INDION® Solids Contact Clarifier
Ion Exchange India, the pioneers and leaders in Total Water Management for over three decades, offers you the INDIAN Solids Contact Clarifier.

This high performance clarifier incorporates the design of internal solid recirculation thereby optimising the chemical consumption and making it more economical than conventional clarifiers.

The Solids Contact Clarifier is widely used both in India and abroad for treating raw water and waste water, producing clarified water of highest quality.

**Applications**
- Clarification of surface water
- Lime soda softening
- Removal of colloidal silica
- Colour removal
- White water recycling
- Primary (physico-chemical) treatment of waste water
- Removal of heavy metals in the chemical and automobile industries

**Process Parameters**
- Handles high inlet suspended solids load up to 3000 ppm while giving consistent treated water quality of less than 20 ppm.
- Wide flow rate and size range – flow rates as high as 5000 m³/h and diameters as large as 60 m.
- Rise rates are higher than conventional clarifiers and depending on the type of application, can be as high as 3.6 m/h.
- Sludge concentrations up to 3 – 8% are achieved depending on the application.

**Principle of Operation**

The Solids Contact Clarifier works on two basic principles of Coagulation/Flocculation and Hydraulic Separation.

Coagulation and flocculation occur in the flocculation zone when the feed stream comes in intimate contact with chemical mixtures and suspended sludge particles from previously treated water. This contact also promotes floc growth as smaller particles agglomerate into larger heavier particles.

The hydraulic separation principle uses an upflow design to move water into the settling zone for clarification.

**Working**

Raw water enters the central draft tube above the recirculator impeller where it is mixed with treatment chemicals and recirculated precipitates. Precipitate recirculation is accomplished by a variable speed impeller which acts as an air lift pump. The mixture of raw water and sludge rises through the central draft tube and is discharged into the flocculation compartment.

This mixture undergoes gentle hydraulic turbulence as it passes through this zone.

Part of the water (equivalent to the instantaneous influent flow rate) enters the clarified water zone and rises toward the effluent collector.

Settled precipitates (sludge) are moved continuously along the floor toward the centre of the unit by means of a slowly rotating scraper which covers...
the entire floor area. The accumulated sludge is transferred to the sludge pit at the centre of the unit, where sludge thickening pickets concentrate the sludge, reducing the total amount of blowdown.

Excess sludge is removed by a blowdown system. Backflushing with water under pressure clears the blow-off line. Opening of the blow-off valve permits the sludge to flow to waste. These operations are either manual or automatic. Most of the water and suspended precipitates enter the lower end of the draft tube to be recirculated, providing positive solid contact regardless of sludge inventory level.

Clear water rises and is uniformly collected.

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**Suggested Specifications**

The equipment is complete with all required components including accessories and conforms to the following specifications:

- The system is designed for operating at atmospheric pressure.
- Side walls of the clarifier are of RCC or mild steel construction depending upon flow rates and applications.
- Components like scrapers, piping for inlet/outlet, platforms, handrail and ladders are in mild steel construction.
- Rotating parts like gear boxes, drive shafts, electrical motors are as per Indian standards.
Other **IONINDON** Products for Clarification & Filtration

- Chemical Dosing Systems for dosing coagulants & flocculants
- Lamella Clarifiers
- Ultra High Rate Solids Contact Clarifiers
- Pressure & Gravity Filters
  - Multi Grade Filters
  - Single & Dual Media Filters
  - Activated Carbon Filters
- Continuous Sand Filters
- Monovalve/Monoscur Al Filters
- Auto Valveless Gravity Filters
- Ultrafiltration Systems
- Sludge Thickeners
- Oil Removal Systems
- Micron Filters

To the best of our knowledge the information contained in this publication is accurate. Ion Exchange (India) Ltd. maintains a policy of continuous development and reserves the right to amend the information given herein without notice. Please contact our regional offices for current product specifications.

**INDION** is the registered trademark of Ion Exchange (India) Ltd.

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