



# TerrAdaptor™

## Winch Brackets

The TerrAdaptor Standard and Capstan Winch Brackets are lightweight and compact brackets designed specifically for use with the TerrAdaptor tripod system. There are three options to choose from: the Standard Winch Bracket, Capstan Winch Bracket and the Capstan Winch Bracket Assembly (includes the Harken 40.2 ST two speed winch).



### Standard Winch Bracket (P/N 230550)

The **Standard Winch Bracket** is designed primarily for mounting crank operated winches used in the work and rescue markets. The standard winch bracket was designed specifically with the bolt pattern predrilled and ready to assemble the DBI/SALA9000004 mounting bracket and the Tractel Winch T2S5OG directly onto the bracket. Follow the winch manufacturer recommendations for proper mounting of the winch to the bracket using the supplied hex bolts and lockwashers (4 each are supplied). The bolts should be torque to 20 lb/ft (DO NOT OVER TIGHTEN).

Other winch models can be mounted to the standard bracket. The dimensions of the bracket are 3½" x 9" x ½" thick and is made from aluminum plate. The top plate will need to be drilled and tapped with additional holes to meet the specific bolt pattern of your winch. See the winch manufacturer recommendations for proper mounting and do not exceed manufacturers rating.

The bracket is designed to be used with winches utilizing rope, wire rope or cable. If wire rope or cable is selected, be sure to use the TerrAdaptor Steel Sheave Assembly (P/N 230360) rather than the Standard TerrAdaptor Sheave Assembly (P/N 230350) as your re-direct accessory.

### Capstan Winch Bracket (P/N 230551)

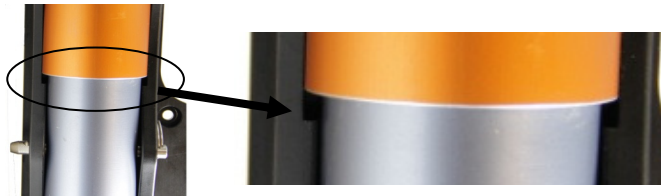
The Capstan Winch Bracket is designed specifically for mounting a Harken 40 ST or 40.2 ST capstan winch. The top plate is predrilled and ready for assembly. Follow the Harken recommendations for proper mounting of the winch to the bracket using the supplied stainless cap screws, washers and hex nuts (5 each). The screws should be torque to 6 or 7 lb/ft (*DO NOT OVER TIGHTEN*).

The TerrAdaptor Capstan Winch Bracket employs a lightweight stainless loop that guides the rope into the capstan at the correct angle for maximum grip of the rope. The guide loop can also mind prussics which can simplify progress capture rigging.

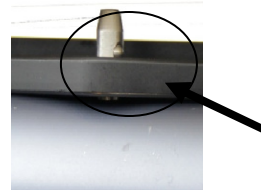


## Attaching The Winch Bracket to the TerrAdaptor System

The bracket is normally located on the rear leg of a tripod, but it can be located on any leg provided the rope or cable is safely routed. It can be attached anywhere along the smaller diameter Perf Tube. It can also be attached at the junction between the Perf Tube and larger Mid Tube by lining up the relief in the sideplates of the bracket at the junction of the two tubes as shown in the picture below. Once positioned, insert the three long quick release pins (with rings) so that the ball detent is fully exposed on the opposite side as shown in the picture below.



Attached at Junction



Ball should be visible

The bracket also has high strength auxiliary attach points (see Table 2-1) at each end for rigging belays, progress capture, tie down, and other rigging needs.

## Capstan Winch Bracket Assembly

The Capstan Winch Bracket Assembly comes fully assembled with the Harken 40.2 ST two speed winch, including the Harken 10 inch lock-in aluminum speed grip handle. Simply attach the assembly to the TerrAdaptor leg with the long quick release pins as described above. For more information on the Harken winch go to [www.harken.com](http://www.harken.com).

## Rigging the Capstan Winch

The rope is routed from the load, through the redirect accessory (pulley, sheave assembly or other gear) located at the tripod head, through the guide loop on the winch bracket and then onto the winch. Specifically, begin at the bottom of the capstan, wrap the rope clockwise around the capstan several times (number of wraps varies with rope diameter) without overlapping until the rope has reached the top of the drum. Finish by putting the tail of the rope over the chrome stripper arm and then between the upper and lower spring loaded jaws of the self tailing mechanism. Install handle. (Please see the Harken User Manual for further information on proper use of the winch).

Raise loads by turning the handle in the direction that provides the best mechanical advantage for your situation. Depending on the weight of the load and the speed needed to raise the load, it may be more efficient to place one foot near the base of the tripod leg or lash the leg to the surface for greater stability. Note that the winch can be rigged for progress capture by attaching prussic or other progress capture devices to the rigging points on the winch bracket.



Lower loads by using the capstan as a belay drum to provide friction. While retaining a firm grasp on the rope tail and supplying tension on the capstan, unwind the rope from between the upper and lower spring loaded jaws and then from the stripper arm. While remaining in control of the rope tail, slowly decrease tension and allow the rope to slip on the capstan to lower the load at the desired speed. Capstan winches must be tailed either manually or by means of the self tailing mechanism. To return to a raise, again wrap the tail of rope over chrome stripper arm and then between the upper and lower spring loaded jaws and turn with the handle.

The TerrAdaptor system employing a capstan style winch is used for raising and lowering typical rescue loads of 300 to 600 pounds using ropes common to rope rescue. Capstan winches are not designed to catch a falling load nor does it employ any type of braking mechanism. If fall protection or a belay line is required then it should be rigged independently.

Also see [www.harken.com](http://www.harken.com) for more information and recommendations for proper winch mounting and use. Do not exceed winch manufacturers rating.

### **Best Practice:**

Cable winches should be mounted on the inside of the tripod so the cable does not drag on the leg tubes. Capstan winches are easier to operate when they are mounted on the outside of the leg. When possible, secure feet directly to anchors to create a more rigid setup.

### **Care & Maintenance:**

Check all components for bending and warping which could indicate overloading.

Auxiliary attach points can be both tied into and clipped into. As a result, pay careful attention to sharp edges or burrs that may have developed. Lightly file or sand off burrs before use.

### **Warnings:**

- Carabiners clipped into auxiliary attach points should be positioned to avoid cross or side loading
- Do not use the normal leg coupling pins to attach the winch bracket as they are too short and could result in the winch bracket detaching from the leg and resulting in injury or death
- See winch manufacturers recommendations for proper winch mounting and do not exceed manufacturers rating when operating winches
- Failure to maintain control of the rope tail on Capstan winches could result in injury or death due to falls

**Table 2-1 - Strengths of auxiliary attachment points**

<b>Auxiliary Attach Point</b>	<b>Breaking Strength</b>
Lash Ring – Single Hole	4,500 lbf. (20kN)
Lash Ring – Opposing Holes	5,600 lbf. (25kN)
Talon Foot	6,744 lbf. (30kN)
Rocker Foot	6,744 lbf. (30kN)
Articulating Foot Adaptor	6,744 lbf. (30kN)
Quick Lash – Straight Pull	6,744 lbf. (30kN)
Quick Lash – Pulled to Side	3,372 lbf. (15kN)
Winch Brackets	6,744 lbf. (30kN)
Head Auxiliary Attachment Points	8,000 lbf. (36kN)

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