



三达水(北京)科技有限公司

Sanda Water (BeiJing) Technology.Co., Ltd.



## 双级反渗透纯化水设备

# Sinnar



三达水-专注纯化水系统研究与应用

## Two-stage reverse osmosis water equipment



### 性能特点

- 1、采用西门子触摸屏加PLC控制，整机自动运行自动冲洗；
- 2、对电导率值或PH值等关键数据采用无纸记录仪实现无纸记录或采用有纸记录仪定时打印；
- 3、不合格水自动排放确保产水安全；
- 4、管路、阀门采用304或316L不锈钢材质，焊缝内外采用高纯度氩气保护，焊接完毕进行酸洗、钝化处理，对20%以上的管路焊缝采用内窥镜拍片检测；
- 5、设备制作符合新版GMP认证要求，提供DQ、IQ、OQ、PQ及FAT、SAT等一系列测试和验证文件；

设备产水量：0.25-50T/H

产水电导率： $\leq 2\mu\text{S}/\text{cm}$

应用领域：医药制剂、无热源纯化水；日用化妆品生产；食品保健品生产；医疗器械GMP认证纯化水；制剂涂装清洗去离子水等。

### Performance Characteristics

- 1, using Siemens touch screen and PLC control, the automatic operation of automatic flushing;
- 2, the conductivity values or pH key data such as the paperless recorder to realize paperless record or the paper recorder timing print;
- 3, unqualified automatic water discharge to ensure water safety;
- 4, pipeline, valve with 304 or 316L stainless steel material, weld and using high purity argon welding completed, pickling, passivation treatment, to more than 20% pipeline welds with endoscope X-ray detection;
- 5, equipment production with a new version of the GMP certification requirements, to provide DQ, IQ, OQ, PQ and FAT, SAT and a series of testing and verification of documents;

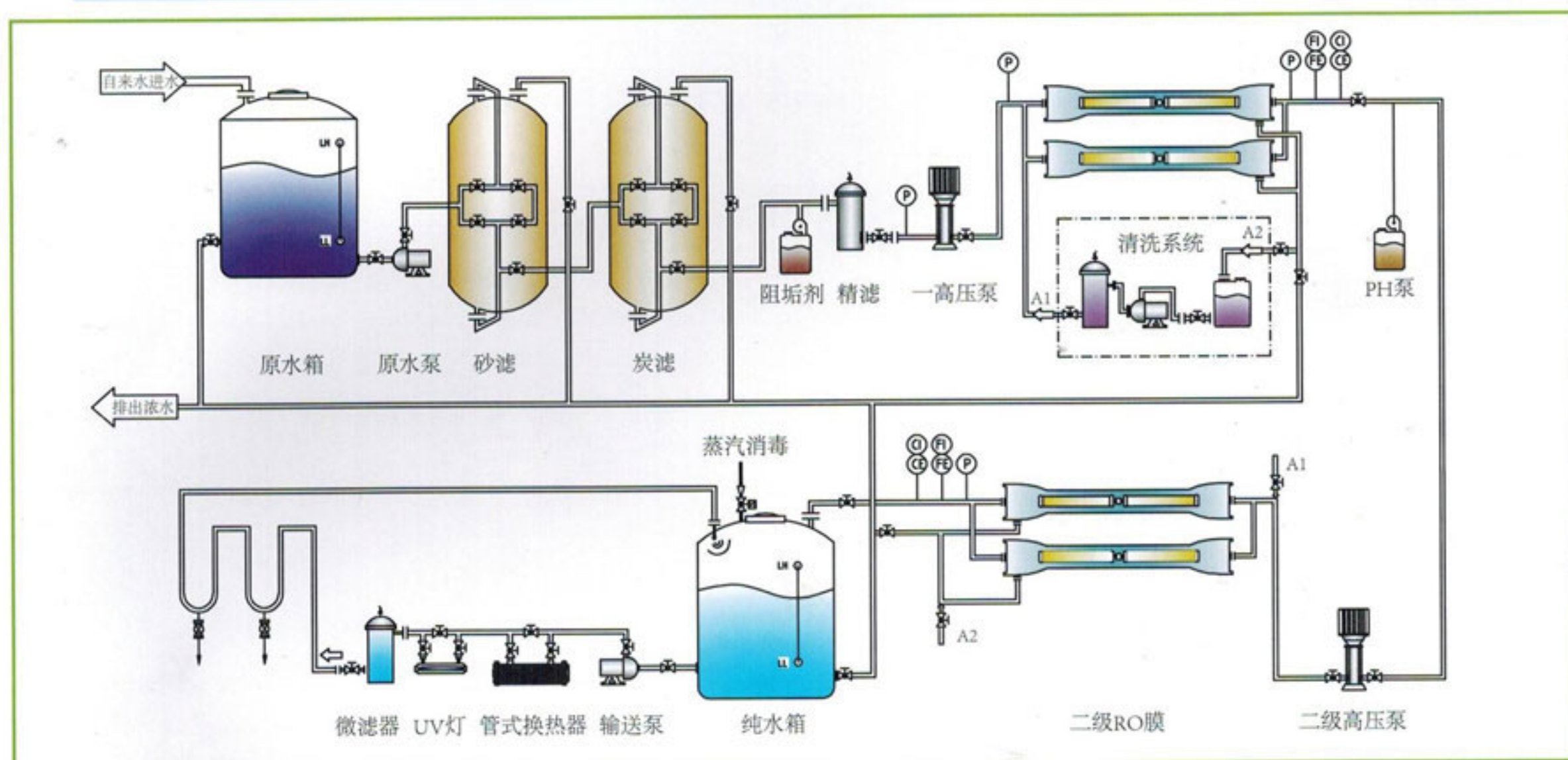
The device water production: 0.25-100T / H

The conductivity of the water production:  $\leq 2\mu\text{S}/\text{cm}$

Application areas: barrel bottled references purified water; pharmaceutical preparations, no heat source of purified water; the daily cosmetics production; food health product; Medical Device GMP certification purified water; Preparation painting cleaning deionized water



## 工艺流程图 Flow Chart



## 产水水质

电导率  $< 2.0 \mu S/cm, 20^\circ C$

重金属  $< 0.1 ppm$

TOC总有机碳  $< 0.50 mg/L$

硝酸盐  $< 0.06 ppm$

菌落总数  $< 100 CFU/ml$



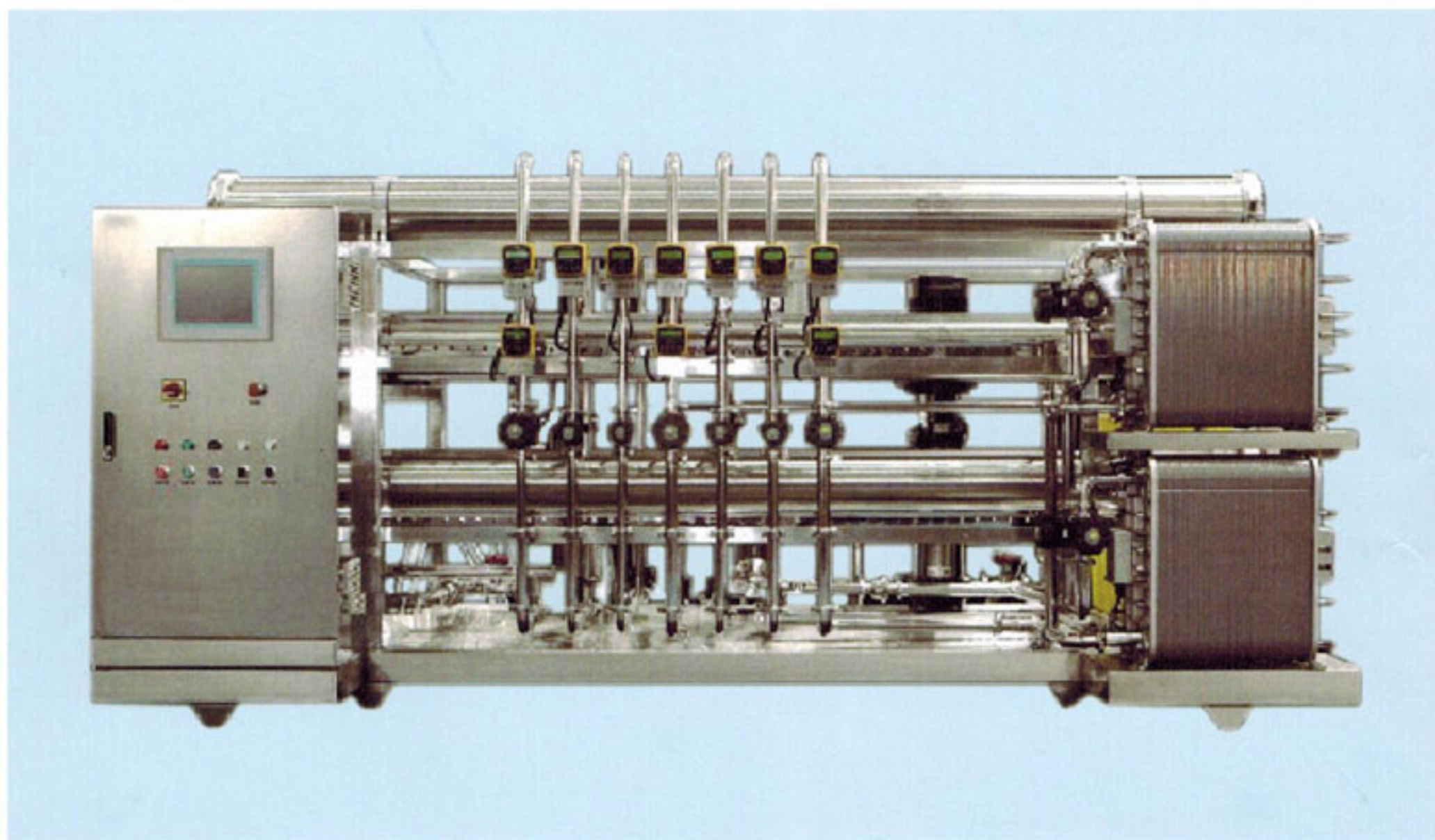


## 反渗透+EDI纯化水设备

RO + EDI water purification equipment

# Sinnar

三达水-专注纯化水系统研究与应用

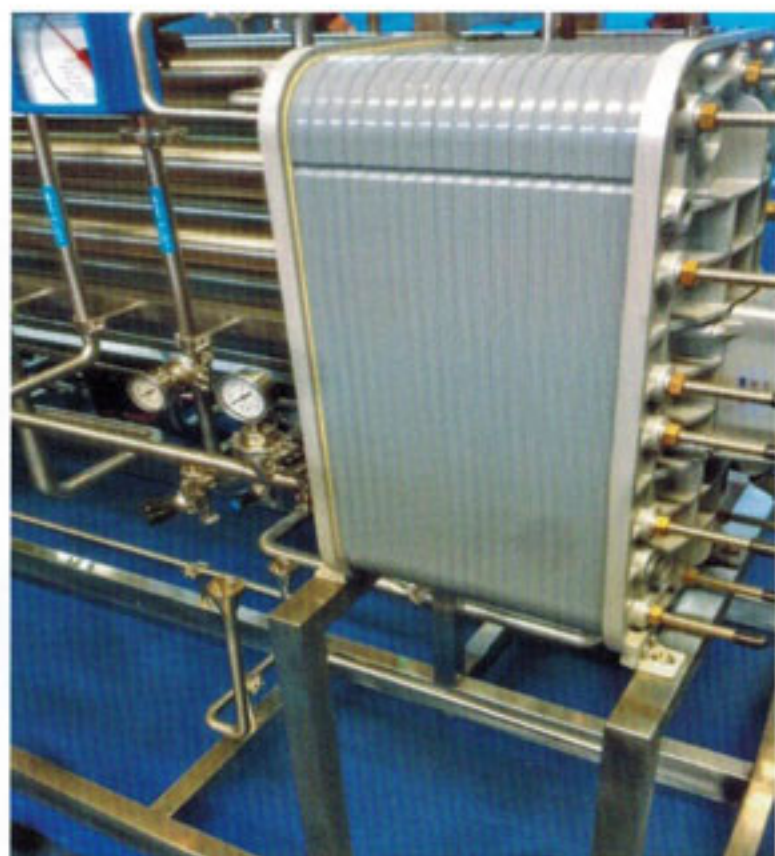
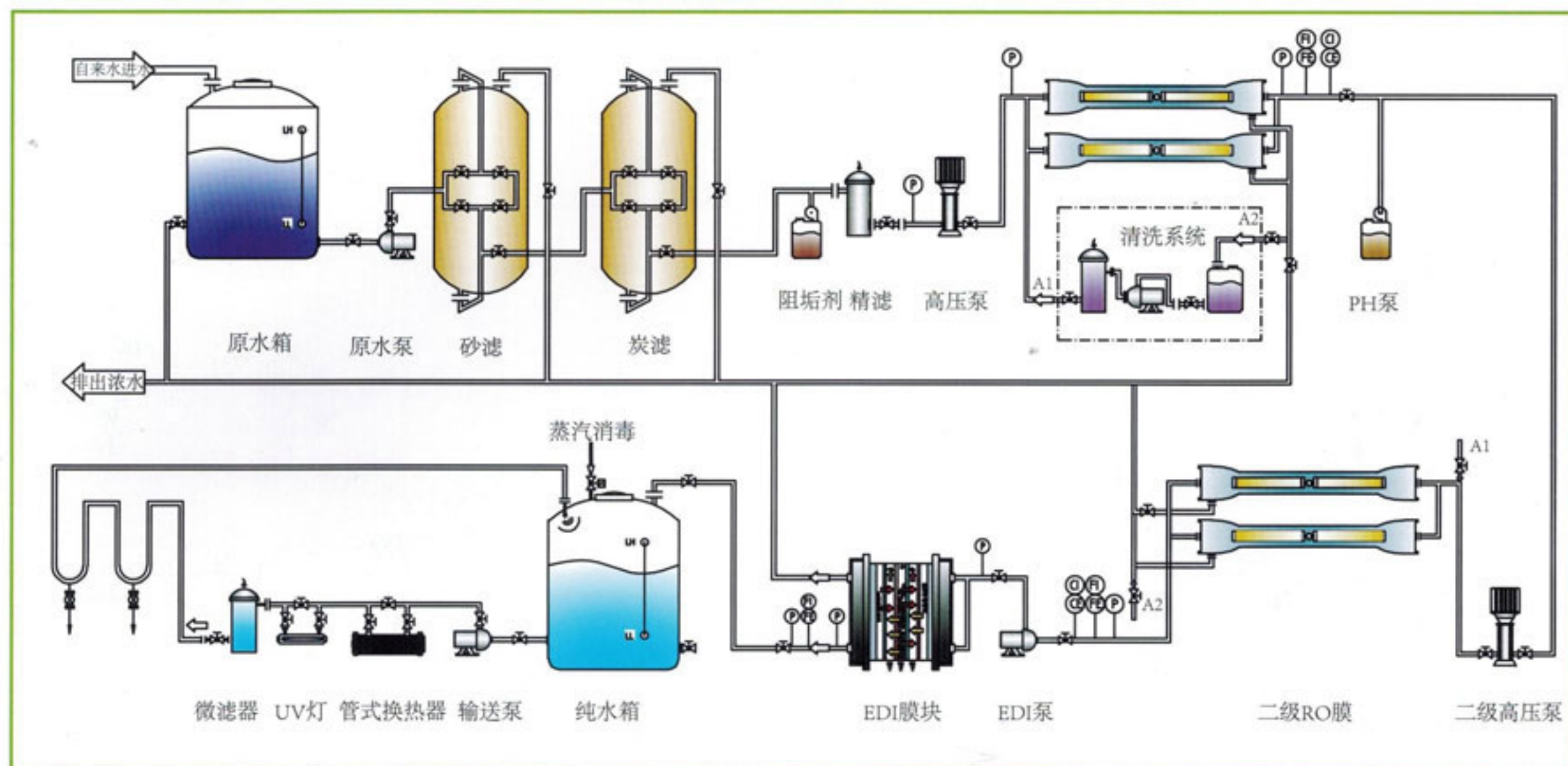


反渗透+EDI纯化水系统采用一级反渗透+EDI或二级反渗透+EDI工艺；产水水质符合新版《中国药典》要求，符合欧盟药典EP7及美国药典USP34要求；在反渗透出水口及EDI出水口设有不合格水回流，当产水电导率或电阻率符合设定值进入下一道程序，不符合时返回上道程序重新处理；整套系统具有高低压报警、水箱缺水报警、水质超标报警、设备故障报警等功能；系统全自动运行且配有有纸或无纸记录仪；设备制作规范符合GMP认证、欧盟认证和美国FDA认证要求，提供全套验证资料；

RO +EDI purified water system using a reverse osmosis +EDI or two stage reverse osmosis +EDI process; the water quality to meet the requirements of a new version of "Chinese Pharmacopoeia", in line with the EU and the United States Pharmacopoeia EP7 Pharmacopoeia USP34 requirements; in reverse osmosis water outlet and the water outlet is provided with EDI unqualified water reflux, when water conductivity or resistivity with the set value entered the next procedure, return program re treatment is not consistent; the whole system has a high and low voltage alarm, water shortage alarming, water exceed the standard alarm, fault alarm functions; system automatic operation and equipped with paper or paperless recorder; Equipment for the production of norms in line with the GMP certification, the European Union and the United States of America FDA certification certification requirements, to provide a full set of validation data



## 工艺流程图 Flow Chart





## LD-S多效蒸馏水机

LD-S multi-effect distilled water machine

**Sinnar**

三达水-专注纯化水系统研究与应用



纳洁LD-S系列列管式多效蒸馏水机是一种以纯化水为原料水，用工业蒸汽加热制取注射用水的设备。

LD-S多效蒸馏水机生产的注射用水满足中国药典（CP2010），美国药典（USP34）、欧洲药典（EP7）对注射用水的规范要求。设备采用3-8效（塔）组合，316L材质，双管板结构，可靠的分离技术，有效去除热源杂质；系统电解抛光，采用全自动界面的自动操控，同时设有不合格蒸馏水自动排放控制系统。

Najie LD-S series tubular multi-effect distilled water machine is a kind of purified water as raw water for industrial steam heating system with water for injection equipment;

LD-S multi-effect distilled water for injection machine production to meet the Chinese Pharmacopoeia (CP2010), United States Pharmacopoeia (USP34), European Pharmacopoeia (EP7) regulatory requirements for water for injection. Equipment using 3-8 Efficiency (tower) portfolio, 316L material, dual board structure, reliable separation technology to effectively remove heat impurities; system electrolytic polishing, using automatic interface, automatic control, but has failed distilled auto emission control systems.



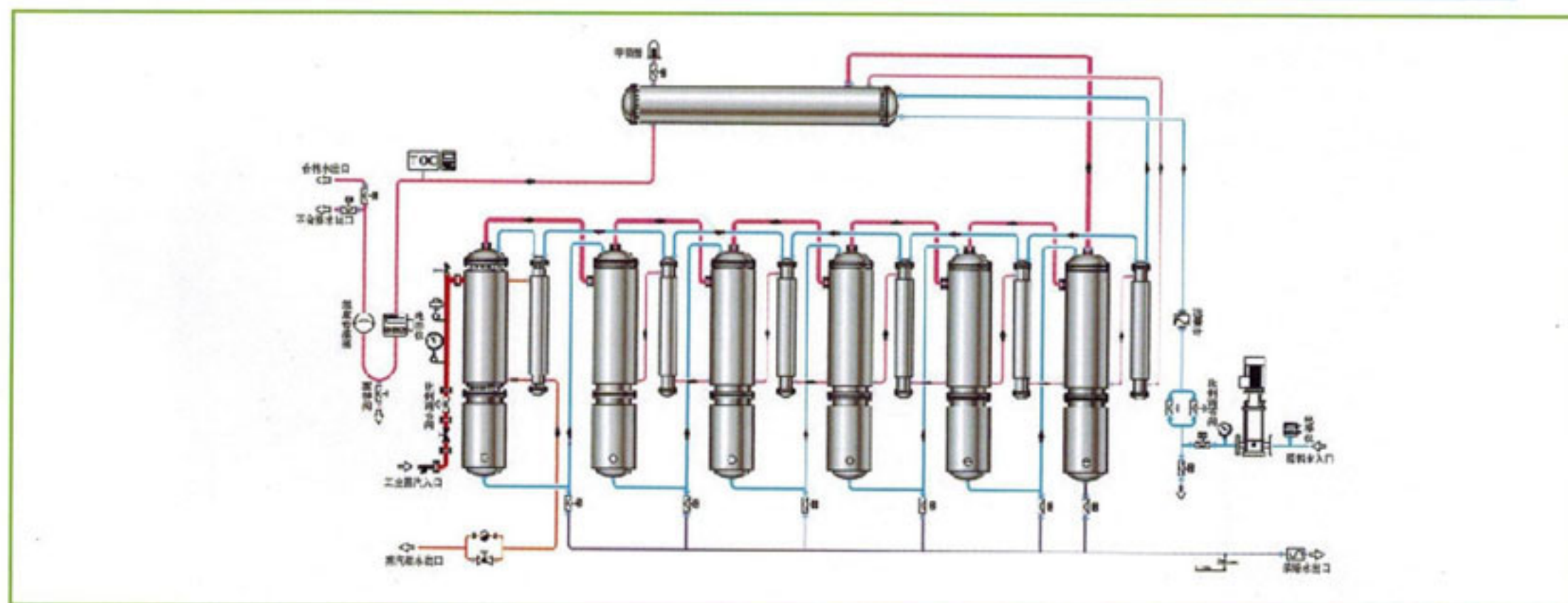
## 主要技术参数表 Primary technical data sheet

规格型号	生蒸汽压力 (MPa)	蒸馏水产量 (L/H)	蒸汽耗量 (L/H)	原料水耗量 (L/H)	冷却水耗量 (L/H)	外形尺寸 长X宽X高 (mm)	耗电量 (kw.h)	净重 (kg)
LD100-3S	0.3	≥100	≤30	≤110	≤80	1065 × 1540 × 1900	0.55	700
LD300-4S	0.3	≥300	≤80	≤330	≤170	1610 × 650 × 2300	0.75	900
LD500-5S	0.3	≥500	≤125	≤550	≤120	2000 × 1000 × 3100	0.75	1000
LD1000-6S	0.3	≥1000	≤225	≤1100	0	2830 × 1000 × 3380	1.1	2200
LD2000-6S	0.3	≥2000	≤450	≤2200	0	3610 × 1200 × 3630	1.5	2950
LD3000-6S	0.3	≥3000	≤675	≤3300	0	4058 × 1025 × 3700	2.2	4900
LD4000-6S	0.3	≥4000	≤900	≤4400	0	4300 × 1400 × 3800	3.0	5900
LD5000-6S	0.3	≥5000	≤1125	≤5500	0	4500 × 1500 × 3800	3.5	6400
LD6000-6S	0.3	≥6000	≤1350	≤6900	0	4910 × 1550 × 3800	5.0	7750
LD10000-6S	0.3	≥10000	≤2250	≤11500	0	6065 × 1950 × 4040	8.0	12120

## 产水水质

TOC总有机碳	mg/L	<0.50
电导率	( $\mu$ S/cm, 25° C)	<1.3
微生物限度	CFU/100ml	10
细菌内毒素限度	EU/ml	<0.25

## 工艺流程图 Flow Chart





## 电多效蒸馏水机

# Sinnar

Electric multi-effect distilled water machine

三达水-专注纯化水系统研究与应用



电加热蒸馏水机是将电加热蒸汽锅炉和多效蒸馏水机合二为一的新型蒸馏水机。该机生产的蒸馏水符合2010版《中国药典》之规定，还能引出洁净的纯蒸汽在灭菌消毒时使用。

该款设备是没有工业蒸汽源的制药厂、医院、生化科研部门最理想的蒸馏水和纯蒸汽生产设备。

Electric heating distilled water machine is the electric heating steam boiler and multi effect distilled water machine and the second is a new type of distilled water machine. The machine production of distilled water with the 2010 edition of "Chinese Pharmacopoeia" provisions, but also leads to pure steam clean used in the sterilization time.

The machine is the ideal equipment of distilled water without industrial steam source pharmaceutical factory, hospital, Department of biochemical research and pure steam



## 主要技术数据表 Primary technical data sheet

规格型号	蒸馏水产量 (L/H)	蒸馏水出水口温度 (°C)	耗电量 (kw.h)	纯化水耗量 20°C时 (L/H)	外形尺寸 长X宽X高 (mm)	净重 (kg)
DLD50-3	50	95	11.5+0.35	60	950 × 600 × 1700	235
DLD100-3	100	95	13.5+0.35	115	950 × 600 × 1700	255
DLD200-4	200	95	27+0.35	230	1000 × 650 × 1950	650
DLD300-4	300	95	40.5+0.55	345	1200 × 800 × 2200	820
DLD400-4	400	95	54+0.55	460	1500 × 850 × 2400	960
DLD500-5	500	95	68+0.55	570	2100 × 850 × 2500	1240
DLD1000-6	1000	95	135+1.5	1250	2800 × 1000 × 3100	2200
DLD2000-6	2000	95	270+2.0	2400	3600 × 1200 × 3100	2900
DLD3000-6	3000	95	405+2.5	3600	4050 × 1250 × 3300	4850

## 主要特点 Main features

- 1.多功能多用
- 2.方便
- 3.按需设计组合
- 4.最新技术结构

首级除沫结构+双向离心分离结构技术，具有内、外、上、下多重离心分离先进特点，生产的纯蒸汽高饱和、高质量、效果显著，比一般纯蒸汽发生器具有更明显的优特点。

- 5.产汽快
- 6.无积水

- 1.multi-function multi-purpose
- 2.convenient
- 3.on-demand design portfolio
- 4.the latest technical structure

Heads demister structure+bi-centrifuge construction techniques, with inner and outer, upper and lower multiple centrifugation advanced features, pure steam generated high saturation, high quality, the effect is significant, than pure steam generator has more obvious advantages features.

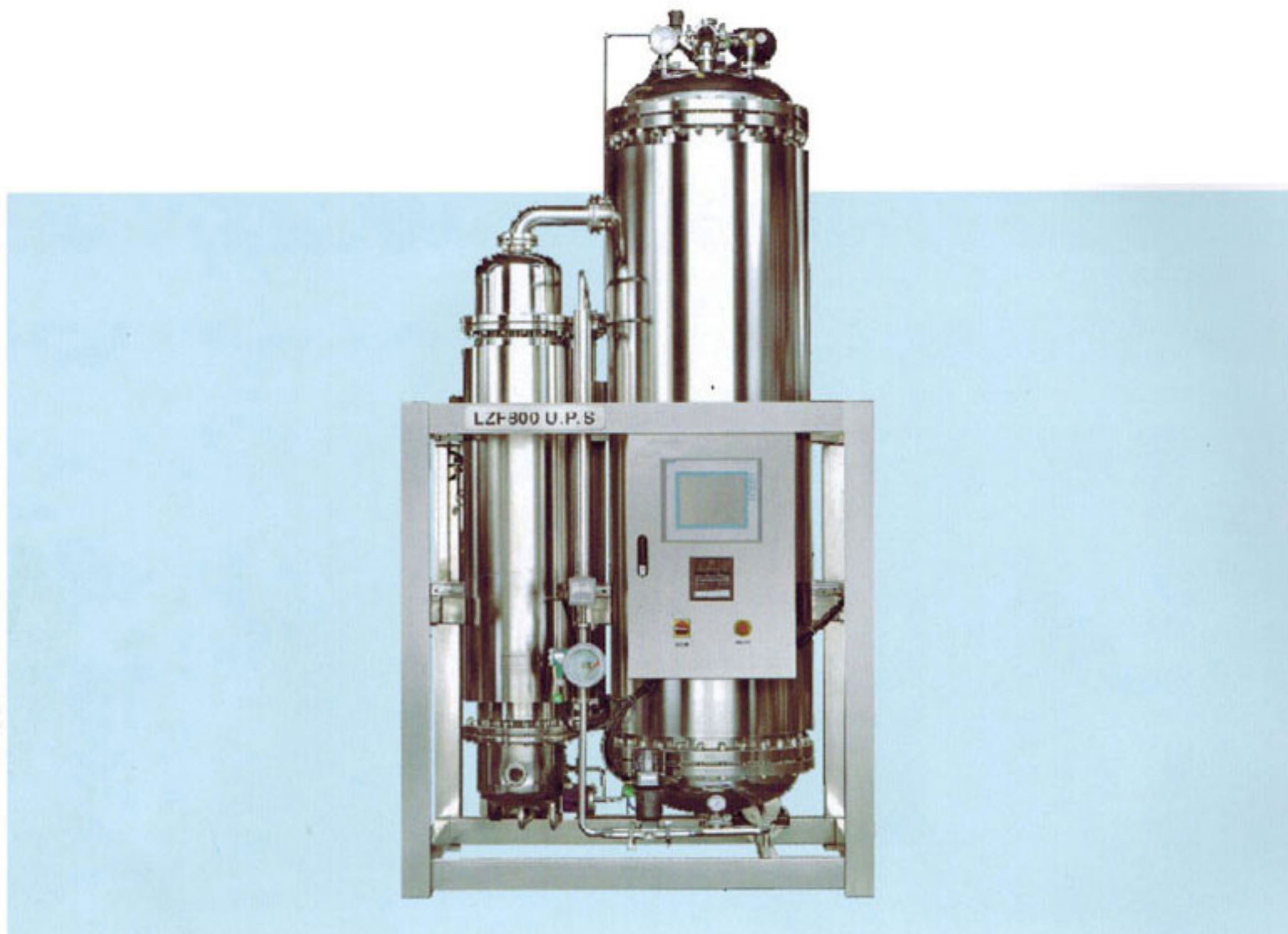
- 5.fast steam production
- 6.no seeper



## 纯蒸汽发生器

High purity steam generator

**Sinnar**  
三达水-专注纯化水系统研究与应用



纯蒸汽发生器由蒸发器、预热器、蒸汽缓冲罐、纯蒸汽冷凝器、电器、仪表及管路等部分组成。工作原理是由输送泵将原料水输送至预热器预热，预热后的原料水进入蒸发器管程中，蒸发器壳程通入工厂蒸汽加热列管中的原料水，蒸发过程产生的二次蒸汽经蒸发器上端的二级分离装置分离后进入蒸汽缓冲罐，分离的浓水沿蒸发器中心管沉降到底部并排出，被储存的纯蒸汽在缓冲罐内经上部分离装置再次净化分离，从而得到干燥且热能高的纯蒸汽并输送到生产工艺用汽点进行消毒灭菌使用。

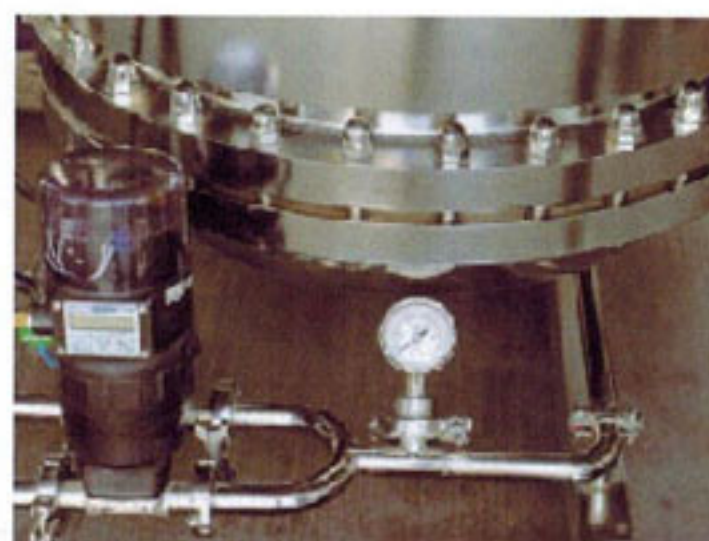
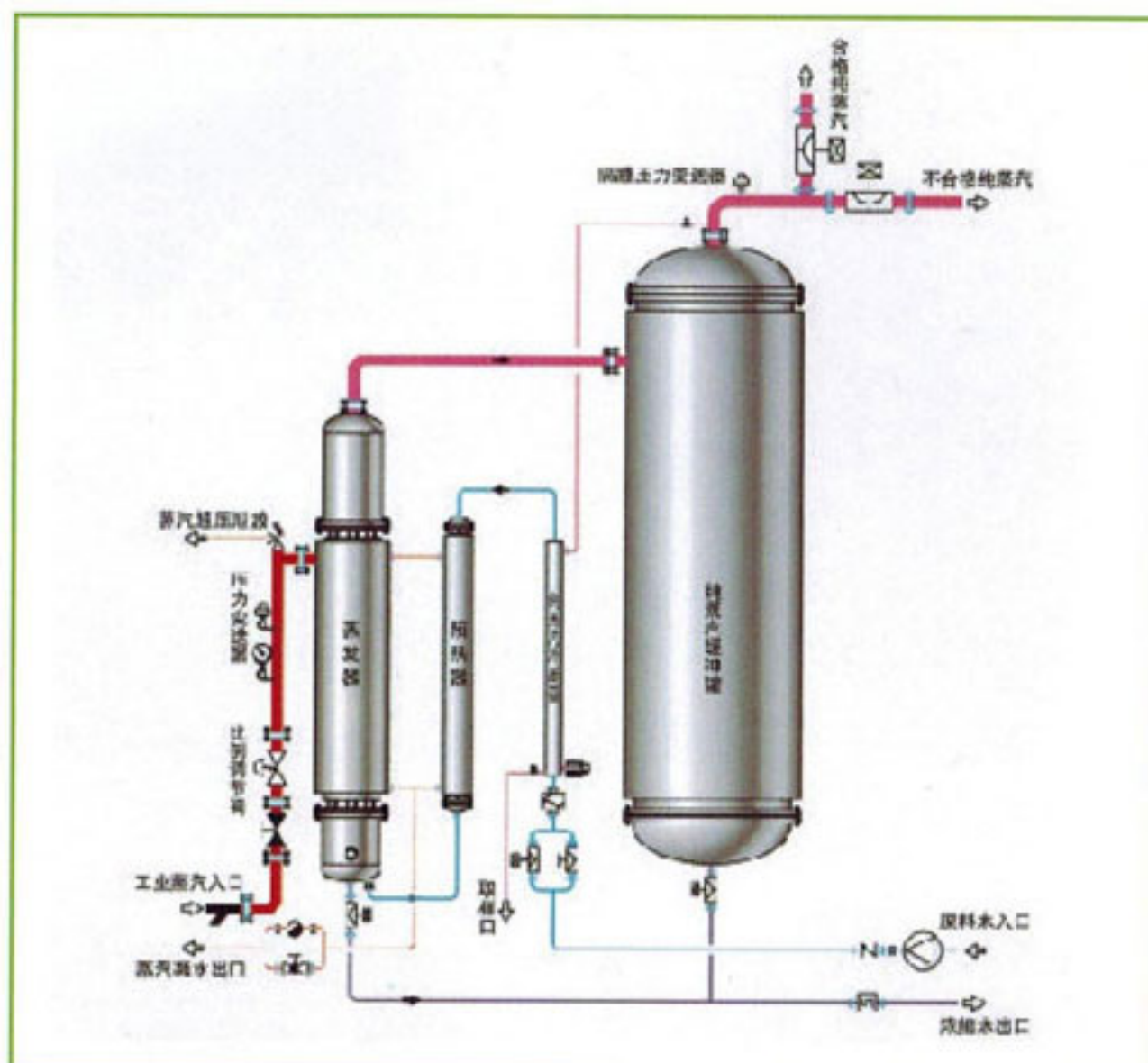
该款设备广泛用于医疗卫生、生物制药和各种工艺生产线的灭菌消毒；能有效的防止热源和重金属等杂质的污染。

Pure steam generator which is composed of evaporator preheater, steam, buffer tank, pure steam condenser, electrical, instrumentation and pipeline etc.. Principle is that the pump will raw water is transported to the preheater preheating, after preheating raw water enters the evaporator tube, evaporator shell pass into the plant steam heating tube in raw water, the evaporation process produced two steam through two stage separation after entering the evaporator steam buffer tank top, concentrated water separation of the settlement and discharged from the evaporator bottom center pipe, pure steam is stored in the buffer tank through the upper separation device again purification and separation, in order to get the pure steam drying and high heat and transported to the production process steam for sterilization using.

This equipment widely used in sterilizing medical and health, bio pharmaceutical, exhibits instruments and various process production line; it can effectively prevent the heat source and the pure metal impurity contamination.



## 主要特点 Main features



## 主要技术数据表 Primary technical data sheet

规格型号	生蒸汽压力 (Mpa)	纯蒸汽压力 (Mpa)	生蒸汽耗量 (L/H)	纯化水耗量 (L/H)	纯蒸汽产量 (L/H)	外形尺寸 长*宽*高(mm)
LCZ100	0.3	0.16-0.25	130	125	> 100	850x600x2250
LCZ200	0.3	0.16-0.25	260	250	> 200	900x750x2350
LCZ300	0.3	0.16-0.25	390	375	> 300	950x750x2450
LCZ500	0.3	0.16-0.25	666	578	> 500	1350x950x2950
LCZ1000	0.3	0.16-0.25	1331	1155	> 1000	1550x1100x3150



## 分配系统—洁净管道工程概述

### Distribution system – clean Pipeline Project Overview



在药厂中有大量的工艺过程涉及到分配系统。如：纯化水的分配系统，注射水的分配系统，药液在配置容器之间的传输和分配等等。

纳洁公司了解这些系统的通行惯例和特殊要求，为客户提供工艺容器的设计、制造、安装、测试及验证支持服务。

根据生物工程设备的特殊要求，洁净管道工程应有良好的结构，满足制药学、卫生学的要求。一个好的管路系统应在以下方面充分考虑：

材料的化学稳定性——无溶出、无毒、不脱落材料制造。常用304和316L不锈钢。

表面处理——与介质相接处的表面通常需要作机械或化学抛光处理。

连接方式——以采用氩气保护自动轨迹焊接为主，在有方便拆装要求的地方，采用卫生快开连接。

合理的管径——管径的选择在实质上是选择适当的流速，防止微生物在管壁停留和附着、滋生。

倾斜度——利于排空，使溶液能依靠自身重力排净，同时应避免出现多处低点。

接附件、阀门处限制长径比——防止出现长盲管端，阻止微生物在此生长。

温度——在某些温度范围内，可以有效防止微生物滋生。例如国际通行的方法：注射用水在80℃以上保温或65℃以上循环保温。

采样点、检测点——合理设置在线检测点，采样点，可以满足系统投入运行后的维护、验证的需要。

保温——防止烫伤、冻伤、结霜，节约能源。在卫生等级房间穿过的管道保温还需要考虑密封，以防止不同卫生等级房间之间空气的流通。

正确安装附件——对各种附件有完全准确的了解，正确安装。





There are a large number of processes in the pharmaceutical companies involved in the distribution system. Such as: the purified water distribution system, the distribution system of the injection water, the liquid in the configuration container between transmission and distribution and so on.

The Najie understand a common practice and the special requirements of these systems, providing customers with process vessel design, manufacturing, installation, testing and validation support services.

According to the special requirements of the bio-engineering equipment, clean pipeline project should have a good structure to meet the requirements of the pharmaceutical, hygiene. A good pipeline system should take full account of the following areas:

The chemical stability of the material - no dissolution. Non-toxic, non-shedding material. Commonly used 304 and 316L stainless steel.

The surface treatment - usually with the surface of the dielectric at the junction of the need for mechanical or chemical polishing treatment.

Connection - using the the argon protection automatically trajectory welding mainly in convenient disassembly required, the use of the health fast open connection.

Reasonable diameter - the choice of diameter in essence is to select the appropriate flow rate to prevent microbial stay in the wall and attached breeding.

Inclination - conducive emptying of the solution to be able to rely on their own gravity drain, and should avoid multiple low.

Annex valve at the limit aspect ratio - to prevent a long blind pipe end to stop the growth of microorganisms in this.

Temperature - within a certain temperature range, can effectively prevent microbial growth. Such as international methods: injection water kept above 80 °C or above 65 °C loop insulation.

Sampling point detection point - a reasonable set of online detection point, the sampling points, maintenance, verification of the need to meet the operational system.

Insulation - to prevent burns, frostbite, frost, saving energy. Through the pipe insulation in the Health Level Room also need to consider sealed to prevent the flow of air between the different health level room.

Correct mounting accessories - completely accurate understanding of the various accessories installed correctly.



## 浓配灌/稀配灌/无菌水箱

# Sinnar

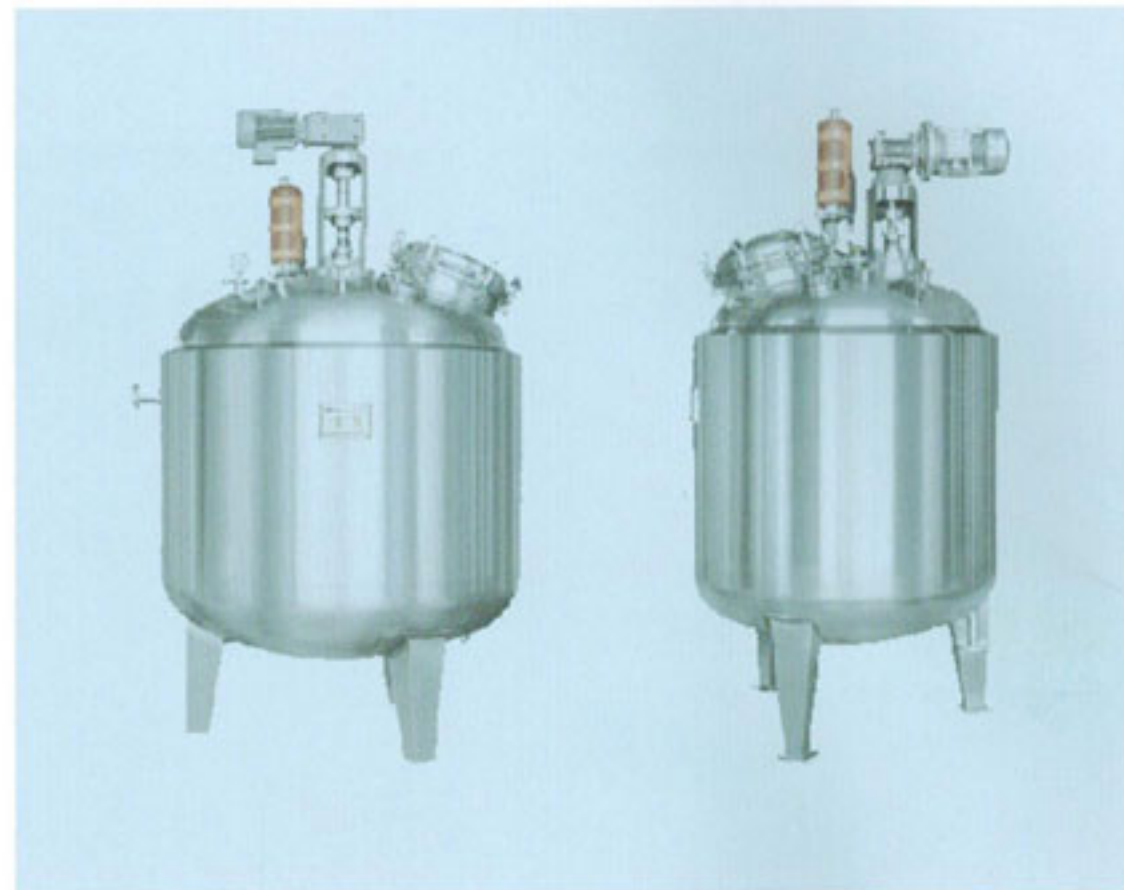
三达水-专注纯化水系统研究与应用

## Distribution system – clean Pipeline Project Overview

### 产品特性

本设备可用于中药、食品、化工行业、液体物料的配制储存，可在夹套内通入蒸汽或冷却水以使物料处于最佳温度，搅拌机选用德国进口弗兰德或SEW，搅拌转速为36-535转/分，也可采用变频调速器控制；搅拌器可避免物料沉淀，传动部位采用机械密封确保无污染，是针剂、大输液药液浓配、稀配的首选设备

具有效率高、操作方便等优点，灌内设置自动旋转喷淋头，确保清洗彻底，内壁镜面抛光，外筒体亚光处理，符合GMP标准。



### Product Features

This equipment can be used in Chinese medicine, food, chemical industry, liquid material configuration storage, can be in the jacket steam or cooling water to pass into the materials in the optimum temperature, mixer selection of German imports of Flanders or SEW, stirring speed of 36 -535 rev / min, but also control of the frequency converter can be used; agitator avoid material precipitated, transmission parts mechanical seal to ensure pollution-free injection drug solution concentrated with a large infusion, dilute with the device of choice

Has the advantages of high efficiency, easy operation, automatic rotary sprinklers irrigation equipment to ensure thorough cleaning, the inner wall of mirror polishing, the outer cylinder pressure light processing, meet the GMP standard.

### 特性

内部形状：立体圆桶状（内筒与药液接触）

内部材质：316L

内光洁度：0.28-0.45  $\mu\text{m}$

外表材质：304镜面板或者亚光板

加热盘管：304

保温材料：珍珠棉（耐高温、抗老化）

外表温度：< 10℃

工作压力：常压

工作温度：60℃-100℃

灭菌压力：0.15-0.3MPa

灭菌温度：121℃-132℃

### Product Features

Internal shape: the stereo drums (the inner cylinder in contact with the drug solution)

Internal material: 316L

Within finish :0.28-0.45  $\mu\text{m}$

Appearance Material: 304 mirror panels or matte board

Heating coil: 304

Insulation material: EPE (high temperature, anti-aging)

Surface temperature: < 10 °C

Working pressure: atmospheric

Operating temperature: 60 °C -100 °C

Sterilization pressure :0.15-0.3 MPa

Sterilization temperature: 121 °C -132 °C



## 无菌水箱

该系列不锈钢储罐为单层、立式结构的卫生洁净型容器设备。是制药、生物工程、食品、饮料、果酒、调味品、化工、油脂等行业中常用的中间缓冲、储液设备。

## 无菌水箱分类

- 1、按结构形式分为：上开盖下斜底、上开盖下锥形封头、上下锥形封头、上下椭圆封头
- 2、按材质分为：SUS304、SUS316L

## 无菌水箱结构

该系列不锈钢储罐由圆柱形不锈钢内筒组成筒体，并配有卫生人孔、清洗球、液位计。

- 1、设备为单层结构。
- 2、材质为不锈钢SUS304或SUS316L。

## 无菌水箱用途

- 1、可作储液罐、混料罐、暂存罐、储水罐等。
- 2、适用于食品、乳制品、果汁饮料、医药化工及生物工程等领域。

## Sterile water tank

The series stainless steel tanks for a single vertical structure hygienic container equipment. Intermediate buffer used in the pharmaceutical, biotechnology, food, drinks, wine, spices, chemical, oil and other industries, liquid storage equipment.

## Sterile water tanks classification

- 1, according to the structure is divided into: opening the lid under the sloping bottom, on opening the lid under conical head, the conical head up and down, up and down elliptical head Divided into
- 2, Material: SUS304, SUS316L

## The aseptic water tank structure

The series stainless steel tank consists of a cylindrical stainless steel inner cylinder barrel, and with health manhole, cleaning ball, liquid level gauge.

- 1, the device as a monolayer structure.
- 2, made of stainless steel SUS304 or SUS316L.

## Sterile water tank uses

- 1, can be used for the tank, mixing tank, temporary storage tank, water storage tanks.
- 2, suitable for food, dairy products, fruit juice and beverage, pharmaceutical and chemical and biological engineering field.

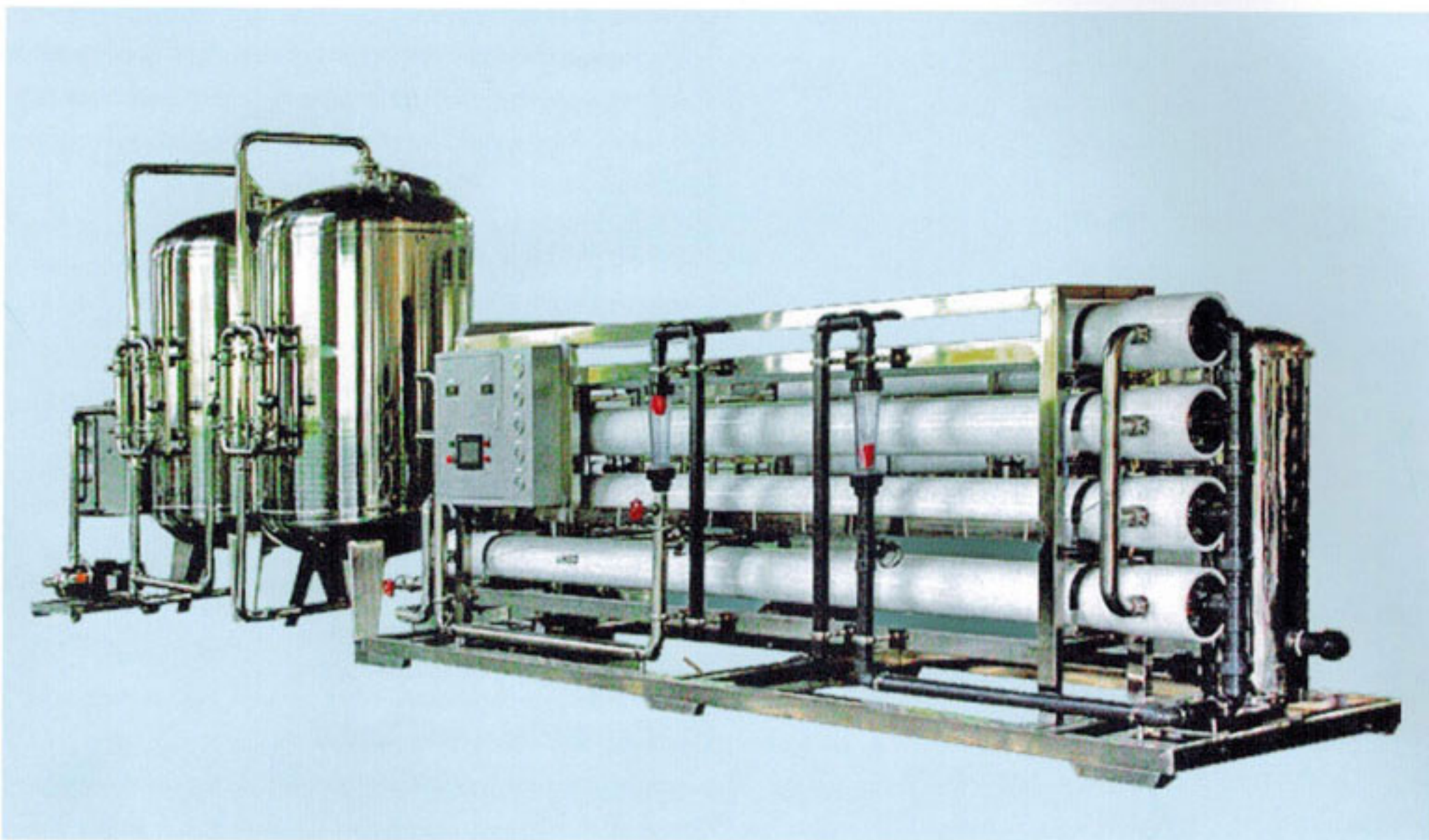




## 单级反渗透纯水设备



Single-stage reverse osmosis water equipment



### 系统描述

单级反渗透设备原理是将源水经过砂滤、炭滤、软化、微滤、一级反渗透膜逐级过滤从而得到洁净的纯水。该系统采用原装进口反渗透膜组件，高效低噪进口或国产名牌水泵及高精密度仪表组成；系统实现全自动运行，无需人为值守，设有高低压报警保护和自动低压反冲洗等功能，具有结构紧凑运行费用低操作简便等优点。

**设备产水量:** 0.25-100T/H

**产水电导率:**  $< 10\mu\text{S}/\text{cm}$

**应用领域:** 纯净水、食品饮料生产；化学化工行业的浓缩、分离、提纯以及配水制备；锅炉补给水除盐软化；电镀涂装前处理清洗用水；造纸、印染等行业以及中水回用处理；海水和苦咸水淡化处理。

### System Description

Single-stage reverse osmosis equipment is the principle source of water through the sand filter, carbon filter, softening, microfiltration, reverse osmosis membrane filtration step by step to get clean water. The system uses reverse osmosis membrane imported, efficient low noise imported or domestic brand pumps and high-precision instrument composed; system to achieve automatic operation, without human duty, with high and low pressure alarm protection and automatic backwash pressure and other functions, with compact structure, low operating costs and easy operation.

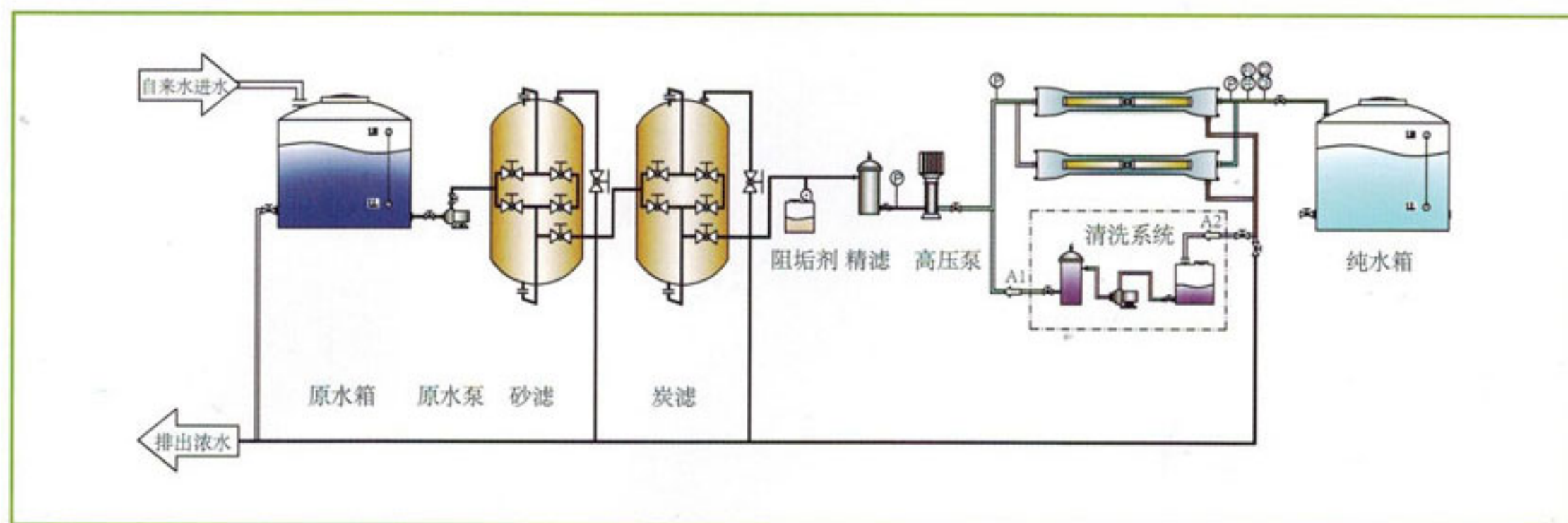
**The device water production:** 0.25-100T / H

**The production water conductivity:**  $< 10\mu\text{S}/\text{cm}$

**Application areas:** clean water, food and beverage production; chemical chemical industry concentration, separation, purification and distribution of water preparation; boiler makeup water desalination softening; plating coating pre-treatment wash water; paper making, printing and dyeing industry, and water reuse treatment; seawater and brackish water desalination treatment.



## 工艺流程图 Flow Chart



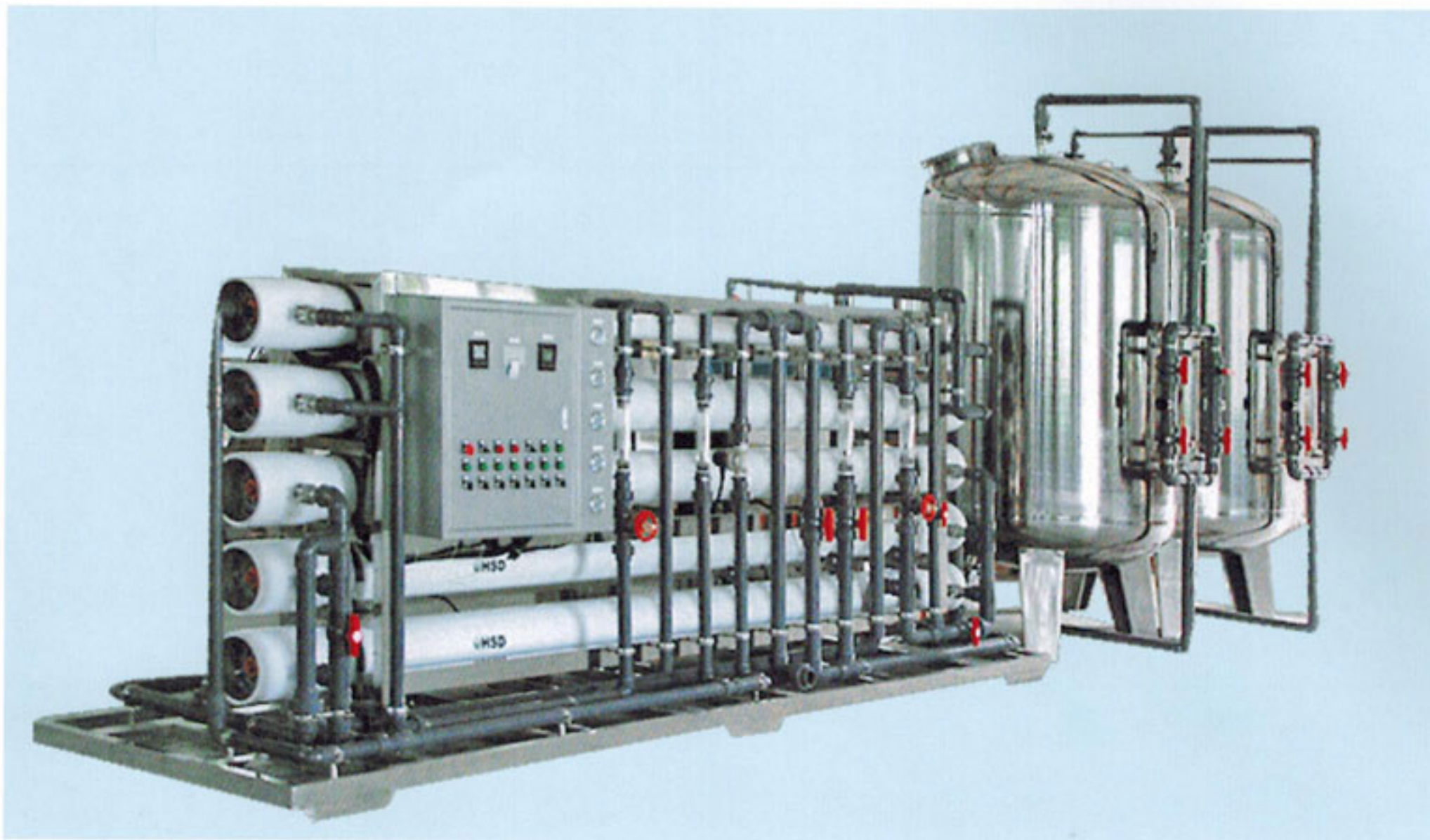


## 双级反渗透纯水设备

# Sinnar

三达水-专注纯化水系统研究与应用

## Two-stage reverse osmosis water equipment



### 系统描述

双级反渗透设备又称二级反渗透设备，原理就是预处理出来的水经过一次反渗透处理之后，再一次的经过反渗透处理，二级反渗透就是对一级反渗透的产水进行提纯，一般市政自来水，经过一级反渗透设备电导率 $<10\mu\text{S}/\text{cm}$ ，经过二级反渗透以后，电导率 $<2\mu\text{S}/\text{cm}$ ，甚至更低。

**设备产水量:** 0.25-100T/H

**产水电导率:**  $<2\mu\text{S}/\text{cm}$

**应用领域:** 桶瓶装饮用纯净水制备；医药制剂、无热源纯化水；日用化妆品生产；食品保健品生产；医疗器械GMP认证纯化水；制取涂装清洗去离子水等。

### System Description

Two-stage reverse osmosis equipment, also known as stage reverse osmosis equipment, the principle is the pretreatment water after reverse osmosis treatment once again after the reverse osmosis treatment, two reverse osmosis purification reverse osmosis water production general municipal tap water through a reverse osmosis equipment conductivity  $<10\mu\text{S}/\text{cm}$  into two reverse osmosis, conductivity  $<2\mu\text{S}/\text{cm}$ , or even lower;

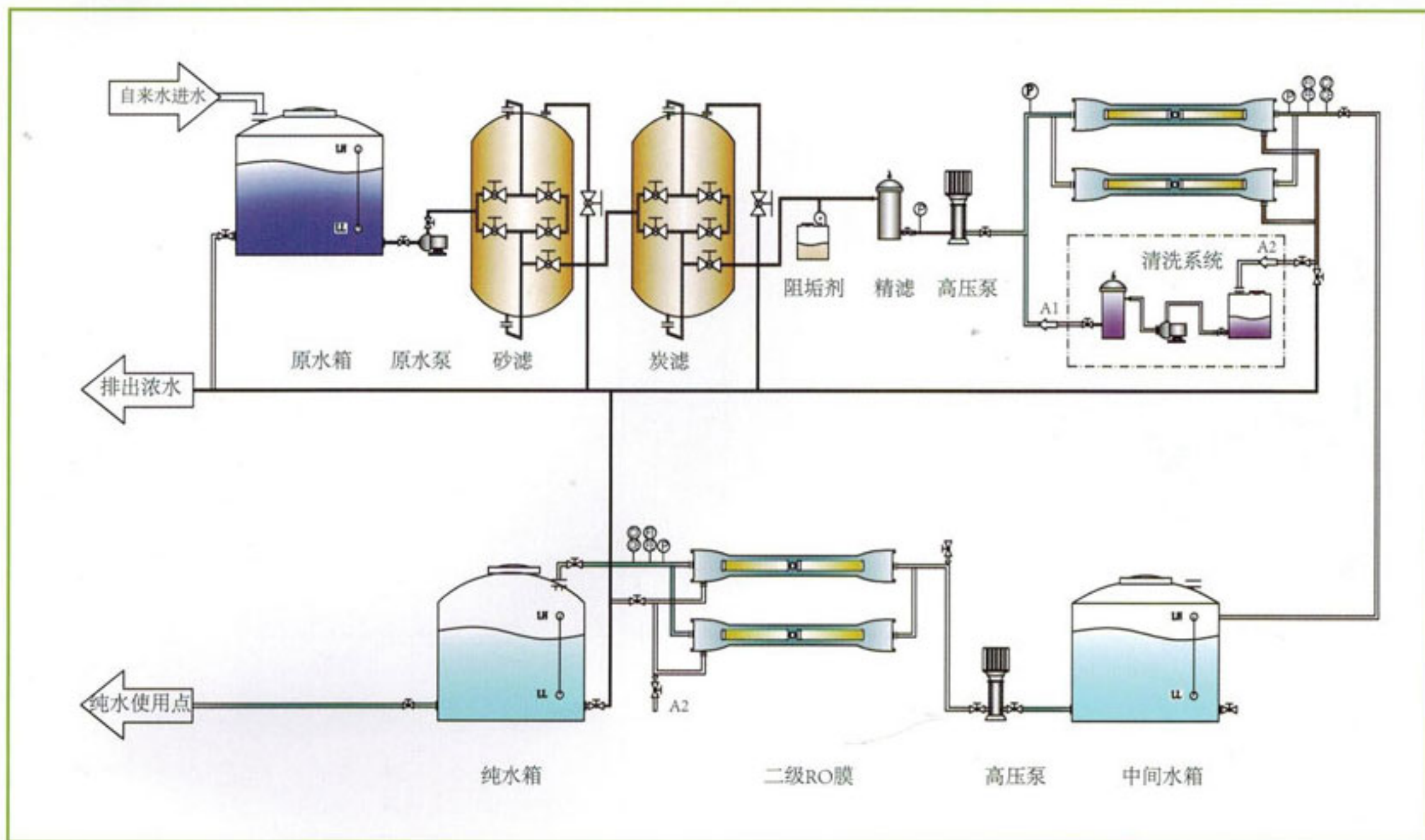
**The device water production:** 0.25-100T / H

**The production water conductivity:**  $<2\mu\text{S}/\text{cm}$

**Application areas:** barrel bottled references purified water; pharmaceutical preparations, no heat source of purified water; the daily cosmetics production; food health product; Medical Device GMP certification purified water; Preparation painting cleaning deionized water



## 工艺流程图 Flow Chart





## 单级反渗透+混床纯水设备

# Sinnar

三达水-专注纯化水系统研究与应用

The single-stage reverse osmosis pure water equipment + mixed bed



### 系统描述

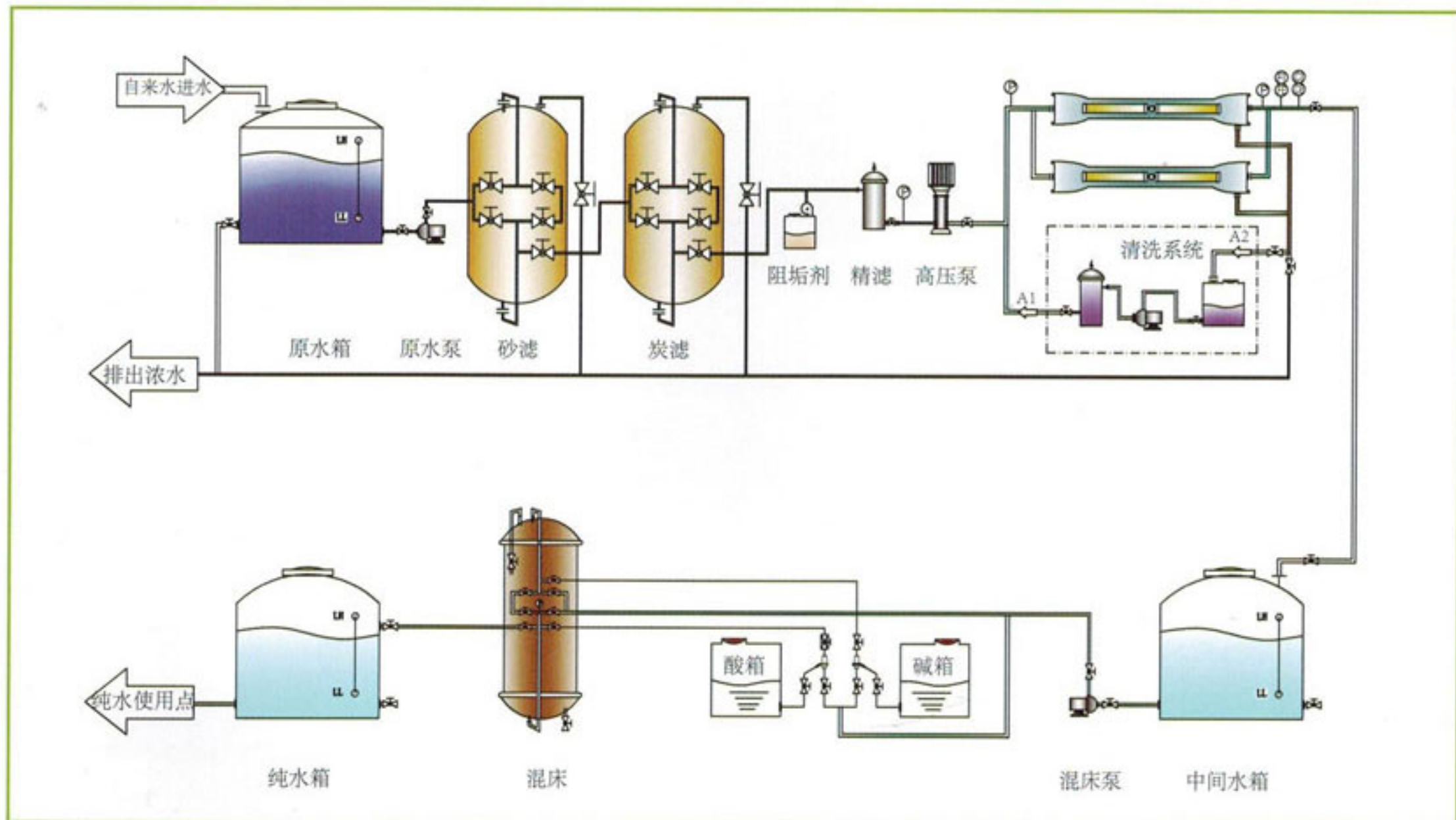
混床是混合离子交换柱的简称，是针对离子交换技术所设计的设备。所谓混床，就是把一定比例的阳、阴离子交换树脂混合装填于同一交换装置中，对流体中的离子进行交换、脱除。目前纯水制备领域，混床一般附加在一级反渗透产水之后，适用于原水含盐量比较高的地区，产水电导率较好，一次性投资较低，运行成本低，稳定性较好；混床树脂可通过再生循环使用，使用寿命长。

### System Description

The mixed bed mixed ion-exchange column referred to as technology equipment designed for ion exchange. The so-called mixed bed is to a certain percentage of the cation and anion exchange resin is loaded in the same switching means, to be exchanged, removal of ions in the fluid. The field of preparation of pure water, mixed bed is generally attached to a reverse osmosis water production, apply to areas of higher salinity than the raw water, the conductivity of the water production is better, the lower one-time investment, low operating costs, better stability ; mixed bed resin can be recycled through regeneration, and long service life.



## 工艺流程图 Flow Chart



设备产水量: 0.25-100T/H

产水电阻率:  $\geq 10(\text{M}\Omega \cdot \text{cm})$

应用领域: 集成电路板、显像管半导体清洗; 蓄电池、锂电池、太阳能电池、干式电池生产; 实验室用水; 电镀涂装清洗; 精细化工、化学制剂生产; 单晶硅、多晶硅精细。

The device water production: 0.25-100T / H

The production water conductivity:  $\geq 10(\text{M}\Omega \cdot \text{cm})$

Application areas: integrated circuit boards, CRT semiconductor cleaning; batteries, lithium batteries, solar cells, stem-cell production; laboratory water; plating coating cleaning; production of fine chemicals, chemical preparations; monocrystalline silicon, polycrystalline silicon fine.

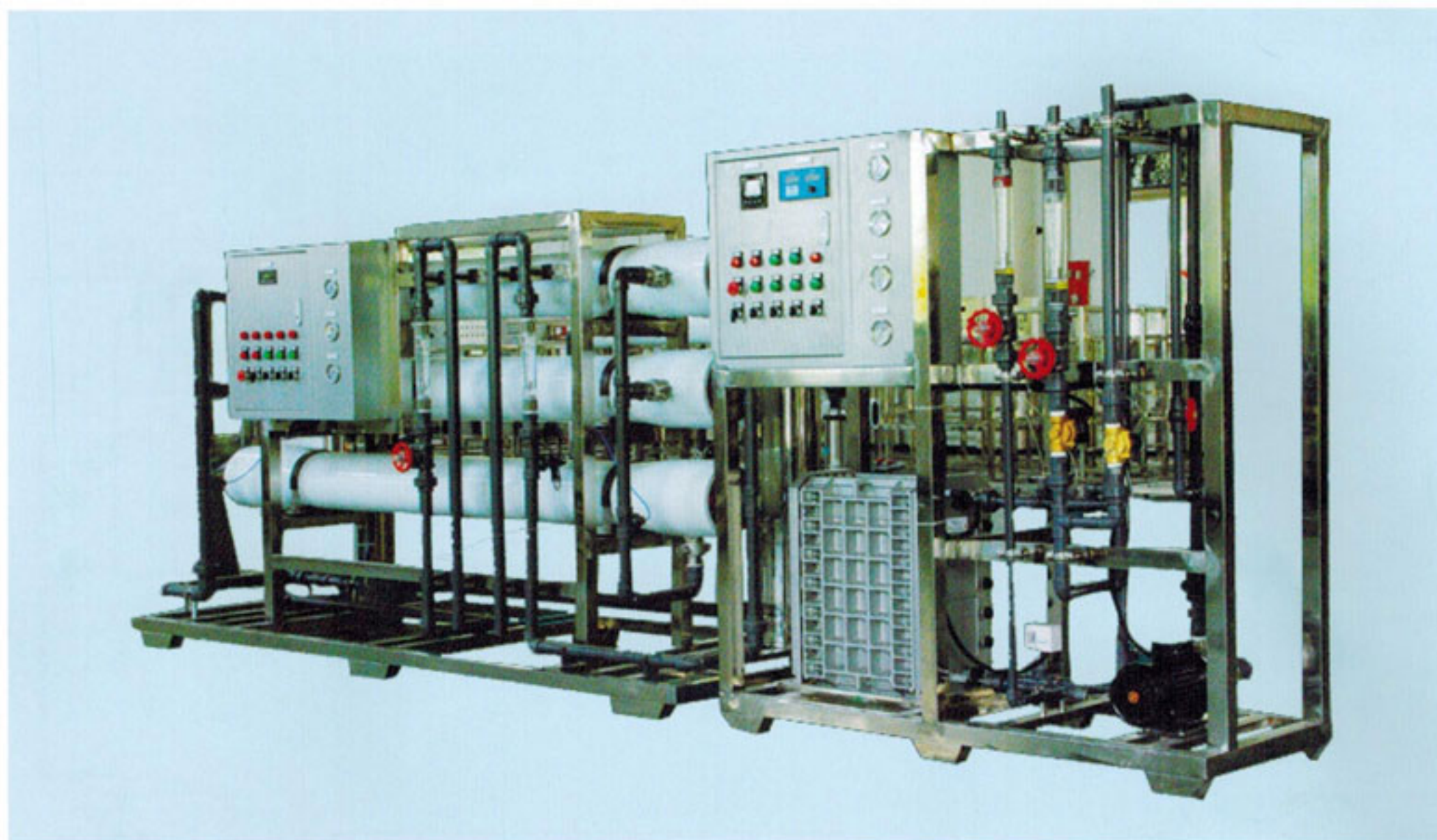


## 反渗透+EDI纯水设备

# Sinnar

三达水-专注纯化水系统研究与应用

## Reverse osmosis + EDI pure water equipment



### 系统描述

EDI纯水设备系统是将电渗析技术和离子交换技术有机结合形成的一种新型除盐技术。可以有效的去除水中全部离子，出水电阻率可稳定在15MΩ.CM以上，连续运行、无化学污染、水的利用率高，在高纯水制备工艺上有着广阔的应用前景。

EDI纯水设备装置是应用在反渗透系统之后，取代传统的混合离子交换技术（MB-DI）生产稳定的去离子水。

**设备产水量:** 0.25-100T/H

**产水电阻率:** 单级反渗透+EDI >10(MΩ.cm)

双级反渗透+EDI >15(MΩ.cm)

**应用领域:** 集成电路板、显像管半导体清洗；蓄电池、锂电池、太阳能电池、干式电池生产；实验室用水；电镀涂装清洗；精细化工、化学制剂生产；单晶硅、多晶硅精细；生物制剂生产

### System Description

EDI pure water equipment system is the combination of electrodialysis and ion exchange technology formed a new desalination technology. Can effectively remove the water ions, water resistivity can be stabilized at above 15MΩ.CM, continuous operation, chemical pollution, high utilization of water in the preparation process of high purity water has a broad application prospects.

EDI pure water equipment means is applied after the reverse osmosis system, replacing the traditional mixed ion exchange technology (MB-DI) production stability of deionized water.

**The device water production:** 0.25-100T / H

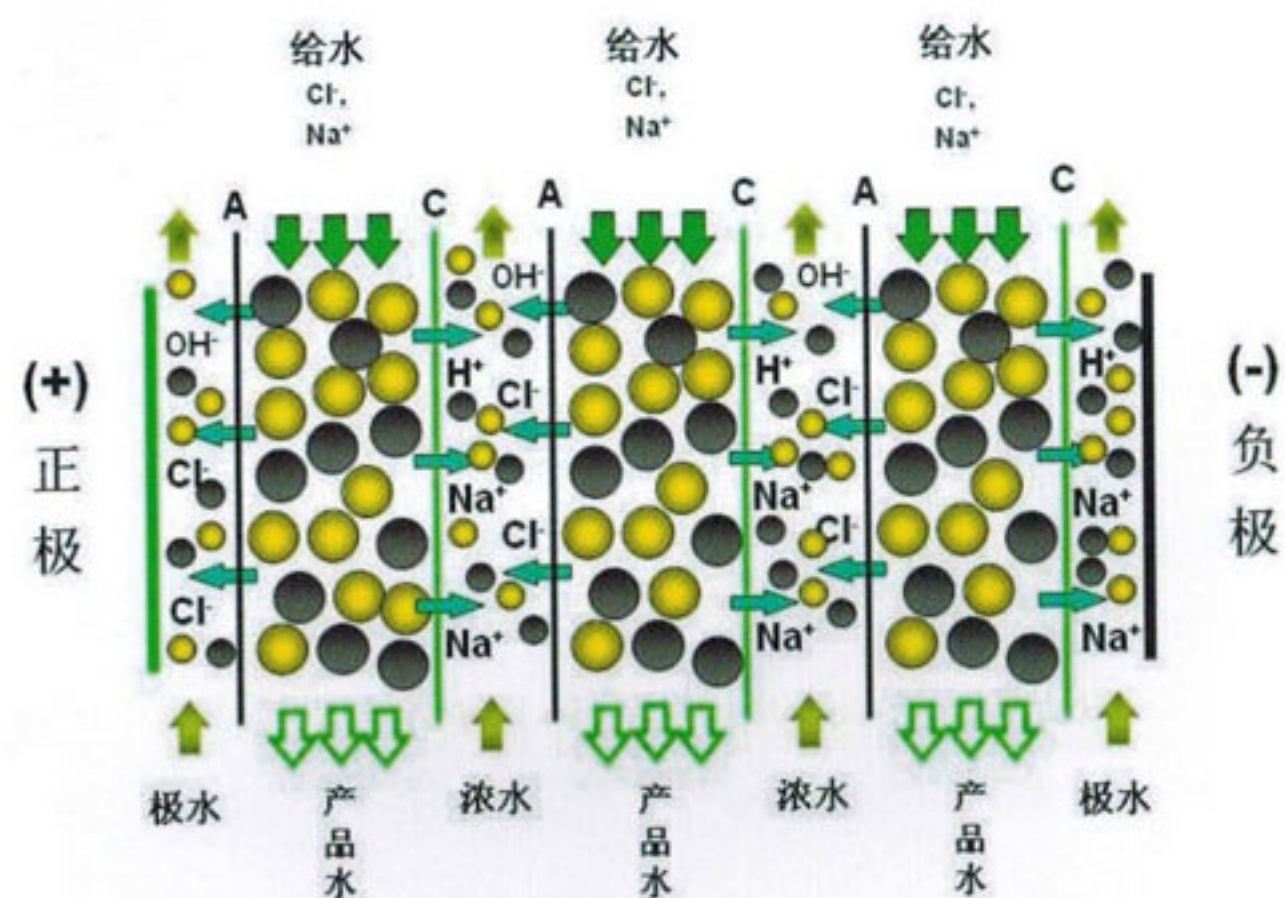
**The production water conductivity:**

single-stage reverse osmosis + EDI > 10 (MΩ . cm)

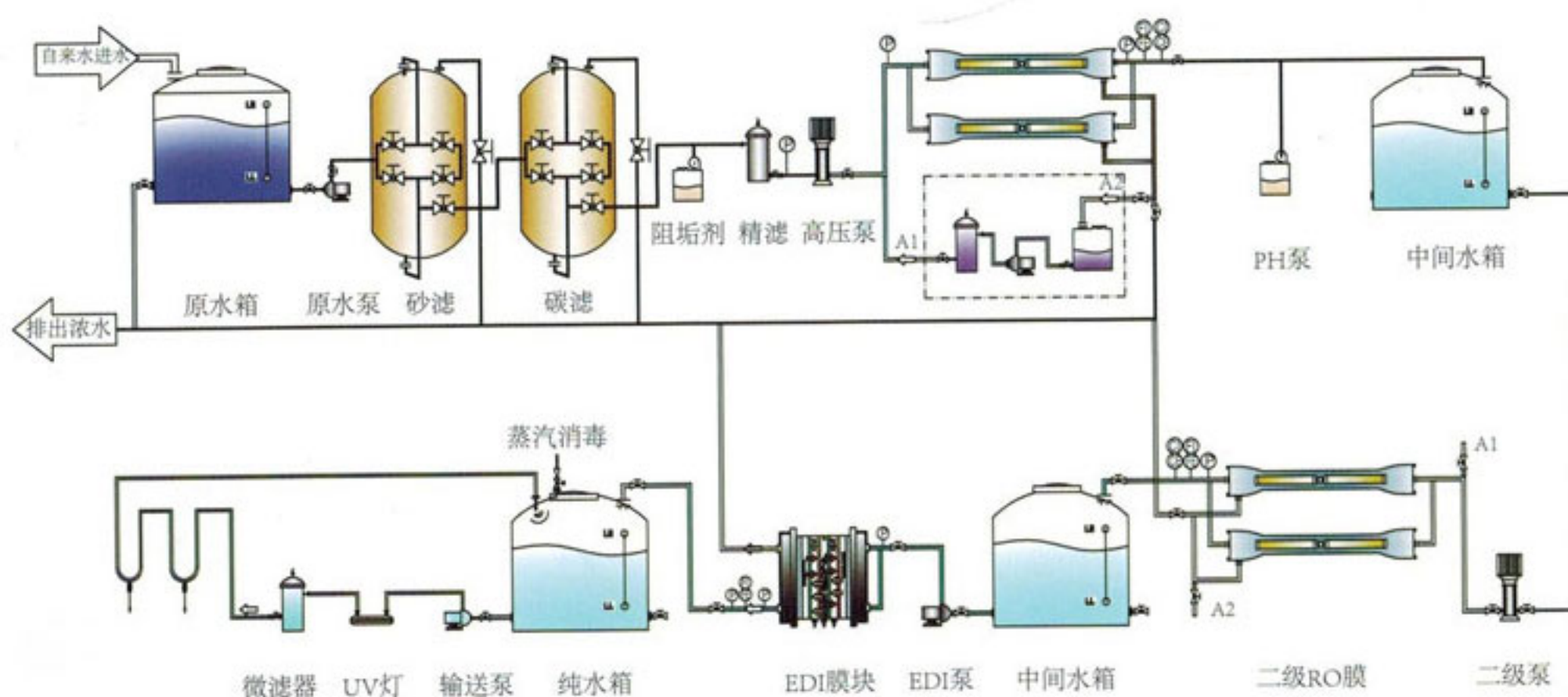
dual-stage reverse osmosis + EDI > 15 (MΩ . cm)

**Application areas:** integrated circuit boards, CRT semiconductor cleaning; batteries, lithium batteries, solar cells, stem-cell production; laboratory water; plating coating cleaning; production of fine chemicals, chemical preparations; monocrystalline silicon, polycrystalline silicon fine.





## 工艺流程图 Flow Chart





## 超滤、纳滤设备

## Ultrafiltration, nanofiltration equipment



### 系统描述

超滤设备：卷式超滤膜的截留分子量为100-20000，超滤膜可以截留大分子杂质，透过目标产物；也可截留目标产物，透过小分子杂质和水，达到脱色、除杂以及产品分级的目的。

纳滤设备：纳滤膜介于反渗透膜和超滤膜之间，并对无机盐有一定的截留率；对有机物的截留分子量从100-1000道尔顿不等；由于其分离物质在1纳米左右而得名，目前被广泛应用于行业中各种分离和浓缩提纯过程。

**设备产水量：**0.25-100T/H

**应用领域：**生物发酵：抗生素，维生素，氨基酸（脱色，除蛋白，浓缩脱灰）等。食品饮料：多糖，低聚糖，淀粉糖，味精中和液脱色，饮料澄清，脱色等。植物提取：大豆，罗汉果，绿茶等植物的澄清与纯化。纯水行业：工业用水的初级纯化，纯水超纯水制备RO预处理，纯水、超纯水终端处理。环保行业：工业废水深度处理，城市中水回用系统，电泳漆、油品的回收。

### System Description

Ultrafiltration equipment: roll ultrafiltration membrane MWCO 100-20000 ultrafiltration membrane can be trapped macromolecular impurities, the target water production can be retained through the target product; small molecule impurities and water, reach decolorization, in addition to miscellaneous, and the purpose of the classification of the product.

Nanofiltration equipment: nanofiltration membrane between reverse osmosis and ultrafiltration membranes, and inorganic salts have a certain rejection; organic MWCO ranging from 100-1000 daltons; due to its separation of the substances in the 1 nanometers is named, is now widely used in the industry in various separate and concentrate the purification process.

**The device water production:**0.25-100T / H

**Application areas:**Biological fermentation: antibiotics, vitamins, amino acids (bleaching, in addition to protein, concentrated deliming).Food & Beverage: polysaccharides, oligosaccharides, starch, sugar, monosodium glutamate and decolorizing, beverage clarification, decolorization.Plant extracts: clarification and purification of soybean, Mangosteen, green tea and other plants.Pure water industries: the junior industrial water purification, pure water, ultra-pure water preparation RO pretreatment, pure water, ultra-pure water terminal handlingEnvironmental industry: industrial wastewater treatment, urban water reuse system, electrophoretic paint, oil recycling.



## 软化水设备

## Water softening equipment



### 全自动软化水设备

全自动软化水设备是由控制器、树脂罐、树脂、盐箱组成的一体化设备。控制系统采用FLECK、AUTOTROL、runxin等多路阀，实现全自动程序控制，运行可定时、定流量自动再生；设备广泛应用于锅炉给水软化、冷却循环水、化工、钢铁冶炼厂、纺织印染用水、洗衣、食品、生活水软化以及纯水设备的预处理装置。设备产量：0.5-300T/H，设备组合形式：单阀单罐型、单阀双罐型、单阀单罐多罐组合型。出水硬度：0.03mmol/L

### Automatic water softening equipment

Automatic water softening equipment is determined by the controller , resin tank , resin, salt tank of an integrated device . Control system uses FLECK, AUTOTROL, runxin other multi -way valve, to achieve automatic process control, can be timed , constant flow moving regeneration ; equipment is widely used in boiler feed water softening , cooling circulating water , chemicals, iron and steel smelters , textile printing and dyeing water , laundry , food, life and pure water equipment, water softening pretreatment device . Equipment production :0.5-300T / H, equipment combinations: single valve single tank type, single -valve dual tank type, single valve single tank multi- tank combination. Water hardness : 0.03mmol / L



### 软水的主要特点

1. 防止水管道、热水器、咖啡机，加湿器、蒸汽电熨斗、浴缸、淋浴喷头、抽水马桶等家庭器具积留水垢、经常堵塞、热效率低等现象。
2. 延长豆腐保质期，豆浆更香浓，豆芽不需生长素，长势粗壮。洗菜，清除农药成分，延长蔬菜保鲜期。煮饭，缩短时间，米粒松软光润、面食不易膨胀。烹调，保持蔬菜的天然口感和营养成分。
3. 洗衣，预防静电、脱色、变形，清洗餐具，洁净无水渍，提高器皿光泽度。清洗厨房浴室，强劲去污、除异味。
4. 节省经费支出，减少水设备及水管道维修费60%以上，减少热水燃料费30%以上，减少洗涤剂购置费50%以上。

### Soft water of the main features

- 1 . Prevent water pipes , water heaters , coffee machines, humidifiers, steam irons , bathtub, shower heads , toilets and other household appliances accumulates scale, often blocked , and low thermal efficiency phenomenon .
2. extend the shelf life of tofu , soy milk more fragrant , bean sprouts without auxin , growing stout . Vegetables , remove pesticide ingredients, prolong shelf life of vegetables . Cooking, shorten the time, soft smooth rice , pasta is not easy to expand. Cooking , maintaining the natural taste of vegetables and nutrients .
3. Laundry, prevent static electricity , bleaching , variant , wash dishes , clean and free of stains , improve utensils gloss. Cleaning the kitchen bathroom, strong decontamination, deodorization.
- 4 . Expenditure savings , reduce water equipment and water pipe repair costs 60 % or more, reduce fuel costs more than 30% water , reducing acquisition costs 50% more detergent.



## 电镀废水达标排放及回用处理

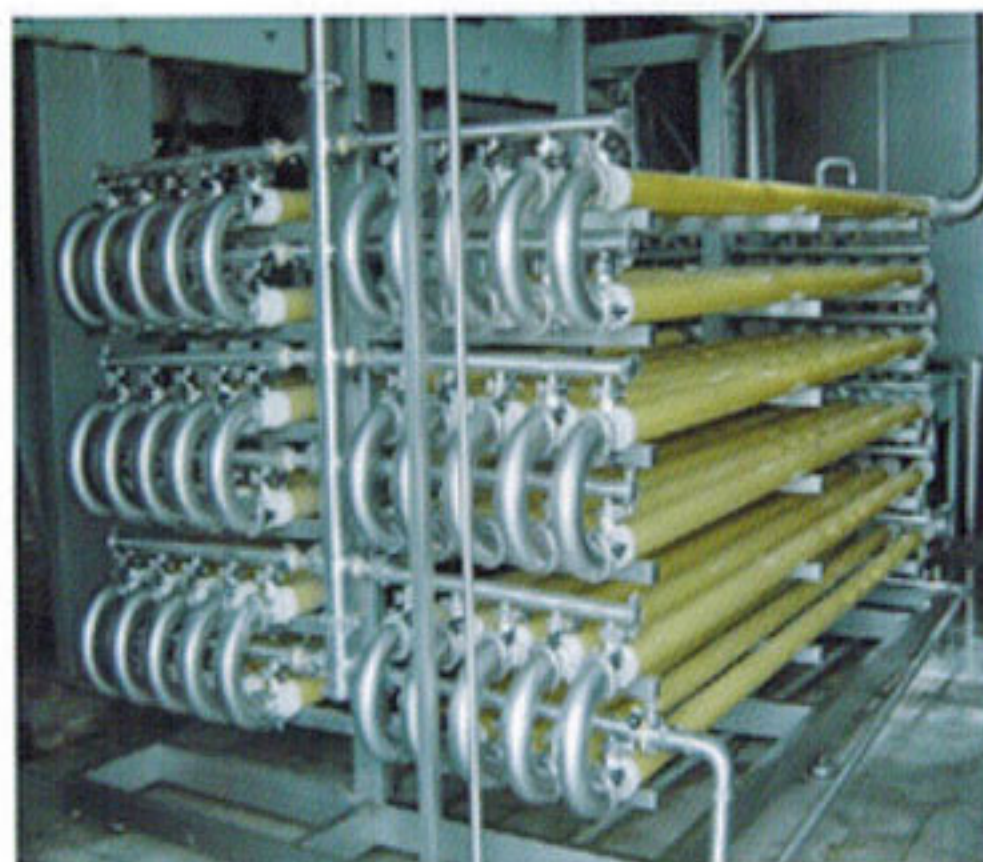
**Sinnar**

三达水-专注纯化水系统研究与应用

Electroplating wastewater discharge and reuse treatment

### 一、电镀废水达标排放处理

- 1、水量：1~200m<sup>3</sup>/d
- 2、废水种类：前处理、氰化镀、镀铜、镀铬、镀镍、镀锌等
- 3、处理后水质达到《电镀废水排放标准》GB21900-2008各类电镀废水处理工艺





## 二、电镀废水回用处理系统

为实现电镀废水的资源再利用，在废水达标处理系统的基础上增加（UF+RO）膜过滤系统，水回收率65%以上，经处理后的废水水质达到纯水标准，可回用到生产线再次利用。

- 1、废水种类：前处理、氰化镀、镀铜、镀铬、镀镍、镀锌等。
- 2、处理后水质满足生产用水需求。





## 印染废水达标排放及回用处理

Printing and dyeing wastewater discharge standard of treatment and reuse

### 一、印染废水达标排放处理

- 1、废水种类：纺织品印染漂洗水、数码印花机废水
- 2、排水水质达到《污水综合排放标准》GB8978-1669 同时符合《污水排入城市下水道水质标准》CJ343-2010或DB31/445-2009

### 印染废水处理工艺

印染废水 → 絮凝反应池 → 斜板沉淀器/膜过滤装置 → 生化处理或化学氧化





## 二、印染废水回用处理系统

- 1、废水种类：纺织品印染漂洗水、数码印花机废水
- 2、处理后水质满足生产用水需求

### 印染废水回用工艺

印染废水 → 前处理 → 砂滤 → 碳滤 → 超滤 → 反渗透 → 回用到生产线



本设备采用砂滤+碳滤+超滤的预处理工艺，可截留容易堵塞或损伤反渗透膜的悬浮颗粒、余氯、有机物胶体等物质，确保系统的稳定运行，当废水处理设备采用DF膜过滤装置的时候，本回用系统中的砂滤和碳滤可省略，反渗透膜采用污水回用专用的抗污染膜元件，可有效防止废水中污染物对膜元件的结垢及腐蚀，极大的增加膜元件的使用寿命，本设备采用PLC自动控制系统，中央处理器根据在线仪表采集的参数，自动控制设备的运行和停止，大大简化的操作难度，同时防止人为操作失误对设备的损伤。



## 机械加工 表面处理行业废水处理

Machining surface treatment industry  
wastewater treatment

**Sinnar**

三达水-专注纯化水系统研究与应用



废水 → 絮凝池 → 集成膜装置 → 芬顿氧化/MBR生物反应器 → 达标排放

机加工切削废水、涂装废水、超声波清洗废水的共同特点是污染物浓度高，但是水量小，采用传统的处理方法流程复杂，运行操作难度高，设备投资大，另外该类废水工程对占地面积都有严格的要求，且一般的公司无专业的污水处理技术人员，因此该类工程的设计一直是个难题，我公司针对此类废水特点开发了一套新型污水处理设备，特别适用于中小型企业的污水处理，该设备具有设备投资适中、占地面积小、操作简单、自动化程度高、处理后水质好等优点。

本设备采用PLC自动控制系统，通过在线仪表实时监控废水水质并通过PLC自动调整运行参数控制设备的启停，运行中可实现无人值守。

本设备采用美国进口特殊膜分离装置，代替传统的沉淀池、机械过滤器等，大大减小了占地面积，简化了污水处理工艺，同时出水水质优于传统沉淀过滤设备，配合化学处理可将重金属离子、悬浮物、浊度等降到极低的限值。满足日益严苛的污水排放标准。

对于有机溶剂含量高的废水视实际情况可采用FENTON氧化工艺或一体式MBR生物反应器，可将废水污染物指标降到相应的污水排放标准。



## 中水回用设备

Equipment for the reuse of reclaimed water



中水回用是利用膜装置来分离水中污染物，膜装置是一种能够将溶液进行净化、分离、浓缩的膜分离技术。根据过滤孔径不同分为微滤膜、超滤膜、纳滤膜、反渗透膜等，在实际工程中，根据需要采用不同的膜元件。我公司和美国海德能、陶氏、DF等膜元件生产商建立长期合作关系，电控仪表均采用符合国标的产品。



## 应用领域

- 1、污水深度处理
- 2、中水回用
- 3、电镀废水回收贵金属
- 4、污水零排放工程





## MBR生物反应器

### MBR bioreactor

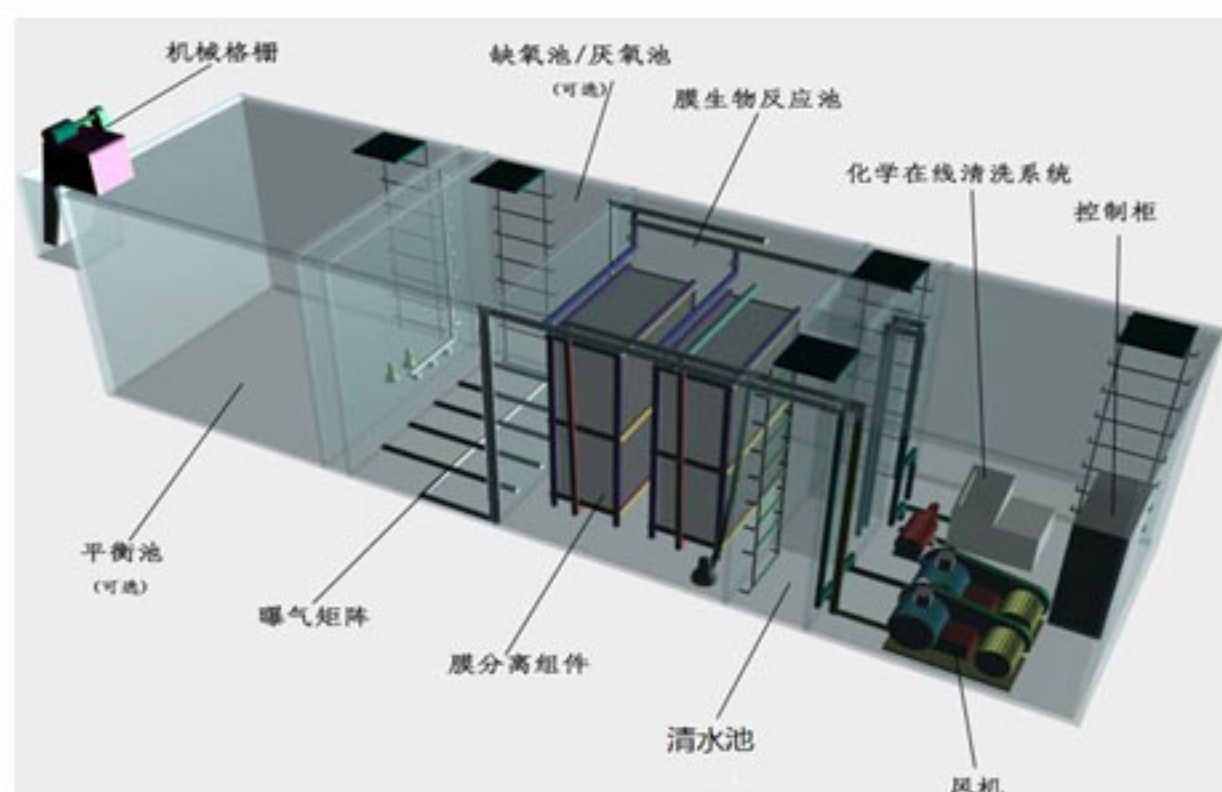
**Sinnar**

三达水-专注纯化水系统研究与应用

MBR是膜分离技术与生物技术有机结合的新型废水处理技术，它利用沉浸于好氧生物池内的膜分离设备将生化反应池中的活性污泥和大分子有机物质有效地截留住，通过负压分离出达到排放标准的清水，省掉二沉池。活性污泥浓度因此大大提高，水力停留时间（HRT）和污泥停留时间（SRT）可以分别控制，而难降解的物质在反应器中不断反应、降解。因此，膜—生物反应器工艺通过膜分离技术大大强化了生物反应器的功能，与传统的生物处理方法相比，具有生化效率高，抗负荷冲击能力强，出水水质稳定，占地面积小，排泥周期长，易实现自动控制等优点，是目前最有前途的废水处理新技术之一。

#### 优点：

1. 高MLSS下微滤膜过滤后，出水水质良好稳定
2. 容积负荷高，停留时间短，占地面积小
3. 取代沉淀及过滤单元，无污泥沉降性问题
4. 抗负荷冲击能力强，有效处理高浓度有机废水
5. 悬浮物和浊度接近于零，适合用于中水回收
6. 可拦截大部分致病菌，减少消毒药剂用量





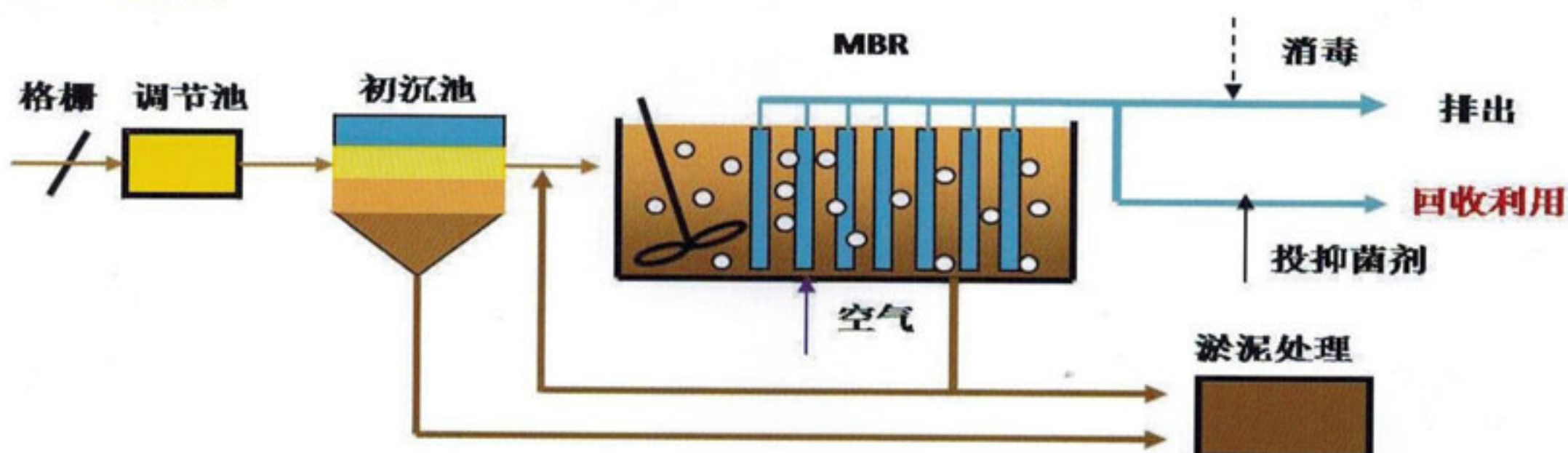
# 医疗废水处理

## Medical wastewater

### 一、应用范围

医院（体检中心、整形美容）含病菌废水，制药（抗生素）废水

### 二、工艺技术



### 三、工艺特点

- 1、病菌杀灭率达到99.9%；
- 2、好氧生物吸附再生法去除有机物能力达到98.7%
- 3、封闭式结构、噪音小，满足医疗机构对安静环境的要求。
- 4、排水水质达到医疗行业废水排放要求。



设备可根据需要采用PLC自动控制系统，配置7英寸触摸屏人机界面，由中央处理器控制设备实现自动运行，使设备的操作更加简单，无需配置专业的技术人员。MBR膜根据实际情况，可采用内置式平板式膜或外置式管式膜，使设备的运行更加稳定，出水效果达到医疗行业废水排放标准。消毒部分采用杀菌效果最好的二氧化氯，系统配备一台二氧化氯发生器，可现场制取二氧化氯药剂，无需采购成品药剂和人工添加，使系统的实用性大大加强。





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