



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.



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High Speed Centrifuge for Fuel Oil Purification

Unreliable fuel oil prices and more stringent emissions controls are putting increasing pressures on ship owners and diesel power plant operators. To address these challenges and improve overall performance, owners and operators are undertaking measures, such as reduced engine speed and the introduction of emission control technologies, to improve fuel efficiency and reduce emissions.

Waste fuel oil recovery from sludge and substantial sludge minimization achieved by Crown Machinery decanter-disc centrifuge fuel purification system is gaining ground as an effective fuel and emissions reduction method.



Decanter to Disc Centrifuge Fuel Purification

When you purify your fuel you should use a method that will remove both the particles and the water from the fuel.

Disc centrifuge is used to separate two liquids with different proportion which is arranged to separate impurities and small amounts of water from oil. The mission of the decanter is remove large solid particles, reduce the solid content to facilitate the fuel oil into the disc centrifuge.

Consequences of Using Dirty or Wet Fuel:

- *Engine failure
- *Poor engine performance including increased emissions
- *Increased maintenance cycle
- *Shortened engine life.

The separation of impurities and water from fuel oil is essential for good combustion. The removal of contaminating impurities from fuel oil will reduce engine wear and possible breakdowns.

*Decanter Centrifuge: Passing the Fuel Through a Media -Removes Particles

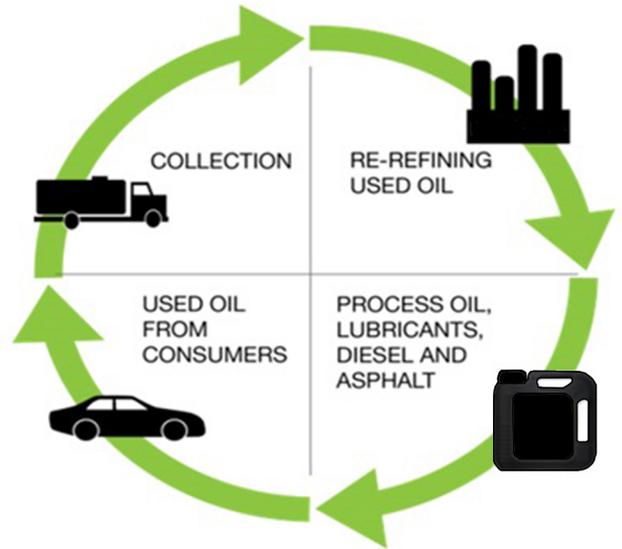
*Disc Centrifuge: Passing the Fuel Through a Media -Removes Water and Lower Solids





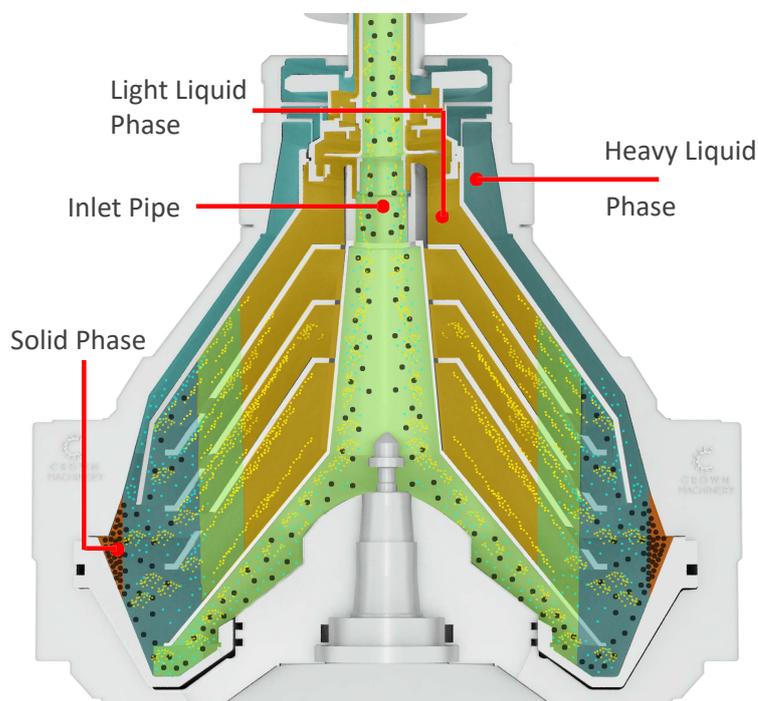
Purify Fuel-Principle of Disc Centrifuge Process

A centrifuge consists of an electric motor drive to a vertical shaft on the top of which is mounted the bowl assembly. An outer framework surrounds the assembly and carries the various feed and discharge connections. The bowl can be a solid assembly which retains the separated sludge and operates non-continuously, or the bowl can be arranged so that the upper and lower parts separate and the sludge can be discharged while the centrifuge operates continuously. The dirty oil is admitted into the centre of the bowl, passes up through a stack of discs and out through the top.



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DGS series Disc centrifuge workflow





Centrifuge Machine Standard Design

The machine has a main frame that consist a horizontal drive shaft with clutch and brake, worm gear, lubricating oil bath and vertical bowl spindle in the lower position.

The bowl is mounted on top of the spindle, fixed by the upper parts, the gasket, the collecting parts, and frame hood. The material feed into the bowl, by the effects of centrifugal force the liquid phase pumped out of machine through outlet pipe, meanwhile the solid phase adhere on the bowl wall, then were discharged automatically by operation water. The electric motor is of the variable frequency drive type or of controlled-torque type. All parts in contact with material are made of stainless steel.

Basic Equipment

Concentrator or purifier parts, inlet and outlet devices, revolution counter, set of erosion-protective parts, illuminated sight glass for liquid phase outlet, vibration sensor, vibration-isolating base plate, flange motor, set of tools and set of standard spare parts.

Optional Extras

Electric cabinet, frequency converter, discharge control panel, standard set of fittings, set of CIP valves and fittings and serviceability package for on-line viewing of separator status



Material Data

Bowl body, hood and locking ring S.S304 Solids cover and frame hood S.S304 Frame bottom parts green casting iron Inlet and outlet parts S.S304 Gasket and O-ring Nitrile rubber

Disc Centrifuge Main Parameter

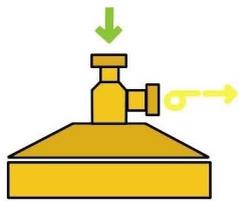
Model	Bowl Speed (rpm)	Through-put Capacity (L/H)	Running Load (kw)	Dimensions (mm)		
				Width	Front-to-Back	Height
300	7302	300-500	4	950	950	1250
400	7070	1000-2000	7.5	1555	1130	1640
480	6600	3000	15	1780	1500	1900
500	6600	5000	18.5	1780	1500	1900
550	6000	10000	22	1800	1850	1900

*Actual production capacity base on the raw materials.



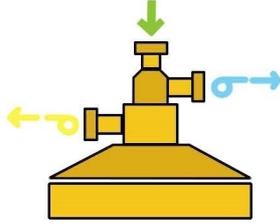
Liquid Feeding/Discharging Configuration

DGC series
One liquid Phase



- Feeding Material
- Liquid Phase
- ↻ Flow with Pressure

DGS series
Two liquid Phase



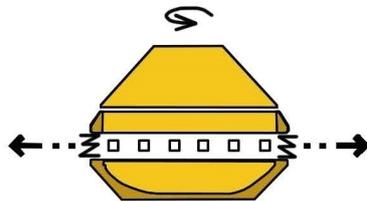
- Feeding Material
- Light Phase
- Heavy Phase
- ↻ Flow with Pressure
- ↻ Flow with Pressure

Discharging Method



Manual Discharging

Shut down and open the bowl, manually remove the inside sediment by labor.



Automatic Discharging

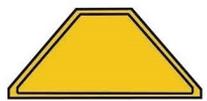
Through Intermittent open lower parts of the bowl, sludge discharged automatically.



Continuous Discharging

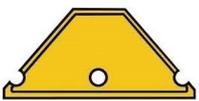
Sludge discharging achieve by the nozzles around the pericline.

Disc Separation



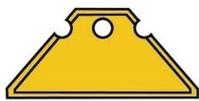
Clarification

Separate the solid particles form the liquid



Separation

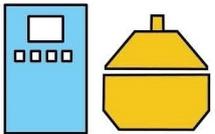
Separate a heavy liquid phase from major light liquid phase, meanwhile the suspended solid particles be separated as well. Maximum level of purified the light liquid phase.



Concentration

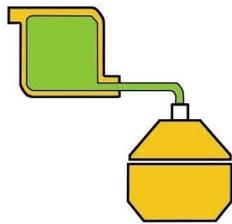
Separate a light liquid phase from major heavy liquid phase, meanwhile the suspended solid particles be separated as well. Maximum level of purified the heavy liquid phase.

Optional Components and Systems



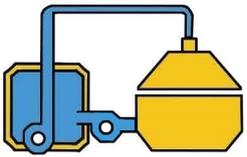
Electric Cabinet

Monitoring and adjustment of power , parameters setting and safety devices.



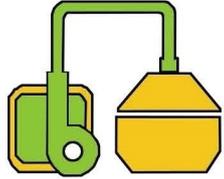
Gravity Feeding System

Ensure the material contnous and stable feeding to centrifuge.



CIP Cleaning System

Control the system clean the separation components automatically.



Feeding Pump

Ensure the flow of material to the centrifuge is stable and adjusted automatically.



HDC series Decanter Centrifuge General Description

Based on the more 30 years separator technics experience, we have developed and advanced the previous centrifuge and separator .

When separator operation is no longer feasible due to high proportions of solids in the suspension to be processed, decanter centrifuge is used, a horizontal, solids-oriented, solid-wall scroll centrifuges.

The solid bowl decanter centrifuge consists of two horizontal concentric rotating elements contained in a stationary casing. The outer rotating bowl element is tapered so that the solids discharge from a smaller radius than the liquor. The inner element is a hollow hub screw conveyor with blade tips shaped to fit closely to the contour of the bowl.

Advantage and Benefits to Choice Decanter Centrifuge

- ✓ Low Cake Moisture
- ✓ Compact design and requires
- ✓ low space Low operation cost
- ✓ High dewatering and filtration
- ✓ Capacity Low required space

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 Ajustable	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

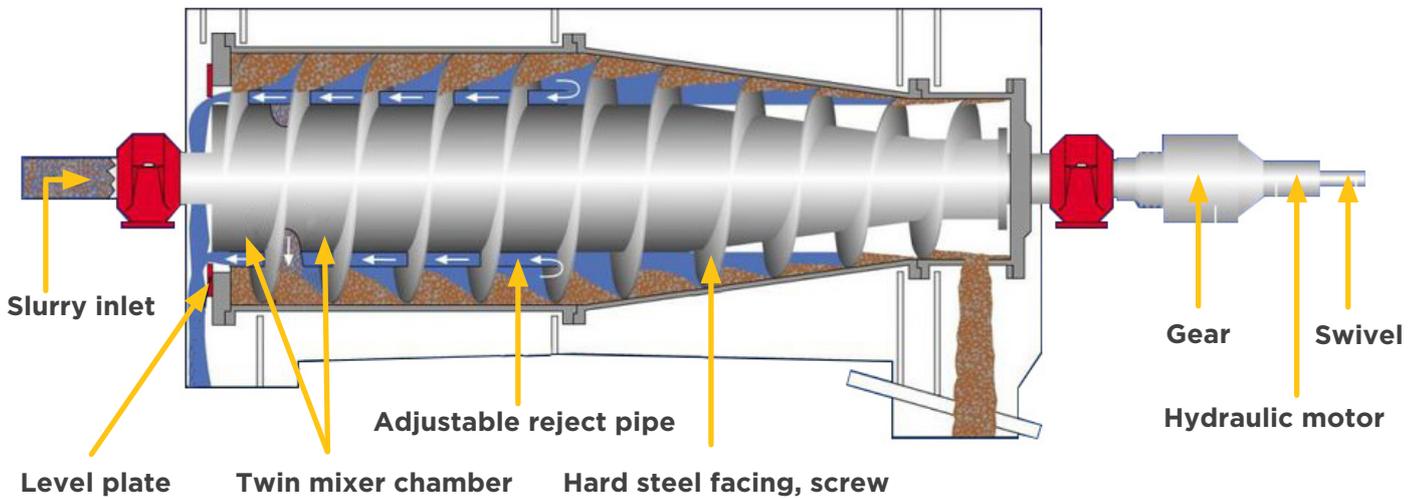
*Actual production capacity base on the raw materials.





Decanter Centrifuge Separation Principle

1. Feed slurry is introduced into the conveyor hub. As the feed accelerates to the machine speed, the slurry is delivered by centrifugal force into the rotating bowl by way of ports in the conveyor hub.
2. The solids settle through the liquid pool formed on the wall of the bowl. The solids are then conveyed, due to a slight differential between the screw conveyor and bowl, up the drying beach to the solids discharge ports.
3. The clarified liquors are discharge in the opposite direction from adjustable overflow ports.





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