Transpososal Ultra Cart
Instructions for Use

Model No.: UL-QD2800
w/IV Pole (optional)

Model No.: UL-DU500
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Introduction

The Transposal Ultra Fluid Cart (cart) is designed to collect surgical fluids from one patient at a time in a reusable suction device that can then be emptied, cleaned, and rinsed. The cart is also designed to enhance or replace main wall vacuum supplies in operating room suites. Two fluid collection capacity options are available. The Ultra Quad (4 reservoirs) collects up to 52-liters of fluid while the Ultra Duo (2 reservoirs) collects up to 33-liters. Once fluids are collected, the cart is connected to an Ultra Evacuation Unit (evac) to process the reservoirs.

Two manuals are provided with this equipment and are shipped with the equipment during the initial installation. Copies of these manuals are available to any Dornoch Medical Systems (DMS) customer upon request.

The two different manuals are as follows:

Instructions for Use Manual – This manual is designed to instruct users in the correct operation of the cart as well as safety considerations associated with the unit.

Technical Service Manual – This manual includes operation instructions, installation & disconnection instructions, technical specifications, and preventative maintenance requirements for the unit.

This is the Instructions for Use Manual, and it is broken into four sections including:

- **Introduction**
- **Technical Description**
- **Instructions for Use**
- **Company Information**

If required, DMS service personnel can be contacted at 1-888-466-6633. Technicians are available 8 am – 5 pm weekdays. An answering service is available 24-hours a day, 7 days a week and a technician will return the call the next business day.
Important Information

Please read this manual and follow all instructions. The words WARNING, CAUTION and NOTE have special meanings and should be reviewed.

**WARNING:** Disregarding WARNING information may compromise the safety of the patient and/or health care staff and may result in injury or death.

**CAUTION:** Disregarding CAUTION instructions may compromise product reliability and may result in damage.

**NOTE:** NOTE information supplements and/or clarifies procedural information.

A triangle with an exclamation point alerts the health care professional to read and understand the accompanying instructions, especially the operating, maintenance and safety information.

Intended Use

The Dornoch Transposal Ultra System is self-powered suction / vacuum pump intended to collect and dispose of liquid waste within Hospital Operating Rooms, Pathology Labs, Surgical Outpatient Centers, and Doctor's Offices.

Equipment Description

Carts collect up to 52-liters of surgical fluids without the need to tandem multiple suction canisters. In addition, the cart’s on-board suction assist pump improves or replaces facility wall vacuum when inadequate suction is otherwise present. The cart significantly reduces employee exposure to potentially infectious body fluids, while eliminating up to 70% of Operating Room red bag waste.

The cart contains either two 16.5 Liter reservoirs or four 13 Liter reservoirs which are processed using an evac. The multiple reservoir design allows separate suction level measurement. However, the carts contain a single vacuum pump. A suction level decrease in any reservoir, due to an open port or line, may cause the other reservoir to decrease. Once the system is installed, operators use the carts to collect fluid during surgical cases and then move them to the evac where they are processed. Once the evac cycle is started, the reservoirs are automatically emptied, cleaned, and rinsed. The carts are then wiped down and, with the addition of a new single use lid or manifold, are ready for another surgical procedure.

New carts come in two model options with the main difference being the single use disposable. The two models are the Ultra Fluid Cart (UL-DU2800 – Duo with Canister Lid and UL-QD2800 – Quad with Canister Lid) and the UltraX Fluid Cart (UL-DU500 – Duo with Cart Manifold and UL-QD500 – Quad with Cart Manifold). The 2800 configuration is designed for single patient use in each reservoir, as well as high fluid generating procedures. The standard configuration Ultra Fluid Carts use the Transposal Single Use Lid #TP-DL2800 to provide the suction to the surgical field. The other configuration option is the UltraX Fluid Cart Single Use Manifold #UL-CL500 supports these needs with a convenient, easy-to-use remove and seal design.
User/Patient Safety

**WARNINGS:**

- **DO NOT** apply High Flow suction or allow extended exposure of suction to the tissue associated with procedures that require either no suction, low vacuum or low flow suction, for example, passive chest drainage. 
  *ALWAYS* consider the type of tissue associated with the surgical procedure **BEFORE** using this system. Failure to comply may result in severe injury or death.

- Before using this system, read and understand the information in this manual. Suction equipment should only be used by people that have had adequate training on the use of this type of equipment. Pay special attention to WARNING information. Become familiar with the system components prior to use.

- The health care professional performing any procedure is responsible for determining the appropriateness of this equipment and the specific technique used for each patient. Dornoch Medical Systems, Inc., as a manufacturer, does not recommend surgical procedure or technique.

- **DO NOT** use this system outside the scope of the defined indications for use.

- **DO NOT** use this system for applications that require a constant vacuum level.

- The reservoir scale and fluid volume display are not diagnostic tools. **DO NOT** use the scale or volume display to accurately calculate the amount of fluid loss from the patient.

- Upon initial receipt and before each use, operate the equipment and inspect each component for damage. **DO NOT** use any component if damage is apparent.

- **ALWAYS** close all unused ports and remove all unused tubing to maintain optimal suction levels. The suction levels of each canister are interdependent and linked to a common vacuum source. Failure to comply may result in the unexpected reduction of suction and patient injury.

- The suction level of this product relative to its vacuum limit setting may fluctuate significantly but will not exceed its limit. **DO NOT** use this system if vacuum fluctuation may cause patient injury. **ALWAYS** consider the type of surgical procedure before using this system.

- **ALWAYS** follow current local regulations governing procedure-specific suction levels to remove fluid waste safely from a surgical site.

- Reservoirs are for surgical and bodily fluid collection only; do not place any items into the reservoir for disposal. Caustic or other harmful chemicals may harm the equipment and will void the warranty.

- Handling biohazard waste is potentially dangerous. **ALWAYS** follow current local regulations governing biohazard waste to safely handle and dispose of surgical fluid waste.

- Manifolds and suction tubing may contain surgical waste after use. **ALWAYS** handle these disposable accessories as “potentially infectious materials” after use. **ALWAYS** wear gloves and protective eye wear when removing and disposing of these disposable accessories.

- The Blood-borne Pathogens Standards, provided by the Occupational Safety and Health Association (OSHA), requires that all workers, having exposure to “potentially infectious materials”, should wear the correct personal protection equipment.

- **To avoid the risk of electrical shock,** this equipment must be connected to electrical outlet with a protective earth ground.

- **ALWAYS** follow reservoir overfill alarms to prevent overfill.

- Verify all access doors are securely in place before operating this unit.

- Use only Dornoch Medical Systems, Inc. approved accessories. Do not connect items to this system that are not designed for or specified for use with this system.

- **ALWAYS** have more than one person unpack and lift the equipment off the shipping pallet.

- Perform recommended maintenance as indicated in these instructions. Only trained and experienced health care professionals should maintain this equipment.

- **No user serviceable parts** inside the unit. Contact Dornoch Medical Systems, Inc. customer service if an issue arises. **Only** authorized service personnel should open any of the access covers on this equipment. User operation does not require access to these areas.

- The unit is for use within the hospital and/or surgery center. The unit is moveable but is not intended to be transportable or used in the outside environment. To be used within the healthcare facility **ONLY**.

- **DO NOT** use the system with patients that are being treated with radioisotopes or hazardous chemotherapy agents.

- **ALWAYS** use the handle to move the cart. **DO NOT** push or pull the cart by grasping any other part of the outer surface. **NEVER** hang any heavy object from the cart handles.

- **No incline planes** of operation.

- **DO NOT** pump into the reservoirs. The lids could become dislodged, the reservoirs could overfill and surgical fluid could spill from the unit.

- **DO NOT** use the system if leakage of surgical fluid waste occurs. Disconnect power immediately and call Dornoch Medical Systems, Inc. customer service.

- **DO NOT** allow fluid of any kind to spill directly onto the exterior surface of the electrically-powered cart.

- **DO NOT** use the cart until it has been tested properly and the Evac Unit has been installed and tested properly.

- This unit uses both bleach and enzyme in its operation. When replacing bottles, always wear the appropriate Personal Protective Equipment. Use only Dornoch Medical Systems, Inc. approved Bleach and Enzyme to avoid damage to the system components.

- This equipment is not suitable for use in the presence of flammable anesthetic mixtures with air, oxygen or nitrous oxide. Is not intended for use with AP or APG equipment.

- **Hot Water Temperatures** higher than 120°F can cause damage to the unit.

- There are no known significant risks of reciprocal interference posed by the presence of this equipment or its operation in either the operating room suites or other areas when used during specific investigations and/or treatments.

- There are no known potential electromagnetic or other interferences between this unit and other devices located and/or operated within the area of the operating room suites.
## Technical Description

### Specifications

#### Table 1 – Equipment Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Ultra Quad (#UL-QD2800/#UL-QD500)</th>
<th>Ultra Duo (#UL-DU2800/#UL-DU500)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Certifications</strong></td>
<td>ETL Listing - Class 1 Medical Device. Complies with the following:</td>
<td>ETL Listing - Class 1 Medical Device. Complies with the following:</td>
</tr>
<tr>
<td></td>
<td>- IEC 60601-1-1. Collateral Standards for Medical Equipment</td>
<td>- IEC 60601-1-1. Collateral Standards for Medical Equipment</td>
</tr>
<tr>
<td></td>
<td>- IEC 60529 – Degrees of protection provided by enclosures.</td>
<td>- IEC 60529 – Degrees of protection provided by enclosures.</td>
</tr>
<tr>
<td></td>
<td>- FDA 510K Certification: K081047</td>
<td>- FDA 510K Certification: K081047</td>
</tr>
<tr>
<td></td>
<td>- CAN/CSA Standard C22.2 No. 601.1</td>
<td>- CAN/CSA Standard C22.2 No. 601.1</td>
</tr>
<tr>
<td><strong>FDA Product Code</strong></td>
<td>JCX (carts) CGY (lids)</td>
<td>JCX (carts) CGY (lids)</td>
</tr>
<tr>
<td><strong>FDA Manufacturer #</strong></td>
<td>1954182</td>
<td>1954182</td>
</tr>
<tr>
<td><strong>Patents</strong></td>
<td>Patent Pending</td>
<td>Patent Pending</td>
</tr>
<tr>
<td><strong>Installation</strong></td>
<td>Mobile</td>
<td>Mobile</td>
</tr>
<tr>
<td><strong>Size (inch (cm))</strong></td>
<td>33(84)W x 23(58)D x 55(140)H</td>
<td>24(61)W x 24(61)D x 55(140)H</td>
</tr>
<tr>
<td><strong>Weight (lbs (kg))</strong></td>
<td>225(102) empty; 340(154) full</td>
<td>195(88) empty; 268(122) full</td>
</tr>
</tbody>
</table>

#### Utilities

<table>
<thead>
<tr>
<th>Power</th>
<th>115-120VAC, 60Hz, 15amp (non-dedicated)</th>
<th>115-120VAC, 60Hz, 15amp (non-dedicated)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flammable Rating</strong></td>
<td>Not suitable for use in the presence of flammable anesthetic mixture with air or with oxygen or with nitrous oxide.</td>
<td>Not suitable for use in the presence of flammable anesthetic mixture with air or with oxygen or with nitrous oxide.</td>
</tr>
<tr>
<td><strong>Addional Cooling</strong></td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Operation

<table>
<thead>
<tr>
<th>Method</th>
<th>Connected to the facilities main vacuum system or as a standalone device.</th>
<th>Connected to the facilities main vacuum system or as a standalone device.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mode</strong></td>
<td>Continuous</td>
<td>Continuous</td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td>High Vacuum/High Flow, maximum vacuum level obtainable is 0-600mmHg. (Measured with all ports closed) If connected to hospitable suction, obtainable vacuum can be higher than 700mmHg.</td>
<td>High Vacuum/High Flow, maximum vacuum level obtainable is 0-600mmHg. (Measured with all ports closed) If connected to hospitable suction, obtainable vacuum can be higher than 700mmHg.</td>
</tr>
<tr>
<td><strong>Fluid Capacity</strong></td>
<td>52,000mL</td>
<td>33,000mL</td>
</tr>
<tr>
<td><strong>Manual IV Pole (Optional)</strong></td>
<td>6,000mL maximum fluid capacity</td>
<td>6,000mL maximum fluid capacity</td>
</tr>
<tr>
<td><strong>Powered IV Pole (Optional)</strong></td>
<td>12,000mL maximum fluid capacity</td>
<td>12,000mL maximum fluid capacity</td>
</tr>
<tr>
<td><strong>Cleaning</strong></td>
<td>Dornoch enzyme solution and Clorox bleach are used to clean the collection cylinders of the Ultra Fluid Cart.</td>
<td>Dornoch enzyme solution and Clorox bleach are used to clean the collection cylinders of the Ultra Fluid Cart.</td>
</tr>
</tbody>
</table>
Figure 1 - Ultra Duo Cart Dimensions and Features (Dim. = inch (cm))

Figure 2 - Ultra Quad Cart Dimensions and Features (Dim. = inch (cm))
Instructions for Use

Models Using Single Use TP-DL2800 Lids

Fluid Collection

Step 1 – Verify fluid reservoirs are empty and clean. Ensure the unit is equipped with new single use lids. (Figure 5)

NOTE: The volume of the pre-fill fluid in the reservoir is accounted for in the displayed volume on the cart’s touch screen.

Step 2 – To prevent inadvertent movement of the cart, lock the caster. Plug power cord into a wall outlet and verify that it is also plugged into the cart. Turn the power switch to the ON position. (Figure 4)

Step 3 – Attach cart vacuum line adapter to the “Vacuum Supply” port on the single use lid. (Figure 5)

Step 4 (Duo Cart) – Turn reservoir vacuum ON or OFF by pressing the desired reservoir icon on the cart’s touch screen. (Figure 5)

Step 4 (Quad Cart) – Turn reservoir vacuum ON or OFF by pressing the desired reservoir icon under the “Light” buttons on the cart’s touch screen. (Figure 7)

Vacuum Startup Warning – Any reservoirs powered on for the first time since Evac processing will start with a suction level of zero. Suction can be increased by using the up arrow next to the appropriate reservoir icon (Figure 6 and Figure 7). Any time following the initial powering up of a reservoir, the vacuum startup warning screen will appear. (Figure 3)
Vacuum Safety Warning Continued – When the vacuum startup warning screen appears, carefully consider which is best for patient safety and select either “Start At 0 mmHg” or “Previous Setting”. “Previous Setting” will start suction at the last suction setting used.

⚠️ Warning: DO NOT apply High Flow suction or allow extended exposure of suction to the tissue associated with procedures that require either no suction, low vacuum or low flow suction. Failure to comply may result in severe injury or death.

Step 6 – Verify suction is present at a manifold port.

Step 7 – Load any required irrigation fluid onto the optional IV pole. Do not load more than 6000mL of fluid on the manual IV pole or more than 12,000mL of fluid on the powered IV pole.

Step 8 – Attach patient tubing to lid port(s).

Step 9 – Regulate suction by pressing the up or down arrow on the vacuum scale next to the appropriate reservoir image. (Figure 6 and Figure 7)

High Flow Mode (Optional Feature)
If increased suction is required during the procedure, adjust the regulated vacuum to full and then press the up arrow one additional time to activate high flow mode. (Figure 15) To deactivate high flow mode press the down arrow to return to regulated suction.

Models Using Single Use UL-CL500 Manifolds

Fluid Collection
Step 1 – Verify fluid reservoirs are empty and clean. Ensure the unit is equipped with new single use manifold. (Figure 8)

NOTE: The volume of the pre-fill fluid in the reservoir is accounted for in the displayed volume on the cart’s touch screen.

Step 2 – To prevent inadvertent movement of the cart, lock the caster. Plug power cord into a wall outlet and verify that it is also plugged into the cart. Turn the power switch to the ON position.

Step 3 – Attach cart vacuum line adapter to the “Vacuum Supply” port on the single use manifold. (Figure 9)

Step 4 (Duo Cart) – Turn reservoir vacuum ON or OFF by pressing the desired reservoir icon on the cart’s touch screen. (Figure 11)

Step 4 (Quad Cart) – Turn reservoir vacuum ON or OFF by pressing the desired reservoir icon under the “Light” buttons on the cart’s touch screen. (Figure 12)
Vacuum Startup Warning – Any reservoirs powered on for the first time since Evac processing will start with a suction level of zero. Suction can be increased by using the up arrow next to the appropriate reservoir icon (Figure 11 and Figure 12). Any time following the initial powering up of a reservoir, the vacuum startup warning screen will appear. (Figure 10)

When the vacuum startup warning screen appears, carefully consider which is best for patient safety and select either “Start At 0 mmHg” or “Previous Setting”. “Previous Setting” will start suction at the last suction setting used.

Warning: DO NOT apply High Flow suction or allow extended exposure of suction to the tissue associated with procedures that require either no suction, low vacuum or low flow suction. Failure to comply may result in severe injury or death.

Step 6 – Verify suction is present at a manifold port.

Step 7 – Load any required irrigation fluid onto the optional IV pole. Do not load more than 6000mL of fluid on the manual IV pole or more than 12,000mL of fluid on the powered IV pole.

Step 8 – Attach patient tubing to manifold port(s).

Step 9 – Regulate suction by pressing the up or down arrow on the vacuum scale next to the appropriate reservoir image. (Figure 11 and Figure 12)

High Flow Mode (Optional Feature)
If increased suction is required during the procedure, adjust the regulated vacuum to full and then press the up arrow one additional time to activate high flow mode. (Figure 15) To deactivate high flow mode press the down arrow to return to regulated suction.
Preparing for the Next Procedure

To use the same reservoir for the next patient, use the following steps. Otherwise, use an empty reservoir or transport the cart to the evac for processing.

**Warning:** Follow the current local regulations governing biohazard waste to safely handle and dispose of surgical fluid waste.

**Step 1** – Cap all of the patient ports but leave the “Vacuum Only” port uncapped. Remove the manifold from the housing and tip it forward so the ports face slightly down. Take the cap off of the back of the housing and place it on the bottom of the manifold. (Figure 13)

**Step 2** – Cap the “Vacuum Only” port and dispose of the manifold per facility red bag waste policy.

**Step 3** – Reset the reservoir fluid volume to zero by pressing the digital value below the reservoir icon and following the instructions. (Number of resets limited to four total resets between cart cleanings.) Cylinder vacuum level will start at zero following cylinder reservoir fluid reset.

**Step 4** – Insert a new manifold and proceed to Step 3 in the “Fluid Collection” section on the previous section.

Wall Suction Operation

Dornoch suction carts may be run with the use of hospital wall suction. This feature may be used in the event of a failure of the vacuum pump inside the cart. It also may be used if very quiet equipment operation is desired.

**Step 1** – Connect suction hose from the wall suction port to the suction inlet port on the left side of the Duo or back side of the Quad suction cart.

**Step 2** – Press the set up button in the bottom left hand corner of the main OR screen. (Figure 11 and Figure 12)

**Step 3** – Press the “Wall Suction Only” button. (Figure 14) (Button will turn green). All cart functions will remain active, with the exception of the vacuum pump.

**Step 4** – If vacuum pump operation is desired, press “Wall Suction Only” button to turn this feature off (button will turn gray).
All Models

Transporting the Cart

After the surgical procedure is complete, the cart needs to be transported to the evac to be emptied, cleaned, and rinsed.

⚠️ **Warning:** Always remove the irrigation accessories and lower the IV pole prior to relocating the cart. Always use the handle to retain control of the cart during relocation.

**Step 1** – Turn off the suction in the cart by pressing the cylinder icon on all activated reservoirs on the carts touch screen.

**Step 2** – Remove patient tubing and cart vacuum lines from the green single use lid(s)/manifold(s) and seal all ports with the attached caps.

**Step 3** – Detach wall vacuum line and power cord from the wall and wind onto the cart’s storage bracket. Unlock the caster to allow the cart to be transported and move it to the evac for processing.

**Step 4** – Once the cart is processed and used single use lids/manifolds are discarded, wipe down the cart with an approved bleach wipe or solution (Table 2) and place clean single use lids/manifolds onto the cart. Dornoch also recommends performing a full soak cycle once per week to assure that the cylinders remain clean.

### Table 2 - Approved Wipes and Solutions

<table>
<thead>
<tr>
<th>Name</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sani-Cloth Bleach Germicidal Wipes (P54072)</td>
<td>PDI</td>
</tr>
<tr>
<td>Clorox Healthcare Bleach Germicidal Wipes (UPC 30577)</td>
<td>Clorox</td>
</tr>
<tr>
<td>Clorox Household Bleach (&lt; 1200 ppm)</td>
<td>Clorox</td>
</tr>
<tr>
<td>3oz (80mL) Clorox in 1 Gal (4L) of Water</td>
<td></td>
</tr>
</tbody>
</table>

**CAUTION:** Avoid pooling of excess disinfection liquid around seams or edges. Dry area with a paper towel if necessary to avoid prolonged exposure to disinfectants. Non-approved wipes may cause surface damage to the equipment.

**NOTE:** Liquid will remain in the reservoir after processing is complete. This liquid contains a small amount of enzyme for starting the breakdown of fluid waste collected during the next case.

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### High Flow Mode (Optional Feature)

High Flow Mode is an optional feature available on some carts. It allows a boost in suction to a customer selected reservoir when more suction is needed. Suction boost is still limited to number of lines hooked to the reservoir and if another reservoir is in use. If increased suction is required during the procedure, adjust the regulated vacuum to full and then press the up arrow one additional time to activate high flow mode. (Figure 15) To deactivate high flow mode press the down arrow to return to regulated suction.

![Figure 15 - High Flow Mode Indicator]
General Usage Information

Single Use Lids/Manifolds and Disposable Suction Tubing

**Single Use Lid: (TP-DL2800)**

The single use lid has three suction ports. Any one of these ports (and up to three) can be used to collect fluids. The suction ports are labeled:

1. “Patient” this port is used for routine collection of fluids.
2. “Tandem” this port is used for routine collection of fluids.
   
   **CAUTION:** The use of this port to tandem reservoirs together is not allowed on carts as this can cause damage to the equipment.
3. “Ortho” this port is used for routine collection of fluids or used when larger suctioned particulate may occlude the Patient or Tandem ports.

**Single Use Cart Manifold: (UL-CL500)**

The single use manifold has three suction ports. Any one of these ports (and up to three) can be used to collect fluids. The suction ports are not labeled and are all the size of a standard “Ortho” port.

**Single Use Lids and Manifolds:**

![WARNING] Both the TP-DL2800 lid and the UL-CL500 manifold are designed to be used for a single patient. Failure to change the item after each patient may result in the following:

1. Loss of available suction. Contaminated and/or wet filters will affect vacuum flow.
2. Cross contamination. Improper usage of single use items poses a health risk to patients and health care providers.

**Disposable Suction Tubing: (Provided by the Hospital)**

Any surgical suction tubing of variable diameters (sterile or unsterile) can be used to attach to single use lids/manifolds. Most suction tubing has flexible boots on the ends to accommodate different diameter suction ports or surgical devices. For high flow applications Dornoch strongly recommends 9/32” ID tubing as it flows noticeably better than smaller 3/16” and 1/4” sizes.

**CAUTION:** Do not connect items that are not designed for suction systems as a safety hazard may result.
Reservoir Use

**General Information for Reservoir Usage**

Cart reservoirs, consisting of a reusable fluid collector and single use lid, shall be used in place of traditional disposable suction canisters/liners in surgery. Cart reservoirs are considered non-critical and non-sterile medical devices and should be handled accordingly. The fluid collection ranges for each reservoir is 0 to 13,000mL for an Ultra Quad and 0 to 16,500mL for an Ultra Duo. The accuracy of the digital readouts on the Ultra Duo and Ultra Quad is +/- 150mL. The graduations on the exterior of the reservoirs are approximations only. Record fluid volume as needed from the digital readouts on the touch screen display.

*Note:* Clots or solid masses in the collection cylinders can affect fluid readout accuracy.

**CAUTION:** Reservoirs are not meant to be used in tandem as this could damage the equipment. Fluid must not be pumped directly into the reservoirs as this could cause the single use lid to become dislodged or damage the equipment.

**CAUTION:** DO NOT use solidifier in the cart reservoirs. It will make the cart inoperable until it can be serviced to clean out the reservoir and may cause damage to the equipment.

**Early Warning and Overflow Protection System**

The cart will alert the user when the reservoir is a 1000mL from full capacity, and will do the following to avoid an overfill situation when the level reaches the reservoirs maximum capacity.

- Reservoir will no longer be active and the vacuum will automatically shut off.
- Reservoir will automatically vent to prevent backflow.
- The hydrophobic filter in the bottom on the single use lid or single use cart manifold is a secondary means (mechanical) of safety to prevent liquid from getting into the vacuum line.

**Alternate Vacuum Source**

**Equipment Malfunction or Power Loss Situation**

An alternate source of vacuum should be readily available in the event the cart can no longer provide suction to the reservoir. The cart can still be used with an external vacuum source hooked directly to the “Vacuum Port” of the single use lid. Vacuum regulation and volume readout will not be available with the cart setup in this configuration.

**Rapid Full Vacuum and Specimen Collection**

**Application that Requires Full Suction in Ten Seconds or Less:**

On the back of the unit there is a place for a canister ring holder. Place a canister ring (TP-RH100) into the holder and then either an 1800cc (TP-RC1800 (reusable)/TP-DCL1800 (disposable w/lid)) or 2800cc (TP-RC2800 (reusable)/TP-DCL2800 (disposable w/lid)) canister into the ring. Hook the black vacuum adapter from one of the reservoirs to the vacuum port on the canister lid and turn on the vacuum for that reservoir.
TP-DL2800 Application Information and Precautions

- To place a TP-DL2800 lid onto a reservoir, press it onto the lid ring with two hands working around the outside edge toward the back of the cart. Another option is to cap all of the ports and use suction to pull the lid onto the lid ring.

- When positioning the TP-DL2800 single use lid onto the cart, check that port caps are not caught under the lid. (Figure 16) Cap all ports prior to transporting the cart.

- **CAUTION:** Do NOT insert objects into the reservoir. (Figure 17) Reservoir contents are to be collected with suction only. Depositing gloves, trash, or other miscellaneous items will CLOG the reservoir making it unable to drain and rendering it inoperable.

Unit Information and Error Messages

The cart provides the operator feedback for common operating errors via the display panel. The most common messages are described below. Please call DMS at 1-888-466-6633 for help with any error message.

<table>
<thead>
<tr>
<th>Warning or Error</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tandem Error:</strong></td>
<td>Verify fluid lines are only hooked to reservoirs that are turned on. Do not tandem reservoirs or pump directly into reservoirs. Call service if necessary.</td>
</tr>
<tr>
<td><strong>Temperature Errors:</strong></td>
<td>Finish the current surgical procedure and then remove the cart from use. Contact service once the cart is available for repair.</td>
</tr>
<tr>
<td><strong>Processing Required:</strong></td>
<td>Finish the current surgical procedure and then process the cart with the evac.</td>
</tr>
</tbody>
</table>

Periodic Maintenance

<table>
<thead>
<tr>
<th>Interval</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to each use and after each cleaning</td>
<td>Inspect the collection reservoirs for cracks and the two casters for failed lock and steer levers. Ensure there are no cuts in the power cord and no bent pins in the power cord receptacle. DO NOT use if the equipment if damage is present.</td>
</tr>
<tr>
<td>As required</td>
<td>Check the level of the enzyme and bleach in the bottles. Replace the bottles as required.</td>
</tr>
</tbody>
</table>
Troubleshooting Guide

**Problem: Unit Will Not Operate**
**Possible Solutions:**
1. Check that the machine is plugged into an operational outlet.
2. Check that the switch on the rear of the unit is turned on and that the power cord is all the way into the receptacle.
3. Call maintenance to replace the internal fuses.

**Problem: Display is Powered, Cannot Get Vacuum Pump to Turn On**
**Possible Solutions:**
1. Go to the setup screen and verify wall suction only button is not green.
2. Try to run the unit with wall vacuum.
3. Call DMS at 1-888-466-6633.

**Problem: Volume Not Displayed on Screen**
**Possible Solutions:**
1. Level Sensor not calibrated or defective.
2. Call DMS at 1-888-466-6633.

**Problem: No Suction or Inadequate Suction**
**Possible Solution:**
1. Verify that new single use lids have been installed. The single use lids/manifolds are each equipped with a hydrophobic filter that will close when it becomes wet. If the unit was processed and the lids have not been replaced this will block suction at the patient ports.
2. If using the cart not attached to wall suction, verify that the suction pump has been turned “ON”.
3. Call DMS at 1-888-466-6633.

**DMS Technical Service - Information**

DMS Technical Service line is answered 24 hours a day, 7 days a week. Technicians are available in the office Monday – Friday from 8AM until 5PM central standard time. For all other calls please leave information with the answering service at 1-888-466-6633 and a service technician will get back to you on the next business day. Please have the information below available for the technician. If possible, call with the equipment available for troubleshooting.

- Equipment Type (Ultra Duo, Ultra Quad, Evac or Safety Station)
- Equipment Serial Number
- Description of the problem
- Location of the equipment
- Contact information for a service technician coming to the account
Symbols & Labels

The explanation and location of all Labels, Safety Signs, Symbols and Displays used on the equipment is presented below.

**Protective Earth Ground Symbol** – This label is used to symbolize a protective earth ground location on the unit. There is one located on the ground from the main power cord and another located on the ground for the 24VDC power supply.

**Functional Earth Ground Symbol** – This label is used to symbolize a functional earth ground. They are located near all functional grounds.

**Single Use Symbol** – This label is used to symbolize that the product is single use only. This label is located on either of the single use lids.

**Consult Instructions Symbol** – When displayed on a device, it refers the user to accompanying instructions and identifies safety and precautionary information.

**Electrical Requirements, Serial Number, and Operating Instructions Label (See Below)** - Located on the back of the unit under the electrical cabinet access panel. This label is used to instruct the user to the manuals. Information contained on this label: DMS contact information, serial number, ETL compliance information, electrical information, patent information and power outlet requirements.

**Suction Rating Label** – This label is used to inform the user of the maximum level of vacuum that can be developed by the system. This label is located on the collar of the monitor pole.

**Receiver Warning Label** – This label is used to warn the user of the electrical pins and connectors inside the receiver of the cart. This label is located under the receiver doors. Do not connect any item here except evac coupler.

**Hospital Suction Information Label** – This label is used to inform the users of the hospital suction supply requirements. This label is located under the wall vacuum connector.
Bleach Wipe Label – This label is used to inform the users to use only approved bleach wipes when wiping down the carts. This label is located on the center of the top plate of the unit.

Air Filter Label – This label is used to inform the users of the air filter replacement requirement. This label is located on the air filter housing.

HEPA Filter Label – This label is used to inform the users of the HEPA filter replacement requirement. This label is located on the air filter housing.

BRAKE Label – This label is used to inform the users of the Brake Caster and is located on the lower cabinet side panel above the brake caster.

STEER Label – This label is used to inform the users of the Steer Caster and is located on the lower cabinet side panel above the steer caster.
Consumables and Accessories

**Warning:** Use only Dornoch-approved components and enzyme. DO NOT modify any component or accessory.

The following is a list of consumables and accessories associated with the cart.

- TP-DL2800 – Single Use Canister Lid
- UL-CL500 – Single Use Cart Manifold
- UL-IV100 – Manual IV Pole Assembly – Mounts to the back panel of the unit and can hold up to 6000mL of fluid.
- UL-PP100 – Powered IV Pole Assembly – Mounts to the back of the unit and can hold up to 12000mL of fluid.
- UL-SF100 – Ultra Smoke Filter – Placed between the vacuum port on the lid and the vacuum hose to protect the cart vacuum supply.
- UL-ST100 – Ultra Specimen Trap – Specimen collection device designed for the cart. Placed on the port on the lid and then suction tubing connected to the top of the trap.
- UL-CB100 – Ultra Clot Buster – Specially formulated chemical to either prevent clotting during a rich blood procedure or to break up any clots found during processing of the cart.
Company Information

DMS has been helping healthcare facilities responsibly manage infectious fluid waste since 1997. Starting out as the premier manufacturer for fluid waste management systems in the country, we now have installations in leading healthcare facilities nation-wide.

DMS was founded in 1995. Products are manufactured and shipped from a centralized facility and supported by a nation-wide sales force. The company’s principals include individuals with extensive backgrounds in product development, management, production, and sales of medical/surgical products. Jim Dunn, a successful inventor who served as an operating room nurse for 20 years, helped design DMS products.

Contact Information

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