Attention to consumer CCFB300!
This manual, combined with the technical description and operating instructions, is a document guaranteed by the manufacturer main parameters and specifications.
Manual is designed to study the construction of the concentrator and the principle of its work and sets the operating rules, compliance with which maintains a hub in constant readiness to work.
Taking into account customer feedback the developer is constantly improving product design, so some structural changes in individual units and parts may not be reflected in this data.

1. PURPOSE
Centrifugal concentrator with floating bed CCFB300 (hereinafter - concentrator ) is designed for high-quality gravity concentration of fine material (sand and alluvial deposits of crushed ore) containing free gold, silver and platinum, in the industrial extraction of small and fine fractions of precious metals and other heavy valuable minerals.
12. The concentrator can be used:
1) In technological research large area samples of mineral raw materials containing precious metals.
2) the processing of ore and placer deposits and tailings developments, containing small and micron gold
3) in the industrial processing of technogenic raw materials containing precious metals (sand and gravel, aggregates dumps and angry CHP, metallurgical slag, electronic scrap).
13. concentrator operates indoors or under cover at a positive air temperature. Operating conditions correspond to the performance of IP44

2. SPECIFICATIONS
2.1. A fineness of the processed material, mm - less than 3.
2.2. Performance on hard, t / h: - 20 *).
2.3. Gold recovery of size,% +50 microns 96-99
                      + 10-50 microns 92-96
                      + 3-10 microns, 50-92
2.4. Sand to liquid (ratio S: L) of 1: 4 to 1:12.
(When enrichment placer sands and fine ores S:L - 1 4 ... 1:10, and when finishing roughing concentrates S:L - 1: 8/1: 12).
2.5. The volume of the resulting concentrate to 1000 ml
2.6. RPM of Bowl 0-500 (adjustable with Frequency Inverter drive)
2.7. The frequency of the bowl vibrations /per min 1500
2.8. Power supply 220V (380V + _ 38), frequency (50 + -1) Hz
2.9. Power of motor 1.5 kW
2.10. Overall dimensions, mm:
   length of not more than 850.
   width not more than 750.
   height is not more than 600.
2.11 Weight, kg 90.
2.12. Mean time between failures, h at least 1000.
2.13. Average full service life, years. 5
2.14. The mean time to repair the state, no more than 0.5 hour.
2.15. The resistance between the grounding bolt and every available touch metal products dead parts must be less than 0.1 ohm.
2.16. Insulation resistance of the power supply circuit must be at least 20 megohms.

*) The maximum output corresponds to the ideal operating conditions (achieved in tests artificial mixtures of quartz sand and granulated ferrosilicon, simulating the density of precious metals), allowing to provide high recovery of small and thin heavy particles. The equipment can not achieve the best results at maximum performance depending on the material composition of the material forms particles of heavy minerals and power characteristics (pulp density).

3. PACKAGE

1. Concentrator centrifugal CCFB300
2. RPM drive Control box
3. Pasport
4. Spare parts( optional)
5. Set of tools and accessories( optional)
6. Packing
4. STRUCTURE AND OPERATION

Fig.1. Schematic diagram of the centrifugal concentrator with floating bed

1. Elastic trapping cone. 2. The bearing assembly. 3. The electric motor with a belt drive. 4. The crimping rollers. 5. Bracket crimping rollers. 6. Snail for discharging tailings slurry. 7. The power supply spigot. 8. The hollow shaft for discharging the concentrate.

A distinctive feature of centrifugal machine is the Flexy Bowl (truncated cone), which is compressed from several directions by rollers mounted on fixed supports. As a result of compression cone in cross section takes the form of a rounded triangle, square, etc. (depending on the number of crimping rollers). Upon rotation of the cone, point of the mineral bed periodically close to the axis of rotation and are removed from it, as if floating in a centrifugal field. The radius of curvature of the inner surface of the cone with a frequency of tens of hertz varies in a range from minimum to maximum. The frequency may be infinitely large. Consequently, the centrifugal field is variable in the angular coordinate. Maximum centrifugal force exceeds the force in the unstrained cone about 1.5 times. The mineral bed formed in the deep grooves between the riffles, while the flexural deformation of the wall of the cone is experiencing frequent compression and tension in the direction of circular motion. When compressed, mineral bed squeezed out of the grooves and when tensile lowered, minerals fill grooves again and thus performs motion like jig action. Thus, in the described apparatus mineral bed undergoes complex movements similar to the movements in both jig and a vibration table. All this takes place in an alternating intensity of the centrifugal field. The centrifugal acceleration varies with the frequency of the process equal to the product of speed by the number of rolls. Swipe centrifugal acceleration value from a few hundreds "g" to a value close to zero or even to a small negative (under strong crimping rollers cone). Consequently, the mineral bed resides loosened (fluidized) state in which the grains of different densities, irrespective of their shape and size quickly differentiated groove depth. Grains with a high density sink to the bottom, and the light - float in the centrifugal field, move to an open groove surface where upflow entrained tailings slurry and are removed from the cone.

In contrast to the previous models concentrators with floating bed, Flexy Bowl cone is made by special technology and composit materials, thus reducing engine power and increase the service life several times.

4.3. The principle of operation of electrical circuit of principle.

The circuit is powered by a single-phase 220volts or three-phase network of 380 volts AC, for operation of the circuit box to connect the power cord to the network. Set the SQ position (manual) left ON.

Attention! Before beginning of work on a centrifugal concentrator, control panel and switch box
must be grounded.

5. SECURITY MEASURES

5.1 Service the concentrator allowed by person familiar with device and past safety training.
5.2 Before you start, the concentrator must be grounded by wire 4mm2. During maintenance concentrator must be disconnected from the power supply, take precautions against the erroneous inclusion in the network.
5.4 Do not:
1) operate without grounding;
2) when cone rotates, put hands or objects in the area of rotation of the cone
3) switch ON rotation if the inner cone was not inserted.

6. MAINTENANCE

6.1. During maintenance the safety requirements are according to section 5 "Safety Precautions" section of this passport.
6.2. Once a month should be carried out preventive inspection of the terminal connections in the power supply of electric motors and serviceability of the power supply.
6.3. At least one time per week, test the state of the cone at fixing points of internal PU cone.
6.4. Every 500 hours of operation concentrator, check the presence and condition of the lubricant in the main bearing and radial cone bearing. If found a lack of lubrication or contamination or non smooth rotation, loose or unusual sounds, it must be replaced. As the lubrication of the bearings use bearing grease. Check the cone outside on wearing of (it is noticeable ring trace from rollers). If any signs of significant wear, replace the outside bowl. Check rollers by measure top side diameter. Cone on top must be not less 74mm.

7. PREPARATION OF THE PRODUCT AND ORDER OF OPERATIONS

7.1. For installation of the concentrator site must have:
1) Power net for motor AC voltage of 220/380 V, 50 Hz; Power 1.5 kW;
2) Discharging a slurry with rate not less than 100t/hour

7.2. Attention!
Concentrator must be installed indoors or under a canopy on a solid base (floor, flooring), provide free approach from all sides at a distance of not less than 0.5 m. Remote control fix vertically at a distance of no more than 3 m from the concentrator.
The concentrator mounted on a horizontal platform on three legs with springs. Allowed of a small tilt towards pipes.

7.3. After concentrator installation is necessary:
1) connect the ground to the control panel and concentrator;
2) connect the electricity to the control panel;
3) connect the hub to the control panel;
7.4 Operations on the concentrator.

Start up the motor, which rotates through V-belt transmission the shaft with cone. Pulp fed through the hopper or feed tube to the bottom of the bowl. The rotating blades of the impeller is pushing and throw pulp to the sides of the bowl. Under the influence of centrifugal acceleration, grained fraction of the pulp falls into the grooves of bowl, where as a result of fluctuations the loosening material and the segregation of heavy minerals and gold particles formed inside the mineral "bed" with their concentration mainly in the depth of the grooves. Light mineral particles with the slurry, entrained upflow sludge, rolling through the riffles, are removed from the bowl to the discharging housing and then on the tail pipe outside. In addition to the main pipe, small discharge pipe is located at the bottom of the tube to drain the pulp, accidentally fell into the bottom section. At the end of cycle (enrichment), stop the motor drive and take out the bowl in the bucket to extract concentrate.

In order to ensure effective concentration, selection of the optimal values of bowl speed, we recommend to change the frequency of rotations by use frequency motor drives.

8. TROUBLESHOOTING AND REMEDIES

1. The motor drive do not turn on or bowl rotation drive motor vibrates or rotating slowly. - Bad electrical contacts or cable break. No voltage of one phase. Disable concentrator, tighten the screws on the contacts, restore cable break, check the electrical network.
2. Voltage on the body of concentrator live parts. Immediately disconnect the concentrator from the mains. Call an electrician.
3. Increased heating of the motor housing. Overloading concentrator with pulp feed. Reduce pulp feed rate.
4. Increased heating of the bearing unit of rotation of the bowl. Short circuit the stator of the motor. Replace motor.
5. The knock or intermittent noise in the bowl rotation unit. Lack of lubrication or contamination the thrust bearing and/or cone radial berings. Tapered bearings. Wearing of rollers or cone outside. Damaged or over tightened radial bearings with seals. - Loose the nut of the axial bearing preload. Disassemble and replace worn bearings with new, replace wear of rolles, replace outside cone.