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**MEDICAL WASTE STERILIZATION SYSTEM OFFER  
AKR250L  
(40 – 60 kg/hour capacity)**



**AKAR MAKİNA SAN. ve TİC. A.Ş.**  
A : Organize Sanayi Bölgesi 14. Cd.  
No:8 26110 Eskişehir / TURKEY  
T : +90.222 236 17 00  
F : +90.222 236 17 02  
E : info@akarmak.com.tr



## 1. ABOUT US

Akarmak, established in 1990, manufactures autoclaves for various industries including Medical Waste Sterilization, Glass Industry, Tire Retreading / Rubber Vulcanization, Building Materials, Composite Materials etc. Our machines are operational in more than 60 countries worldwide.

We have good capability to offer autoclaves for the above-mentioned industries with our 30 years of experience and know-how. Our manufacturing capacity is up to 5 meters in diameter and 65 meters in length. We are capable of providing turn-key and boutique solutions for our customers starting from the “Customer Requirement Acquisition” stage up to “Design”, “Manufacturing”, “Testing”, “Delivery” and “On-Site Commissioning”.

Akarmak has the following certifications including those for autoclave and pressure vessel manufacturing:

- Pressure Equipment Directive 2014/68/EU
- ASME SEC VIII D.1.
- EAC
- EN 3834-2
- Other certificates that may be required by different countries and jurisdiction

## MEDICAL WASTE STERILIZATION

Medical Waste Sterilization Systems are manufactured in our state-of-the-art manufacturing facilities in Eskisehir/Turkey, in close proximity to major cities and ports. We have the widest capacity range along with both pre-shredded and post-shredded types.

Our systems are designed using advanced design tools and software meeting the highest safety and quality standards. We approach every project as unique and therefore can provide custom-made solutions by considering “Customer Specific Request’s.” Our manufacturing is carried out by experienced, highly trained and certified labor force and technical personnel.

Upon manufacturing, our machine is inspected for sterilization level as per International Standards (Robert Koch Institute & STAATT Level IV etc.). We share this Inspection Report with our customers.

## QUICK FACTS

- 8log10 Microbial Inactivation
- Sterilization Report as per International Standards (Robert Koch Institute & STAATT Level IV etc.)
- Technical Support & Maintenance by Certified Experts
- Up to 80% Volume Reduction
- Strong and Long-Lasting Shredder
- Bayonet: Safest Door Type for Autoclaves
- References in 70+ Countries
- 35 Years of Experience and Know-How
- Siemens Touch Panel



## 2. SCOPE OF SUPPLY

### I. Medical Waste Sterilization System



#### Technical Features

- **Pre-shredded**, pressured, direct **steam sterilization** method
- Sterilization Capacity: 40-60 kg/hour depending on density of waste
- Cycle duration: Approximately 30-35 minutes
- Average Waste Density: 100-150 kg/m<sup>3</sup>
- Sterilization Temperature: 138-145°C (adjustable)
- Autoclave Surface Temperature: Maximum 10°C above the ambient temperature (except the areas such as direct nozzle entries/exits, flanges, etc. that transfers internal heat to outside).
- Cooling Process: Through pressured cold air.
- Sterilization Pressure: 3,5-4 bar (adjustable).
- Total Power Supply: ~12 kW (Excluding Steam Generator)
- Steam Consumption: 6 kg per cycle
- Electricity Consumption: 2 kWh per cycle (Excluding Steam Generator)
- Total Weight: *Approximately* 2.000 kg (Excluding, compressor and steam gen.)
- Main Dimensions without lifter (mm): (W) 1300 x (L) 2000 x (H) 2300



#### a. AKR250L

- Autoclave Material: AISI 316L – Stainless Steel
- Shredder's Frame Material: AISI 316L – Stainless Steel
- Shredder's Blade Material: Special Hardened Steel
- Feeding Unit Volume: 300 lt
- Sterilization Unit Volume: 450 lt
- Shredder Type: Double axel and integrated between sterilization and feeding units.
- Shredder Power: 7,5kW
- Condense discharge after sterilization (2" diameter)
- Auto reverse when waste blocked
- Control for electric current to avoid damage in shredder

**2014/68/EU CE Conformity declaration, CE certification will be provided by TUV or Intertek**

#### b. Bayonet Door System

- "Bayonet" System: Safest Door Type in Autoclaves
- Fully Automatic with Pneumatic Drive
- Special design safety locking mechanism to prevent door opening under pressure
- Door opening right, left and up based on hinge system
- Leakage preventative silicon door seal



### c. Valve and Piping System

- Steam inlet and other controls will be checked via On-Off Valve system
- Overpressure safety valves: Spring valve (1 piece)
- Pressure and temperature gauges.
- System will be controlled over autoclave pressure
- Autoclave piping connections and valves (bypass included)

### d. Vacuum Unit

- Monoblock water ring vacuum pump (tank included)
- 0,75 Kw Pump Power & 18-25 m<sup>3</sup>/h Vacuum capacity
- Filter Cassette is included. (Carbon, Textile, HEPA)

### e. Automation and Power Control Unit

- PLC & Automation: Siemens 7 inch Touch Screen.
- Drivers with Profinet communication.
- Internet connection is required for remote access. The remote connection module will be provided.
- Audible and visual alarm alerts for malfunctions.
- 1 thermocouple to measure the temperature inside the autoclave. 2 transmitters for internal pressure.
- Safety relay for emergency stop.
- Monitoring, Data Storage & Record: Color Screen, English Menu.
- Alphanumeric print-out during cycle.



### f. Insulation

- 50mm rockwool insulation applied externally.
- Insulation is covered by stainless steel sheet metal for protection.

## g. Waste Feeding & Discharging

- Waste Feeding & Discharging System: Manuel.
- Up to 80% volume reducing ratio after treatment.



## II. Steam Generator

- Capacity: 40 kg/h, 30 kW, 4 bar (CE Certified).
- Fuel Type: Electricity.
- Water softening equipment included.
- Piping between Steam Generator and Autoclave will be done by Akarmak. (This is under Akarmak scope as steam generator is next to machine in very close distance).
- Water and Electricity connection till Steam Boiler are of Customer responsibility.





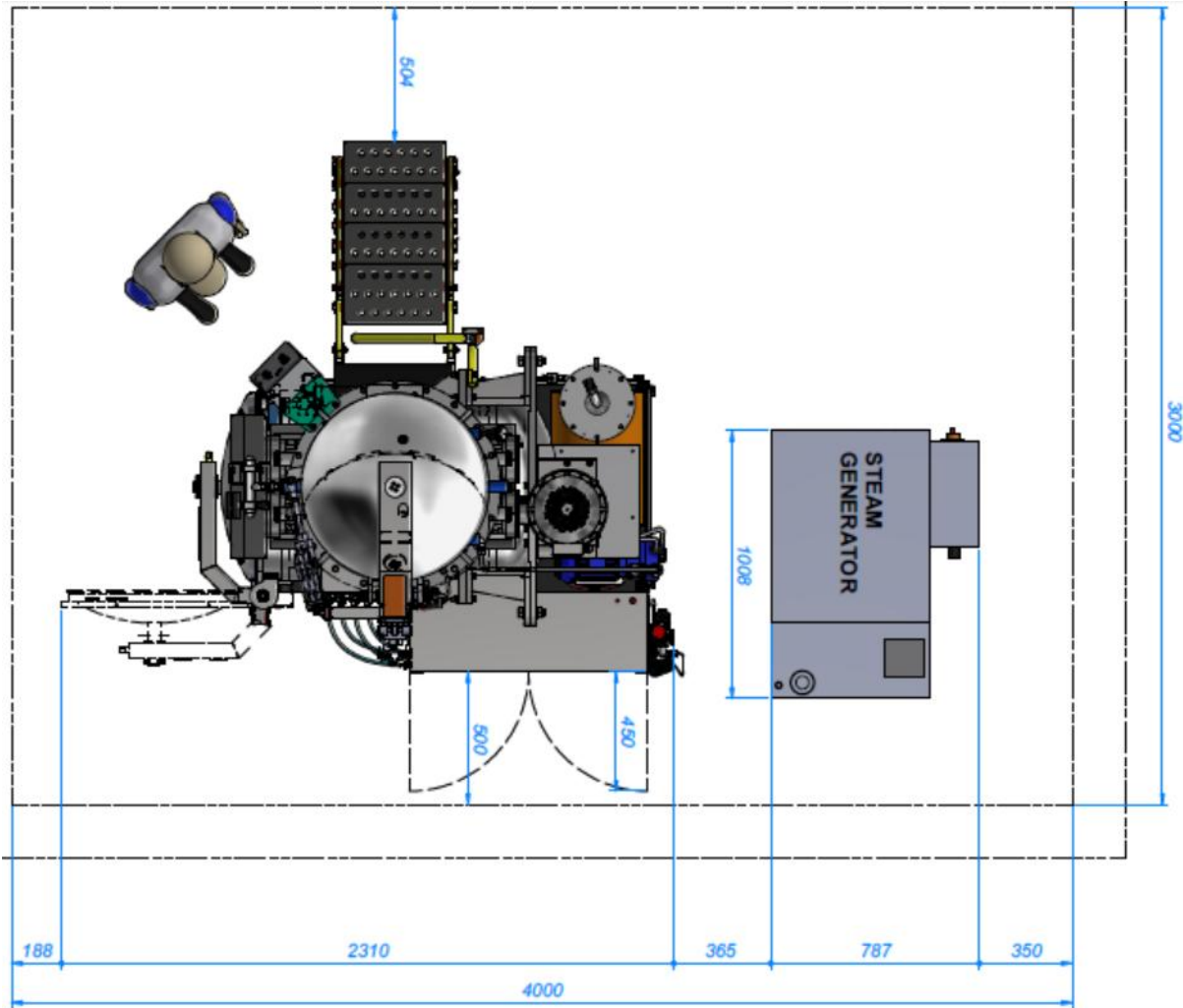
### III. Piston Compressor

- Compressor: 0,75 kW (CE certified)
- Capacity: 180 liter/min, 8 bar
- Filter and 24 liter air tank included
- Piping between Compressor and Autoclave is of Customer responsibility
- Electricity connection till Compressor is of Customer responsibility





### SAMPLE LAY-OUT





## PHOTOS FROM RECENT PROJECTS



