

## Bridge Plug

Any permanent, retrievable or high expansion bridge plug which is run on a standard pyrotechnic setting tool can be set using the Combined Trigger Unit (CTU) without the need for radio silence.

The tool consists of three main components: electronic trigger, surface safety switches and pyrotechnic setting tool and plug.

### Electronic Trigger

The electronics package controls the output from a battery pack. This initiates the pyrotechnic igniter only when all safety barriers are overcome, and downhole parameters are such that they satisfy the pre-programmed firing sequence.

### Surface Safety Switches

Individual mechanical pressure and temperature switches form short circuits across the detonator to ensure surface safety. Well pressure and temperature 'open' the switches at a pre-determined depth and 'close' them on retrieval. These switches ensure that the device cannot fire on or near surface.

### Explosive Set Plug and Setting Tool

Industry standard pyrotechnics, setting tools and plugs can be initiated by the CTU. A slickline dummy rope socket can be used to allow for fishing of stuck assemblies. A full range of setting tools are available to suit a wide range of plugs and packers.



#### Applications:

- Setting of Bridge Plugs, Retainers and Packers
- Water shut off
- Abandonment
- Workover

#### Benefits:

- Tool counts up after detonation to confirm firing time
- Tool records maximum pressure and temperature
- Uses industry standard tools and pyrotechnics
- No radio silence required
- No e-line rig up required
- Reduced personnel
- Release tool available if stuck