

Heal Force Laboratory Equipment

Heal Force specialises in the design, development, manufacture and sales of laboratory equipments in the fields of Biosafety protection, Centrifugation, Cell culture, Water purification & Gene amplification.



Water Purification System

Reliable and Versatile



Biosafety Cabinet

Heal Force brand stands for safety, ergonomics and performance. Taking advantage of a heritage from over 25 years experience, Heal Force offers safety features, options and accessories beyond the standard requirements, to fulfill different needs. Thousands of units installed in laboratories in more than 100 Countries.

Centrifuge

Neofuge, the name that defines quality centrifuges from Heal Force. Offering bench-top high speed models with or without refrigeration for today's discerning laboratory technicians. Neofuge series provide excellent centrifugal effect and maximum application versatility.

CO₂/Tri-Gas Incubator

Heal Force Smart Cell incubator provides you with natural simulation to ensure optimum growth conditions for your culture at all time. That's why it is widely used in fields of application including tissue engineering, in vitro fertilization, neuroscience, cancer research and other mammalian cell researches.

Water Purification

Well-proved Heal Force water purification system offers ideal and comprehensive solution for a choice of water qualities that range from primary for simple routine washing and rinsing, through to ultra-high grade for different critical science and analytical applications.

Thermal Cycler

Since PCR is central for molecular biology research, you need flexible solutions that can help you achieve PCR success for virtually any application. Heal Force has been developing new cycling platforms from economical option to advanced series to empower your search. These instruments are renowned for their reliability, accuracy, and user-friendly interfaces.

Clean benches

Adopts dual monitoring breeze speed sensors to provide safer protection for samples.

Low temperature cold chain products

Provide -80°C ultra-low temperature refrigerator, -40°C/-25°C low temperature refrigerator, 2-8°C medicine storage box.



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Heal Force leads you to healthier life

What to look for in an ideal water purification system?

Heal Force gives you **MORE:**

- Multiple technologies into a system**
- A comprehensive sequence of water purification process
- A range of cartridges exist to remove specific types of contaminants
- Optimal for water quality guarantee**
- Resistivity monitoring for high-precision measurement of ionic concentration
- TOC monitoring for prevention of organic breakthrough

Reliability you expect

- Supported by Heal Force worldwide service
- Part of an overall solution that includes design, consumables, instruments and validation

Exceptionally easy to operate

- Easy-to-use graphical interface
- Rapid cartridge replacement
- Convenient pure and ultrapure water delivery



TIMELINE

Water purification systems continue to evolve from basic laboratory equipment to sophisticated and precise one. Heal Force continues to pursue such advancements for higher quality

2003
The first generation of water purification system

2006
Super series launched

2007
IP application for some special designs

2011
Smart series launched with EDI module

2013
Pureforce system with large water production developed

2016
New generation of Smart Plus introduced

Which system is best for you?

Our Solution	Water quality	Typical applications
Smart Plus N(T) Smart Plus NE(T) Smart Plus P(T) Smart Plus EP(T) Smart N Smart P Smart Mini Easy	ASTM Type I ultrapure water	<p><i>BOD tests</i> <i>COD tests</i> <i>DNA microarrays</i> <i>Electrochemistry</i> <i>Electrophoresis</i> <i>Enzyme immunoassays</i> <i>GC(Gas chromatography)</i> <i>GFAAS(Graphite Furnace Atomic Absorption Spectrophotometry)</i> <i>HPLC(High Performance Liquid Chromatography)</i> <i>IC(Ion chromatography)</i> <i>ICPAES(Inductively Coupled Plasma Atomic Emission Spectrometry)</i> <i>ICPMS(Inductively Coupled Plasma Mass Spectrometry)</i></p> <p><i>IHC(Immunohistochemistry)</i> <i>IVF(in vitro fertilization)</i> <i>LC-MS(Liquid chromatography-mass spectrometry)</i> <i>Kjeldahl analysis</i> <i>MALDI-ToF</i> <i>Mammalian and bacterial cell culture</i> <i>Northern and Southern blotting</i> <i>PCR(Polymerase chain reaction)</i> <i>Plant tissue culture</i> <i>Qualitative analyses</i> <i>Ultra trace analysis</i> <i>Western blotting</i></p>
Smart Plus E Smart ROP	ASTM Type II high pure water	<p><i>AAS(Atomic Absorption Spectrophotometry)</i> <i>Buffer and media preparation</i> <i>Electrophysiology</i> <i>FAAS(Flame Atomic Absorption Spectrophotometry)</i> <i>Feed to ultrapure water systems</i> <i>General chemistry</i> <i>Histology</i> <i>Hydrogen generators</i> <i>Microbiological analysis</i></p> <p><i>PH measurement</i> <i>Pharmaceutical(according to US and European pharmacopias)</i> <i>RIA(Radioimmunoassay)/ELISA(Enzyme Linked Immunosorbent Assay)</i> <i>Sample dilution and reagent preparation</i> <i>Spectrophotometry</i> <i>Stability chambers</i> <i>Surface tension experiments</i> <i>Water analysis</i> <i>Weatherometers</i></p>
Smart RO	ASTM Type III pure water	<p><i>Animal watering</i> <i>Aquariums</i> <i>Autoclave feed</i> <i>Feed to ultrapure water system</i> <i>Glassware Washing/rinsing</i> <i>Heat bath</i> <i>Humidifiers</i></p> <p><i>Hydroponics</i> <i>Plant growth cabinets</i> <i>Stability chambers</i> <i>Steam generators</i> <i>Sterilizer feed</i> <i>Washing machines</i></p>
Smart ROB Smart ROE ROB-B Pureforce ROE	CAP/CLSI Type I high pure water	<i>Automated clinical analysers (Biochemistry, Immunochemistry and immunology)</i>
Smart RO Pureforce RO	<p><i>Healthcare applications</i> <i>EN15883, HTM2030/2031, NHS MESC52, MDA/HIS, ISO 15883 part 4, EN285</i></p>	<p><i>Automated endoscope reprocessors</i> <i>Washer disinfectors</i> <i>Autoclaves</i></p>
ROA Pureforce ROA	<i>Low microbiological levels in a high purity water system</i>	<i>Water laboratory animals</i>



Our team of technical and application specialists is always available to answer any questions, as well as providing friendly, expert advice in choosing the most suitable water purification system.

Technical Processes and Features

Water purification is often a complex process that incorporates multiple technologies into a single purification system

Pretreatment Cartridge

- Compression molding process prevents water leakage risk from your safety
- Column is filled with active carbon integrally removing free chlorine in tap water
- PP cotton removes particles, effectively guarding RO membrane from clogging
- Strengthened pretreatment cartridge & water soften column is optional for hard water

01



Reverse Osmosis Module

- Highest quality DOW reverse osmosis systems with state of the art spiral membranes
- Remove inorganic ions, bacteria and particulates with high efficiency
- Automated forward and backward rinse to clean the membrane surface ensures stability and durability
- Flow restriction design keeps reverse osmosis membrane wet to maximize its lifespan

02



High-Strength UV lamp

- Dual wavelength UV lamp ensures organic molecule oxidation and bacteria destruction
- UV lamp is activated only when ultrapure water is produced
- Water inlet at bottom of the cartridge to avoid trapping air bubbles
- Held in a robust and corrosion-resistant stainless steel housing
- High transmittance synthetic quartz sleeve for higher efficiency

03



Purification Cartridge

- Adoption of high quality precision grade resin
- Dual-column design increases the ion exchange capacity of consumables and minimizes running costs

04



Ultra-Purification Cartridge

- Adoption of high quality nuclear grade resin
- Polishing cartridge removes ionic and organic contaminants below trace levels
- Active carbon supplement* restrain organic level inside the cartridge effectively.

05



* Applicable for CR-SP303M

Ultra-Filtration Filter / Micro Filter

- Effectively filter out endotoxin, proteins and nucleases, which is critical for tissue culture, cell culture and media preparation*
- The large ultrafiltration area and automatic surface rinse ensure both a high flow rate and a long service life.
- Easily switch to alternative microfilters for different applications

*Ultra-Filtration Filter

06



Point-Of-Use filter

- 0.22 μ m membrane filter farthest eliminates contaminants that might interfere with specific application at dispensing point

07

Delivered water maintain consistent peak quality and unqualified water is automatically recirculated

More Featured Designs for Applications

Microprocessor Control

- Fully automatic and self-diagnostic system monitors and controls working condition.
- PIN-coded access to software set points prevents unauthorized changes to operation or system settings.

Comprehensive Sanitization

Unlike many other systems, Heal Force entire fluid pathway is included in the automated disinfection process ensuring complete sanitization.

Module-designed Cartridges

- High quality and economical due to disposable integrated purification column design.
- Easy replacement and quick connection.

High precision resistivity meter

- Flow-through structure make sure the real-time measurement of the actual ionic concentration in water
- Low cell constant (0.01cm⁻¹) to ensure optimum measurement accuracy of low ionic contamination
- Automatic temperature compensation (0.1 °C resolution) makes the value displayed on the screen meaningful



strengthened pre-treatment module

Easy-to-read LCD display

User-friendly LCD provides optimal convenience, with indication on conductivity, resistivity, reservoirs water level and consumable changing reminder to ensure water quality.

Optional strengthened pre-treatment module

20" size long cartridge contains detergent. Therefore, besides the feature of higher water throughput, feed water with extremely low quality can be properly dealt with



Contamination-Free Water Tank

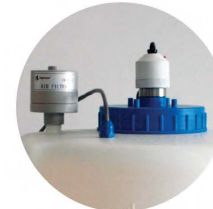
- Water level sensor combined with bottom pump enables 5-level automatic water production controls
- Capacity of water reservoir includes 30L and 60L. Moreover, ultra big 350L water reservoir is available for special needs
- The water reservoir is made through cylindrical mold and blow molding process to avoid the generation of velum
- PE material ensure low extractives
- Overflow protection tube eliminates the risk of flooding
- Cone shape bottom guarantees no stagnant water and facilitates easy clean
- Optional UV lamp and vented filter maintain consistent purity of stored water and provide effective protection against airborne contaminants.



30L water tank



60L water tank



UV lamp for water tank



Vented filter

Network Compatible

RS232 port allows for data collection and permanent record of water quality and system parameters, with date and time, to a PC or printer - essential for compliance with good laboratory practice guidelines



Smart N

Introduction

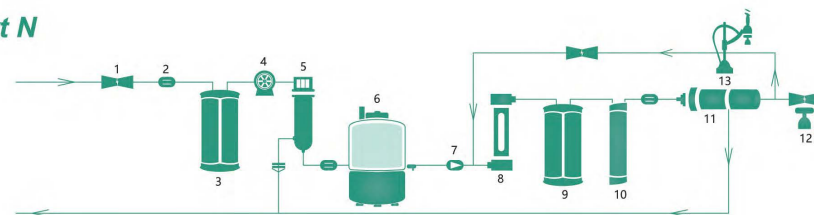
The Smart N system is a compact solution that combines the production of pure water and ultrapure water in a single unit — eliminating the need for a pretreatment stage upstream of the ultrapure water system.



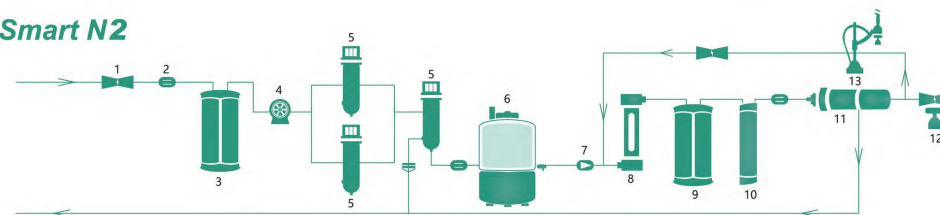
Configuration

SMART-N System	Smart N15UV	Smart N15VF	Smart N30UV	Smart N30VF
Pretreatment module	○	○	○	○
High pressure pump	○	○	○	○
Reverse osmosis	○	○	○	○
Dual wavelength UV-lamp	○	○	○	○
Ultra-purification cartridge	○	○	○	○
Microfiltration cartridge	○	○	○	○
Ultrafiltration cartridge	○	○	○	○
Point-of-use filter	○	○	○	○
Storage tank 30L	○	○	○	○
Air filter net for tank	○	○	○	○
Remote water dispenser	○	○	○	○

Smart N



Smart N2



- 1 Solenoid Valve
- 2 Conductivity Sensor
- 3 Pre-treatment Module
- 4 Boost Pump
- 5 RO Module
- 6 Water Tank
- 7 Ball Valve
- 8 Dual Wave UV Cartridge
- 9 Purification Module
- 10 Ultra-Purification Module
- 11 Micro-Filtration Cartridge (UV)
- 12 Point-Of-Use Filter
- 13 Remote Water Dispenser

Model	Smart N 15UV	Smart N 15VF	Smart N 30UV	Smart N 30VF
Feed Water Requirement				
Source	Tap water	Tap water	Tap water	Tap water
Conductivity*	< 400us/cm	< 400us/cm	< 400us/cm	< 400us/cm
Hardness**	< 450ppm as CaCO ₃	< 450ppm as CaCO ₃	< 450ppm as CaCO ₃	< 450ppm as CaCO ₃
Pressure	0.1~0.4MPa(14~58psi)	0.1~0.4MPa(14~58psi)	0.1~0.4MPa(14~58psi)	0.1~0.4MPa(14~58psi)
Temperature	5~40 C	5~40 C	5~40 C	5~40 C
Purification Water(Class III)				
Ionic Rejection	> 95%	> 95%	> 95%	> 95%
Bacteria Rejection	> 99%	> 99%	> 99%	> 99%
Conductivity	< 20us/cm (RO-2 < 5us/cm)	< 20us/cm (RO-2 < 5us/cm)	< 20us/cm (RO-2 < 5us/cm)	< 20us/cm (RO-2 < 5us/cm)
Productivity Rate	15L/h	15L/h	30L/h	30L/h
Ultrapurification Water(Class I)				
Resistivity At 25 C	18.2MΩ.cm	18.2MΩ.cm	18.2MΩ.cm	18.2MΩ.cm
Conductivity At 25 C	0.055us/cm	0.055us/cm	0.055us/cm	0.055us/cm
TOC Level***	1~5ppb	1~5ppb	1~5ppb	1~5ppb
Endotoxin(Pyrogens)****	N/A	< 0.001EU/ml	N/A	< 0.001EU/ml
Particulate(≥0.02um)	< 1pc/ml	< 1pc/ml	< 1pc/ml	< 1pc/ml
Bacteria***	< 1cfu/ml	< 1cfu/ml	< 1cfu/ml	< 1cfu/ml
Rnase / Dnase**	N/A	Free	Free	Free
Manual dispense flow rate	1.5~2.0L/min	1.5~2.0L/min	1.5~2.0L/min	1.5~2.0L/min
Automatic dispense volume	100~6000ml	100~6000ml	100~6000ml	100~6000ml
Electrical Requirements				
Electrical Voltage	110V/220V±10%	110V/220V±10%	110V/220V±10%	110V/220V±10%
Electrical Frequency	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ	50HZ/60HZ
Packing Information				
Net Weight				
Main units	24kg	24kg	24kg	24kg
Water tank (30L)	7kg	7kg	7kg	7kg
External Dimensions(W×D×H)				
Main units	315×525×570mm	315×525×570mm	315×525×570mm	315×525×570mm
Water tank (30L)	380×380×595mm	380×380×595mm	380×380×595mm	380×380×595mm
Shipping weight				
Main units	37kg	37kg	37kg	37kg
Water tank (30L)	15kg	15kg	15kg	15kg
Shipping Dimensions(W×D×H)				
Main units	525×610×770mm	525×610×770mm	525×610×770mm	525×610×770mm
Water tank (30L)	520×440×615mm	520×440×615mm	520×440×615mm	520×440×615mm

* If feed water quality is poor(Conductivity>1000us/cm), strengthened pretreatment module and RO-2 type is highly recommended

** When hardness of feed water is high(>450ppm as CaCO₃), 0.5T water soften is recommended

*** Dual wave UV module need to be adopted. Also dependent on feed water, recommended feed TOC<30ppb

****Ultra-filtration module need to be adopted. Feed water need to be satisfied as above

