

DFH Direct Firing Head

Faster, more efficient multizone perforating

APPLICATIONS

- Multizone tubing-conveyed perforating
- Highly deviated wells
- Applications involving dropping guns, setting packers, setting plugs, and initiating tubing cutters

BENEFITS

- Easier maintenance for increased safety
- Instant firing for faster operations
- Shorter length for less rig-up time

FEATURES

- Single firing system
- Independent but sequentially operated shear and firing mechanism
- Versatility that is suitable for coiled tubing and tubing-conveyed operations
- Immunity to heavy mud
- Absolute pressure triggering
- Safety features that meet API RP67 and all Schlumberger safety requirements

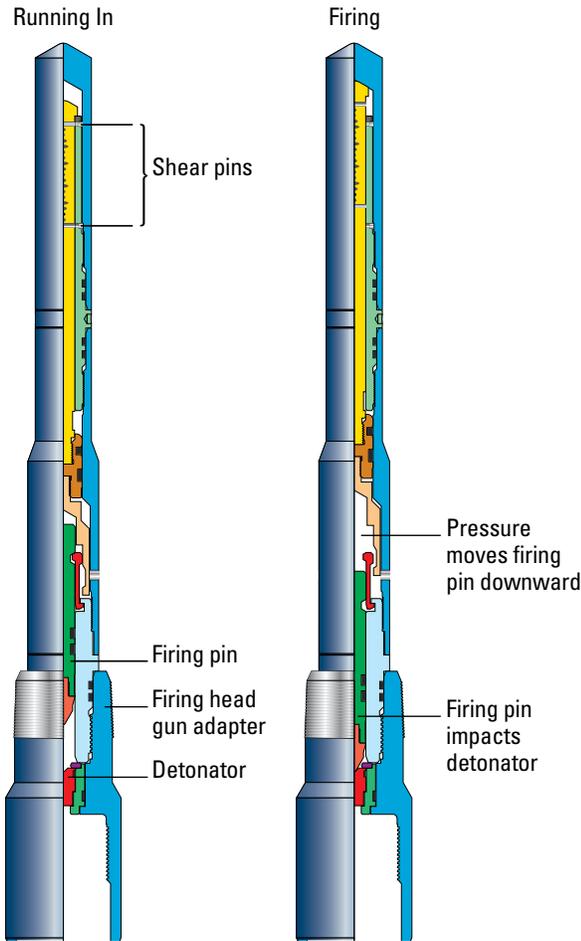
The direct firing head (DFH) is a next-generation absolute pressure activated firing head that is immune to wellbore fluids with high solid content.

The new design isolates the shear pins from wellbore fluid through independent and sequentially operated shear pin sections.

The firing head functions when direct pressure applied across the operating piston exceeds the predetermined value of the shear pins.

This pressure then drives the operating piston upward and releases the firing pin, which is driven down by the applied pressure.

The DFH is used in multizone perforating to fire guns simultaneously with no time delay and for overbalanced treatment at the time of perforating. The DFH is run with an appropriately sized fill sub. The fill sub isolates the DFH head from the tensile strength of the conveyer string.



Direct firing head running in hole (left) and firing (right).

Direct Firing Head

Specifications

Model	DFH-AA
Outside diameter, in [mm]	1.87 [47.5]
Maximum operating pressure, psi [MPa]	15,000 [103]
Maximum working temperature, degF [degC]	350 [177]
Maximum time at temperature, h	100
Total length (standard), in [cm]	18.85 [47.88]
Makeup length, in [cm]	16.42 [41.70]
Weight, lbm [kg]	10 [4.5]
Tensile strength	na [†]
Minimum operating pressure, psi [MPa]	500 [3]
H ₂ S service	No
Maximum shear pins	18

[†]Not applicable

DFH with gun adapter assembly specifications[†]

Size, in [mm]	3.06 [77.7]
Pressure rating (80% minimum yield), psi [MPa]	
Hydrostatic	15,000 [103]
Differential	na [†]
Temperature rating, degF [degC]	350 [177]
Time at temperature, h	100
Tensile strength, lbf [kN]	193,700 [862] (2 $\frac{3}{8}$ -in C90 tubing upper thread)
Makeup length, in [cm]	20.37 [51.74]
Bottom gun thread	2 $\frac{3}{8}$ -in Stub Acme (with gun adaptation)
Upper fill sub thread	2 $\frac{3}{8}$ -in EUE pin
Weight, lb [kg]	17.40 [7.90]
Firing heads	DFH

[†]Other sizes available upon request

[†]Not applicable

www.slb.com/perforating