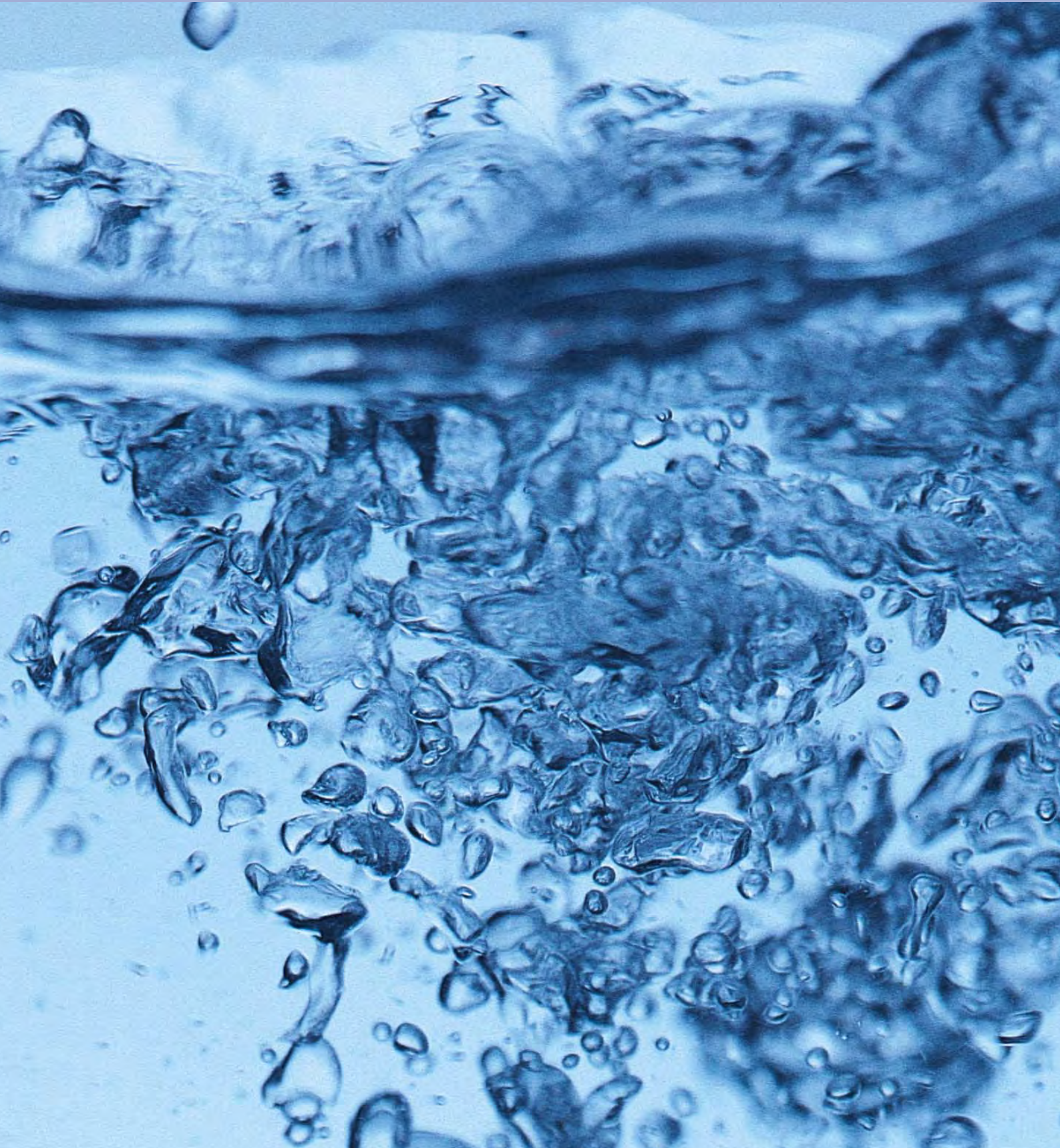


'TORAY'

Toray Reverse Osmosis Membrane Elements



New Century of Water Created by Toray Reverse Osmosis Elements

Efficient use of water resources is an important challenge in the 21st century. A global shortage of water resources is expected. Consideration of the earth's environment has become more important in recent years, giving rise to a growing demand for reverse osmosis membranes.

Demonstrating excellent quality and high performance, Toray RO elements are functional membrane elements that were developed through the polymer engineering of Toray, the first Japanese manufacturer of reverse osmosis membranes.

Toray RO element technology grew from Toray's abundant business experience. This experience has generated a broad product line spanning many fields of application: ultra pure water production for semiconductor and other industries, desalination of seawater, waste water treatment, and recovery of valuable process materials in the food processing industry.

The experience, technology and expertise of Toray are being actively applied to all water-related needs around the world through the global operation of overseas affiliates and sales agents.



Features of Reverse Osmosis

1. Removal of dissolved salts

Reverse osmosis can stably and effectively remove dissolved salts, dissolved organic substances (trihalomethane, its precursors, agricultural chemicals, etc.), and microfine particles (living and dead bacteria and many other microfine particles) from water.

Thus it is ideal for a wide array of applications ranging from production of ultra pure water to desalination of seawater.

2. Energy-saving separation technique

Since reverse osmosis does not require the evaporation of water, it consumes less energy than separation processes that use evaporation.

3. Utilizable as a concentration and recovery method

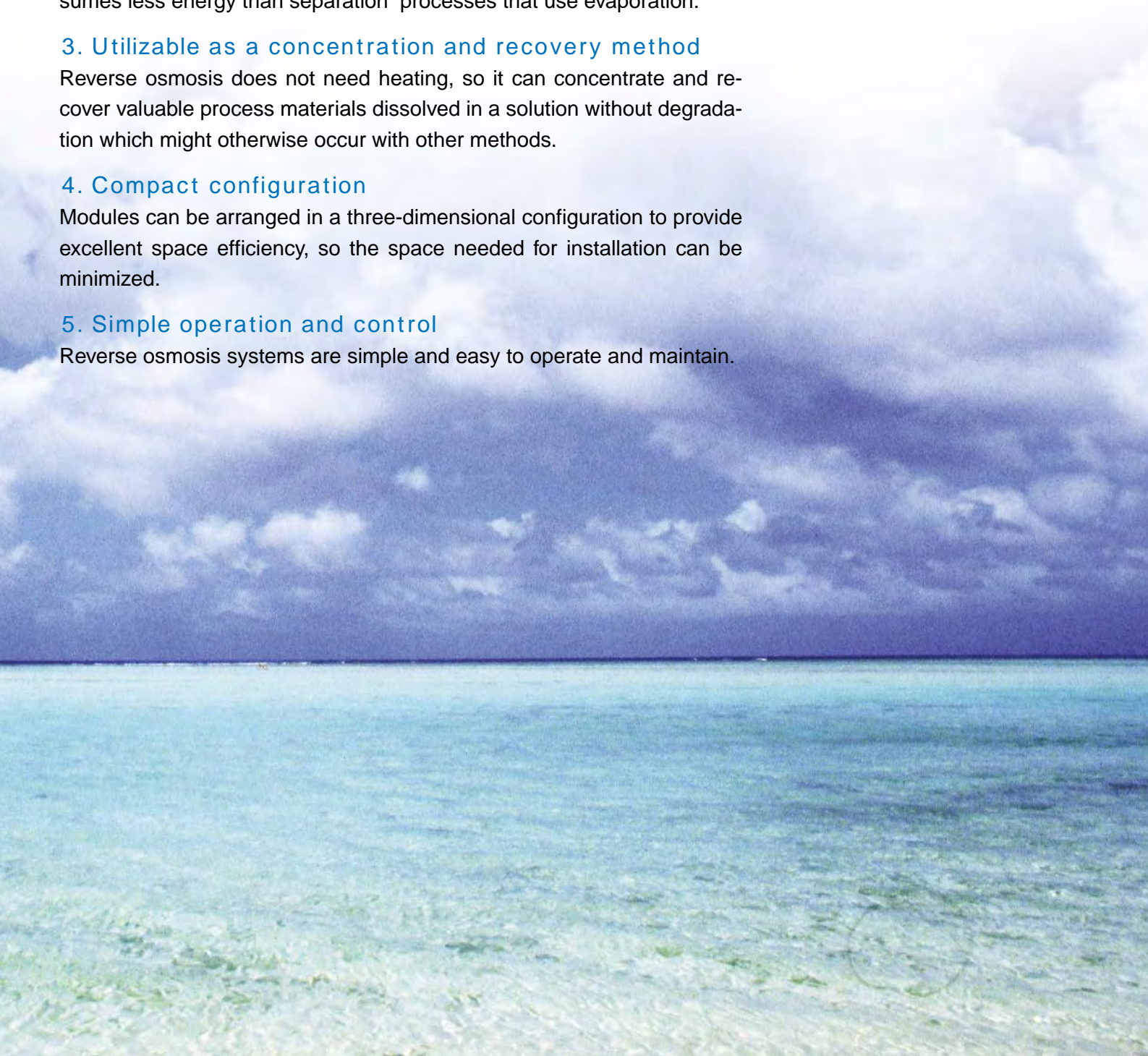
Reverse osmosis does not need heating, so it can concentrate and recover valuable process materials dissolved in a solution without degradation which might otherwise occur with other methods.

4. Compact configuration

Modules can be arranged in a three-dimensional configuration to provide excellent space efficiency, so the space needed for installation can be minimized.

5. Simple operation and control

Reverse osmosis systems are simple and easy to operate and maintain.

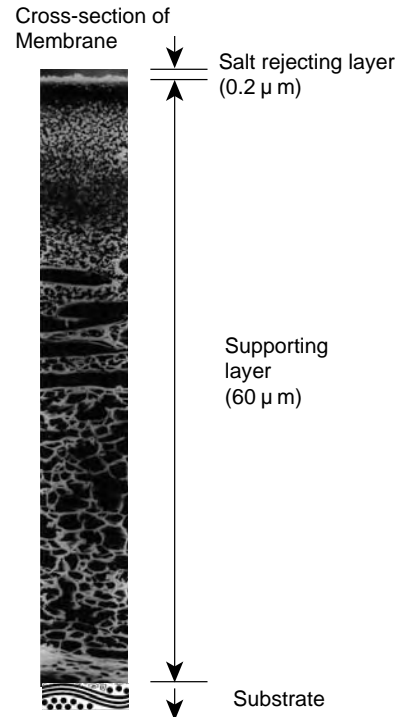


Reliable Technology for Water Production

Cross-Linked Polyamide Composite Membrane

Electric power costs can be reduced to a great extent since this membrane operates at low pressures.

The membrane has excellent properties for removing dissolved salts, TOC, and silica, demonstrating superb performance in the production of ultra pure water and the desalination of seawater.



Cross-Linked Polyamide Composite Membrane Element

Spiral wound reverse osmosis element.

Little elution occurs from the materials that form the element. This allows the specific resistance and TOC rise time to be reduced in ultra pure water.

Rich line of products for a wide range of water treatment applications.

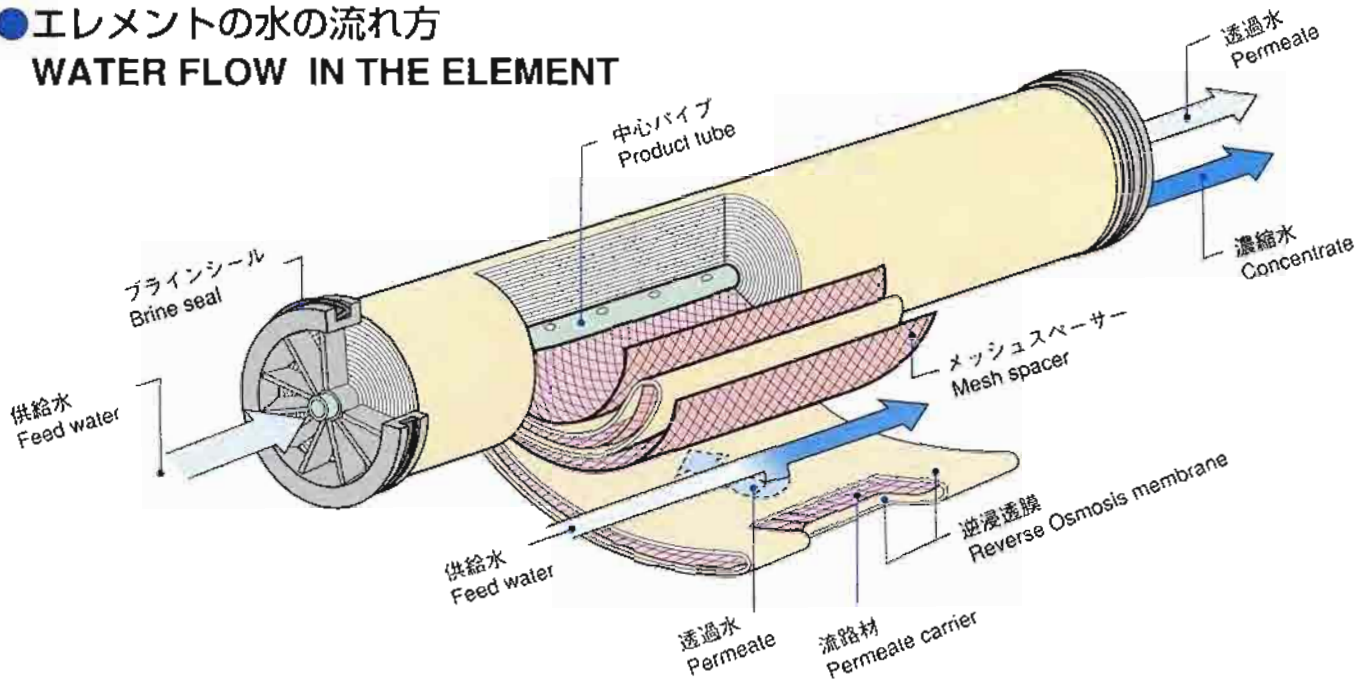


MEMBRANA の構造とシステム例

Structure and Example of Module Unit

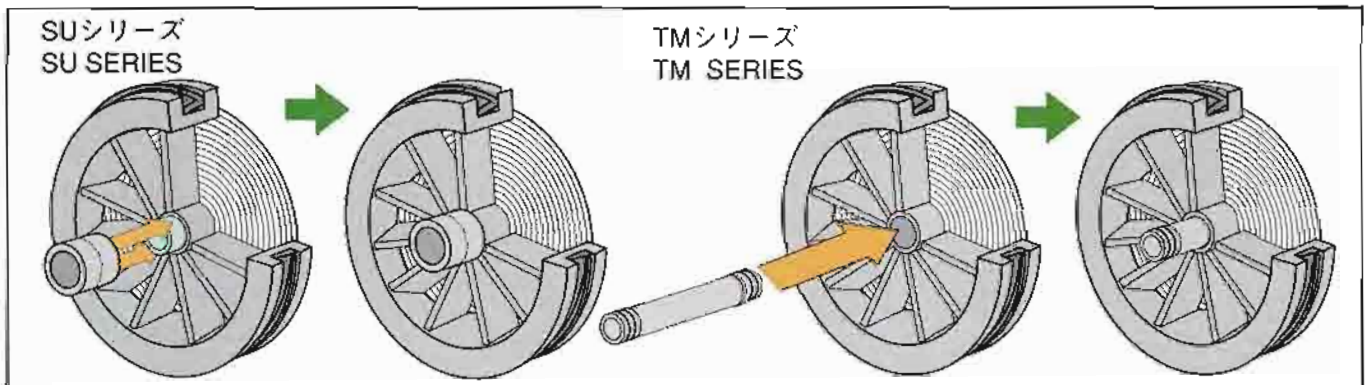
●エレメントの水の流れ方

WATER FLOW IN THE ELEMENT



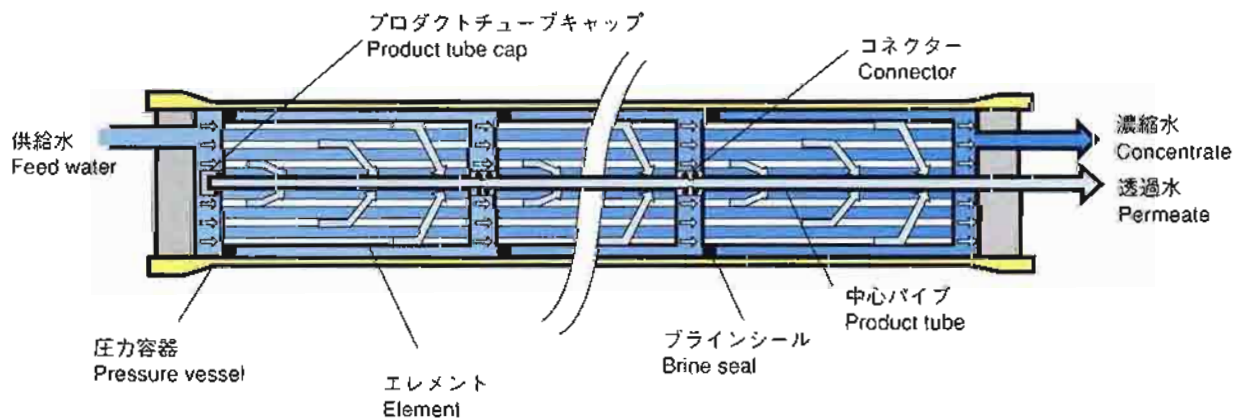
SU/TMシリーズ端板部分比較図

SU/TM SERIES COMPARISON



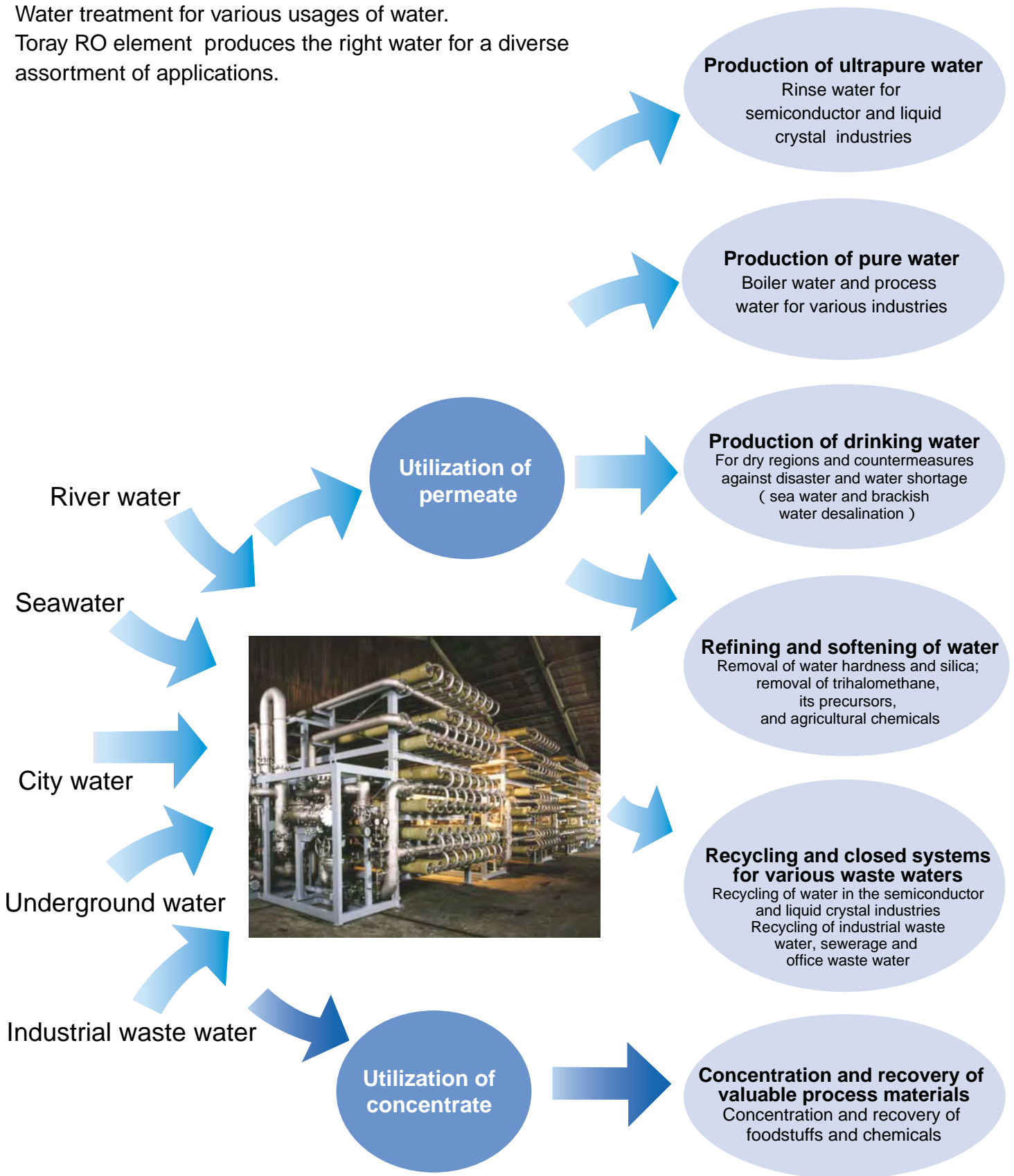
●モジュール構造図 (SU シリーズ)

STRUCTURE OF MODULE (SU Series)



Applications

Water treatment for various usages of water.
Toray RO element produces the right water for a diverse assortment of applications.



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Element Production:



Membranes and elements are manufactured and undertaken the quality assurance at Toray Ehime Plant, which has obtained Quality Management System ISO 9001 certification, registration number; JQA-0683, and Environmental Management System ISO 14001 certification, registration number; JQA-EM0440.

Toray accepts no responsibility for results obtained by the application of this information or the safety or suitability of products, either alone or in combination with other products.