NEW TAP AND BORE (TAB) WET MATE TECHNOLOGY

Simple. Robust. Fluid Filled.

Affordable wet-mate connector technology has arrived.

The complexity of fluid-filled connectors has kept them very expensive since first introduced over 40 years ago.

Now, a patented sealing-technology breakthrough is positioned to change the industry, with a simple, robust seal design.

The new Tap-and-Bore (TAB) seal system achieves penetrable oil chambers using a onepiece, uncomplicated interface that remains sealed before, during, and after repeated connector mating.

TAB connectors lower manufacturing and quality assurance costs by incorporating many fewer and simpler reliable components.

This state-of-the-art technology is available through licensing agreements or acquisition from Pontus Subsea Connectors, LLC (PSC), a leading technical expert in wet-mate connector technology.



SCHEMATIC OF A TAB ELECTRICAL CONNECTOR'S BASIC ELEMENTS

PONTUS SUBSEA CONNECTORS, LLC

TAP AND BORE (TAB) REVOLUTIONARY SEAL DESIGN EXPLAINED

Tap and Bore (TAB) seals are simple one-piece devices through which elongated objects can repeatedly be inserted and withdrawn without leakage. They are incorporated into several of PSC's wet-mate connectors.

The figure illustrates a TAB seal schematic wherein the seal body is an elastomeric disc through which a crescentric perforation is made. The perforation creates a tap and a bore. For illustration purposes the disc is shown with a cut-away pie-shaped portion displaced radially outward. There is an uncut portion of the tap that remains attached to the seal body, and which acts as a strong muscle to pull the tap into the bore. Both the tap and bore have flared ends that aid in sealing the tap and bore interface.



When an elongated object such as an

electrical pin of slightly larger diameter than the bore penetrates the seal, it displaces the tap, sealing within the bore.

When the pin is withdrawn from the seal, the uncut portion of the tap snaps the tap back into position within the bore. The tap's flared ends assist both in sealing the interface and in wiping the bore clean.

Several TAB seal devices are shown in this document. One configuration contemplated but not shown allows the possibility of high pin-density fluid-filled connectors, something that has never existed before. It is projected that as many as 18 electrical circuits could be housed in a 1.2" diameter shell.





WORKHORSE



GELCON

Electrical Wet Mate

FOXHOLE Fiber Optic Wet Mate

SPECIFICATIONS

	Dimensions (in)	No. of Pins	Туре	Capacity
FOXHOLE	1.0 Dia x 4 L	1	Fiber Optic	Single or Multimode
WORKHORSE	1.25 Dia x 8 L	3	Electrical	3.0 KVDC 30 A
GELCON	1.0 Dia x 4 L	3	Electrical	3.0 KVDC 30 A

ALL THE ABOVE CONNECTORS ARE FLUID FILLED AND PRESSURE BALANCED WITH REVOLUTIONARY TAB DESIGNED SEAL TECHNOLOGY.

THE NUMBER OF CONDUCTORS AND CARRYING CAPACITY CAN BE DESIGNED TO FIT ANY APPLICATION.

BENEFITS OF TAB SEAL CONNECTORS

All new improved technology

Fluid-filled and pressure balanced

Simple, robust designs minimal part count

Positive closure seal designs

Most parts may be injection molded, minimizing costs

ABOUT PONTUS

Pontus Subsea Connectors, LLC (PSC) is a Limited Liability Corporation founded by Dr. James Cairns.

Dr. Cairns co-founded both Lockheed Challenger Marine connectors and Ocean Design, Inc (ODI).

He holds over 60 U.S. Patents, mostly on underwater connector design.

Rubber Molded Fluid-Filled