Spiral Classifier

CONTACT US
Phone: 310-830-6601
FAX: 310-830-9336
Email: info@sepor.com
& services@sepor.com

LOCATIONS
WEST COAST
718 N. Fries Avenue
Wilmington, CA 90744
EAST COAST
3740 NW 124th Ave
Coral Springs, FL 33065

Description:

A Spiral Classifier is a machine that is primarily used to classify the slimes (fines) from a coarser, sandy sized material. It has a inclined trough with one or two spirals revolving slowly and free from touching the sides or bottom of the tank. The motion of the spiral creates pool hindered settling in the bottom pool area, where the agitation of the water hinder the fines from settling to the bottom, but the coarser particles do settle and are carried up the slope by the revolving spiral, to the discharge, located at the top of the classifier. Then gravity flow or pumps are used to move the coarse material to the next stage in the process, the fines overflow from the pool area. The pool area normally has an adjustable wier, which will determine the amount of time material is in the pool area, and subsequently the coarseness of the discharge from the pool area, with a shorter residence time the coarser the discharge, along with the fines. Therefore, some control of the classification size can be accomplished by adjusting the weir height up or down, to give more of less residence time in the pool area.

The typical range of feed to a spiral is 20 mesh (850 μ) to 325 mesh (45 μ). The slope of the spirals is 3.5 inches vertical per foot of horizontal distance. These units are primarily constructed from carbon steel, but are available in stainless steel, if required.

Conditions that affect classification in a spiral classifier are:

1. Coarse particles settle faster, having a faster settling velocity than fine particles under hindered settling conditions.
2. Heavy particles settle faster than lighter particles.
3. Porous or irregular shaped particles settle slower than relatively round and non-porous particles.
4. If fine slimes are present in quantity, it increases the density of the liquid slurry in the pool, rendering all settling velocities slower, as the medium becomes denser. Coarser particles will be in the fines overflow.

5. On the dilute side, (adding water to the pool area) critical dilution is reached when the density approaches that of water, increasing the settling rates and giving a coarser separation. Finer particles will be in the fines overflow.

6. Less water in the pool area with have the effect of giving a coarse separation, by creating a heavy media effect, and allowing coarser particles to overflow.

Experimentation will determine the right conditions to achieve the desired separation in a spiral classifier for a particular material. Overflow from a spiral classifier typically contains from 15% to 25% liquid, while the fines overflow contains from 85% to 75% liquid.

Catalog Number	Dia x L (inches)	Overflow Cpty Lbs/Hr	Sand Cpty Lbs/Hr	HP	Shipping Weight
050B-032	6" x 76"	400	1000	1/4	300 lbs
050B-034	9" x 79"	900	1800	1/2	520 lbs
050B-036	12" x 125"	2200	4000	1	650 lbs

SPIRAL FEED

COARSE DISCHARGE