Joshua Eaton, *Manager, UNOLS East Coast Winch Pool*

MS #17, 266 Woods Hole Road, Woods Hole, MA 02543
jeaton@whoi.edu http://winchpool.whoi.edu
Office: 508.289.2672

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 capable of operating up to Factor of Safety (FS) of 2.0 on the tension member. The FS on the tension member may be adjusted due to the sheave train that is employed to meet Appendix A regulations. 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 or if a tension member with a breaking strength less than the DLT is used.

Section	Operation	Allowed
B.3.5.1	Towing – Surface	Y
B.3.5.2	Towing - Mid Water	Y
B.3.5.3	Towing - Deep Water	Y
B.3.5.4	Station Keeping – Surface	Y
B.3.5.5	Station Keeping – Mid Water	Y
B.3.5.6	Station Keeping – Deep Water	Y

System Characterizations

Empty Weight	5,500	lbf
Maximum Weight	6,500	lbf
Maximum Pull at Bottom Layer / MWT	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

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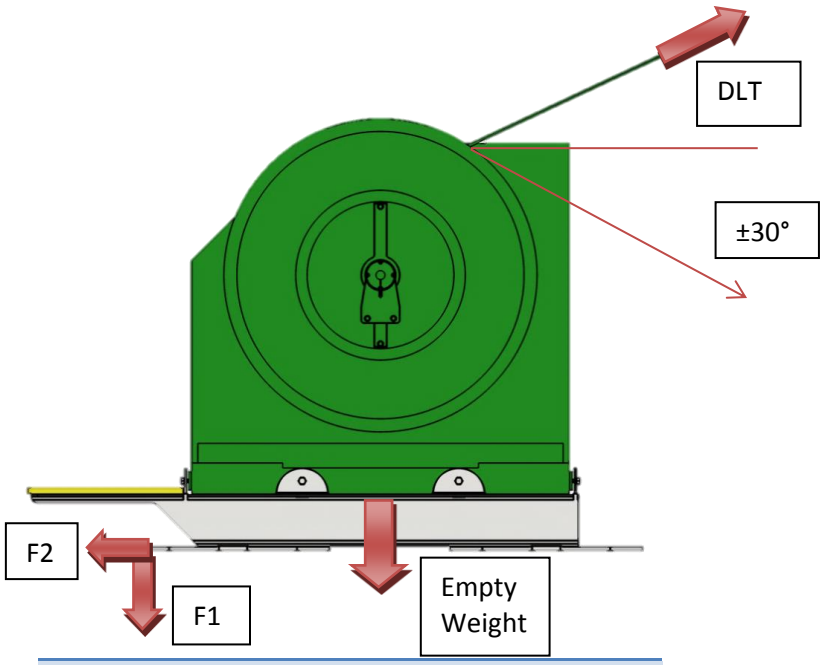
Free Body Diagram



	Reaction At MWT	Reaction At DLT
F1	250 lbf	500 lbf
F2	250 lbf	1,200 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 ±30° and a horizontal fleet angle of ±5°.