

# Kemet

**Precision** Lapping | Polishing | Cleaning | Materialography

## MATERIALOGRAPHIC EQUIPMENT & CONSUMABLES FOR SAMPLE PREPARATION & ANALYSIS



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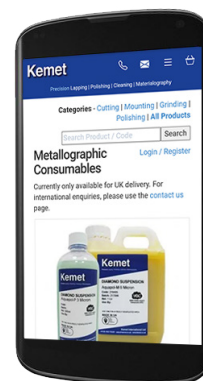
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**Diamond Suspension**





# 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.

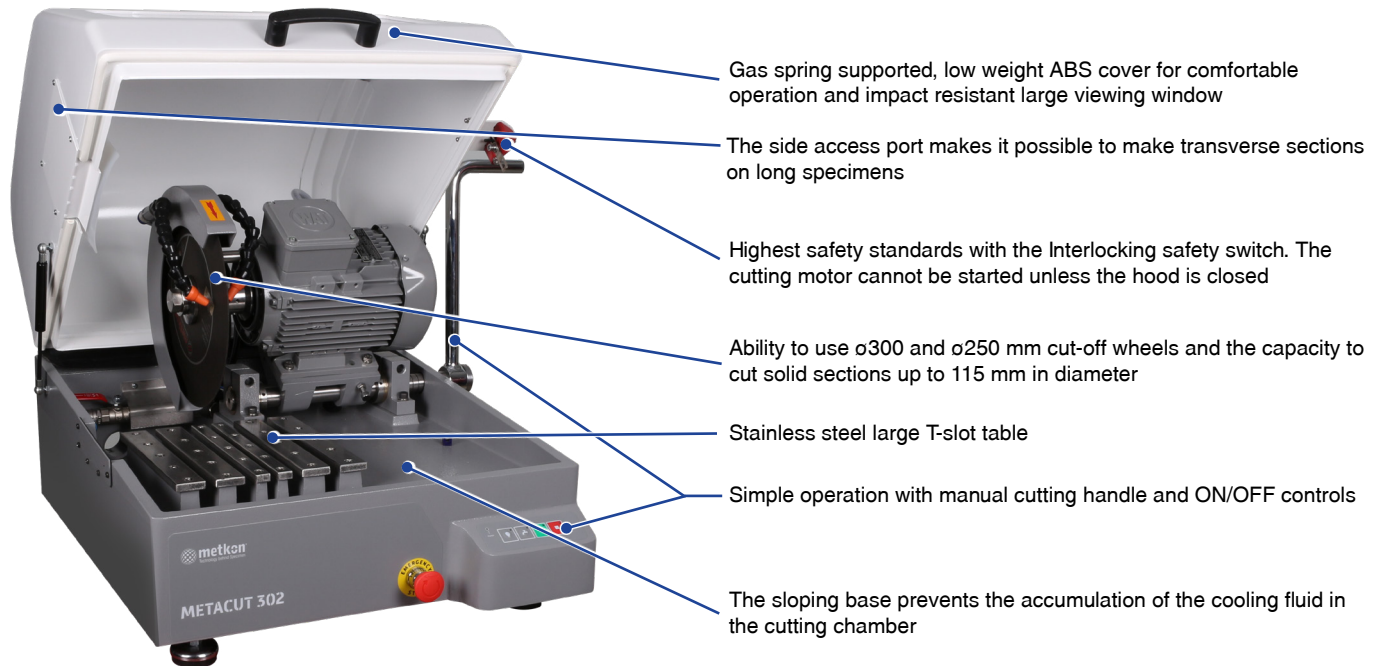
In short, Kemet offer a one stop shop for all your cutting, mounting, grinding and polishing requirements at highly affordable prices. A comprehensive range of consumables, supplied from stock, is supported by a price competitive range of sample preparation equipment incorporating the latest features.

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 85 years' experience in process development, means Kemet can provide you with a complete metallographic and spectrographic sample preparation system tailored exactly to your needs.



# Cutting

## Metacut - Abrasive Cut-Off Machine



Model	Metacut 302
Cutting Power kW (S1)	3
Cutting Power kW (S3)	4.6
Wheel Speed (rpm)	2800
Operation	Manual
Wheel Diameter (mm)	$\phi 250$ / $\phi 300$
Cutting Capacity, $\phi$ (mm)	$\phi 90$ / $\phi 115$
Cutting Capacity, # (mm)	50 x 165 ( $\phi 250$ ) 50 x 195 ( $\phi 300$ )
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

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.

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.

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.



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 offer several 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 302 - Abrasive Cut-Off Machines



Servocut Models	302-AA	302-MM
Max. Wheel Diameter (mm)	Ø300	Ø300
Max. Cutting Capacity (mm)	Ø110	Ø110
Max. Cutting Capacity, HxD (mm)	70 x 200	70 x 200
Z-Axis Travel (mm)	125	125
Y-Axis Travel (mm)	220	220
X-Axis Travel (mm) *	-	-
T-Table Dimension (mm)	495 x 275	495 x 275
T-Slot Dimension (mm)	12	12
Cutting Motor Power (S1) (kW)	4	4
Wheel Speed (rpm)	600 - 4000	2800
Cutting Feedrate (µm/s)	20 - 5000	-
HMI Touch Screen	7 inch	-
Chop Cutting, Z-Axis	Auto	Manual
Table Feed Cutting, Y-Axis	Auto	Manual
Parallel Cutting, X-Axis *	-	-
Table Oscillating Cutting	Standard	-
Rapid Pulse Cutting	Standard	-
Smart Feed Control	Standard	-
Step Cut; Segment Cut; Diagonal Cut ***	Optional	-
Size WxDxH (cm)	94x99x76	94x99x76
Weight (kg)	250	250
Recirculation Cooling Unit (l)	80	80
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.

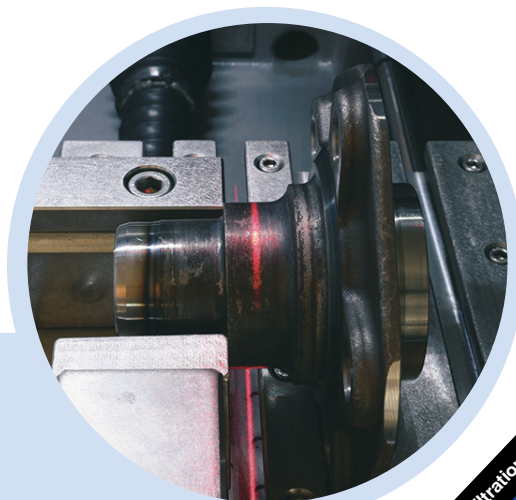
**Diagonal Cut:** For increased cutting capacity. **Step Cut:** For extra hard materials.

**Segment Cut:** For difficult and complex shaped materials.

The all new Servocut 302 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.

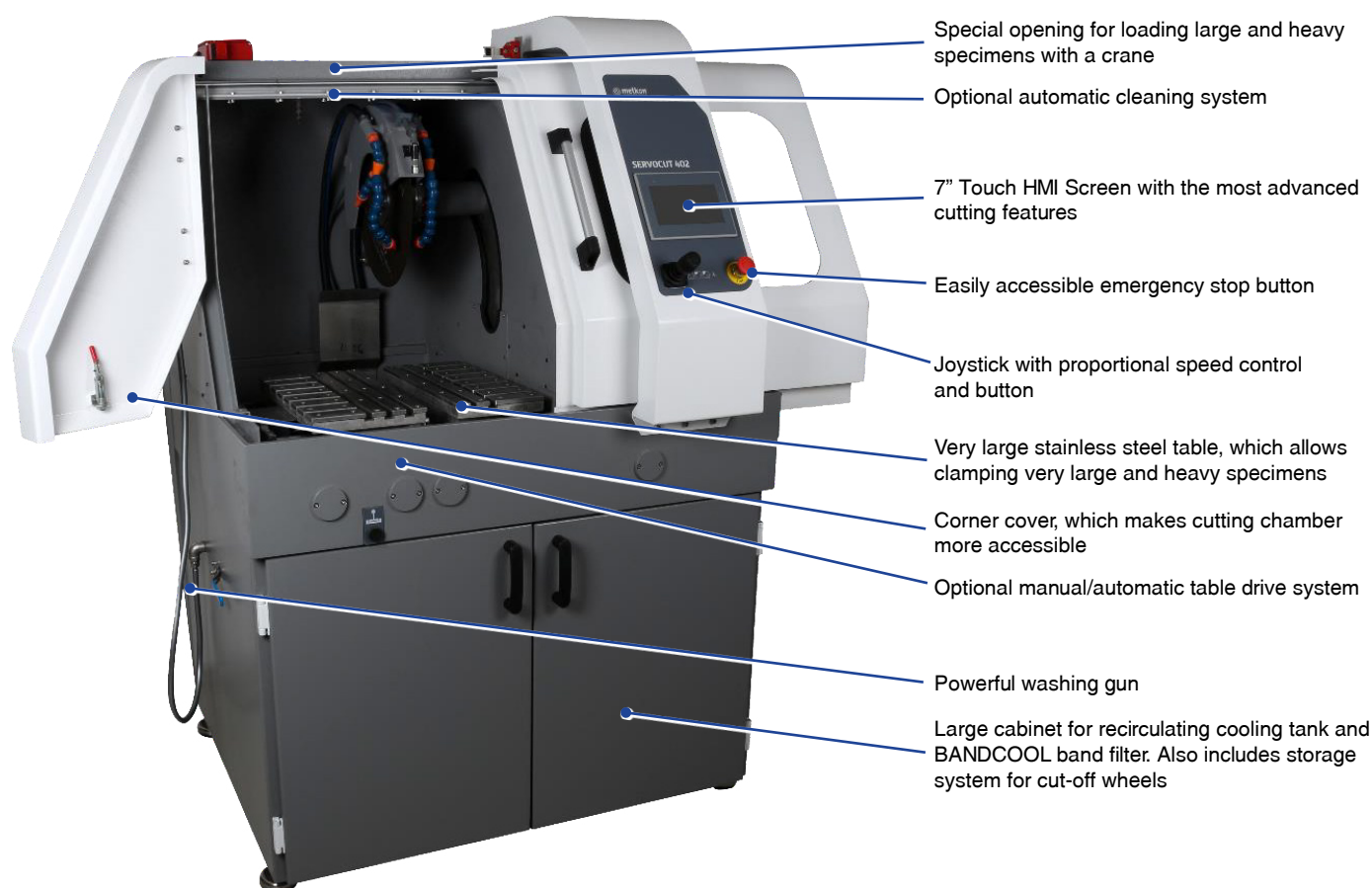
The interlocking safety device prevents the motor from being started unless the hood is closed and it cannot then be opened until the cutting motor has stopped. The electronic brake system, which is a standard feature, brings the cutter to a quick full stop seconds after it has been switched off.

- X-Y-Z triple axes cutting capability: Z-axis Chop cutting, Y-axis Table-feed cutting, X-axis Parallel Cutting
- Instafeed - Available for AA models, automatically reduces and increases feedrate while passing through component for optimum cut speed
- It can be used as bench-top or with a floor cabinet
- Small enough for laboratory, large enough to clamp and cut big samples most of which can be positioned on the table
- Powerful 4 kW cutting motor and advanced cutting methods can overcome the hardest and largest samples
- USB input for sample programme transfer and storage



**For cutting larger specimens that cannot be cut in one cycle the Y and Z axis are combined for additional cutting capacity. First the cutting is performed with Z-axis chop cutting, subsequently the specimen is cut with Y-axis Table-feed.**

# Servocut 402 - Abrasive Cut-Off Machines



Special opening for loading large and heavy specimens with a crane

Optional automatic cleaning system

7" Touch HMI Screen with the most advanced cutting features

Easily accessible emergency stop button

Joystick with proportional speed control and button

Very large stainless steel table, which allows clamping very large and heavy specimens

Corner cover, which makes cutting chamber more accessible

Optional manual/automatic table drive system

Powerful washing gun

Large cabinet for recirculating cooling tank and BANDCOOL band filter. Also includes storage system for cut-off wheels

An advanced metallographic cutting machine all the SERVOCUT 402 models offer a high cutting capacity for use on a wide range of materials, offering automatic chop cutting, automatic table-feed cutting with various cutting methods, programmable cutting parameters, accurate and motorized positioning of the specimen in X - Y and Z axis (X-axis for plane parallel cutting is optional), a cutting capacity of up to 130/150 mm solid stock, with cut-off wheels up to  $\phi 350/400$ mm.

- Modern and sturdy design
- Extraordinary access for easy handling
- X-Y-Z three axes cutting capability
- Advanced cutting features for difficult workpieces
- Automatic Cleaning System optional on all 402 models (excluding 402-MM model)
- Belt protection system (Sensor stops machine if wheel jams) on all 402 models
- Programmable with coloured HMI touch screen controls
- Ergonomic Joystick control offers excellent application versatility

## SERVOCUT 402-MA-MX

Manually driven X-axis table with 150 mm travel for plane parallel cutting.

## SERVOCUT 402-MA-AX

Automatically driven X-axis table with 150 mm travel for programmable serial plane parallel cutting.

## SERVOCUT 402-MM-MX

2200 rpm cutting speed including a manually driven X-axis table with 150 mm travel for plane parallel cutting



**Laser Alignment Unit for rapid and accurate positioning of the cut-off wheel and helps to define the exact cutting line.**



# Servocut 402 - Abrasive Cut-Off Machines

Features on all Servocut 402 and above models:

**Instafeed** - Optimizes 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 (Available for AA models).

**Table Oscillation** - During chop cutting the table makes an oscillation movement to minimize the contact and area to reduce the risk of specimen damage (Available for AA models).

**Rapid Pulse** - Reduces contact time and ensures maximum cooling of specimen (Available for all models excluding MM models).

Servocut Models	402-AA	402-AA-AX	402-MA	402-MA-AX	402-MA-MX	402-MM	402-MM-MX
Max. Wheel Diameter (mm)	Ø400	Ø400	Ø400	Ø400	Ø400	Ø400	Ø400
Max. Cutting Capacity (mm)	Ø150	Ø150	Ø150	Ø150	Ø150	Ø150	Ø150
Max. Cutting Capacity (HxD) (mm)	85x350	85x350	85x350	85x350	85x350	85x350	85x350
Z-Axis Travel (mm)	255	255	255	255	255	255	255
Y-Axis Travel (mm)	300	300	300	300	300	300	300
X-Axis Travel (mm)	-	150	-	150	150	-	150
T-Table Dimension (mm)	550x484	(446+150) x 484	550x484	(446+150) x 484	(446+150) x 484	550x484	(446+150) x 484
T-Slot Dimension (mm)	12	12	12	12	12	12	12
Cutting Motor Power (S1)	7.5 kW	7.5 kW	7.5 kW	7.5 kW	7.5 kW	7.5 kW	7.5 kW
Wheel Speed (RPM)	600-3200	600-3200	600-3200	600-3200	600-3200	2200	2200
Cutting Feedrate (µm/s)	20-5000	20-5000	20-5000	20-5000	20-5000	-	-
HMI Touch Screen	7 inch	7 inch	7 inch	7 inch	7 inch	-	-
Chop Cutting (Z- Axis)	Auto	Auto	Manual	Manual	Manual	Manual	Manual
Table Feed Cutting (Y-Axis)	Auto	Auto	Auto	Auto	Auto	Manual	Manual
Parallel Cutting (X-Axis)	-	Auto	-	Auto	Manual	-	Manual
Table Oscillating Cutting	Standard	Standard	-	-	-	-	-
Rapid Pulse Cutting	Standard	Standard	Standard	Standard	Standard	-	-
Smart Feed Control	Standard	Standard	Standard	Standard	Standard	-	-
StepCut; SegmentCut; Diagonal Cut; Combined Cut *	Optional	Optional	-	-	-	-	-
Automatic Cleaning System	Optional	Optional	Optional	Optional	Optional	-	-
Size WxDxH (cm)	114 x 112 x 169						
Weight	600 kgs						
Recirculation Cooling Unit	135 lt						
Voltage	400V-3phase-50Hz						

\*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. **Combined Cut:** For cutting larger specimens that cannot be cut in one cycle.

The preselection of the cutting force level as well as the setting of cutting feed rate (0.02-5mm/sec) is possible from the touch screen LCD. The feed rate is automatically adjusted, if needed reduced, resulting in perfect cuts and eliminating sample and machine damage. Pulse cutting mode is a standard feature in all automatic models for cutting extra hard specimens. Integrated speed regulating unit is available to adjust the cut-off wheel speed between 600-3200 rpm.



# Servocut 502 - Abrasive Cut-Off Machines



The preselection of the cutting force level as well as the setting of cutting feed rate (0.02 - 5mm/sec) is possible from the touch screen LCD. The feed rate is automatically adjusted, if needed reduced, resulting in perfect cuts and eliminating sample and machine damage. Pulse cutting mode is a standard feature in all automatic models for cutting extra hard specimens. Integrated speed regulating unit is available to adjust the cut-off wheel speed between 600 - 2400 rpm.

The SERVOCUT 502 has 3 different stop modes:

**Stay at the end of cutting:** Stops when the specimen has been cut through. **Back to starting point:** Stops when it has returned to its starting point. **Back to reference point:** Stops when the ultimate reset point in all axes has been reached.

The Servocut 502 range has the same features as the 402 but with larger T-Table dimensions. These 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.

- X-Y-Z triple axes cutting capability: Z-axis Chop cutting, Y-axis Table-feed cutting and X-axis Parallel Cutting
- Belt protection system (Sensor stops machine if wheel jams)
- Automatic Cleaning System optional

Servocut Models	502	502-AX
Max. Cut-off Wheel Diameter (mm)	Ø500	Ø500
Max. Cutting Capacity (mm)	Ø180	Ø180
Max. Cutting Capacity, HxD (mm)	100x400	100x400
Z-Axis Travel (mm)	350	350
Y-Axis Travel (mm)	380	380
X-Axis Travel (mm)	-	200
T-Table Dimension (mm)	764 x 608	(634+200) x 608
T-Slot dimension (mm)	12	12
Cutting Motor Power (S1)	11 kW	11 kW
Variable Wheel Speed (RPM)	600 - 2400	600 - 2400
Cutting Feedrate (µm/s)	20 - 5000	20 - 5000
HMI Touch Screen Controller	7 inch	7 inch
Chop Cutting in Z- Axis	Auto	Auto
Table Feed Cutting in Y-Axis	Auto	Auto
Parallel Cutting in X-axis	-	Standard
Table Oscillating Cutting	Standard	Standard
Rapid Pulse Cutting	Standard	Standard
Smart Feed Control	Standard	Standard
Step Cut; Segment Cut; Diagonal Cut; Combined Cut	Optional	Optional
Automatic Cleaning System	Optional	Optional
Size WxDxH (cm)	140x134x185	140x134x185
Weight	1100 kgs	1100 kgs
Recirculation Cooling Unit (l)	135	135
Voltage	400V-3phase-50Hz	

\*Optional cutting methods for heavy-duty cutting applications.

**Step Cut:** For extra hard materials.

**Diagonal Cut:** For increased cutting capacity.

**Segment Cut:** For difficult and complex shaped materials.

**Combined Cut:** For cutting larger specimens that cannot be cut in one cycle.



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 602 - Fully Automated Abrasive Cut-Off Machines

The Servocut 602 range of machines offer the same features and more than the Servocut 502.

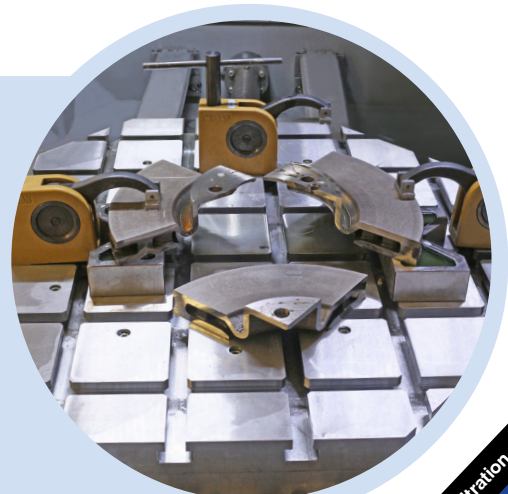
- X-Y-Z triple axes cutting capability: Z-axis Chop cutting, Y-axis Table-feed cutting and X-axis Parallel Cutting
- The precision cutting of this machine can eliminate the need for grinding before lapping the specimen
- Belt protection system (Sensor stops machine if wheel jams)
- USB input for sample programme transfer and storage
- Auto wheel speed change as wheel diameter reduces, to maintain peripheral speed.



Servocut Models	602-AX	602-AX-R
Max. Cut-off Wheel Diameter (mm)	Ø600	Ø600
Max. Cutting Capacity for Round Sections (mm)	Ø225	Ø225
Max. Cutting Capacity for Rectangular Sections, HxD (mm)	100 x 500	100 x 500
Max. Cutting Capacity for Rectangular Sections, HxD (with Combined Cut) (mm)	200 x 550	200 x 550
Z-Axis Travel (mm)	340	340
Y-Axis Travel (mm)	560	560
X-Axis Travel (mm)	540	540
T-Table Dimension (mm)	772 x 710	Ø710 Rotary Table
Rotary Table Positioning Angle	-	360° with 0.1° Accuracy
T-Slot dimension (mm)	18	18
Cutting Motor Power (S1)	15 kW	15 kW
Variable Wheel Speed (RPM)	600 - 2400	600 - 2400
Wheel Diameter Measurement	Standard	Standard
Constant Peripheral Wheel Speed	Standard	Standard
Cutting Feedrate (µm/s)	20 - 5000	20 - 5000
HMI Touch Screen Controller	10 inch	10 inch
Chop Cutting in Z- Axis	Auto	Auto
Table Feed Cutting in Y-Axis	Auto	Auto
Angle Cutting	-	Standard
Parallel Cutting in X-axis	Standard	Standard
Multi Target Cutting	Standard	Standard
Table Oscillating Cutting	Standard	Standard
Rapid Pulse Cutting	Standard	Standard
Smart Feed Control	Standard	Standard
Step Cut; Segment Cut; Diagonal Cut; Combined Cut *	Optional	Optional
Automatic Cleaning System	Optional	Optional
Central Lubricating System	Optional	Optional
Size WxDxH	184 x 173 x 200 cm	
Weight	1600 kgs	1600 kgs
Recirculation Cooling Unit	200 lt	200 lt
Voltage	400V-3phase-50Hz	

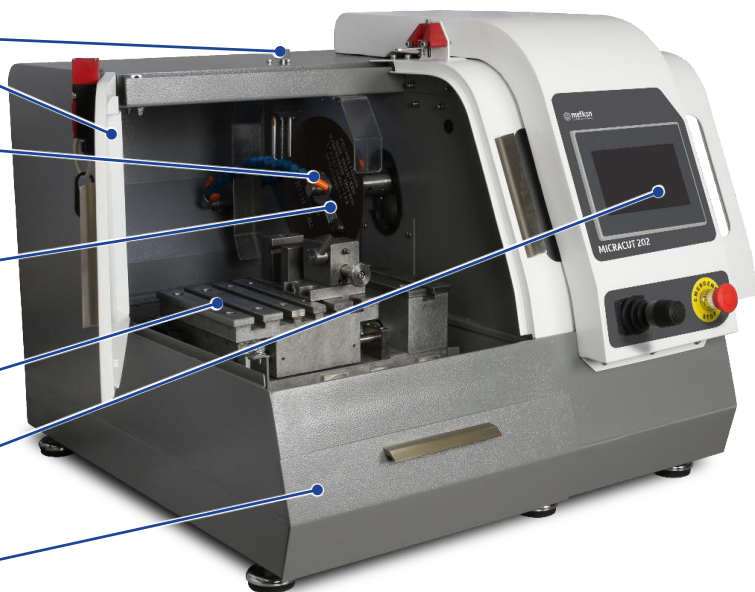
\*Optional cutting methods for heavy-duty cutting applications. **Diagonal Cut:** For increased cutting capacity. **Step Cut:** For extra hard materials. **Segment Cut:** For difficult and complex shaped materials. **Combined Cut:** For cutting larger specimens that cannot be cut in one cycle.

**SERVOCUT 602-AX-R has 4-Axis Multi-Target Cutting,** designed for cutting complex shaped specimens in any angle without re-clamping. Equipped with 360° rotary table with servo motor drive. Ability to cut specimens up to 20 different cutting lines in different angles. Program memory for cutting lines and parameters for Multi-Target Cutting. Very large rotary table with a diameter of Ø710 mm allows to fix, position and cut very large samples easily and efficiently. The angle of rotary table can be adjusted with 0.1° accuracy. With combination of all 4-axis, the cutting can be done in any possible position without re-clamping.



# Micracut - Precision Cutters

- Advanced dressing unit
- Corner cover, which makes cutting chamber more accessible
- Powerful cooling nozzles
- Advanced Cutting Methods**  
Suitable for diamond, CBN and abrasive cut-off wheels up to 200 mm diameter. Adjustable cut-off wheel (Z-axis) height up to 45 mm. "Rapid Pulse Cutting" feature eliminates heat generation and reduces cutting time. "Instafeed" feature allows fastest cutting without burning specimen. Feedrate is optimised according to the specimen hardness and contact of cutting area depending on the motor load.
- Extremely precise X-axis movement system allows very precise slice cutting (AX model)
- 7" coloured HMI touch screen with user friendly software allowing easy view and control of all steps. Up to 99 different cutting program can be saved
- Integrated recirculation cooling tank with 9 litre capacity



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, the Micracut machines offer low kerf-loss and sample holding versatility, making them an essential part of the modern day laboratory.

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

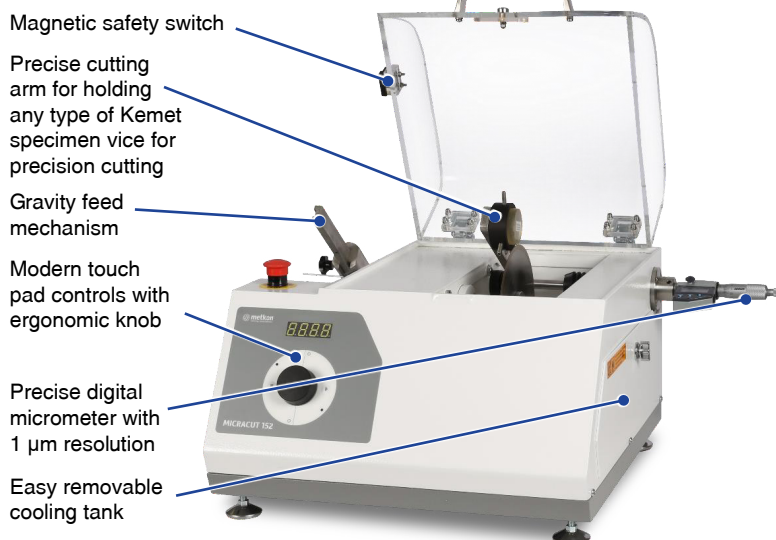
The larger of the two models, the **Micracut 202**, has a powerful motor with variable cut-off wheel speeds (300 - 4,000 rpm) enabling high and low speed cutting, and with a simple adjustment to the cutting table, it can handle larger and deeper samples. A wide variety of clamping tools and accessories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

- T-slotted, moving table accommodates wide range of clamping tools
- Variety of flange sets available to maximise cutting capacity or cutting wheel support

The **Micracut 152**, can use very thin cut-off wheels, up to Ø150 mm diameter, under 1 mm thickness.

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





## Recirculation Cooling Tank

The Cooling Tanks' compact design allows easy storage under the cabinets of all cutting equipment (supplied standard with cutting machines). The Cooling Tanks are offered in 2 sizes to offer efficient cooling during cutting process. The pump starts and stops automatically with the connected equipment.

The cutting surface is cooled by spray nozzles when the water jets hit both the cutting wheel and the specimen. This provides efficient cooling of the sample and prevents the overheating of the surface structure.

### Fine filter sheets for recirculation cooling tank

The fine filter sheet is located on the top of the tank and keeps the cooling water free from debris. The fine filter sheets are reusable and easy to clean.

### Magnetic Collector Rods

Collects the finest magnetic particles from the cooling liquid for cleaner recirculation.



## Bandcool - Filtration of coolant

Designed for filtration of coolant from magnetic and non-magnetic contaminants. The float mechanism senses the contaminant level and actuates the endless chain automatically to bring fresh paper in position. The collected contaminants and used filter paper is collected in a waste container for easy disposal. Coolant life is greatly extended and bacterial growth is inhibited by the efficient removal of contamination.

Perfect choice for cutting materials which generate a lot of swarf or for higher volume usage. Band filter conveyor for the automatic collection and disposal of swarf for long continuous usage. It is environmentally friendly, filtering the coolant and depositing the swarf in a separate container for easy disposal. Available in two sizes - 115 and 150 litres - BANDCOOL can be located under the cabinets of SERVOCUT 502 & SERVOCUT 602, minimising the footprint.

### Coolant Level Sensor

The coolant level sensor monitors the coolant level in the tank to make sure that the coolant is always at the proper level and informs operator when coolant level is insufficient to ensure uninterrupted cooling during operation.





## 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)	Thickness (mm)	Arbor (mm)	Abrasive Type	Recommended for cutting	Code
TRENO-HP	150	0.8	12.7	Silicon Carbide	Non-Ferrous materials and stainless steels	345530
TRENO-MP	150	0.8	12.7	Aluminium Oxide	Medium hard, hardened steels and ferrous materials > 23 HRC	345531
TRENO-HP	200	0.8	12.7	Silicon Carbide	Non-Ferrous materials and stainless steels	345412
TRENO-MP	200	0.8	12.7	Aluminium Oxide	Medium hard, hardened steels and ferrous materials > 23 HRC	345413
TRENO-NF	250	1.6	32	Silicon Carbide	Non-Ferrous materials	600355
TRENO-H	250	1.6	32	Aluminium Oxide	Soft steels and ferrous materials < 23 HRC	600351
TRENO-M	250	1.6	32	Aluminium Oxide	Medium hard steels and ferrous materials > 23-55 HRC <	600352
TRENO-S	250	1.6	32	Aluminium Oxide	Hard steels and ferrous materials > 50-60 HRC <	600353
TRENO-SS	250	1.6	32	Aluminium Oxide	Very hard steels and ferrous materials > 60 HRC	600354
TRENO-NF	300	2	32	Silicon Carbide	Non-Ferrous materials	600356
TRENO-H	300	2	32	Aluminium Oxide	Soft steels and ferrous materials < 23 HRC	600499
TRENO-M	300	2	32	Aluminium Oxide	Medium hard steels and ferrous materials > 23-55 HRC <	600357
TRENO-S	300	2	32	Aluminium Oxide	Hard steels and ferrous materials > 50-60 HRC <	600358
TRENO-SS	300	2	32	Aluminium Oxide	Very hard steels and ferrous materials > 60 HRC	600498
TRENO-NF	350	2.4	32	Silicon Carbide	Non-Ferrous materials	600359
TRENO-M	350	2.4	32	Aluminium Oxide	Medium hard steels and ferrous materials > 23-55 HRC <	600360
TRENO-S	350	2.4	32	Aluminium Oxide	Hard steels and ferrous materials > 50-60 HRC <	600361
TRENO-SS	350	2.4	32	Aluminium Oxide	Very hard steels and ferrous materials > 60 HRC	600500
TRENO-NF	400	3	32	Silicon Carbide	Non-Ferrous materials	*
TRENO-M	400	3	32	Aluminium Oxide	Medium hard steels and ferrous materials > 23-55 HRC <	600362
TRENO-S	400	3	32	Aluminium Oxide	Hard steels and ferrous materials > 50-60 HRC <	600363
TRENO-SS	400	3	32	Aluminium Oxide	Very hard steels and ferrous materials > 60 HRC	*
TRENO-M	432	3	32	Aluminium Oxide	Medium hard steels and ferrous materials > 23-55 HRC <	600364
TRENO-S	432	3	32	Aluminium Oxide	Hard steels and ferrous materials > 50-60 HRC <	600365
TRENO-M	500	3	32	Aluminium Oxide	Medium Hard Steels and ferrous materials > 23-50 HRC <	*
TRENO-S	500	3	32	Aluminium Oxide	Hard Steels and ferrous materials > 50-60 HRC	600497
TRENO-M	600	5	32	Aluminium Oxide	Medium Hard Steels and ferrous materials > 23-50 HRC <	*
TRENO-S	600	5	32	Aluminium Oxide	Hard Steels and ferrous materials > 50-60 HRC	*

\* Available on request. Other sizes also available on request  
All above are supplied in pack of 10

## 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%.

### Features:

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

Size	Code
5 Litre	600096





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

All above are supplied one off



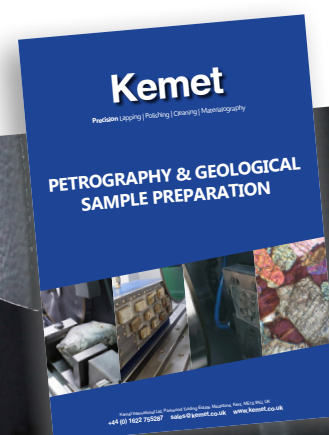
## Kemet Dressing Stick

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

Product	Code
Dressing Stick	362240



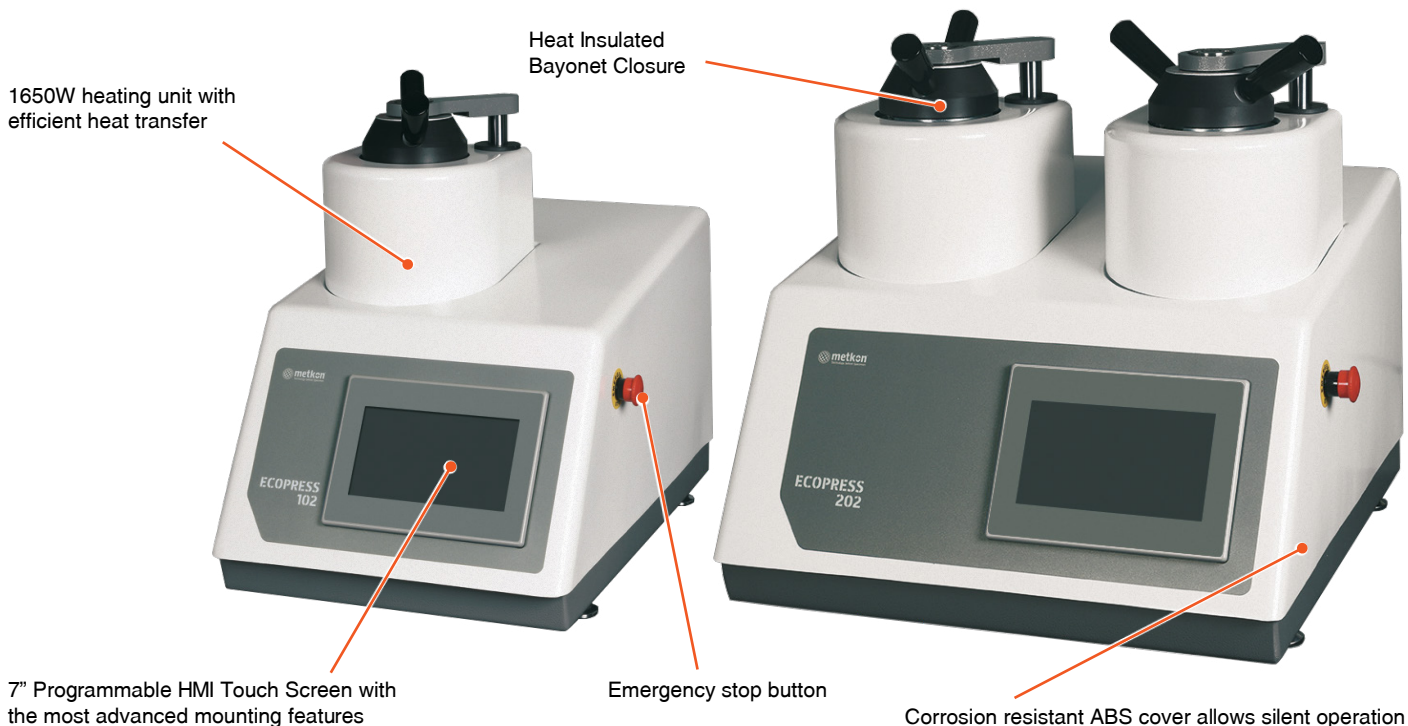
# For Geology Equipment View Kemet's Petrography Catalogue



# Mounting

## Ecopress - Automatic Hot Mounting Presses

The Ecopress range offers high capacity, state of the art, automatic mounting presses with advanced software. 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 diameter 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.

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

\* Chamfered moulds available for easier grinding and polishing of samples (Extends life of media on subsequent processes).



The Ecopress has pre-programmed moulding sequences built-in (factory set) from which you can choose according to your own applications. The pressure, heating and cooling are automatically controlled and the total cycle time of a complete cool mount takes 7 to 9 minutes. The parameters can be changed and adjusted during the mounting process.



## Vacuum Impregnation Units

Used mainly used for porous materials, such as ceramics and sprayed coatings, these units help to reinforce fragile materials. For this type of work, Epoxy resins are used, due to their low viscosity and low vapour pressure and when mixed with a fluorescent dye, they can be used for pore detection. Vacuum Impregnation is carried out by placing the mount into a bell jar, which is connected to a vacuum pump. The vacuum pulls any entrapped air from the Epoxy resin encapsulating the sample. The displaced air is replaced with Epoxy resin, providing complete bonding and support.

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



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

## Mounting Moulds and Accessories

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

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

Moulds	Size (mm)	Quantity	Code
Rubber Moulds	55 x 30	Pk 5	600727
	70 x 40	Pk 5	600728
	100 x 50	Pk 5	600729
	ø25	Pk 5	600062
	ø30	Pk 5	600063
	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 50	600066
	ø30	Pk 50	600753

Accessories	Quantity	Code
Cups and stirrers	Pk 100	600058
250ml measuring cup & stirrer	Pk 5	600730
Stainless steel clips	Pk 100	600050
Plastic clips	Pk 100	600053
Silicon free mould release spray	500ml	600158







## 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, with one mix producing a number of samples.

Type	Application	Cure Time	Shrinkage	Hardness	Colour	Mix Ratios	Contents	Code
KEP Epoxy	General purpose epoxy with very low shrinkage	10h at 25°C	Low	75 Shore D	Clear	2:1 by weight	1kg Resin & 500g Hardener	600410
KEPT Epoxy	Porous materials, coatings and electronic components							600411
Kemset Transparent Dye	For creating a 'see-through' coloured finish. <b>For use with KEP &amp; KEPT Epoxy only</b>	-	-	-	Blue	Dye added to achieve the required depth of colour	20g	600415
			-	-	Yellow			600416
			-	-	Green			600417
Demotec 70	Conductive resin by SEM applications (Conductivity - Good) Previously known as 'Acrylic CLB' (Old product code: 600827)	18 mins	Medium	62 Shore D	Black	1:1 by weight	1kg Resin & 500g Hardener	600760
Demotec 20	General purpose. Previously known as 'Acrylic VLST' (Old product code: 600702)	10 mins	Low	90 Shore D	Clear	1:1 by weight		600757
Acrylic VLB	General purpose	10 mins	Low	90 Shore D	Green	2:1 by volume		600825
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 have 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	12.5kg	600177
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	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	1kg	600176
Melamine	Cream	Standard Examination of all Materials	1kg	600751
Melamine	Cream	Standard Examination of all Materials	7.5kg	600752

# Grinding & Polishing

## Forcipol - Polishing and Grinding Machine

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

The working wheel is powered by a high torque 1.0 HP electric motor with both clockwise and counter clockwise wheel rotation. The state-of-the-art frequency converter allows smooth speed variation (50-600 rpm) of the grinding wheel with soft start and soft stop. This allows the setting of the optimum speed for each individual preparation process. It is perfect choice for laboratories preparing a wide range of different materials from very small to very large.



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)	50	55
Voltage	230V-1phase-50Hz	

Forcipol instruments can be used for grinding, lapping and polishing with magnetic backed discs and cloths or by quick and simple exchange of wheels. When the number of specimens to be prepared increases, Forcipol instruments can be fitted with Forcimat automatic head for automation (see page 15). Forcimat automatic head provides high rate sample preparation and frees the operator from the grinding and polishing procedures.

**Diamond Suspension**  
**ISO 9001:2015 Quality & Zero VOC**  
(see page 26)



Forcimat 102



Forcimat 52



Forcipol Control Unit



## Forcimat - 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 and half spin jog function for easy loading of individual samples.

The Forcimat 102 is operated with an 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" or "Individual" force. An 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, with an audible signal notifying the operator.

For manual sample preparation, the Forcipol Control Unit can be fitted. This 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. If automatic operation is required in the future, one of the Forcimat automatic heads can be installed at any time.

Model	Forcipol Control Unit	Forcimat 52	Forcimat 102
Operation	Manual	Semi Automatic	Programmable Automatic
Application of Force	-	Individual	Individual + Central
Control Panel	Touch Pad Controls	Touch Pad Controls	7" HMI Touch Screen
Program Memory	Last Parameters Retained in 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)	200 x 200x 390	260 x 460 x 540	260 x 460 x 540
Weight (kg)	5	16	16
Voltage	230V-1phase-50Hz		

## Dosimat Peristaltic Dispenser

The Dosimat Peristaltic Dispenser is an optional accessory for the Forcimat 52 and Forcimat 102 systems. It is an automatic fluid dispensing instrument used in combination to obtain consistent specimens and to save time and consumables. The Dosimat can feed both diamond suspensions / lubricants and aluminium oxide suspensions.

Automatic dosing of consumables is applied precisely for perfect sample surfaces. Efficiency is further increased with high quality peristaltic pumps that guarantee exactly the same dosing every time for automation and control of consumable consumption. The liquid is dosed exactly to where the operator wants it on the polishing cloth. No vaporization or spray mist occurs.

Individual force specimen holder	
Size	Code
Ø145mm, for 6 x Ø25 mm specimens	346010
Ø145mm, for 6 x Ø40 mm specimens	346018
Other specimen holder sizes available on request	

Set of insert rings for	
Size	Code
Ø30 mm (to be used with 346018)	345128
Ø25 mm or Ø1" (to be used with 346018)	345279
Ø1 1/4" (to be used with 346018)	345743
Ø1 1/2" (to be used with 346018)	345744

Product	Code
Z-axis material removal with depth control, for FORCIMATE 102 (Must be ordered simultaneously with the machine)	345932
Air filtering and lubricating unit	345126



# 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.

Head unit is mounted on robust dual column to provide superior specimen surfaces. Motorized positioning of the head in vertical (Z) and horizontal (X) axes

7" HMI Touch Screen for creating professional sample preparation programs. Automatic disc cleaning and drying feature. USB interface for program backup, software update and barcode scanner interface (optional)

Integrated optional dosing module

Side opening for easy service and maintenance. Emergency stop button at the right side for maximum operation safety

Retractable water tap for easy cleaning of grinding / polishing area

Quick sample holder replacement mechanism for both individual and central force sample holders. Precise force loading system

Sample storage area to maximize operator comfort

Heavy-duty cast frame eliminates vibration



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

- Suitable for both 250mm and 300 mm applications
- Pneumatically adjustable central and/or individual force loading system
- Robust construction on dual columns
- Efficient control of consumable consumption by integrated Peristaltic Dispensing Unit
- Slurry level calculation feature based on starting volume and dosing settings
- Variable wheel speed 50-750 rpm
- Specimen holder equipped with variable speed 50-150 rpm
- Combined Z-axis material removal control system
- Powered by a high torque 1.5 HP electric motor
- Optional Plexiglas protection cover for safety

**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).**



# High Volume Sample Preparation - Fully Automated Systems

## Velox 102

High volume sample throughput starting from planar grinding to fine grinding/polishing/fine Polishing/Cleaning and Drying The planar grinding station has 4 kW powerful motor with adjustable variable wheel speed from 500 to 1500 RPM with soft start-stop enabling quick planar grinding of the specimen surface. It can accommodate 300 mm diameter flat grinding stones. Automatic dressing unit (every 20 - 600s) allows high material removal rate and maximum flatness on the sample, with a dressing depth of 10  $\mu\text{m}$  - 100  $\mu\text{m}$ .

The fine grinding/polishing station has 1.1 kW powerful motor with adjustable variable wheel speed from 50 to 600 RPM with soft start-stop. It can accommodate 250 mm grinding/polishing discs. Automatic disc cleaning feature keeps the grinding/polishing discs ready for next use.



An automatic sample holder system stores and queues up to six specimen holders, each of which can be programmed with various grinding and polishing parameters. The system automatically takes a holder from the rack for the operation and, once completed, returns it, and selects the next one. This process requires no manual intervention. Additionally, during the operation, completed holders can be removed, and new ones can be added to maintain a continuous, high-throughput grinding and polishing process.

Model	Velox 102	Velox 102-JR
Sample Preparation Stages	Planar / Grinding / Polishing	Grinding / Polishing
Automatic Sample Holder Replacement & Feeding System	Standard	No
Sample Holder (Ø mm)	160	
Specimen Holder Type	Central Force	
Central Pressure Force	30 - 750 N	
Sample Cleaning	Pressurised Water + Ethanol + Ultrasonic	Pressurised Water + Ethanol (Ultrasonic optional)
Sample Drying	Filtered Pressurised Air Drier	
Grinding/Polishing Disc (Ø mm)	250	
Peristaltic Dosing Unit	8	6
HMI Touch Screen	9.7"	7"
Dimensions, WxDXH (mm)	2045 x 902 x 1690	1250 x 902 x 1690
Weight (kg)	850	730
Voltage	400V-3phase-50Hz	

### Velox 102-JR

Ideal for non-ferrous applications, the Velox 102-JR is a compact version which excludes the planar grinding station and Automatic Sample Holder Replacement and Feeding System (both available on the Velox 102).

For high volume sample throughput starting from coarse grinding to fine grinding / polishing / fine polishing / cleaning and drying. This model has the same Fine grinding / polishing station spec as the Velox 102.



Both models have built-in automatic grinding/polishing disc exchange system which can store up to 10 different grinding/polishing discs. During the cleaning operation, the grinding or polishing discs are exchanged automatically according to the selected preparation recipe. The software automatically informs the operator to replace the disc when it has reached the end of its life cycle.



# High Volume Sample Preparation - Semi Automated Systems



## Forciplan 352

Designed for **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. Equipped with a precise automatic dressing unit to provide a flat grinding surface and maintain the performance of the grinding stone. Dressing depth can be set 10 µm to 100 µm with 1 µm increments.

## Forcipol 352

Designed for **grinding and polishing** of very large specimens or a high volume of specimens in specimen holders. It reduces total preparation time for high-volume sample throughput. Uses the same sample holders as the Forciplan 352 Planar Grinder, so can be combined with the Forcipol 352 to increase sample throughput.

Both models can accommodate Ø350 mm disc, with sample holders up to Ø210 mm, 8 samples of Ø50 mm or 10 samples of Ø40 mm can be prepared at the same time.



The Forcipol 352 has an automatic cleaning station for the sample holders (Pressurised water cleaning, ethanol cleaning and fast drying with filtered air). This provides minimal operator intervention between the steps. Automatic cleaning of the specimen holder after each step avoids contamination.

# Eloprep - Electrolytic Polishing & Etching Machine

A fully automatic, electrolytic polishing and etching instrument. The polishing and etching unit can be placed away from the control unit which can then be installed under a fume extraction system. The electrolyte cartridge is easily exchangeable and inserted into the polishing and etching unit. All preparation parameters can be saved/stored for future use.

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 <sup>2</sup> )	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)



## Vibratory Polisher

The Vibrapol is a vibratory polisher designed to prepare high quality polished surfaces on a wide variety of materials, for use on EBSD applications, AFM and SEM analysis.

The high frequency vibration motion produces a very effective polishing action to remove minor deformation remaining after mechanical preparation and reveal the stress-free surface.

- Low power consumption and noise design with piezoelectric vibratory plate, light weight but stable in operation
- Easily replacement design on disc, convenient to change and clean
- Save up to 20 customised programs
- Automatically adjust frequency setting
- Ideal for all materials



Recommended Consumables for Vibrapol	
Product	Code
CHEM-H polishing cloth (For final polishing with colloidal suspensions on medium to hard materials)	342225
MRE polishing cloth (For final polishing with colloidal suspensions on soft materials)	342333
NSH-B polishing cloth (For final polishing using alumina suspensions)	342226
Colloidal silica, Col-K (NC) (For final polishing stage)	342334
Alumina suspension, 0-1 micron (For polishing steel & hard metals)	342335
Alumina suspension, 0-0.7 micron (For polishing semi-hard metals)	342336
Alumina suspension, 0-0.3 micron (For polishing soft metals)	342249
Alumina suspension, 0-0.05 micron (For polishing soft materials)	342216

Model	Vibrapol 1200
Bowl Size (mm)	Ø300mm / 12"
Power	110 / 220V single-phase (50/60 Hz)
Rated Power	50W
Dimension (WxDxH)	516 x 503 x 379mm (cover opening: 607 x 503 x 669mm)
Weight (kg)	53
Sample holder sizes	1" - 2", other sizes can be customised
Product Code	370200

# 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.

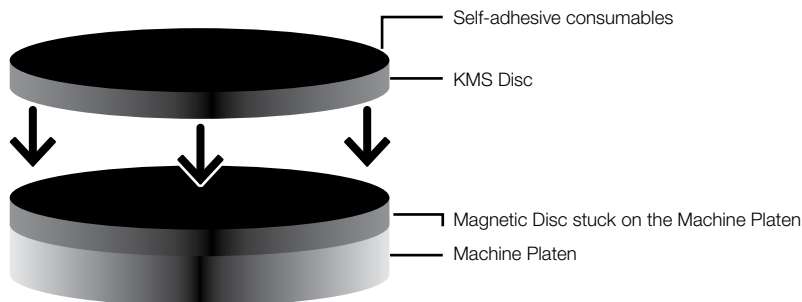
Paper Ring		
Ø 200 mm	Ø 250 mm	Ø 300 mm
345142	345132	345112

## Self-adhesive Grinding and Polishing Consumables:

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

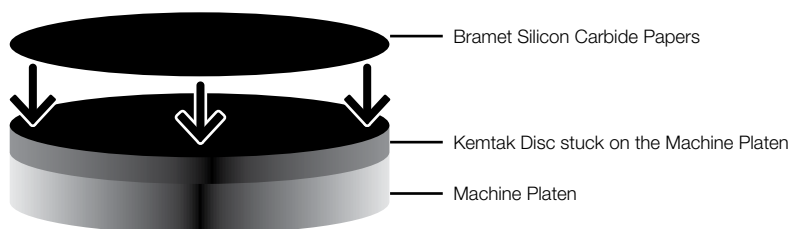
**Option 1:** The self-adhesive discs can be fixed directly to the platen.

**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 24-25 for polishing pads.



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

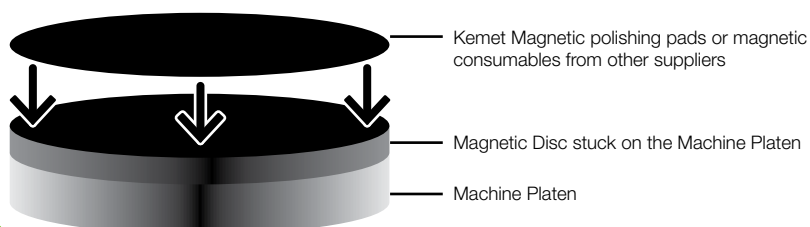
**Option 3:** All Kemetak discs can be used with Bramet self-adhesive grinding papers. The plastic barrier film on the Bramet disc grips the Kemetak non-skid surface so that the adhesive is not used. This makes for faster and cleaner change overs from one grit size to another. Kemetak discs can be supplied on a flexible magnetic backing (Kemetak-M), a solid thin metal backing (Kemetak-S), or PSA backed (Kemetak). Kemetak Plus has a mylar film with adhesive on both sides for sticking non-adhesive papers. Met Discs on page 23.



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

## Magnetic Grinding and Polishing Consumables:

The Kemet magnetic disc system is suitable for a wide range of magnetic polishing pads (marked 'magnetic' on pages 24-25), diamond grinding and fine grinding discs.



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



# 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.

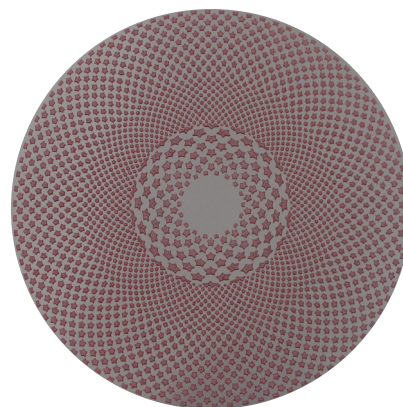
Fine Grinding Discs		Ø Disc (mm)		
Use with	Colour	200	250	300
6-3µm	Green	343585	343587	343819

## Diamond Grinding - Diaflex

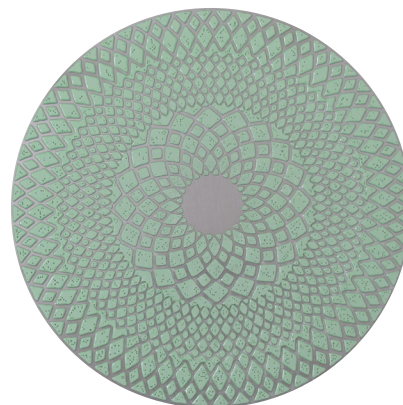
Kemet Diaflex is a self-adhesive, flexible diamond material which combines the long life and aggressive cutting action of diamond with the flexibility of cloth.

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 (Magnetic backed available on request).**

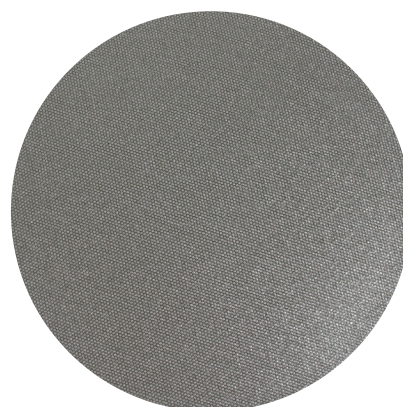
Grade	Grit/Micron Size	Ø Disc (mm)					Square (mm)		
		150	200	230	250	300	100 x 100	150 x 150	300 x 300
Green (N)	60 / 250	342074	342025	342075	342076	342068	342011	342013	342048
Black (N)	120 / 125	342001	342002	342077	342026	342027	342014	342070	342049
Red (N)	200 / 74	342004	342005	342067	342028	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



Diamond Grinding Disc

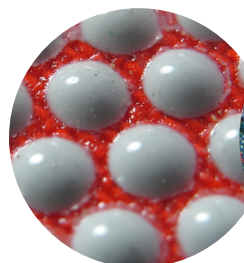


Fine Grinding Disc

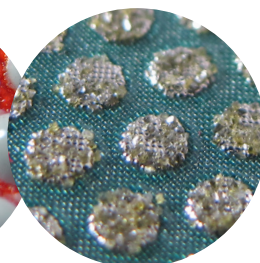


Diaflex Grinding Disc

Close-up of resin bonded Diaflex



Close-up of nickel bonded Diaflex



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.



## 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	-
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

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



## 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
120	342403	342414	342436	342447	-	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

## 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.




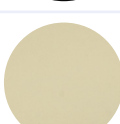
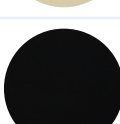

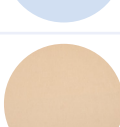
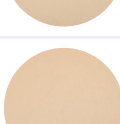
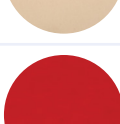
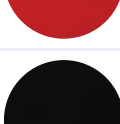
- Proprietary resin system improves adhesion to substrate
- Uniform 3 mil polyester film backing, ensures film flatness and improved part geometry
- Compatible with most machinery attachments and all coolants, allowing quick film replacement
- Pressure sensitive adhesive (PSA) backing

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



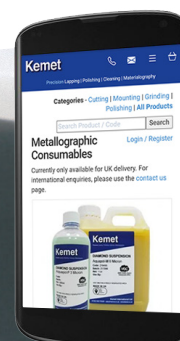
# Kemet Polishing Pads

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	<b>Chemo-textile</b> 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	<b>Nap Cloths</b> 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	341077	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	

*Polishing Pads continue on page 25*

Order consumables from  
[kemet.co.uk/metshop](http://kemet.co.uk/metshop)





Name	Type	Description	Use with Recommended Diamond Micron size	Ø (mm) Supplied in pk of 10			Colour
				200	250	300	
ASFL	<b>Synthetic Silk</b> 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.		341300	341297	341279	
AST-M (magnetic)				341287	341288	341285	

Other sizes available on request



## 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 Suspension

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.

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

- 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

# Diamond Suspension

AQUAPOL-M			AQUAPOL-P			TYPE OM		TYPE OP	
Water Based Monocrystalline			Water Based Polycrystalline			Oil Based Monocrystalline		Oil Based Polycrystalline	
Micron	400g	1 Litre	Micron	400g	1 Litre	Micron	400g	Micron	400g
1/10 (0.1)	219471	219490	1/20 (0.05)	219500	-	1/10 (0.1)	216321	1/10 (0.1)	216341
1/4 (0.25)	219459	219491	1/10 (0.1)	219472	219484	1/4 (0.25)	216323	1/4 (0.25)	216342
1/2 (0.5)	219457	219492	1/4 (0.25)	219461	219485	1/2 (0.5)	216322	1/2 (0.5)	216343
1	219450	219493	1/2 (0.5)	219463	219486	1	216324	1	216344
3	219440	219494	1	219452	219487	3	216326	3	216346
6	219448	219495	3	219453	219488	6	216328	6	216347
9	219442	219496	6	219454	219482	9	216329	9	216349
15	219444	219497	9	219455	219483	15	216331	15	216350
25	219446	219498	15	219456	219489	25	216332	25	216351
Note to users of WM/WP suspensions - these are still available						45	216333		

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

## Type AP

High quality alcohol based polycrystalline diamond suspension ideal for polishing specimens which cannot come into contact with water. It is supplied in 500ml bottles. Other Micron sizes and packaging sizes are available upon request.

Micron	TYPE AP	TYPE WFP
	500ml	400g
1	250350	250677
3	250271	250676
6	250272	250678



## Type WFP

Specially developed to obtain the best results when polishing water-sensitive materials, Type WFP is a high concentration polycrystalline diamond suspension that provides short preparation times. Oil and water free, Type WFP does not contain alcohol making it non-hazardous for shipping and is more environmentally friendly. Supplied in 400g bottles. Use with a water free lubricant such as WF Lubricating Fluid (see page 28).

## EasyPol - Diamond & Lubricant in a Single Application

Easypol is a diamond suspension and lubricant combination, resulting in faster and simpler metallographic sample preparation. These suspensions result in high stock removal, allowing preparation time to be reduced. The diamond suspension / lubricant combination ensures that the optimum ratio of diamonds and lubricant is predetermined, resulting in a quality polishing operation, first time and every time.

- Lower cost of consumables
- Reduction in preparation time
- Excellent and reproducible results
- Easy to use and clean
- Water based
- Also available in 2.5 and 5 litres

Micron	EasyPol (For routine metallographic sample preparation)			EasyPol+ (Special formula for reduced polishing times)		
	500ml	2.5 Litres	5 Litres	500ml	2.5 Litres	5 Litres
1/4	250600	-	-	-	-	-
1	250601	250621	250619	250606	250628	250613
3	250602	250618	250622	250607	250629	250614
6	250603	250623	250624	250608	250630	250615
9	250604	250625	250617	250609	250631	250616
15	250605	250626	250627	250610	250632	250633



\* 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.

## 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
- 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
- Optimum viscosity and chemical composition of each Liquid Diamond Product gives fast stock removal with the ability to produce superfine surface finishes



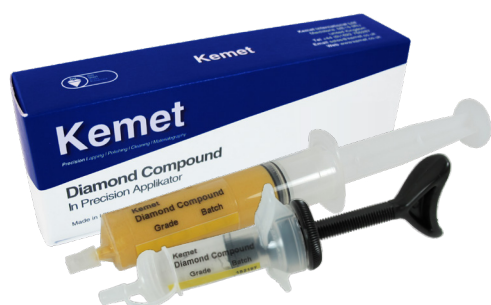
## Diamond Compound

### 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).



Micron	TYPE CM			TYPE CP		
	5g Applikator	10g Syringe	20g Syringe	5g Applikator	10g Syringe	20g Syringe
1/10	115000	115040	115010	115020	115050	115030
1/4	115001	115041	115011	115021	115051	115031
1/2	115002	115042	115012	115022	115052	115032
1	115003	115043	115013	115023	115053	115033
3	115004	115044	115014	115024	115054	115034
6	115005	115045	115015	115025	115055	115035
9	115006	115046	115016	115026	115056	115036
15	115007	115047	115017	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 Applicator 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
1/10	113187	-
1/4	113188	113200
1	113189	113201
3	113190	113202
6	113191	113203
8	113192	113204
14	113193	113205
25	113194	-
45	113195	-
60	113196	-





# 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
- Reduces the consumption of diamond slurry

Type	Description	Soluble in	Colour	450ml Trigger spray	2.5 Litres	5 Litres
Blue	Improves cutting and polishing performance on cloths or plates.	Water	Blue	301200	301156	301159
GW2	For use with Kemet Diamond Suspension, particularly when used with Kemet Lapping Plates.	Water	Light green	301514	301108	301107
R OS2	For use where water is not permitted.	Oil	Red	301513	301512	301141
W9	Recommended for use with AquaPol Diamond Suspensions. *ZERO VOC's.	Water	Clear	301533	301527	301529
WF	Recommended for use with Type WFP Diamond Suspensions. *ZERO VOC's.	Alcohol	Clear	301220	301221	301223



# 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). 0.09 micron particle size.

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



\* 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.

# Spectroscopy Sample Preparation

## Spectral 350/250 - Sample Preparation Surface Grinder



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 version.

Magnetic and mechanical sample holders available for round specimens



Type	Code
Magnetic	345169
Mechanical	345248

Model	Spectral 250	Spectral 350-1	Spectral 350-2	Spectral 350-2S
No. Of Stations	1	1	2	2
Disc Diameter (mm)	250	350	350	350
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	110 x 60 x 95
Weight (kg)	40	120	205	205
Voltage	400V-3phase-50Hz			

## Spectral PG/AG - Pendulum Grinder

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.

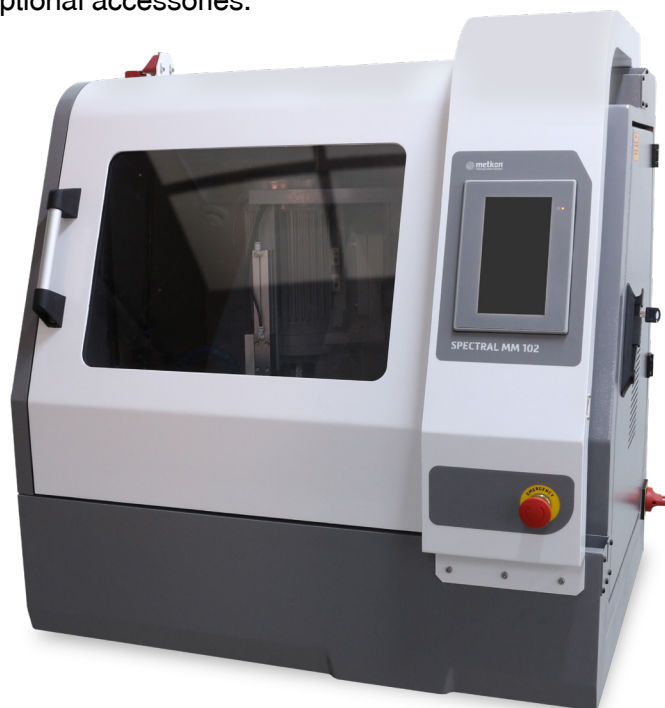
The **Spectral AG** is an automatic cup grinder for spectroscopic sample preparation of iron and steel samples. Parameters of the grinding process, such as feedrate and grinding depth, can be preset using the digital display. Equipped with automatic sample feed and fine speed control, fast advance and reverse are available, with a laser measurement station ensures extremely precise positioning of the cup wheel.



Model	Spectral PG 52	Spectral AG
Grinding motor power, (kW)	(S1 - 3)	(S1- 3)
Grinding wheel Speed (rpm)	2800	2800
Cup wheel Diameter (mm)	Ø150	Ø150
Radius of arc	68	-
Travel, mm	203	-
Table feed rate (mm/s)	-	10 - 250
Stroke (mm)	(Z-Axis - 60)	(Y-Axis - 210) (Z-Axis - 60)
Operation	Manual	Automatic
HMI Touch Screen	-	7"
Program Memory	-	99
Grinding Depth Accuracy, (µ)	-	10
Dimensions, WxDxH (cm)	without cabinet	94 x 83 x 97
	with cabinet	94 x 83 x 175
Weight (kg)	without cabinet	300
	with cabinet	385
Voltage	400V-3phase-50Hz	

# Spectral MM - Automatic Milling

Suitable for different sample shapes with diameters up to 60 mm, the **Spectral MM** can be fitted with a special cutter head with diamond or tungsten carbide tips. A three-jaw-chuck is standard but other additional clamping devices are available as optional accessories.



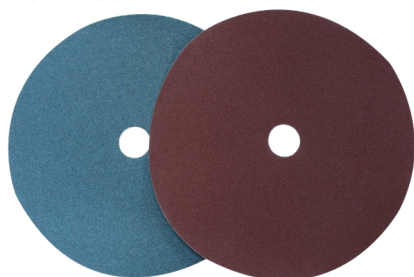
Model		Spectral MM 102
Processable sample material		Non-ferrous and steel samples
Sample Shapes		Cylindrical, mushroom shaped etc.
Milling Head Movement		Automatic
Milling Power (kW)		5
Milling Head Speed (rpm)		500 - 4000
Milling Head Dia. (mm)		Ø60
Table Movement, Y Axis		Automatic
HMI Touch Screen		7"
Sample Height Measurement		-
Sample Size, Height (mm)		Max. 60
Sample Dia. (mm)		Max. Ø60
Sample Hardness		Max. 55 HRC
Sample Holder System		Optional accessories
Y Axis travel (mm)		210
Z Axis travel (mm)		60
Table feedrate (mm/s)		0.5 - 30
Dimensions, WxDxH (cm)	without cabinet	94 x 83 x 97
	with cabinet	94 x 83 x 175
Weight (kg)	without cabinet	300
	with cabinet	385
Max Milling Depth (mm)		3 (For Non-ferrous)
Axial Feeding (mm)		Automatic
Program Capacity		99
Cooling System		Air Cooling (Optional)
Voltage		400V-3phase-50Hz

## Consumables For Spectroscopy Sample Preparation

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	250	60	345722
	350	60	345409
Zirconium oxide	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	-

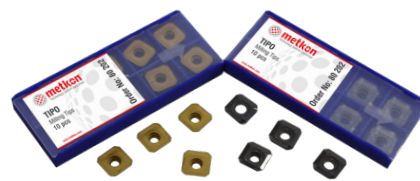
Contains 1 per pack.



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.



View Kemet's  
Spectroscopy Catalogue  
For More Machines



# Ultrasonic Cleaning

The K-Sonic Benchtop ultrasonic cleaners are available in 3 sizes the K-sonic 6, 12 & 30, catering for all your smaller component cleaning requirements. All tanks can be heated, starting at 30°C and increasing by 5°C increments up to a maximum temperature of 80°C, an LED display light indicating when the set temperature is achieved. The K-sonic features a continuous ON mode, which enables continuous running for up to 6 hours, as well as individual 1-5 minutes, increasing to 5 minutes increments after up to a 30-minute cycle time. A small audio buzz alerts the operator when the cleaning cycle ends.

The tank, basket and housing are fabricated from stainless steel, the cleaner standing on four non-slip feet to ensure any pooling water is kept away from the electronics. A waste valve at the back is controlled by a side-mounted handle. The K-sonic benchtop cleaners have practical carry handles and the lid can also be used as a drip tray for loading and unloading.

Operating at 37Khz the switchable function modes ensure the hardware performance meets your process requirements, Eco mode is for cleaning sensitive materials. The ultrasonic cavitation operates with less power to minimise cavitation damage on soft materials whilst also reducing the noise level and mechanical impact on the tank, thus increasing the life of the tub. Dynamic mode optimises the sound field distribution ensuring peak performance for stubborn hard-to-remove contamination.



Technical information	K-Sonic 6	K-Sonic 12	K-Sonic 30
Tank total volume (l)	5.9	12.9	27.5
Recommended tank operating capacity (l)	4.3	10	22
Ultrasonic power effective (W)	150	200	300
Heating power (W)	400	800	1200
Unit ext. dim. W/D/H (mm)	370 x 225 x 280	380 x 315 x 330	575 x 375 x 330
Tank int. dim. W/D/H (mm)	280 x 130 x 149	275 x 215 x 199	475 x 270 x 199
Basket int. dim. W/D/H (mm)	195 x 105 x 50	250 x 195 x 135	450 x 255 x 135
Weight (kg)	5.1	7.5	11.0
Voltage	230V-single phase-50Hz or 110V-single phase-60Hz		
Product Code	359482K	359484K	359486K

The punched pattern on the baskets base and side walls, complement an assortment of versatile pins. The perforations are positioned to enable optimum cavitation access to the items being cleaned. Items ranging from large industrial components to delicate laboratory glassware, tiny watch parts, and intricate pieces of jewellery, can be individually secured. Using this smart arrangement increases the potential number of components that can be cleaned in one load of the basket and improve productivity levels through the efficient use of water, cleaning agents, energy and time.

# 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.**



## 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
1 Litre (Box of 12)	362962
5 Litres	364618



## 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

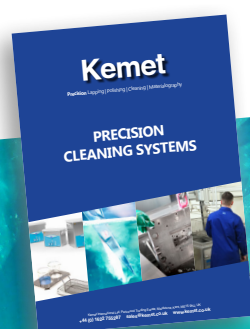


### CO - 42 Cleaning Fluid

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.



**View Kemet's  
Ultrasonic Cleaning Catalogue  
For More Machines & Fluids**



# Hardness Testers



These Hardness Testers are ideal instruments for quality assurance, quality control, research and metallurgical departments to monitor the hardness during fabrication and after heat treatment or welding as well as for the performance analysis on metal parts and new alloys.

Typical applications are determining the Vickers microhardness of small precision parts, thin material or wire, coatings and performing case depth determinations (CHD, EHT, NHT) on cross sections, both manually or automatic on this advanced hardness tester system.

The 'N-Sure' software increases productivity and operator efficiency by automating the test & measurement process and optional motor stage navigation process. For high-volume mounted sample testing, multi-sample mount holders are available to further increase the productivity and throughput of samples.

## Scanning Overview Image Feature

Mapping function allows overview image of complete sample surface. The test points are easily determined on the sample with pre-defined or user defined patterns.

## Case Hardening Depth (CHD) Testing

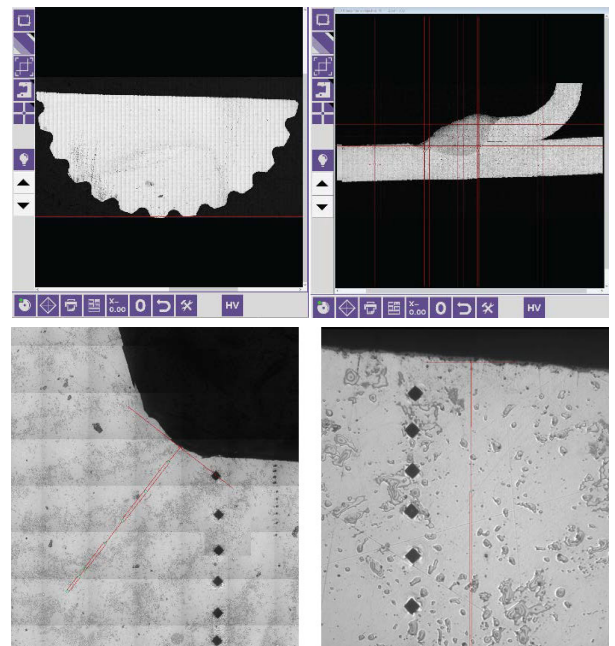
Case Hardening Depth Module is optionally available for all models. DUROLINE V1 can be equipped with a Digital Manual XY-Stage that includes one Slyvac digital micrometer and one analogue micrometer. Readings from Slyvac micrometer is transferred to N-Sure software simultaneously, so automatic features of CHD software module can be used. For DUROLINE M1 and M2 models, Case Hardening Depth testing is done manually by digital manual XY-Stage. For DUROLINE M4, Case Hardening Depth testing is done automatically by motorized XY-Stage.

## Closed-Loop Controlled Load Application by Load Cell Technology

The DUROLINE V1 tester is equipped with high technology closed-loop load cell system. Load cell system provides maximum accuracy and repeatability for all test loads without exceeding target load threshold.

## High precision spindle

For accurate Vickers hardness testing, the elevating speed and backlash of the spindle are critical. By using quality components and design experience, the spindles guarantee long life without loss of accuracy due to wear and friction, even for large and heavy specimens.





		VICKERS & KNOOP					VICKERS	ROCKWELL	
		M1	M2	M4	LV1	LV2	LV3	V1	R1
Hardness Scales		Vickers HV as per ISO 6507, ASTM E384, E92 - HV0,01 - HV0,025 - HV0,05 - HV0,1 - HV0,2 - HV0,3 - HV0,5 - HV1			Vickers HV as per ISO 6507, ASTM E384, E92 - HV0,1 - HV0,2 - HV0,3 - HV0,5 - HV1 - HV2 - HV3 - HV5 - HV10			Vickers HV as per ISO 6507, ASTM E384, E92 - HV0,3 - HV0,5 - HV1 - HV2 - HV3 - HV5 - HV10 - HV20 - HV30	Rockwell Regular & Superficial Scales as per ISO 6508 & ASTM E18 - HRA, HRBW, HRC, HRD, HREW, HRFW, HRGW, HRHW, HRKW, HRLW, HRMW, HRPW, HRRW, HRSW, HRVW, HR15N, HR30N, HR45N, HR15TW, HR30TW, HR45TW, HR15WW, HR30WW, HR45WW, HR15XW, HR30XW, HR45XW, HR15YW, HR30YW, HR45YW
		Knoop HK as per ISO 4545, ASTM E384, E92 - HK0,01 - HK0,025 - HK0,05 - HK0,1 - HK0,2 - HK0,3 - HK0,5 - HK1			Knoop HK as per ISO 4545, ASTM E384, E92 - HK0,1 - HK0,2 - HK0,3 - HK0,5 - HK1 - HK3			Knoop HK as per ISO 4545, ASTM E384, E92 - HK0,3 - HK0,5 - HK1 - HK3	
Test Loads	Test Loads	10gf - 25gf - 50gf - 100gf - 200gf - 300gf- 500gf - 1000gf			100gf, 200gf, 300gf, 500gf, 1kgf, 2kgf, 3kgf, 5kgf, 10kgf			300gf - 500gf - 1kgf - 2kgf - 3kgf - 5kgf - 10kgf - 20kgf - 30kgf	Preload for Superficial Rockwell - 3 kgf. Preload for Rockwell - 10 kgf. Test Loads for Superficial Rockwell - 15 kfg, 30 kgf, 45 kgf. Test Loads for Rockwell - 60kfg, 100kgf, 150kgf. Test Loads for Brinell Depth - 5 kgf to 250 kgf.
		0,09807N - 0,2452N - 0,4904N - 0,9807N - 1,961N - 2,942N - 4,904N - 9,807N			0,9807N - 1,961N - 2,942N - 4,904N - 9,807N - 19,631N - 29,420N - 49,033N - 98,067N			2,942N - 4,904N - 9,807N - 19,631N - 29,420N - 49,033N - 98,067N - 196,033N - 294,200N	
	Test Load Accuracy	10gf - 200gf: +/- 1,5% and > 200gf: +/- 1,0% As per ISO standard (and ASTM E-384, JIS B7725, JIS B7734)			10gf - 200gf: +/- 1,5% and > 200gf: +/- 1,0% As per ISO standard (and ASTM E-384, JIS B7725, JIS B7734			All loads within +/- 1,0% As per ISO standard (and ASTM E-384, ASTM E-92-17, JIS B7725, JIS B7734)	As per ISO 6508 and ASTM E18
	Test Load Dwell Time	From 5 - 99 sec with 1 sec increments As per ISO standard (and ASTM E-384, JIS B7725, JIS B7734)							
	Test Load Application Speed	10gf - 200gf: < 0.070 mm/s and > 200gf: < 0.200 mm/s As per ISO standard (and ASTM E-384, JIS B7725, JIS B7734)			10gf - 200gf: < 0.070 mm/s and > 200gf: < 0.200 mm/s			For all loads not more than 0.200 mm/s As per ISO standard (and ASTM E-384, JIS B7725, JIS B7734)	
	Load Force Application	Dead-weight, Automatic motorized, load, dwell, unload			Motorized force application with closed loop load cell control, Automatic load, dwell, unload				
	Load Selection	Manual by external setting knob			By N-Sure test settings				



Rockwell (R1) Hardness Tester

# Microscopes

Kemet provides an extensive selection of microscopes, cameras, and accompanying accessories. The following items represent just a portion of what Kemet has to offer.



## 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

This Single magnification stereo microscope offers clear, upright, and true-colour imaging with a wide field of view, making them ideal for tasks requiring ample distance between the microscope and the object. They ensure fatigue-free viewing over extended periods, featuring a 45° inclined binocular head with diopter adjustment and an interpupillary distance range of 55-75mm.

The standard configuration includes a 2X objective and 10X Widefield eyepieces, achieving a total magnification of 20X, which can be expanded from 5X to 70X with optional components.



## 4K C-Mount Camera

This microscopy camera delivers 4K resolution live images with true colour and sharpness. Multiple ways to get images from the camera: HDMI, USB, SD card, WiFi, GigE.

**Frame Rate:** 30@3840×2160(HDMI & USB). **Pixel Size:** 2µm

# Kemet Technical Support

## Technical Support

Our expertise is available to you through our in-house technical specialists, a team of 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	Cast iron	Gold	Silicon Carbide
Alloys	Ceramic	Graphite	Sintered Materials
Alumina	Chrome Plate	Inconel (Cobalt/Nickel)	Stainless steel
Aluminium	Cobalt Chrome	Keronite (ceramic)	Steel
Aluminium Nitride	Compact Disc	Molybdenum	Steel (Hard)
Anodised Aluminium	Concrete Cement	Nimonic Steel	Titanium
Beryllium Copper	Copper	Nickel	Tool Steel
Bone	Epoxy Resin	Plastic	Toughened Steel
Boron Carbide	Ferrite	Polyetherimide	Tungsten carbide
Brass	Fibre Optic	Quartz	Tungsten Copper
Bronze	Gallium Arsenide	Sapphire	Vulcanised Fibre
Carbon	Germanium	Silicon	Zinc Selenide
Carbon Fibre	Glass	Silicon Aluminium Alloy	Zirconate (Lead) Titanate

All processed samples are returned with detailed technical process reports, **free of charge**.





# Kemet



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Kemet Europe B.V

### **Japan / Korea**

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### **China**

Kemet China Ltd

### **Australia**

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