Soft Press

PRODUCT DATASHEET

QCX® ASP100 Automatic Soft Press

The ASP100 Automated Soft Press is a fully automated soft-pressing machine that prepares quality pressed samples for quantitative x-ray diffraction (XRD) analysis using the innovative Rietveld Method. The soft press is ideal for materials containing clays and micas.

The main design intention of the Automated Soft Press was to inhibit the preferred orientation of particles, which normally causes errors in XRD analysis. By producing better quality samples, the press enables the highest possible quality XRD data to be obtained.

The process of soft pressing is fully automated and can produce samples with a smooth or textured surface. The surface options can be applied to suit different sample characteristics and analysis requirements.

Other advantages include uniform ring wear with automated storage of used rings in a magazine with six positions, or the option for 12. Further, sample material is not contaminated with a binder, so the material is reusable for other analytical tasks or further processing.

Advantages

- Accuracy: automatic dosing, spreading and levelling of the powder materials gives you consistent, repeatable sample preparation for accurate analysis that can be trusted every time.
- Safety: fully automated sample preparation protects your workers from health and safety issues by preventing their exposure to potentially harmful materials.
- Unbiased analysis: preferred orientation and selective segregation of particles normally causes undesirable analytical bias, but the unique soft press method inhibits such errors.

Easy and efficient XRD sample preparation without error

How it works

The ASP100 Automated Soft Press was designed to change the status quo of XRD sample preparation. Unique soft press technology has the capability to press samples at pressures 1.4 – 5.8 N/mm2. It works by automatically dosing powder into a ring and pressing it according to your pre-defined pressing recipe.

The unit maintains sample consistency by precisely dosing the powder material into a ring with an inset base. The material is then spread evenly using an in-built levelling feature that reduces the potential for errors caused by variations in sample height displacement. During pressing, pressure is applied to the base, not to the sample itself.

The ring containing the pressed sample is automatically moved to the output position, ready for analysis. Rings are mechanically cleaned to prevent contamination.

As well as producing samples for quantitative XRD analysis, the ASP100 can produce samples for NIR, colour measurements and ED XRF (measurement surface up), for the minerals, cement and fine chemicals industries.

Possible configurations

Stand-alone

The operator handles the samples outside the press with a belt and cup/ring magazine that has 16 positions.

RoboLab

The unit can be integrated with RoboLab, allowing the robot to handle all samples outside the soft press.

Specification

Sample material	Various minerals, ores, cementitious materials etc. Dry, non-sticky, pulverised material
Sample ring type	51.5 x 8.6 mm or 40 x 14 mm (inside diameter: 30 mm)
Sample quantity	Minimum 10 cm^3
Punch type	Flat, option: sanded
Sample frequency	> 15 samples per hour
Capacity of Cup/Ring magazine	16 (The in-feed buffer magazine is optional)
Pressing force	1 – 4 kN (1.4 – 5.8 N/mm^2) Optional: up to 6.7 kN (9.7 N/mm^2)
Dedusting	2.3 m^3/min, -16 to -32 kPa
Power supply	100 – 240 V; 50/60 Hz; max. 0.8 kW
Compressed air supply	0.6 – 1.0 MPa (Quality 1.4.1 as per ISO 8573-1)
Operating conditions	Temperature: 5°C to 35°C Humidity: 20 – 80%, non-condensing
Weight	Max. 375 kg
Dimensions (W x D x H)	1040 x 730 x 1570 mm 1260 x 730 x 1570 mm with CUP magazine

Stand-alone with Cup/Ring magazine

RoboLab

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