



# The Automatic Passivation Series

*Automated Ultrasonic Series*

## Automated Passivation Equipment

**Single  
Process  
Unit**



**Multiple  
Process  
Unit  
Systems**



**Custom  
Sized  
Process  
Units**



**Completely closed, modular  
system incorporating integrated  
heated storage containment tanks  
with a self-contained,  
automatic ultrasonic washer**



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# Features & Specs



## Passivation Process: (50—60 minutes)

1. Ultrasonic clean (alkaline)
2. Ultrasonic Rinse from Storage
3. Ultrasonic Passivation
4. Ultrasonic Rinse from Rinse Storage#1
5. Ultrasonic Rinse from Rinse Storage#2
6. Final Ultrasonic Rinse from Bldg. Water Source
7. Dry

\*\* User defined programming available

Esma's automatic ultrasonic passivation systems provide a unique and closed process of cleaning-rinsing-passivating-rinsing and drying all at the push of a button. Easily described as a one-of-a-kind process, these systems are designed and built to provide medical device manufacturing operations an alternative to outsourcing their parts passivation by incorporating this modular equipment into the manufacturing process. These systems do not require much floor space and provide great cost savings when compared to other automated robotic passivation systems.

**\*AUTOMATED PROCESS MOVING FLUIDS NOT PARTS\***

The process will easily integrate into virtually any manufacturing line. By moving fluids in and out of a single high-powered ultrasonic cleaning tank, the system eliminates the need of an operator moving parts through a series of baths, and reduces interaction with dangerous chemicals. Modular, covered, heated storage tanks are integrated with the system to allow re-use of chemicals and rinse water. PLC controlled monitoring systems integrate with company servers through standard Ethernet connectivity to provide data collection for process steps and are an important upstream factor for ensuring a validated state. Durable stainless steel construction, an unconditional 1-year warranty, and industry-recognized customer service make Esma's automated ultrasonic systems a cost saving step for in-house cleaning and passivating.

The passivation system can be configured as a single processing system or as multiple processing system—each configurations using a single set of storage tanks. Listed below are the E700 and E992 system configurations (single and dual). These would be considered “standard” tanks using the same outer dimensional cabinet, but tank size modifications based on customer part requirements is common.

Esma brand chemistries which can be used in system

- Esma Metal Wash—Mildly alkaline cleaning detergent
- Esma General Purpose Cleaner—Alkaline cleaning detergent
- Esma DeOx 964—Citric Acid Passivation Solution (meets ASTM 967-01 Standard)

### E700 - 9 Gallons System

- Washer: 35" x 25" x 45"H Cabinet
- Tank: 18" x 12" x 10"D  
Ultrasonic wattage: 900  
Dryer: 4,500 watts

#### 15 Gallon Integrated Storage Tanks

- Storage Tanks: 20" x 24" x 30"H
- 1,500 watts, temperature controlled heat

### Dual E700 - 9 Gallons System (2 units)

- Washer: 35" x 25" x 45"H Cabinet/each
- Tank: 18" x 12" x 10" D  
Ultrasonic wattage: 900/each  
Dryer: 4,500 watts/each

#### 30 Gallon Integrated Storage Tanks

- Storage Tanks: 28" x 38" x 30"H
- 3,000 watts, temperature controlled heat

### E992 - 18 Gallons System

- Washer: 35" x 25" x 45"H Cabinet
- Tank: 24" x 14" x 12"D  
Ultrasonic wattage: 1,800  
Dryer: 4,500 watts

#### 30 Gallon Integrated Storage Tanks

- Storage Tanks: 22" x 30" x 30"H
- 3,000 watts, temperature controlled heat

### Dual E992 - 18 Gallons System (2 units)

- Washer: 35" x 25" x 45"H Cabinet/each
- Tank: 24" x 14" x 12" D  
Ultrasonic wattage: 1,800/each  
Dryer: 4,500 watts/each

#### 60 Gallon Integrated Storage Tanks

- Storage Tanks: 28" x 38" x 30"H
- 4,500 watts, temperature controlled heat



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