



HEAD RUSH TECHNOLOGIES WHITE PAPER

THE TRUBLUE CARABINER SWIVEL

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The default connector on a TRUBLUE Auto Belay is a triple action, auto-locking carabiner on a swivel. The swivel automatically rotates to ensure the auto belay webbing does not become twisted during operation. By ensuring the webbing does not become twisted, the swivel maximizes webbing life and ensures proper retraction during the operation of your device. Conversely, eliminating the function of the swivel adversely affects the lifespan of your TRUBLUE webbing and may prevent proper retraction due to the twisting of the webbing at the nozzle location. In short, constraining the swivel is not an acceptable practice for how it may accelerate webbing wear and affect retraction.

This whitepaper explains the scenarios in which an alternate connection method is used instead of, or in conjunction with, the triple locking carabiner.

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FOR REDUNDANT OR DUAL CONNECTION POINTS

In operations that wish to or are required to have a dual connection to the climber, it is important not to bypass or connect onto the swivel. Such a connection prevents the swivel's ability to freely rotate. It is important that no connection bypasses or connects onto the swivel during operation of the device (Figure 1).

It is important not to bypass or connect onto the swivel.

Solution

If you are seeking the option of a secondary connector, an appropriate option is the TRUBLUE Adventure webbing (which incorporates the Petzl Swivel S) available on the Head Rush Store (Figure 2).



Figure 1: Do NOT create your own system that prevents the swivel from freely rotating during operation. This practice is not acceptable.



Figure 2: A TRUBLUE Adventure Webbing (with Petzl® Swivel S) allows for one to implement a secondary connector, continuous belay, or other custom connector in manners not limited to what is shown above in Figure 2.

FOR RETRACTING AND RETRIEVING WEBBING

Some operators may wish to store the TRUBLUE webbing fully retracted during non-operational hours or when auto belay is not in use (i.e top roping mode). In such situations, operators wish for the webbing to be retrievable via a tag line or tether. This is acceptable so long as the tagline does not prevent the swivel's ability to freely rotate during use and, such that tag line is NEVER mistaken by inexperienced users as a valid connection. Operators must ensure that this is considered when setting up these systems.

Solution

If one must use a tagline for retrieval, they should attach it to the carabiner directly, or it must be removed before climbing or device operation. Taglines should NOT be permanently connected to the swivel. One may also consider an alternative connector, such as the TRUBLUE Adventure Webbing (which incorporates Petzl Swivel S) if they wish to tie a permanent tagline adjacent to the connector.



Figure 3: Do NOT Attach a Tag Line or Tether to Swivel in such a way that constrains the swivel during climbing or descent. Taglines that bypass must be always be removed before operation.



Figure 4: If attaching a tagline, attach directly to a carabiner in such that it is not constraining the swivel, and must be removed before connecting, as shown.

FOR CUSTOMERS WITH DIFFICULTY USING TRIPLE ACTION CARABINER

Some locations frequently work with inexperienced clientele who are being introduced to auto belays and climbing for the first time. Beginners must balance dexterity and strength when pulling down the webbing, opening the triple action carabiner, disconnecting the carabiner from the belay gate, and then clipping into the appropriate point on the harness. Individuals who are tired or unfamiliar with the mechanism may struggle or accidentally release the webbing, causing it to retract up into the auto belay.

Solution

There are several alternative connectors that are compatible with TRUBLUE devices (alternative to a carabiner-swivel assembly) that eliminate the possibility for an accidental webbing release and reduce the difficulty of attaching to the auto belay relative to a triple action carabiner. These include the Self Belay manufactured by Safety Engineering, or the Belay Mate, manufactured by Clip 'n Climb. These systems include an integrated swivel. Other solutions that are designed may be acceptable (i.e Figure 6) so long as they do not constrain the swivel while a participant climbs (Figure 6).



Figure 5: Do NOT create your own system that prevents the swivel from freely rotating during operation. This practice is not acceptable.



Figure 6: Attaching a belay gate to the swivel in such a way that it must be removed before climbing occurs is an acceptable solution to this problem so long as the swivel is never constrained during climbing, and such that connector stays with belay gate always. The belay gate must be attached using a carabiner with captive pin. With such a method, it must not be possible for climber to remove the second connector from the belay gate.



Self Belay



Belay Mate

Figure 7: Do also consider an alternative anti-release connector, which may be more suitable for those who do not prefer triple action carabiners, for operators who wish to prevent accidental webbing releases, or for operators who want to control access to auto belays.

Individuals who are tired or unfamiliar with the mechanism may struggle or accidentally release the webbing, causing it to retract up into the auto belay.

FOR FACILITIES WITH FREQUENT CLIMBING

Carabiners that see exceptionally heavy use over time can accumulate grit, dust, chalk, or other debris inside of the TRUBLUE carabiner's swivel. In harsh and highly corrosive environments, corrosion may occur inside of the carabiner swivel. In any of these cases, this may prevent its ability to freely rotate.

Solution

The TRUBLUE Operator Manual requires device and webbing inspection daily, weekly and semiannually in addition to the annual recertification (pg. 25 in manual). As part of daily and weekly inspection, operators must inspect the condition of the carabiner, and ensure smooth operation of the carabiner swivel.

The TRUBLUE Operator Manual requires device and webbing inspection daily, weekly, and semiannually.

If a swivel is observed to have stopped functioning for any reason during an inspection, one should attempt to restore swivel action by blowing out the carabiner gate with pressurized air and applying lubricant (dry without solids, such as graphite lubricant) inside of the gate. If this does not restore smooth swivel action, replace the webbing assembly.

CONCLUSION

It is important not to constrain the swivel of the TRUBLUE's carabiner to ensure you do not accelerate the wear of your webbing, which in turn may affect retraction. Different connectors are available as replacement webbings depending on one's custom needs, such as the TRUBLUE Adventure Webbing ([Petzl Swivel S](#)). Ensuring that one does not constrain the swivel of the TRUBLUE will result in the best possible experience with your TRUBLUE Auto Belay.