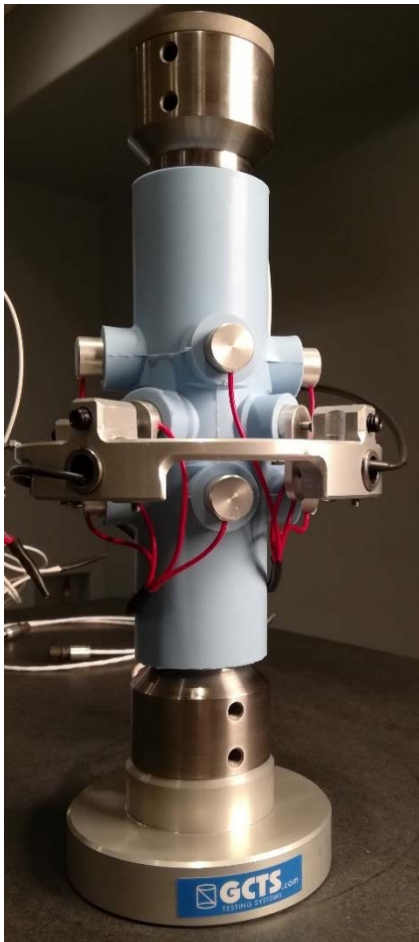


## Reusable Membranes for Specimen Instrumentation



### DESCRIPTION

Membranes are used in triaxial testing for isolation of the test specimen from the confining fluid. These membranes are used in laboratory tests which include acoustic emission monitoring of hydraulic fracturing (fracking). GCTS has developed a new way of producing custom diameter and length membranes with ports for acoustic emission or ultrasonic velocity sensors. The membrane design allows these sensors to be in direct contact with the specimen for increased measurement precision, unlike the standard method where instrumentation is mounted over the sealing jacket.

The sensor ports can be configured with a desired geometry for acoustic emission echolocation of the crack propagation in 3D space. Additional ports can be added to the membrane for mounting strain measurement sensors. The membranes can accommodate a GCTS cantilever bridge (DEF-CAN) or an LVDT holder ring for measurement of local radial strains together with acoustic emission or other sensors.

The membranes are manufactured from a flexible material which can sustain confining pressures up to 210 MPa (30,000 psi) and temperatures up to 200 °C (392 °F). These membranes allow for a quick setup and are fully reusable, unlike standard heat shrink tubing, which needs to be discarded after each test. The mounting holes can be configured with different diameters and spacing, and custom geometries can be produced upon request.