DynaSelect™ System
Plug-n-Perf Optimized
The DynaSelect™ System sets a new standard in dependable performance and operational cost savings in selective perforating. Compare the impact of DynaSelect to traditional selective perforating tools, and you will see a real difference — our system is proven to be more effective at reducing misfires, misruns, mishaps and eliminating accidents, ensuring the highest possible safety and completion success. That is why DynaSelect is verified by third-party laboratories, and recognized by service and oil and gas companies worldwide as the safest and most reliable in the industry. The DynaSelect System includes the Multitronic IV Firing Panel, Surface Tester, and features the world’s first and only fully integrated switch-detonator.

Wireline companies perforating with the DynaSelect System are reducing total cost of operations for their oil and gas customers while providing more protection for oil field workers and the environment.

–Thilo Scharf, Product Line Manager
INTEGRATED SWITCH-DETONATOR

Unmatched protection of people and operations results from an intrinsically safe integrated switch-detonator that will not initiate without a series of digitally coded signals.

GUN STRING

Typical Plug-n-Perf string with two guns and a composite bridge plug separated by Tandem Isolation Subs.

INTEGRATED SWITCH-DETONATOR INSIDE TANDEM ISOLATION SUB

With only three connections, the chances of a wiring fault are reduced. The large window in the sub allows for easy access and electric before ballistic arming.
**SURFACE TESTER**

By safely checking perforating guns on the surface, the DynaSelect Surface Tester greatly reduces the chance of lost time, misruns and misfires due to a wiring fault. The DynaSelect Surface Tester is fully RP67 compliant and cannot initiate any type of detonator or explosive device.

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**MULTITRONIC IV FIRING PANEL**

The Multitronic IV Firing Panel with CCL display is as easy to use as a smartphone app. The highly intuitive software allows the gun string to be safely tested and verified while running in hole. Any potential errors are detected early and can be rectified with minimum downtime.

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**Independent Safety Test Results**

- Static electricity tested safe to 2500 pF 30,000 V.
- Safely tested at 50 V and 20 A.
- Surge tested to 6600 V and 2500 A.
- RF safe at 4 GHz, 300 V/m.
- Fluid desensitized after 2 min. in water.
- Impact tested to 70 Joule.
- Exceeds API RP67 standards for electrical and operational safety.
- The integrated switch-detonator may be damaged by excessive current or voltage but is designed to fail safe.

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**Specifications**

- 20 guns and one setting tool per descent on monocable.
- Standard DynaSelect 300°F/150°C for 1 hr.
- Premium DynaSelect 500°F/260°C for 1 hr. with insulated vacuum flask.
- Unlike some EFI or EBW detonators, the DynaSelect system is available without import, export and transport restrictions worldwide, except for sanctioned countries.
DynaSelect is engineered to increase productivity and guarantee the highest levels of perforating accuracy, delivering unrivaled reductions in rig time and completion costs. The innovative system design improves gun-loading efficiency and allows rig-up, running in hole and rig-down without radio silence or interrupting wellsite operations. Unlike traditional plug-n-perf and other selective-fire equipment, the system permits easy verification of initiator functionality, reducing the chance of a misrun. With the ability to test system wiring and identify communication problems at the earliest stage of the process, misfires are reduced.

Significantly Safer

A small incremental investment in the DynaSelect system can prevent a catastrophic surface detonation of a perforating gun, avoiding risks posed by conventional methods and other switch-detonator combinations. DynaSelect’s integrated switch-detonator requires a series of specific digital codes to initiate, preventing any other energy sources from unintentionally initiating the detonator or igniter.

<table>
<thead>
<tr>
<th>Protected from:</th>
<th>Conventional EB switch when used with a resistorized detonator</th>
<th>Conventional switch-resistorized detonator combinations</th>
<th>DynaSelect</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Energy</td>
<td>No</td>
<td>Yes, if wired correctly</td>
<td>Yes, always</td>
</tr>
<tr>
<td>Stray and direct voltage and current</td>
<td>No</td>
<td>Yes, if wired correctly Single-point failure potential</td>
<td>Yes, 100% safe. Cannot be energized by AC or DC electrical power, a cathodic protection system, or by any type of battery, induced power or static electricity.</td>
</tr>
<tr>
<td>Megger tests</td>
<td>No</td>
<td>Yes, if wired correctly Single-point failure potential</td>
<td>Yes, 100% safe. Lives have been saved using the DynaSelect system when accidental Megger tests were conducted and no unintentional initiation occurred.</td>
</tr>
<tr>
<td>Indirect lightning strikes or another supplier’s hardware or equipment</td>
<td>No</td>
<td>Yes, if wired correctly Single-point failure potential</td>
<td>Yes, always</td>
</tr>
<tr>
<td>API RP 67 requirements</td>
<td>Meets minimum</td>
<td>Meets minimum</td>
<td>Exceeds</td>
</tr>
</tbody>
</table>

More Efficient

Through innovative design, DynaSelect streamlines the perforating process and boosts well completion efficiency:

- Electrical wiring connections are reduced from 5 to 3, increasing wiring efficiency and decreasing the chance of human error by 40%.
- Setting tool and guns can be quickly tested on the surface, when run in hole and between shots, enabling potential errors to be detected earlier.
- Skip-over capabilities for individual guns, ensuring every stage has the highest chance of being perforated for maximum productivity.
- Supporting software and help files are less complex, facilitating easier training.

Reduced Risk

DynaSelect improves well completion profitability by mitigating perforating-related risks and minimizing lost time. Field results demonstrate fewer misruns and zero accidents or incidents with this game-changing technology:

- Based on hundreds of thousands of runs, DynaSelect is proven to greatly reduce the chance of a gun or bridge plug misfire compared to traditional plug-n-perf methods. By preventing or minimizing nonproductive time to perforation and hydraulic fracturing activities at the wellsite, millions in operating losses have been avoided.
- All DynaSelect integrated switch-detonators must pass X-ray quality assurance, significantly reducing the chance of lost time due to a manufacturer’s defect.
Every company working with explosives has a moral obligation to protect people and the environment. We designed the DynaSelect system to achieve zero incidents with maximum service quality, so everyone involved in the direct or indirect handling and use of select fire-perforating guns will not be harmed and will be able to go home to their families at the end of the day.

– Thilo Scharf, Product Line Manager, DynaEnergetics

Compare the Impact of DynaEnergetics perforating systems against conventional options, and we guarantee that you’ll see a measurable difference in performance, reliability and well productivity.

Contact us from anywhere on the globe at performance@dynaenergetics.com or visit us online at dynaenergetics.com, and we’ll show you how.