



WOODS HOLE OCEANOGRAPHIC INSTITUTION

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UNOLS East Coast Winch Pool Manager

Maximum Capability Document

ECWP Dynacon LD-1

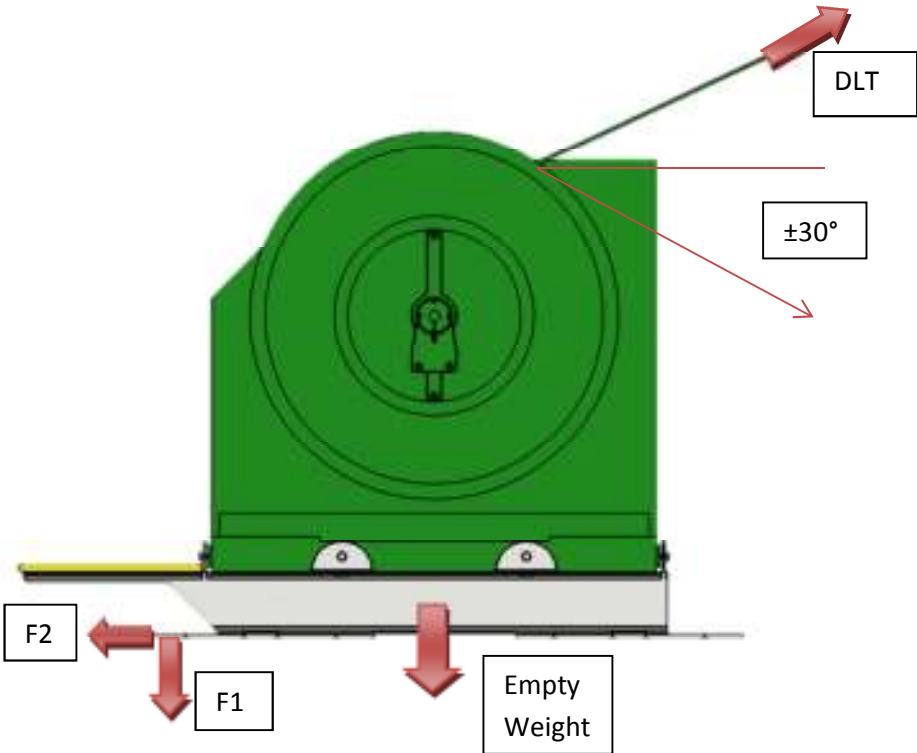
This document has been prepared in accordance with Appendices A & B from the UNOLS RVSS. This machine is primarily used for 0.322/0.393 tension members, with 11,600 lbf and 16,000 lbf breaking strengths, respectively. Per Appendix A, the machine in its' current configuration is limited to a Factor of Safety (FS) of 5.0 on the tension member due to the lack of cable monitoring system. The FS on the tension member could be lowered if a monitored over-boarding block is employed in accordance with Appendix A. Per Appendix B this machine is only rated for "Lifting & Towing - Mid Water" (Section B.3.5.2 & 5) with .322/.393 or stronger tension members as currently configured due to the lack of load limiting equipment. This strictly limits tension member deployed length to 75% of water depth. This machine could be rated for "Lifting and Towing - Deep Water" if proper load limiting equipment were employed per Appendix B.

System Characterizations

Empty Weight	5,500	lbf
Maximum Weight	6,500	lbf
Maximum Pull at Bottom Layer / MPT	3,500	lbf
Maximum Continuous Allowed Structure Load / DLT ¹	9,300	lbf
Maximum Speed at Bottom Layer	40	m/min
Maximum Oil Operating Temperature	180	F
Minimum Operating Temperature	-20	F
Power Requirements	3 Phase 480VAC 60 Hz 60 Amp Circuit	

¹ At this tension the brake will slip causing the winch to render cable

Free Body Diagram



At DLT
F1 = 1,200 lbf
F2 = 500 lbf

Forces are maximum forces per bolt, at DLT, for a 16 bolt hold down pattern (Rows spaced at 24", 48", and 72"). Analysis is good for a vertical fleet angle of $\pm 30^\circ$ and a horizontal fleet angle of $\pm 5^\circ$.

