

Halliburton Velocity™ Revolve Gun System

INDUSTRY'S MOST ACCURATE, COMPACT, AND VERSATILE SYSTEM FOR ORIENTING PERFORATIONS IN FIBER-OPTIC COMPLETIONS

OVERVIEW

With the increase of fiber-optic installations in unconventional wells to achieve better understandings of well completions and production, the need to accurately orient perforations to avoid damaging fiber-optic cable is critical. Unintentionally damaging the fiber-optic hardware can negatively impact the well's treatment and production diagnostics. While oriented perforating is not a new concept, existing solutions have been either unreliable, inefficient, or uneconomic.

The Halliburton Velocity™ Revolve oriented gun system gives operators the ability to confidently orient perforations within 5° of the desired perforating azimuth, which is more precise than the leading competitive system on the market. The ability to align the perforating charge tube by using internally oriented components eliminates the need for externally oriented hardware, such as eccentered weight bars, which can also increase complexity and unreliability.

As the first internally oriented, fully modular guns on the market, Velocity™ Revolve guns eliminate the need for additional hardware and failure-prone components. Traditionally oriented perforating jobs can require additional equipment and personnel on location to prepare the gun string and to clean hardware in between each run, and this requirement can have a negative impact on overall frac efficiency. Velocity™ Revolve guns are pre-loaded and aligned prior to shipping and can be delivered directly to a wellsite. Upon arrival of the Velocity™ Revolve gun system, a wireline crew only needs to insert a detonator and assemble the final bottomhole assembly (BHA) before running it in hole.

Legacy oriented perforating methods can decrease the overall efficiency of a frac job by as much as 67%, which can increase the cost of the completion spread by hundreds of thousands of dollars over the course of a well. Another gap in legacy oriented systems has been the additional hardware length that is often required, along with potential limitations in the perforating charge performance specifications. Oriented Velocity™ Revolve guns are up to 35% shorter than competitive gun systems and are better suited for more common industry-standard perforation charges, with a wider range of entry hole diameter specifications.

FEATURES

- » Orients charges within 5° of the desired angle
- » Orientation unaffected by wellbore conditions
- » Modular, disposable platform
- » Shorter length than competing systems
- » Broader portfolio of charge options than traditional gun systems

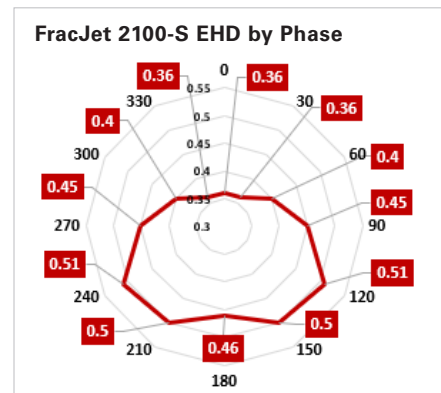
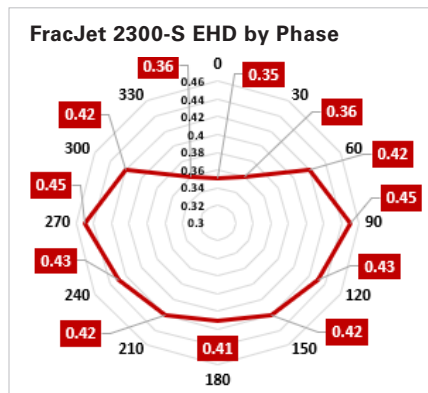
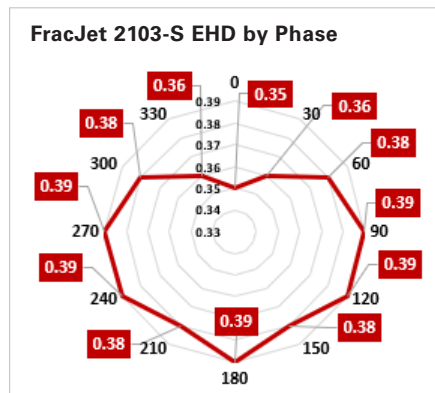
BENEFITS

- » Provides the most accurate and efficient internally oriented system in the industry
- » Offers the lowest total perforating cost for fiber-optic completions
- » Eliminates the tasks of redressing and cleaning equipment
- » Reduces the amount of equipment and personnel required to be on location



Velocity™ Revolve	Legacy Oriented Guns	Benefits of Velocity™ Revolve Systems
Internally oriented mechanism	Reliance on eccentered weight bars and subs	<ul style="list-style-type: none"> • More reliable orientation method and shorter BHA than in traditional systems • Unaffected by wellbore conditions
Modular platform	Loading, assembly, and/or wiring required on location	<ul style="list-style-type: none"> • More efficient surface operations • Elimination of human-caused failures • Fully disposable • Eliminates the need to clean and redress equipment
Accurate within 5° of desired angle	Accuracy known to be more than 60° off in some cases	<ul style="list-style-type: none"> • Provides confidence in fiber-optic avoidance • Eliminates downhole variables in the completion design
Shortest BHA in the industry	Requires longer guns and additional hardware	<ul style="list-style-type: none"> • Ability to run more guns without the need for additional surface equipment • More easily conveyed down hole
Multiple perforation charge specifications	Often limited to a single perforation charge specification	<ul style="list-style-type: none"> • Completion design flexibility • More limited entry options

Revolve Shaped Charge Entry Hole Diameters by Phase



Specifications are in 5.5-in 23# casing

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

H014095 02/23 © 2023 Halliburton. All Rights Reserved.