



WC100E POTABLE WATER CART

Operation Manual





Mailing and physical address:

11175 W. Emerald
Boise, ID 83713 USA

Phone: 208-378-9888

Fax: 208-378-9889

Email: staff@aerospecialties.com

Website: www.aerospecialties.com

Please take a moment and fill in the following information for convenience in parts ordering or service for the AERO Specialties equipment pertaining to this manual. The model and serial number are located on a placard on your equipment.

Model: _____

Serial Number: _____

Date Received: _____

Model: _____

Serial Number: _____

Date Received: _____

Table of Contents

WC100E POTABLE WATER CART

INTRODUCTION	4
WARRANTY INFORMATION.....	5
AGREEMENT OF CONFIDENTIALITY.....	5
SAFETY.....	6
GENERAL INFORMATION & OPERATING INSTRUCTIONS.....	7
SECTION 1 - Description	7
SECTION 2 - Specifications	8
SECTION 3 - Operation.....	9
MAINTENANCE	11
SECTION 1 - Servicing.....	11
SECTION 2 - Repairs.....	11
DIAGRAMS & ILLUSTRATED PARTS.....	12
Mechanical Dimensions	12
Major Components	13
Electrical Diagram	14
PARTS LISTS.....	15
WC100E Potable Water Cart Standard & Replacement Parts List.....	15
WC100E Potable Water Cart Options Parts List	16
Water Tank Cleaning Instructions	17
COMPONENT SPECIFICATION SHEETS.....	18
CE-MARK INFORMATION.....	22

WC100E Potable Water Cart

Introduction

Thank you for purchasing AERO Specialties' WC100E Potable Water Cart. When used properly, this cart will provide years of drinking water servicing pleasure for everyone who uses it, especially those prone to dehydration.

AERO Specialties constructs all of its aircraft service carts from high-quality materials, and assembles them with durable and efficient components. As with any piece of ground support equipment, parts will need to be replaced occasionally because of normal wear-and-tear. Although AERO Specialties warrants its new service carts for one year (see Warranty section below for more information), we are dedicated to helping you keep your equipment in operation for many years. AERO stocks all replaceable parts for its service carts, and manufactures its own lav and water fill couplers and fittings. All parts are available for order through AERO's secure online store (www.aero-specialties.com) - with a credit card or a PO# if you have an account with us. Of course you can still order parts the old fashioned way by giving us a call.

Agreement of Confidentiality

This manual is, and shall remain, the property of AERO Specialties, Inc. This manual is provided for the use of AERO Specialties, Inc.'s customers to aid them in the operation and maintenance of equipment purchased from AERO Specialties, Inc. The material contained within this manual is strictly confidential and the distribution of this manual or revealing of its contents is expressly prohibited. The user's acceptance of this manual constitutes acknowledgment of these conditions and agreement to conform to them.

Any disclosure of the confidential material contained within this manual may result in the immediate repossession of this manual by AERO Specialties, Inc., and termination of all warranty coverage and technical support.

Warranty

Subject to the conditions stated herein, AERO Specialties, Inc. warrants that the equipment delivered to the original purchaser will be free from defects in material and workmanship for a period of twelve (12) months from the date of delivery. AERO Specialties, Inc. agrees, upon prompt notification of defect and confirmation that the equipment has been operated and maintained within the recommendations of AERO Specialties, Inc., to repair or replace any part or parts proven to our satisfaction to have been defective in materials or workmanship.

Replacement parts will be invoiced in the regular manner with invoices subject to adjustment after the parts claimed to be defective are examined at our factory. No material or parts will be accepted at our factory for in-warranty repairs or credit without previous authorization from AERO Specialties, Inc. If inspection by AERO Specialties, Inc. does not verify defects in material or workmanship, our regular charges will apply.

No warranty is made or implied with respect to equipment accessories, component parts, or auxiliary equipment not warranted by their respective manufacturers, and these warranties are passed along to purchaser. AERO Specialties, Inc. shall in no event be responsible or liable for modifications, alterations, misapplication, or repairs made to its equipment by purchaser or others without the authorization of AERO Specialties, Inc. This warranty does not apply to damage caused by negligence, improper maintenance, accident, overloading, or improper use by purchaser or others. AERO Specialties, Inc. shall not be liable for any special or consequential damages, such as loss of profits or revenue, loss of other equipment, down-time costs, costs associated with the removal of equipment from service, or claims of third parties against the purchaser. Responsibility for damages incurred in transit will be borne by the user, and the user in turn must file any damage claim against the carrier. All warranty items are F.O.B. our factory, and freight charges are the responsibility of the user.

NOTE ON STAINLESS STEEL TANKS: All AERO Specialties potable water service carts use rust-free stainless steel tanks. Special care must be taken to clean stainless tanks without scratching the surface of the tanks. If the tanks are scratched, they will rust. Rusted tanks are NOT covered under this warranty. (Please refer to the Maintenance section of this manual for more information on cleaning and care of stainless steel tanks.)

SAFETY

Read & Understand This Manual

Described below are general safety precautions and possible hazards involved in using AERO Specialties lavatory and potable water service carts. It is the user's responsibility to read and understand this operation manual prior to (and, of course, during) using any of the lavatory or potable water equipment described herein.

Local Regulations & Procedures

It is further the operator's responsibility to adhere to local procedures and regulations for use of lavatory and potable water servicing equipment. Users of this equipment are required to develop and/or adhere to appropriate procedures for use, including safety procedures, with the various aircraft intended to be serviced, in accordance with the technical regulations and requirements in force in the jurisdiction where this equipment is used.

Risk of Spillage

Fluid contents of water carts can spill or overflow, creating a variety of potential hazards. Operators must monitor all actions involving water cart fluids, and take appropriate cautions against slipping or falling if a spill should occur. The following are some examples of possible spill/overflow risk:

- Towing or turning the cart at excessive speed. Never exceed 12 MPH on straight roads, and 5 MPH during turns.
- Dragging hoses on the ground while towing. Holes or thin areas can wear in hoses, which will leak with little or no pressure.
- Not properly maintaining equipment. Hoses, couplings, and plugs can leak if not properly maintained, or if defects exist in the material. Operators must follow the maintenance schedule and carefully inspect and maintain all components to prevent unexpected spills, leaks, or overflow of fluid.
- Not monitoring flow of fluids during cart or aircraft servicing. Filling aircraft potable water reservoirs requires strict monitoring of fill fluid flow volume. The aircraft water tanks will overflow with fluid into the aircraft if excessive fluid is pumped, which will damage the aircraft.

It is the user's responsibility to assure that tanks are not overfilled. AERO Specialties will not be liable for any damage caused by overfilling tanks or aircraft.

SECTION 1 - DESCRIPTION

GENERAL INFORMATION & OPERATING INSTRUCTIONS

General

The WC100E Potable Water Cart is a self-contained mobile cart designed for servicing the drinking water facilities of commercial, corporate and business aircraft. The WC100E tanks are made of 12-gauge stainless steel, and the chassis and towbar are powder coated steel. The pumping system consists of a 12-volt electric pump. The WC100E water carts include all required hoses and fittings to service any applicable aircraft. It is designed for towing by hand or vehicle (under 12 MPH).

Major Components

A. Chassis

The chassis is constructed of powder coated steel. The fifth-wheel steering unit consists of heavy-duty baggage cart wheels (4.8 x 8) on machined spindles bolted into a powder-coated steel fork inserted into a tapered-bearing hub. The cart's powder-coated steel towbar is equipped with a latched tire brake when in the upright position. The rear wheels are affixed to the axle with the same machined spindles and bearings as used on the front wheels and steering fork assembly. The 8-inch wheels and pneumatic tires are the same all around, and share the same hub part with the steering fork assembly.

B. Tank & Housing Assembly

The 100-gallon (379 liters) potable water tanks are constructed of 12-gauge stainless steel. All tanks meet United States Food & Drug Administration (FDA) requirements* and are fitted with: internal anti-slosh baffles; a machined, anodized aluminum 3/4" fill adapter with check-valve; a stainless steel-screened dome vent; a water-level gauge; and a threaded tank bottom drain. An immersion heater is optional equipment on the WC100E.

The 12-volt deep cell gel battery, charger, pump, hoses, and filter (and optional immersion heater) are located in the front compartment. The tank features a 16-inch square gasketed lid for accessing and cleaning the tank.

C. Pumping System

The WC100E water cart features a 12-volt, 4.5 gallons-per-minute electric pump system. An on-board 12-volt battery and charger are located in the front compartment. The 10-foot fill hose is clear nylon-braid-reinforced 3/4" hose. The fill coupler is an AERO Specialties 3/4" green anodized aluminum general aviation coupler, which will fit all aircraft potable water fill ports. The coupler comes installed on the fill hose, and features a plug attached to a lanyard to prevent leaking when not in use. An optional in-line digital flow meter can be added to the fill hose for monitoring the volume of water pumped into the aircraft.

*Check with your local regulatory agencies regarding standards and requirements for storing and processing potable water.

SECTION 2 - SPECIFICATIONS

(See spec sheets on individual components at the end of this manual)

Dimensions:

Length overall: 93 inches (236.22 centimeters)
Height: 41 inches (104.14 centimeters)
Width: 45 inches (114.3 centimeters)
Weight (empty): 850 lbs. (386 kilograms)

Tank Capacity:

Potable water tank size:

100 gallons (379 liters)

Pumping System:

FLOJET 12-volt DC electric pump: Model 4325-143A

- 3.75" High x 6.3" Wide x 9.9" Long (95mm x 160mm x 252mm), 6 lbs. (2.8 kg)
- 4.5 GPM (17 liters/minute) @ 40psi
- Motor: permanent magnet, ball bearings @ front & rear endbell
- Self-priming up to 6 ft. suction lift
- Dry-running w/out damage
- 4-chamber positive displacement diaphragm
- Corrosion-resistant construction, thermally protected
- Strainer included
- Replacement parts available

12-volt battery:

GelStar M24SLDG

Nom Voltage(V)	12
Nom Capacity (AH) 5hr rate	66 AH
Nom Capacity (AH) 20hr rate	73.6 AH
Weight	53.6 (24.3kg)
Length (mm)	10.25 (260mm)
Width (mm)	6.75 (171mm)
Height (mm)	9.88 (251mm)
Reserve Capacity	132

12-volt charger: 12V 7A Charger, Super Charger Elite. Pn 1214CC. Input volts: 120 AC

Fill hose: 3/4" I.D. reinforced PVC hose, 10 feet

Fill coupler: 3/4" long grip AERO Specialties anodized aluminum fill coupler, with plug

Flow Meter (optional): GPI 01N31GM Digital In-Line meter, 3-30 GPM

Chassis:

Powder coated steel

Tires\Wheels:

Steel wheels and 4.8" x 8" pneumatic tires, with tapered bearings

SECTION 3 - OPERATION

A. General

Operation of AERO Specialties WC100E Potable Water carts is simple. The following recommendations are made for the operation of the unit. Refer to your company policies for their specific procedures in the operation of ground support equipment.

- Potable Water (Drinking Water) must be supplied from an FDA-approved (or other appropriate regulatory agency) source.
- Supply fill hose provided with cart must be used at all times.
- Supply hose should be permanently attached to supply.
- Supply hose must be capped at all times when not attached to the cart.
- Male inlet fitting on cart must be capped when not attached to supply hose.
- Dome vent must be in secured and not plugged or obstructed. Tank will be damaged if vent is plugged.

B. Filling and maintaining tank

1. Fill tank from approved supply source until full.
 - Monitor as tank fills - it fills quickly, and water will come out the screened vent when tank is full.
 - Avoid spilling water on top of cart as this can damage electrical components.
 - Never fill cart while the electrical system is energized. **ELECTRIC CORD SHOULD NOT BE PLUGGED IN DURING FILL CYCLE.**
2. Shut off water supply, disconnect fill hose, insert plug, and stow supply hose properly.
3. Secure cap on inlet fill nipple.
4. Reposition cart to designated parking area.
5. **PLUG IN CART WHEN NOT IN USE.** Damage from freezing temperatures and dead batteries will occur if cart is not plugged in while not in use.

D. Pre-operational Check

Walk around the unit and make a visual inspection, paying particular attention to the following:

- Check general condition of unit
- Note the condition of tires and wheels.
- Make sure all hoses are stowed and secure.
- Check water level in tank.
- Make sure fill port is closed and secure.
- Make sure the battery has a full charge.

E. Towing to aircraft

1. Unplug charger cord before towing.
2. Pull unit to aircraft at a safe speed. Never exceed 12 MPH (20 KPH). Slow to 5 MPH (8 KPH) for any turns.
3. Approach aircraft slowly. Do not position cart closer than 10 feet (3 meters) from aircraft.
4. Disconnect cart from towing vehicle and hand push into position.
5. Position unit so that rear of cart is adjacent to aircraft service point and such that there will be no sharp kinks in the fill hose when attached to the aircraft.

F. Recharging Aircraft Fluid

1. Locate fill hose and remove the plug from the coupler. Attach coupler to aircraft water fill port. Do not kink hose.
2. Hold down the pump switch on the side of the cart to input fluid to the aircraft. The pump will deliver 4.5 gallons per minute, and the switch must be held down to operate the pump. Release switch to stop fluid delivery at desired capacity.
3. Remove fill coupler from aircraft, re-insert plug, and carefully replace the fill hose. Wind the hose - do not bend!
4. Close aircraft service panel(s).

G. Towing away from aircraft

1. Connect cart to towing vehicle.
2. Make sure that all hoses and fittings are secure and that there are no obstructions around unit before pulling away.
3. Pull unit away from aircraft at a safe speed. Never exceed 12 MPH (20 KPH). Slow to 5 MPH (8 KPH) for any turns.
4. Disconnect cart from towing vehicle and hand push into parking position.
5. Plug in heater/charger cord.

MAINTENANCE

SECTION 1 - SERVICING

General

Basic servicing of the AERO Specialties WC100E Potable Water Cart can be accomplished with standard mechanical hand tools. All work should be performed in accordance with standard shop practices.

Chassis and Tanks

The chassis is made from powder coated steel and requires no maintenance other than regular cleaning with mild soapy water.

The stainless tanks should be cleaned with our Drox Cleaning Kit on a regular basis (see Water Tank Cleaning Instructions at the back of this manual for separate cleaning instruction sheet). The stainless steel tanks - if used and cleaned properly - will not corrode or rust. NEVER use steel wool or cleaning pads containing metallic fibers to clean the water tank! Metal cleaning pads will scratch the tank and allow rust to develop. Any tank with rust can NOT be repaired and must be replaced. Rusted tanks are not covered by warranty. Replacement tanks are available through AERO Specialties.

Plumbing System

The pump, hoses, and couplings should be inspected for wear, leaks, or other damage. The hoses should be checked for cracks, cuts or other defects that will cause leakage. Those items should be repaired or replaced. All replaceable parts can be ordered from AERO Specialties.

Pump

The FLOJET 12-volt electric pump is self-priming and can be run dry without damaging the pump. If necessary, the pressure switch and a diaphragm rebuilding kit are readily available. Please contact AERO Specialties for pump troubleshooting if required.

Running gear

The wheels and tires should be inspected daily. Unusual tire wear, cuts, leakage, or missing and damaged fasteners need to be replaced or repaired at once. The wheel bearings should be inspected every six (6) months. The wheel bearings should be greased monthly using the grease fitting in the hub. A common wheel bearing grease should be used.

SECTION 2 - REPAIRS

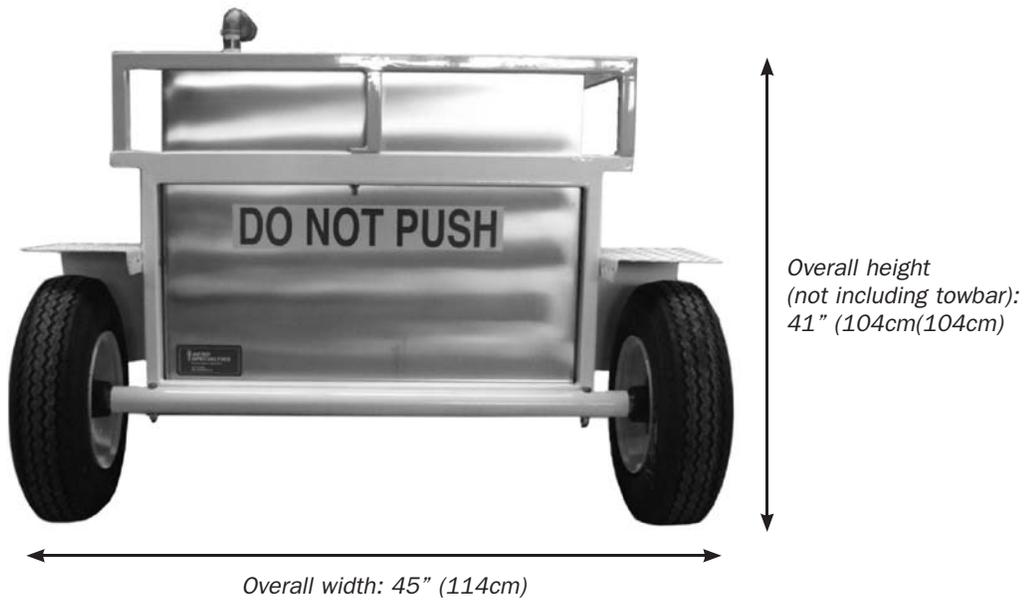
General

Repairs should be limited to the removal and replacement of detail parts and assemblies. Repairs of plumbing components should be limited to common shop practices. Repairs of the pump assembly should follow recommended procedures identified in the manufacturer manual.

If repairs are necessary to the structural members or suspension, it is advised to contact AERO Specialties for the proper procedure.

DIAGRAMS & ILLUSTRATED PARTS

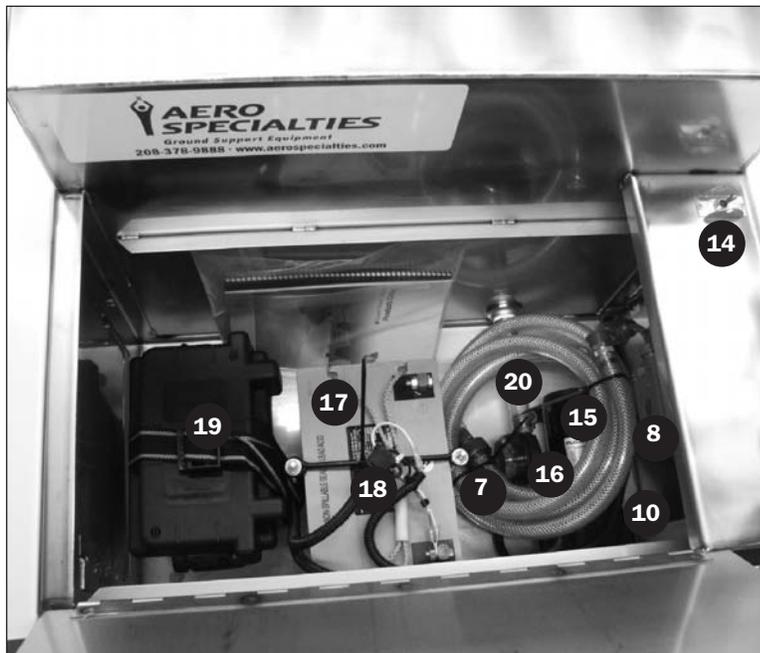
Mechanical Dimensions



Major External Components - WC100E

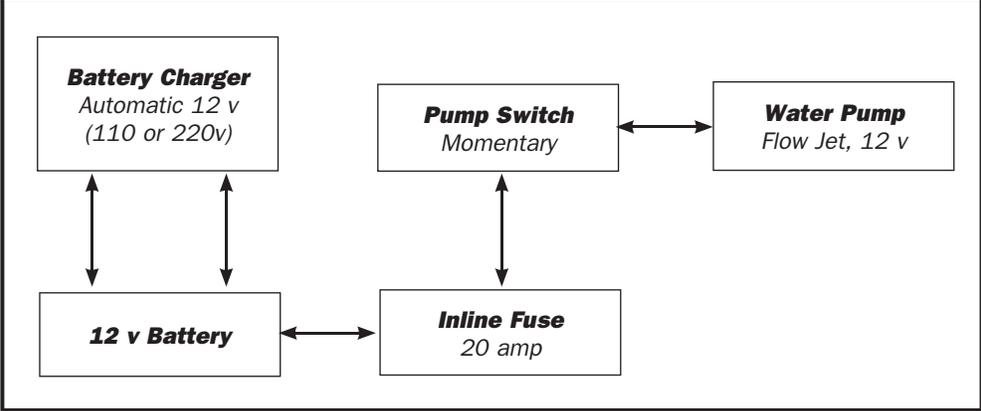


1	Frame
2	Tank
3	Service lid
4	Vent
5	Fill port
6	Fill hose
7	Compartment lid
8	Towbar
9	Wheel & hub kit
10	Fork & latch
11	Pigtail
12	Rail
13	Rear fender



14	Pump switch
15	Pump
16	Pump strainer
17	Battery
18	20 amp fuse
19	Charger & box
20	Fill kit with coupler

Electrical Diagram



PARTS LISTS

WC100E Potable Water Cart Standard & Replacement Parts List

Item	Part No.	Qty	Description
1	Frame - 100-series	1	Powder-coated steel frame
2	WC100 Tank	1	Stainless steel tank assembly for WC100
3	Service Lid	1	WC100 Service Lid
4	Dome Vent 1" Stainless	1	Stainless steel screened dome vent
5	Fill port: Check valve 3/4" FPT	1	Check valve and elbow
	Fill port: AERO Inlet	1	3/4" water inlet fitting, threaded male nipple, anodized green
	Fill port: AERO Cap	1	3/4" water inlet nipple cap, anodized green
6	Fill hose water 3/4"	10 feet	3/4" Potable Fill Hose, reinforced
	Water coupler	1	3/4" water fill coupling, anodized green
	Water plug	1	3/4" AERO Specialties Water plug, anodized green
7	Compartment lid	1	Part of WC100 tank assembly
8	Towbar - standard	1	Towbar for AERO 100-series lav and water carts
9	Wheel-Tire Standard	4	4:8 x 4 x 8 on 4-lug steel rim
	Hub Kit Standard	5	Hub, spindle, bearings, seal, nut and dust cover
10	Fork 100/150/RJ1	1	Steering fork for 100/RJ1 Series lav and water carts
	Brake Latch 100-Series	1	Brake latch for steering fork on 100-series lav & water carts
11	Pigtail	1	External plug-in for charging unit
12	Rails - 100-Series	1	Steel safety rail for 100-Series lav & water carts, powder coated
13	Fender - 100-Series	2	Rear fenders for 100-Series lav & water carts, powder coated
14	BOL Switch	1	Pump switch, momentary, environmentally sealed
15	Flojet Pump Standard	1	12-volt self-priming electric pump w/hose barb kit, 4.5gpm
16	Strainer	1	Disc strainer for Flojet pump
17	Battery - 12V	1	12-volt deep cycle gel battery
18	Fuse holder - 20 amp	1	20 amp in-line fuse and plastic holder
19	Charger - 12V	1	12V battery charger, 120V input (220V available)
	Battery Box - 12V	1	Vented plastic battery box for charger
20	Water Fill Kit (same parts as 6 plus Garden Hose Adapter Female)	1	Wall-to-cart fill kit
21	Electrical box	1	Electrical covered box for charger input
22	Pump inlet	1	3/4" hose and brass coupling from tank to pump
23	Pump outlet	1	3/4" hose and brass fittings for outlet from pump to fill hose

WC100E Potable Water Cart Options Parts List

Item	Description
Flow Meter GPI	GPI in-line electronic digital flow meter, 3-30 GPM (gallons only)
Spares WC 30-150	Spares kit for AERO potable water carts (30-150 carts). Includes: AERO fill coupling, plug & inlet cap; fill hose; wall-to-cart fill kit; Flojet pump rebuild kit
Immersion Heater	Heater Chromalox: immersion heater for WC100 water tank to prevent freezing while plugged into 120V outlet
Gauge	Gauge 18": Water tank level gauge (analog) for all AERO Specialties potable water carts
DROX Kit	DROX Cleaning Kit: Kit for cleaning stainless steel potable water tanks. Includes DROX liquid cleaner, gloves, scrub pads & brush, and respirator mask.

Cleaning Instructions

Applies to all AERO Water Carts (WC15, WC30, WC40/60/80-RJ, WC100, WC150, WC250)

Recommended Frequency: AERO Specialties recommends that all of its water cart tanks be thoroughly cleaned every 30 days.

Recommended Cleaning Materials: AERO Specialties recommends using its Drox Cleaning Kit (Part No. 110 PN-W DROX) for all tank cleaning. The kit contains the following items:

- Drox (1 quart; 1:10 dilution). Drox is a citrus-based, powerful blend of inhibited cleaning agents especially compounded to remove scale, mineral and lime deposits from stainless steel. Drox is NOT classified HAZMAT, but you must clear its disposal down storm drains with your local airport authority.
- 3M Respirator (No. N95)
- Nylon scrub brush
- Scotch-Brite pads (2)
- Heavy-duty rubber cleaning gloves



Recommended Cleaning Instructions:

1. Fill tank one-quarter full of water.
2. Pour proper quantity of Drox into tank (WC15: approximately 5 ounces; WC30: approximately 10 ounces; WC40-RJ: 14 ounces; WC60-RJ: 20 ounces; WC80-RJ: 26 ounces; WC100: 32 ounces & WC150: 48 ounces; WC250: 64 ounces)
3. After covering nose & mouth with the respirator and donning the rubber gloves, scrub entire inside of the tank with the Scotch-Brite pad. Use the nylon scrub brush for hard-to-reach areas.
4. Drain the tank and flush thoroughly twice with cold water.
5. OPTIONAL neutralizing procedure: fill tank one-quarter full with water and dissolve a small box of baking soda. Slosh mixture around entire tank. Rinse twice with cold water.

IMPORTANT: Never, EVER, use any metal pads or brushes to clean the stainless tank. Metal pads, brushes, or steel wool will irreparably scratch the stainless tank, causing the tank to rust. There is no way to repair the tank if it rusts. FDA regulations prohibit any potable water tank from operating if containing rust.

NOTE: These instructions are AERO Specialties' recommendations for maintaining your AERO Specialties Potable Water Service Cart. PLEASE CONTACT TO YOUR LOCAL FDA AGENCY FOR THEIR SPECIFIC CLEANING REQUIREMENTS.



DECLARATION OF CONFORMITY 

Manufacturer: AERO Specialties, Inc.
11175 W. Emerald
Boise, ID 83713
208-378-9888

The undersigned hereby declares, on behalf of AERO Specialties, Inc., that the below-referenced products, to which this declaration relates, are in conformity with the provisions of the following European directives pertaining to electrical, mechanical, and functional safety, and EMF/EMC/Radiation:

EN1915-1:2001, EN1915-2:2001, EN1915-3:2004, EN1915-4:2005, EN12312-122002, EN12312-13:2002, EN60204-1:1997, EN61000-6-4:2001, EN61000-3-2:2000, EN61000-3-3:2001, EN61000-6-2:2001.

Testing was conducted by TÜV America, Inc., 10040 Mesa Rim Road, San Diego, CA 92121, +001.858.678-1400, Project Manager Frank West.

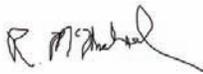
LAVATORY SERVICE CARTS

- LC60
- LC60-RJ1
- LC100
- LC100E
- LC100G
- LC180-RJ2-E
- LC180-RJ2-G
- LC270-RJ3-E
- LC270-RJ3-G
- LC270E-Insert
- LC270G-Insert

POTABLE WATER SERVICE CARTS

- WC30
- WC30E
- WC40-RJ1
- WC60-RJ1
- WC80-RJ1
- WC100E
- WC180-RJ2-E
- WC180-RJ2-G
- WC270-RJ3-E
- WC270-RJ3-G
- WC270E-Insert
- WC270G-Insert

The Technical Report No. SI600378—101, Revision 00, dated 2006-03-28, required by this Directive, is maintained at the corporate headquarters of AERO Specialties, 11175 W. Emerald, Boise, ID 83713.

By: 
Bob McMichael
VP of Sales & Marketing

Date: April 1, 2006

11175 W. Emerald • Boise, ID 83713-8932 • PHONE: 208-378-9888 • FAX: 208-378-9889
email: staff@aerospecialties.com • website: www.aerospecialties.com



11175 West Emerald
Boise, Idaho, 83713 USA

Phone: 208-378-9888
Fax: 208-378-9889

Email: sales@aerospecialties.com
Website: www.aerospecialties.com