



CROWN
MACHINERY



New Innovation Technology for Waste Water from
Crown Machinery



Crown Machinery Enterprise Introduction

Crown Machinery Inc. is a modern innovative high-tech centrifuge R&D and manufacture enterprise with four main branches in global work located in USA , South Korea, Philippine and China. Adhering to the concept of quality is the enterprise life, innovation is the driving force for the development, Conform to the trend of the development of modern industry, Fusion concept of global economic integration, Creative thinking, Integrate liquid separation processing industry leading enterprise in the upstream and downstream resources; Gather technical force; Together with the power of the global enterprise for business purposes; Dedicated to supply the clients complete separation solution.

Our company assemble a number of skillful, talented professionals, introduction advanced of international centrifuge technology with 30 years experiences of the development and design, through adopting international advanced management method, we have developed very professional separator and centrifuge for edible oil , pharmaceutical , chemical , waste project and various liquid industry. Until now we have accumulated more than 500 clients in global world market and get wide good feedback for our products and service, as our enterprise name "Crown Machinery" described we would like to supply the products like the crown quality and service.

Nowadays, our USA branch mainly forwards the waste-water market; Manila branch mainly prompts the coconut products machinery in Asia-Pacific market; Our Korean branch also named the Hanil Science Medical Co.,Ltd. is focusing on the Bio-tech and Bio-pharmaceutical market; And Liaoyang Crown Machinery Co.,Ltd. in China works as the head-quarter of four branches to serve the machinery selection, sale, technology support and after-service job.

Up to now, we have successfully introduced many clients' final products such as coconut oil into Chinese market to achieve a mutually beneficial win-win situation. We do hope serving the client not only the products but also the wonderful experience to cooperate with us.

Welcome to contact and visit us.





Decanter Centrifuge For Waste-water or Sludge Process

As more and more attention has been paid to environmental protection, Waste water or sludge treatment has become the most important issue of environmental protection.

Wastewater treatment plants for municipal and farm applications are designed to produce a clean, safe water discharge. Complexity of the plant depends on the immediate environmental considerations and consent limits negotiated with authorities. New plants built today are more and more sophisticated, making the decanter centrifuge ideal for precise wastewater treatment.

Wastewater or Sludge series decanter centrifuges from Crown Machinery provides effective concentration, dehydration during the waste water treatment process, also apply to the working water purification and reuse. For the high pH value material, highly corrosion proof material of the wetted parts is adapted.

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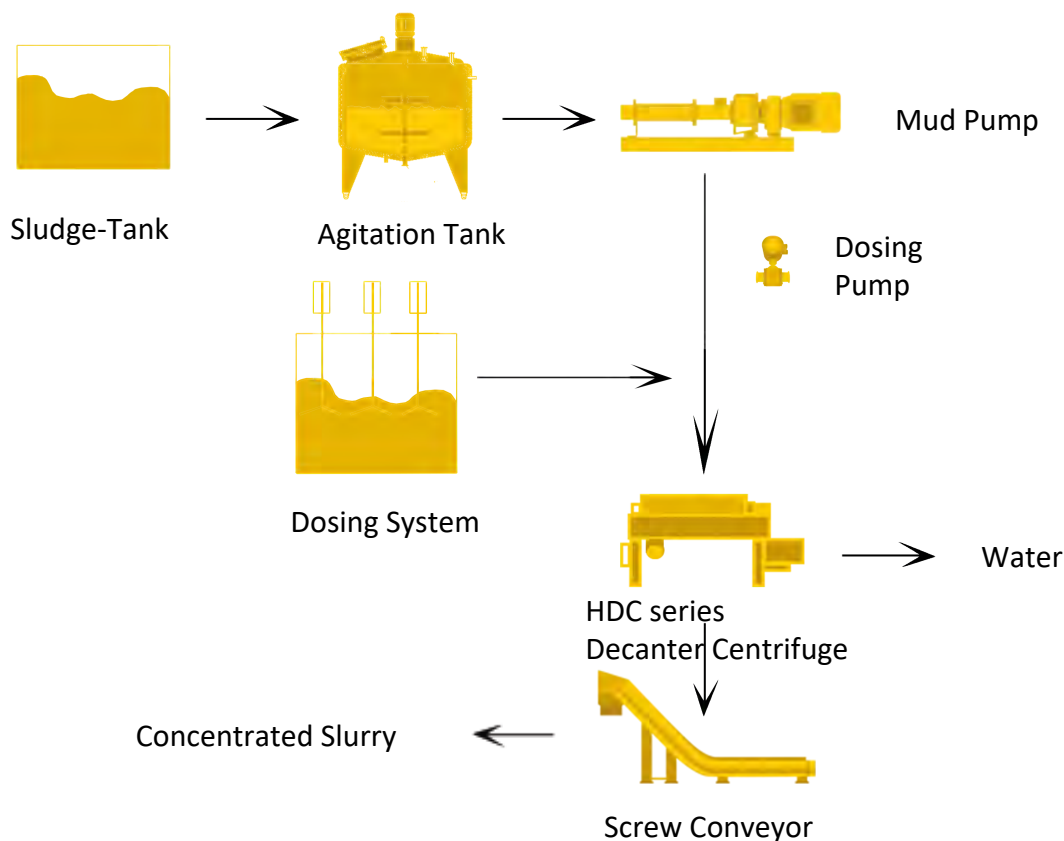
Waste Water or Sludge Thickening and Dewatering

In sludge thickening, surplus sludge, which is generated during the biological stages, is concentrated from 1 % or less total solids content to 5 – 8 % before it is pumped into the digester. As a result, the amount of sludge is reduced by 90 to 95 % in volume.

Recent studies which took all relevant fixed costs(capital and labor) as well as variable costs (consumption of power, water, and polymer as well as spare parts) into account, show that a thickening decanter has advantages over other thickening equipment. These advantages become increasingly significant in the case of large capacities and long operation time. .

Regardless of whether the sludge is transported after dewatering, reused as fertilizer, disposed of in landfills or incinerated – maximum dryness is the most critical factor. The other key factors are cost efficiency in terms of consumption of polymers, energy, water and spare parts, as well as continuous, automatic operation at minimal costs.

Decanters stand out from the competition with their reliability and cost efficiency.



Flocculant

To a certain extent, the consumption of flocculants during sludge dewatering and concentration depends on the design of the machine. In order to achieve maximum efficiency, the formation of flocculation sludge must be at the appropriate time and position.



Thickening and Dewatering Principle

A decanter centrifuge can be viewed as a settling pond wrapped around an axis. In the settling pond, solid particles, which are heavier than the liquid, settle to the bottom driven by gravity and build up a sediment layer on the bottom of the pond. In the rotating bowl of the centrifuge, solid particles, which are heavier than the liquid, move to the inner diameter of the bowl driven by centrifugal force and build up an annular sediment layer on the inner surface of the centrifuge bowl. Since the centrifugal force in the decanter is approximately $3000 \times g$ instead of $1 \times g$ in the settling pond, separating solid particles from a liquid in a centrifuge becomes much faster and more efficient.

The bowl shell of a decanter centrifuge has a cylindrical – conical shape. It rotates at a high speed creating the centrifugal force needed for the separation. Inside the bowl, there is a scroll conveyor for the continuous discharge of the sediment which is packed on the inner surface of the bowl wall. The scroll conveyor rotates at a speed relative to the bowl speed. This differential speed is created by a rotating gear box at the drive end of the bowl.

The sludge to be separated enters the bowl via a stationary feed pipe. From the feed pipe it enters the separation zone via feed ports in the scroll body. In the separation zone, it separates into a sediment layer and liquid layer. The sediment is scraped off the bowl wall via the scroll conveyor and delivered out of the pond on the conical end of the machine, also called the dry zone, before it leaves via discharge ports on the conical end of the bowl. The separated liquid flows to the cylindrical end of the bowl where it is discharged by gravity via an overflow weir.





Integrated System Design

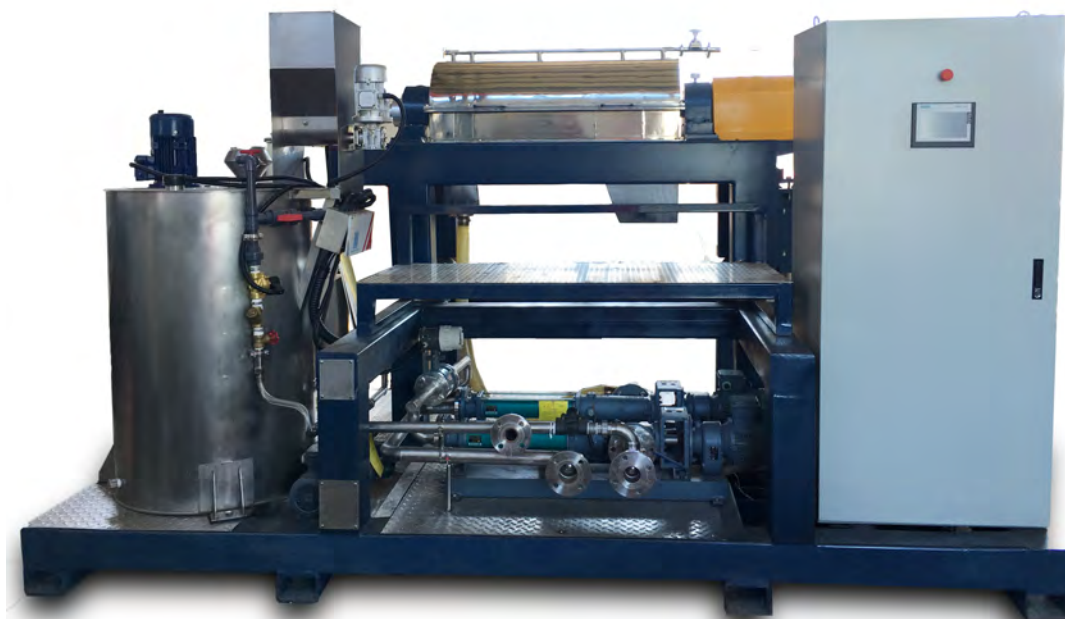
In order to optimize the separation results, maximize machine reliability and minimize operating costs, the centrifuge should be properly matched with all surrounding plant components.

A Crown System can be stationary, mobile or semi-mobile. It can be skid-mounted on a platform or installed in a closed container.

Our engineers have many years of experience in the layout of plant components such as control cabinets, pumps, flocculation units, piping, etc. We know that customer requirements vary and depend on process, location and other circumstances.

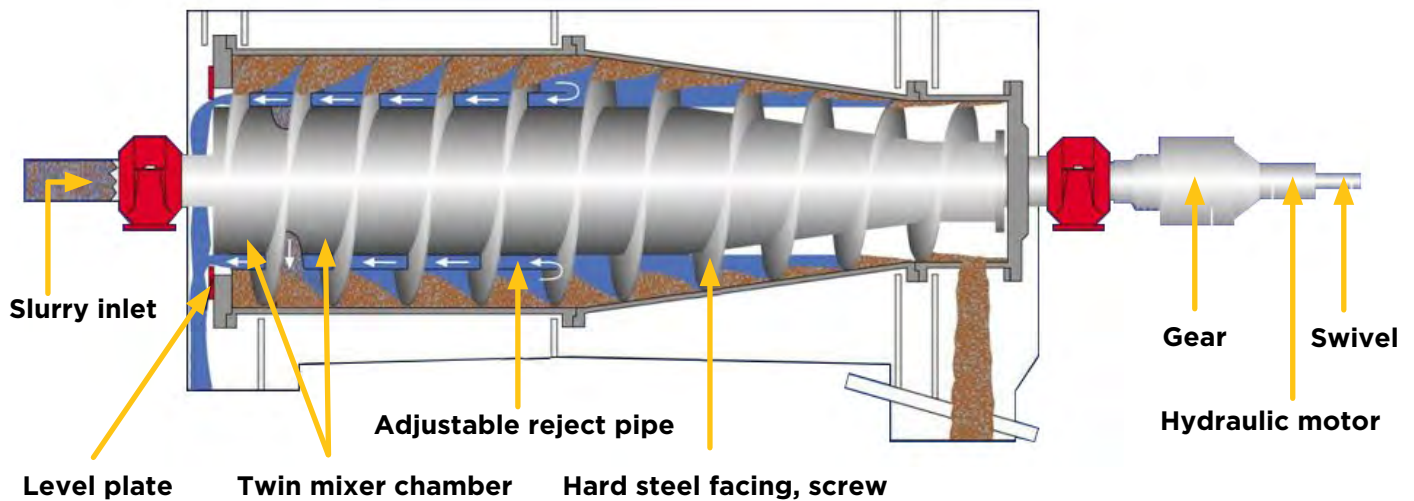
Customer benefits

- High separation efficiency due to perfectly coordinated components
- Quick and safe commissioning due to reduced control points
- High reliability and safety since Crown Machinery assumes the responsibility for the whole system
- Maximum convenience for our customers since there is only one contact person for the complete system
- Long life span and high availability due to our full support for the whole operating system





Decanter Centrifuge



Advantage and Benefits of Decanter Centrifuge

- Low cake moisture
- Compact design and requires
- low space Low operation cost
- High dewatering and filtration Capacity
- Low required space
- Smooth operation

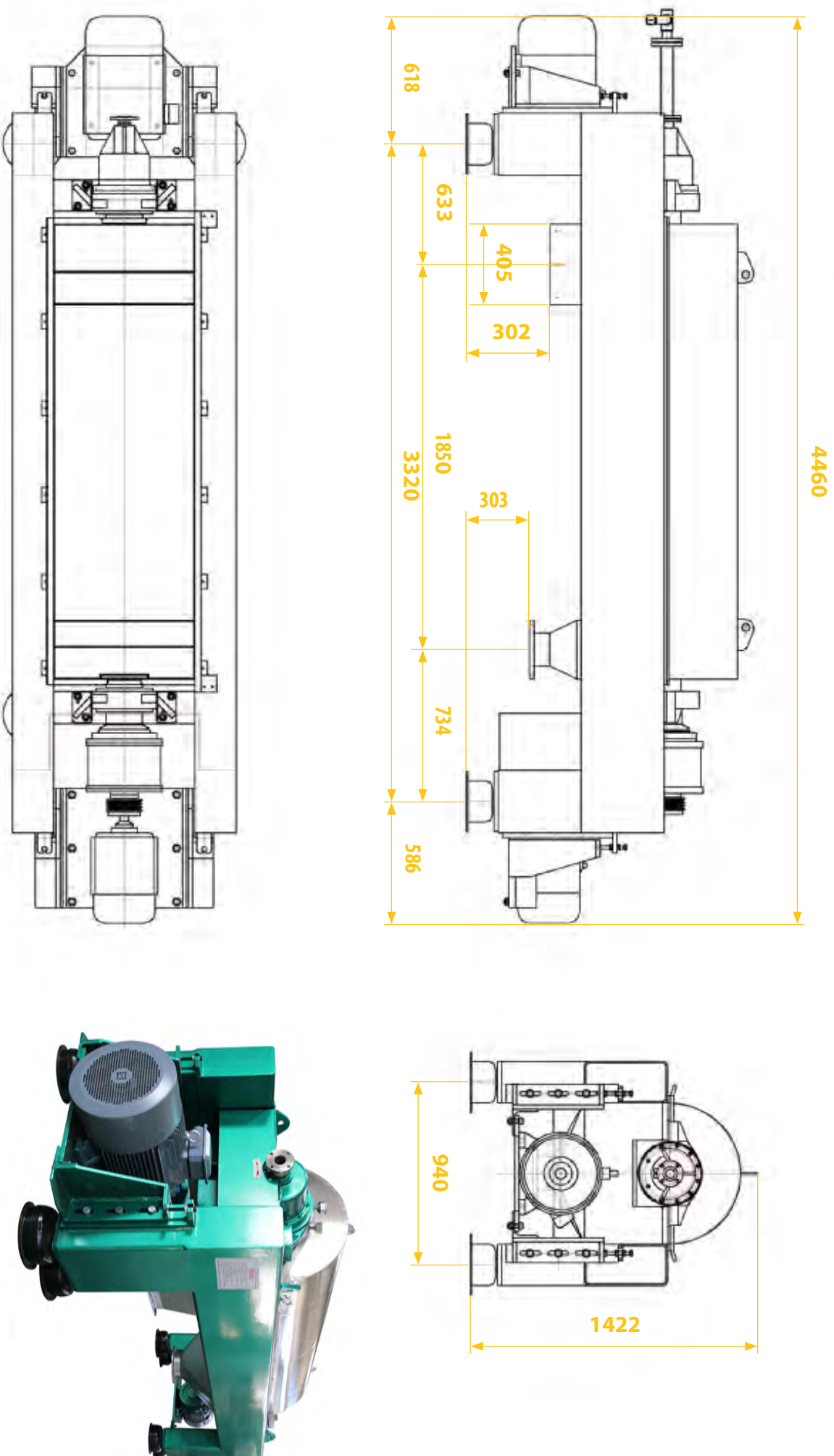
Decanter Centrifuge Main Parameter

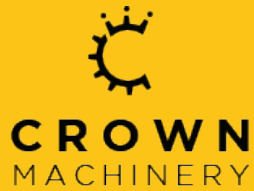
Model	300 x 1350	355 x 1600	450 x 1800	520 x 2200	650 x 2600
Bowl Dia. (mm)	300	350	450	520	650
Through-put Capacity (L/H)	1000-3000	3000-5000	50000-100000	100000-200000	200000-500000
Bowl Length Dia.(mm)	1350	1600	1800	2200	2600
L&D Ratio	1:4.5	1:4.5	1:4.0	1:4.2	1:4.0
Bowl Speed (r/min)	4200	3800	3200	3000	2800
Separation Factor	3000G	2868G	2575G	2620G	2850G
Screw Differential (r/min)	5-30 Stepless Adjustable	2-20 Stepless Adjustable	4-28 Stepless Adjustable	5-25 Stepless Adjustable	5-25 Stepless Adjustable
Motor (kw)	Main Motor11 Vice4	Main Motor15 Vice7.5	Main Motor30 Vice11	Main Motor45 Vice15	Main Motor75 Vice22
Noise db(A)	≤85	≤85	≤85	≤85	≤85

*Actual production capacity base on the raw materials.



Waste Water Decanter Centrifuge Out-shape





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