

## APPLICATIONS

- TCP perforating
- Permanent completions

## FEATURES

- Designed to API RP-67 (Oilfield Explosive Safety) guidelines
- Uses existing Drop Bar and Direct Pressure Firing Head components
- Independent firing systems ideal for permanent completions jobs

## BENEFITS

- Provides a complete backup solution in case of misfire of primary system
- Enhanced safety as cannot be detonated at surface or by electrical sources

The Dual Top Firing Head provides an ideal solution for redundant firing systems generally requested for rigless permanent completion perforating operations. It consists of the Drop Bar Hydrostatic and Direct Pressure Firing Heads which function completely independent of each other inside a single assembly.

Operating procedures for this system are determined by which firing head is used as the primary system. Generally, the pressure activated firing head is preferred as the primary system. Should no shot be detected using the pressure activated firing head, the mechanically activated firing head can be used as backup. This will ensure no formation damage can occur through pressuring up the wellbore should the primary system have perforated without any indication.

Firing heads and explosives are sold separately. Please refer to their individual data sheets for detailed specifications.

## DUAL TOP FIRING HEAD HARDWARE SPECIFICATIONS

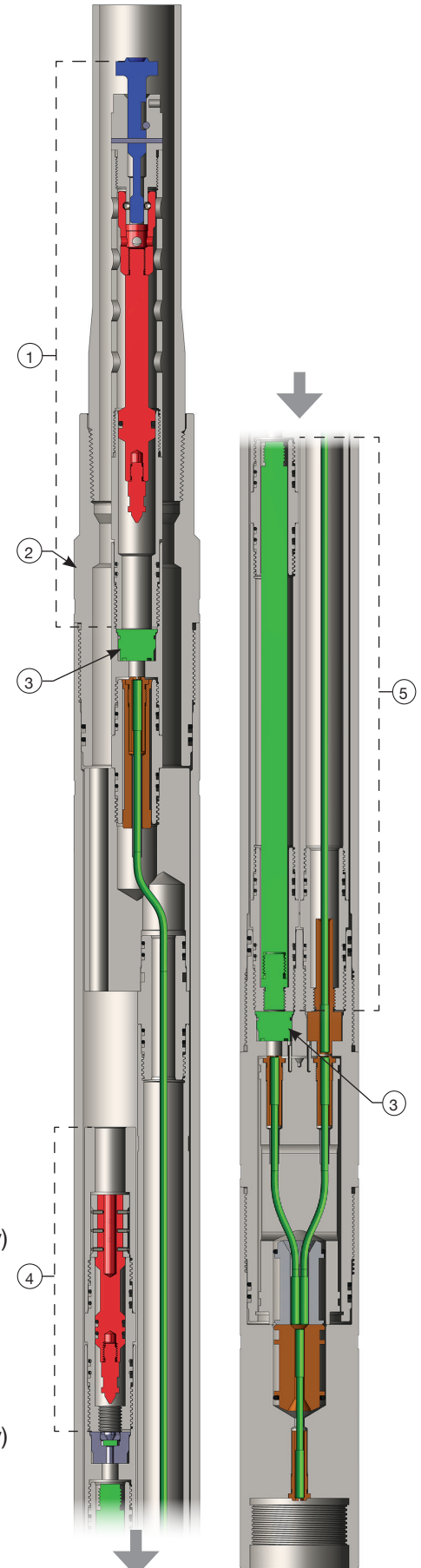
Tube Size (in)[mm]	2-3/8 [60] EUE 2-7/8 [68] EUE
Assembly Part Number	FHDT-3375-000**
O.D. (in)[mm]	3.38 [86] for 2-3/8" EUE 3.67 [93] for 2-7/8" EUE
Makeup Length (ft)[m] <sup>§</sup>	5.09 [1.55]
Max. 100 Hour Temperature Rating (°F)[°C] <sup>†</sup>	400 [204]
Min. Required Hydrostatic (psi)[MPa]	200 [1.4]
Min. Required Pinning Pressure (psi)[MPa]	1,800 [12]
Max. Operating Pressure (psi)[MPa] <sup>‡</sup>	20,000 [138]
Max. Tension (lbf)[kN]	120,000 [534]
Top Sub Part Number	FHDT-3375-238B (2-3/8" EUE) FHDT-3375-288B (2-7/8" EUE)
9 Minute Pyrotechnic Delay Part Number	FHPA-1375-100**
Redress Kit Part Number	FHDT-3375-000**-KIT FHPA-1375-100**-KIT

\*\* Use "HT" for high temperature operations (above 325°F (163°C))

<sup>†</sup> Hardware only. Viton O-rings need to be used above 325°F (163°C)

<sup>‡</sup> Backup O-rings required above 13,000psi (90MPa). Kit FHDT-3375-000-BUKIT and FHPA-1375-100-BUKIT needs to be ordered separately

<sup>§</sup> Including top sub



1. Drop Bar Hydrostatic Firing Head (sold separately)
2. Top Sub
3. Percussion Initiator
4. Direct Pressure Firing Head (sold separately)
5. 9 minute Pyrotechnic Delay