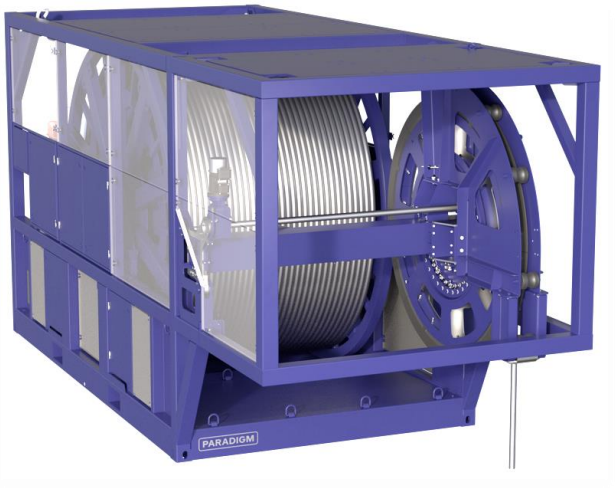
E90 Coiled Tubing Downline System

The **Coiled Tubing Downline System** is designed for efficient deployment and retrieval of coiled tubing from multi-service vessels and offshore facilities. Featuring a compact footprint and full redundancy, this system comprises a matching pair of reel skids that can be operated simultaneously or independently. Each skid is equipped with an all-electric liquid-cooled drive system, planetary gearbox, and an internal spring applied, electric released, disk brake, ensuring precise control and reliable performance. The integrated level-wind sheave is adaptable to various tubing sizes.



Applications

- Riserless Deepwater Intervention
- Subsea Pipeline Pre-commissioning
- Subsea Pipeline Decommissioning

Benefits

- Compact footprint
- Minimized crew requirements
- Precise deployment/recovery speeds
- Energy efficient, no hydraulic system losses
- No emissions
- Low cost of shipping and operation
- High availability/uptime

Features

- Single lift 'Plug & Play' system
- Twist lock frame-to-deck interface
- Intuitive joystick & handheld remote control
- Electronic pay out, tension and speed visualization
- D-rings for sea fasting

Directives & Certifications

- DNVGL-ST-E273 2016 Offshore lifting
- Machinery directive 2006/42/EC
- Low voltage directive 2014/35/EU
- Electromagnetic compatibility 2014/30/EU

The system utilizes high-power inverters and permanent magnet motors, providing high torque and efficient operation. The integrated level-wind sheave has removable inserts to adapt to the tubing size, while a sheave-mounted encoder provides accurate digital measurement of the deployed pipe length. A level-wind mounted load pin delivers precise total weight measurements, and the software-assisted spooling feature ensures controlled coiled tubing deployment.

For ease of transport and installation, the skids feature a single-lift configuration, forklift pockets, and a twist lock interface with ISO corners.

The power supply can connect to the grid or a generator set and is capable of reduced power operation, operating on current capacities between 32 A and 180 A. The secondary supply connection is used for standstill heating and control.

Each reel operates independently with a local control panel, including a push buttons, switches, and a touch screen display for sensor visualization and system setup. Additionally, a handheld remote-control allows for flexible operation.

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Reel capacity	Maximum length		Pipe weight	Liquid weight
2-3/8" OD x 0.203" WT, QT800	2400 m	7874 ft	16830 kg	5440 kg
2" OD x 0.203" WT, QT800	2600 m	8530 ft	15090 kg	3960 kg
Flow iron connection	3" 1502 hammer union			
Medium	Seawater			
Performance				
Maximum pull force outer layer	16000 kg		35200 lb	
Maximum pull force inner layer	20000 kg		44000 lb	
Maximum rotational speed	4 rpm			
Maximum pipe speed inner layer	20 m/min		65.6 ft/min	
Maximum pipe speed outer layer	40 m/min		131.2 ft/min	
Maximum static brake load	1,5 x Maximum pull force (reference DNVGL-RP-0232)			
Electrical characteristics				
Rated power	125 kW			
Electrical main power/ control supply connection	380 – 480 V, 50 – 60 Hz, 180 A, 3PH+GND			
Electrical stationary supply connection	230 V, 50 Hz, 16 A, 1PH+GND			
Signal connections	External signals, ethernet			
Enclosure ratings	IP56			
Installed drive power	100 kW			
Mechanical characteristics				
Structural design acc.	DNVGL-ST-E273 / Class R30			
Lift between vessel/ platform	Max Hs=3m			
Design temperature	-20° C			
Noise level	According to machinery directive			
Corrosion protection	ISO 8501-1 and ISO 12944-9 Class CX			
Topcoat colour	Ultramarine Blue RAL 5002 – frames, reel, sheave and components			
Over boarding sheave	2410 mm, single groove with changeable inserts (2-3/8" as standard)			
Pressure sensor (2x)	1000 bar		14500 psi	
Pressure gauge (2x)	1000 bar		14500 psi	
Working pressure	690 bar		10000 psi	
Dimensions & weights				
Complete Skid				
Overall dimensions (W x L x H)	3200 x 8000 x 3840 mm		126" x 315" x 151,2"	
Length of base	5840 mm		230"	
Length of reach 2 3/8"OD	1657 mm		65,2"	
Rated maximum gross weight	37500 kg		82673 lb	
Tare weight without pipe and liquid	20500 kg		45194 lb	
Reel				
Flange diameter	3670 mm		144"	
Core diameter	2410 mm		95"	
Width between flanges	2200 mm		87"	
Freeboard 2 3/8"OD	124 mm		4,9"	
Reel maximum load (pipe+fluid)	23000 kg		50700 lb	
Environmental parameters				
Operating temperature range	-20 to +50° C		-4 to +122° F	
Humidity	100% at +50° C		100% at +122° F	
Vessel accelerations and angles	**Operational**		**Transit**	
Vertical (including g)	12,8 m/s^2		12,8 m/s^2	
Transversal	4,9 m/s^2		4,9 m/s^2	
Longitudinal	4,9 m/s^2		4,9 m/s^2	
Heel angle	5°		5°	
Trim angle	2°		2°	

All products, product specifications and data are subject to change without notice, to improve design, reliability, functionality or otherwise.

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Reel capacity, pipe 2-3/8" OD	Pipe length per layer	Total pipe length on reel	Pipe length per layer	Total pipe length on reel
Layer 1	264 m	264 m	866 ft	866 ft
Layer 2	277 m	541 m	908 ft	1774 ft
Layer 3	290 m	830 m	950 ft	2724 ft
Layer 4	303 m	1133 m	993 ft	3716 ft
Layer 5	315 m	1448 m	1035 ft	4751 ft
Layer 6	332 m	1780 m	1089 ft	5840 ft
Layer 7	341 m	2121 m	1119 ft	6960 ft
Layer 8 (27 wraps)	279 m	2400 m	914 ft	7874 ft
Reel capacity, pipe 2" OD	Pipe length per layer	Total pipe length on reel	Pipe length per layer	Total pipe length on reel
Layer 1	317 m	317 m	1040 ft	1040 ft
Layer 2	330 m	647 m	1083 ft	2123 ft
Layer 3	343 m	990 m	1126 ft	3249 ft
Layer 4	356 m	1346 m	1169 ft	4417 ft
Layer 5	369 m	1716 m	1212 ft	5629 ft
Layer 6	382 m	2098 m	1255 ft	6883 ft
Layer 7	395 m	2494 m	1298 ft	8181 ft
Layer 8 (11 wraps)	105 m	2600 m	349 ft	8530 ft

Note: Layer diameters based on stacked pipe.

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