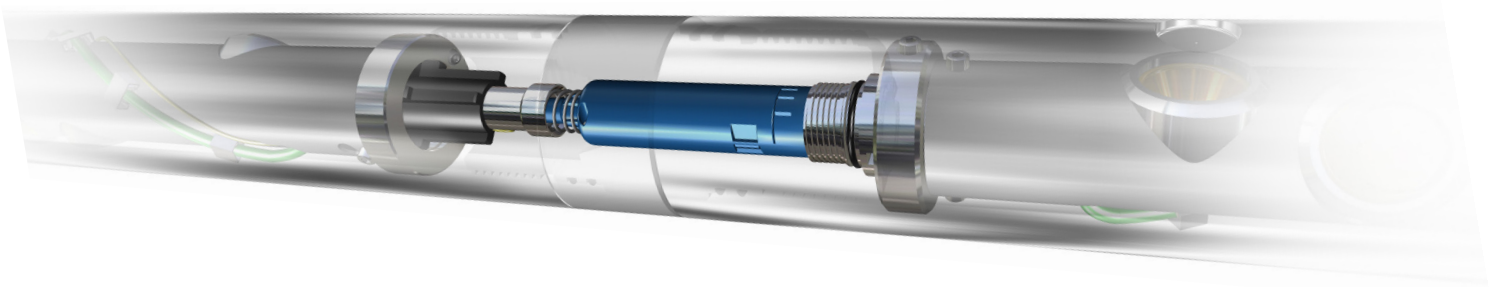


ESUB International Adoption

Titan Division | Wireline Hardware



Overview

Recent technological innovations from Hunting's Titan Division, combined with our worldwide distribution network, have led to widespread global adoption of the Efficiency Sub (ESUB) with our patented ControlFire® Cartridge (CFC).

Challenge

Globally, operators are demanding increased perforating efficiencies, improved safety, and reduced non-productive time (NPT).

Solution

The rising popularity of the ESUB in international markets is providing a simple, yet reliable, method of using the CFC with the most common perforating guns in the industry.



"We have seen an abundant increase in the use of ESUB for the global market over the past couple of years. Our customers continue to look for opportunities to simplify their operations with added operational flexibility. ESUB provides them the ability to use their existing technology and improve their operating efficiencies."

– Jason Mai, Managing Director
Hunting's Titan Division

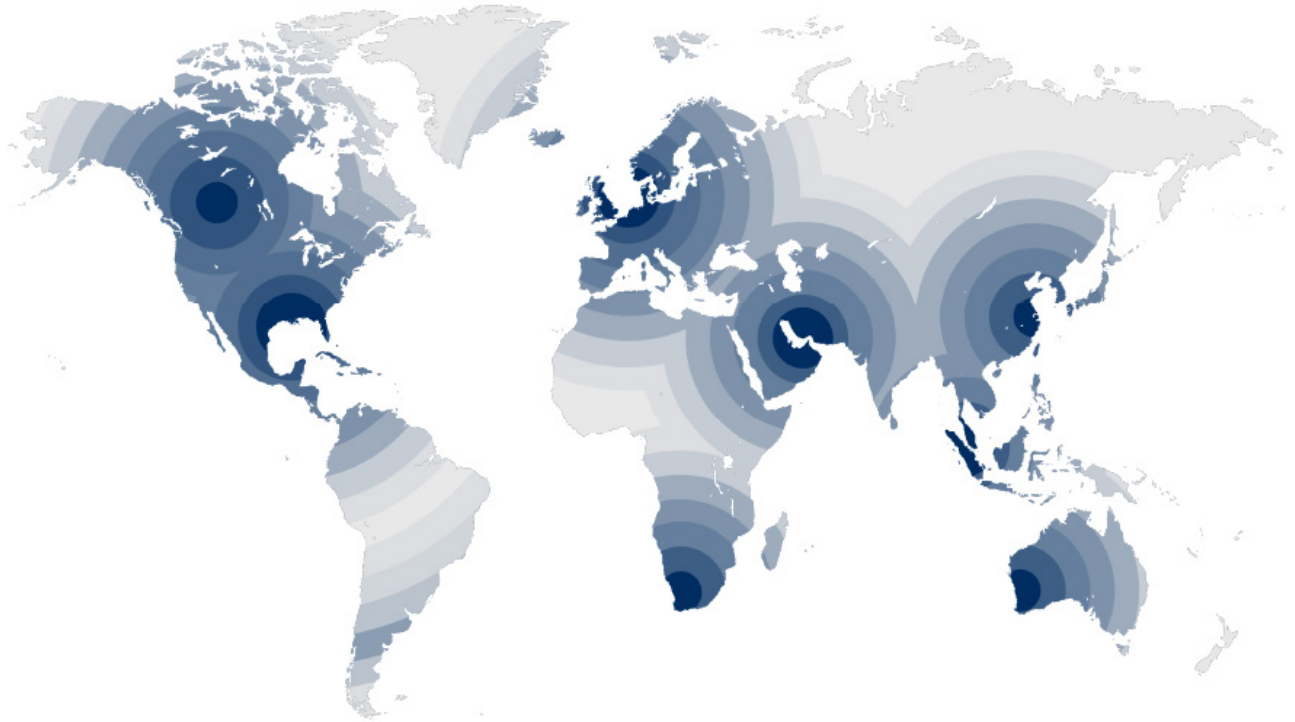
The ESUB is a semi premium, cost efficient plug-and-play solution for the conventional perforating gun system. The ESUB is installed in a conventional gun to provide a degree of "smart gun" capability. ESUB utilizes ControlFire® Cartridge technology, allowing for simple, wire-free arming and assembly.

The CFC combines the trio of bulkhead, switch, and detonator into a plug-and-play cartridge that only Hunting can provide. This patented technology greatly reduces service quality errors while simplifying the arming process of the perforating gun. The ESUB can therefore be armed without wiring switch and detonator. Instead, the CFC containing the switch and detonator is simply screwed into the bottom end of the gun.

Contained within the CFC is the ControlFire® switch itself. ControlFire® is the most widely used surface-safe, addressable select-fire switch in the market. It is safe from stray voltage, electrostatic discharge and radio frequencies, while also allowing perforating guns to be fired individually from bottom to top via addressable software, without relying on the previous detonation to fire the next gun. This provides skip-over capabilities in the event of a misfired gun. The ControlFire® Switch has been run over 5 million times, with a success rate of 99.999%.

Outcome

Hunting's ESUB, the plug-and-play solution to the standard perforating gun, is quickly becoming one of the foremost detonation systems for perforating worldwide. Major operators are adopting the technology in the Asia Pacific region, including China, as well as the Middle-East and Latin America.



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Further Information

Web

www.hunting-intl.com

Email

sales.titan@hunting-intl.com

support.titan@hunting-intl.com

Global Headquarters

Hunting Energy Services Inc.

16825 Northchase Drive, Suite 600

Houston, Texas 77060-3236

USA

T. +1 281 442 7382



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