GTEK Laboratory
Jig Machine

LAB DIPHRAGM JIG MACHINE OPERATION MANUAL

GTEK MINERAL TECHOLOGIES
Great Thoughts Embrace Knowledge
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Ⅰ Introduction

Diaphragm Jig Machine belongs to gravity concentrating device that separates material based on differing densities of the material. Diaphragm Jig Machine is widely used in concentration of heavy minerals such as tin, gold, tungsten, manganese and barite. GTEK Laboratory XCT Diaphragm Jig Machine is an ideal instrument for research of beneficiation of ferrous metal and nonferrous metal.

Ⅱ Technical Specification

Model		--	XCT-100×50	XCT-200×300
Chamber Size	*Length*	mm	150	300
	Width		100	200
Chamber Number		--	2	2
Chamber Area		m²	0.03	0.06
Eccentric Maximum Stroke		mm	≤20	≤32
Feeding Size		mm	≤3	≤6
Stroke Frequency		times/min	420	346
Capacity		kg/hr	20-70	70
Backwater Consumption		kg/min	0.117	4
Feeding Water Consumption		kg/min	0.10	2.4
Motor	*Power*	kW	0.55	0.75
	Rotation Speed	rpm	1400	1390
Dimensions	*Length*	mm	760	1100
	Width		530	820
	Height		1135	1270
Weight		kg	170	200

Ⅲ Structure

As is shown in Figure 1, the top the diaphragm is rectangular and the bottom is cone-shaped separation chamber 1 and separation chamber 2. These two chamber are connected together and mounted on the frame 3 to become complete one piece. There are jigging area A, jigging area B and diaphragm area C in each separation chamber. Jigging area A and jigging area B are separated by a division plate that does not reach the bottom. Each separation chambers share the same transmission device 4 and coupled with water valve 5 as shown in figure 2 as well as water supplement pipe 6, the jigging process of the upper area of jig machine reply on movement of water caused by reciprocating motion of diaphragm, so as to realize mineral separation. When the diaphragm is moving download, supplement water fed to the separation chamber under the sieve plate, supplement water is regulated by water valve 5. The water valve 5 and diaphragm 7 operate synchronously. When the diaphragm moves downward, the water valve is closed and water does not enter the jig machine. When the diaphragm moves upward, the water valve is open. Therefore, the effect of descending water current in the jig is reduced.

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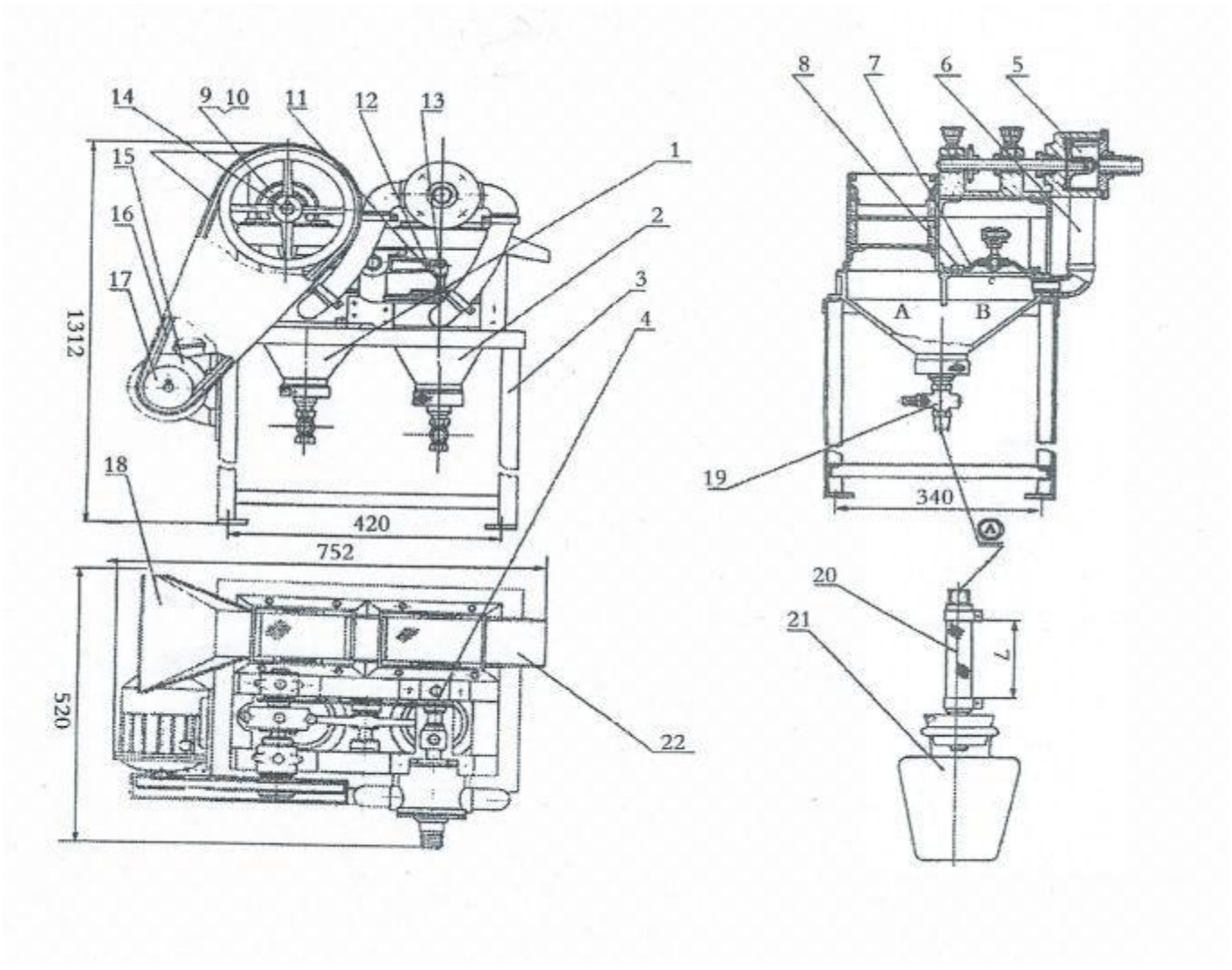
The separation chamber is made from gray cast iron, diaphragm is fixed on horizontal iron pad 8 of the separation chamber which is well sealed. The diaphragm is connected with lever 12 though eccentric connecting rod 9,10 and diaphragm connecting rod 11. The reciprocating motion is realized by lever 12, which caused relevant motion in separation chamber. The lever is then connected with the eccentric connecting rod covered on shaft 13, shaft 14 is driven by the motor 15 via triangle belt 16 and belt wheels 17.

As the height of each separation chamber is different, the raw ores are fed to the separation chamber through feed trough 18. Driven by water, the ores go out of the jig separately based on differing of special gravity. Ores go down the chamber though valve 19 and rubber hose has larder special gravity.



Ⅳ Installation

The crusher shall be placed on flat ground of workshop or platforms. If it is accessory equipment or work with other equipment, shall fully consider convenience for ore feeding, discharging, checking and maintenance. Power supply 220V/3phase, supplement water pressure 0.6-2Kg/cm$^{2.}$

After installation, check the horizontal status with gradienter, tilt environment shall be avoided, connect the power and perform test run for at least 2hours. If everything is successful in test run, load test shall be perform according to operation manual. Start to use when test run is ok.

Ⅴ Lubrication

1. The eccentric connecting rod bearings and shaft bearings are sliding bearings, lubricate with thick lubrication oil for every 8 continuous working hours.
2. Motor bearing shall be lubricated with thick lubrication oil every 6 month.