

# Kemet

Precision Lapping | Polishing | Cleaning | Materialography

## SPECTROSCOPY SAMPLE PREPARATION EQUIPMENT & CONSUMABLES



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# Kemet Spectroscopy Products

**Kemet**  
INTERNATIONAL LTD

Since 1938, Kemet has been at the forefront of precision polishing technology, producing quality diamond pastes, slurries and composite lapping/polishing materials in our purpose built facilities.

Optical emission spectrometry (OES) and X-Ray fluorescence are most commonly used techniques for the analysis of metals and solid samples.

Sample preparation of metals and materials have become more and more important during the past few years because of the rapid development and improvement of both software, as well as OES and XRF-devices. These have shifted the detection limit for trace analyses and it is crucial to have the sample properly prepared. The sample needs to be both representative, homogeneous and with an even surface in order to eliminate factors that can influence the results. For the preparation of solid metal samples, Kemet offers manual, semi automatic and automatic sample preparation machines - from the small table-top disc surface grinders to fully automatic milling machines.

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## Ordering Information

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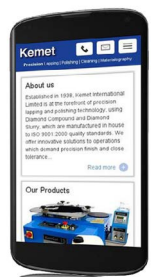
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### Website:

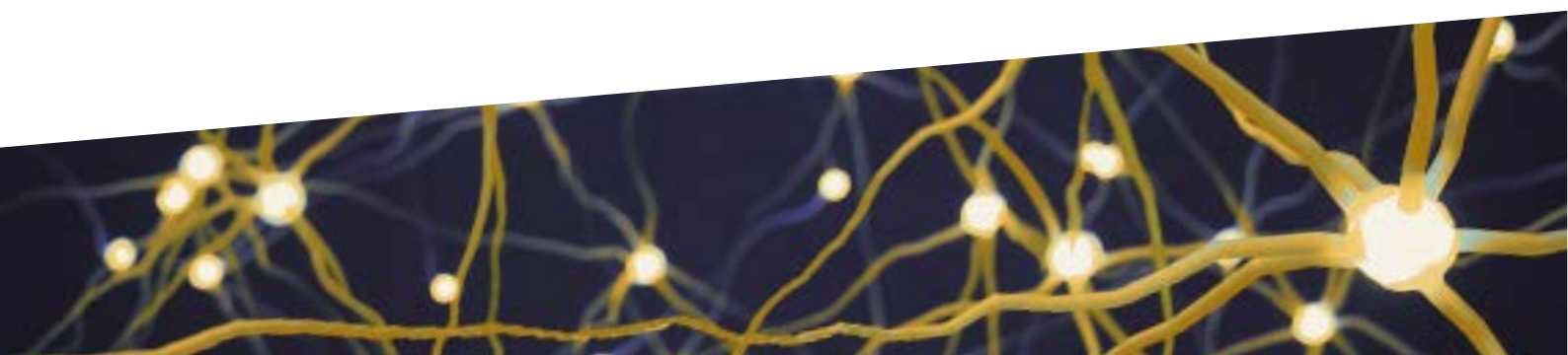
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Catalogue version: 2001





# Sample Preparation Surface Grinder - Spectral 350/250

Used to achieve excellent precision flat surfaces of iron and steel samples for spectroscopic analysis, both models are of robust and vibration-free construction.

Designed to hold the grinding papers by suction, avoiding the need for adhesive backings and shortening abrasive changeover times. An integrated vacuum system with spark trap allows a safe, dust-free operation. The specially designed cover allows grinding on a specific segment of the grinding disc to ensure operator comfort and safety. The Spectral 250 is a table top/portable version and the Spectral 350 is a free standing version.

The Spectral 350 series of instruments are available as single or dual disc units with 350 mm wheel size which is dynamically balanced for smooth running.

The grinding disc is covered halfway by a lid, allowing grinding only in a segment for operator comfort and protection. A safety switch guarantees automatic switch off when the lid is opened and the machines are fitted with an interlocking safety device. When the lid is opened or the emergency button is depressed, the motors stop immediately.

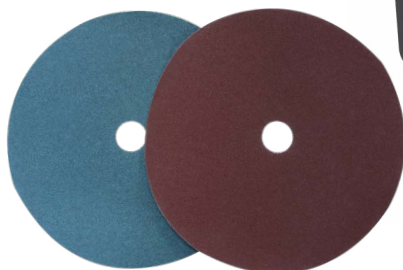
Magnetic and mechanical sample holders available for round specimens



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)	Ø250	Ø350	Ø350	Ø350
Disc Speed (rpm)	2800	2800	2800	1400/2800
Motor Power (kW)	1.1	2.2	2 x 2.2	2 x 2.2
Dust Exhauster	Yes	Yes	Yes	Yes
Paper Adjustment	Vacuum	Vacuum	Vacuum	Vacuum
Dimensions, WxDxH (cm)	35 x 45 x 33	75 x 60 x 90	110 x 60 x 95	110 x 60 x 95
Weight (kg)	40	120	205	205
Voltage	230V-single phase-50Hz	400V-3phase-50Hz		

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.



# Pendulum Grinder - Spectral PG

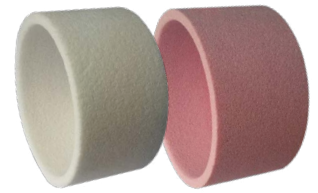
A bench-top, pendulum grinder for fast, wet or dry grinding of iron and steel samples for spectroscopic analysis. It is also possible to prepare other materials on the Spectral PG 52 by using special stone cup wheels.



Model	Spectral PG 52	
Grinding motor power, (kW)	(S1 - 3)	
Grinding wheel Speed (rpm)	2800	
Cup wheel Diameter (mm)	Ø150	
Radius of arc	68	
Travel, mm	203	
Stroke (mm)	Z-Axis - 60	
Operation	Manual	
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	

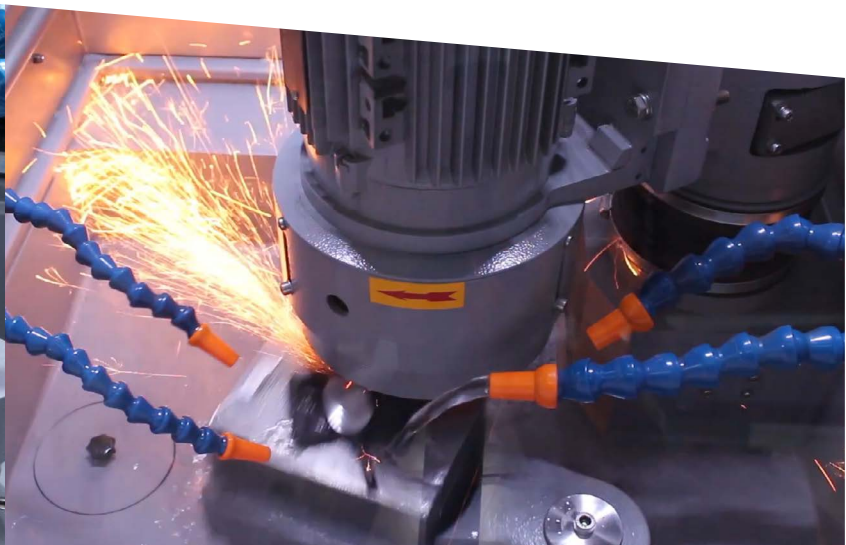
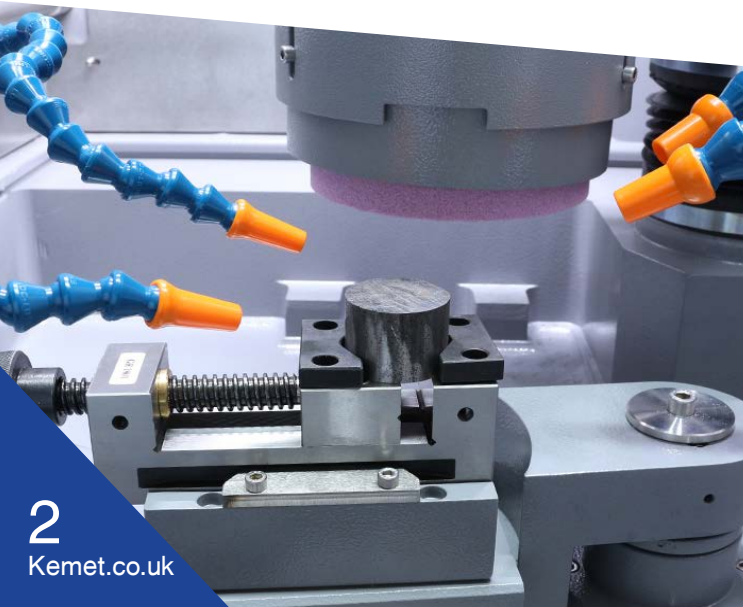
Grinding Stones			
For	Diameter	Grit	Code
Hard Steels (White)	150/32 mm	60	345156
	150/32 mm	36	-
Cast Iron (Pink)	150/32 mm	60	345157
	150/32 mm	36	-

*Contains 1 per pack.*



Vertical movement (Z-axis) of the grinding head is by handwheel in front and positioning with 0.01 mm accuracy is possible. Reproducible flat surfaces are achieved with column mounted taper bearings. Manual V-shaped clamping vice and mechano-magnetic plates are available as accessories.

Spectral PG 52 is equipped with a braking device permitting a rapid stop of the grinding wheel. The machine is fitted with an interlocking safety device so the hood cannot be opened before the grinding motor is stopped. An external dust exhauster available as an optional extra.





# Automatic Pendulum Grinder - Spectral AG

The Spectral AG 102 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.

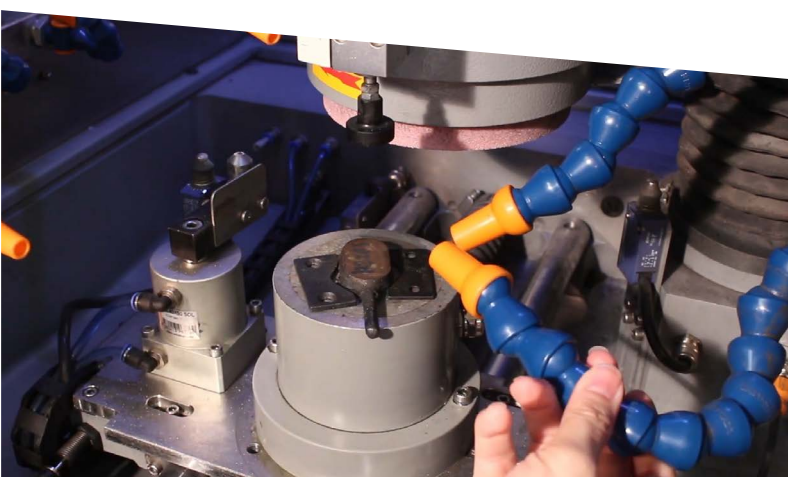


Model	Spectral AG 102	
Grinding motor power, (kW)	(S1- 3)	
Grinding wheel Speed (rpm)	2800	
Cup wheel Diameter (mm)	Ø150	
Table feed rate (mm/s)	10 - 250	
Stroke (mm)	Y-Axis - 210, Z-Axis - 60	
Operation	Automatic	
HMI Touch Screen	7"	
Program Memory	99	
Grinding Depth Accuracy, (µ)	10	
Dimensions, WxDxH (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	

Equipped with automatic sample feed and fine speed control, fast advance and reverse are available, with a laser measurement station ensuring extremely precise positioning of the cup wheel.

Spectral AG 102 includes an automatic diamond dresser which keeps the grinding stone flat and sharp for optimum performance and precise results. The multi-pass grinding depth is monitored accurately with the material height measurement system. Instead of relying on preparation time, the necessary amount of material to be removed can be specified with the shortest possible grinding time.

The Spectral AG 102 has a range of optional clamping devices and cooling systems.



# Automatic Surface Milling - Spectral MM

Suitable for different sample shapes with diameters up to 60 mm, the Spectral MM 102 is 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 Size, Height (mm)	Max. 60	
Sample Dia. (mm)	Max. Ø70	
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	



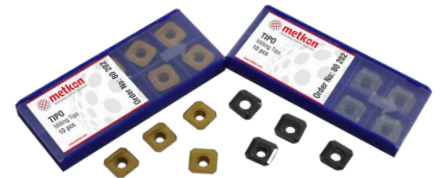
The front sliding door can be completely opened for easy handling. A large polycarbonate window and sealed LED lamp in the milling chamber allow precise observation of the milling process at an optimum degree of safety.

Spectral MM 102 provide an economical solution for milling iron, steel and stainless steel samples up to 50 HRC and max 80 samples per shift in a compact package that is loaded with full-size features.

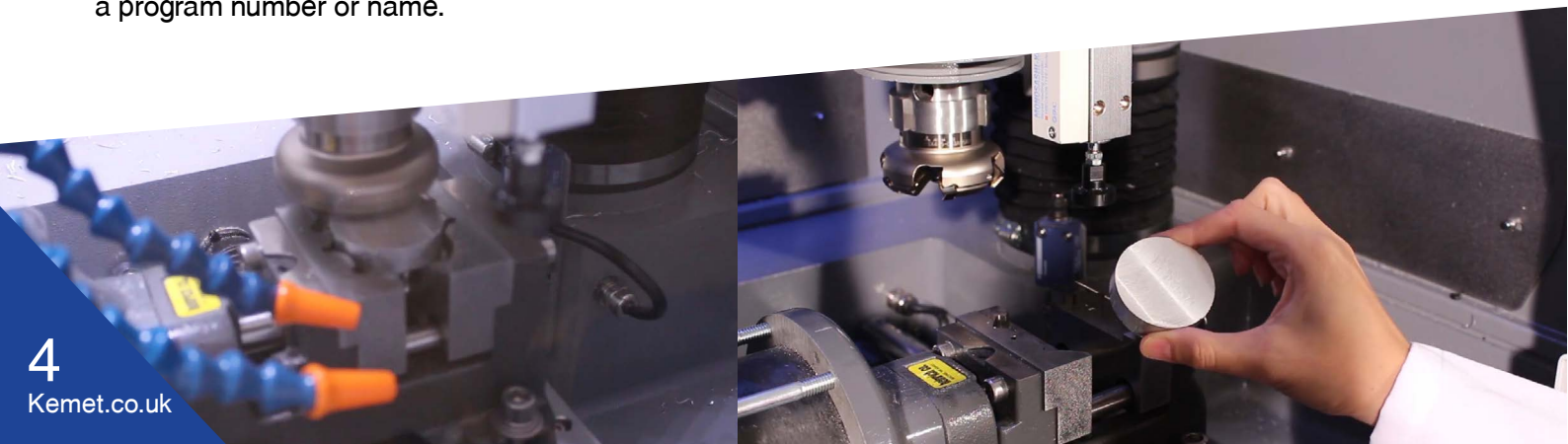
The preselection of the milling feed rate (0.5 - 30 mm/sec) is possible from the touch screen LCD. The feed rate is automatically adjusted, if needed, resulting in perfect surfaces and eliminating sample damage.

Spectral MM 102 can be programmed to make multi-pass milling operations. It is possible to set the number of passes and the milling depth of each pass which can be stored under a program number or name.

Milling Tips For Spectral MM	
For	Code
Non Ferrous Materials & Stainless Steels	345184
Ferrous Materials & Cast Iron	-



Supplied in packs of 10.





# Abrasive Cut-Off Machines - Servocut

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

- 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 as passing through component for optimum cut speed
- It can be used both as bench-top and with floor cabinet
- Small enough for laboratory, large enough to clamp and cut big samples. Most of the big samples 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

Servocut Models	302-AA	302-MM	402-AA	402-MM	502	502-AX	602	602-AX
Max. Wheel Diameter (mm)	Ø300	Ø300	Ø400	Ø400	Ø500	Ø500	Ø600	Ø600
Max. Cutting Capacity (mm)	Ø110	Ø110	Ø150	Ø150	Ø180	Ø180	Ø225	Ø225
Max. Cutting Capacity, HxD (mm)	70 x 200	70 x 200	85 x 350	85 x 350	100 x 400	100 x 400	100 x 500	100 x 500
Z-Axis Travel (mm)	125	125	255	255	350	350	340	340
Y-Axis Travel (mm)	220	220	300	300	380	380	560	560
X-Axis Travel (mm) *	-	-	-	-	-	200	-	540
T-Table Dimension (mm)	495 x 275	495 x 275	550 x 484	550 x 484	764 x 608	(634 + 200) x 608	772 x 710	772 x 710
T-Slot Dimension (mm)	12	12	12	12	12	12	18	18
Cutting Motor Power (S1) (kW)	4	4	7.5	7.5	11	11	15	15
Wheel Speed (rpm)	600 - 4000	2800	600 - 2400	2200	600 - 2400	600 - 2400	600 - 2400	600 - 2400
Cutting Feedrate (µm/s)	20 - 5000	-	20-5000	-	20 - 5000	20 - 5000	20 - 5000	20 - 5000
HMI Touch Screen	7 inch	-	7 inch	-	7 inch	7 inch	10 inch	10 inch
Chop Cutting, Z-Axis	Auto	Manual	Auto	Manual	Auto	Auto	Auto	Auto
Table Feed Cutting, Y-Axis	Auto	Manual	Auto	Manual	Auto	Auto	Auto	Auto
Parallel Cutting, X-Axis *	-	-	-	-	-	Standard	-	Standard
Multi Target Cutting **	-	-	-	-	-	-	-	Standard
Table Oscillating Cutting	Standard	-	Standard	-	Standard	Standard	Standard	Standard
Rapid Pulse Cutting	Standard	-	Standard	-	Standard	Standard	Standard	Standard
Smart Feed Control	Standard	-	Standard	-	Standard	Standard	Standard	Standard
Step Cut; Segment Cut; Diagonal Cut ***	Optional	-	Optional	-	Optional	Optional	Optional	Optional
Central Lubricating System	-	-	-	-	-	-	Optional	Optional
Size WxDxH (cm)	94 x 99 x 76	94 x 99 x 76	114 x 112 x 169	114 x 112 x 169	140 x 134 x 185	140 x 134 x 185	184 x 173 x 236	184 x 173 x 236
Weight (kg)	250	250	600	600	1100	1100	1600	1600
Recirculation Cooling Unit (l)	80	80	135	135	150	150	200	200
Voltage	400V-3phase-50Hz							



# Kemet



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