

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. It is ran as integral part of the tubing, with the bypass in open position. The bypass will then be pressure cycled to closed position, giving full barrier function. The DTHP barrier will be removed by a new set of pressure cycles.

TiWo

The DTHP-R (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.

DSBP

The Deep-Set Bypass Plug is the fifth-generation glass plugs, offering the same functionality as the TDP Remote Open, but in addition also flow bypass functionality.

It is run with bypass open, offering auto filling of tubing and displacing of fluid when reaching setting depth. After closing the bypass, a full V0 validated barrier is obtained.

The barrier will be removed by our non-explosive glass-breaking system via remote cycling.

Applications

- Completion barrier plug
- Isolate lower completion
- Packer setting device
- Fluid loss control device
- Pressure testing

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	Validation
587x300	5,87"	3,00"	302°F / 150°C	7 500psi / 517bar	ISO 14310 V0
587x300	5,87"	3,00"	329°F / 165°C	8 000psi / 552bar	ISO 14310 V0
800x430	8,00"	4,30"	302°F / 150°C	7 500psi / 517bar	ISO 14310 V0
833x467	8,33"	4,67"	329°F / 165°C	7 500psi / 517bar	ISO 14310 V0
833x467	8,33"	4,67"	302°F / 150°C	8 500psi / 586bar	ISO 14310 V0
833x588	8,33"	5,88"	293°F / 145°C	6 500psi / 448bar	ISO 14310 V0

TDP NonEx Remote Open

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	Validation
452x260	4,52"	2,60"	311°F / 155°C	7 500psi / 517bar	ISO 14998 A.8 V0
472x275	4,72"	2,75"	311°F / 155°C	10 000psi / 690bar	ISO 14998 A.8 V0
485x290	4,85"	2,90"	302°F / 150°C	10 000psi / 690bar	ISO 14998 A.8 V0
587x400	5,87"	4,00"	302°F / 150°C	7 500psi / 517bar	ISO 14998 A.8 V0
815x580	8,15"	5,80"	275°F / 135°C	6 000psi / 414bar	ISO 14998 A.8 V0
833x580	8,33"	5,80"	275°F / 135°C	6 500psi / 448bar	ISO 14998 A.8 V0
833x609	8,33"	6,09"	275°F / 135°C	5 000psi / 345bar	ISO 14998 A.8 V0

TDP Pump Open

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	Validation
365x245	3,65"	2,45"	212°F / 100°C	5 000psi / 345bar	ISO 14998 V6
375x245	3,75"	2,45"	302°F / 150°C	7 500psi / 517bar	ISO 14998 A.3 V5
500x300	5,00"	3,00"	302°F / 150°C	10 000psi / 690bar	ISO 14998 A.8 V0
544x388	5,44"	3,88"	302°F / 150°C	10 000psi / 690bar	ISO 14310 V6
544x388	5,44"	3,88"	302°F / 150°C	7 500psi / 517bar	ISO 14998 A.8 V0
588x426	5,88"	4,26"	302°F / 150°C	10 000psi / 690bar	ISO 14310 V6

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	Validation
650x480	6,50"	4,80"	302°F / 150°C	9 000psi / 620bar	ISO 14310 V6
709x477	7,09"	4,77"	302°F / 150°C	9 000psi / 620bar	ISO 14310 V6
709x477	7,09"	4,77"	302°F / 150°C	5 500psi / 380bar	ISO 14998 A.8 V0
775x516	7,75"	5,16"	302°F / 150°C	9 500psi / 655bar	API19V V3

TDP Mill Open

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	Validation
472x275	4,72"	2,75"	311°F / 155°C	10 000psi / 690bar	ISO 14998 A.8 V0
500x300	5,00"	3,00"	302°F / 150°C	10 000psi / 690bar	ISO 14998 A.8 V0
587x400	5,87"	4,00"	302°F / 150°C	7 500psi / 517bar	ISO 14998 A.8 V0
833x580	8,33"	5,80"	275°F / 135°C	6 500psi / 448bar	ISO 14998 A.8 V0
833x588	8,33"	5,88"	347°F / 175°C	5 000psi / 345bar	ISO 14310 V0
833x609	8,33"	6,09"	275°F / 135°C	5 000psi / 345bar	ISO 14998 A.8 V0

DTHP – Disappearing Tubing Hanger Plug

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	Validation
867x467	8,67"	4,67"	86°F / 30°C	9 000psi / 621bar	ISO 14998 A.8 V0
881x609	8,81"	6,09"	212°F / 100°C	5 500psi / 380bar	ISO 14998 A.8 V0

Disappearing Tubing Hanger Plug – Retrievable (TIWO)

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

DSBP – Deep-Set Bypass Plug

Product Type	Outer Diameter	Inner Diameter	Temperature	Diff. Pressure	Validation
833x580	8,33"	5,80"	302°F / 150°C	6 500psi / 448bar	ISO 14998 A.8 V0