

Here are practical ways to **increase the holding strength of cam-buckle tie-downs and prevent slippage**, especially for setups in FSUP380, XFSUP380 with a 3HP motor or heavier, where shock load is the real problem:



1. Tie Off the Tail (Simple Knot)

The easiest method:

- After tightening the strap, wrap the loose end around the main strap and tie a simple half-knot.
- This stops the strap from pulling through the cam even if the buckle loses friction.

This alone can double or triple the effective security.

2. Use Longer Straps and Add Extra Wraps

If the cam allows it:

- Run the strap through the cam **twice** instead of once.
- More surface contact = far more friction = far less slippage.

Some cams allow double pass, some don't.

3. Add Additional Tie-Down Straps (Load Sharing)

Adding more straps to the same D-rings or nearby anchors:

- Reduces the load on each individual strap
- Greatly reduces slip chances
- Helps absorb shock loads from the motor

If you use **4 straps instead of 2**, each strap handles only ~25% of the force.

**4. Switch to Textured or Rubber-Coated Webbing

Some webbing has:

- Woven textures
- Rubberized threads
- Grip coatings

These bite into the cam teeth better and resist slip much more than smooth polyester.

5. Use Cam Buckles With “Serrated” or Hardened Teeth

Not all cam buckles are equal.

Better ones have:

- Deeper teeth
- Hardened steel
- More aggressive bite

Cheap aluminum cam buckles slip more easily under shock loads.

6. Add a Small “Keeper Loop”

You can add a tiny accessory loop:

- Wrap the loose end around the main strap
- Feed the tail through a loop
- Cinch tight

This mechanically prevents backward travel unless the strap breaks.

7. Pre-tension the System With a Short Bungee

This is optional but works well for motor mounts:

- Add a small tension bungee pulling *forward*
- This keeps continuous tension on the cam strap
- Reduces sudden shock loads that cause buckle slip

It doesn't replace the strap, but it reduces spikes that defeat cam friction.

8. Switch to a *Lift-Lever* Cam Buckle

There are upgraded cam buckles (“LoadLok,” “NRS HD,” etc.) that:

- Clamp tighter
- Have a mechanical override
- Provide much higher holding friction than basic cam buckles

These are still not ratchets, but significantly stronger.

9. Use Anti-Slip Sleeve Under the Strap

Like a rubber pad or silicone grip tape:

- Place under strap where it makes contact
 - Reduces movement and vibration
 - Makes cam buckle grip more effective
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10. Minimize Strap Angle

The more the strap is angled (instead of straight-line tension), the more it wants to slide.

Try to:

- Keep straps pulling straight back
- Avoid sideways angles
- Use centered D-rings

This reduces side-loading and slipping.

BEST Combo for Your XFSUP380 Setup

For a 3HP motor, the most effective bundle is:

1. **Tie the loose end into a safety knot**
2. **Use 4 cam straps instead of 2**
3. **Upgrade to deeper-tooth buckles**
4. **Use textured or rubber-thread webbing**

This gives the biggest improvement without switching to ratchets.