



Maximum Capability Document

Hawboldt SPR-2036/S General Purpose – 1722-1

This document has been prepared in accordance with Appendices A and B from the UNOLS RVSS. This machine is primarily used with the following tension members:

- 1/4" Tension members, with a 6,750 lbf breaking strength
- 3/8" Tension members, with a 14,800 lbf breaking strength
- 0.322" Tension members, with a 11,600 lbf breaking strength
- Synthetic tension members of varying size and breaking strength

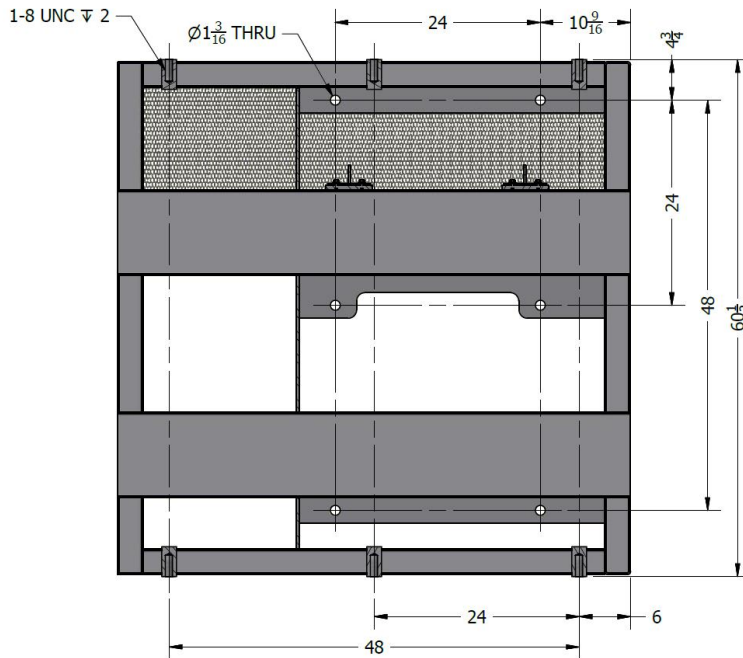
The machine's levelwind sheave has two liners: one grooved for $\varnothing 3/8$ " wire rope, and one grooved for $\varnothing .322$ " EM cable. Per Appendix A, Tables A.8.1 to A.8.4, the machine qualifies for a Factor of Safety (FS) of 1.5 on the tension member when used with $\varnothing 3/8$ " wire rope and liner, it qualifies for a Factor of Safety (FS) of 2.0 on the tension member when used with $\varnothing .322$ " cable and liner, and qualifies for a Factor of Safety (FS) of 2.5 on the tension member when used with $\varnothing 1/4$ " wire rope and either $3/8$ " or 0.322 " liner.

Per Appendix B, for tension members possessing an NBL of 15,000 lbf or less, this machine is constructed in accordance with B.4.7.1, and rated for "Lifting and Towing-Deep Water". Per Appendix B.4.7.2, stronger tension members are permitted on uninspected vessels provided the deployed length does not exceed 75% of the nominal water depth. This is also allowed on inspected vessels provided a special case is granted by the US Coast Guard Marine Safety Center

System Characterizations

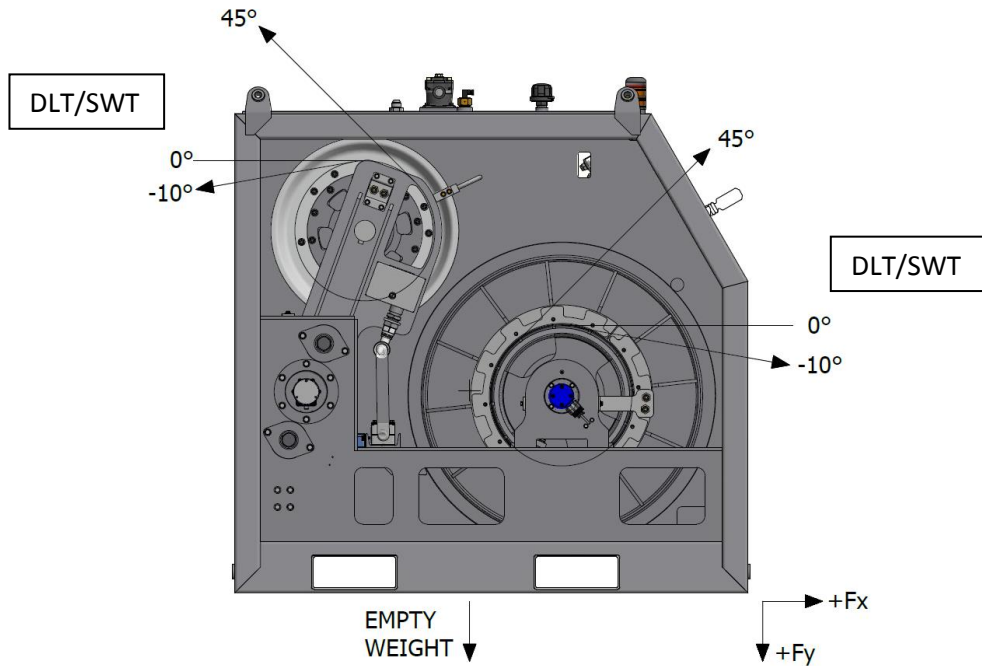
Empty Weight	3,800 lbf
SWT of Winch	3,500 lbf
SWT Fleet Tolerance	+45°/-10° vertical, +/- 5° horizontal
DLT of Winch	15,000 lbf
Max. Line Speed @ Bare Drum	103 ft/min
Power Requirements	480VAC/3PH/60HZ
Bare Drum Pull	3,500 lbf
Full Drum Pull	1,830 lbf

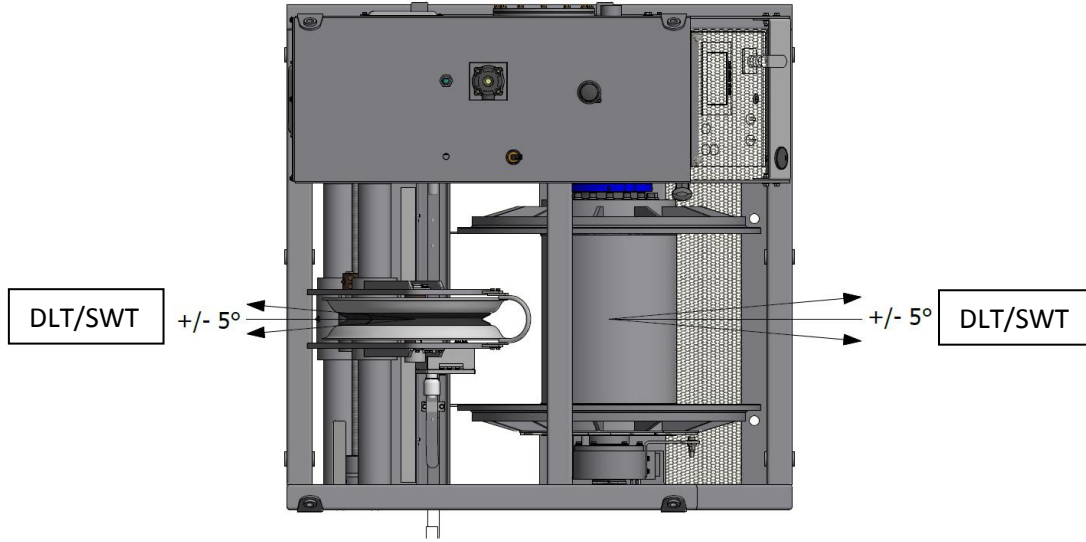
Bolt Pattern



There are two mounting options for this winch. The first, is a 6 bolt pattern which matches the UNOLS 2'x2' bolt pattern. The second, is a 6 bolt pattern consisting of threaded bosses on two sides of the winch frame.

Free Body Diagram





Forces are maximum forces per bolt, at SWT & DLT, for the 6 bolt pattern in the winch base frame. The analysis is valid for a vertical fleet angle of $+45^{\circ}/-10^{\circ}$ and horizontal fleet angle of $+/-5^{\circ}$. The analysis is also valid for both reeving options shown, with and without levelwind.

		Reaction @ SWT	Reaction @ DLT	Mounting Fasteners
Mounting Option 1	Fx [lbf]	552	2,400	1"-8 UNC
	Fy [lbf]	432	4,000	316 SS ($\sigma_y=40$ ksi)
Mounting Option 2	Fx [lbf]	552	2,400	1"-8 UNC
	Fy [lbf]	354	3,250	316 SS ($\sigma_y=40$ ksi)

Mounting fasteners shall be lubricated and torqued to 210 ft.lb (K=0.15).