



SPECTRAL SPECTRAL

Surface Grinders for Spectroscopy



SPECTRAL 200

SPECTRAL 200 is a table-top portable surface grinder for the preparation of steel samples for spectroscopy. Its compact design with vibration free operation makes it a practical instrument to work with. Low noise and dust generation levels as well as standard outlet for dust exhauster are additional advantages.

200 mm grinding disc is dynamically balanced for smooth running. Grinding paper is sucked to the grinding disc which does not require any glue. Papers with 40-120 grit can be used to obtain the desired surface quality. SPECTRAL 200 is equipped with electronic brake system bringing the motor to a quick full stop just in seconds after it has been stopped. A safety switch guarantees automatic switch off when the lid is opened.



SPECTRAL 350

SPECTRAL 350 Dual Disc Grinder is used to achieve excellent precision flat surfaces of iron and steel samples for spectroscopic analysis. The robust and vibration-free construction has been designed for continuous operation at high sample throughput.

SPECTRAL 350 has two independently driven grinding discs of 350 mm which are dynamically balanced for smooth running and the speed of each disc can be set either to 1400 rpm or 2800 rpm. Coarse and fine grinding on two separate grinding discs can be done on the same machine. Due to its special design, grinding paper is sucked to the grinding disc which does not require any glue. SPECTRAL 350 can be equipped with a strong aspiration device in addition to its special design, increasing vacuum for suction which retains the abrasive paper on the disc, eliminating the requirement for any adhesives or fixing attachments. Therefore, the abrasive papers can be used on their full widths and are very easy to exchange.

Strong Aspiration Device (Blower) unit available as an accessory with easily replaceable filter creates a dust-free working environment. Both discs are covered by halfway by a lid and the sheet metal allows grinding only in a segment for operator comfort and protection. Magnetic and mechanical specimen holders available ensure maximum operator safety.

SPECTRAL 350 is further equipped with breaking device permitting a rapid stopping of the turning discs. The machine is fitted with an interlocking safety device not allowing the lid being opened before the motors are stopped.





SPECTRAL PG

SPECTRAL PG is a compact bench-top pendulum grinder for fast grinding of iron and steel samples for spectroscopic analysis. It has a simple and reliable design with low noise and dust generation levels. It is completely enclosed and dustproof with halogen spot light. The front cover can be completely opened for easy access to all sides.



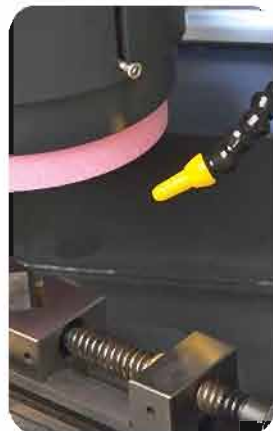
Ergonomic operation



Digital display



Magnetic plate



Clamping Vise

SPECTRAL PG is suitable for wet and dry grinding with minimum maintenance required which is mainly cleaning. It is possible to attach an external dust exhauster to the standard outlet at the rear side. The grinding arm is placed just in front of the machine making it ergonomic and easy to handle. **SPECTRAL PG** is especially suitable to grind hard materials like white cast irons. It is also possible to prepare other materials by using special stone cup wheels which are easy to exchange.

Vertical movement (Z-axis) of grinding head is motorized with digital positioning and display with 0,01 mm accuracy. Reproducible flat surfaces are achieved with column mounted on taper bearings. Manual V-shaped clamping vice, Electromagnetic and Mechano-magnetic plates are available as accessories.

Spectral PG is equipped with braking device permitting a rapid stop of the grinding wheel. The machine is fitted with an interlocking safety device not allowing the hood being opened before the grinding motor is stopped.

SPECTRAL MM



SPECTRAL MM is an automatic milling machine for fast milling of non-ferrous and steel samples for emission and X-ray spectrometer analysis. Automatic fine surface milling guarantees the highest level of reproducibility through automatic processing of the specimen. **SPECTRAL MM** has a robust and reliable design with low noise and emission levels. It is completely enclosed and sound-insulated with halogen spotlight. The front cover can be completely opened for easy access to all sides.

SPECTRAL MM is equipped with automatic sample feed with fine speed control. Fast advance and reverse are available. All important parameters of the milling process like feedrate, milling depth, spindle speed are adjustable with digital display. The spindle speed can be adjusted to different materials to achieve optimum surfaces. Vertical movement (Z-axis) of the milling head is motorized with digital positioning and display with 0,01 mm accuracy. Reproducible flat surfaces are obtained with column mounted on taper bearings.



SPECTRAL MM is suitable for different sample shapes (cylindrical, mushroom shaped etc.) with diameters upto 80 mm. It can be fitted with special cutter head with 8° diamond or tungsten carbide tips. Three-point-chuck is included in the standard scope of supply of the machine. Other additional clamping devices are available as optional accessories.



SPECTRAL MM is equipped with highest level of the safety standards. Several safety circuits guarantee optimum protection for the operator. An electronic brake system is integrated to the system for a rapid stop of the milling head. The interlocking safety device does not allow the hood to be opened before the milling motor is stopped.

Sample Preparation for Spectroscopy



Spectroscopy and Sample Preparation

Optical emission spectrometry (OES) and X-Ray fluorescence are most commonly used techniques for the analysis of metals and solid samples. Optical emission spectrometry (OES) using arc and spark excitation is the preferred method to determine the chemical composition of metallic samples. This process is widely used in the metal making industries, including primary producers, foundries, die casters and manufacturing. Due to its rapid analysis time and accuracy, Arc/Spark OES systems are most effective in controlling the processing of alloys. This technique can be used for many aspects of the production cycle including In-coming inspection of materials, metal processing, quality control of semi-finished and finished goods and many other applications where a chemical composition of the metallic material is required. X-Ray fluorescence is one of the most versatile methods to determine elements in a sample. The material is exposed to x-rays that cause each element to emit its own unique fluorescent x-ray. The subsequent analysis of the results is based on comparisons to standard samples with given chemical composition.

Sample preparation of metals and materials have become more and more important because of the rapid development and improvement of both software as well as OES and XRF-devices during the past few years that shifts the detection limit for trace analyses. 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 Metkon offers manual and automatic sample preparation machines - from the small table-top disc surface grinder to automatic milling machine. With Metkon Sample Preparation Machines, you feel yourself ready for the analysis.

SPECIFICATIONS

SPECTRAL 200

Table-top Surface Grinder for spectroscopic sample preparation of steels and irons, vibration-free construction, robust steel housing, 0,55 kW motor, standard outlet for exhauster, easy to clean and ready for operation.

220V, 50 Hz.

Order No: 80 01

SPECTRAL 350

Dual Disk Surface Grinder for spectroscopic sample preparation of steels and irons, course and fine grinding possible on two separate disks of 350 mm dia. which are dynamically balanced, two individual driving motors (2,2 kW each) with dual speeds of 1400/2800 rpm, equipped with braking device for a rapid stop of the turning discs, suction created by special design retaining the abrasive paper on the disk (no need to glue or fix), easily replaceable filter, disks covered halfway by lids allowing grinding only on a segment, with interlocking safety switch not allowing the top cover being opened before the motors are stopped, ergonomically designed and ready for operation.

3X380V, 50 Hz

Order No: 80 02

Strong Aspiration Device (Blower) Unit

Order No: GR 1364

Accessories for SPECTRAL 200 & SPECTRAL 350

Sample Holder for round specimens, Magnetic type.

Order No: GR 1804

Sample Holder for round specimens, Mechanical type.

Order No: GR 1805

SPECTRAL PG

Pendulum Grinding Machine for the fast spectroscopic sample preparation of iron and steel samples, bench top compact design, closed housing, max. safety provided with interlocking switch, pendulum arm mounted in taper roller bearings, low noise with motor of 1,1 kW and 2800 rpm., easy handling with sample swing movement from the front side of the machine, motorized vertical positioning of the grinding head with digital display and accuracy of 0,01 mm., large working space with halogen lamp, standard outlet for dust exhauster, complete and ready for operation. (wooden packing included)

3X380V, 50 Hz.

Order No: 80 03

Accessories for SPECTRAL PG

Magnetic Plate, 160 mm. Dia.

Order No: GR 1807

Electromagnetic plate, 160 mm. Dia.

Order No: GR 1800

Standard clamping device for large samples upto 60 mm.

Order No: GR 1801

Floor Cabinet

Order No: GR 1802

AL203 white grinding stone for hard steels

Order No: 80-150

AL203 pink grinding stone for hard steels

Order No: 80-151

SPECTRAL MM

Automatic fine surface milling machine, for preparation of steels and non-ferrous metal samples for OES and XRF analysis, bench top compact design, closed housing, max. safety provided with interlocking switch, large working space with halogen lighting, chip container, 3-point chuck suitable for all shapes of sample forms, (cylindrical, mushroom, etc.), for samples upto 80 mm dia. automatic sample feeding with adjustable fine speed control, digital depth setting, digital setting of milling height with accuracy of 0,01 mm., cutting motor 1,1 kW, digital setting of cutter rotational speed between 500-3600 rpm to obtain optimum surfaces for different materials, all parameters with digital display, ready for operation.

3X380V, 50 Hz.

Order No: 80 04

Accessories for SPECTRAL MM

Cutter head 63 mm with 5 diamond tips.

Order No: GR 1808

Floor Cabinet

Order No: GR 1803