



# *Pyrotechnic Delay Assembly*

Weatherford's pyrotechnic delay assembly is designed to promote safety and reliability during tubing-conveyed-perforation (TCP) applications by providing a time delay between actuation of the firing head and detonation of the gun system. This assembly can be run on top or bottom of TCP guns and can change the pressure to allow for a specific underbalance or overbalance pressure upon gun detonation. The direct-pressure-actuated firing head initiates the delay, and the column burns for a predetermined delay time (chosen in nine-minute increments) before it detonates the gun system.

## *Applications*

- Underbalanced and overbalanced TCP operations
- Perforating operations in highly deviated or horizontal wells
- Environments in which nitrogen is required to actuate the firing head
- Detonation of multiple-gun systems

## *Features, Advantages and Benefits*

- Reliability and predetermined delay time provide enhanced operational safety.

## *Specifications*

|                           |                 |              |               |
|---------------------------|-----------------|--------------|---------------|
| Delay interval (minutes)  | 9               | 18           | 27            |
| OD (in./mm)               | 1.38<br>35.05   |              |               |
| Overall length (in./cm)   | 20.0<br>50.8    | 34.8<br>88.4 | 49.4<br>125.5 |
| Makeup length (in./cm)    | 17.7<br>45.0    | 32.4<br>82.3 | 47.1<br>119.6 |
| Pressure rating (psi/bar) | 20,000<br>1,380 |              |               |

