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## TCO Tubing Disappearing Glass Plug

TCO Tubing Disappearing Glass Plugs (TDP) provide a total seal against all fluids. The patented laminated glass material can withstand high levels of differential pressure from both sides and disintegrates into small particles after removal.

TCO's TDP range is installed and run as an integrated part of the completion string or liner. This increases the efficiency of the installation process and enables full bore access after the plug has been removed. The glass barrier enables the operator to isolate sections of the well during completion phase. Once the glass barrier is opened it allows full bore access for all future interventions.

TCO provides glass plugs to different applications with various opening mechanisms:

### TDP Remote Open

The TDP Remote Open uses a rubber membrane to separate the well bore fluid from the silicon oil in the cycling mechanism. This is to ensure that debris from the well will not restrict the function of the cycling mechanism. The mechanism can be mechanic or electronic, based on system configuration relating to multiple pressure cycles before opening. The TDP may be adapted to activate with explosives or mechanical breaking.

### TDP Pump Open

The TDP Pump Open contains an internal pump open device which is set to open on a specific differential pressure. Simply apply pressure up to a pre-set value and the plug will open.

### TDP Mill Open

TDP Mill Open has a variety of removal options including tractor on e-line, coil tubing or drill pipe in addition to spear open on slickline.

### DTHP

The TDP-DTHP (Disappearing Tubing Hanger Plug) functions as one of the two primary barriers required for the temporary suspension of a subsea well.

### TiWo

The TDP-DTHPR (Disappearing Tubing Hanger Plug Retrievable) is installed in a profile in the tubing hanger in wells with vertical X-Mas trees, and functions as one of the two primary barriers required for the temporary suspension of a subsea well. It is remote open to 4,00" ID, and can be retrieved when suitable, leaving full bore.

## Applications

- Completion barrier plug
- Isolate lower completion
- Packer setting device
- Fluid loss control device
- Pressure testing
- Casing flotation device (Pump Open version)

## Features & Benefits

- Large bore access
- Safer operations
- No external personnel required
- ISO 14998 / ISO 14310 V0 certified
- Reduce / eliminate need for intervention operations
- Debris tolerant
- Reduced rig time
- Easy removal compared to deep-set / horizontal wireline plugs
- Integrated installation

## TCO Tubing Disappearing Glass Plug Portfolio

### TDP-3 Remote Open

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	ISO 14310 Certification
587x300	5,87"	3,00"	302 °F / 150 °C	7 500psi / 517bar	V0
587x300	5,87"	3,00"	329 °F / 165 °C	8 000psi / 552bar	V0
800x430	8,00"	4,30"	302 °F / 150 °C	7 500psi / 517bar	V0
800x442	8,00"	4,42"	302 °F / 150 °C	7 500psi / 517bar	V0
833x467	8,33"	4,67"	329 °F / 165 °C	7 500psi / 517bar	V0
833x467	8,33"	4,67"	302 °F / 150 °C	8 500psi / 586bar	V0
833x588	8,33"	5,88"	293 °F / 145 °C	6 500psi / 448bar	V0

### TDP NonEx Remote Open

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	ISO 14998 Certification
587x400	5,87"	4,00"	302 °F / 150 °C	7 500psi / 517bar	V0
815x580	8,15"	5,80"	275 °F / 135 °C	6 000psi / 414bar	V0
833x580	8,33"	5,80"	275 °F / 135 °C	6 500psi / 448bar	V0
833x609	8,33"	6,09"	275 °F / 135 °C	5 000psi / 345bar	V0

### TDP Pump Open

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	ISO 14310 Certification
500x300	5,00"	3,00"	302 °F / 150 °C	7 500psi / 517bar	V0
544x388	5,44"	3,88"	302 °F / 150 °C	10 000psi / 690bar	V6
544x388	5,44"	3,88"	302 °F / 150 °C	7 500psi / 517bar	V0
572x375	5,72"	3,75"	275 °F / 135 °C	5 000psi / 345bar	V0
588x426	5,88"	4,26"	302 °F / 150 °C	10 000psi / 690bar	V6
650x480	6,50"	4,80"	302 °F / 150 °C	9 000psi / 620bar	V6
709x477	7,09"	4,77"	275 °F / 135 °C	5 500psi / 380bar	V6

### TDP Mill Open

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	ISO 14310 Certification
457x299	4,57"	2,99"	302 °F / 150 °C	5 000psi / 345bar	V0
587x400	5,87"	4,00"	302 °F / 150 °C	7 500psi / 517bar	V0
833x580	8,33"	5,80"	275 °F / 135 °C	6 500psi / 448bar	V0
833x588	8,33"	5,88"	347 °F / 175 °C	5 000psi / 345bar	V0
833x609	8,33"	6,09"	275 °F / 135 °C	5 000psi / 345bar	V0

### DTHP – Disappearing Tubing Hanger Plug

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	ISO 14310 Certification
881x609	8,81"	6,09"	212 °F / 100 °C	5 500psi / 380bar	V0

### TiWo – Disappearing Tubing Hanger Plug - Retrievable

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	ISO 14310 Certification
626x400	6,26"	4,00"	122 ° F / 50 ° C	10 000psi / 690bar	V0

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