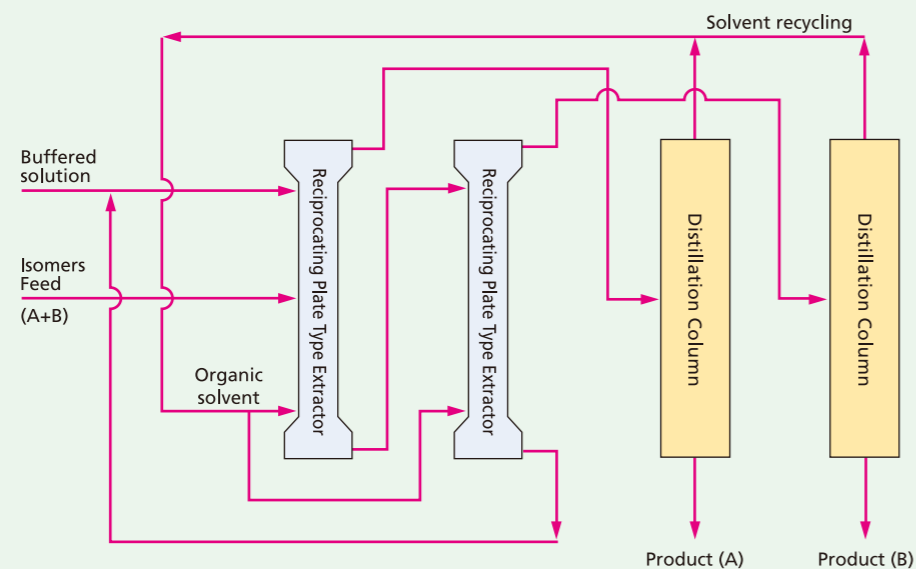




The following is an example of the process using the Reciprocating Plate Type Extractor

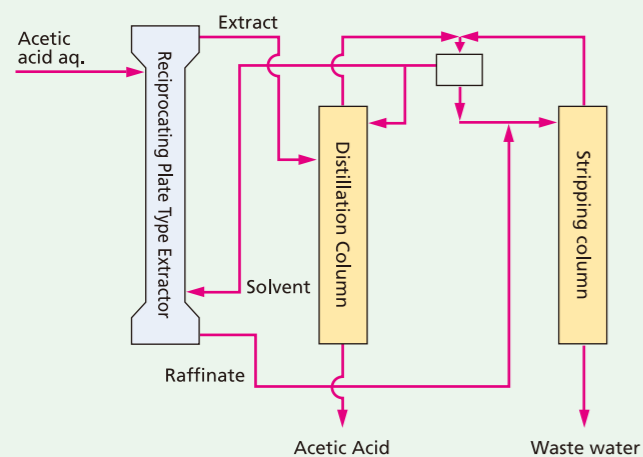


Isomeric Separation by Fractional Extraction

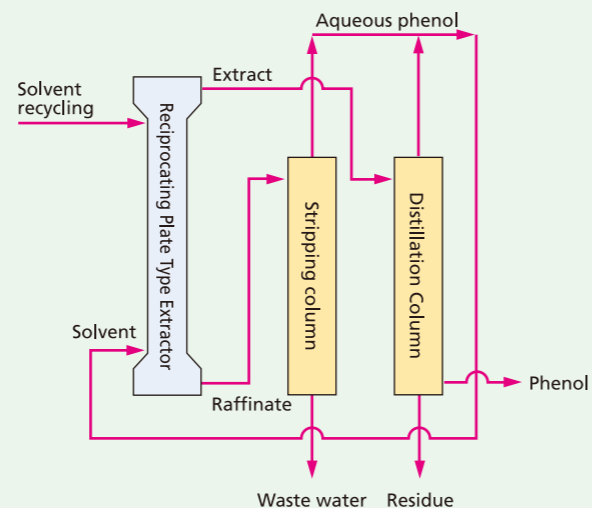


Reciprocating Plate Type Extractor

Recovery of Acetic Acid from Waste and Process Drainage



Recovery of Phenol from Waste and Process Streams



Classification	Typical Process
Process	Vitamins, esters/fatty acids, mineral acids, refined oil, copper solution, medicinal and pharmaceutical such as sulfa drugs, nitrobenzene/ nitrotoluene
Recovery	Acetic acid in water solution, phenol in water solution, uranium, nuclear fuel, antibiotics
Separation	Respective isomers, metals such as nickel, cobalt, etc.
Removal	Phenol in process liquid, organic material, inorganic material
Purification	Phosphoric acid, antibiotics
Drying	Miscible/non-miscible solvents

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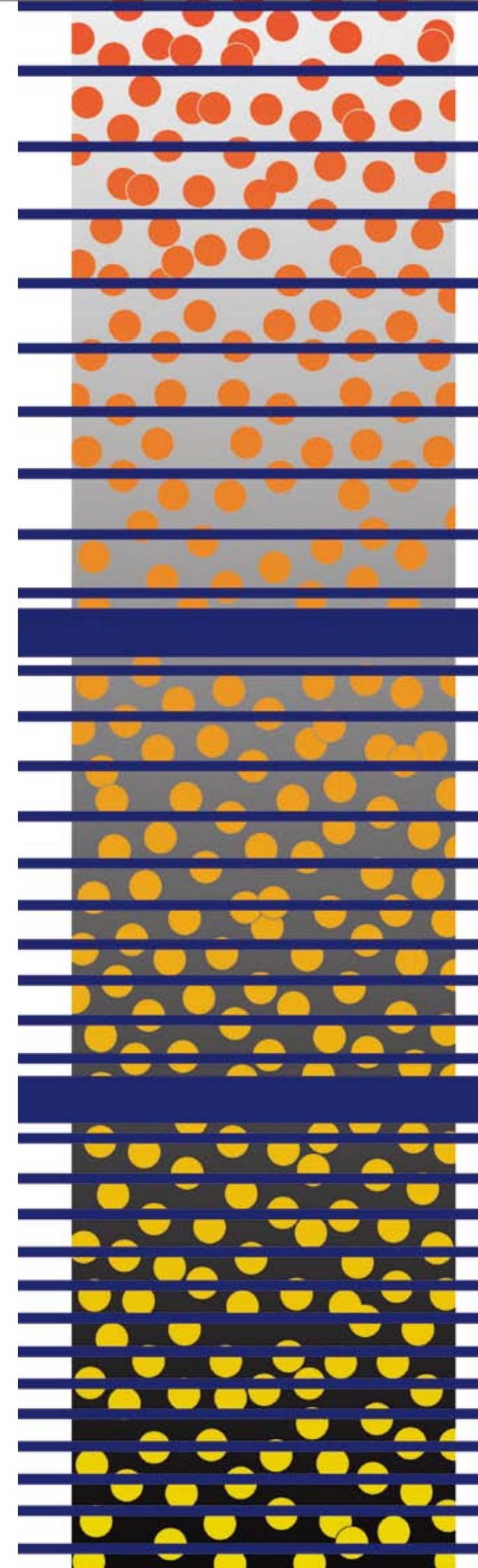
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Sumitomo Heavy Industries Process Equipment Co.,Ltd.





The extracting operation is used extensively in such areas as chemical, petrochemical, medical and pharmaceutical and nonferrous industries. "Reciprocating Plate Type Extractor" is used in a wide variety of fields because of its extensive operating range and high processing capacity.

Features

Reciprocating Plate Type Extractor is an energy-saving type of high-performance liquid-liquid extractor. In accordance with the separation process as represented below, it realizes a process structure that is efficient.

- Operations for which separation is difficult through distillation (azeotropic systems, systems with little boiling point difference, etc.)
- Separation of products whose qualities (colors, smells, etc.) are affected by heating.
- High theoretical stage extracting operations that cannot realize complete separation with batch type extractors.
- Saving of energy regarding dewatering operations such as collecting high-boiling point components from aqueous solutions.

1 Established Scale Up

- The system of scaling up to actual installations based on data obtained from pilot testing facilities (column diameter: φ25) has been established.
- Our records show that scaling up to a maximum column diameter of φ1500 is possible. Looking at our past achievements, it is evident that every performance was better than expected.

2 High Processing Capacity

- The throughput per cross-sectional area of the countercurrent contact point is approximately 60m³/m²/h (maximum).
- HETS* is low. Normally, HETS obtained with pilot testing facilities is 100mm~500mm.
- *HETS: height equivalent of one theoretical stage (mm)
- The size of the equipment can be smaller.

3 Stable Operation

- Efficient liquid-liquid contact is possible at every column's cross-section.
- Even for low load operations, efficiency is ensured by adjusting the reciprocal speed.
- Applicable even for liquids that tend to emulsify.

4 Applicable to a Variety of Fields

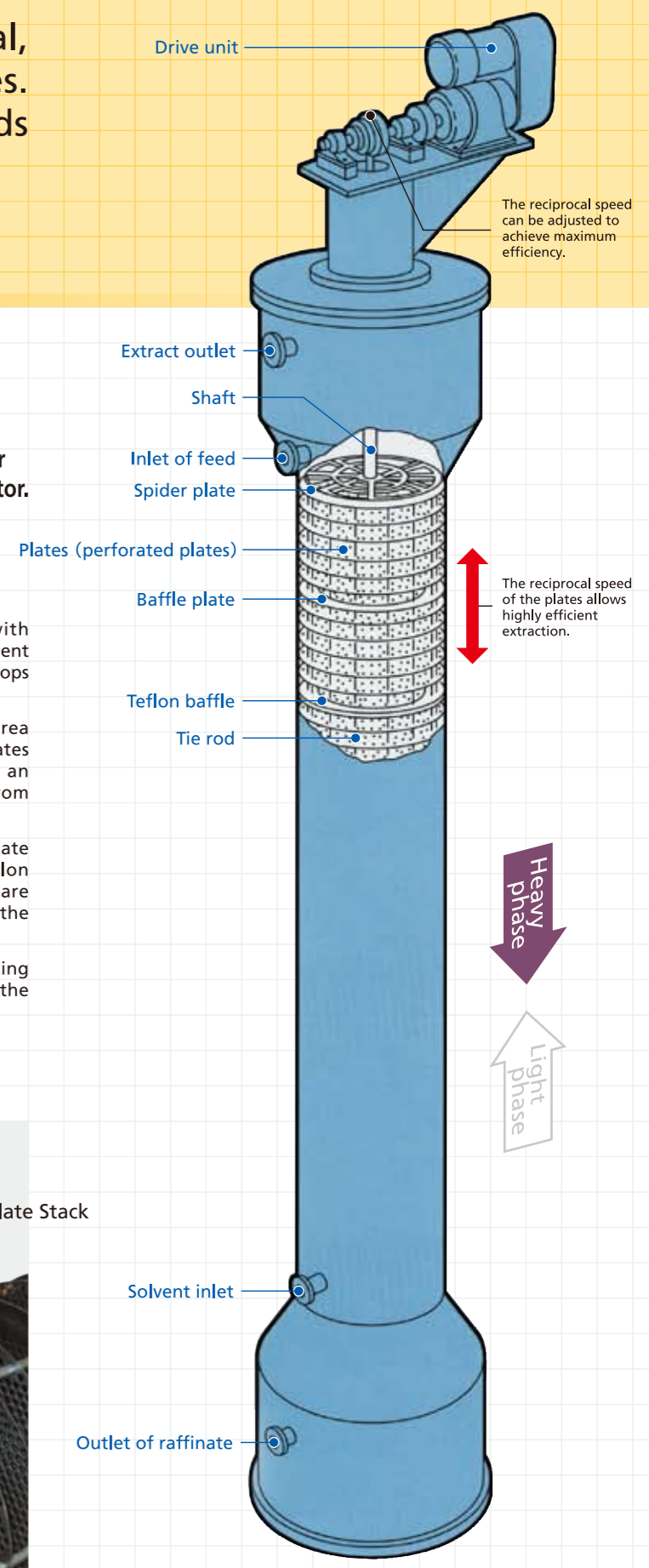
- The Reciprocating Plate Type Extractor has been adopted for various industrial separation operations.
- The combination of continuous/dispersal phases and feed/solvent can voluntarily be selected in accordance with the condition of the liquid.
- Enable to choose an appropriate material as it can be used for a variety of materials

Contact Us ©Please contact our Sales Department if you have any inquiry pertaining to process applications and/or delivery.

Structure

Reciprocating Plate Type Extractor is a unique countercurrent extractor.

- The drive unit is equipped on the top of the column with a plate stack connected to it. With the reciprocating movement (up and down) of the plate stack, uniform and fine liquid drops are formed.
- The plate stack is composed of plates with an open area ratio of approximately 50% (perforated plates), baffle plates and spider plates. The spider plates are attached in an attempt to prevent deformation of the plate stack from warping.
- The plate stack is installed in a way that ensures appropriate clearance between it and the shell. Additionally, Teflon baffles (with slightly bigger diameters than the plates) are attached with appropriate spaces between them. Thus, the structure prevents any metal touch with the shell.
- Conducting maintenance is easy since there is no supporting structure such as bearings in the wetted parts (bottom of the columns, etc.).



Structure of Reciprocating Plate Type Extractor

This drawing indicates the case where the heavy phase is the feed and the light phase is the solvent.