

integrated sample preparation system for geological

Integrated sample preparation system is a kind of automated equipment integrating continuous automatic feeding, crushing, mixing and reduction, which is mainly used for the preparation of representative samples of solid bulk materials such as coal, ore, ferroalloy, building materials and so on.

Integrated Sample Preparation System

The integrated sample preparation system widely meets the relevant provisions of national standards such as GB/T 19494 Coal Mechanized Sampling, GB 474 Coal Sample Preparation Methods, GB/T 2007 General Rules for Bulk Mineral Sampling and Sample Preparation, etc., and is suitable for industrial quality control and analysis and testing links with strict requirements.

Features

1. Full-automatic intelligent control: PLC programming and touch screen human-machine interface are adopted to realize one-key control of the whole process of sample making.
2. Structural sealing design: fully enclosed working space, effective control of dust dispersion, in line with the requirements of modern environmental protection operations.



3. Continuous belt feeding system: the material supply is uniform and stable, effectively avoiding particle size segregation and feeding blockage.
4. High-efficiency crushing system: the first stage is hammer and knife type high-speed crushing, with strong shear and impact. The second stage is roll crushing structure with tooth surface treatment to ensure that the particle size is controlled within the target value.
5. Modular reduction system: the reduction structure adopts the classic slot design, multi-stage series connection, flexible and adjustable reduction ratio, good sample representation.
6. Anti-clogging and wear-resistant design: the use of stainless steel and alloy steel parts, effective resistance to corrosion, wear and high humidity sample clogging.
7. Cleaning and iron removal function: built-in automatic cleaning mechanism and multiple iron removal devices to avoid cross-contamination and metal foreign body interference.

Main Advantages

1. High efficiency: one-time completion of the entire sample making process, saving labor and time costs.
2. Strong representativeness: high precision of reduction, sufficient mixing, effectively guarantee the quality of samples.
3. No pollution: the equipment is fully enclosed, with automatic cleaning function, reduce human intervention, avoid sample loss.

4. Convenient maintenance: modular structural design, quick disassembly of key parts, convenient for daily maintenance.
5. High degree of automation: suitable for laboratory automation system or industrial field automatic sampling line, intelligent linkage.

Working Principle

The integrated sample preparation system continuously feeds the bulk material into the crushing area by belt conveyor, firstly, the hammer knife crushing system carries out primary crushing on the material to reach the preset particle size range. after that, it enters into the roller-type secondary crushing device to further refine to the target particle size, for example, less than 3mm, and the crushed material is then evenly mixed through the mixing device, and then enters into the shrinkage unit to carry out multi-stage shrinkage. In the process of reduction, the system automatically separates analytical samples, preparation samples and moisture samples according to the set ratio, and the discarded samples are discharged through the conveyor belt, and the process is fully automated without manual intervention.

Application Fields

1. Coal industry: quality testing and sampling of raw coal and commercial coal.
2. Metallurgy and iron and steel: iron ore, manganese ore, alloy materials, factory inspection and factory sampling.
3. Power system: thermal power plant coal quality monitoring and boiler feed analysis.
4. Geology and mineral exploration: preliminary preparation of field samples and generation of laboratory test samples.
5. Building materials industry: sample preparation for cement, limestone, slag and other raw materials.
6. Third-party testing organizations: provide accurate sample processing in accordance with national standards.
7. Scientific research units and university laboratories: experimental sample pretreatment and data analysis with sample preparation.

Model	CP6000A	CP6000AQ
Feed size	≤150mm	≤150mm
First output size	less than 6mm or 13mm	
Second output size	less than 3mm(adjustable, sieve rate not less than 98%)	
First reduction ratio	1/8 to 1/2(adjustable)	
Second reduction ratio	1/2	
Total reduction ratio	1/16 to 1/4	
Production rate	1600 to 2200kg per hour	
Total power	11.22kw	11.59kw
Weight	1200kg	1300kg
Dimensions	3050x1200x2080mm	3050x2400x2080mm
Sample disposal conveyor	no	yes