Capillary Tubing Unit
Optimized layout enables customized well intervention

The Perfect Fit
The Halliburton Capillary Tubing Unit is a compact, lightweight intervention system. Because of the minimum footprint of its modular components, the capillary unit allows operations in offshore and land installations previously inaccessible, either due to limited deck space, crane limitations, road conditions, or overall structure constraints.

The unit is capable of offering conventional coiled tubing services with the added benefits of minimum footprint and weight, reduced personnel requirements, and embedded fluid pumping capabilities.

All components meet DNV lifting standards, Zone II specifications and CE marking requirements, and are versatile to accept various sizes of capillary tubing ranging from 3/8-in to 1-in OD.

The Halliburton Capillary Tubing Unit is a perfect fit for the most challenging scenarios and most attractive opportunities.

Applications
The system is perfectly suited for the following applications:
- Radial drilling
- Matrix stimulations
- Dewatering
- Cleanouts
- Mechanical interventions
- Downhole Tools operations
- Chemicals injection
- Gas lift
- Hydrates removal
- Asphaltenes treatments
- Flowline blockage removal

Safety
During jobs, acquisition of real-time data of all critical parameters allow accurate control of operating conditions from the operator’s cabin, to guarantee safe execution at all time.

Safety is also dramatically enhanced by:
- Shorter rig-up and rig-down of equipment, with easy handling of smaller components
- Less personnel involved in the operations, and as such limited overall exposure
- No heavy lifts needed
- Double well control barriers, with quad and dual BOPs as well as two-door stripper

A wealth of opportunities
The Halliburton Capillary Tubing Unit provides the operational flexibility not always achievable with standard Coiled Tubing equipment, offering Customers the unique opportunity to intervene and regain economic profitability from remote, marginal or previously inaccessible wells.

Power Pack
The 125 horsepower Power Pack includes 4 hydraulic pumps, driving Injector Head, Tubing Spooler, BOP and pumping circuits.

Four 10-gallon accumulators provide the necessary back-up for the BOP circuit. Also, a 15k psi Triplex Pump is embedded within the skid, providing a compact and manageable system. Remotely operated from the control cabin, the triplex pump is fed by a 65-gallon storage tank, and connected to the tubing spooler via a high pressure hose and swivel joint.
Quick-latch hydraulic bundled connections guarantee a leak-free environment and efficient rig-up process.

**Control Cabin**

Although compact in size, the operator’s control cabin can comfortably accommodate additional personnel, like job engineer or customer representatives.

Air conditioned, the cabin is equipped with two separate access doors and large front viewing window.

All controls are easy to operate as per standard Coiled Tubing hydraulics layout.

A touch screen panel - as well as a dedicated PC - for job modeling and real-time monitoring - acquires and stores data from:

- Skate Pressure
- Stripper Pressure
- BOP Accumulator Pressure
- Injector Pressure
- Well Head Pressure
- Fluid Pump Pressure
- Tubing Depth and Speed (via quadrature encoder)
- Tubing Weight (hydraulic load cell coupled to pressure transducer)

All devices meet ATEX Zone II and CE compliance. A mechanical hand pump also provides emergency backup to the Stripper and Injector Traction systems.

**Tubing Spooler**

The capillary tubing spool is driven by a high-speed/low-torque hydraulic motor. The tubing is connected to the triplex pump via a high pressure hose and 15k psi swivel, and is guided during deployment and retrieval by a remotely operated levelwind system.

The tubing counter mounted on the levelwind itself includes an electronic quadrature encoder to transfer depth and speed information to the control cabin.

The skid is flexible to accommodate various drums widths, by a sliding mechanical support matching all industry available spool sizes.
**Injector Head**

The Injector Head provides 20k lbf continuous pull capability and is equipped with a 6-cylinder hydraulic traction system with roller-style skates. Dual counter-balance valves prevent overrunning loads in either direction. Tubing size change is accomplished by installing a different chain size to match tubing size. Weight is measured via hydraulic load cell, and can be recorded with the main acquisition system with a pressure transducer. Automatic hydraulic brakes hold tubing weight when movement is stopped.

**Well Control Equipment**

The unit is capable of accommodating standard Quad and Combi BOPs and “Two-door” Stripper to guarantee double barrier configuration. Equipment is 3.06” through Bore, 10k psi Working Pressure, H₂S Service, 15k psi Test Pressure. All metals in contact with well fluids meet NACE Spec MR-01-75 2003 for H₂S Service.

**Specifications**

Compliant to the following lifting standards
- DNV 2.7-3, R60 (2011)
- EN 12079
- LRCCS (2013)

All skids measure 8’W X 12’L X 8’6”H

**Tubing Skid**
- Tare Weight: 4,500 lb (2041 kg)
- Payload: 15,000 lb (6803 kg)
- Maximum Gross Weight: 19,500 lb (8,845 kg)
- Transportation Weight: 19,000 lb (8,618 kg)
  - Includes 5,000M of 5/8” capillary tubing
  - Includes 20K Injector Head and gooseneck

**Engine/PowerPack Skid**
- Tare Weight: 4,500 lb (2041 kg)
- Payload: 15,000 lb (6803 kg)
- Maximum Gross Weight: 19,500 lb (8,845 kg)
- Transportation Weight: 14,000 lb (6,350 kg)

**Control Cabin Skid**
- Tare Weight: 6,000 lb (2,722 kg)
- Payload: 10,000 lb (4,536 kg)
- Maximum Gross Weight: 16,000 lb (7,257 kg)
- Transportation Weight: 11,500 lb (5,216 kg)

For more information Capillary Tubing Unit, please call your local Halliburton representative or email us at production solutions@halliburton.com

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