OUTER ARMOR®

TECHNICAL BULLETIN

COMPOSITE RATCHETS

CSI has introduced composite mooring cover ratchets that have smoother, more ergonomic tensioning and tighter control of component quality and manufacturing tolerances.

The Outer Armor Ratchet is constructed with a high-strength composite chassis and handle in addition to stainless steel interior components. The ratchet is patent pending and has been developed to address the limitations of stainless-steel ratchets used for tensioning the cover.

Limitations of standard industry stainless steel ratchets:

- Galling, when stainless parts come together under tension. The quick fix for this has always been to apply anti-seize or lubrication on a regular basis.
- Poor tension of the ratchet. If the webbing is not properly tensioned by the end customer, the cover can billow while trailering which can cause the metal ratchet to be loose and lead to possible damage to the boat.
- The stainless ratchet is heavier which can be a detriment if not properly tensioned and zipped in the boot.

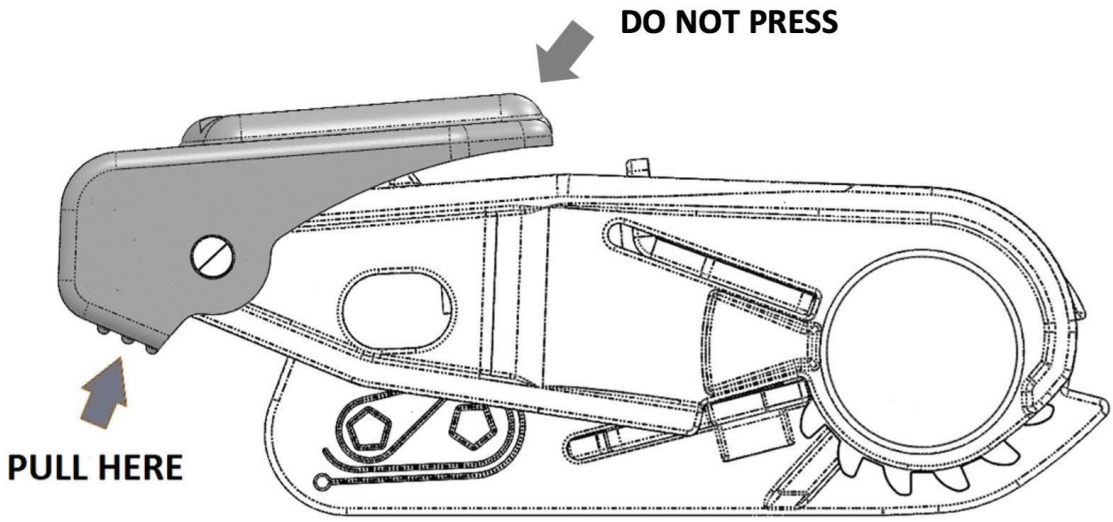
Ergonomics

The feel of tensioning and releasing was a top priority of the composite ratchet. The handle width, length and grip as well as the consistent feel of adding or releasing pressure exemplifies its strength and reliability.

One of the key features of the ratchet is the tension indicator. The exterior composite lever on top of the handle acts as a torque wrench so that users can tell when they have hit the minimum tension required to ensure a tight fit before trailering their boat. Loose covers while trailering can cause the cover to billow and result in damage to the cover or the boat if not properly installed. A cover not tensioned properly may cause water to pool in areas that would otherwise run off smoothly.

The ratchet is considered to be tensioned at the minimum requirement for a tight-fitting cover when a "pop" is felt or a unique clicking sound is heard before catching another gear tooth. It is safe to pull beyond the tension indicator to ensure the minimum force has been applied. Be sure both ratchets are tight for trailering. The ratchet is capable of applying 2 times the minimum force required.

- Pull ratchet handle upwards using your fingers underneath.
- Do not press down on the top of the ratchet with your thumb as this will interfere with the tension indicator.



Patent Pending

Testing

The OuterArmor composite ratchet is engineered for use on boat covers and has been designed to last beyond the life of the cover. Ratchets were cycle tested to recommended tension and released to ensure durability across the variables that Commercial Sewing requires.

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