

Retorts— Processing With Overpressure

Overpressure: Pressure supplied to a retort in excess of the normal pressure exerted by the heating medium at a given temperature and is used to:

- To maintain container integrity
- To permit adequate processing

Overpressure requirements vary:

- Too much at the start of the process could distort containers (crush containers) or damage seals
- Too little during heating could lead to container rupture or seal damage, slow heat penetration, or interfere with water circulation patterns in the retort
- Too little during cooling could lead to container rupture or seal damage

Factors affecting overpressure requirements:

- Product fill temperature
- Container headspace
- Container vacuum
- Entrapped air
- Processing temperature

Each retort **must** have a pressure recording device

Each retort **should** have pressure gauge

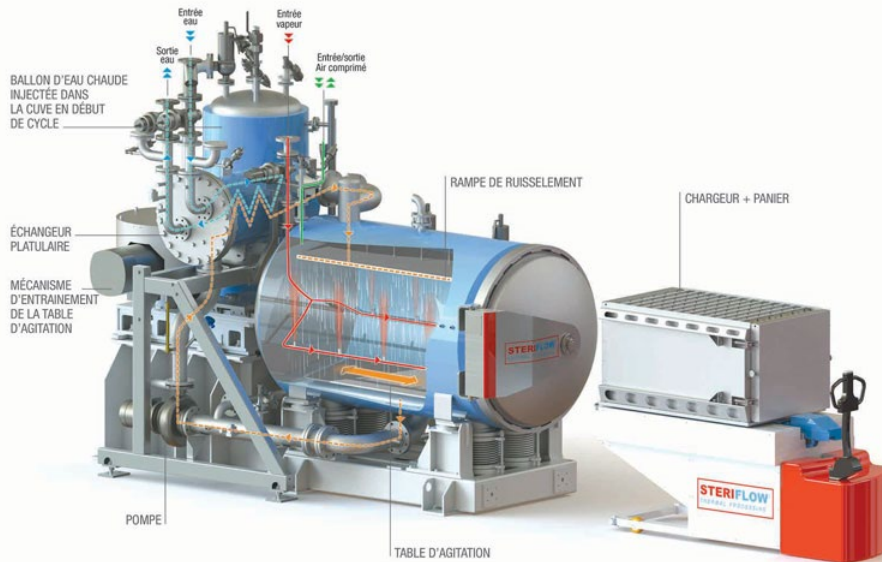
Each retort **must** have a means of providing uniform HD/TD during processing

The efficiency of the circulation system **must** be documented in HD/TD data or other documentation from a Processing Authority

HD/TD data **must** be on file at the establishment to support the retort operating procedures

General Characteristics of Retorts that Provide Overpressure:

- Introduced steam or air is the source of overpressure
- Batch processing, not continuous container handling
- Static (still), rotary (end-over-end), and back and forth (Shaka®process) agitation models



Picture of retort with the SHAKA agitation

Factors that may Affect Heat Distribution or Processing Medium Circulation:

- Operating pressure
- Come-up procedures
- Partial loads
- Fan or pump off or not functioning properly

Retorts that Provide Overpressure

- water immersion,
- cascading water,
- water spray
- steam/air mixture