



## EXPERIENCE & TRACK RECORD

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**Torque Engineering Australia Pty Ltd** ABN 76 131 766 473

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## COMPANY STRUCTURE

Torque Engineering Australia Pty Ltd is part of the ASX listed company Matrix Composites & Engineering Ltd. Torque Engineering, together with its alliance partners has the following track record and experience.

## MANAGEMENT EXPERIENCE & TRACK RECORD

Collectively the senior management and directors of the company have in excess of 150 years of track record and experience in;

- Project and Operations management to the global offshore and subsea construction industry
- Machine design and equipment manufacture
- Design, Fabrication & Testing to Internationally Recognised standards

## SUMMARY OF PRODUCTS

- Man Riding Winches
- Deep Ocean Fast Deployment Winches
- Mooring Winches & Allied Equipment
- Flexible Lay Equipment
- Umbilical Reelers
- Launch & Recovery Systems
- Hydraulic / Electric or Pneumatic Drive
- Control Systems
  - Heave Compensation – Active and Passive
  - Radio Control
  - Load & Line out information



**SUMMARY OF MAJOR PROJECTS**

**5 te Hook Load Fast Winch and Over Boarding Frame**

SWL	-	86 kN
Wire	-	2,000 m x Ø24 mm (12 layers)
Speed (Max)	-	150 m/min (75 Hz)
	-	74 m/min (50 Hz)
Power	-	120 kW – 400 Vac
Size	-	660 x 290 x 440 cm high
Mass	-	19,000 kg
Standard	-	DNV 2.7-1; Lloyds; DNV; ABS



**10 te Hook Load Fast Winch**

SWL	-	121 kN
Rope	-	1400 m x Ø28 mm (11 layers)
Speed (Max)	-	63 m/min (75 Hz)
	-	43 m/min (50 Hz)
Power	-	90 kW 400 Vac
Size	-	8.80 x 4.80 x 3.0 meters
Mass (no wire)	-	14,200 kg
Standard	-	DNV 2.7-1; Lloyds; DNV; ABS



**Electric 30 kN SWL Winch**

SWL	-	30 kN
Wire	-	200 m x Ø16 mm (5 layers)
Speed	-	26 m/min
Inverter	-	37 kW
Mass	-	1,400 kg
Standard	-	ABS



**Hydraulic Umbilical Reeler**

SWL	-	5 kN
Wire	-	200 m x Ø19 mm (5 layers)
Speed	-	44 m/min
HPU	-	7 kW (20 l/min @ 150 bar)
Mass	-	700 kg
Standard	-	DNV 2.7-1 (frame)



**5 te Electric Man Riding Hoist**

SWL	-	50 kN
Wire	-	170 m x Ø28 mm (2,5 layers)
Speed	-	50 m/min
Power	-	2 x 22 kW motors
Size	-	125 x 227 x 140 cm high
Mass	-	3000 kg



**20 te SWL Hoist**

SWL	-	200 kN
Rope	-	240 m x Ø36 mm (3 layers)
Speed	-	55 m/min
Power	-	5 x 37 kW motors
Size	-	130 x 248 x 150 cm high
Mass	-	5800 kg



**Hydraulic Man Riding Winch**

SWL	-	10 kN
Wire	-	200 m x Ø13 mm (3 layers)
Speed	-	26 m/min
HPU	-	11 kW (60 l/min @ 80 bar)
Mass	-	700 kg
Standard	-	ABS
	-	IMCA



**Pneumatic Man Riding Winch**

SWL	-	10 kN
Wire	-	200 m x Ø13 mm (3 layers)
Speed	-	26 m/min
Air	-	150 l / sec (320 cfm) @ 6 bar
Mass	-	700 kg
Standard	-	ABS
	-	IMCA



**Powered Under Rollers / Reel Drive Base**

SWL	-	300 kN
Reel	-	300 tonnes - Ø6 m to Ø11 m
Speed	-	30 m/min
HPU	-	110 kW (473 l/min @ 250 bar)
Mass	-	26 000 kg
Standard	-	ABS



**Saturation Diving Bell Winch**

SWL	-	50 kN
Wire	-	316 m x Ø24 mm (7 layers)
Speed	-	26 m/min
HPU	-	70 l/min @ 263 bar
Mass	-	4,8 tonnes
Rules	-	IMCA



**Pneumatic Umbilical Reelers**

SWL	-	30 kN on top layer
Umbilical	-	700 m x Ø96 mm (5 layers)
Speed	-	40 m/min
Air	-	21 m <sup>3</sup> /min (750 cfm) @ 6 bar
Mass	-	19 300 kg
Lifting Frames	-	DNV 2.7-1



**Deep Ocean Deployment System**

SWL	-	1500 kN & 2500 kN
Rope	-	3000 m x Ø109 mm Dyneema
Speed	-	30 m/min
Drive	-	750 kW Electric
Control	-	Manual
		Active Heave Compensated
		Constant Tension
Mass	-	200 te (approximately)
Spooling	-	YES



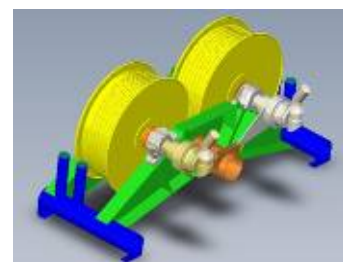
**Compact Mooring System**

SWL	-	1000 kN
Wire	-	2000 m x Ø76 mm
Speed	-	26 m/min
Drive	-	Electric or Hydraulic
Spooling	-	YES



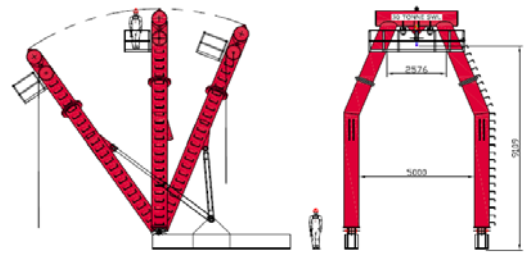
**Umbilical Tensioning Device**

SWL	-	80 kN
MBR	-	700 mm
Speed	-	20 m/min
HPU	-	37 kW (80 l/min @ 260 bar)
Drum	-	Ø1400 mm



**Vessel A-frame**

SWL	-	300 kN
Road Transportable		
Standard	-	ABS



**150 te Hoist Winch**

SWL	-	1500 kN
Wire	-	380 m x Ø90 mm
Speed	-	12 m/min
Power	-	400 kW
Size	-	435 x 290 x 390 cm high



**13,5 te Fast Winch**

SWL	-	135 kN
Wire	-	170 m x Ø28 mm (3 layers)
Speed	-	23 m/min
Power	-	3 x 22 kW motors
Size	-	125 x 227 x 140 cm high
Mass	-	3200 kg



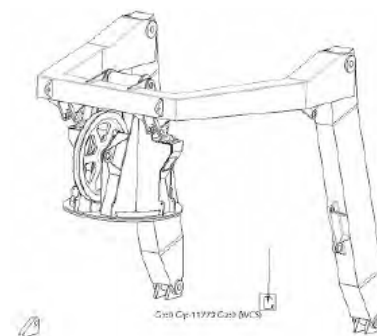
**400 te Linear Winch (continuous pull)**

SWL	-	4000 kN
Wire	-	< Ø4"
Speed	-	5 m/min
Power	-	2 x 220 kW Diesel HPU's
Size	-	2 x 40' Containers



**12 te SWL ROV Deployment Frame**

SWL	-	120 kN
Base Dimensions	-	8700 m x 3700 m
A-frame Height	-	7.2 m
Umbilical	-	Ø45 mm



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