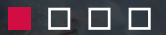


WIRELINE SERVICES

Tubing-Conveyed Perforating Systems

Full-Service Support,
Complete Optimization

Delivering downhole perforating
solutions through our expertise,
innovation, and collaboration



Weatherford®

Onshore and offshore, we provide a full range of high-performance tubing-conveyed perforating systems

Weatherford offers an array of perforating systems that help ensure operational performance, efficiency, and safety. Our tubing-conveyed perforating (TCP) systems are suited for a full complement of casing and liner sizes, and they feature an assortment of charge and explosive types, phasing ranges, and shot densities. Multiple-mode firing-heads are also available, with redundancy, and come with utilities such as gun-release subs, vent subs, surge tools, orientation devices, shock absorbers, and shot detection.

We specialize in the science of wellbore perforation and exceptional customer service.

At Weatherford, we recognize that a successful operation is about more than just understanding the geological and mechanical aspects of the job at hand. It's also about taking the time to fully appreciate your unique requirements, priorities, and concerns.

Our TCP services are custom-designed for your completion, well-control, or decommissioning application. Backed by solid experience and driven by a spirit of innovation, we strive to continually exceed your expectations. Our knowledgeable and highly trained technicians take pride in their ability to provide agile, responsive service while leading the way in a rapidly evolving industry.





REAL RESULTS

GULF OF MEXICO

Four target intervals selectively perforated in a single run,

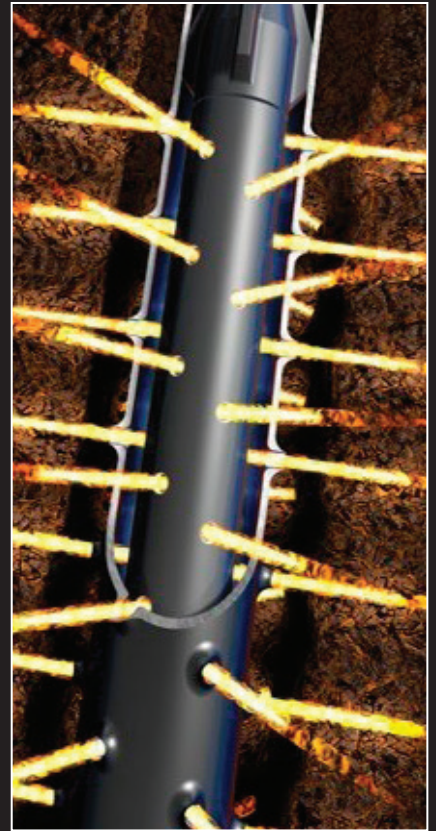
SAVED MORE THAN 60 HOURS OF RIG TIME

Weatherford selectively designed and loaded perforating guns to match the conditions at each interval and covered a gross depth of 860 ft (262 m) in just one run. The two uppermost perforating intervals required firing through two strings of casing. Killing the well in one run, instead of four, mitigated fluid losses in each zone, reduced rig time, and reduced risk exposure by more than 75 percent—from an estimated 84 hours to just 21 hours.



Perfect perforations are our goal

Because tubing is not vulnerable to well kicks, TCP service is well suited for underbalanced wells in vertical and deviated applications. From toe to heel and everything between, our expertise and confidence comes through in horizontal operations. By setting the plug and perforating multiple zones in a single trip, you'll save considerable time and expense. In addition, you can easily control pressure within the tubing, which simplifies the process of setting the plug in wellbores that have already been perforated.



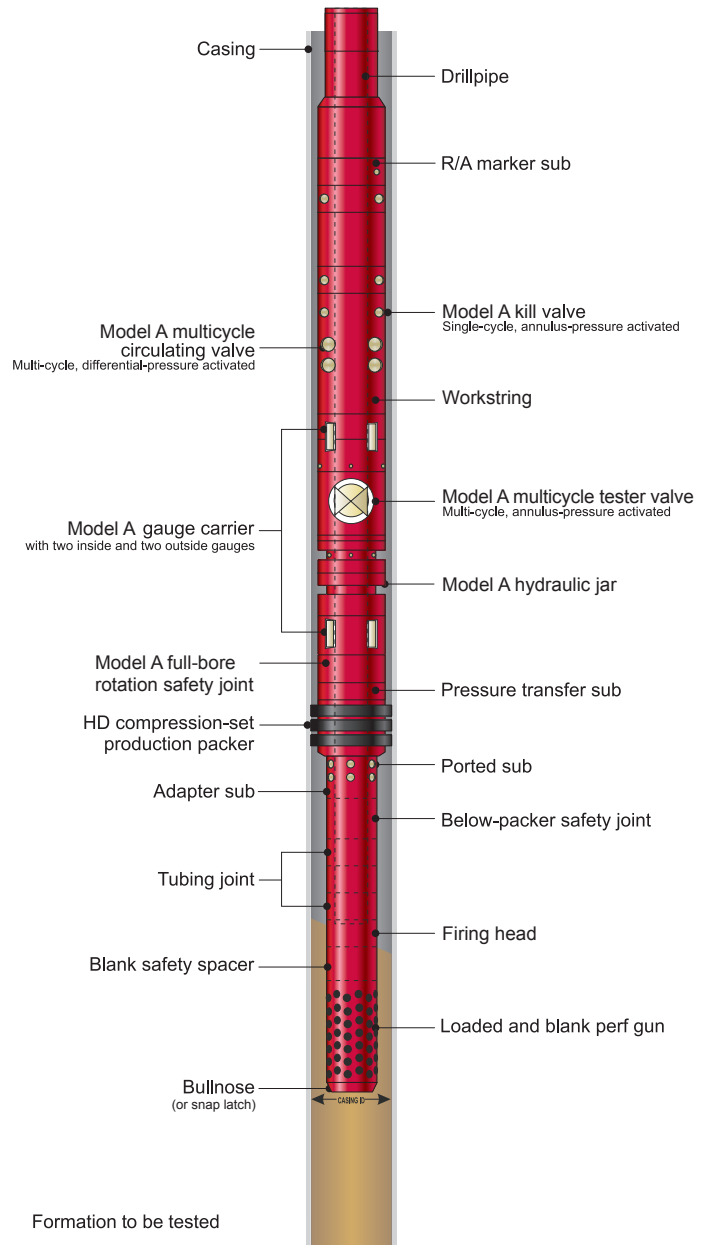
With TCP expertise and thorough recordkeeping, we help maximize results during every step of your project:

- Temporary completion design
- Permanent completion design
- Reservoir analysis
- Perforation design
- Perforation-system engineering
- Charge modeling
- Air-gap cushioning
- Two-fluid cushioning
- Nitrogen (N₂) displacement
- Propellant-perforating technology
- Extreme-overbalance applications
- Well-control procedures

A product line as versatile and effective as our customer service

At Weatherford, we help to ensure that you have advanced tools and equipment to tackle a variety of operational challenges. Not only are we adept at integrating your current on-site equipment, but we also have the in-house engineering capabilities to design and build custom solutions, which helps eliminate uncertainties and boost performance.

Gun Systems	
OD ranges	1-11/16 to 7 in.
Density ranges	1 to 18 shots per foot
Vents	<ul style="list-style-type: none"> • Bar actuated • Annulus-pressure actuated • Low-pressure bar vent
Auxiliary Tools	
Firing heads	<ul style="list-style-type: none"> • Drop bar • Ball drop • Annular-pressure activated • Differential-pressure activated • Tubing-pressure activated
Release systems	<ul style="list-style-type: none"> • Automatic (explosive actuated) • Mechanical (via shifting tool)
Underbalance tools	<ul style="list-style-type: none"> • Glass-disc subs • Stop-fill valves
Well-Control Tools	
Annular-pressure transfer system	<ul style="list-style-type: none"> • Shoot-and-pull operations • Annulus operated • Bypasses packer to fire guns • Annulus-pressure vent
Multicycle circulating valve	<ul style="list-style-type: none"> • Annulus operated • Differential pressure • Rupture-disk actuated <ul style="list-style-type: none"> – Combo tools – Single shot
Tubing tester valve	<ul style="list-style-type: none"> • Rupture-disk actuated <ul style="list-style-type: none"> – Combo tools – Single shot • Annulus operated • Multicycle
Retrievable packers	<ul style="list-style-type: none"> • ArrowSet™ packer without internal bypass (4-1/2 to 9-5/8 in.) • HDL internal-bypass packer with carbide slips (5-1/2 to 9-5/8 in.)
Memory gauges	<ul style="list-style-type: none"> • Full pressure-data reporting (within 24 hours) • Pressure and temperature • Ported to ID or OD • Field-summary report on location





Extensive training and TCP experience— with zero recordable incidents

In the Weatherford TCP program, our dedicated service team, intensive safety programs, and incident-free operation have achieved industry-leading statistics. Far beyond compliance with state and federal regulations, our training helps to keep Weatherford personnel focused, in control, and out of harm's way.

Plug-and-perf decommissioning: One run, and the job is done

With Weatherford TCP, decommissioning your well is faster, easier, and cost effective. Thanks to our exclusive design, which includes perforating guns directly below the cement retainer, you can perforate and cement in a single trip. No matter what your decommissioning needs, we can custom-design a safe and reliable TCP solution for you.

Tubing-conveyed perforating is part of our comprehensive portfolio of openhole and cased-hole wireline services. To learn how our services and technologies can work for you, contact us at wireline@weatherford.com, or visit us at www.weatherford.com



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