Design and Development of Autoclaves

Autoclaves are used to manufacture airworthy composite components under suitable settings of pressure, vacuum and temperature. CSIR-NAL now has the capability in building large computer controlled autoclaves with the associated subsystems. MoU has been signed with a private industry for manufacturing and marketing of autoclaves.

Indigenous Autoclave Technology

*India’s largest 4.4m x 9m autoclave was commissioned at NAL in 2009. A high temperature, high pressure autoclave capable of reaching 350°C and 15 bar(g) was also commissioned in 2010.*

**Specifications:**

- **Dia. of working space**: 4,400 mm
- **Length of working space**: 9,000 mm
- **Working pressure**: 7.14 kg/cm²
- **Working temperature**: 250°C
- **Working capacity**: 2,14,000 litres
- **Control system**: Dual computer, Recorder, PLC and PID controller based, in-house developed software.
- **Operating weight**: 90,000 kg
- **Maximum charge**: ~12,000 kg of steel
- **Temp. uniformity**: ± 2°C
- **Rate of heating**: 0.5°C/min
- **Rate of cooling**: 0.3°C/min

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