

POLAB[®] AMT sample preparation and analysis system.



A company of
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POLAB® AMT.

Complete – Modular – Flexible.



POLAB® AMT (Advanced Module Technology) optimally integrates and harmonises all required sample preparation and analysis components – and still has an extremely small footprint.

The AMT configuration is designed to ensure the highest standard of efficiency and provides impressively high sample throughput rates, easy operation and consistent modularity.



The sample reception and preparation units (such as pneumatic tube, fine grinding, tablet pressing and cleaning modules) as well as the analyser units (such as fluorescence spectrometer, diffractometer, laser granulometer and colour difference analyser)



are all placed within reach of the robot.

The 6-joint robot supplies all the analyser units with prepared samples and thus supports simultaneous analyses.

Pneumatic tube module

The samples of all initial, intermediate and finished products that are automatically taken at short intervals from the individ-



With POLAB® AMT, the preparation and analysis of all initial, intermediate and finished products is specifically tailored to the individual materials.

ual sections of the production process are sent in capsules to the pneumatic tube module. The subsequent volumetric dosing process takes place without contamination and is totally dust-free.

The module permits manual loading and removal of pneumatic dispatch capsules, as well as the storage of reserve samples (e.g. for physical investigations).

Fine grinding module

The vibratory disk mill (depending on the number of samples to be processed, a second grinding module can also be installed) grinds the samples to the fineness required for analysis. The grinding period and number of grinding aid tablets are defined according to the sample material. Optimum preparation parameters ensure highly reliable and reproducible analysis, even in the case of extremely difficult raw meals and cements.

Press and cleaning module

After the sample materials have been pressed into tablet form, the upper and lower sides of the tablet, the press tool and the material feed hopper are cleaned. Cleaning of the pneumatic dispatch capsules, sample cups, dosing devices, press tool and tablet rings is performed with compressed air in closed systems with highly effective dust extraction.

Parking areas

Parking areas for tablets and pre-dosed samples serve to decouple the preparation modules from the analyser units and thus ensure optimal

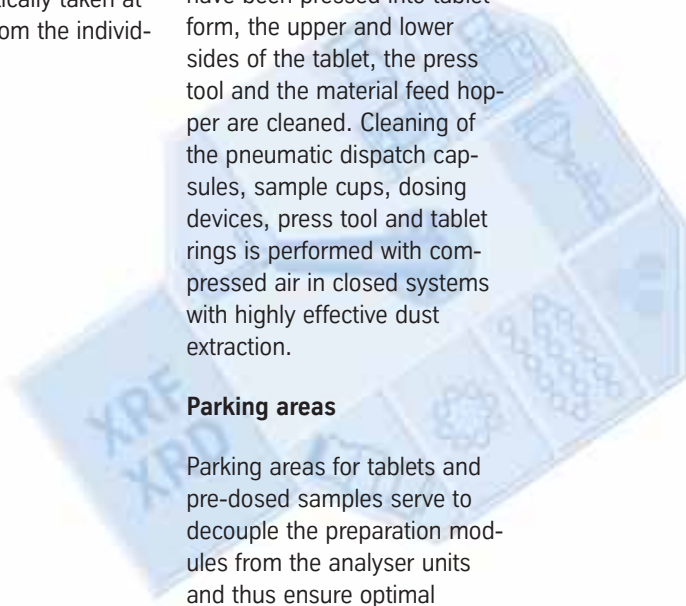
capacity utilisation of all the function units.

All the integrated modules are located in a defined position by means of a rail system. This system also enables quick and easy removal from the enclosure for maintenance work and subsequent repositioning in precisely the same position in the POLAB® AMT. No time-consuming readjustment of the robot is necessary.

Manual loading of samples

The user enjoys the advantages of optimum sample preparation for both manually loaded samples and automatically received samples.

A manual input/output magazine enables loading and removal of samples according to a programmable procedure.



Configuration possibilities

The POLAB® AMT has a consistent modular structure and grows with the user's individual quality assurance requirements.

User-friendly operator control and display

The most up-to-date control and monitoring systems are used for the operation and displaying of the entire POLAB® installation. Windows-based computer systems provide comprehensive information on all operations within the system and on the check-back signals coming from the process. Special input masks are used for defining all the parameters needed for the sample preparation, analysis and process control, and for generating different mixture formulations. This ensures specifically directed preparation and analysis of all occurring samples.

Optimum process control / regulation

The aim of optimum process control is to provide comprehensive knowledge about the material compositions and properties before and during the production process.

On the basis of the **spectrometer analysis** the

- raw meal mixtures are optimally calculated and set
- alkali cycles inside the kiln system are controlled and
- sulphate phases are determined and the cement quality chemically controlled.

The particle size fractions determined in the **laser granulometer** are the basis for controlling the separator speed or for operation of a higher-

ranking, intelligent mill regulation system, such as POLEXPERT® MCE.

Through the application of Rietveld software, the latest generation **diffractometers** generate a complete diffractogram and enable exact identification of all clinker phases in a matter of minutes. This opens up totally new perspectives for regulating the material quality, operating the kiln under consideration of substitute fuels and optimising the cement manufacturing process.



Thanks to its modular concept, the POLAB® AMT can be configured to suit requirements – and can be extended without any problem at a later point of time.