



## User's Manual for "Ballnutz"

CE0120 EN 12276 Frictional anchors for Mountaineering

### Caution!

- Read and follow carefully before use.
- Only the trained and experienced expert or the one who are under his/her direct or indirect control can use this.
- "Ballnutz" Frictional anchor is designed for mountaineering
- Misuse and forbidden uses may result in severe injury or death

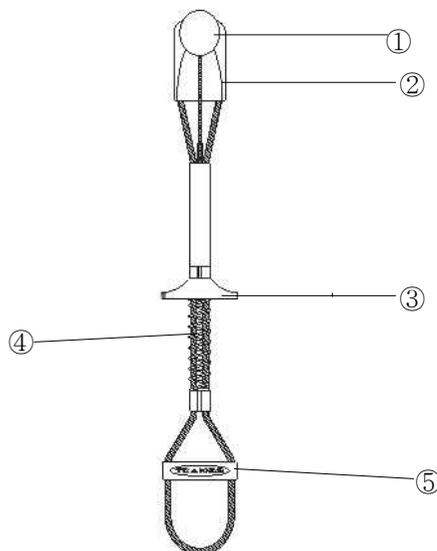
### 1. Minimum holding force and Width size

Size	#1	#2	#3	#4	#5
Minimum holding force(kN)	7	8	8	8	8
Width(mm)	3.- 6.	4.5 - 9.	6.- 12.	8. - 14.	10.5 - 18.
Weight(g)	30	40	50	60	75

\* Minimum holding force depends from rock type and its surface conditions

### 2. Part list

- ① Ball
- ② Span
- ③ Grip bar
- ④ Spring
- ⑤ Grip



### <General Information>

#### 1. Warning ...

- Improper use of this product may cause serious injury or damage. Careful attention and limitation is required to use this product. Read and understand the properties and characteristics of this product.
- Only the persons trained and experienced on mountaineering or ones who are under his/their direct or indirect control can use this product.
- It may be used in conjunction with any appropriate items of climbing equipment of suitable specification and according to the EN standards with due consideration to the limitations of each individual piece of equipment.
- In wet or frozen condition, it may not operate smoothly.
- Ballnutz parts can be damaged by sharp edged things
- ※ See detailed instructions on next page.

#### 2. How to maintain ...

- Always check the operation status before/after use.
- If the ballnutz can not open easily, lubricate ballnutz shaft.
- If after oiling ballnutz does not work well, discard ballnutz.
- Replace the unit with signs of wear and corrosion.
- Replace the ballnutz when opening and closing are difficult.
- Avoid any contact of the ballnutz with corroding substance and heat sources.

#### 3. Lifespan or how to assess it.

- 3-5 years when monthly used. · 1-2 years when weekly used.
- 4-6 months when daily used. · Sudden impact will end useful life.

The load indicated is always the lowest guaranteed value.

A cam lasts several years when use intermittently, but this can not exactly be evaluated. In frequent use condition, for your safety, a replacement each 3 years is recommended.

#### 4. Limitation on use

Never use the products having

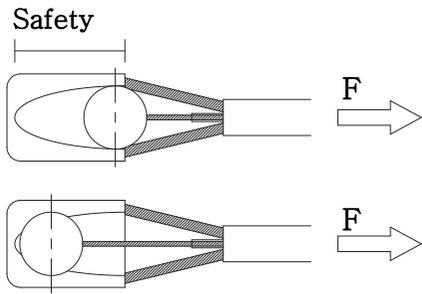
- sudden impact like fall, even if not default or damage is visible.
- defects, cracks, damages.
- abrasion, corrosion.
- unsmooth trigger moving.

#### 5. Effects of chemical reagents and temperature

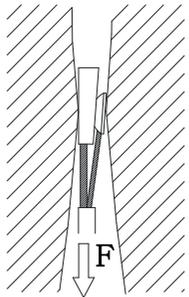
- High temperature over 100°C can shorten the lifetime.
- Chemical reagents like strong acid can corrode the cam.

#### 6. Effects of storage and ageing

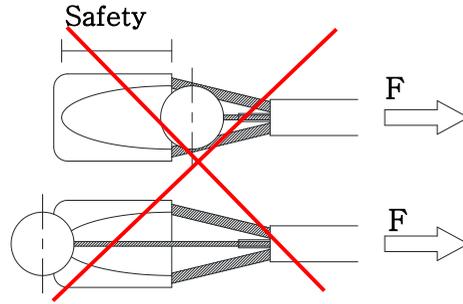
- When ballnutz is stored in damp air, cam will be rusted and malfunctioned. Do not store in damp air.
- There is no ageing effect on the metallic components.
- Keep in a cool, dry, dark place away from high temperature, high humidity, sharp edges, icy conditions, corrosive or other possible causes of damage and/or chemicals.



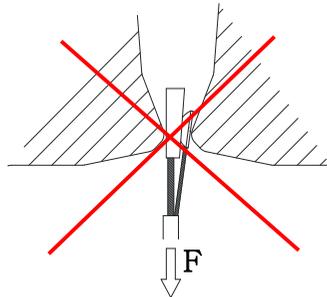
OK  
fig 2.



OK  
fig 4.



Danger  
fig 3.



Danger  
fig 5.

#### How to Use

1. Position the ball properly and use(fig 2. & fig 4.)
2. Do not use the extreme adjusting position(fig 3.)
3. After install ballnutz, please make sure it's fixed
4. Nerver posion a ballnutz at the edge of a crack(fig 5 .)

#### Regular inspection

Before and after use, be sure your ball have smooth trigger action, easy ball retraction and expansion, and independent ball motion, with no sign of damage to ballnutz

#### Note 1. TRANGO 3 year guarantee

- This product is guaranteed for 3 years against any faults in materials or manufacture.
- Exclusions from the guarantee : modifications or alterations, incorrect storage, poor maintenance, damage due to accidents, to negligence, or to improper or incorrect usage and uses for which the product was not designed.

#### Note 2. Canyoning and caving increase the rate of risk considerably.

Note 3. We recommend the use gloves when using belay & rappel techniques.

**TRANGO**

587-11, Anaji-ro, Gyeyang-gu, Incheon, 407-070, Korea  
Tel:+82(32)555-3945 Fax:+82(32)555-3946

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