Installation Guide Trident Series

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The leading manufacturer of cleaning and cleanliness testing products.

Installation Requirements for Aqueous Technologies' Trident Series Aqueous Automatic Defluxing Systems

Freight

The cleaning system will arrive in a crate or on a pallet and will weigh approximately 900 lbs. A forklift will be required to unload the truck if your facility is not equipped with a loading dock. If a forklift is not available, please contact Aqueous Technologies prior to shipment to make alternate delivery arrangements. If the delivery truck arrives and you are unable to unload the machine from the truck, you may be charged an additional fee by the shipping company if the delivery has to be rescheduled.

Upon receipt of machine, immediately inspect crate and contents. Immediately report any damage or signs of damage to the freight carrier. If damage to the crate is noticed upon receipt, indicate such damage on the freight bill before signing for the shipment. Notify Aqueous Technologies' customer service department at (909) 944-7771. Any damage or shortages to the machine or other contents must be reported to the freight company and to Aqueous Technologies within three days of receipt.

Machine Sizes

Trident I, II, III
71" (180.3 cm) Height x 44" (111.7 cm) Width x 34" (86.4 cm) Deep

Trident CL
71" (180.3 cm) Height x 44" (111.7 cm) Width x 34" (86.4 cm) Deep
Plus two 8" (20.3 cm) diameter external DI tanks

Evaporator (optional)
63" (160 cm) Height x 32" (81.3 cm) Width x 32" (81.3 cm) Deep

Recommended Clearances

Both NEC and OSHA requirements dictate that 36 inches of working clearance must be maintained around of any equipment that may require examination, adjustment, servicing, or maintenance while energized. In order to avoid the disconnection and relocation of the unit should such service be required, we generally recommend conformance with these requirements. However because servicing to the rear of the unit is rare, reducing the clearance to approximately 24 inches is allowable. (The unit may have to be moved in case of major service).

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Electrical Connection

The Trident I, II, III Series are available in the following electrical service configurations:

Model	Volts (AC)	Amps	Phase	Hertz	Location
Trident I, II, III	208-240	40	3	60	Right side
Trident I, II, III	400	31	3	50	Right side
Trident CL	208-240	40	3	60	Right side
Trident CL	400	31	3	50	Right side
E101 Evaporator	208-240	86	3	60	Right side
E101 Evaporator	480	43	3	60	Right side
E101 Evaporator	400	50	3	50	Right side

Plumbing Connections (Trident I, II, III)
Primary Water Inlet

De-Ionized water is highly recommended. Water supply must remain on during cycle.

In most regions, ultra-pure water is required to meet commercial and military cleanliness specifications. Deionization (DI) is the only process that can produce large quantities of ultrapure water economically and efficiently on a continuous basis.

DI water service companies located throughout North America and in most industrialized regions throughout the world. The most economical method of acquiring DI water is to rent resin-based service tanks from a local DI water company. In short, tap water flows into the tanks and high quality DI water flows out of the tanks. After a specific volume of DI water has been produced, the tanks will require exchange, a process handled by your local DI water company.

DI Water Specifications

Quality	5 M-Ohm (Minimum)
Flow Rate	5 Gallons (19 liters) per minute (intermittent flow)
Maximum Daily Volume (100% equipment usage)	240 gallons (908 liters) per 8 hour shift

Water Inlet

Size	¾” NPT
Location	Rear lower panel

Drains

Trident I sends both wash and rinse water to drain (after filtration). In most regions, Trident Series defluxing systems may be connected directly to the drain. Aqueous Technologies recommends that you consult with your local municipality to verify specific drain requirements and permitting procedures (if required).

Trident II and III are equipped with a closed-loop wash solution recirculation and re-use system. Wash solution is captured and reused on subsequent defluxing cycles. Filtered rinse water is directed to the drain. In most regions, Trident Series defluxing systems may be connected directly to the drain. Aqueous Technologies recommends that you consult with your local municipality to verify specific drain requirements and permitting procedures (if required).

If a zero discharge configuration is desired, all Trident I, II, and III models may be connected to the Model E101 evaporation system. The E101 concentrates the Trident's effluent into low volume high-solids liquid waste, eliminating Trident's need for a drain connection.

Model	Wash solution tank drain size	Rinse water drain size	Location
Trident I	n/a	1x ¾" NPT (wash & rinse)	Rear lower panel
Trident II	¾" NPT (wash only)	¾" NPT (wash only)	Rear lower panel
Trident III	¾" NPT (wash only)	¾" NPT (wash only)	Rear lower panel

Plumbing Connections (Trident CL)
Primary Water Inlet

De-Ionized water is recommended but not required.

The Trident CL is equipped with a deionization system consisting of carbon and resin service tanks provided by Aqueous Technologies. One carbon and one resin tank are required for use. Aqueous Technologies also provides one extra carbon and one extra resin tank for use as a spare set.

Although the Trident CL is closed-loop, it will lose water through evaporation. For this reason, water must periodically be added to the Trident CL's sump tank. The addition of make-up water may be accomplished manually (with a hose or water container) or automatically if the machine is connected to a water source.

DI Water Specifications

Quality	Tap or DI
Flow Rate	3 - 5 Gallons (19 liters) per minute (intermittent flow)
Maximum Daily Volume (100% equipment usage)	< 1 gallon per 8 hour shift

Water Inlet

Size	¾" NPT
Location	Rear lower panel

Drains

Trident CL is not equipped with a drain line.

Chemical Chemicals

A chemical additive is required for all rosin and no-clean flux removal applications. Trident I, II, and III models are designed to operate with a chemical additive. Operation of Trident I, II, or III models without a chemical additive is not recommended. Trident CL is not designed to operate with a chemical additive.

There are a variety of chemical additives suitable for use in Trident I, II and III models. Aqueous Technologies is pleased to provide Vitrex Series defluxing chemicals. Vitrex defluxing chemicals are fully compatible with the Trident I, II, and III models and produce cleanliness results exceeding all commercial, military, and medical cleanliness standards. Vitrex defluxing chemicals are safe for both operators and the environment.

If other brand defluxing chemicals are desired, consult with Aqueous Technologies to ensure chemical compatibility and safety specifications. At no time may flammable chemical be used in any Trident model. In addition to Vitrex chemicals, Aqueous Technologies is pleased to recommend other defluxing chemicals.

Air Exhaust (all Trident Models)

All Trident Series defluxers are equipped with a 6” (15.24 cm) diameter exhaust duct located on the top of the machine. During the drying cycle, air will be directed out of the machine through the exhaust duct. The machine’s internal blower will provide the pressure necessary to push air up the exhaust stack.

An exhaust connection is not required for machine operation. Only warm, moist air exits the machine. If desired, the Trident Series defluxer’s exhaust may be directed out of the area. Do not connect the exhaust duct to an exhaust fan or blower. This action will create negative pressure in the wash/dry chamber, causing the water temperature to drop. If connection to an exhaust vent is desired, ensure a 6” (15.24 cm) air separation between Trident’s exhaust duct and your exhaust duct. Maximum duct pressure is 0.8 inches of water.

Exhaust Duct