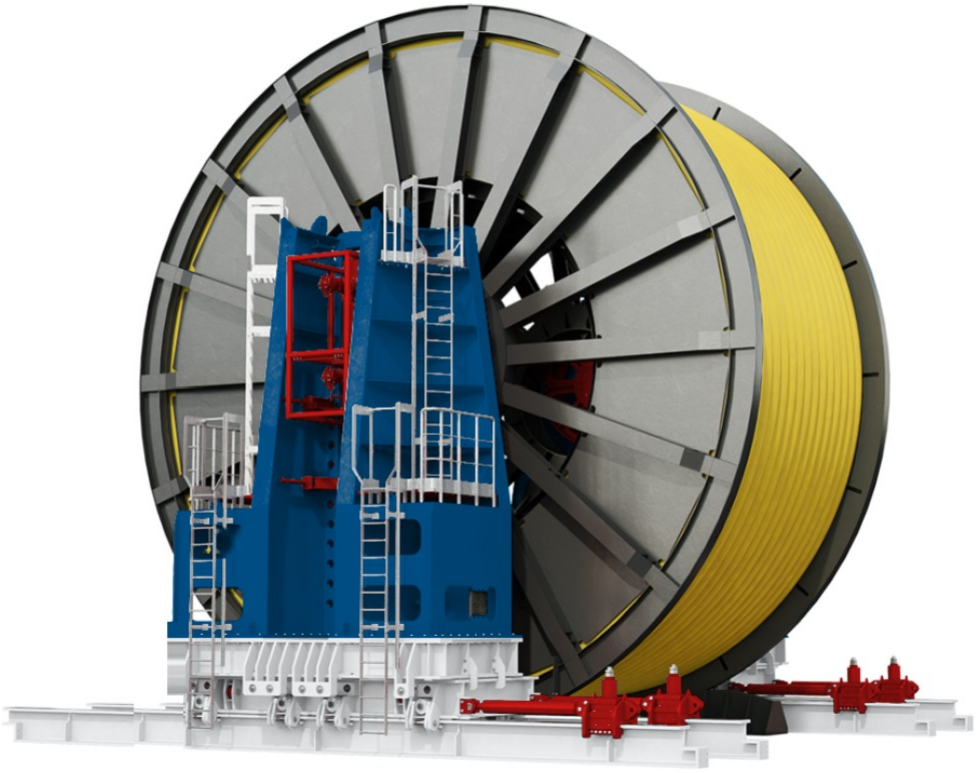
PRODUCT DATASHEET

# Dimension Reel Drive System (DRDS-400)

Portable, twin-tower reel hub drive (RHD) for spooling and controlled back-tension of subsea power cables, umbilicals, flexible risers, Coil Tubes and flowlines on and off storage reels during installation and recovery.

| 400 Te | 11.4 m | 142.5 T·m | 0.50 m | 88.2 Te |
|---|---|---|---|---|
| MAX REEL LOAD | MAX REEL FLANGE DIA | DRIVE TORQUE @ 0.5 rpm | REEL ENGAGE TRAVEL | SYSTEM WEIGHT (2 TOWERS) c/w min. 2 skidding rail beams |



## Overview

The Dimension DRDS-400 is a portable twin-tower reel hub drive that engages a storage reel at its hub to spool product on and off and provides controlled back-tension during lay and recovery or Product repair. It comprises two drive towers on skid rails, hydraulic hub drives with spur-gear reduction, hydraulic-release fail-safe disc brakes and a dedicated hydraulic power unit, in a modular steel structure that breaks into road- and sea-freightable units and installs on the vessel deck with sea-fastening for quick mobilisation and de-mobilisation.

Designed and packaged by Dimension and engineered to DNV-RP-0232 / DNV-ST-0378 / DNV-ST-N001 (DNVGL rules & guidelines), the system is delivered with full documentation, load-test and function-test certification and offshore commissioning support.

## Applications

- **Reel storage & spooling —** power cables (HV/EHV export and inter-array), umbilicals, flexible risers, flowlines (SURF).
- **Lay & recovery back-tension —** feeds product to the tensioner / HLS / VLS at controlled back-tension during installation.
- **Decommissioning —** recovery and re-spooling of cables, Coil tubing and flexible product.
- **Rental or sale —** vessel-of-opportunity mobilisation; multiple-reel handling on skid rails.

## Key Features

- **Twin-tower hub drive —** two towers engage the reel at the hub; hydraulic drive with spur-gear reduction.
- **High capacity —** 400 Te max reel load (350 Te nominal), 11.4 m max flange diameter; larger reels via spacers and packers.
- **Drive & brakes —** 142.5 T·m @ 0.5 rpm / 71.3 T·m @ 1.0 rpm (≈ 25 Te line pull at 11.4 m flange); hydraulic-release fail-safe disc brakes.
- **Reel handling —** reel engage/disengage (0.50 m travel); multiple reels skidded on rails via gripper jacks.
- **Reel compatibility —** Technip / NKT / Wellstream / Duco / JDR reels; adjustable hub.
- **Modular —** towers, bases, skid rails, HPU and spares ship as standard units; heaviest single lift 27.3 Te.

# TECHNICAL SPECIFICATION

| Capacity & Design | |
|---|---|
| **System type** | Reel hub drive (RHD) — twin-tower hub-reel drive system |
| **Reel load (nominal / maximum)** | 350 Te / 400 Te |
| **Maximum reel flange diameter** | 11.4 m |
| **Drive** | Hydraulic, spur-gear reduction |
| **Drive torque @ speed** | 142.5 T·m @ 0.5 rpm; 71.3 T·m @ 1.0 rpm (≈ 25 Te line pull at 11.4 m flange) |
| **Reel rotation speed** | 0 – 1.0 rpm |
| **Reel engagement travel** | 0.50 m |
| **Brakes** | Hydraulic-release fail-safe disc |
| **Design / appraisal** | DNV-RP-0232; DNV-ST-0378; DNV-ST-N001 — DNVGL rules & guidelines |

| Reel & Product Handling | |
|---|---|
| **Reel hub compatibility** | Technip / NKT / Wellstream / Duco / JDR |
| **Reel hub / core diameter** | TBC — subject to client reel specification |
| **Larger reels** | Accommodated with spacers & packers |
| **Reel skidding** | Gripper-jack skidding; multiple reels on skid rails |
| **Suitable product** | Power cable, umbilical, flexible pipe, flowline and Coil tubing |
| **Multiple-reel handling** | Yes with extended skidding rails beams |

| Environmental | |
|---|---|
| **Operating temperature** | -10 °C to +50 °C |
| **Survival temperature** | -20 °C to +55 °C |
| **Humidity / atmosphere** | Up to 100 % RH; marine, high salinity |
| **Hazardous area** | Safe area / Zone 2 option |

| Dimensions & Weights | |
|---|---|
| **Per drive tower (L×B×H)** | 5.2 × 2.86× 7.2 m |
| **System width across towers** | 10.8 m |
| **Reel spacing between towers** | 6.63 m |
| **Max reel drum width** | ≈ 5.9 m |
| **System weight (2 towers + bases)** | 88.2 Te |

| Dimensions & Weights | |
|---|---|
| **Drive tower / base c/w Skidding Rail beams (each)** | 27.3 Te / 16.8 Te |
| **Skid rail (each, 6 off)** | 10.0 × 2.1 m, 7.4 Te |
| **Heaviest single lift** | 27.3 Te (drive tower) |
| **Total mobilised spread** | ≈ 150.0 Te |

| Power & Control | |
|---|---|
| **Hydraulic power unit** | 2 × 75 kW (150 kW); 440 V / 3ph / 60 Hz, ≈ 250 A; IP56 |
| **Hydraulic system** | 220 bar; 2 × 175 lpm; air-cooled |
| **HPU mass / envelope** | ≈ 7.0–8.0 Te (dry / wet) / 2.81 × 2.02 × 2.08 m |
| **Controls** | Reel Hub up/down; reel engage/disengage; spool in/out; gripper-jack skidding |
| **Starter / control panels** | IP65 (above-deck panels, min IP65) |
| **Emergency** | E-stops; fail-safe disc brake on power loss |

| Lifting & Ancillary Equipment | |
|---|---|
| **Skid rails** | 6 × (10.0 m, 7.4 Te) |
| **Spares container** | 10 ft, 5 Te |
| **Hoses & gripper-jack container** | 5 Te |
| **Gripper jacks** | For reel skidding; per lifting arrangement dwg |

| Scope of Supply | |
|---|---|
| **Standard** | Two drive towers (A/B) with bases and hub drives, fail-safe disc brakes, 6 × skid rails, 2 × 75 kW HPU with air cooler, Wireless Operator radio controller, control & starter panels, spares container, hoses & gripper-jack container |
| **Options** | Tower hight adjustable modules for larger reels; additional skid rails; reel adaptor hubs; integration with Dimension HLS / VLS and tensioner spreads |
| **Documentation** | GA drawings & LA drawings,-Factory acceptance test records or reconduct FAT if requested, O&M manual, packing / mob manifest including Critical Operating Spares list, DNVGL verification |

**Commercial & Mobilisation** *Available for rental or sale. Mobilised from Singapore; total spread ≈ 150.0 Te across 13 lifts. Technicians available for commissioning and offshore operation. Contact sales@dimension.sg for availability and day rates.*

*Specifications are indicative and subject to change without notice; final performance depends on reel and vessel interface and project-specific engineering. Highlighted fields are placeholders — verify before issue. Figures are indicative pending detailed design.*