



# PROCESS CENTRIFUGES

# Sanborn Technologies Basket Centrifuge

## Vertical Basket Centrifuges

- Filtration and Sedimentation Applications
- Top Unload and Bottom Discharge Models
- Forces of Gravity (G Levels) to 12,000
- Basket Diameters from 12" to 60"
- Various Metallurgies and Coatings Available
- Manual and Automatic Controls

## Applications for Vertical Basket Centrifuges

- Dyes and Pigments
- Crystal Extraction from Mother Liquors
- Dewatering of Industrial Wastes and Sludge
- Filtering and Washing of Pharmaceutical Intermediates



Vertical baskets are ideal for batch or semi-continuous applications with solids levels up to 20%. Most efficient cake washing of any filtration device and the most versatile of all centrifuges.

# NOXON Decanter Centrifuge

## Horizontal Continuous Scroll Centrifuge

- Concurrent and Counter-current Designs
- High Settling Efficiency
- Bowl Diameters from 9" to 31.5"
- Feed Rates from 4 to 220 GPM
- Various Metallurgies and Coatings Available
- Polymer Dosing and Automated Control Systems

## Applications for NOXON Decanter Centrifuges

- Dewatering Solids from Municipal Waste Treatment Plants
- Rendering
- Sludge Removal from Paper Processing Operations
- Fish Meal Processing
- Solids Removal and Fluid Clarification from Industrial Wastes
- Sludge Removal from Oil Tank Residues and Tank Bottoms



Decanter centrifuges provide continuous separation of liquid and solids at solids concentrations of up to 30%. Machines can be used for high concentrate clarity and good cake dryness.



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# Custom Built Centrifuges

## Custom Centrifuges Built to Your Specifications

- For Unique Applications or Configurations
- Special Installations Can Be Accomplished
- Can Be Designed with Very High Rotational Speed
- Unusual Process Requirements Can Be Met
- Various Metallurgies and Coatings Available
- Special Sizing for the Application

## Applications for Custom Built Centrifuges

- Nuclear Materials Can Be Separated
- Manufacture and Development of Medicines
- High Viscosity Materials and Polymer Separations Achieved
- Processing of Highly Volatile Materials



If you have a need for a rotating device utilizing centrifugal force and standard machines are not available or quite right, Sanborn will design and build a custom unit for your application.

# Remanufactured Centrifuges

## Remanufacturing: Vertical Baskets, Peelers, Pushers, and Decanters

### Scope of Remanufacturing

- Convert Hydraulic Drives to Electric Drives
- Provide State-of-the-Art Controls
- Complete Machinery Upgrading
- Custom Modifications per Specifications
- All Work Includes a New Machine Warranty



A remanufactured unit might be right for you if you need quick delivery, capital cost reduction, process or regulatory required changes, reduced maintenance requirements, or new process consistency.



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# Centrifuge Technologies—How They Work

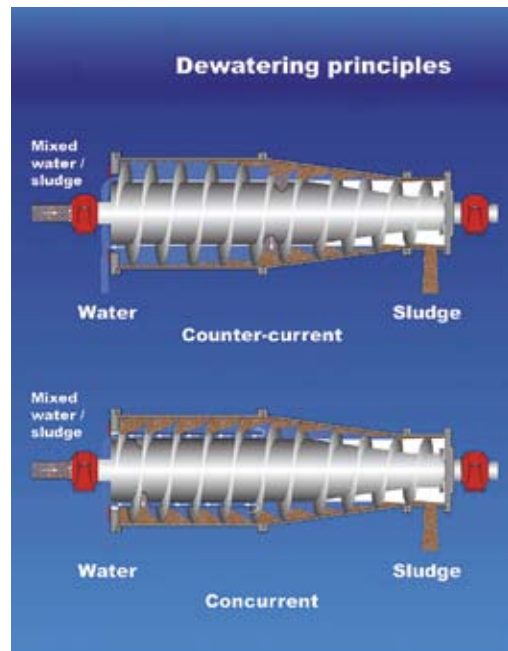
## THE NOXON DECANter

The decanter centrifuge consists of a bowl and an internal screw conveyor; each rotates independently. Sludge is introduced through a feed pipe located at the axis of rotation. The sludge enters a special feed chamber in the conveyor where polymer is added if needed to flocculate the solids. The feed mixture discharges into the rotating bowl where the solids separate from the liquid under centrifugal force and collect on the bowl wall. The screw conveyor transports the solids to the conical section of the bowl where they are dewatered before discharging.

In the counter-current design (right, above), the feed chamber is located between the cylindrical and the conical sections of the bowl. Solids discharge at the small conical end of the bowl while the clarified liquid flows towards the large end of the bowl.

In the concurrent design (right, below), the feed chamber is located at the large end of the bowl. The solids and clarified liquid travel together towards the small end of the bowl. Just before the conical section, the clarified liquid is redirected through effluent pipes towards the large end of the bowl.

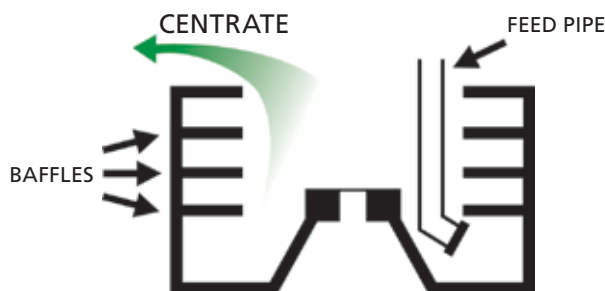
In both designs, the clarified liquid, “centrate,” is discharged over weir plates. The weir plates are used to optimize the liquid pool for best decanter performance.



Counter-current Flow and Concurrent Flow.

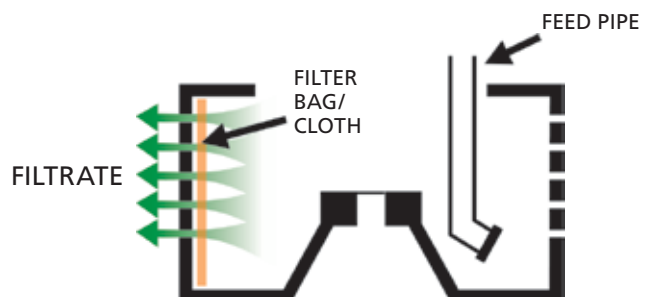
## BASKET CENTRIFUGES

### Imperforate Type Basket



Imperforate Basket—Separation is achieved by centrifugal force magnifying the difference in density between the solid and liquid phases. No basket perforations or filter bag are used. The centrate decants over the basket cap (centrifugal settling).

### Perforate Type Basket



Perforate Basket—Uses a filter bag or cloth, and the basket is perforated. Solids are filtered from the slurry by centrifugally-generated hydrostatic pressure. The filtrate flows through filtered cake, filter bag, and out the perforations (centrifugal filtration). Washing the filtered cake is possible with this design.