Multi-Chambered Counter-Recessed
Ultrasonic Cleaning Systems

Model E289 Three-Chamber System
Ultrasonic cleaning , Ultrasonic Rinsing , Hot air drying
Large 14 quart, Tank accommodates cassettes

Model E787 Two Chamber System
Ultrasonic cleaning , Ultrasonic rinsing

Model E488 Three-Chamber System
Ultrasonic cleaning, Ultrasonic rinsing, Hot air drying

Model E887 Five-Chamber System
Ultrasonic cleaning, Ultrasonic rinsing, Hot air drying
Two individual soaking tanks

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ESMA

Features & Specs

Multi-chambered, counter-recessed, ultrasonic cleaning systems are designed to streamline the presterilization preparation process. For effective autoclaving, instruments must be cleaned, rinsed and dried.

Ultrasonic cleaning in our powerful ultrasonic cleaning chambers will eliminate the manual cleaning that is subject to human error and the possibility of injury and infection by personnel.

Ultrasonic rinsing is a unique feature within our systems. When a basket full of instruments or instrument cassettes are removed from an ultrasonic cleaning tank, the instruments are covered with dirty cleaning solution containing in suspension the very particles that have just been removed. Elimination of this dragged-out solution is a major task. Manual rinsing is seldom effective, consumes time and is subject to human error. Our ultrasonic rinsing chamber combines powerful ultrasonics with flushing hot water and results in a thorough effective rinse that eliminates the inefficiencies of tap rinsing. The drag-out contaminants from the cleaning tank are fully flushed away.

Hot air drying chambers streamline the process and increase the life of instruments. No more open air towel drying. The messy drip trails created from ultrasonic-to-sink-to counter are eliminated saving time, labor and space. When all the chambers are running simultaneously, multi-chambered equipment can quickly and easily process a large volume of instruments.

Custom tank configurations to fit your office are available. The Model E887 in particular can be customized. The back two tanks of the E887 come standard as soaking tanks to be used for disinfectant or lubrication solutions. These tanks can be customized as additional cleaning or rinsing chambers. The Model E289 has tanks specifically designed to accommodate instrument cassettes and is capable of holding three large cassettes in each tank. An additional benefit of our counter-recessed equipment is that the noise generally associated with ultrasonics is significantly dampened when equipment is recessed. This equipment comes self-contained and is easily installed, just locate near drain and hot water lines. *"Well designed with the doctor in mind."*

- All stainless steel construction
- Square wave ultrasonic circuitry
- RFI filtered
- Over 10 years of successful in-field history
- Long-lasting potted transducers
- Unprecedented warranty
- Backed by quality assurance of underwriters laboratories

MODEL NUMBER	NUMBER OF CHAMBERS	TOP PLATE SIZE	COUNTER OPENING	UNDER THE COUNTER	ULTRA SONIC POWER	TANK	POWER
E787	2	19"x18" D	16.5" x 15.75" D	15"	100 w/tank	9.5" x 5.5 x 6"D	120V 50/60 HZ 350W
E488	3	27"x18"D	24.75" x 15.75"	15"	100 w/tank	9.5" x 5.5" x 6" D	120V 50/60 HZ 1850W
E887	5	27"x24"D	24.75" x 21.5"D	15"	100 w/tank	9.5" x 5.5" x 6"D	120V 50/60 HZ 1850W
E289	3	39"x21"D	36.75" x 18.75"D	17"	300 w/tank	12" x 10" x 8" D	120V 50/60 HZ 2350W

Our ultrasonic cleaning equipment can accommodate many different basket or racking options. From large baskets for cleaning loose instruments to racks housing cassettes, our cleaning equipment will fit into your instrument management system. ESMA also manufactures its own line of Insertion Baskets as an alternative to cassettes. Insertion baskets are designed for use with the SciCan STATIM ™ cassette autoclaves, and nest together enabling you to clean, and then autoclave multiple baskets at a time. These stainless steel baskets are available in three sizes:

7" x 2.875 x 1.375" 7" x 2.875 x 2.875" 10" x 2.875 x 2.875"

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For best results: Use Esma general purpose cleaner E589, a low foaming, cleaner concentrate specifically formulated for our cleaning equipment.

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INSTRUCTIONS FOR COUNTER RECESSED ULTRASONIC CLEANING UNITS MODELS E488, E787 and E887

INTRODUCTION

The units contain either 2, 3 or 5 tanks for ultrasonic cleaning, ultrasonic rinsing and hot air drying (E488 and E887 models). The units will minimize or eliminate manual cleaning which is subject to human error.

The units are manufactured from 304ss. They contain two self-tuning modular circuit boards, high velocity fans to cool the electronics and an RFI filter to eliminate high frequency line noise.

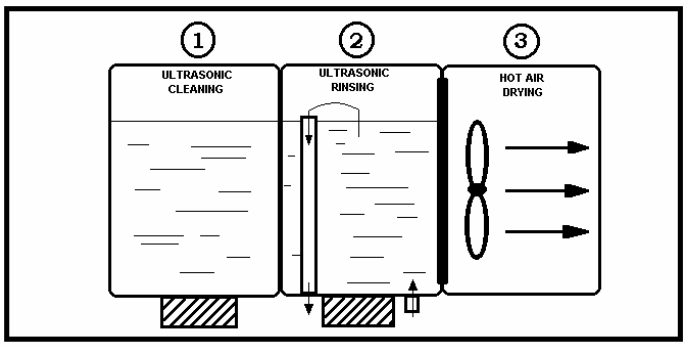
The following units are covered by these instructions.

MODEL	NO. OF CHAMBERS	CAPACITY OF TANKS (gls.ea.)
E787	2	1 ¼
E488	3	1 ¼
E887	5	1 ¼

ALL MODELS:

Tank 1- Ultrasonic Cleaning Tank-Tank 1 can be heated by turning on the heater switch. Solution will be thermostatically controlled at approximately 130degrees F.

Tank 2- Ultrasonic Rinsing Tank-The hot water flow is controlled by a solenoid valve activated along with the ultrasonics when rinse timer is turned on. A pump to discharge the overflow is also activated with the timer.



MODELS E488 and E887
Tank 3 -Hot air drying chamber-When timer for dryer is activated, the forced air will be heated to 160degrees F for rapid drying. NEVER PUT A COVER ON DRYING CHAMBER OR POUR SOLUTION INTO DRYER.

MODEL E887
Tanks-4 and 5 are holding tanks for various types of solutions. They can be equipped with ultrasonics and rinsing features on special order.

INSTALLATION

The following instructions will help in the designing of a new cabinet or in the remodeling of existing cabinets to accommodate various recessed units. The main items are the opening in the counter top and the necessary door opening in the front of the cabinet.

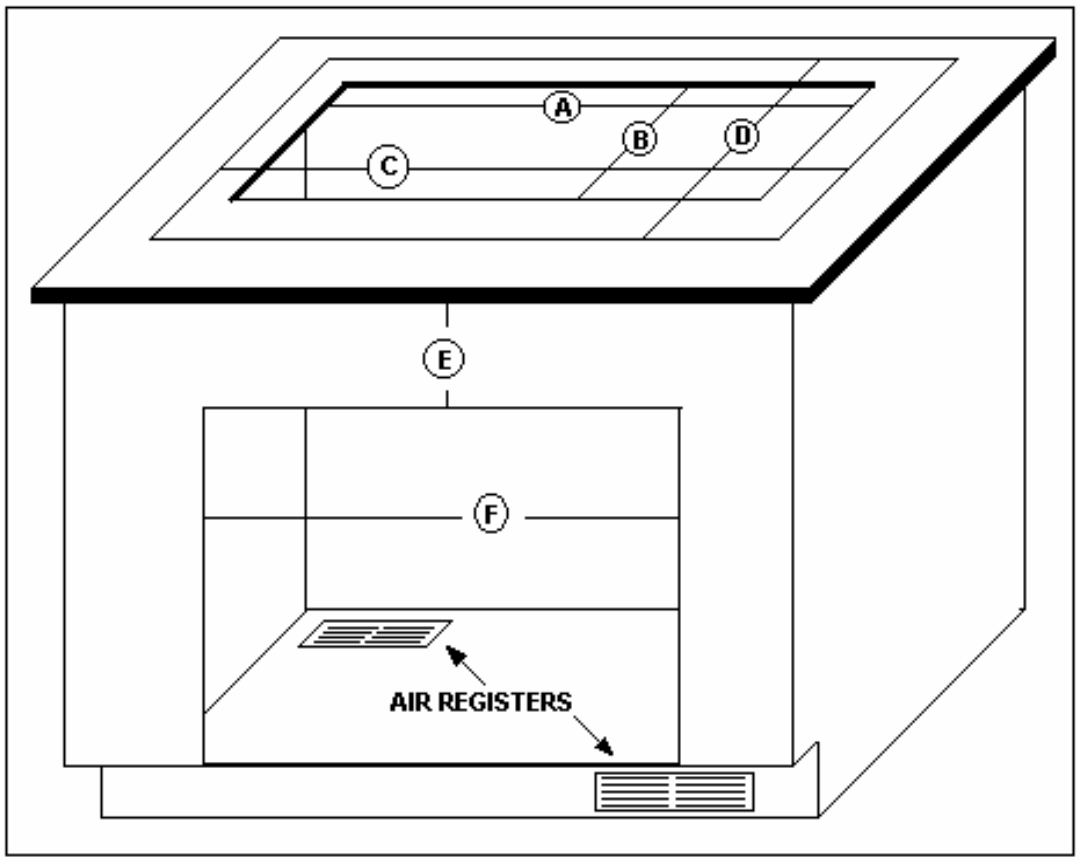
The following table along with the diagram will give necessary information:

	Opening		Size of Top Plate		Clearance Under Counter	Opening	
	A	B	C	D		E	F
E787-Two Chamber	16 ½	15 ¾	19	18	15	2	18
E488-Three Chamber	24 ¾	15 ¾	27	18	15	3	25
E887-Five Chamber	24 ¾	21 ½	27	24	15	3	25
E289-Three Chamber 14Qt.	36 ¾	18 ¾	39	21	17	5	37

Access is necessary to the front of the cabinets to get to the drain and rinse inlet valves. Also, there is a panel on the front of the sub-chassis that needs to be removed when any internal maintenance of the unit is required.

Important: A fan is located on the left side of the sub-chassis and needs a minimum of 1" clearance on the intake side. The inside of the cabinet should have a minimum dimension of C (Table above) and there will be sufficient room for air circulation. If your cabinet is airtight, a hole or an air register should be added to the kickboard (and the floor if it is raised) of the cabinet to insure proper airflow.

A gasket is glued to the underside of the top plate to prevent liquid from seeping into the counter. The mounting screws (supplied) can be pushed through the gasket material when securing top plate to counter. After mounting, any excess gasket material that extrudes beyond edge of top plate can be trimmed with a knife.



PLUMBING (See Diagram)
Inlet-Use ¼" copper tubing to connect from the hot water supply under your sink to the rinse inlet valve of unit (takes ¼" compression fitting)".

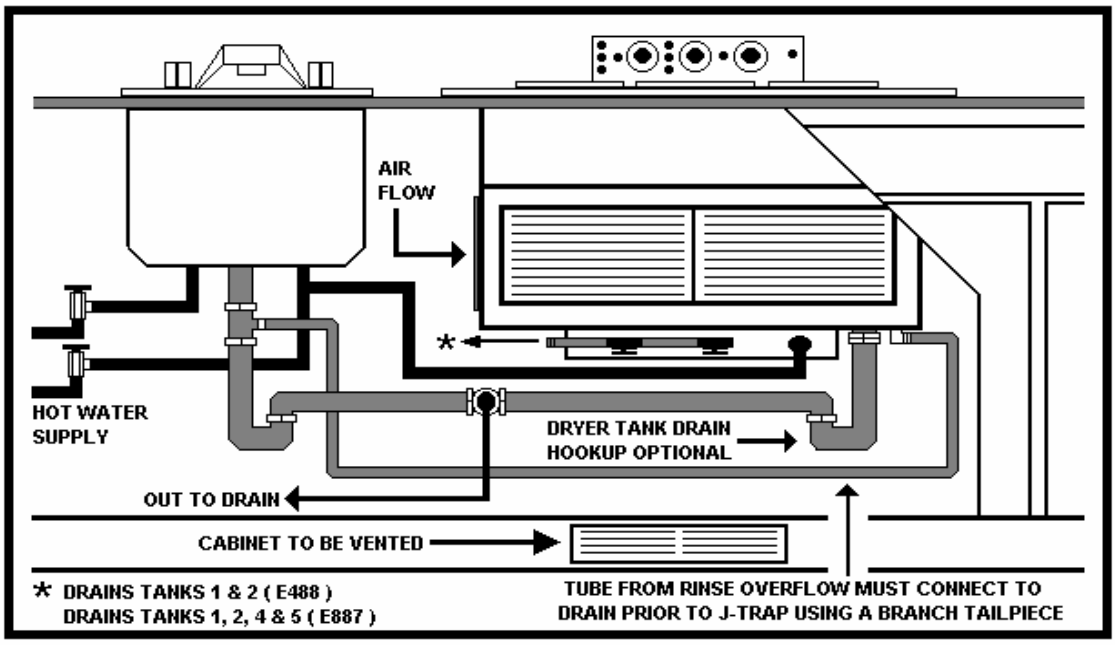
Outlet-The rinse outlet located at the bottom rear of unit has a barbed fitting for ½" I.D. hose. Outlet should be connected to your sink drain above the sink trap. A pump in the unit pumps the overflow from the rinse tank into your sink drain.

Drain Valves-Each tank has its own valve for complete draining. Drained solutions should be disposed according to local regulations.

The dryer tank has a 1 ½" drain fitted with a 1 ½" PVC coupling (with slip nut) protruding out of the bottom of the unit. Water drippings can be simply collected in a bucket underneath the unit. If the dryer tank drain is connected to your sink drain, a separate drain line is required to the trap under the sink.

For shipping purposes the hose fittings for DRAIN TANKS 1, 2 along with 4 and 5 for Model E887 may have been removed from tank drain valves and shipped inside one of the tanks. The elbow fitting attaches to the valve marked Tanks 2 and 5 for Model E887 and the tee

fitting attaches to the valves marked Tanks 1 and 4. The short piece of hose connects these fittings.



ELECTRICAL

The units are rated as follows:

MODEL	WATTS, 120VAC, 50/60 HZ	FUSE AMP
E787	350	5
E488	1850	15
E887	1850	15

Both the Model E488 and E887 units have power cords with a hospital grade plug (NEMA 5-20). The special E887 units with ultrasonics in tanks 4 and 5 will be fitted with an NEMA L5-30P locking type plug. The power cord is located extending from the bottom of the sub-chassis. The fuse is located in a holder on the left side of control cabinet.

Unit must be electrically grounded. The power cords must be connected to a three way grounded outlet. For 2-wire service, an adapter with external ground wire is necessary. Connect the green grounding wire of the adapter to the screw which holds the electric outlet plate cover to the socket. DO NOT OPERATE UNIT WITHOUT PROPER GROUNDING.

START-UP PROCEDURE

1. Drain screens are to be installed in the bottom drains of the clean and rinse tanks and the overflow of the rinse tank.

2. Fill cleaning tank with 4 inches of solution.

3. On rinse tank, after the initial hook-up is completed, bleed the air in the hot water supply as follows:

a) Pour 2 inches of water in tank.
b) Put main switch on.
c) Turn on rinse timer to activate rinse solenoid.
d) Gradually open rinse needle valve and bleed trapped air in line.
e) Adjust needle valve to control the flow of water into tank. An internal pump drains the rinse overflow.
f) The rinse timer will regulate a solenoid valve to start or stop the flow of water.
g) The tank has high level protection. If overflow outlet or office facility drains become clogged or internal pump malfunctions, the solenoid valve will be shut off by a high level sensor.

OPERATION

The basic principle of operation is the enhancement and acceleration of the chemical cleaning by ultrasonics cavitations. Parts to be cleaned are placed in baskets or racks and lowered into tank. Never place parts or basket directly on the bottom of the tank.

1.**Main Switch**-activates power to unit when red indicator light is on.

2.**Timers**-Turn timer knob clockwise to the desired time and ultrasonic action is initiated (green indicator light is on). When the set time expires, ultrasonic action is terminated. Five to ten minutes is recommended for ultrasonic cleaning of loose instruments and 15 minutes when instruments are in cassettes. Five minutes of ultrasonic rinsing is generally sufficient.

3.**Dryer**-Turn dryer timer clockwise, red light will go on and forced air, heated to 160degrees F will flow. After the hot water rinse, racks with parts are generally dried in 10 minutes. The air temperature of the dryer is controlled with an internal thermostat. Contact manufacturer for specific detail in adjusting temperature.

CAUTION: IMMEDIATELY AFTER DRYING DO NOT TOUCH HOT PARTS.

OPTION

On Model E887, Tanks 4 and/or 5 can be equipped with ultrasonics. The power from circuit board of Tank 1 can be switched to Tank 4 and controlled by timer of Cleaning Tank 1. The power of Tank 2 can be switched to Tank 5 and controlled by timer of Rinse Tank 2. Independent of each tank can also be provided.

MAINTENANCE

1. When liquid in tanks needs to be changed open drain valve for either Tank 1, 2,4 and 5 of Model E887.

2. Periodically the overflow screens need to be cleaned of any accumulated debris.

3. Keep top of unit dry. Unit is manufactured from 304 stainless and can be restored to its original finish with a stainless polish used for kitchen appliance.

CLEANING SOLUTIONS

Make sure the cleaning solutions used are compatible with the stainless steel tank. **NEVER** pour tartar and stain remover or permanent cement remover solutions directly into tank or damage will result. Esma General purpose Ultrasonic Cleaner, E589 is recommended.

RUSTING OF INSTRUMENTS

If you experience rusting of certain instruments, replace these instruments with those of a higher grade (300 series) stainless steel. If you choose to replace your instruments over a period of time, the clean-rinse procedure will have to be changed. Rust inhibiting tablets should be placed in the cleaning tank and the ultrasonic rinse should be only 1 to 2 minutes in cold water.

MODULAR CIRCUIT BOARD

The recessed units are equipped with modular circuit boards that are easily replaced by the customer if a problem occurs. If the ultrasonic action in the tank stops (and most of it is due to failures occurring in the circuit board), call us and a circuit board will be shipped immediately. This way the need for shipping the unit back for repairs is eliminated and the disruption is minimal.

The unit has a one year warranty, two year warranty on circuit boards and lifetime on transducer bonds and tank welding seams.

FOR ASSISSTANCE CALL: 1-800-276-2466