



Universal Clip - Self Tightening



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Summary

3D-printable clip-on clamp to secure backdrops, tarps, banners, shade cloths, camping covers, towels, etcetera

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3D-printable clip-on clamp to quickly mount and tension backdrops & greenscreens on a camerset without damaging the material! Can also be used for tarps, banners, mesh screens, shade cloths, camping covers, towels, etcetera to the ground or ropes!

It uses a tension-based wedge-lock to provide a quick, reusable anchor point without punching holes or damaging your fabric! The self-tightening wedge mechanism automatically increases the grip level as load is applied, making the system perfect to mount materials that need to be tensioned, while being extremely reliable to use, even during load!

Key Features & Advantages

- **Hole-Free Instant Attachment:** Secures directly onto hemmed or unhemmed fabric up to 1.5 mm thick without puncturing or tearing.
- **Self-Tightening Wedge Mechanism:** Features a tapered slide-and-cam design that increases jaw tension under load, preventing slip under heavy wind or high tension.
- **Zero-Tool Installation:** Easily hand-fitted and released in seconds, allowing rapid adjustments or temporary rigging on-site.
- **Optimized for FDM 3D printing:** Tailored for quick 3Dprinting without support material, utilizing the ribbed texture of print-layers to maximize grip.
- **Locking mechanism:** Added geometry to prevent the 2 parts from separating by themselves when not in use, or stored in a bag

Version Guide

There are 2 versions available;

- The **standard version** uses a single, extruded bulge to grip the material. It is safe to use and won't be able to damage your cloth or material (Thin plastic can still deform permanently)
- The **Xtreme version** has a click-in/ replaceable grip plate, which uses negatively tapered grip teeth to get a **significantly stronger grip** on your material. During very heavy load, it can however cause damage to fine cloth, so use with caution. The plate is easily replaceable in case the teeth get dull or damaged.

Primary Applications

- **Camping & Outdoor Gear:** Custom tie-down points for rain / sun covers, groundsheets, and tarps.
- **Banners & Signage:** Temporary or permanent mounting of vinyl banners, mesh posters, and event displays.
- **Agriculture & Gardening:** Securing shade nets, greenhouse plastic, weed barriers, and frost protection covers.
- **Boating & Automotive:** Fastening boat covers, trailer tarps, and custom sunshades.

Installation & Operating Guide

1. **Position the Wedge:** Slide the locking collar back to fully open the wedge jaws.
2. **Insert Material:** Fold or place the edge or corner of the sheet/tarp deep into the jaw cavity.

3. **Engage the Lock:** Slide the collar forward toward the nose until tight against the fabric.
4. **Apply Tension:** Attach a cord, carabiner or tent peg through the 9mm eyelet hole. Pulling the line automatically draws the wedge tighter into the sleeve.
5. **Release:** Relieve tension on the line and press the collar backward to release the grip instantly.

Technical Specifications & Print Recommendations

Specification / Parameter	Details / Recommended Setting
Max Load Rating	Standard version; ~30 kg (Failure type; Material slips) Xtreme version; ~50 kg (Failure type; Material tears or Print breaks) (when printed in PETG at recommended settings)
Recommended Filament	PETG (General outdoor), ASA (UV/Weather critical), PA-CF / Nylon (Heavy load). Do not print in PLA
Print Orientation	Pre-oriented
Layer Height	0.16 mm or lower
Perimeters / Walls	4-5 walls (1.6 mm-2.0 mm total wall thickness)
Speed	Print slow (40mm/s - 60mm/s) to allow the layers to bond well Prusa STRUCTURAL profiles are tested and good
Fan	Keep fan <40% for majority of print, set fan speed 100% for bridges
Infill	40%-60% (Gyroid or Cubic infill for uniform strength)

Supports Needed	None
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Keywords;

Greenscreen / Backdrop / Universal Clip / Banner Clip / Tarp Clip / Camping Clip

Model files


Standard version
4 files


wedge-lock-set.stl
☐ Complete set


wedge-lock-top.stl


wedge-lock-base.stl


carpet-corner-clip.step
☐ STEP file for modding & Remixing


Xtreme version
5 files


wedge-lock-xtreme-set.stl
☐ Complete set



wedge-lock-xtreme-grip-plate.stl

☐ Replacable Click-in Grip plate



wedge-lock-xtreme-top.stl



wedge-lock-xtreme-base.stl



carpet-corner-clip-xtreme.step

☐ STEP file for modding & Remixing

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