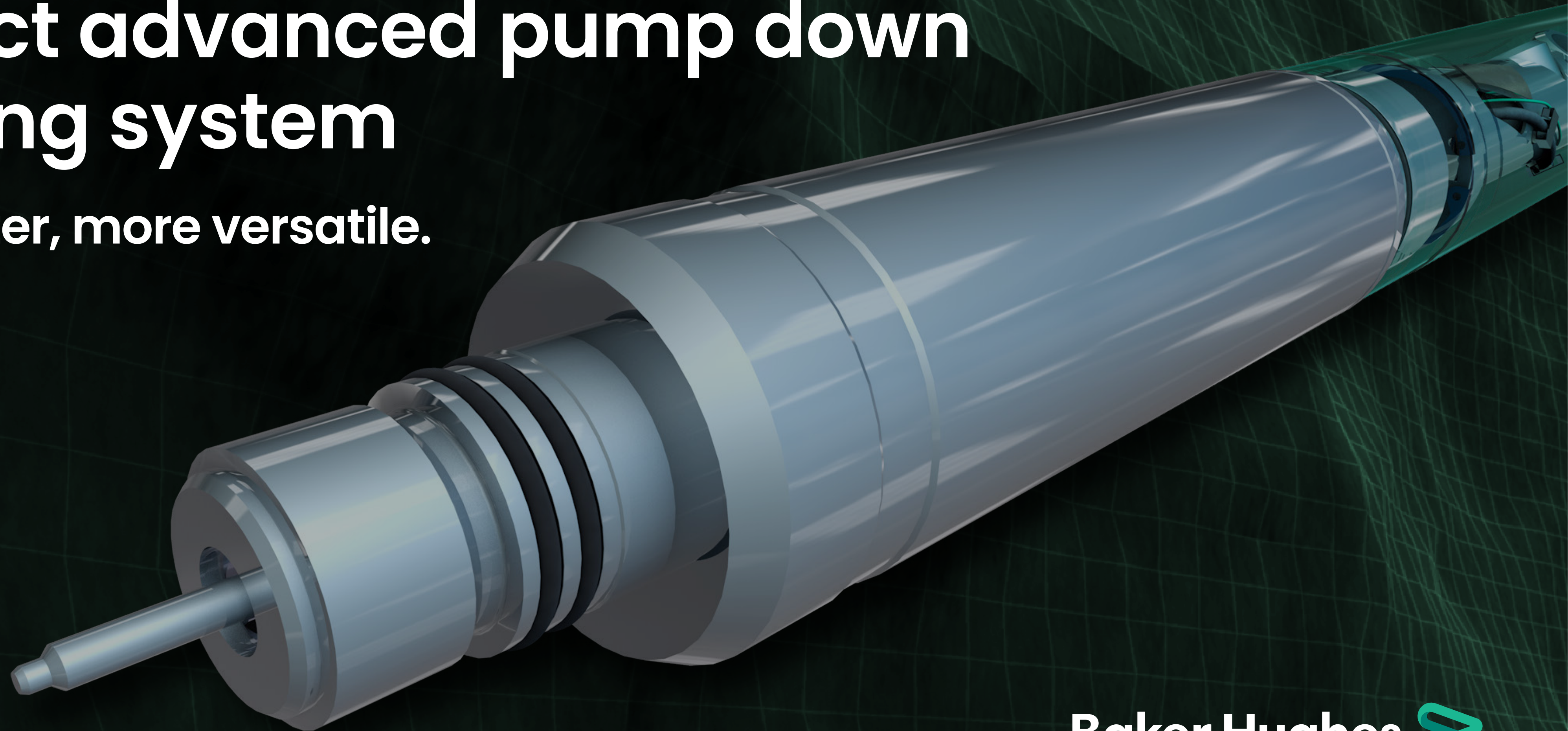


# TrueSelect advanced pump down perforating system

Quicker, smarter, more versatile.



[bakerhughes.com](http://bakerhughes.com)

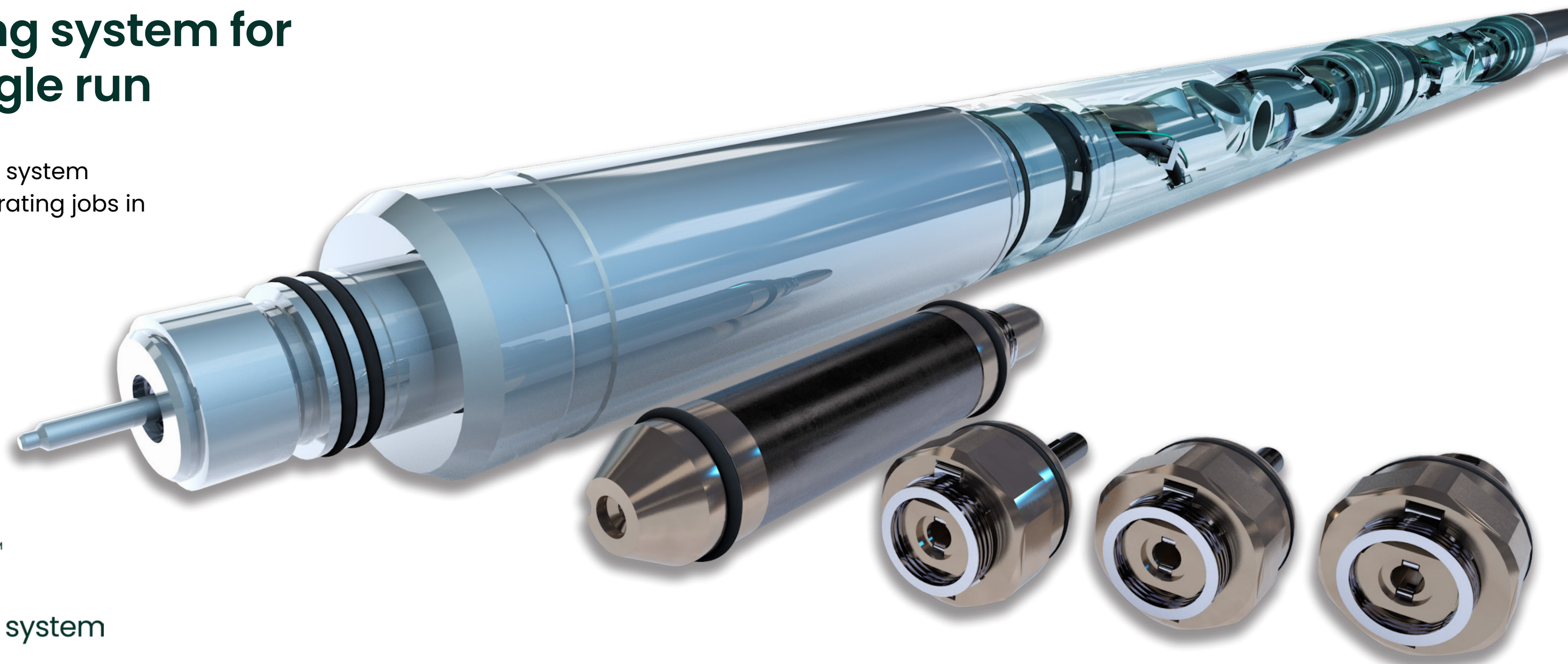
**Baker Hughes** 



## The TrueSelect advanced pump down perforating system

Get a quicker, smarter, more versatile plug-and-play perforating system for multiple intervals in a single run

The TrueSelect™ advanced pump down perforating system enhances the speed, safety, and certainty of perforating jobs in conventional and unconventional wells alike.



**TrueSelect™**  
advanced pump down perforating system



## QUICKER



## Quicker

The TrueSelect™ system features a fully disposable, pre-assembled gun ready for rapid connection at the wellsite to substantially reduce deployment and operational time. Because this pre-wired system is quality confirmed before it reaches the well, you can eliminate electrical connection in the field, nonproductive time, and misfire risks.

With its modular design and simplified assembly at the wellsite, the TrueSelect system helps avoid common challenges associated with conventional pump down perforating systems to let you:

- Simplify workovers and eliminate post-run maintenance through fully disposable components
- Gain the assurance of a pre-assembled, single-pressure bulkhead within each tandem sub, minimizing component failures and human errors
- Eliminate electrical connections to reduce assembly time between deployments
- Reduce make-up length, easing navigation through the wellbore and enabling more clusters (up to 30 guns) in a single run

The TrueSelect system incorporates software with a graphical interface, which quickly guides you through system check, addressable switch verification, and on-the-fly initiation of each perforation cluster.





## SMARTER



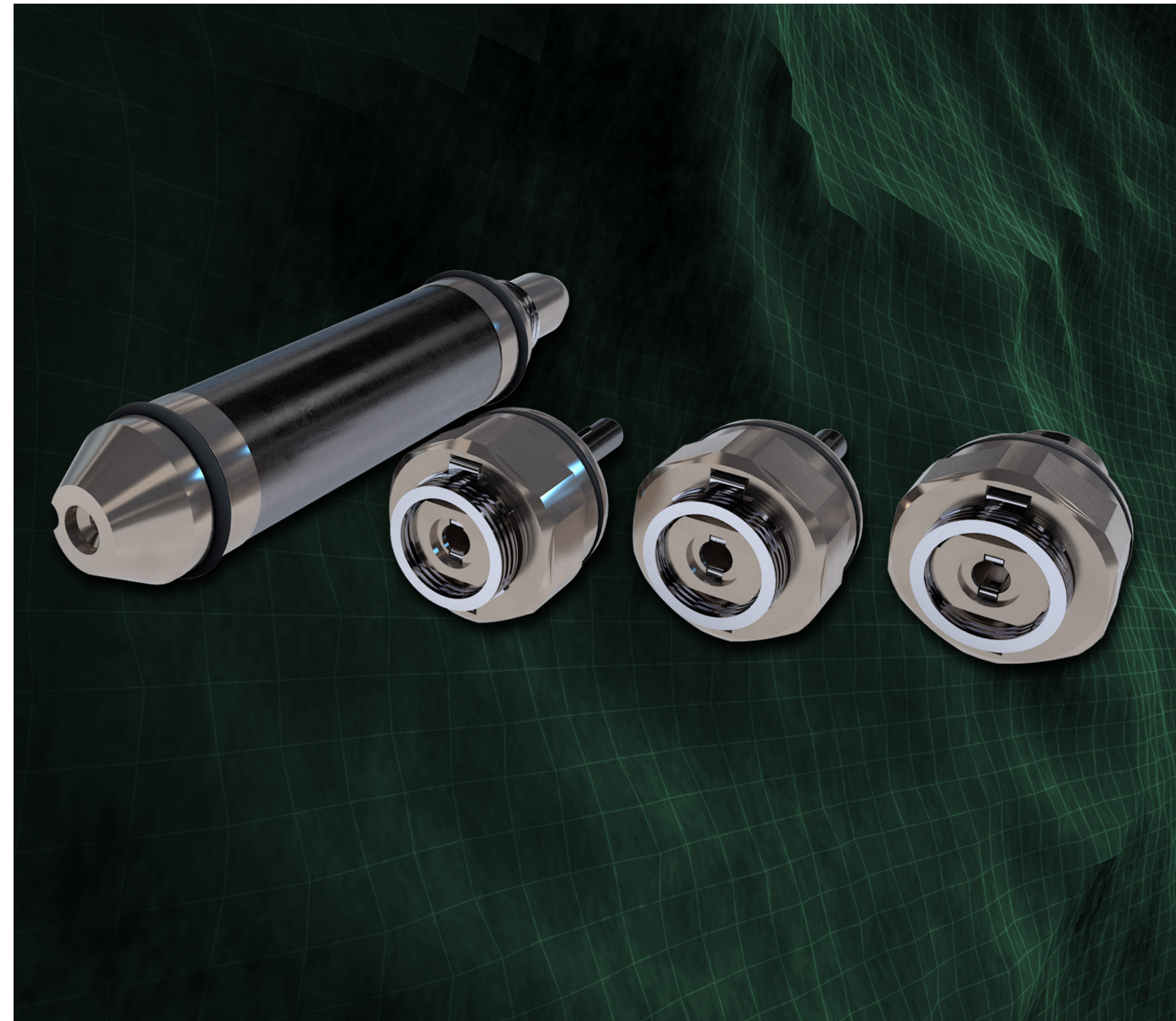
## Smarter

The TrueSelect™ system is intelligently designed to increase safety, reliability, and efficiency at the wellsite. Smart features include a fully integrated cartridge design with non-sequential addressability, which lets you:

- Eliminate address duplication on the rig site and the associated delays to reprogram or swap guns
- Identify each individual gun, igniter, release tool, and firing head, thanks to the unique address assigned to each cartridge switch
- Use each unique address to identify the physical position in the gun string, validate shots, and skip guns if desired

This smart system also offers detonator detection in each cartridge to safely and instantaneously validate the connection of the detonator or igniter to the switch after the gun/plug is fully assembled. You can validate this connection on surface prior to and during deployment and every time the gun is accessed. The system also lets you continuously validate the connection at any point during the log, with no interruption to operations.

The TrueSelect system enhances wellsite safety through radio frequency (RF) safe compliance with API RP67. In addition, an internal active detonator shunting system guarantees maximum safety during assembly and operation.





## MORE VERSATILE

## More versatile

The TrueSelect™ system is one of the most versatile plug-and-play perforating technologies on the market. Designed to enhance production efficiency, the system is highly customizable in terms of the number of clusters per stage, the type of charge used, and the shot-per-foot and phasing designs utilized.

This modular push-and-play gun system features a plug-in switch that:

- Integrates the switch circuit board with the detonator in one cartridge
- Easily adapts to hardware changes with minimal intervention by the user
- Eliminates gun wiring and the use of wire connectors during assembly and arming

The top cartridge serves as both a voltage regulator and safety switch that complies with API RP67 for enhanced reliability. In addition, the system's power output remains constant regardless of changes to input voltage or load conditions. This helps ensure a reliably strong signal, even when high-resistance and/or long wireline cables are used.

Versatility is further enhanced through consistent entry hole sizes at various penetration depths, shot phasing, and densities. Although designed for use with Baker Hughes TrueJet™ uniform hole-perforating charges, the system is compatible with any industry-standard, consistent hole-shaped charge.



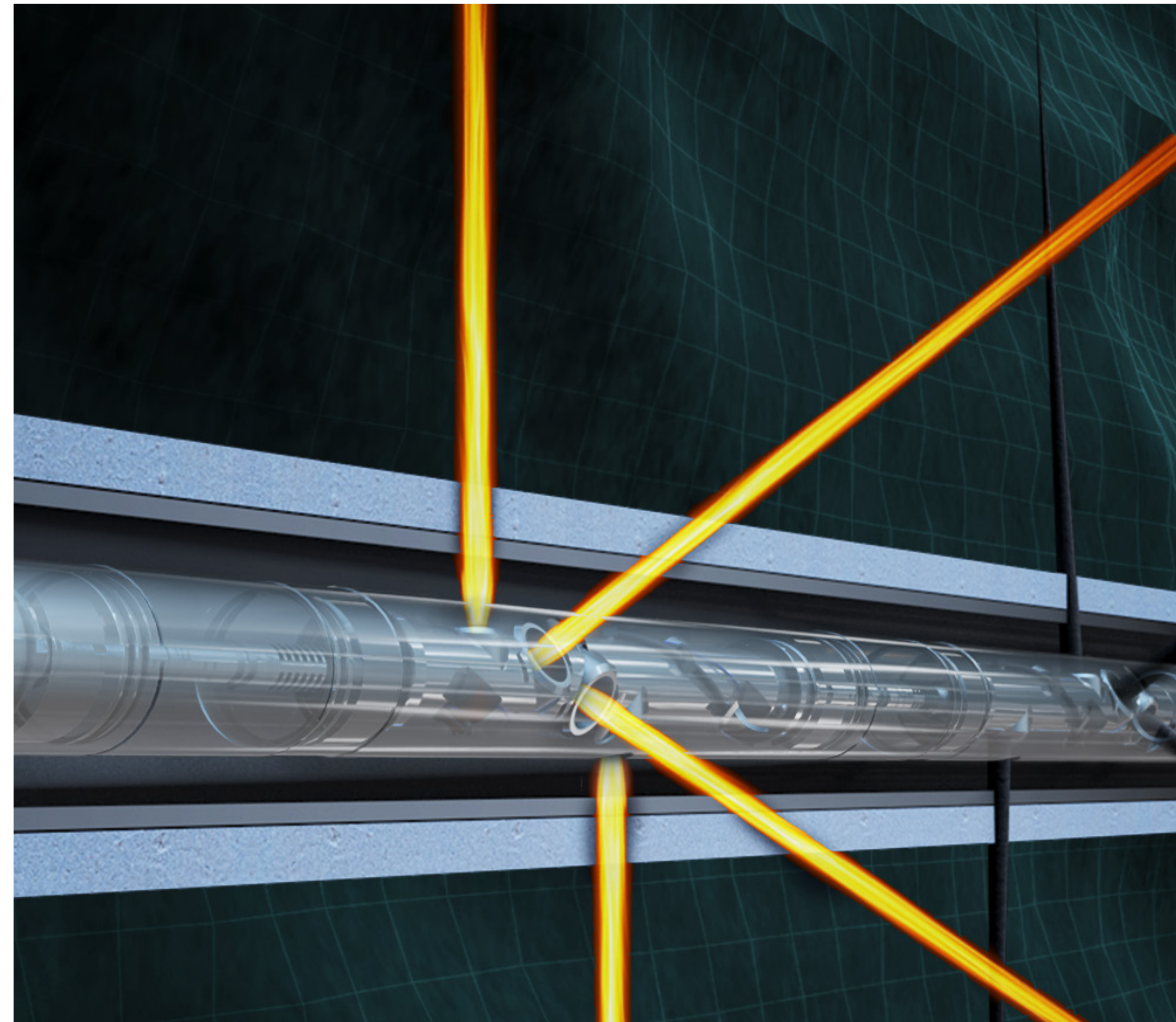


## Applications

- Pump down perforating in conventional and unconventional wells
- Plug-and-perf stage completions

## Benefits

- Eliminates wire connections and port plugs to minimize the risk of misfires and nonproductive time (NPT) common in conventional systems
- Maximizes operational efficiency by reducing the invisible lost time associated with assembling and verifying the system before each deployment between wellhead connections
- Enhances production efficiency by allowing customization of the number of clusters per stage, the type of charge used, and shot-per-foot and phasing designs
- Enhances safety at the wellsite and is compliant with API RP67
- Provides rapid access to information through a graphical surface interface, allowing for quick pulling speed while perforating clusters and verifying initiation



SPECIFICATIONS



# System ratings and requirements

3 1/8-in. size

Mechanical	
Nominal OD	3.63-in. (92.2 mm)
Nominal thickness	0.31-in. (7.9 mm)
Minimum ID for running	3.63-in. (92.2 mm)
Minimum ID restriction	3.50-in. (89.0 mm)
EHC tensile strength rating	88,000 lb (39,916 kg)
EHC torque rating	3,300 ft/lb (4,475 N-m)
Weight of gun body/tube	10.17 lb/ft (15.13 kg/m)
Weight of tandem assembly	6.50 lb (3.0 kg)
Weight of bull plug	10.85 lb (4.9 kg)

Environmental	
EHC pressure rating	20,000 psi (1,379 bar)
Temperature rating of Symphoni™ cartridge	340°F (170°C) for 1 hour

Electrical	
All fire current	800 mA
No fire current	250 mA @ 1 minute



HARDWARE



# System hardware

3 1/8-in. size

Hardware description	SAP description	Part number
Gun kit assembly	Kit, wired EHC, 3 1/8-in. HP SGS, (SPF, phasing)	View gun kit assembly for options
Top sub (firing head)	Assy, top sub, 1 5/8-in. HD GO pin, 3 1/8-in. SGS	A3004879313
Top sub cartridge	Assy, top sub cartridge, SGS	A3004884000
Disposable tandem sub	Assy, blkhd tandem, 3 1/8-in. SGS	A3004919313
Re-usable tandem sub	Assy, reusable blkhd tandem, 3 1/8-in. SGS	A3004919312
Setting tool adapter PSA	Kit, st head adapter, E-4 #10, 3 1/8-in. SGS	A3005101313
Setting tool adapter PSA	Kit, st head adapter, E-4 #20, 3 1/8-in. SGS	A3005102313
Detonator switch	Assy, detntr, A-2B, SGS cartridge	A3004885100
Igniter switch	Assy, st cartridge, split, hex, beta MGS	A3004864000
BRT switch with DETO	Assy, brt pcba enclsr, A-2B DET	A3004892200





HARDWARE



Top sub and cartridges >

# Top sub and cartridges

Hardware description	Required quantity	Part number
Top sub, 1 5/8-in. HD GO pin, 3 1/8-in. SGS	1	A1013559000
Assy, top sub cartridge, SGS	1	A3004884000
Retainer nut	1	A1013605000
O-ring 222 FKM-95	2	F243095222
Rebuild kit	Ref.	A3004879900

Dimensional data	in./mm
Outer diameter	3.13 (79.5 mm)
Length	9.93 (25.2 cm)
Top thread/type	1.6250-6 ACME
Bottom thread/type	2.750-6 ACME





HARDWARE



# Tandem sub and feedthrough kit

Tandem sub and feedthrough kit



Hardware description	Required quantity	Part number
Disposable: Tandem sub	1	A1013429000
Re-Usable: Tandem sub	1	A1014605000
Bulkhead pin	1	A1013430000
O-ring 016 FKM-90	1	HWWB016V40
Retainer nut	1	A1013547000
Assy, blkhd pin with o-ring, TrueSelect™	1 ref.	A3005220000
O-ring 230 NBR-90	4 ref.	F259260230

Dimensional data	in./mm
Outer diameter	3.13 (79.5 mm)
Length	0.25 (0.6 cm)
Thread/type	2.750-6 ACME





HARDWARE



# Setting tool adapter PSA: Size 10

Hardware description	Required quantity	Part number
Adapter, firing head #10	1	A1014186000
Assy, st cartridge, SGS	Ref.	A3004864000
Igniter retainer	1	A1014185000
Kit, O-ring rebuild	Ref.	A5000479900
Igniter, Baker BP-3S	Ref.	H437442200
Secondary ignitor	Ref.	H437431000
TrueStage™ power charge	Ref.	H437690001
Safe sleeve		A1005960000

Dimensional data	in./mm
Outer diameter	3.13 (79.5 mm)
Length	3.53 (8.97 cm)
Top thread/type	2.750-6 ACME
Bottom thread/type	2.375-6 ACME



Setting tool adapter  
PSA: Size 10





HARDWARE



# Setting tool adapter PSA: Size 20

Hardware description	Required quantity	Part number
Adapter, firing head #20	1	A1014187000
Assy, st cartridge, SGS	Ref.	A3004864000
Igniter retainer	1	A1014185000
Kit, O-ring rebuild	Ref.	A5000480900
Ignitor, Diamondback BP-3S	Ref.	A2011599000
Secondary ignitor	Ref.	H437431000
TrueStage™ power charge	Ref.	H437690001
Safe sleeve		A1005961000

Dimensional data	in./mm
Outer diameter	3.38 (85.9 mm)
Length	3.17 (8.05 cm)
Top thread/type	2.750-6 ACME
Bottom thread/type	2.875-6 ACME



Setting tool adapter  
PSA: Size 20





HARDWARE



# Wire only gun kit assembly

3 1/8-in. size

Hardware description	Part number
Kit: Wired only EHC, 3 1/8-in., 0 phasing	A50009087-XX
Kit: Wired only EHC, 3 1/8-in., 60 phasing	A50008917-XX
Kit: Wired only EHC, 3 1/8-in., 90 phasing	A50009097-XX
Kit: Wired only EHC, 3 1/8-in., 120 phasing	A50009107-XX
Kit: Wired only EHC, 3 1/8-in., 180 phasing	A50009117-XX

**Custom part** (Example: XX=A50009107**03**)

- 01 for 1 shot, 14-in.
- 02 for 2 shot, 16-in.
- 03 for 3 shot, 18-in.
- 04 for 4 shot, 20-in.
- 05 for 5 shot, 22 in.
- 06 for 6 shot, 24-in.
- Up to 12 shots available, 36-in.



Wired only gun kit assembly





HARDWARE



# Fully loaded gun kit assembly

3 1/8-in. size

Hardware description	Part number
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet™ 30 RDX	A5000912- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 30 HMX	A5000913- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 36 RDX	A5000991- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 36 HMX	A5000992- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 38 RDX	A5000914- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 38 HMX	A5000915- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 40 RDX	A5000916- <b>XXX</b>
Kit, Loaded EHC, 3 1/8-in., 3123 TrueJet 40 HMX	A5000917- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 40 ECH RDX	A5000918- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 40 ECH HMX	A5000919- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 42 RDX	A5000924- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 42 HMX	A5000925- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 50 RDX	A5000993- <b>XXX</b>
Kit: Loaded EHC, 3 1/8-in., 3123 TrueJet 50 HMX	A5000994- <b>XXX</b>

Custom part (Example: A5000914 <b>403</b> )
<b>1XX</b> : 0 phasing
<b>2XX</b> : 60 phasing
<b>3XX</b> : 90 phasing
<b>4XX</b> : 120 phasing
<b>5XX</b> : 180 phasing
<b>01</b> for 1 shot
<b>02</b> for 2 shot
<b>03</b> for 3 shot
<b>04</b> for 4 shot
<b>05</b> for 5 shot
<b>06</b> for 6 shot
Up to 12 shots available

Fully loaded gun kit assembly



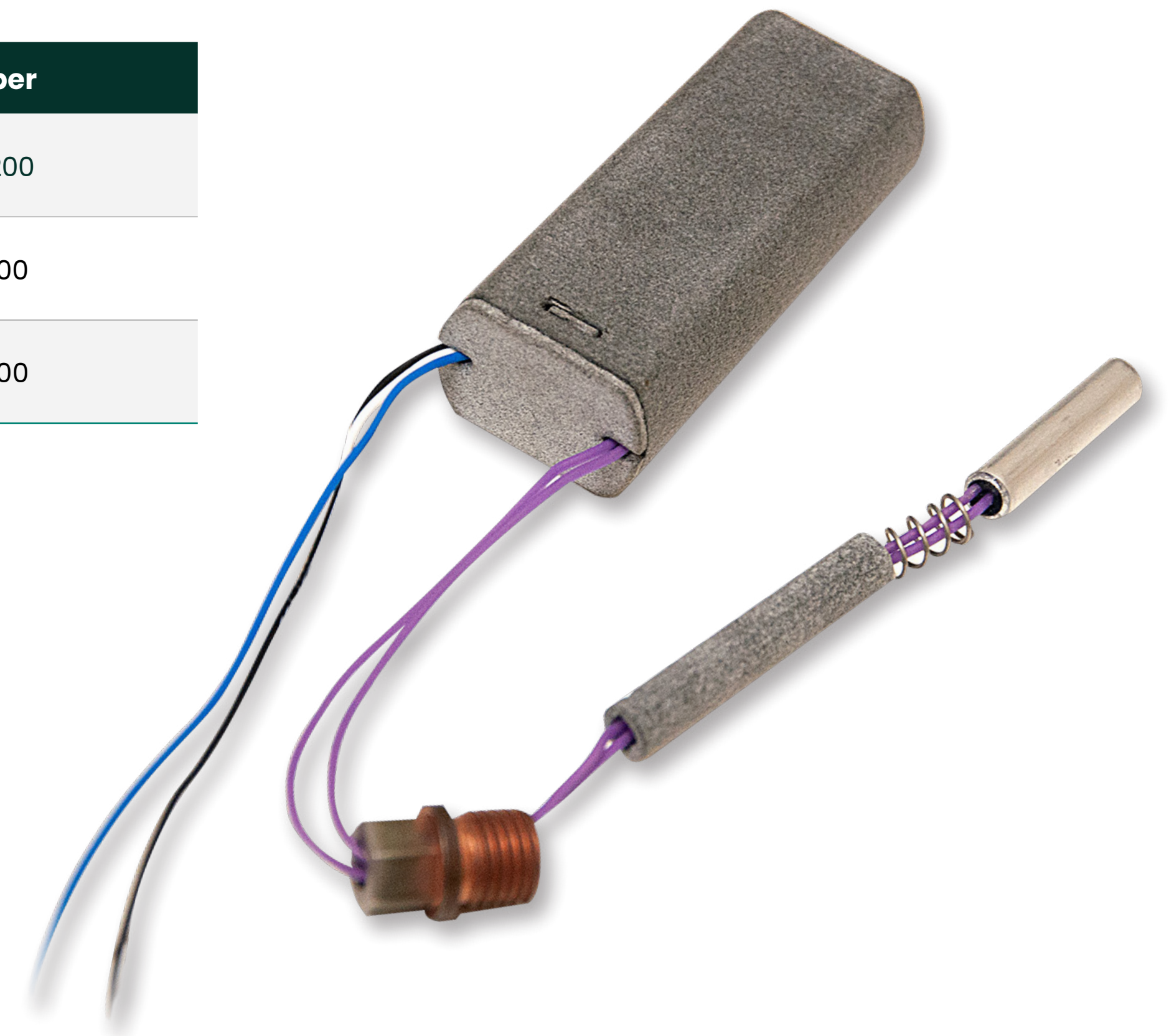


HARDWARE



# Ballistic release tool switch

Hardware description	SAP description	Part number
BRT switch with DETO and booster	Assy, BRT PCBA ENCLSR, A-2B DET	A3004892200
Spacer for ISI release tool (replace after release)	Spacer, removable for ISI spitfire BRT	A1013938000
Nut for Cantex release tool (reusable until the tools is fired)	Canatex BRT, 0.4375-20 UNF THD	A1013635000



Ballistic release tool switch >



SURFACE EQUIPMENT

# Surface equipment

Hardware description	SAP description	Part number
Control panel to communicate with switches downhole	Assy, control panel, MGS, 4586XA	F140850000
Kit, cable, warrior system	Kit, cable control fire panel (portable panel)	A2007673000
Surface test box	Assy, test box, mgs, 4587XA	F140851000
Surface test cable with banana leads	Assy, mgs test cable, modular, banana leads	A3004674000
Surface test connector for tandem	Assy, conn, tandem, magnetic, BETA MGS	A3004872000
Surface test connector for 1 5/8-in. GO top sub	Assy, GO pin test conn, 1.625-6 ACME	A3004733000
Switch simulator box for training	Assy, switch simulator box	A3005051000



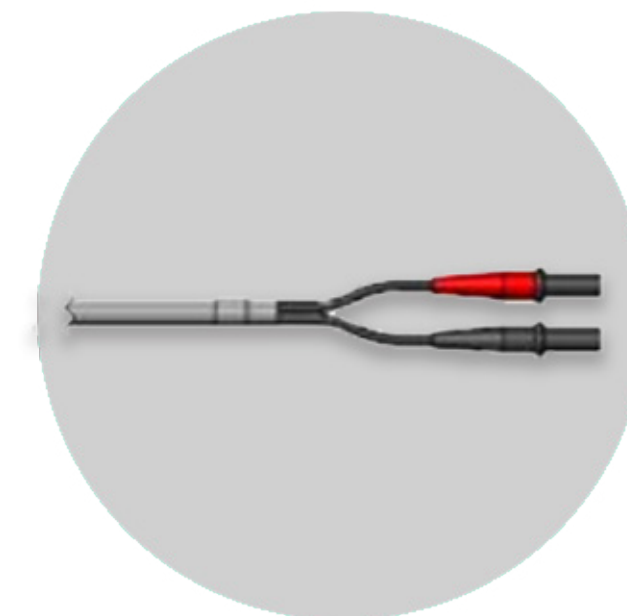
CONTROL PANEL



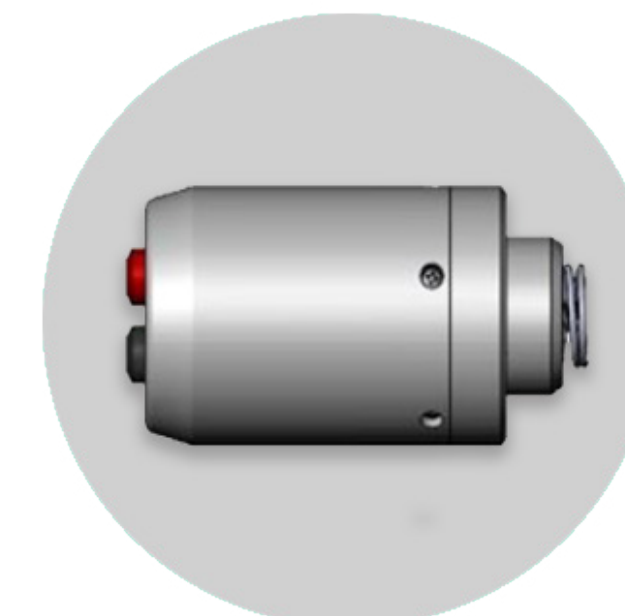
CONTROL PANEL CABLES



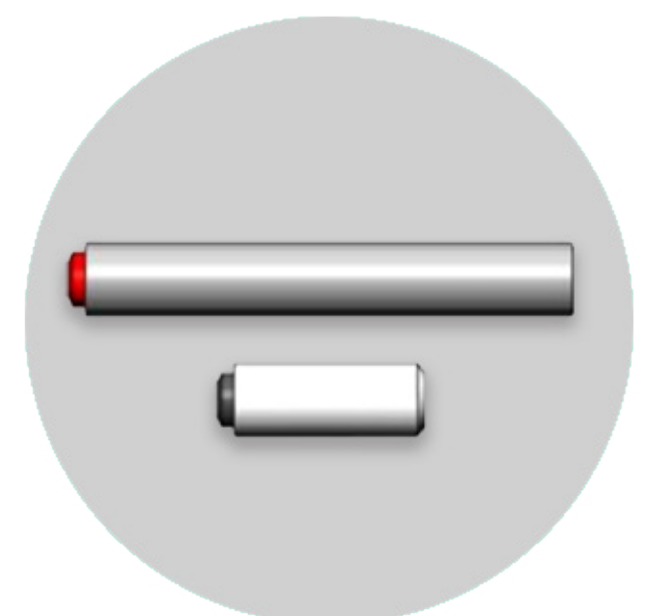
SURFACE TEST BOX



SURFACE TEST BOX CABLE



TEST CONNECTOR FOR TANDEM



TEST PROBE OPTION



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