micracut - Precision Cutters



A precisely manufactured, heavy duty, aluminium frame provides a stable and low vibration base for precision fabricated components and linear bearings.

The larger of the two models, the **Micracut 202**, has a powerful motor with variable cut-off wheel speeds (300 - 4,000 rpm) enabling high and low speed cutting, and with a simple adjustment to the cutting table, it can handle larger and deeper samples. A wide variety of clamping tools and accessories are available for different specimen geometry and applications.

- Fully enclosed cutting compartment
- Transparent hood with interlocking safety switch
- T-slotted, moving table accommodates wide range of clamping tools
- Adjustable cut-off wheel (Z-axis) height up to 45 mm
- Suitable for diamond, CBN and abrasive cut-off wheels up to 200 mm diameter
- Variety of flange sets available to maximise cutting capacity or cutting wheel support
- Sliding door for superior health and safety benefits

The Micracut machines are designed to minimise structural deformation during the cutting operation and maintain the structural integrity of the sample, so that the cut surface is ready for microscopic examination with minimal polishing.

Capable of handling a wide variety of materials, low kerf-loss and sample holding versatility also makes the Micracut machines an essential part of the modern day laboratory.

	Model	Micracut 152	Micracut 202	Micracut 202-AX
Disc Dia. (mm)		150	200	200
Cutting Capacity (mm)	Ø	50	75	75
	#	-	50 x 175	50 x 175
Positioning Range (mm)	X-Axis	25	-	60
	Y-Axis	-	210	210
	Z-Axis	-	45	45
Table Feed Speed, (µm/s)			5 - 5000	5 - 5000
Table dimensions (mm)		-	365 x 205	(305+60) x 205 mm
T-Slot dimensions (mm)		-	12	12
Thin Section Grinding Feature		-	Yes	Yes
Rotary Clamping Device		-	Yes	Yes
Pulse Cutting		-	Yes	Yes
Automatic Feedrate		-	Yes	Yes
Cutting Motor Power (S1)		100 W	1.1 kW	1.1 kW
Disc Speed (RPM)		0 - 1000	300 - 4000	300 - 4000
Cooling Unit (l)		1	9	9
Joystick		-	Yes (2 axes)	Yes (3 axes)
HMI Touch Screen		-	7"	7"
Program Capacity		-	99	99
Laser		-	Yes *	Yes *
Dressing During Cutting Operation		-	Yes *	Yes *
Motor Drive System		-	Direct Drive	Direct Drive
Dimensions, WxDxH (mm)		510 x 430 x 340	738 x 750 x 636	738 x 750 x 636
Weight (kg)		28	150	150
Voltage		230V-1phase-50Hz		

* Optional feature



New cutting features for the Micracut 202 include the 'Instafeed', which optimises the feedrate according to the specimen hardness and the preset cutting force. It increases the cut off wheel life and ensures optimum cutting without overloading. The 'Rapid Pulse' feature reduces the contact time and ensures maximum cooling of specimen.

Ecopress - Automatic Hot Mounting Presses

The **Ecopress 102 and 202** are high capacity, state of the art, automatic mounting presses with advanced software and programmable coloured HMI screens.

Able to handle small or odd shaped specimens, fragile materials, thin layers or coatings during preparation, as well as provide good edge retention, the Ecopress produces specimens of uniform size for easier handling in automatic holders for further preparation steps.

Robust bayonet closure allows for easy, quick and safe operation and a wide selection of mould assemblies, from 25 to 50 mm dia are available, all with an intermediate ram, enabling two mounts per cylinder to be produced simultaneously.

All Ecopress models have electrohydraulic operation, so no requirement for compressed air. The sample is ejected quickly and smoothly, with all the hydraulic components safely housed inside the casing.

The **Ecopress 102 and 202** have capacity to store up to 99 operator-created programs.

The **Ecopress 52** is a fully automatic, cost effective, digital mounting press, suitable for all hot mounting materials currently used in materialography. A user friendly touch pad controls the setting of mounting parameters providing high productivity with last parameter settings being retained in the memory.



MOUNTING



Models	Ecopress 52	Ecopress 102	Ecopress 202
Number of moulds	1	1	2
Max Pressure (bar)	300	300	300
Max. Temperature (°C)	200	200	200
Heating Power (W)	1650	1650	2 x 1650
Water & Slow Cooling	Yes	Yes	Yes
Operation	Automatic / Hydraulic	Programmable / Hydraulic	Programmable / Hydraulic
Display	Digital Display	7" HMI touch screen	7" HMI touch screen
Mould Assembly (mm)*	25 - 50	25 - 50	25 - 50
Size (mm)	360 x 550 x 480	360 x 550 x 480	490 x 550 x 480
Weight (kg)	37	38	54
Voltage	230V-1phase-50Hz		

* Chamfered moulds available for easier grinding and polishing of samples

Vacuum Impregnation Units

Most mineralogical specimen have porosities, cavities and cracks and therefore need to be embedded under vacuum. Designed for embedding and impregnation of porous materials, these units remove the trapped air from the mounting material and eliminate any gaps between the specimen and resin.

- Self contained vacuum impregnation unit with gauge
- Incorporated vacuum pump and control circuit
- Compact and simple to use
- Efficient Impregnation
- Multi-specimen application
- Vacuum gauge

Model	Type	Code
KemVac	No compressed air supply required, Electrical: 220V-1 Phase-50Hz	345827
Vacumet 52	Compressed air supply required	345173



Forcipol - Polishing and Grinding Machine

Whether for multiple sample preparation or individual components, the Forcipol family of instruments will meet all your requirements. Available as single and dual (200/250/300mm dia) wheel units. There are water inlet and flexible water outlets with control valves for wet grinding.



The Forcipol Control Unit (shown left on the Forcipol 202) controls the wheel speed, cycle time, motor and water on/off functions (set in seconds). The speed and cycle time are digitally displayed and can be changed during operation. The last parameter settings are always retained in the memory.

Models	Forcipol 102	Forcipol 202
No. Of Stations	1	2
Motor Power (HP)	1	1
Disc Speed (rpm)	50 - 600	50 - 600
Disk Diameter (mm)	Ø200 / 250 / 300	Ø200 / 250 / 300
Dimensions (mm)	450 x 740 x 340	870 x 740 x 340
Weight (kg)	40	45
Product Code	345130	345100
Voltage	230V-1phase-50Hz	

Forcimat - Automatic Head units for Forcipol

Mounted on the rigid post fixed to the base of all the Forcipol machines, the Forcimat Automatic Heads can prepare 6 samples simultaneously. The sample holder is easily positioned with a quick-locking clamping mechanism.

The Forcimat 102 is operated with a HMI touch screen and the Forcimat 52 with a touchpad to adjust the pneumatic force applied to individual specimens from 5N (1.1 lb.) to 60N (13.5 lb.). The Forcimat 102 can apply both "Central" and/or "Individual" forces. Optional encoder allows you to measure the amount of material removed from the surface.

Once the samples are in place, the dosing level, force, cycle time, wheel speed and direction can be set. Both the Forcimat and Forcipol operate simultaneously when the start button is pressed. Upon completion of the cycle, both instruments stop, an audible signal notifying the operator.



Forcimat 102



Forcimat 52

Specimen Holders & Accessories	
Size	Code
6 x Ø40 mm	345127
3 x Ø50 mm	345278
Ø145mm, for 6 x Ø25mm or 6 x Ø1" specimen	345235
Ø145mm, for 6 x Ø30mm specimen	345141
Ø145mm, for 3 x 2" specimen	345746
Set of insert rings for 30 mm	345128
Set of insert rings for 25 mm or 1"	345279

Model	Forcimat 52	Forcimat 102
Operation	Semi Automatic	Programmable Automatic
Application of Force	Individual	Individual + Central
Control Panel	Touch Pad Controls	7" HMI Touch Screen
Program Memory	Last Parameters Retained in Memory	30 Programs
Motor Power (Watt)	100	100
Head Speed (rpm)	50 - 150	50 - 150
Individual Force (N)	5 - 60	5 - 60
Central Force (N)	-	30 - 500
Compressed Air	6 bar	6 bar
Dimensions (mm)	260 x 460 x 540	260 x 460 x 540
Weight (kg)	16	16
Voltage	230V-1phase-50Hz	

aKu-Disp Peristaltic Dispenser

The Kemet aKu-Disp is designed to work in conjunction with the Forcipol individually or with the Forcipol/Forcimat combined. The aKu-Disp operates whilst the machine is running to provide accurate metered dosing of abrasive slurry to the grinding / polishing application.

The unit's stirrer function begins to operate as soon as power is switched on and variable speed controls for both the pump and stirrer can be adjusted.

Features

- Easily programmable operation
- Variable speed stirrer and pump controls
- Constant movement of fluid in tubes when on standby to avoid hardening of abrasive
- Can operate as a stand-alone unit
- Auxiliary contact relay for timer integrated control
- Priming function to charge pipe and spray head prior to use
- Optional extras include Forcimat mounting kit, aKu-Disp spray bar holder and additional spray heads
- Voltage: 230V-1phase-50Hz



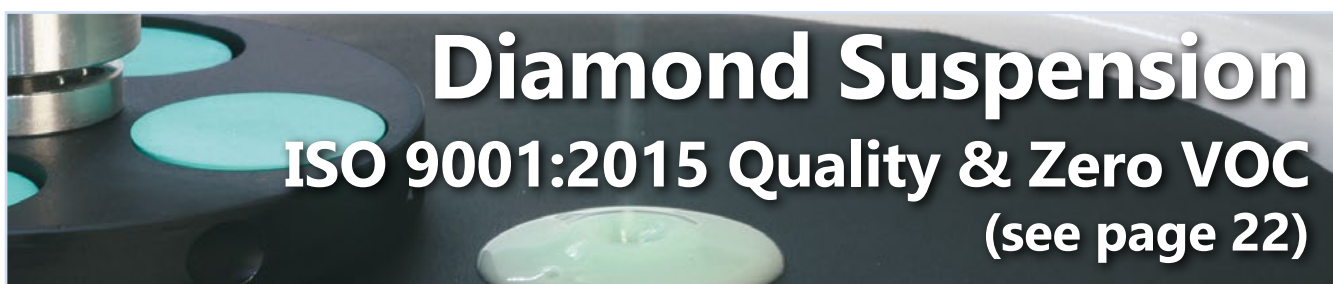
Product	Code
aKu-Disp unit	362820
Integration kit for Forcipol	362828
Integration kit for Forcimat	362825

Eloprep - Electrolytic Polishing & Etching Machine

A fully automatic, electrolytic polishing and etching instrument, the Eloprep features an independent control unit, offering shorter preparation time compared to traditional mechanical preparation.

All preparation parameters can be stored in memory under a specific program number. Each program can be saved for a material specific name such as "Cast Iron, Bronze, Al-Si Alloy, etc." These parameters are entered and stored in the memory and displayed on the coloured LCD screen as preset values.

Model	Eloprep 102
Temperature limiter (°C)	30 - 50
Pump	Magnetic Stirrer
Volume (ml)	1000 (Electrolytic Container) 1200 (External Etching)
Cooling System	Integrated
Mask Dimensions (cm ²)	0 - 0.5 - 1 - 2 - 5
Scanning Function	Automatic
Control Panel	7" HMI Touch Screen
Program Memory	99
Output Voltage / Current	0 - 120 V (Polishing) 0 - 35 V (Etching) 0 - 15 V (External Etching)
Power Supply	230V-1phase-50Hz
Dimensions, WxDxH (mm)	404 x 370 x 305 (Control Unit) 210 x 370 x 305 (Polishing Unit)
Weight (kg)	20 (Control Unit) 5 (Polishing Unit)



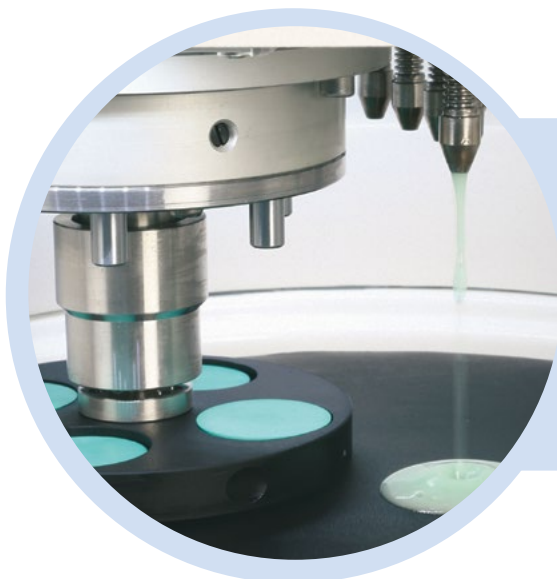
Digiprep Accura - Advanced High End Grinding & Polishing

The Digiprep Accura is ideal for applications requiring extremely flat specimen surfaces, from very coarse grinding to very fine grinding and polishing.

- Suitable for both 250mm and 300 mm applications.
- Pneumatically adjustable central and/or individual force loading system.
- Robust construction on dual columns.
- Motorized positioning of the head in vertical (Z) and horizontal (X) axes with memory function.
- Efficient control of consumable consumption by integrated Peristaltic Dispensing Unit.
- Variable speed (50-750 rpm).
- Combined Z-axis material removal control system.
- Specimen holder equipped with variable speed 50-150 rpm.
- Precise control of the force applied.
- Transparent cover for improved safety and working area.
- Ability to store and recall preparation programs on the LCD screen.
- Cleaning & drying function with single button.
- Powered by a high torque 1.5 HP electric motor.



Model	Digiprep Accura 102
Application of Force	Individual + Central
Individual Force (N)	5 - 100
Central Force (N)	30 - 500
Head Motor Power (W)	100
Base Motor Power (kW)	1.5
Head Speed (rpm)	50 - 150
Wheel Speed (rpm)	50 - 750
Wheel Diameter (mm)	Ø250 / Ø300
Head Rotation Direction	CW / CCW
Wheel Rotation Direction	CW / CCW
HMI Touch Screen (inch)	7"
Program Memory	30
Grinding Depth Measurement (Z-Axis) Accuracy (µm)	10
Horizontal Positioning (mm)	50
Dimensions, WxDxH (mm)	730 x 790 x 730
Weight (kg)	200
Voltage	230V-1phase-50Hz



Automatic Fluid Dispenser, programmable and controllable from the touch screen of the Accura 102, with pre-dosing function. Optional 4 or 6 micro peristaltic pumps with automatic liquid level calculation, with automatic retract function at the end of every step to prevent contamination. (To be ordered simultaneously together with the machine).

Velox 402 - Fully Automatic Programmable Grinding/Polishing System



Model	Velox 402
Stations	4 Grinding/Polishing
Specimen Cleaning	Water + Ethanol
Ultrasonic Cleaning	Optional
Specimen Drying	Hot air dryer
Specimen Holder Type	Central + Individual
Disc Diameter, mm	Ø250 & Ø300
Dosing Unit	8 peristaltic pumps
Coarse Grinding Speed (rpm)	100 - 1200
Fine Grinding/Polishing Speed (rpm)	50 - 600
Base Motor Power (kW)	1.1
Head Speed (rpm)	50 - 150
Head Motor Power (W)	100
Horizontal Movement System	Servo Motor
Individual Force (N)	5 - 70
Central Force (N)	30 - 500
Grinding Depth Measurement Sensor	Yes
HMI Touch Screen	10 inches
Recirculation Cooling System	2 x Enviro (Optional)
Beacon (Warning Light)	Yes, (3 colors)
Dimensions, WxDXH (mm)	2946 x 926 x 1791
Weight (kg)	1350
Voltage	400V-3phase-50Hz

The Velox 402 Automatic programmable grinding and polishing system has four grinding/polishing stations, offering coarse and fine grinding and two polishing stages with the option of 250mm or 300mm diameter wheels. The stations can be independently configured to suit the specific requirement of the abrasives. A vibration free, robust, steel construction ensures extremely flat specimen surfaces.

- Flexible - Stations can be tailored to specific abrasive requirements
- Fully integrated dispensing controlled by touch screen.
- High variable speed grinding station (100-1200 RPM) enables quick planar/course grinding.
- Variable speed fine grinding and polishing stations (50-600 RPM).
- Servo-motor driven head automatically moves smoothly from one station to the next.
- Automatic Head offers “Central” and/or “Individual” specimen force and accommodates single as well multiple sample holders, catering for all levels of sample throughput.
- Built-in encoder to accurately measure the amount of material to be removed from the sample surface.
- Grinding depth can be set for different types of samples.

Forciplan - Manual Planar Grinding Machine



A manual, compact, bench-top pendulum grinder for initial, planar grinding of metallographic specimens, the Forciplan has a simple and reliable design with low noise and dust generation levels. Completely enclosed to contain any dust, the grinding arm is positioned at the front making it easy to handle.

- Interlocking switch for safe operation
- Robust column mounted in taper roller bearings.
- Low noise, 2.2 kW and 2,800 rpm motor
- Easy handling with manual sample swing movement from the front of the machine.
- Precision vertical positioning of the grinding head to an accuracy of 0.01 mm.
- Large working space with LED lamp and outlet for dust extraction.

Technical Details Below

Digiprep Plan - Automatic Planar Coarse Grinder



The Digiprep Plan is designed for first step initial planar grinding of very large specimens, or a high volume of specimens in specimen holders. It is fast and efficient in providing high quality flat specimen surface, saving time on the subsequent fine grinding and polishing steps.

Specimen holders with 6 specimens can be prepared in less than a minute with a 150 mm stone cup wheel which requires minimal dressing. It can easily provide enough specimen throughput for two or three Accura polishing machines.

Model	Digiprep Plan	Forciplan
Grinding motor power, (kW) (S1)	2.2	2.2
Grinding motor power, (kW) (S3)	3	3
Grinding wheel Speed (rpm)	2800	2800
Cup wheel Diameter (mm)	Ø150	Ø150
Radius of Arc	-	52
Travel (mm)	-	203
Table Feedrate (mm/s)	20 - 120	-
HMI Touch Screen (inch)	7"	-
Program Memory	99	-
Grinding Depth Accuracy (µm)	10	-
Y-Axis Stroke (mm)	160	-
Z-Axis Stroke (mm)	80	80
Operation	Automatic	Manual
Dimensions, WxDxH (mm)	without cabinet	880 x 660 x 740
	with cabinet	880 x 660 x 1550
Weight (kg)	185	170
Voltage	400V-3phase-50Hz	

Replication - Kemet Portable Grinder Polisher

- Lightweight battery pack and motor controller for Nakanishi brushless motor and right-angled hand-piece (1000rpm-25,000rpm)
- Includes 4:1 reduction gear for higher torque
- Battery life - 2-5 hours constant use (charger included)
- Visual LED bar-graph display of RPM, load indication and battery level
- Utility belt to hold controller, hand-piece, battery and consumable items
- Packing dimensions: 600 x 470 x 300 mm.
- Weight: 8kg
- Product code for full kit: 339098



Consumables included with kit

Disc Holders	Code	32mm Polishing Cloths	Code
32mm rubber holders (Pk 3)	340724	HS Green (Pk 25)	340722
32mm Abrasive Discs	Code	HS Blue (Pk 25)	340725
Grit 80 (Pk 100)	362441	MBL (Pk 25)	341889
Grit 120 (Pk 100)	362442	Polishing Compounds	Code
Grit 240 (Pk 100)	362443	1-OS-C2 (5g)	114006
Grit 400 (Pk 100)	362444	6-OS-C2 (5g)	114013
Grit 600 (Pk 100)	362445		
Grit 1200 (Pk 100)	362472		

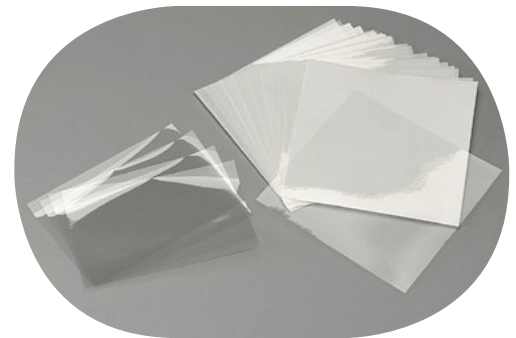


Other compounds and polishing cloths available to suit customer specific processes

Replication Sheets

Cellulose acetate sheets provide a quick and convenient means of replicating surfaces, particularly from large objects which cannot be sectioned. They soften in acetone, allowing them to be applied to surfaces which have been pre-wetted with acetone, then the replica can be stripped when dry.

Micron Size	Dimensions	Pack Size	Code
35	150 x 100mm	20	343511
50	150 x 100mm	20	343512
50	Tape (38mm x 1.1m)	1	343513
75	150 x 100mm	20	343499
180	150 x 100mm	20	343498



Portable & Digital Microscope

Each microscope comes complete with capture software including measurement features. They are incredibly versatile, consequently the applications range from quality control, assembly, scientific research, dermatology, forensic and law enforcement.

The microscope is a USB Digital Microscope with Built-In LED illumination. Using a colour CMOS sensor it has a frame rate of upto 30fps. Images can be saved in the following formats (using DinoCapture 2.0) BMP, GIF, PNG, MNG, TIF, TGA, PCX, WBMP, TP2, JPC, PGX, RAS, PNM. Using DinoXcope, PNG JPEG.

Supports Windows 8, 7, Vista and XP operating systems. Mac OS 10.4 or later are also supported.

- 10 - 50X & 200X USB2 1.3MP pixels
- Microtouch Capture Software with Measurements
- **Laptop required for viewing**
- Product code: 362617



Spectral 350/250 - Sample Preparation Surface Grinder



Magnetic and mechanical sample holders available for round specimens



Type	Code
Magnetic	345169
Mechanical	345248

Used to achieve excellent precision flat surfaces of iron and steel samples for spectroscopic analysis, the **Spectral 350** has a robust and vibration-free construction.

Designed to hold the grinding papers by suction, avoiding the need for adhesive backings and shortens abrasive changeover times. An integrated vacuum system with spark trap allows a safe, dust-free operation.

Specially designed cover allows grinding on a specific segment of the grinding disc to ensure operator comfort and safety.

The **Spectral 250** is a table top/portable version.

Model	Spectral 250	Spectral 350-1	Spectral 350-2	Spectral 350-2S
No. Of Stations	1	1	2	2
Disc Diameter (mm)	Ø250	Ø350	Ø350	Ø350
Disc Speed (rpm)	2800	2800	2800	1400/2800
Motor Power (kW)	1.1	2.2	2 x 2.2	2 x 2.2
Dust Exhauster	Yes	Yes	Yes	Yes
Paper Adjustment	Vacuum	Vacuum	Vacuum	Vacuum
Dimensions, WxDxH (cm)	35 x 45 x 33	75 x 60 x 90	110 x 60 x 95	119 x 60 x 95
Weight (kg)	40	120	205	205
Voltage	400V-3phase-50Hz			

Spectral PG/AG - Pendulum Grinder for Spectrographic Sample Preparation



A bench-top, pendulum grinder for fast, wet or dry grinding of iron and steel samples for spectroscopic analysis. It is also possible to prepare other materials on the **Spectral PG** by using special stone cup wheels.

The grinding head is moved vertically (in the Z-axis) by hand to an accuracy of 0.01 mm.

The **Spectral AG** is an automatic cup grinder for spectroscopic sample preparation of iron and steel samples.

Parameters of the grinding process, such as feedrate and grinding depth, can be preset using the digital display. Equipped with automatic sample feed and fine speed control, fast advance and reverse are available, with a laser measurement station ensures extremely precise positioning of the cup wheel.

Model	Spectral PG	Spectral AG
Grinding motor power, (kW)	(S1 - 2.2) (S3 - 3)	(S1- 2.2) (S3 - 3)
Grinding wheel Speed (rpm)	2800	2800
Cup wheel Diameter (mm)	Ø150	Ø150
Radius of arc	52	-
Travel, mm	203	-
Table feed rate (mm/s)	-	20 - 120
Stroke (mm)	(Z-Axis - 80)	(Y-Axis - 160) (Z-Axis - 80)
Operation	Manual	Automatic
HMI Touch Screen	-	7"
Program Memory	-	25
Grinding Depth Accuracy, (µ)	-	10
Dimensions, WxDxH (cm)	without cabinet	69 x 83 x 73
	with cabinet	69 x 83 x 155
Weight (kg)	170	155
Voltage	400V-3phase-50Hz	

Spectral MMax/MM - Automatic Milling for Spectrographic Sample Preparation

Suitable for different sample shapes with diameters up to 80 mm, the **Spectral MM** can be fitted with a special cutter head with 8" diamond or tungsten carbide tips. A three-jaw-chuck is standard but other additional clamping devices are available as optional accessories.

Spectral MM has advanced techniques and software with programmable HMI touch screen controls increasing the productivity, sample consistency and operator comfort.

Model	Spectral MM	Spectral MMax
Processable sample material	Non-ferrous and steel samples	Iron, carbon steel, high-grade steel, non-ferrous metal
Sample Shapes	Cylindrical, mushroom shaped etc.	Without pin, round, oval, double thickness
Milling Head Movement	Automatic	Automatic
Milling Power (kW)	2.2	5.5
Milling Head Speed (rpm)	500 - 4000	200 - 1500
Milling Head Dia. (mm)	Ø63 / Ø80	Ø80 / Ø100
Table Movement, Y Axis	Automatic	Automatic
HMI Touch Screen	7"	10"
Sample Height Measurement	-	Automatic
Sample Size, Height (mm)	Max. 60	Min. 7 Max. 60
Sample Dia. (mm)	Max. Ø60	Max. Ø60
Sample Hardness	Max. 55 HRC	Max. 65 HRC
Sample Holder System	Optional accessories	Pneumatic Automatic Clamping
Y Axis travel (mm)	140	-
Z Axis travel (mm)	60	-
Table feedrate (mm/s)	0.2 - 16	0.1 - 16
Dimensions, WxDxH (cm)	without cabinet	64 x 83 x 73
	with cabinet	64 x 83 x 154
Weight (kg)	without cabinet	165
	with cabinet	225
Max Milling Depth (mm)	3	-
Axial Feeding (mm)	Automatic	-
Program Capacity	25	25
Cooling System	Air Cooling (Optional)	Standard Air Cooling
Voltage	400V-3phase-50Hz	



A fully automatic machine for fast, fine surface milling of steel, cast iron and non-ferrous samples for optic emission and X-ray spectrometer analysis, the **Spectral MMax** provides the highest level of specimen processing reproducibility.

With a robust design, low noise and emission levels, the MMax is completely enclosed and sound insulated. It is well illuminated with an LED spotlight and the front cover can be completely opened for easy access to all sides.

Equipped with automatic sample feed with fine speed control, fast advance and reverse. All parameters of the milling process, feedrate, milling depth, spindle speed are controlled from the colour HMI touch screen.

The spindle can be adjusted to different materials to achieve optimum surfaces.

Consumables



Abrasive Cut-Off Wheels

Selecting the right cut-off wheel is important to ensure samples are not burned or distorted and can also save time and money.

The most commonly used abrasive cut off wheels are Silicon Carbide (for non-ferrous metals) and Aluminium Oxide (for ferrous metals)

Hard wheels are used for cutting soft materials while soft wheels are recommended for cutting harder materials.

Name	Diameter (mm)	Arbor (mm)	Thickness (mm)	Abrasive Type	Recommended for cutting	Code
TRENO-HP	150	12.7	0.8	Silicon Carbide	Non-Ferrous materials and stainless steels	345530
TRENO-MP	150	12.7	0.8	Aluminium Oxide	Medium hard, hardened steels and ferrous materials > 23 HRC	345531
TRENO-HP	200	12.7	0.8	Silicon Carbide	Non-Ferrous materials and stainless steels	345412
TRENO-MP	200	12.7	0.8	Aluminium Oxide	Medium hard, hardened steels and ferrous materials > 23 HRC	345413
TRENO-NF	250	32	1.5	Silicon Carbide	Non-Ferrous materials	600355
TRENO-H	250	32	1.5	Aluminium Oxide	Soft steels and ferrous materials < 23 HRC	600351
TRENO-M	250	32	1.5	Aluminium Oxide	Medium hard steels and ferrous materials > 23-55 HRC <	600352
TRENO-S	250	32	1.5	Aluminium Oxide	Hard steels and ferrous materials > 50-60 HRC <	600353
TRENO-SS	250	32	1.5	Aluminium Oxide	Very hard steels and ferrous materials > 60 HRC	600354
TRENO-NF	300	32	2	Silicon Carbide	Non-Ferrous materials	600356
TRENO-H	300	32	2	Aluminium Oxide	Soft steels and ferrous materials < 23 HRC	600499
TRENO-M	300	32	2	Aluminium Oxide	Medium hard steels and ferrous materials > 23-55 HRC <	600357
TRENO-S	300	32	2	Aluminium Oxide	Hard steels and ferrous materials > 50-60 HRC <	600358
TRENO-SS	300	32	2	Aluminium Oxide	Very hard steels and ferrous materials > 60 HRC	600498
TRENO-NF	350	32	2.4	Silicon Carbide	Non-Ferrous materials	600359
TRENO-M	350	32	2.4	Aluminium Oxide	Medium hard steels and ferrous materials > 23-55 HRC <	600360
TRENO-S	350	32	2.4	Aluminium Oxide	Hard steels and ferrous materials > 50-60 HRC <	600361
TRENO-SS	350	32	2.4	Aluminium Oxide	Very hard steels and ferrous materials > 60 HRC	600500
TRENO-NF	400	32	3	Silicon Carbide	Non-Ferrous materials	*
TRENO-M	400	32	3	Aluminium Oxide	Medium hard steels and ferrous materials > 23-55 HRC <	600362
TRENO-S	400	32	3	Aluminium Oxide	Hard steels and ferrous materials > 50-60 HRC <	600363
TRENO-SS	400	32	3	Aluminium Oxide	Very hard steels and ferrous materials > 60 HRC	*
TRENO-M	432	32	3	Aluminium Oxide	Medium hard steels and ferrous materials > 23-55 HRC <	600364
TRENO-S	432	32	3	Aluminium Oxide	Hard steels and ferrous materials > 50-60 HRC <	600365
TRENO-M	500	32	3	Aluminium Oxide	Medium Hard Steels and ferrous materials > 23-50 HRC <	*
TRENO-S	500	32	3	Aluminium Oxide	Hard Steels and ferrous materials > 50-60 HRC	600497
TRENO-M	600	32	5	Aluminium Oxide	Medium Hard Steels and ferrous materials > 23-50 HRC <	*
TRENO-S	600	32	5	Aluminium Oxide	Hard Steels and ferrous materials > 50-60 HRC	*

* Available on request



Cutting and Coolant Fluid

Kemet Cutting and Coolant Fluid is a mineral oil-free, water-miscible cutting fluid that creates little foam, provides excellent corrosion protection and is completely free of nitrate, chlorine and zinc.

The optimum mixing temperature is 15-20°C, with a recommended mixing concentration of at least 5%.

Size	Code
5 Litre	600096

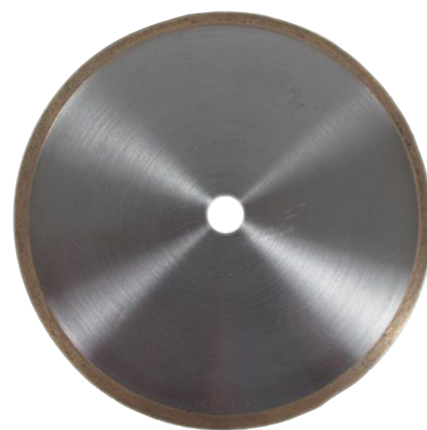
Features:

- Excellent wetting and cutting properties
- Free of nitrate, chlorine and zinc
- Prevents solubility of cobalt
- Creates little foam
- High corrosion protection

Diamond Cut-Off Wheels

Diamond cut-off wheels are available from 75-350mm diameters. Other sizes available on request. It is recommended that Kemet Cutting and Coolant Fluid be used with these wheels.

Type / Materials	Diameter	Thickness	Arbor	Code
High concentration Metal Bond for ferrous metals and medium / hard ceramics.	75mm	0.15mm	12.7mm	600017
	100mm	0.3mm	12.7mm	600018
	125mm	0.4mm	12.7mm	600019
	150mm	0.5mm	12.7mm	600026
	175mm	0.6mm	12.7mm	600028
	200mm	0.8mm	12.7mm	600029
Low concentration Metal Bond for ceramics, glass and geological samples.	75mm	0.15mm	12.7mm	600032
	100mm	0.3mm	12.7mm	600033
	125mm	0.4mm	12.7mm	600034
	150mm	0.5mm	12.7mm	600035
	175mm	0.6mm	12.7mm	600036
	200mm	0.8mm	12.7mm	600037
Continuous Rim Diamond Cut off Wheels for Petrography.	100mm	0.4mm	12.7mm	600038
	150mm	1.0mm	12.7mm	600044
	200mm	1.35mm	12.7mm	600048
	250mm	1.35mm	32mm	600049
	300mm	1.6mm	32mm	600059
	350mm	2.4mm	32mm	600075



CUTTING

Kemet Dressing Stick

Used for cleaning resin and dirt particles from the diamond cut off wheels. Dimensions 1" x 1" x 6"

Product	Code
Dressing Stick	362240



Mounting Moulds and Accessories

A wide range of mounting moulds which can be used in conjunction with all Kemet cold mounting resins.

- KM Acrylic Resin Mould - detachable aluminium base (non-reusable)
- Teflon Mould - with detachable base (reusable)
- Rubber Mould - one piece (reusable)

Moulds	Size (mm)	Quantity	Code	Accessories	Quantity	Code
Rubber Moulds	55 x 30	Pk 5	600727	Cups and stirrers	Pk 100	600058
	70 x 40	Pk 5	600728	250ml measuring cup & stirrer	Pk 5	600730
	100 x 50	Pk 5	600729	Stainless steel clips	Pk 100	600050
	ø25	Pk 5	600062	Plastic clips	Pk 100	600053
	ø30	Pk 5	600063	Silicon free mould release spray	500ml	600158
	ø40	Pk 5	600064			
Teflon Moulds	ø20	Pk 5	600723			
	ø25	Pk 5	600724			
	ø30	Pk 5	600710			
	ø40	Pk 5	600725			
	ø50	Pk 5	600726			
KM Acrylic Moulds (Acrylic with aluminium base)	ø25	Pk 30	600070			
	ø30	Pk 50	600753			





Cold Mounting Resins and Acrylics

The Kemet range of cold mounting resins includes acrylic and epoxy solutions. Cold mounting systems are particularly useful for delicate specimens that will not withstand the heat and pressure from a hot mounting press, and are also a good way of producing high volumes of mounted samples, one mix producing a number of samples.

Type	Application	Cure Time	Shrinkage	Hardness	Colour	Mix Ratios	Shrinkage	Resin & Hardener Kit
KEP Epoxy	General purpose epoxy with very low shrinkage	10h at 25°C	Low	75 Shore D	Clear	2:1 by weight	Very low	600410
KEPT Epoxy	Porous materials, coatings and electronic components							600411
Acrylic CLB	Conductive resin by SEM applications (Conductivity - Good)	30 mins	Medium	62 Shore D	Black	8:5 by volume	Low	600827
Acrylic VLST	general purpose	10 mins	Low	90 Shore D	Clear	5:2 by volume	Very low	600702
Acrylic VLB	General purpose	10 mins	Low	90 Shore D	Green	2:1 by volume	Very low	600825
Acrylic VLXB	Ideal for hard materials	15 mins	Very Low	96 Shore D	Blue	2:1 by volume	Very low	600691
Acrylic Green	Replication of sample surface	10 mins	N/A	87 Shore D	Green	2:1 by volume	-	600834



Hot Mounting Resins

Hot embedding resins are extremely hard, acid-resistant and low-shrinkage. They reduce sweating and guarantee clean edges when polishing. Hot embedding resins are divided into two categories:

- Thermoresistant (Phenolic or Allylic)
- Thermoplastic (Acrylic or Epoxy)

Type	Colour	Use	Size	Code
Phenolic	Black	Standard Examination of all Materials	2.5kg	600800
Phenolic	Black	Standard Examination of all Materials	25kg	600174
Phenolic	Green	Standard Examination of all Materials	2.5kg	600801
Phenolic	Green	Standard Examination of all Materials	10kg	600802
Phenolic	Red	Standard Examination of all Materials	2.5kg	600803
Phenolic	Red	Standard Examination of all Materials	10kg	600804
Phenolic	Brown	Standard Examination of all Materials	2.5kg	600805
Phenolic	White	Standard Examination of all Materials	2.5kg	600806
Phenolic with glass fibre	Black	Standard Examination of all Materials	2.5kg	600807
Conductive Acrylic Copper	Red/Brown	Electrically Conductive for SEM Examination	2.5kg	600809
Acrylic	Transparent	Standard Examination of all Materials	2.5kg	600810
Epoxy	Black	Examination of Edges	2.5kg	600811
Epoxy	Black	Examination of Edges	10kg	600812
Allylic with glass fibre	Blue	Examination of Edges	2.5kg	600813
Phenolic Carbon Conductive Resin	Black	Electrically Conductive for SEM Examination	2.5kg	600179
Melamine	Cream	Standard Examination of all Materials	1kg	600751
Melamine	Cream	Standard Examination of all Materials	7.5kg	600752

Kemet Fixing Systems

Kemet have a variety of mounting methods suitable for all types of grinding and polishing consumables.

	Kemtak	KMS Disc	Magnetic Disc	Paper Ring
Non- Adhesive	-	-	-	✓
Adhesive	✓	✓	✓	-
Magnetic	-	-	✓	-

Non-adhesive grinding papers:

Non-adhesive papers can be used with a paper holding ring. This clamps the papers in place, and allows for easy and fast changing. Paper rings are available to suit 200, 250, and 300mm diameter platens.

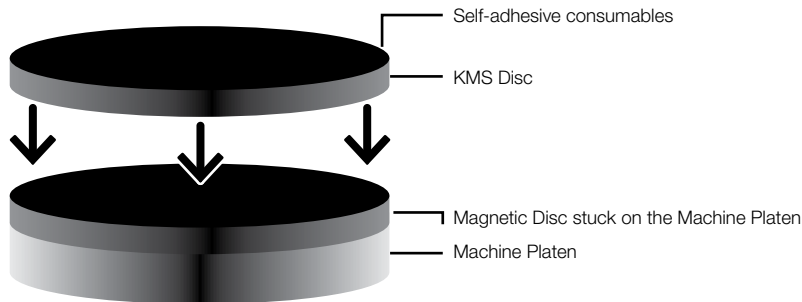
Paper Ring		
Ø 200 mm	Ø 250 mm	Ø 300 mm
345142	345132	345112

Self-adhesive Grinding and Polishing Consumables:

Self-adhesive consumables can be used in 3 different ways.

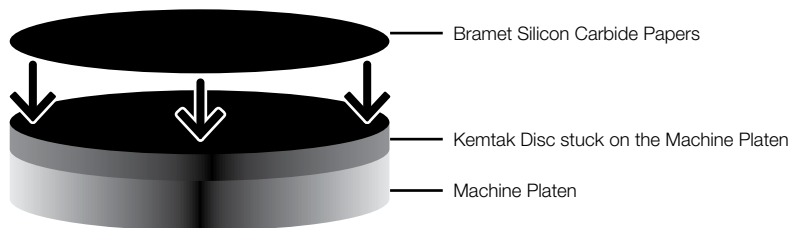
Option 1: The self-adhesive discs can be fixed directly to the platen.

Option 2: Self-adhesive grinding papers or polishing cloths can be mounted to a KMS disc (1mm thick stainless steel). These fix directly onto a machine platen when fitted with a magnetic disc. This allows easy change over from one consumable to another. Multiple KMS discs are needed to use this method in the most productive way. See pages 19-20 for polishing pads.



KMS Stainless Steel Disc		
Ø 200 mm	Ø 250 mm	Ø 300 mm
342560	342561	342562

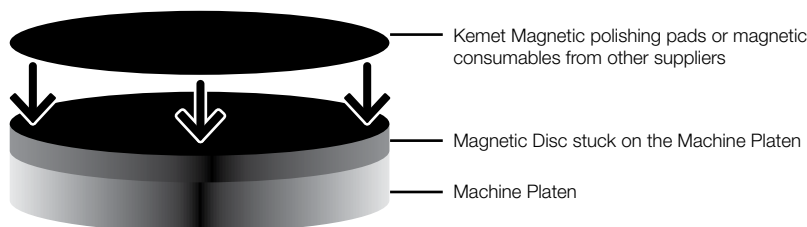
Option 3: All Kemtak discs can be used with Bramet self-adhesive grinding papers. The plastic barrier film on the Bramet disc grips the Kemtak non-skid surface so that the adhesive is not used. This makes for faster and cleaner change overs from one grit size to another. Kemtak discs can be supplied on a flexible magnetic backing (Kemtak-M), a solid thin metal backing (Kemtak-S), or PSA backed (Kemtak). Kemtak Plus has a mylar film with adhesive on both sides for sticking non-adhesive papers (Met Discs on page 18).



Kemtak Discs			
Type	Ø 200 mm	Ø 250 mm	Ø 300 mm
Kemtak-M	343706	343707	343708
Kemtak-S	343709	343710	343711
Kemtak	343700	343701	343702
Kemtak Plus	343720	343721	343722

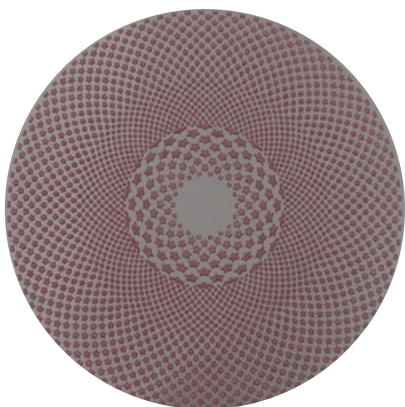
Magnetic Grinding and Polishing Consumables:

Magnetic systems have become increasingly popular and the Kemet magnetic disc system includes a wide range of magnetic polishing pads, diamond grinding and fine grinding discs. See page 20 for magnetic system.

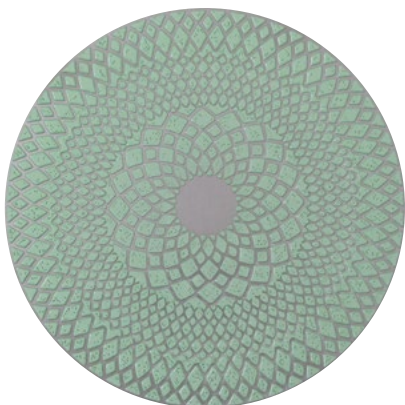


Magnetic Disc		
Ø 200 mm	Ø 250 mm	Ø 300 mm
345770	345771	345772

Diamond Grinding Disc



Fine Grinding Disc



Diaflex Grinding Disc



Diamond Grinding & Fine Grinding

Kemet diamond grinding and fine grinding/ polishing discs for use with its metallographic grinding and polishing machines offer:

- High and consistent stock removal while achieving perfect flatness
- Maintain flatness while providing excellent surface finish
- Suitable for magnetic mounting
- Longevity

Diamond Grinding Discs			Ø Disc (mm)		
Grit	Micron	Colour	200	250	300
80	251	Red	343800	343806	343807
120	107	Yellow	343801	343808	343815
220	76	Green	343802	343809	343816
600	30	Blue/Black	343803	343810	343817
1200	15	Black	343804	343811	343818

The fine grinding and diamond polishing discs are used in combination with Kemet liquid diamond.

Fine Grinding Discs		Ø Disc (mm)		
Use with	Colour	200	250	300
6-3µm	Green	343585	343587	343571

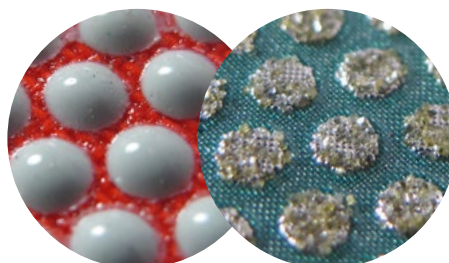
Diamond Grinding - Diaflex

Kemet Diaflex is a self-adhesive, flexible diamond material which combines the long life and aggressive cutting action of diamond with the flexibility of cloth.

Supplied in either discs or squares, and in a wide range of grit sizes, the diamond is either nickel bonded (N) or resin bonded (R) and is ideal as a grinding step in either metallographic sample preparation or flat lapping. **Diaflex can also be supplied plain backed.**

Grade	Grit/Micron Size	Ø Disc (mm)					Square (mm)		
		150	200	230	250	300	100 x 100	150 x 150	300 x 300
Green (N)	60 / 250	342074	342025	342075	342076	342068	342011	342013	342048
Black (N)	120 / 125	342001	342002	342077	342026	342027	342014	342070	342049
Red (N)	200 / 74	342004	342005	342067	342028	342029	342016	342036	342050
Yellow (N)	400 / 40-50	342006	342007	342071	342030	342031	342018	342066	342051
White (N)	800 / 20-30	342032	342008	342072	342033	342034	342020	342037	342052
Yellow / White (R)	800 / 20-30	342078	342035	342079	342080	342047	342038	342044	342053
Blue (R)	1800 / 6-12	342042	342009	342073	342081	342084	342043	342021	342054
Orange (R)	12000 / 1-3	342069	342010	342082	342083	342085	342022	342023	342055

Close-up of resin bonded Diaflex



Close-up of nickel bonded Diaflex

Non-Adhesive Rolls and Papers

Grit FEPA	Met Papers	Met Discs			Met Rolls	
	230 x 275 mm	Ø 200 mm	Ø 250 mm	Ø 300 mm	75 mm x 50 m	100 mm x 50 m
60	-	342286	342297	342307	342221	342225
80	-	342246	342298	342308	342241	342333
100	-	-	-	-	342245	342226
120	-	342250	342299	342309	342331	342334
180	342201	342207	342300	342310	342242	342335
240	342219	342208	342301	342311	342213	342336
320	342202	342234	342302	342312	342222	342249
400	342203	342209	342238	342313	342214	342216
600	342204	342210	342303	342314	342215	342217
800	342235	342211	342304	342315	342224	342337
1000	342205	-	-	-	342244	342340
1200	342206	342212	342305	342316	342240	342218
2500	342339	342287	342306	342317	342332	342338
4000	-	342660	342661	342662	-	-

Met discs supplied in box of 100 & Met papers supplied in pack of 10

Non-adhesive silicon carbide waterproof abrasive discs, rolls and papers for the initial stages of preparation, available in a variety of sizes, dimensions and grits.



Self Adhesive Bramet N

Grit FEPA	Bramet Discs				Bramet Strips	
	Ø 150 mm	Ø 200 mm	Ø 250 mm	Ø 300 mm	75 x 275mm	305 x 305mm
60	342401	342412	342434	342445	-	-
80	342402	342413	342435	342446	342461	342472
100	-	-	-	-	-	-
120	342403	342414	342436	342447	342462	342473
180	342404	342415	342437	342448	-	-
240	342405	342416	342438	342449	342125	342164
320	342406	342417	342439	342450	342126	342476
400	342407	342418	342440	342451	342127	342477
600	342408	342419	342441	342452	342128	342478
800	342409	342420	342442	342453	342491	342479
1000	-	-	-	-	342133	342492
1200	342410	342421	342443	342454	342134	342480
2500	342411	342422	342444	342455	-	342481
4000	-	342456	342469	342465	-	-

Bramet Discs supplied in box of 100 & Bramet Strips supplied in pack of 10

Easy peel off adhesive, waterproof silicon carbide papers. No need for clamping or glueing, saving time when changing grit sizes.



Diamond Lapping Film

Kemet diamond abrasive lapping film products are specifically engineered to meet all your ultra-fine, finishing requirements featuring precision coating to provide consistent polishing.











- Proprietary resin system improves adhesion to substrate.
- Uniform 3 mil polyester film backing, ensures film flatness and improved part geometry.
- Compatible with most machinery attachments and all coolants, allowing quick film replacement.
- Pressure sensitive adhesive (PSA) backing.

Micron	Ø 300 mm
0.5	362997
1	362998
3	363004
6	363002
9	363001
15	363000
30	362999









Kemet Polishing Pads

Flat polished surfaces on many softer materials can only be produced with polishing pads. Available to suit most grinder/polisher and flat lapping machines, Kemet offer the widest range of self-adhesive and metallic backed polishing pads. These are generally split into three types: Chemo-textile, Nap and Synthetic Silk

Name	Type	Description	Use with Recommended Diamond Micron size	Ø (mm) Supplied in pk of 10			Colour
				200	250	300	
PSU-M	Chemo-textile These are manufactured to the highest standards with accurately controlled uniform thickness. Self-adhesive, and available in medium (PSU-M) and hard (PAD-K) formats.	These medium and hard chemo-textile cloths are for smoothing and polishing operations.	15 micron and finer	341008	341009	341010	
PSU-MM (magnetic)				341811	341812	341813	
PAD-K	Non-woven pads manufactured specially for polishing processes.	The ultra-hard chemo-textile cloth used where fast cutting is needed.	15 micron and finer	341017	341028	341039	
NSH-B	Nap Cloths For final polishing stages of preparation, Kemet Nap Type Cloths are available with a range of softness and nap length. They give a more gentle polish, and are ideal for softer specimens and components. All cloths are self-adhesive unless marked 'plain'.	A short nap cloth with woven backing used for metallographic and some optical polishing operations.	3 micron and finer	341257	341246	341203	
NSH-BM (magnetic)				341263	341261	341262	
NLH		A longer, stiffer nap cloth.	6 micron and finer	341205	341247	341206	
NLH-M (magnetic)				341292	341293	341267	
CHEM-H		For use with a chemical mechanical polishing process with colloidal silica suspension.		341782	341783	341784	
Chem-HM (magnetic)				341861	341852	341853	
LIL-Plus		A long nap synthetic cloth.	3 micron and finer	341611	341610	341609	
Lil Plus-M (magnetic)				341289	341290	341291	
Selvyt SR		A cotton cloth of medium nap with a single pile. Available only as non-adhesive. For final polishing using diamond or fine alumina.		341302	341309	341311	
KAN		Wool based cloth for polishing ferrous and non-ferrous.	3 micron and finer	341076	34077	341070	
Kan-M (magnetic)				341294	341295	341072	
MRE		Synthetic flock on a flexible waterproof carrier. A more heavy duty cloth	6 micron and finer	341712	341716	341714	
MRE-M (magnetic)				341815	341816	341817	
MBL		Synthetic flock sprayed on cotton carrier. Used with 3 micron Kemet Diamond after 6 micron ASFL stage.		341722	341726	341724	

Other sizes available on request.

Name	Type	Description	Use with Recommended Diamond Micron size	Ø (mm) Supplied in pk of 10			Colour
				200	250	300	
ASFL	Synthetic Silk Durable woven structure, developed for finishing metal specimens and components.	Synthetic silk pad with durable woven structure for mirror finishing of most metals.	6 micron and finer	341148	341162	341111	
ASFL-M (magnetic)				341175	341176	341177	
MSFL		Will polish metal flat, and to a mirror finish.	3 micron and finer	341752	341754	341755	
MSR		Similar to MSFL with rigid plastic backing.	3 micron and finer	341702	341707	341704	
MST		An extra hard, rigid silk cloth for increased cutting action. Excellent pre-polishing Pad.	15 - 6 micron	341762	341764	341763	
ASR		Mounted on a rigid and heavy barrier foil.	3 micron and finer	341120	341119	341103	
AST		Used for increased cutting action and good general flatness control. Use with 15 - 6 Micron diamond before final polishing.		*	*	341279	
AST-M (magnetic)				341287	341288	341285	

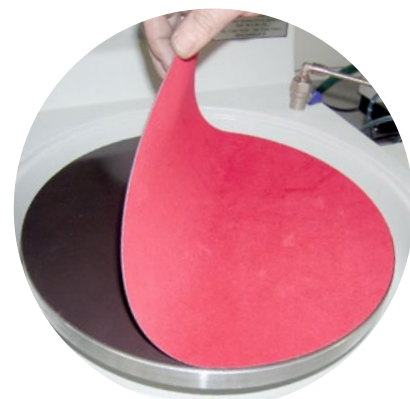
* Available on request

Magnetic Polishing Pad Systems

The Kemet magnetic disc system is suitable for Kemet's range of magnetic polishing pads (marked 'magnetic' above), diamond grinding and fine grinding discs, and any magnetic consumable from other suppliers.

- Easy to change and cloths last longer
- No adhesive breakdown problems
- Faster and cleaner cloth changes
- No metal disc involved so safe to use

Magnetic Disc Size	Code
Ø 200 mm	345770
Ø 250 mm	345771
Ø 300 mm	345772



Metallographic Disc Storage Unit

Storage unit for protecting polishing pads, discs and cutting wheels with a diameter of up to 300mm

Dimensions - 320 x 251 x 332 mm (WxHxD)

Number of draws - 9

Product code - 363211



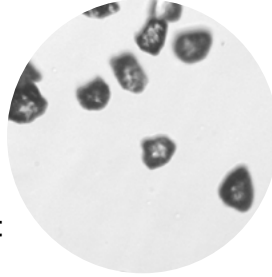
Diamond Products

Kemet offer a wide range of standard and special Diamond Products formulated and manufactured in our quality controlled laboratories in the UK to ISO 9001:2015 quality assurance standards. Each is a special blend of diamond powder with a specific grading and concentration in a chemical carrier to give the optimum:

- Stock removal and surface finish.
- Ease of cleaning.
- Temperature resistance.
- Lubricity to prevent drying out.

With changing technology, new Kemet Diamond Products are continually being developed to meet specific requirements. These products may well incorporate different types of diamond to suit the application such as synthetic or natural, monocrystalline or polycrystalline powder, suspended in a wide range of chemical carriers.

Our laboratories can also help to develop formulations specific to your application.



Micron	Grade
0.1	140,000*
0.25	25,000*
1	14,000*
3	8,000*
6	3,000*
8	1,800*
14	1,200*
25	600
45	300
60	230
90	170

*Estimated

• Diamond Grading

The exceptionally close grading standards developed by Kemet exceed many international standards and guarantee that Kemet Diamond Products are manufactured to the closest tolerances.

• Quality Control

Microscopic and computer analysis of the diamond powder ensures that it is exactly the correct grading and shape to maximise cutting performance.

• Consistency of Performance

Strictly manufactured to ISO 9001:2008 quality assurance standards - our guarantee that the quality will be consistent.

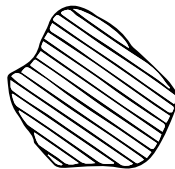
• User Friendly

Manufactured from the highest purity chemicals - safe to use and friendly to the environment.

We use only the best quality virgin diamond powder and the highest purity chemicals in Kemet Diamond Products.

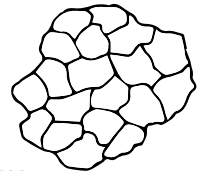
Monocrystalline:

This diamond has tough resilient crystal structure that gives sustained cutting power. It is the type of diamond used most commonly in Kemet Diamond Compounds and Slurries.



Polycrystalline:

Structure is 'raspberry-like', i.e. each particle is in fact a number of very small particles of microcrystallites bonded together. Stock removal and surface finish is better due to the many cutting points of the polycrystalline crystal.



Liquid Diamond

Our range of Kemet Liquid Diamond products are available as oil soluble, water soluble or as emulsions. The chemical composition of the carrier fluids is carefully controlled to ensure that they are compatible with Kemet Lapping Plates, Kemet Polishing Cloths and the components/samples being lapped/polished.

- Precision graded diamond particles in a fluid.
- Optimum viscosity and chemical composition of each Liquid Diamond Product gives fast stock removal with the ability to produce superfine surface finishes.
- Suitable for dispensing with all Kemet Dispensing Systems, eliminating wastage and reducing lapping costs.
- Specially formulated Liquid Diamond Products enable parts to be easily cleaned.

Liquid Diamond Type KM

Type KM liquid diamond is a low viscosity oil/water emulsion suitable for most applications aimed for the metallographic market.

- Lower viscosity to give better stock removal.
- Less inclusion pullout.
- Spreads better over the polishing cloth.
- Parts are easier to clean after polishing.
- Stable emulsion which does not separate.
- Diamond stays much longer in suspension.
- **ZERO** Volatile Organic Compounds (VOC*)
- Colour coded for easy identification.
- Supplied in 400g bottles with trigger spray. Other sizes available upon request.

Micron	Colour	Code
1/2	Grey	211254
1	blue	211251
3	green	211253
6	yellow	211252
9	red	211255
15	brown	211256



GRINDING & POLISHING

Diamond Suspension

Low viscosity, high concentration, **oil based** suspensions available in monocrystalline (Type OM) and polycrystalline (Type OP).

Aquapol is the next generation of **water based** diamond suspensions for sample preparation. Available in monocrystalline (Aquapol-M) and polycrystalline (Aquapol-P). Aquapol is easy to clean and non-foaming.

- Uniform suspension of diamond particles.
- No agitation required.
- Suitable for dispensing by Kemet Electronic Dispenser or alternative systems.
- **ZERO** Volatile Organic Compounds (VOC*)
- Colour coded for easy identification.
- Supplied in 400g bottles with trigger spray. Other sizes available upon request.



AQUAPOL-M		AQUAPOL-P		TYPE OM		TYPE OP	
Water Based Monocrystalline		Water Based Polycrystalline		Oil Based Monocrystalline		Oil Based Polycrystalline	
Micron	Code	Micron	Code	Micron	Code	Micron	Code
1/10	219471	1/10	219472	1/10	216321	1/10	216341
1/4	219459	1/4	219461	1/4	216323	1/4	216342
1/2	219457	1/2	219463	1/2	216322	1/2	216343
1	219450	1	219452	1	216324	1	216344
3	219440	3	219453	3	216326	3	216346
6	219448	6	219454	6	216328	6	216347
9	219442	9	219455	9	216329	9	216349
15	219444	15	219456	15	216331	15	216350
25	219446			25	216332	25	216351
				45	216333		

Note to users of WM/WP suspensions - these are still available

Diamond Suspension AP

Kemet Diamond Suspension AP is a high quality alcohol based polycrystalline diamond suspension. It is ideal for polishing specimens which cannot come into contact with water. It is supplied in 500ml containers. Other Micron sizes and packaging sizes are available upon request.

Micron	Size	Code
1	500 ml	250350
3	500 ml	250271
6	500 ml	250272



* ZERO Volatile Organic Compounds (VOC) - not classified as an atmospheric pollutant and offer health and safety benefits. VOCs are organic chemicals that have a high vapour pressure at ordinary room temperature, some of which can be dangerous to human health and/or cause harm to the environment.



Lubricating Fluids

- Assists Kemet Diamond Products to cut and polish more effectively by absorbing frictional heat and diluting the lapping residue.
- Lubricant performance remains stable even when under high pressure.
- Manufactured from high purity chemicals.

Type	Description	Soluble in	Colour	450ml Trigger spray	1 Litre	2.5 Litres	5 Litres
Blue	Improves cutting and polishing performance on cloths or plates.	Water	Blue	301200	301158	301156	301159
GW2	For use with Kemet Diamond Suspension, particularly when used with Kemet Lapping Plates.	Water	Light green	301514	301105	301108	301107
R OS2	For use where water is not permitted.	Oil	Red	301513	301511	301512	301141
W9	Recommended for use with Aquapol Diamond Suspensions	Water	Clear	-	-	301527	-

Diamond Compound



Type CM

Standard grade high concentration containing Monocrystalline Diamond Powder (Water soluble).

Type CP

Premier grade high concentration containing Polycrystalline Diamond Powder particular recommended for polishing ceramics sintered materials and composites (Water soluble).

TYPE CM				TYPE CP			
Micron	5g Applikator	10g Syringe	20g Syringe	Micron	5g Applikator	10g Syringe	20g Syringe
1/10	115000	115040	115010	1/10	115020	115050	115030
1/4	115001	115041	115011	1/4	115021	115051	115031
1/2	115002	115042	115012	1/2	115022	115052	115032
1	115003	115043	115013	1	115023	115053	115033
3	115004	115044	115014	3	115024	115054	115034
6	115005	115045	115015	6	115025	115055	115035
9	115006	115046	115016	9	115026	115056	115036
15	115007	115047	115017	15	115027	115057	115037
25	115008	115048	115018				
45	115009	115049	115019				

Diamond Spray



Water soluble spray manufactured from Polycrystalline or Monocrystalline Diamond Powder. Supplied in 100g Pump Spray Dispenser.

Micron	Monocrystalline	Polycrystalline
1/10	116000	-
1/4	116001	116036
1/2	116002	-
1	116003	116037
3	116004	116038
6	116005	116039
9	116006	116040
15	116007	116041

Diamond Stick

Water soluble stick diamond compound, manufactured from Polycrystalline or Monocrystalline Diamond Powder.

- Eliminating the need for spatulas or manual application.
- Allows easy application of Diamond Compound.
- Supplied in 10g Applicator Stick.

Micron	Monocrystalline	Polycrystalline
1/4	113188	113200
1	113189	113201
3	113190	113202
6	113191	113203
8	113192	-
14	113193	-



Polishing Abrasives

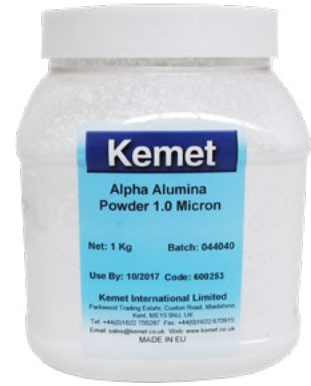
Kemet offer a wide range of conventional polishing abrasives.

Alumina Powders for polishing most materials

Micron	Use	Size	Code
Gamma 0.04	Super finishing of soft metals such as copper, lead, aluminium	1kg	600251
Alpha 0.3	Final polishing of copper alloys, nickel, brass, bronze, aluminium	1kg	600252
Alpha 1.0	Fine pre-polishing of all metals	1kg	600253

Alumina Suspensions for special applications

Description	Micron	Use	Size	Code
Alumina Suspension No.1	0 - 1	Steel & Hard metals	1 Litre	600711
Alumina Suspension No.2	0 - 0.7	Semi-hard metals	1 Litre	600712
Alumina Suspension No.3	0 - 0.3	Soft metals	1 Litre	600713
Alumina Suspension	0.05	Soft metals	1 Litre	343591
Kemox SF - Aluminium Oxide	Mirror polishing of aluminium	1 Litre	300207	
		3.8 Litre	300200	
		5 Litre	300199	



Colloidal Silica - Col-K

A Liquid polish used on Kemet Chem-H Cloth to produce the ultimate in high quality mirror polishes on polishing machines. A part abrasive, part chemical polishing action makes Col-K well suited to polishing difficult materials such as Stellite and Cobalt Chrome. Also available in a non crystallising version called Kemet Col-K (NC).

Unit	Col-K	Col-K (NC)
1 Litre	600262	600261
5 Litres	600212	600199
20 Litres	600204	600202



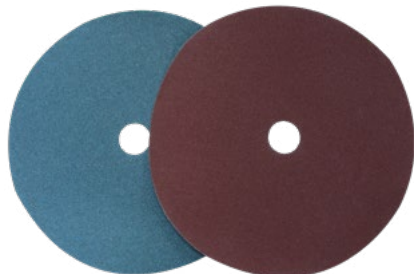
Consumables For The Spectral Range Of Sample Preparation Machines

Sample preparation of metals and materials have become more and more important in recent years and it is crucial to have the sample properly prepared. Ensuring it is representative, homogeneous and has a flat, even surface will eliminate factors that could influence the results.

Paper Grinding Discs

Type	Diameter	Grit	Code
Corundum	200	60	345179
	250	60	345722
	350	60	345409
Zirconium oxide	200	60	-
	250	60	345780
	350	60	-

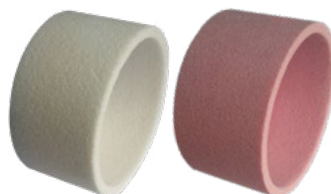
Supplied in packs of 20.



Grinding Stones

For	Diameter	Grit	Code
Hard Steels (White)	150/32 mm	60	345156
	150/32 mm	36	-
Cast Iron (Pink)	150/32 mm	60	345157
	150/32 mm	36	-

Contains 1 per pack.



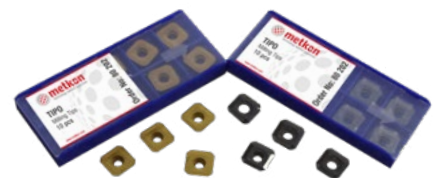
Milling Tips For Spectral MM

For	Code
Non Ferrous Materials & Stainless Steels	345184
Ferrous Materials & Cast Iron	-

Milling Tips For Spectral MMax

For	Code
Steel & Stainless Steels	345848
Ferrous Materials & Cast Iron	-

Supplied in packs of 10.



Ultrasonic Cleaning

Kemet Light-Industrial Ultrasonic Cleaners for Precision Cleaning



Top of the range digital generator operates piezo-ceramic transducer elements giving a powerful cleaning effect. The Booster function, for extra power, can be used for the most difficult cleaning tasks. Distribution of the ultrasonic energy is achieved by the frequency sweep to give precision cleaning throughout the tank. All models are equipped with thermostatically controlled heating to ensure optimum cleaning temperature.

Manufactured from DIN 304 stainless steel, both internally and externally, they are easy to keep clean and hygienic. A drip protector guides any unwanted water droplets away from the operating panel and the internal control circuitry is protected against water splash.

Features

- Tank made from stainless steel (DIN 304)
- High quality stainless steel mesh basket
- Boost, Sweep and Degassing function
- Easy setting of time, temperature and special functions
- Dry run heating protection and automatic switch off after 12 hours of operation
- Glass beaker system available for cleaning small parts



Technical information	Kemet 3	Kemet 6	Kemet 12	Kemet 30	Kemet 45
Tank service volume (l)	1.9	4.3	9	20.6	45
Internal tank dimensions (mm)	240 x 137 x 100	300 x 150 x 150	300 x 240 x 200	505 x 300 x 200	500 x 300 x 300
Internal basket dimensions (mm)	198 x 106 x 50	255 x 115 x 75	250 x 190 x 115	455 x 250 x 115	455 x 270 x 194
External dimensions (mm)	300 x 179 x 214	365 x 186 x 264	365 x 278 x 321	568 x 340 x 321	615 x 370 x 467
Ultrasonic power nom/peak (W)	80/160	150/300	200/400	300/600	400
Ultrasonic frequency (kHz)	38	38	38	38	38
Heating power (W)	200	400	800	1200	1600
Voltage	230V - single phase - 50Hz				
Product Code	359480	359482	359484	359486	359488

Accessories Available	Kemet 3	Kemet 6	Kemet 12	Kemet 30	Kemet 45
Plastic lid	✓	✓	✓	✓	
Stainless steel lid					✓
Stainless steel basket	✓	✓	✓	✓	✓
Lid/beaker holder	✓	✓	✓	✓	
Set: lid/beaker holder, 2 beaker glasses 600ml with lid and rubber rings	✓				
Beaker Ø 95 mm, 600 ml	✓	✓			
Beaker Ø 95 mm, 1000 ml	✓	✓			

Ultrasonic Cleaning Fluids

Kemet are a distributor for NGL with more than 300 high performance formulations, providing a solution to most cleaning challenges. The finest in biodegradable cleaning fluids, these specially formulated concentrated detergents are available in neutral, alkaline and acid types.

The detergents work by reducing surface tension, intensifying ultrasonic cavitation, and dissolving and binding the contaminants that have been loosened by the ultrasonics.

- Free consultations and trials to adapt formulations to specific requirements and optimise cleaning processes.
- Environmentally aware process development to offer ecological solutions.
- Compatible with Kemet range of ultrasonic cleaners.
- Physiochemical and physical wastewater treatment systems to comply with environmental legislation.

Kemet recommend that any cleaning fluid should be tested on a sample of the component to be cleaned to ensure it does not damage the material and offer free trials to establish the optimum process.



For a full list of ultrasonic cleaners and cleaning fluids visit www.kemet-cleaning.co.uk or Kemet Cleaning catalogue

Dasty Industrial Degreaser

This product is extremely effective for thoroughly degreasing all mechanical parts as well as large surfaces and perfect for cleaning off lapping residue. Thanks to its ultra-concentrated formula, Dasty easily removes grease, mineral oil, scale, etc. and is biodegradable, safe for shipping and contains no ozone depleting chemicals.

Size	Code
1 Litre	362936
Box of 12	362962



Manual Cleaning Solutions

C70 Solvent Cleaning Fluid

A versatile and highly efficient cleaning and degreasing fluid with a fast evaporation rate for removing grease, oil and residues from all metals and ceramics. Supplied in a pressurised container, complete with detachable extended spray tube for reaching into the most difficult areas, C70 contains **NO** ozone depleting substances.

Size	Container	Code
500ml	Aerosol	302114
500ml	Aerosols (Pk 12)	302115



CO - 42 Cleaning Fluid

Designed for cold use and applied by spray, brush, cloth or full immersion, CO42 is a highly efficient degreasing fluid similar in performance to 1.1.1 Trichloroethane, but without the ozone depleting properties.

Size	Container	Code
450ml	Trigger Spray	302103
5 Litres	Metal	302102
25 Litres	Metal	302101
200 Litres	Metal	302105



- C70 and CO-42 are **NOT** approved for use at elevated temperatures or in ultrasonic cleaning machines.

Microscopes

Kemet offer a comprehensive range of microscopes, cameras and accessories. Below are a few that Kemet offer. Contact us to discuss your exact requirements.



Upright Trinocular Microscopes

High quality materials microscope equipped with a trinocular head ready for the attachment of a digital camera. This microscope includes a full set of high quality plan achromatic materials objectives on a modern reversed objective turret. Specimens can be placed on the mechanical stage with ergonomically positioned controls for XY stage and focus control.

The focusing tension can be adjusted and a focus lock protects the objectives from damage. Illumination is provided from an integral reflected light illuminator with a 20W halogen lamp with adjustable intensity, field and aperture diaphragms, polariser and set of Y, G, B and diffusion filters.



Inverted Trinocular Microscopes

Advanced microscope features superb UIS optics and a full range of functionality including darkfield (in the BD version) and polarised light. Includes a pair of 10X eyepieces with a wide field number of 22mm, a full set of high quality infinity corrected, long working distance, darkfield/brightfield, plan achromatic metallurgical objectives mounted under the stage.

Illumination is provided from a high intensity 50W halogen lamphouse with adjustable intensity, field and aperture diaphragms and set of Y, G, B and diffusion filters.



Trinocular, Stereo Zoom Microscopes

Equipped with a pair of 0.7X-4.5X zoom objectives controlled by a zoom knob and a pair of 10X extra wide-field eyepieces. Each eyepiece links directly to one of the angled zoom objectives, this gives a stunning 3 dimensional image of your specimen. The optical quality is very good giving a bright, crisp 3D image of the specimen.

The binocular eyepiece tubes are inclined at a comfortable 45°. The entire head can be easily rotated through 360°, it has interpupillary distance adjustment and both eyepiece tubes have diopter adjustment. Illumination can be provided separately using LED ringlights or LED & halogen spot or fibre optic illuminators.

High Resolution 1080P Live Cameras

This camera has a unique internal dual processor design producing fantastic colour images with no flicker. It connects direct to any HDMI display displaying 2.0MP (1920x1080) resolution images live at an amazing 60 frames per second. The camera requires a C-mount adapter. These adapters are standard microscope accessories available to fit onto photoport of trinocular headed microscopes and monozoom microscopes.



Hardness Testing & Technical Support

Hardness Testers from Indentec

Kemet have partnered with Zwick/Roell, manufacturers of Indentec hardness testing machines, accessories, test blocks and indenters. With a service department for after-sales support, Indentec also offer UKAS accredited recalibration and repairs. Enquiries for any of these products and services can be channelled through Kemet.

Zwick / Roell
Indentec



Technical Support

Our expertise is available to you through our in-house technical specialists, a team of 5 Technical Representatives in the UK, and an extensive network of overseas Subsidiary Companies and Distributors.

Kemet provide continuous technical support for both prospective and current customers, and to ensure that any problems are correctly and quickly resolved.

Tailor-made training courses are delivered regularly in our Technical Centre or at customers' premises.



Process Development

We regularly assist customers by developing new products and processes, utilising the very latest in metallographic sample preparation. Customers' samples are evaluated, free-of-charge. Comprehensive reports are issued covering all aspects of the process. Here are some of the materials we are able to process:

Acrylic	Ceramic	Graphite	Silicon Aluminium Alloy
Alloys	Chrome Plate	Inconel (Cobalt/Nickel)	Silicon Carbide
Alumina	Cobalt Chrome	Internal Seal	Sintered Materials
Aluminium	Compact Disc	Keronite (ceramic)	Stainless steel
Aluminium Nitride	Concrete Cement	Molybdenum	Steel
Anodised Aluminium	Copper	Mould insert or cavity	Steel (Hard)
Beryllium Copper	Diamond Tools	Nimonic Steel	Titanium
Bone	Epoxy Resin	Nickel	Tool Steel
Boron Carbide	Ferrite	Piston Rings	Toughened Steel
Brass	Fibre Optic	Plastic	Tungsten carbide
Bronze	Gallium Arsenide	Polyetherimide	Tungsten Copper
Carbon	Germanium	Quartz	Vulcanised Fibre
Carbon Fibre	Glass	Sapphire	Zinc Selenide
Cast iron	Gold	Silicon	Zirconate (Lead) Titanate

If a material does not appear in the list, please contact Kemet. All processed samples are returned with detailed technical process reports, **free of charge**.

Kemet



Kemet International Ltd. Subsidiary Companies

Netherlands
Kemet Europe B.V

Singapore
Kemet Far East Pte Ltd

Japan / Korea
Kemet Japan / Kemet Korea

China
Kemet China Ltd

Malaysia
Kemet Precision (M) SDN BHD

Australia
Kemet Australia Pty Ltd

Kemet Products are available through a worldwide Network of Authorised Distributors in

Europe
Asia

Africa
Americas

Middle East
Australasia