



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
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Core saturator

Core plug saturator is a system that consists of a pressure control panel, a core plug holder vessel, a pneumatic pump to drive liquid/gas into the sample saturation chamber, and a vacuum pump to evacuate the pore spaces of the sample. It is used to saturate clean and dry core samples. Liquid phases include oil/water/brine, gaseous phases include CO₂/CH₄/N₂.

1. Core holder

1. Pressure resistant saturation cell rated up to 2000 psi, sealable with a threaded plug.
2. Wire mesh basket for placing the core and loading in saturation cell
3. Saturation cell diameter: 58 mm
4. Saturation cell height: 300 mm
5. Adaptable to smaller sample sizes using spacers.
6. Non-corrosive upon interaction with water/brine/oil/gas.

2. Vacuum pump

1. Double stage rotary vane pump
2. Attached to core holder for evacuating void spaces before analysis
3. Vacuum up to 10⁻⁵ psi
4. Trap tank between core holder and vacuum pump

5. Equipped with filter and manometer.

3. Plumbing

1. Pressure gauges for visualizing inlet fluid/gas pressure and saturation pressure.
2. Control panel for controlling valves and observing pressure.
3. Wetted materials of SS316
4. Pressure resistant non-corrosive pipelines
5. Back pressure valve for safety

4. Pumps

1. Manual hydraulic pump for fluid saturation. Pressure requirement up to 2000 psi
2. Saturant vacuum tank
3. Syringe pump for pressurizing gas before injection. Pressure requirement upto 2000 psi.
4. Gases required: CO₂, N₂, CH₄

5. Other specifications and requirements

- Feed tank must be supplied
- A set of plastic disks used to fill the unoccupied cell volume
- Warranty of three years
- Spare parts must be supplied
- Required gauges and plumbing as needed (other than mentioned)

Eligibility criteria:

- A similar facility must have been supplied and functional, preferably in India. User reports (Qty -2) may be provided and performance demonstration may be sought.