

Production potentiality of Aleksandra Plus Company

Aleksandra Plus has a great experience in manufacturing and designing ultrasonic equipment since 2000. Individual approach to each request helps cope with complex and non-standard tasks, consider the entire customer's needs and integrate equipment into existing operating processes. Its own construction department helps respond quickly to any requirements at all stages: development and design, startup and commissioning as well as equipment operating. Equipment is manufactured in the new workshop with new machinery; welding is performed by highly trained certified professionals. The industrial base and the laboratory allow testing new technologies and rendering engineering support.

The company holds 25 patents for objects of industrial properties including 17 patents for invention (one is Eurasian). The necessary business permits are available. The company has the quality management system in compliance with GOST R ISO 9001:2015.

Aleksandra Plus produces a wide range of industrial ultrasonic equipment for different industrial sectors. It designs and produces both separate ultrasonic baths and automated cleaning complexes that can include: ultrasonic cleaning, blasting, electrochemical purification, washing



with bubbling technology, drying chamber, automated or semiautomated system for bath baskets movements, swinging system, regeneration system of washing solution and other functions. If necessary, cleaning devices are equipped with touch screen panels providing full control over equipment.

Subsidiary company «Novotech-ECO» designs and manufactures equipment of various capacities for reagent-free water and sewage disinfection based on the combination of ultrasound and ultraviolet influence.



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Alexandra Plus

Ultrasonic technologies and equipment

From Idea to Implementation

Equipment for ore-mining and processing enterprises

Aleksandra Plus has designed and produced ultrasonic equipment for ore-mining and processing enterprises since 2004. Since that time the company has developed the production of diverse ultrasonic equipment used in the following application areas:

- Regeneration of vacuum disc filters with ceramic filter plates (CDF)
- Ore dressing
- Production intensification
- Well strainer cleaning

ULTRASONIC SUBMERSIBLE VIBRATOR FOR REGENERATION OF CERAMIC DISK FILTERS (CDF)

Ultrasonic submersible vibrators are designed and produced to equip a wide range of filter machines. Ultrasonic vibrators produced by Aleksandra Plus operate efficiently in such large companies as "Kazminerals", "Kazzinc", "Kazakhmys", "Kazakhrom",

"Russian Copper Company", "Russdragmet" and others. The significant advantage of the equipment in comparison with foreign counterparts (Larox, Outokumpu, Outotech and others) is the optimal quality-price ratio.



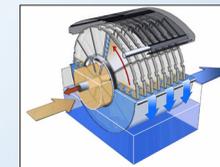
Purpose: accelerating and improving the quality of CDF regeneration in different devices used for pulp dewatering processes.

Application: Regeneration of vacuum disc filters with ceramic filter elements installed in filter machine models CC, VCDF, KS, CDF and others.

An ultrasonic vibrator can be designed according to customer's requirements.

Result:

- the time used for regeneration of ceramic filters reduces up to 30 minutes;
- filter machine performance enhances up to 15-17%;
- a ceramic filter layer thickens up to 2.0 cm;
- ceramic filter cake moisture content is 8-10 %.



Advantages of ultrasonic submersible vibrators made by Aleksandra Plus

Robust construction

Vibrator casing is made of high quality AISI316Ti or 12X18H10T stainless steel. Increased thickness of casing walls ensures abrasion resistance.

Rugged casing

The cover of the vibrator is attached by a butt-joined seam that guarantees the highest level of reliability.

Ultrasonic powerful impact

The use of the high-power ultrasonic generator provides intensive work of the vibrator casing.

Operating stability

Split rings of round shape are manufactured by stamping and project minimally over the piezoceramic elements. For anti-corrosion protection split rings are made of brass sheets and insulated as soon as the radiator is assembled.

Ultrasonic transducers with secure mounting

The special attachment technique (mounting technology) of ultrasonic transducers to the casing guarantees item fixation in any operation modes.

Operating stability of ultrasonic submersible vibrators is achieved by using an up-to-date ultrasonic generator, model AlexPulse V10

Extensive adjustment options

A wide frequency range (from 15 to 50 kHz) allows the generator to perform the precise adjustment of the equipment to specific operating parameters.

Additional functions:

- Protection from through-current and overload allows you to save equipment in emergency cases
- Frequency deviation loads a great number of transducers with different mechanical frequency evenly
- Stabilization of the generator output power ensures stable operating process in case of environmental changes and easy adjustments for users

- Increased nominal power as well as power control function provides maximum efficiency of ultrasonic equipment under any operating conditions.



ULTRASONIC EQUIPMENT FOR ORE-DRESSING

A through-type device is designed and produced so that the radiator is the inner surface of the tube on which ultrasonic transducers are installed.

Purpose:

- Mineral cleaning, mechanical removal of slime films from minerals;

- Intense disintegration of mineral complexes;
- Desliming and intensifying washing processes of materials with high clay content;
- Reagents machining to intensify the flotation process.



The model HO-156 is made for JSC "Uralmekhanobr", Ekaterinburg.

Ultrasonic purifying of quartz sand at the primary separation stage: the device is used for removal of iron-bearing films from sand grains and slurry separation.



The column type device, model HO-407 is used for intensifying machining of zirconium powder (JSC "Chepetskiy Mechanical Plant", Glazov).

The ultrasonic device, model HO-134 is produced for The Kara Balta Ore Mining Combine ("Central Asia Ore Mining Company", Kirghizia).



INTENSIFICATION OF TECHNOLOGICAL PROCESSES

Contact ultrasonic transducers are installed on customer's equipment to improve production processes.

The ultrasonic equipment set is used for intensifying desorption (regeneration) processes of ion-exchange resins in process solutions (the Institute for High Technologies JSC "NAC "Kazatomprom", Kazakhstan).

Ultrasonic transducers are installed on ion-exchange columns of NAC "Kazatomprom".

Result:

- Intensification of uranium desorption from ion-exchange resins
- Increasing desorption process on extraction of uranium
- Reducing reagents consumption



ULTRASONIC EQUIPMENT FOR WELL STRAINER CLEANING

The ultrasonic device for well strainer cleaning of various applications is designed, manufactured and tested. A pilot complex is used at real processing wells during in situ leach uranium mining operations in Kazakhstan (NAC "Kazatomprom") and in Russia (JSC "Khiagda"). A special generator is lowered into a well together with the ultrasonic device and operates efficiently at a depth of up to 600 m.

