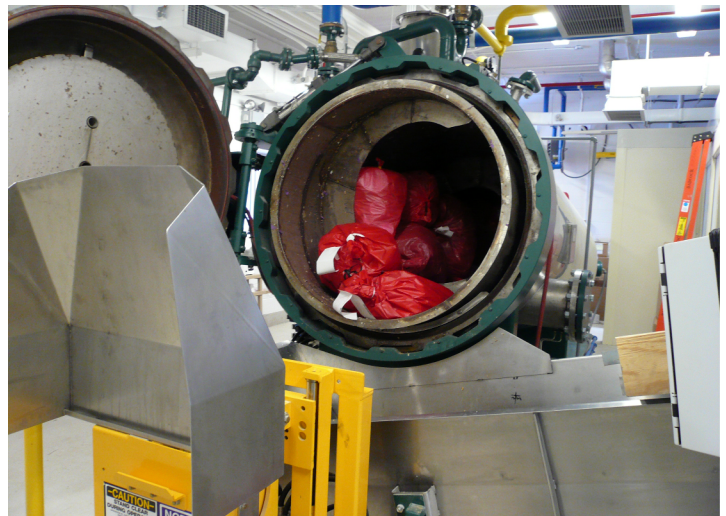


Rotating Inner Drum Autoclaves (RIDAs) are used for sterilizing or steam processing regulated medical waste (RMW) and other non-homogeneous solids or slurries which would entangle any other device that uses an agitator. The inner drum contains spiral flights that help the contents mix and tumble when the drum rotates. Because the flights are in a spiral configuration, the inner drum loads when rotated forwards; but when the drum is rotated in reverse, it completely self-empties all solids and liquids.



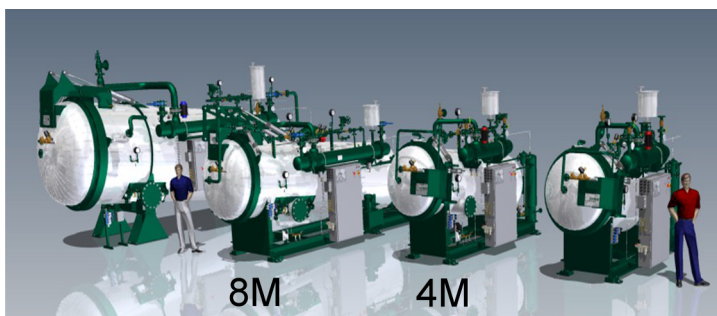
Stationary autoclaves require a long time for the center of a one cubic meter cart to reach sterilization temperatures. In comparison, imagine how long it would take to cook a 100 kg. cake. The tumbling action of the inner drum exposes all of the processed material directly to steam which heats it almost instantly. Most users run a 1 hour cycle which uses approximately 1/3 kg of steam per kg of RMW.

This table lists Liberty Welding and Bartlett Engineering's two popular hospital sized models and the key design parameters. We have designed and manufactured over 150 units scattered to all corners of the world such as US, UK (with EU CE marking per PED guidelines), Japan, Saudi Arabia, Qatar, China (with ML), and Mexico. Our ability to remotely troubleshoot the control system is particularly helpful for those machines that are in other countries or remote locations.

Model*	Nominal Size (dia. x length)	Capacity per Batch		
		Vol. m <sup>3</sup>	Wt. Kg	Qty red bags**
4M	1.2 m x 4.3 m	4	800	100
8M	1.5 m x 5.3 m	8	1600	200

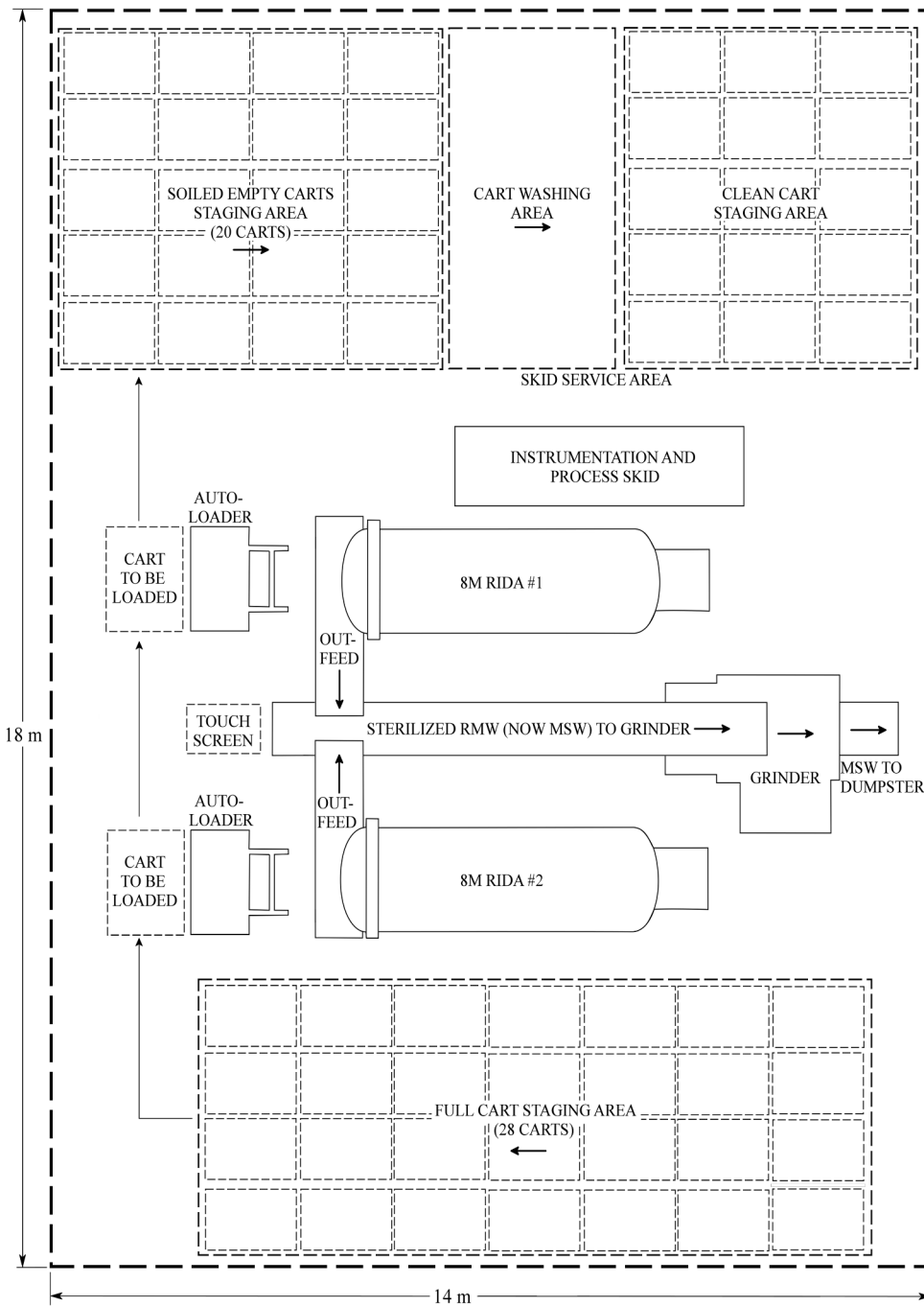
\*smaller units available

\*\*assumes 40 liters per bag



Every RIDA system comes with a performance guarantee that it can achieve a microbial inactivation of STAATT<sup>1</sup> Level IV, which translates to a reduction of bacterial spores by at least a factor of 1,000,000:1, commonly referred to as 6log<sub>10</sub> or 10<sup>6</sup>. This level is considered "sterilization." Some competing units which are rated for STAATT Level III achieve a reduction factor of 10,000:1, which is considered only "inactivation."

<sup>1</sup> STAATT - State and Territorial Association on Alternative Treatment Technologies  
<sup>2</sup> Bacterial spore reduction measured using geobacillus stearothermophilus as biological indicators.



This sample layout of a RIDA Room shows two of the 8M RIDA units and their associated equipment in an area 14m by 18m. In one month, this system is capable of processing 235 tonnes using a 2 hour cycle time and operating 40 hours per week. We estimate that the operating cost for that facility (labor, rent, and utilities) would be \$10,000 per month for an average of \$43 per tonne. For reference, according to an article published by the International Journal of Preventive Medicine, the average generation rate of Regulated Medical Waste (RMW) in hospitals in Isfahan, Iran is 0.63 kg/bed/day.

Included in the layout shown are marshalling spaces for the carts, the work flow paths to move the carts, the cart auto-loaders used to dump full carts into the RIDAs, and an instrumentation and process skid. Conveyors are also shown which are used to move the processed RMW to the grinder. Because the processed RMW is now sterilized, it has been converted to simply municipal solid waste (MSW). Another conveyor carries the ground MSW to your dumpster.

\*Not included in this layout is your boiler or your cooling tower.