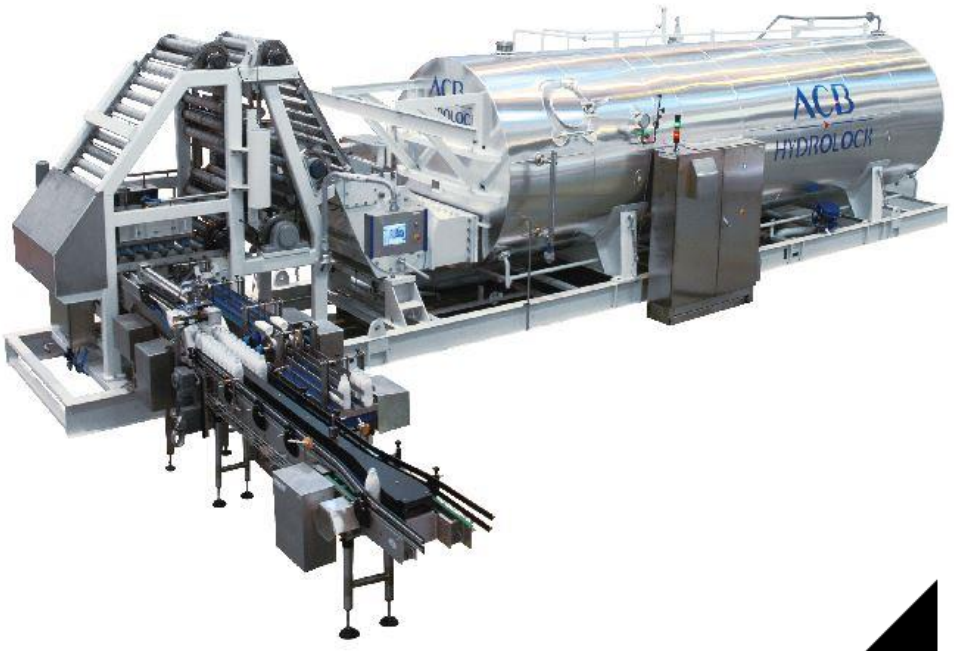
STOCK

innovative sterilization solutions

HYDROLOCK

CONTINUOUS STERILIZERS

FAQs



HYDROLOCK

FREQUENTLY ASKED QUESTIONS

HISTORY

Q: When did this technology start?

A: ACB, a French shipbuilding company, developed the continuous technology in the early 70's when they were asked to design a sterilization solution "on board" a fishing ship. On ship processing provided the highest efficiencies available eliminating the need for refrigeration. Since the inception of this technology there have been over 95 machines installed worldwide.

PRODUCTS/CONTAINERS

Q: Can they process more than rigid cans?

A: Yes. With the addition of a fan and process air control valve, the HYDROLOCK sterilizer can process at system pressures above saturated steam pressure providing required overpressure profiles for any semi-rigid or flexible package.

Q: Can Hydrolock sterilizers run different containers in a single machine?

A1: This is possible, but is optimized if the same container geometry is maintained. For instance, if capacity was designed for a 400 series diameter profile, it would not be prudent to run a 600 series can on the same sterilizer. The machine could process 200 and 300 series cans in any length.

A2: The HYDROLOCK sterilizer could also process two different containers at the same time with a compatible thermal profile.

A3: It is possible for the HYDROLOCK to be designed with "different style" material handling systems to allow for a combo system to sterilize glass on one and cans on the other as long as the cylindrical geometry is maintained and the container diameters are grouped in a compatible series.

PROCESS/OPERATIONS

Q: Can I see where the carriers are during the entire process?

A: Each carrier is tracked as well. At any point in time the operator can graphically determine what carrier is in any position of the sterilizer.

Q: Are process deviations automatically corrected with an alternate process?

A: Deviation correction is done by stopping the chain before the "Critical Carrier" enters into the water leg. The chain is held in position until the additional residence FO time is obtained then automatically restarted. The entire event is documented on the log report.

Q: How does the HYDROLOCK system handle a bad container entering the system?

A: If there's a problem with your can filler or closer, the HYDROLOCK system will not destroy the container during the process. The can will still be processed and maintain its integrity and will be identified "as bad" by a downstream Dud Detector after the sterilization process. With other sterilization equipment based on the "reel and spiral" mechanics, a deformed lid or low vacuum will easily create a jam condition causing major downtime and the need for vessel entry or sometimes reel removal. HYDROLOCK has a Single Valve for container "entry and exit" as compared to 3 pressure transfer valves on a typical shell Reel and Spiral sterilizer.

FREQUENTLY ASKED QUESTIONS

Q: Can I be assured a better Thermal Process?

A1: As compared to a Batch application, with HYDROLOCK there is no "Come Up Time" which is by definition the time it takes for all points of the sterilizers to be equal to or greater than the filed process temperature. By eliminating the Differential Temperature seen by the container loaded in the geometric center of the load verses the perimeter of the load; the HYDROLOCK does provide a shorter, more uniformed thermal process.

A2: As compared to a Rotary Pressure Sterilizer, the HYDROLOCK system can assure rotation throughout the entire cook and cooling phases of operation. The RPS uses gravity allowing the can to slip fall onto the spiral when the reel angle reaches a point in which gravity pulls the can to the spiral. This generally occurs in the lower 1/3 of the sterilizer. When the container is contacting the spiral it is pushed by the reel creating axial rotation.

A3: HYDROLOCK sterilizers rely on the contact friction of the continuously rotating carrier to provide axial motion transfer to the cylindrical containers within the cylindrical carrier. This technology provides continuous axial rotation throughout the entire process.

Q: How does this compare to a Rotary Pressure Sterilizer process?

A1: Like the RPS, the HYDROLOCK sterilizer is continuous in design although there is a major difference in container handling between HYDROLOCK and Rotary Pressure systems. The HYDROLOCK inserts multiple containers on a carrier during the loading/unloading cycle.

A2: This is a very low speed handling system as compared to a typical reel and spiral design (Rotary Pressure) loading singular cans through a pocket valve at 500cpm plus. With HYDROLOCK, the container is never launched into a pocket valve. You will not acquire dents on the body and or the chime of the container.

A3: HYDROLOCK incorporates a low speed mechanical "Vane Type" valve which is immersed in water to prevent any back flow of steam.

Q: How does it compare to a typical HYDRO sterilizer?

A1: The HYDROLOCK is positioned horizontally and does not rely on hydraulic pressure developed in an infeed or discharge water leg to maintain stem-pressure in the sterilization segment of the sterilizer.

A2: Although a HYDRO can load and unload containers in sticks, it is very susceptible to temperature changes, atmospheric barometric changes and varying load changes by nature of the design.

A3: The HYDRO can deliver can agitation as it passes over the head-shafts only. The HYDROLOCK design can provide continuous agitation throughout the entire heating and cooling phases.

A4: HYDROLOCK incorporates a low speed mechanical "Vane Type" valve which is immersed in water to prevent any back flow of steam.

Q: How does the machine start up?

A: The ICON system first runs a full electronic diagnostic check of all field device instrumentation. It then determines if there are available utilities available to adequately heat and cool the sterilizer. If the HYDROLOCK machine is formatted to be a Saturated Steam sterilizer and all supporting criteria are validated, the operator enters a password protected startup screen that will automatically adjust all levels in the sterilizer and start a vent process. Venting is based on a pre-established temperature and time test.

CONTROLS/REPORTS

Q: Can you control equipment outside the HYDROLOCK application?

A: You will have the ability to divert tagged carriers to another location (other than packaging). Our PLC can communicate downstream equipment to divert when "XYZ" carrier is in place for unloading. As a standard with monitor filler bowl temperatures to validate product Initial Temperatures.

Q: Can the control system monitor process stops for overcook?

A: A secondary timer tracks cumulative time to verify the product does not receive process time over and above a quality threshold. The system will display and alarm if any carrier in the sterilizer is in danger of over-processing.

Q: How are reports generated?

A: Log reports are grouped by "Blocks of Time" with time being a selectable variable. Generally most operations set up their log cycles in 4 hour periods. This is considered the process log and will be fully computer generated. The Operator will need to place information into the system such as visual checks including: MIG/TID readings, Reel Timing and Bleeder Evaluation.

Q: How are recipe profiles managed?

A: The ICON Recipe management is capable of tracking the active process and the awaiting process. If the current process is shorter than the waiting process the chain must be run clean. If the awaiting process is shorter and the Process Manager will allow for some product to be over exposed, a void time can be placed to allow for separation of the containers. Once Product One clears the exit, the chain speed can be ramped up to facilitate the shorter process. This is production dependent, but it is in the logic and expertise of the system.

Q: How can I see my Energy Efficiencies?

A: Energy Tracking is done for Steam, Air, and Water. Analog flow meters monitor utility inputs in real-time. We can directly correlate flow with energy cost based on Steam - Pounds/ Per Hour, Air – Cubic Feet/Minute and Water - Gallons/Minute. With your supplied costs/Therm/Water-Sewer/Kilowatt Hour we can provide actual cumulative reports based on real-time resources used.

VALIDATION

Q: Are these systems validated?

A: Validation (21 CFR Part 11) is performed for every HYDROLOCK USA installation along with process Temperature Distribution and Heat Penetration testing for up to two recipe profiles.

SUPPORT/MAINTENANCE

Q: How are these installations supported?

A: A STOCK America Service Technician will remain in the Corning Area for up to thirty days after the unit starts running production to assist personnel with any pop-up issues or questions. We want to make absolutely sure your personnel are fully capable of internally supporting every aspect of this equipment.

Q: How are maintenance parameters checked?

A: Our maintenance screen will log runtime hours on the chain, record failed instrumentation such as Overload condition on VFD's, and Overload contacts for On/Off motors as well as Analog Inputs when an (Out of Range) condition is observed. The R.T.D. inputs are dual element probes programmed to switch PID control in the event of a failure. The system documents the event and will remind the operator the system is running in a non-redundant mode of operation before the sterilizer is restarted.

Q: How can management be alerted when there is a required action?

A: The system has the ability to communicate with smart phones/tablets for message alerting based on a predefined set of alarm conditions. The alarm message protocol can be set for Thermal Process, Maintenance and General Management

Q: What does HYDROLOCK do to insure the longevity of this equipment?

A1: In every HYDROLOCK proposal is our Standard "1st Year" Checkup. Our team will be on-site for your shutdown and assist with the removal of the carrier section. Our Engineers will inspect the shell, material handling system and carrier assembly for any abnormal wear and make adjustments while providing concise verbal and written explanation to the Engineering and Maintenance staff.

A2: We work with your local water treatment provider to implement the best water maintenance program for this sterilizer based on local conditions. Our ICON controls application fully maintains the injection and monitoring of critical control points.

A3: It's a great idea to Soda Blast the assembly at this time as well. After the first year checkup we recommend this be done every Four Years of Operation.

Q: How does STOCK America support HYDROLOCK?

A: Our Engineering Team, Electrical and Mechanical, are available directly on a 24/7 status. Our ICON controls are designed to allow for a real-time view of all analog and digital information as well as direct access to source code. If we cannot isolate and eliminate a situation remotely we will be on location ASAP.