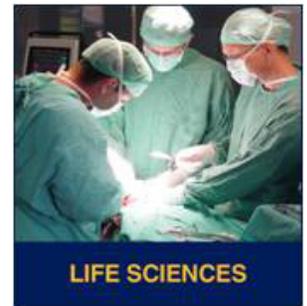


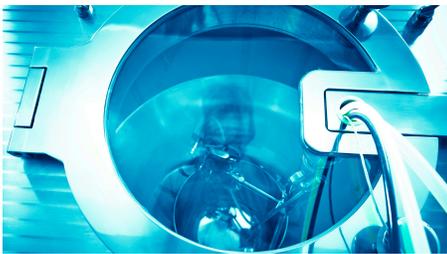
# Problem Solved!

## TECHSEAL INNOVATIONS - HYPERBARIC CHAMBER DOOR SEALS



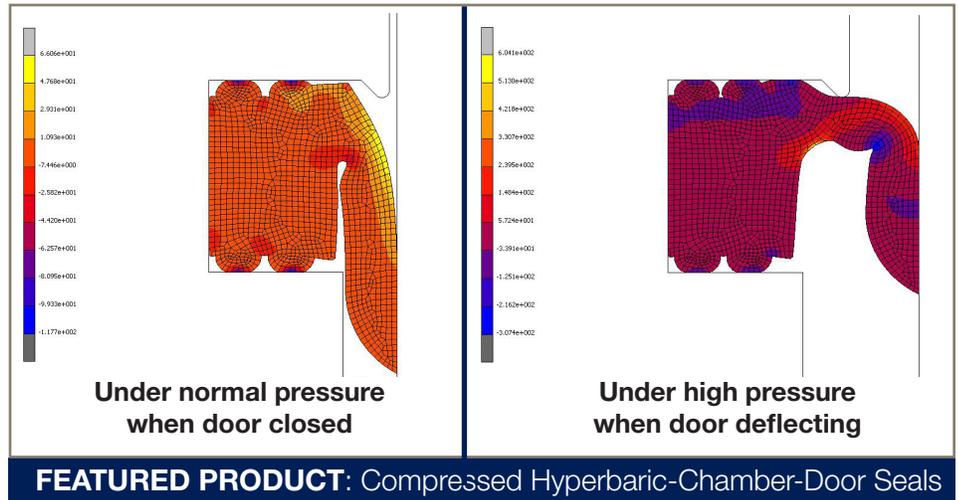
### Application

Hyperbaric oxygen therapy (HBOT) chambers are used to expose patients to high concentration oxygen at high pressure for many medical and health treatments.



(The illustration above represents only part of the hardware, not the entire application.)

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### Problem

The therapeutic principles of HBOT consist of a pressure chamber and a process of increasing the oxygen level in the patient's blood cells. While the patient is inside the pressurized chamber, maintaining the right pressure inside the chamber is extremely critical; a sudden loss in pressure may result in

discomfort or even endanger the health of the patient. One of the major causes of sudden pressure drop is inadequate door sealing. TechSeal's customer was experiencing failure with their current door seal design. Under high pressure the chamber's door deflected outward and created gaps around the door hatch.

The seal failed to seal the gaps and blew out of the door's groove, resulting in a pressure loss. TechSeal's team of Application Engineers proposed a new custom seal design that overcame the door deflection problem, has a higher seal retention, and can be installed more easily.

### Parker Solution

TechSeal's Application Engineers provided the customer an enhanced design geometry with ribs and a flap. The ribs act as stabilizing features and aid with seal retention as well as installation. The flap, as illustrated above, provides superior sealing to the chamber door both when the door is closed under normal pressure and when the door is deflecting under high pressure. Additionally, the flap design operates under low compressive force so the operator will not have to exert a large force to close the door.

TechSeal assisted the customer throughout the design process by supporting testing and selecting a sealing grade silicone material. For more details on the TechSeal Division's sealing solutions for chamber doors, please contact our Application Engineers, or refer to the bulletin "Chamber Door Seals" (TSD 5432) available on [parker.com/techseal](http://parker.com/techseal).

### Contact

**Parker Hannifin**  
TechSeal Division  
3025 West Croft Circle  
Spartanburg, SC 29302

Phone: 864 573 7332  
Email: [tsdmarketing@parker.com](mailto:tsdmarketing@parker.com)  
[www.parker.com/techseal](http://www.parker.com/techseal)

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