

## Top-Fired Dual Firing Device

The Top-Fired Dual Firing Device (TFDFD) provides a dual firing method for all Expro gun systems sizes 3 1/8" through 7". The TFDFD is only available in size 3 1/8".

The Top-Fired Dual uses a standard Expro firing system, such as the Safety Impact or Pyrotechnic Delay Firing Assembly as the primary means of detonation and incorporates a pyrotechnic delay backup firing system as an integral component. This firing system can be configured to meet a variety of well conditions and parameters.

### Operation:

The primary firing system is selected, shear-pinned if applicable, and installed on the Top-Fired Dual Firing Device. The back-up firing system is shear-pinned and configured for the specified bottom-hole pressure and well conditions. After the bottom-hole assembly is positioned at depth, a detonating bar is dropped or the well is pressurized to overcome the shear pins and detonate the guns.

### Features and Benefits:

- Flexible completion design. Firing options may be pressure or drop bar combination
- Extremely safe and reliable
- Ideal for overbalanced or underbalanced perforating
- Well-suited for highly-deviated completions
- Back-up firing method can be selected for instantaneous detonation or delay interval easily increased in 10-minute increments
- Easily reconfigured and repinned in the field
- Available without delay
- Readily adapts to Annular Pressure Firing System

### Specifications:

|                                |  |
|--------------------------------|--|
| Tubing Thread                  | 2 3/8" EU 8RD API standard box up          |
| Length                         |  |
| 10-min                         | 28.3" (0.72 m)                             |
| 20-min                         | 43.0" (1.09 m)                             |
| 30-min                         | 57.7" (1.47 m)                             |
| Diameter                       | 3.125" (79.375 mm)                         |
| Working Pressure & Temperature | 15,000 psi (103.42 Mpa) at 350°F/175°C     |
| Pressure Rating                | 10,000 psi (68.95 Mpa) at 375°F/190        |
| Collapse                       | 18,000 PSI*                                |
| Burst                          | N/A  |
| Seal Rating                    | 10,000 PSI standard; 20,000 PSI high-temp. |
| Tensile Strength               | 170,000 lbs.                               |

\*A high-pressure and high-tensile-strength design is available for guns 3 3/8" and larger

