Coiled Tubing Downline System

The **Coiled Tubing Downline System** is designed for efficient deployment and retrieval of coiled tubing from multiservice 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, multi-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.

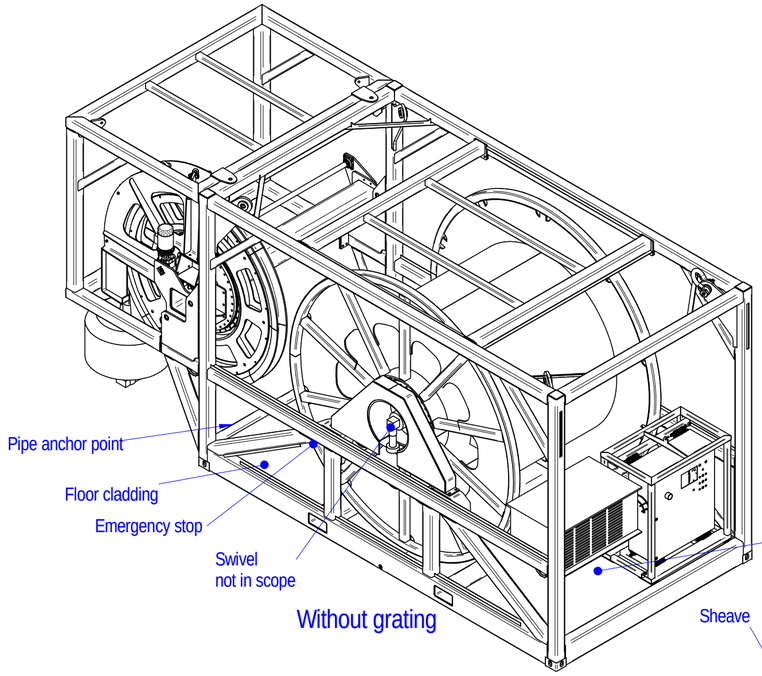
For ease of transport and installation, the skids feature a single-lift configuration, forklift pockets, and a twist lock interface with ISO corners.

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.

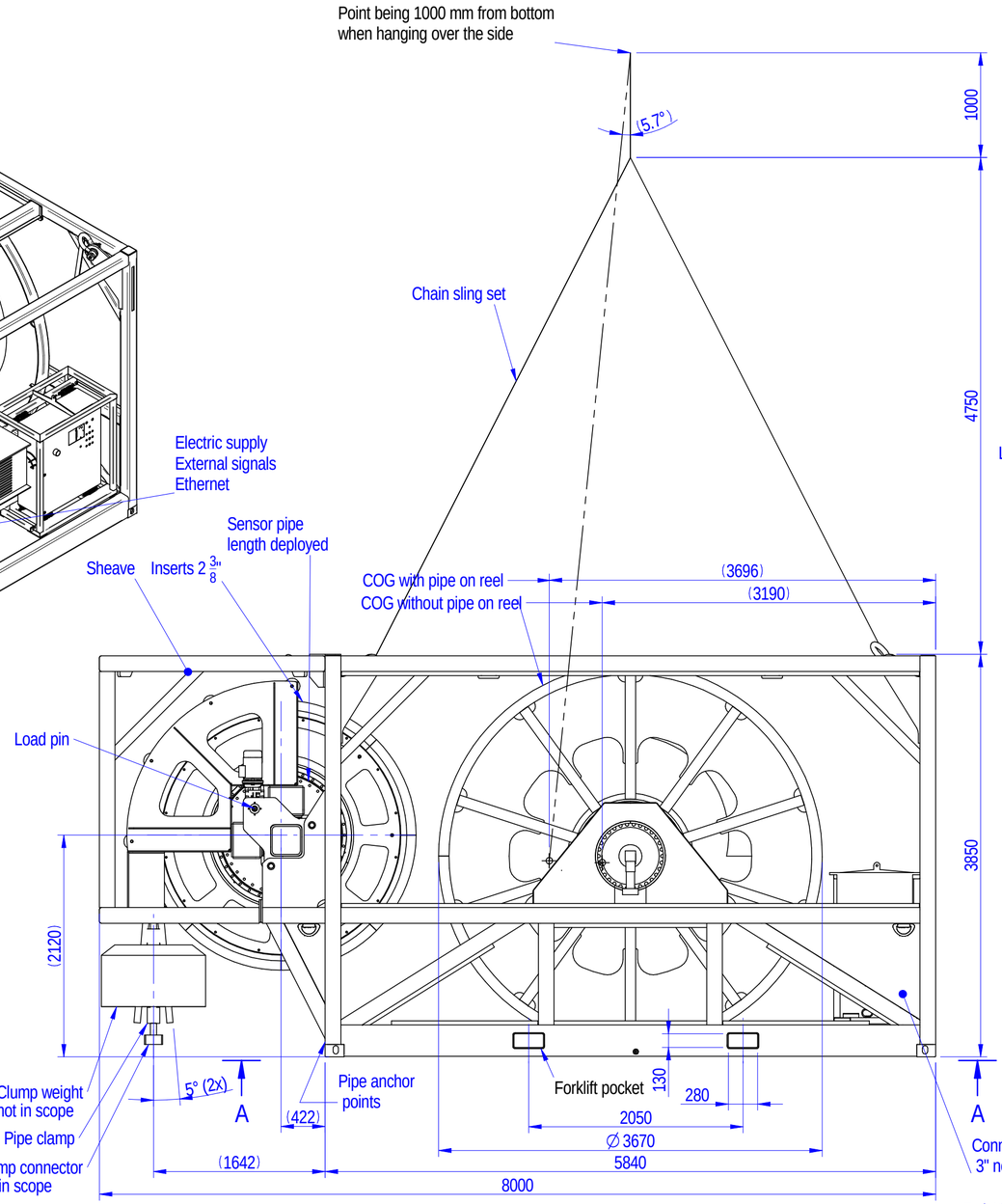
Each reel operates independently with a local control panel, including a joystick, push buttons, switches, and a touch screen display for sensor visualization and system setup. Additionally, a handheld remote-control allows for flexible operation.

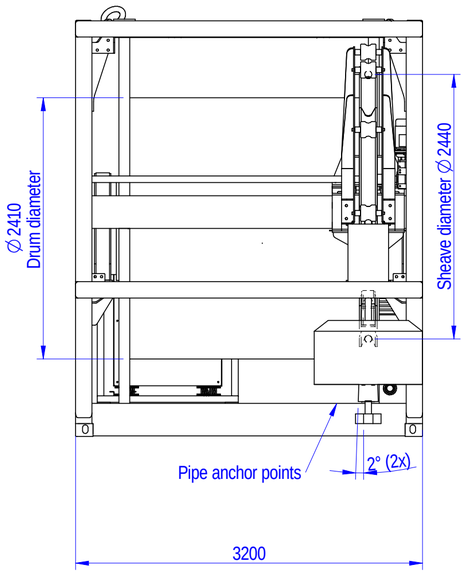
Reel capacity	Maximum length		Pipe weight	Liquid weight
2-3/8" OD x 0.203" WT, QT800	2400 m	7874 ft	17790 kg	5440 kg
2" OD x 0.203" WT, QT800	2600 m	8530 ft	16090 kg	3960 kg
Flow iron connection	3" 1502 hammer union			
Medium	Seawater			
Performance				
Maximum pull force outer layer	5000 kg		11000 lb	
SWL on bare drum	20000 kg		45000 lb	
Maximum rotational speed	4 rpm			
Maximum pipe speed empty reel	20 m/min		65.6 ft/min	
Maximum pipe speed full reel	40 m/min		131.2 ft/min	
Maximum static brake load	1,5 x SWL (reference DNVGL-RP-0232)			
Electrical characteristics				
Rated power	125 kW			
Electrical main supply connection	380 – 480 V, 50 – 60 Hz, 180 A, 3 phases, 4 wires			
Electrical secondary supply connection	110 – 250 V, 50 – 60 Hz, 16 A			
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	96" | 2438 mm, single groove with changeable inserts (2-3/8" as standard)			
Pressure sensor	15000 psi (2x)			
Dimensions & weights				
Complete Skid				
Overall dimensions (W x L x H)	3200 x 8000 x 3780 mm		126" x 315" x 149"	
Length of base	5620 mm		221"	
Length of reach	1625 mm		64"	
Rated maximum gross weight	37500 kg		82673 lb	
Tare weight without pipe and liquid	17000 kg		37479 lb	
Reel				
Flange diameter	3600 mm		148"	
Core diameter	2438 mm		96"	
Width between flanges	2200 mm		87"	
Freeboard	130 mm		5,1"	
Reel maximum load (pipe+fluid)	23000 kg		50706 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°	

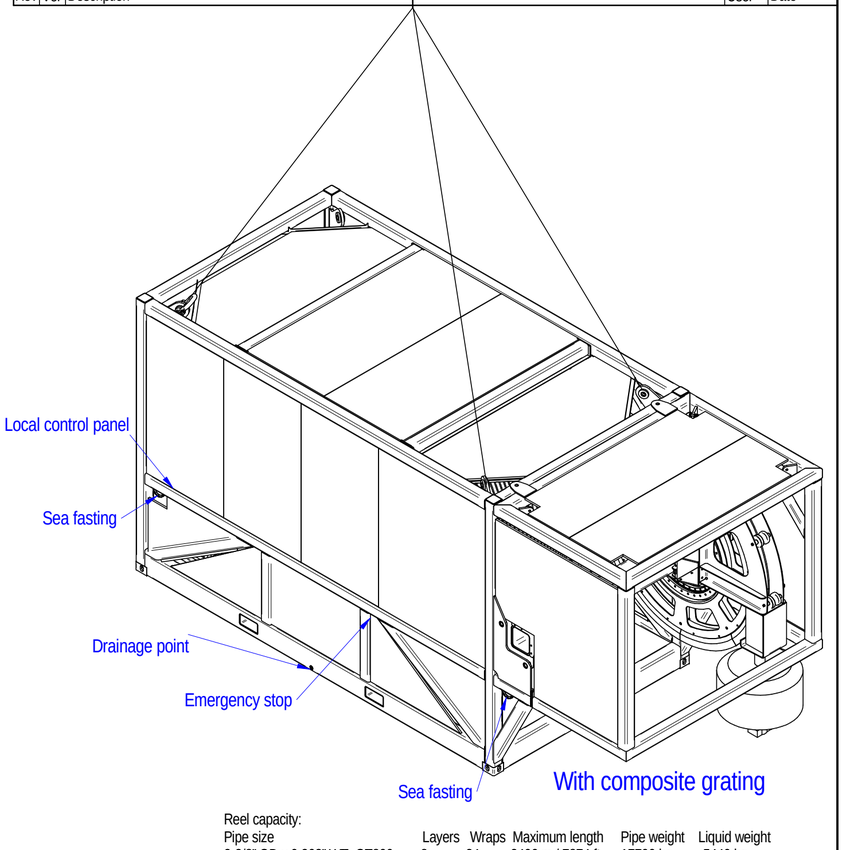
Rev	Ver	Description		User	Date



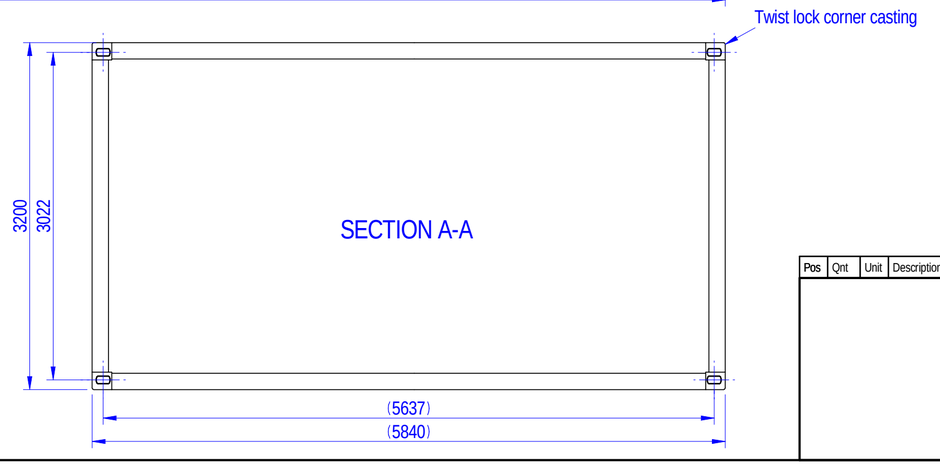
Without grating







With composite grading



3" 1502 hammer union connection, iron package including swivel supplied by client.
Pressure sensor (2x) 15000PSI

Terminal box:

Electrical main supply connection	380 – 480 V, 50 – 60 Hz, 180 A, 3 phases, 4 wires
Electrical secondary supply connection	110 – 250V, 50 – 60 Hz, 16A
External signals	
Ethernet	

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

Marking:
Client assetnumber/ serial number
CE
DNV-ST-E273

All dimensions between brackets (*) are preliminary

Reel capacity:

Pipe size	Layers	Wraps	Maximum length	Pipe weight	Liquid weight
2-3/8" OD x 0.203" WT, QT800	8	34	2400 m / 7874 ft	17790 kg	5440 kg
2" OD x 0.203" WT, QT800	8	40	2600 m / 8530 ft	16090 kg	3960 kg
Medium Sea water					

Performance:

Maximum pull force, outer layer	5000 kg / 11000 lb
SWL at bare drum	20000 kg / 45000 lb
Maximum rotational speed	4 rpm
Maximum pipe speed empty reel	20 m/min / 65.6 ft/min
Maximum pipe speed full reel	40 m/min / 131.2 ft/min
Maximum static brake load	1,5 x SWL (reference DNVGL-RP-0232)

Unit Weights:

Rated maximum gross weight	37500 kg / 82673 lb
Tare weight (w/o pipe and liquid)	17000 kg / 37479 lb
Pay load	20500 kg / 45195 lb
Liquid to be removed before transport.	
Reel maximum load (pipe + liquid)	23000 kg / 50706 lb

Structural design acc.DNVGL-ST-E273 / Class R30
Lift between vessels/ platform in Max Hs =3m
Design temperature -20°C

Operating temperature range	-20 to +50° C / -4 to +122° F
Humidity	100% at +50° C / 100% at +122° F

Vessel accelerations and angles:

Direction	Operational	Transit (Reference DNV-ST-E272)
Vertical (including g)	12,8 m/s2	12,8 m/s2
Transversal	4,9 m/s2	4,9 m/s2
Longitudinal	4,9 m/s2	4,9 m/s2
Heel angle	5°	5°
Trim angle	2°	2°

Pos	Qnt	Unit	Description	Part number	Material	Standard	Cert. Code	Mass

REMOVE ALL BURRS AND BREAK SHARP EDGES	Mass [kg]:		Material:	Scale: 1:40	Size: A2	
General Arrangement	Drawn: MK	Appr.:	Date: 03-07-2024	Drawingnr.: D1392433	Rev: 0	Ver: 0
Description: Coiled Tubing Downline System						
This drawing is our property and is confidential It is not allowed to copy or to show to third parties, without our written permission.	Projection:		Sheet: 1 of 1	Partnumber:		