



## Nu/Clean® Model 510 Recirculating Water Deionizer Inline Aqueous Cleaning System for Closed Loop, Zero Discharge Operations

### *Technical Specifications & Pricing*



The base machine in its standard configuration will produce up to 10 gallons per minute (GPM) of deionized water in support of aqueous cleaning operations. User must maintain regeneration of the media. Periodic test of the wastewater, i.e., Toxicity Characteristic Lead Procedure (TCLP), is the responsibility of the customer.

### **Base System Specifications**

#### **SUMP TANK:**

The Sump Tank is a 75-gallon polypropylene tank for water returning from the aqueous rinse line. Equipped with fill start and fill stop float switches for automatic make-up water due to evaporation and drag-out losses. Included is a bottom low-level cutout float switch for pump shutdown and in the event of no make-up water supply. A high-level cutout switch also is provided. Valves are provided to select "zero discharge" recovery or "direct to drain" disposal of cleaner tank water (post-cleaning operations).

#### **PRESSURIZING PUMP:**

Stainless Steel Turbine, 1 ½ HP, Three-Phase, 50/60 Hz. 15 Amps, TEFC, IEC magnetic starter; outlet pressure is variable.

#### **PREFILTRATION:**

One (1) 10" long, 5 micron spun polypropylene cartridge in a filter housing is provided.



**CARBON FILTRATION: (NECESSARY) Not Supplied by Technical Devices**

One 13" by 54" (for the 3.5 system) or a 10" by 45" (for the 1.5 system) pressure vessel rated at 150PSI and 150 degrees F maximum is suggested. The vessel should be filled with 12x40 mesh granular activated carbon media. Back flush valves and flow control are included in the system.

Note: Typical replacement of the carbon media is 2 to 4 times a year.

**CHELATE RESIN TANK: (OPTIONAL) Not Supplied by Technical Devices**

One 13" by 54" (for the 3.5 system) or a 10" by 45" (for the 1.5 system) pressure vessel rated at 150 PSI and 150 degrees F maximum is suggested. This vessel should be filled with chelating ion exchange resin for dissolved metal removal.

**COMPOSITE SAMPLING:**

The sampling valve is located down-stream of the carbon tank or chelate tank (if used), so the metal levels can be monitored. Testing of the samples is the responsibility of the customer. Samples may be checked in-house or by an outside laboratory.

**ANION AND CATION BEDS: (NECESSARY) Not Supplied by Technical Devices**

Two each 13" by 54" (for the 3.5 system) or a 10" by 45" (for the 1.5 system) pressure vessels rated at 150 PSI and 150 degrees F maximum are suggested. One vessel should be filled with anion and the other with cation exchange resin.

**TWO-BED (MIXED BED) DEIONIZERS: (OPTIONAL) Not Supplied by Technical Devices**

One 13" by 54" (for the 3.5 system) or a 10" by 45" (for the 1.5 system) pressure vessel rated at 150 PSI and 150 degrees F should be filled with a mixture of anion and cation exchange resin. Note: mixed beds cannot be regenerated.

**TEMPERATURE:**

The maximum allowable temperature recirculating through the two-bed deionizers is suggested to be less 125°F. (Note: Running at higher water temperature will reduce the life of the resin).

**POST-FILTRATION:**

A 10" long, 5 micron spun polypropylene cartridge in a glass-filled nylon high temperature filter housing will be provided. It is used as a resin trap down stream of the two-bed deionizers.

**PRESSURE RELIEF:**

Polypropylene pressure relief valve, a flow meter, and a PSI gauge are provided to maintain constant pressure to the final rinse spray nozzles in the aqueous cleaner, regardless of variable upstream pressure drops.

**RESISTIVITY MONITOR:**

The system is designed to provide a minimum of 200,000-ohm/cm resistivity deionized water to the aqueous cleaner. The unit includes a .5" LCD Readout with minimum and maximum level indicators.

**CONTROL PANEL:**

An electrical enclosure with indicator lights, switches, contacts for remote system start and recirculation, is provided.

**PLUMBING:**

3/4" Schedule 80 CPVC pipe and valves are used for all internal plumbing.

**PRESSURE GAUGES:**

Liquid filled, stainless steel cased pressure gauges with snubbers are used.



**INLINE WATER HEATER: (OPTIONAL)**

An on-demand inline water heater is available from Technical Devices Company to assist in heating the DI water exiting the Nu/Clean Recirculating Water Deionizer. Achievable temperature rise will vary depending on GPM flow of the water. The heater can be attached to the Recirculation Water Deionizer or to the Inline Cleaner.

**PHYSICAL DIMENSIONS:**

Length - 80 inches.

Width - 36 inches.

Height - 70 inches.

Weight - 800 lbs.

**RESIN BED REGENERATION AND EXCHANGE:**

The Technical Devices' **Nu/Clean Recirculating Water Deionizing System** is engineered to remove all organics, chemicals, and heavy metals via particle filters, carbon, and chelate tanks prior to reaching the ion exchange resins (cation and anion tanks). (Please see Owners' Manual for more information on the deionizing process.)

Regeneration of the ion exchange beds is accomplished by pumping acids through the resin beds until a desired pH level is achieved. Technical Devices recommends a local Industrial Water Supplier complete this process. Industrial water suppliers can be located in the Telephone Company Yellow Pages (A Business to Business Phone Book is recommended) under the heading "Water Treatment and Purification". Choose a supplier having the capability to regenerate exchange beds individually. Regenerating resin tanks individually will insure there is no cross contamination between resins. Suppliers utilizing a batch regenerating process cannot insure cross contamination will not occur. Carbon, chelate and mixed bed tanks cannot be regenerated.

Regenerating ion exchange beds is a time consuming process. Technical Devices recommends the purchase of a spare set of tanks. The availability of a spare set of tanks will cut machine down time to approximately 30 minutes. **Warning:** New carbon and chelate tanks must be back flushed prior to use to eliminate ion exchange bed fouling. (Please see Owners' Manual for more details.)

Technical Devices Company recommends pretreatment of the city water coming into the Nu/Clean Recirculating Water Deionizer. Doing so will greatly prolong the life of the exchange beds in the system.

**SPECIFICATIONS:**

ELECTRICAL: 480VAC 3PHZ (208/230V or 380 available as options; Customer must specify at time of order.)

WATER FLOW: .5 TO 10 G.P.M.

PARTICLE FILTER: 5 MICRON

INLET CONNECTIONS: 1" NPT

OUTLET CONNECTIONS: ¾" NPT

DRAIN: 1" NPT

PLUMBING: ¾" SCH. 80 CPVC



**Technical Devices Company**  
*Nu/Clean 510 Recirculating Water Deionizing System Pricing*

• SYSTEM BASE PRICE – Nu/Clean 510 <i>Recirculating Water Deionizing System</i>
• 75 Gallon Holding Tank
• 3 HP Pump
• 5 Micron Filters
• Resistivity Monitor with Alarm
• Installation and Training

OPTIONAL FEATURES

• Auto Sump Pump with Tank
• Drip Tray for Single Sump Pump
• Dual Sump Pump with Two Tanks
• Drip Tray for Dual Sump Pump
• Inline Water Heater
• U.V. System
• Drip Tray for DI Unit
• Crating



### **START-UP:**

After the equipment is set-up and the utility connections have been made, Technical Devices will provide start-up and checkout assistance. Customer personnel should be present for acceptance testing. At the same time, customer personnel will be instructed on the operation of the equipment and the operation and maintenance manuals will be reviewed. **Please note: An advance notice of 2 weeks is required by the Technical Devices' Service Department for installations. Any shorter notice will require the customer to pay for additional airfare costs.**

### **CUSTOMER REQUIREMENTS:**

- Site preparation (level foundation, adequate lighting, etc.)
- Movement and placement of the equipment to the final installation site.
- Inlet city water piping valved-off to within five (5) feet of the final installation site (minimum flow rate is 8 GPM; minimum pipe size is 3/4 inch copper)
- Floor drain in the immediate area or an overhead drain line snubbed off within five (5) feet of the final installation site; minimum pipe size is 1 inch. PVC Sump Pump is required for overhead drain.
- 3-phase electrical power and disconnect wired to the control panel by customer personnel.
- **Customer is responsible for supplying all necessary DI beds according to the specific needs.**