

iEDI (INTEGRATED ELECTRO-DEIONIZATION) ULTRAPURE WATER SYSTEM



iEDI ULTRAPURE WATER SYSTEM OUTLINE

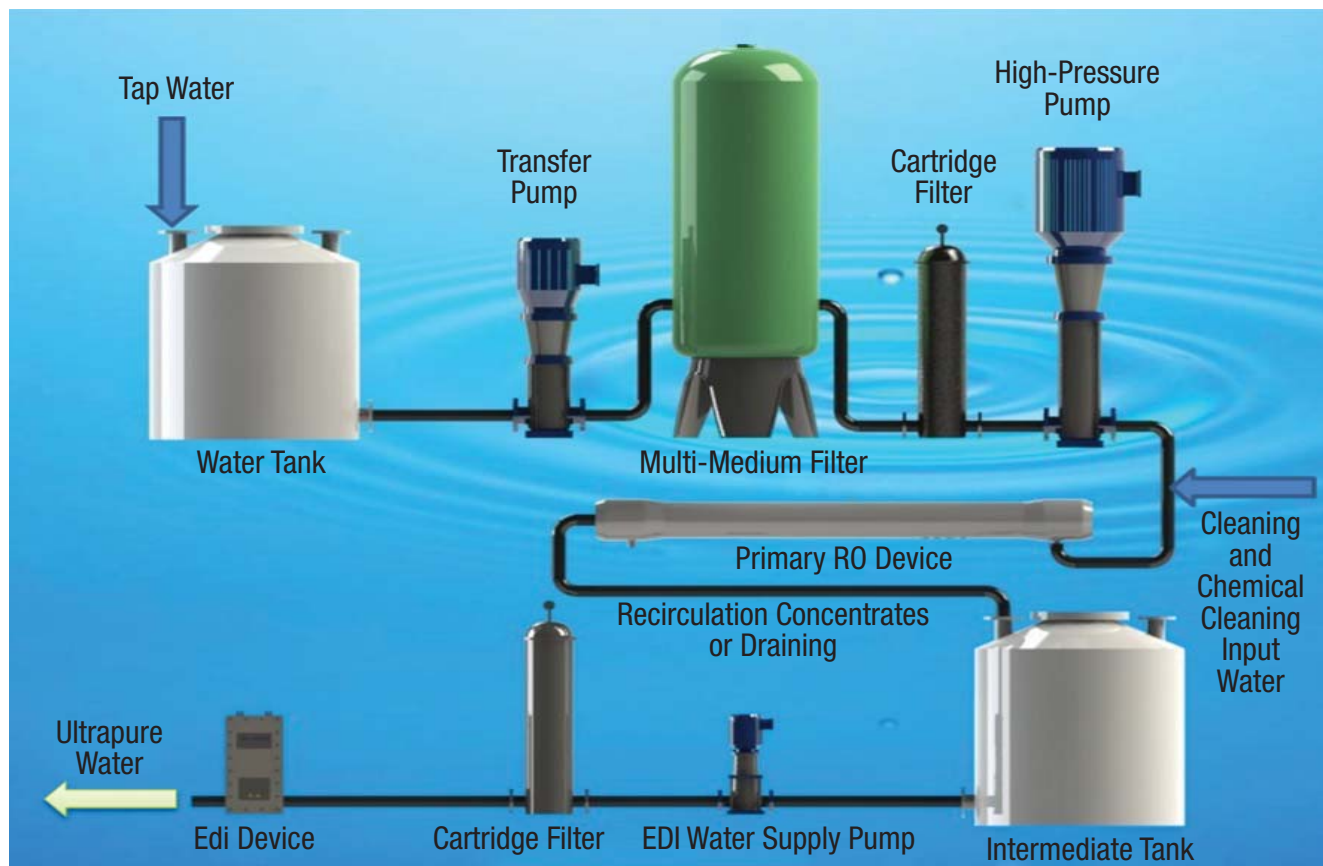
Ultrapure water is a kind of water that all conductive mediums have been completely removed and the undissociated colloidal substances, gases and organic matters are reduced to a minimum level.

TriTech ultrapure water system is a perfect combination that uses the most advanced and energy saving RO separation technology as pre-treatment, combined with Electro-Deionization (EDI) technology. Using iEDI module instead of mixed bed has many advantages like advanced process, reliable quality, strong scalability, small footprint, continuous production, no acid-alkaline regeneration and environmentally friendly. TriTech iEDI ultrapure water system is fully automated and easy to operate.



iEDI

PROCESS FLOW



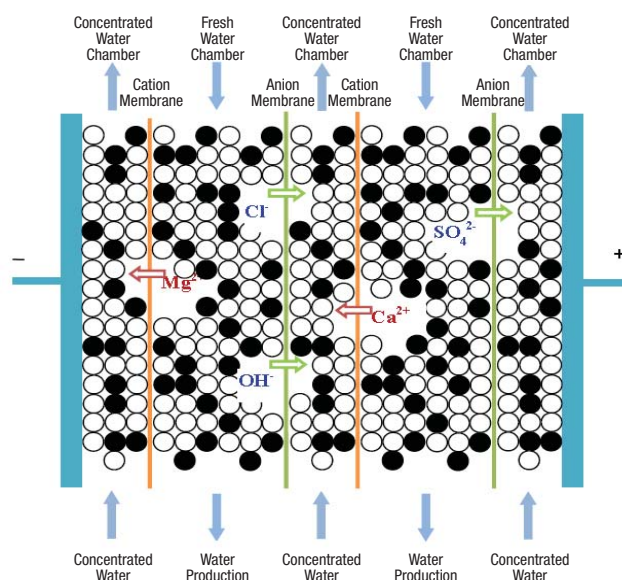
SYSTEM FEATURES

- System on-line monitoring, System parameters on-line display, self-diagnosis at start-up, automatic draining, automated consumables replacement reminder.
- Multi-system protection, shutdown protection for system error or leakage, low pressure, no water and high pipe pressure monitoring.
- Utilizing advanced EDI technology, Trittech iEDI is capable of producing ultrapure water continuously with stable output water quality.
- Do not require acid/alkaline regeneration for EDI, avoided the hazards of using those harmful chemicals.
- No regeneration/spent waste water, clean process.
- Small footprint, easy to operate and maintain with environmentally friendly advantages.

IEDI SYSTEM WORKING PRINCIPLES

iEDI System uses the optimal combination of RO and EDI. The working principles of EDI is as shown in the figure on the right:

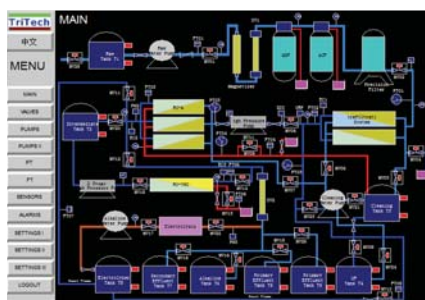
The cationic and anionic exchange membranes are stacked simultaneously between the cathode and anode of the EDI stack. The membranes only allow ions to pass through, while retaining water in the chamber. Each of the concentrate and dilute membrane chamber contains an ion exchange resin. In the dilute chamber, the produced OH⁻ ions are exchanged with anions (such as Cl⁻), while the produced H⁺ ions are exchanged with cations (such as Na⁺). The exchanged ions are then directed by the electric field to pass through the respective ionic membranes and into the concentrate chamber, while water stripped of its conductivity flows out as product water. At the same time, ionization of water produces H⁺ and OH⁻ ions to regenerate the ion exchange resin, eliminating the need for chemical regeneration of the resin.



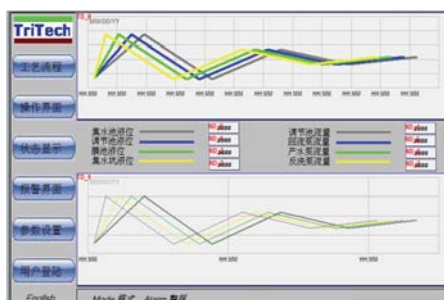
IEDI SYSTEM MAIN APPLICATION AREAS

Trittech iEDI ultrapure water system combines RO technology and the advanced EDI technology. The system does not require the use of acid/alkaline chemical reagents for regeneration, the unstable factors of water quality was minimized and the operating cost was kept to a minimal level. Trittech iEDI ultrapure water system can work either continuously or in batch mode. The ultrapure water produced can be used for process in chemical industries, for boiler in electrical industries, in food industries, in ultrasound cleaning, in electroplating industries, and other processes for car, household electrical appliance coating, glass coating, cosmetics and fine chemicals.

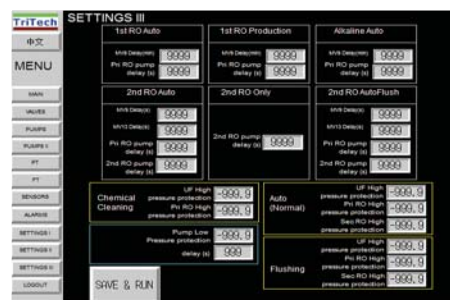
OPERATION INTERFACE



Process Flow Tracking



Display Records Change Plot



Parameters Setting Page

MODULAR SYSTEM DESIGN



iEDI

FEATURES OF IEDI ULTRAPURE SYSTEM

RO System

- VSD Controlled Feed Pump
- Feed tank
- Cartridge filter
- Automatic Water filter
- Activated carbon filter
- RO Membrane
- Recycle Tank
- High Pressure pump
- Booster Pump
- Flushing tank
- Flushing pump
- UV Lamp
- Membrane skid

EDI System

- Cartridge filter
- Supply pump
- EDI Module
- EDI Power Supply Unit
- Pressure tank
- RO Membrane
- Control Panel including PLC
- Fittings and valves
- Meters and sensors
- System skid

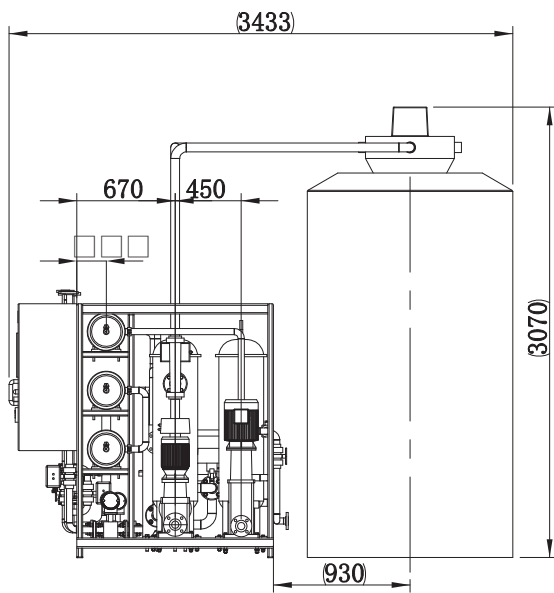
TECHNICAL SPECIFICATIONS

Input water TDS	<1000mg/L
Input water TOC	≤3.5mg/l
Input water temperature	5-35°C
Ultrapure water Resistivity	15-18.2MΩ.cm(25°C)
Ultrapure water conductivity	≤0.2μS/cm (25°C)
Output water pH	5.5-7.5
Total silica content (as SiO ₂)	20-25 μg/l
Output water temperature	5-40°C
Electrical voltage	220-240V AC, 50Hz

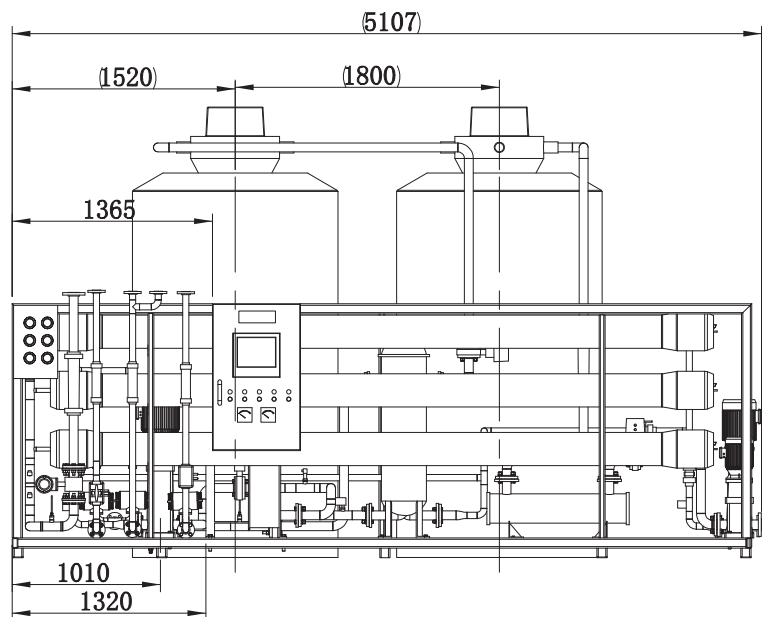
SYSTEM MODELS

Model	Output Volume (m ³ /h)	Concentration Nominal Flow Rate (LPH)	RO Power Consumption (KW/h)	EDIPower Consumption (KW/h)
iEDI-0.5	0.5	50	2.4	1.8
iEDI-1	1	100	3.0	2.7
iEDI-5	5	600	6.5	4.5
iEDI-10	10	1300	10.0	9
iEDI-20	20	2600	17.5	18
iEDI-50	50	6500	35.0	44
iEDI-100	100	13000	67.0	88

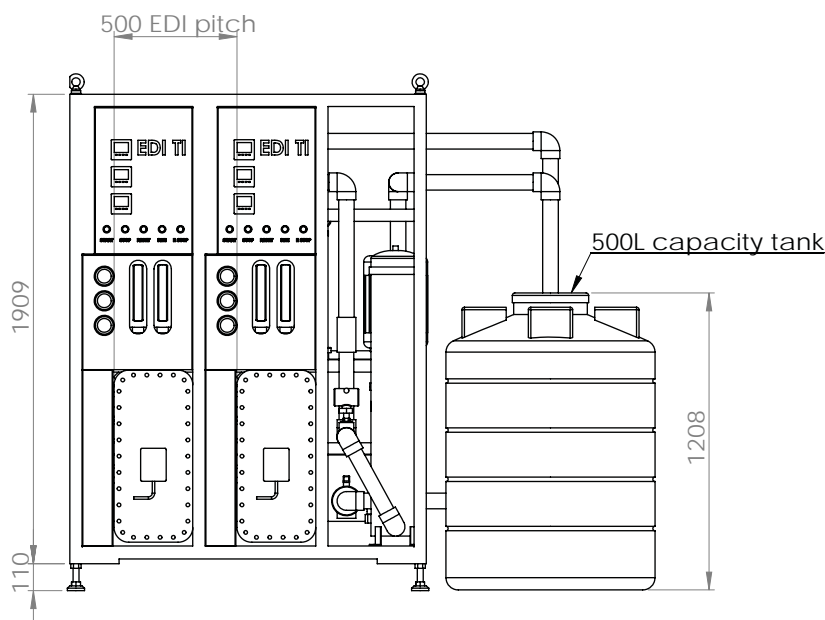
MECHANICAL DRAWINGS OF IEDI ULTRAPURE SYSTEM



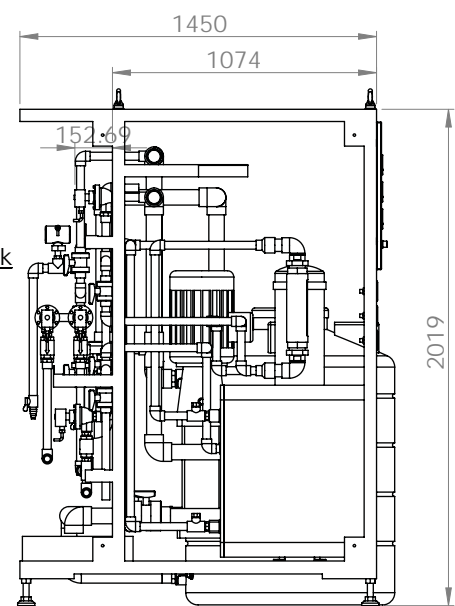
Side view of RO system



Front view of RO system



Front view of EDI system



Side view of EDI system