

# Pulley block

## FZ 300 / FZ 500 / FZ 650

### Operating instruction

**CE**

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**EG-Konformitätserklärung / Déclaration de conformité CE / EC declaration of conformity**

Wir / Nous / We

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erklären hiermit, dass die Maschine /  
*déclarons par la présente que la machine*  
hereby declare that the device

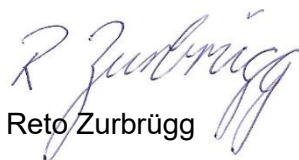
**Flaschenzug / moufles / pulley block FZ300-500-600**

in seiner Konzipierung und Bauart sowie in den von uns in Verkehr gebrachten Ausführungen den grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Richtlinie Maschinen entsprechen. Bei nicht bestimmungsgemässer Verwendung, sowie bei nicht von uns freigegebenen Umbauten oder Änderungen, verliert diese Erklärung ihre Gültigkeit. Zudem verliert diese Konformitätserklärung ihre Gültigkeit, wenn die Bestimmungen der Betriebs- und Instandhaltungsanleitung nicht befolgt oder missachtet werden.

*satisfait aux exigences fondamentales de la directive machines CE en matière de sécurité et de santé, tant du point de vue de sa conception et de sa construction que pour toutes les versions que nous avons mises sur le marché. En cas d'utilisation non conforme ou de modification ou transformation non approuvées par nous, cette déclaration perd sa validité. Cette déclaration perd également sa validité en cas de non-respect des instructions d'utilisation et de main tenance.*

conforms to the health and safety requirements of the EC Machinery Directives in its conception and design, as well as in the version placed on the market by us. In the event of improper use, as well as modifications or changes which are unauthorised by us, this statement loses its validity. This declaration of conformity also loses its validity if the relevant user guide and maintenance manual are not followed or are violated.

Zutreffende EG-Richtlinie:	Maschinen 2006/42/EG, Anhang II A
<i>Directive CE concernée:</i>	<i>Machine 2006/42/CE, Annexe II, chapitre A</i>
Applicable EC directives:	Machinery 2006/42/EC, Annex II., sub. A

**Geschäftsleitung / direction / management**

Reto Zurbrügg

## 1. General

### 1.1. Use of pulley block

The pulley block is designed to get a reduction of the weight to lift. It is designed for the use of steel wire rope with the designated rope diameter (see technical data) and the rope capacity (see technical data). The pulley block was specifically designed for use on cable cars and rope installations. Next to tensioning ropes it can be used to lift and lower weights and constructions. The company *Zurbrügg Seilbahnen und Montagen GmbH* would like to assist with specific questions in how to use the pulley block.

### 1.2. Scope of application in this operating instruction

This operating instruction is limited to the parts that are delivered by the company *Zurbrügg Seilbahnen und Montagen GmbH*. This manual was written with reference to the pulley block in the state that it was upon delivery. All later modifications that would affect the handling and maintenance will be added and customized as long it is approved by company *Zurbrügg Seilbahnen und Montagen GmbH*. If third parties make any modifications, this manual is not valid anymore and the company *Zurbrügg Seilbahnen und Montagen GmbH* is not responsible. Any later acknowledgment in future development of the technology, experiences of other similar uses or other applications than originally planned are not considered and will not be automatically added to this manual.

This manual was made with up to date knowledge of the technology at the point of commissioning. New regulations and instructions of the authority, Safety regulations and local specific regulations are not included in this manual and may disagree with it. In this case the authority regulation will have priority. If in doubt please contact *Zurbrügg Seilbahnen und Montagen GmbH*.

### 1.3. Caution and prohibited note

To prevent possible hazards and damage in using the pulley block be aware of these caution and prohibited notes:



**Attention: possible hazard for staff and machinery**



**Prohibited: high danger for staff and machinery**

### 1.4. Risk



Operating a pulley block and its installations, specially all moving mechanical parts and ropes is an inherent risk. Even when all safety relevant precautions have been considered to minimize the risk with operating the pulley block, there is still a possibility for injury or death. It is essential to follow this manual and meet all safety regulations. If not clear contact *Zurbrügg Seilbahnen und Montagen GmbH*.

**The owner of the pulley block is in charge of a safe operation. He is in charge for maintenance, inspection according the regulations as well the operation according to regulations and law, and correct installation of the pulley block as it is described in this manual.**

## 1.5. Safety



- Next to this manual and work safety regulation from the country where the machinery is in use you also have to pay attention to the recognized rules of professional work and work safety regulations.



- To be in between the detensioning sling and the reeving line is prohibited.



- It is absolutely forbidden to let the pulling machinery that is connected with the pulley block run unmanned by itself.



- Third parties have to be advised about the hazards with and around the detensioning system.



- It is absolutely forbidden to touch an operating pulley, block rollers and the moving cables.



- To do maintenance on the pulley block, it has to be uninstalled.



- In case of a stop while pulling on the pulley block, the staff who ordered the stop has to be the one that approves to pull again. And he will also be responsible that everyone leaves the danger area.



- Possible danger areas around the detensioning system have to be closed off for every unauthorized staff.



- The pulley block is not to be installed or operated on the ground or in dirt.

## 1.6. Expertise

The installation and operating of the pulley block and the machinery that is connected to it has to be done by trained staff only. The trained staff need to know this manual and the machinery that is attached to the pulley block as well as follow the given safety instructions. The staff need to know how to handle a wire rope while knowing its load limits and its restrictions. If questions come up contact *Zurbrügg Seilbahnen und Montagen GmbH*.

## 2. Installation Note

### 2.1. Conditional inspection of the pulley block

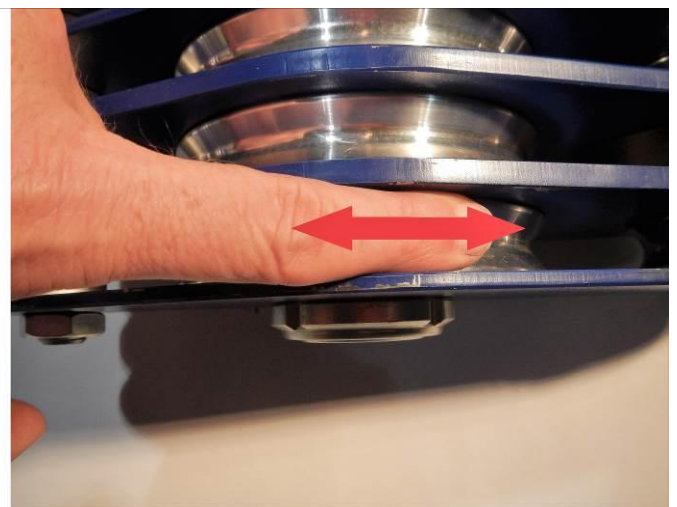
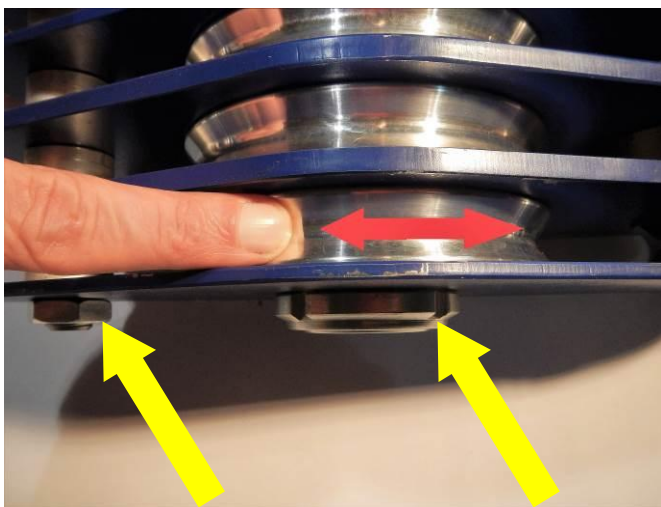
Before the install of the pulley block the following checks have to be done:



- No nuts or bolts are loose
- The pulley turns free and evenly



- Ensure the pulley block is clean and free of objects (sand, dirt, metal chips) between the pulley and the side walls.

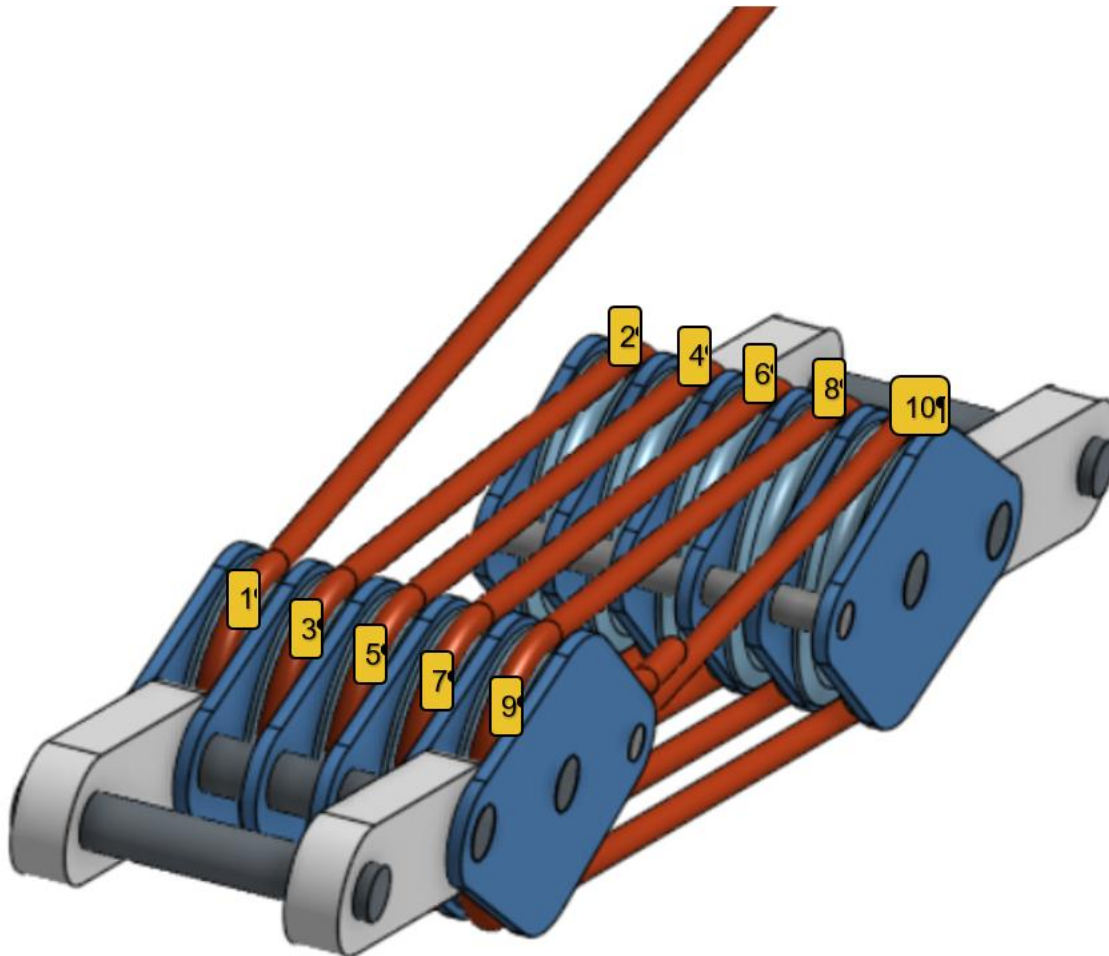


## 2.2. Reeving

Corret reeving procedure



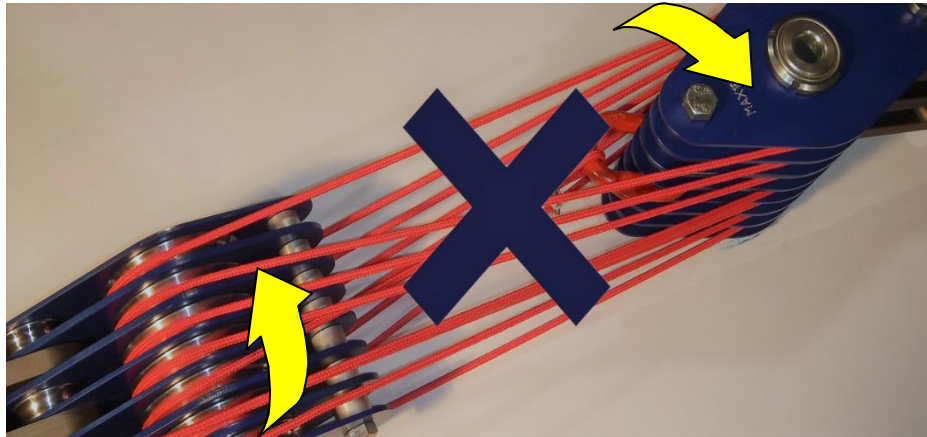
- The cables under tension must not cross and touch each other.
- If possible, the cables under tension should not rub against the structural sheets.



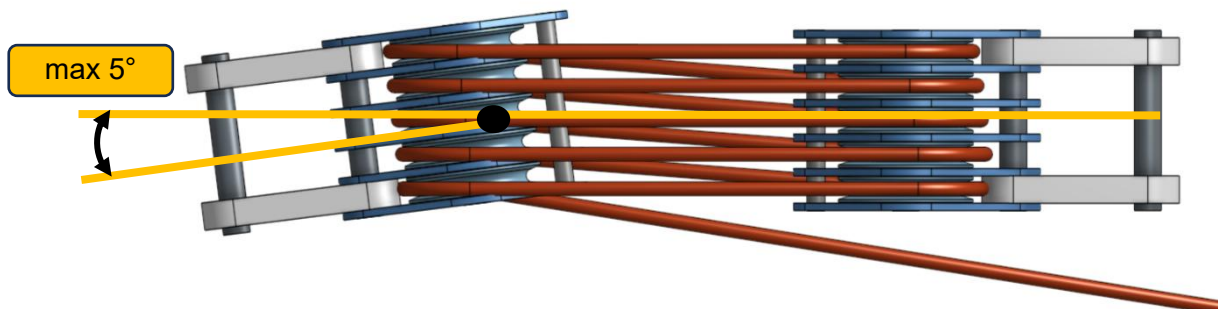
## 2.3. Pulley block installation



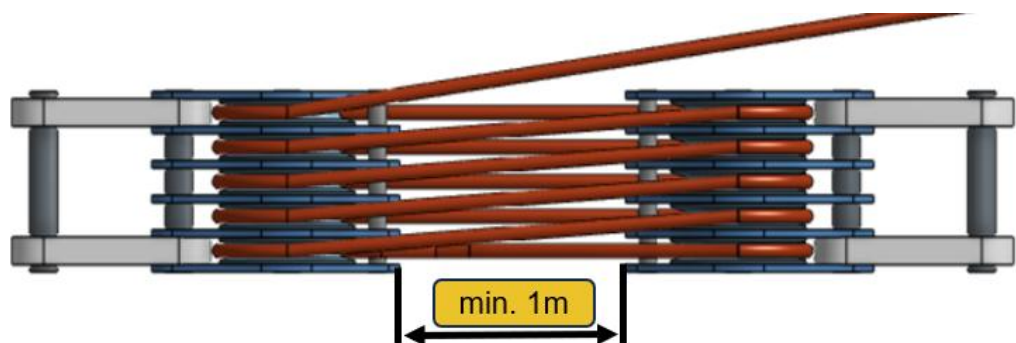
- Wrong installation of the pulley block



- Attention to straight alignment

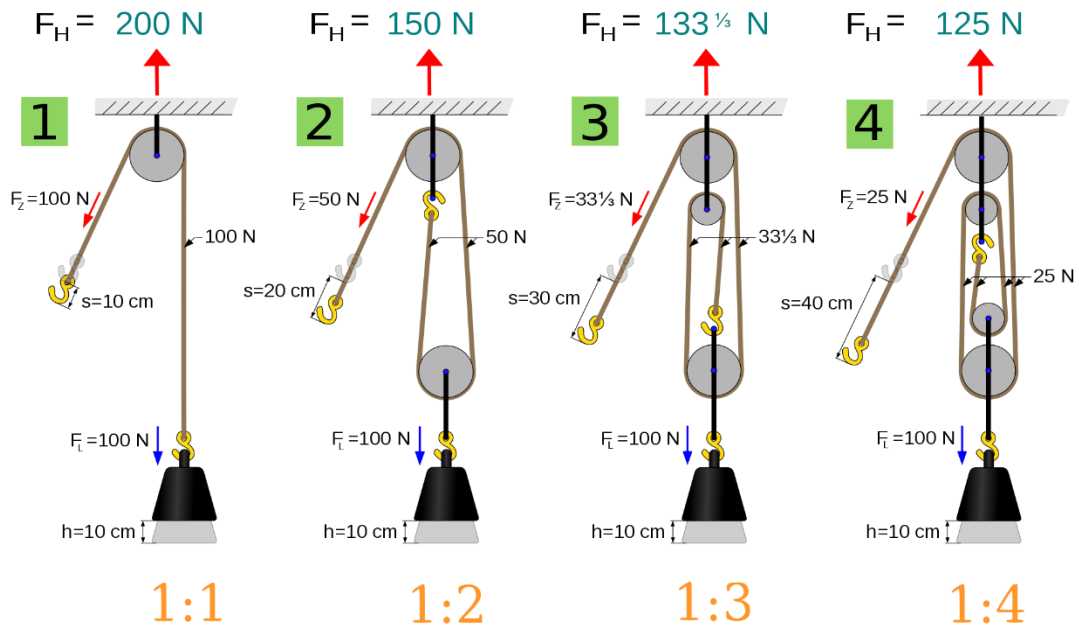


- Minimal distance to pull the pulley blocks together

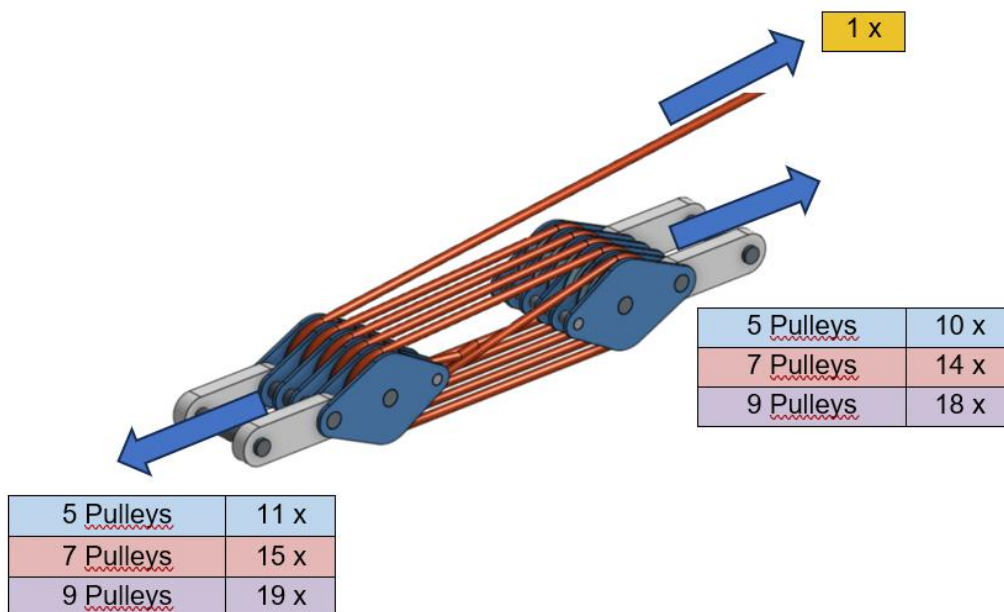


## 3. Operating instruction

### 3.1. Pulley block principle



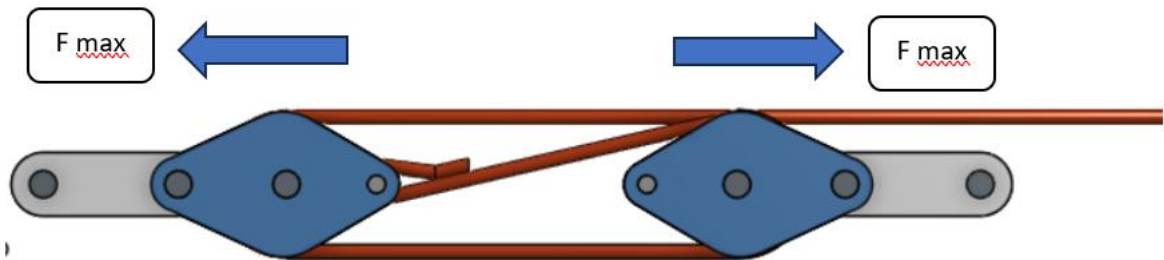
### 3.2. Possible installation example and force transmission



### 3.3. Maximum safe work load



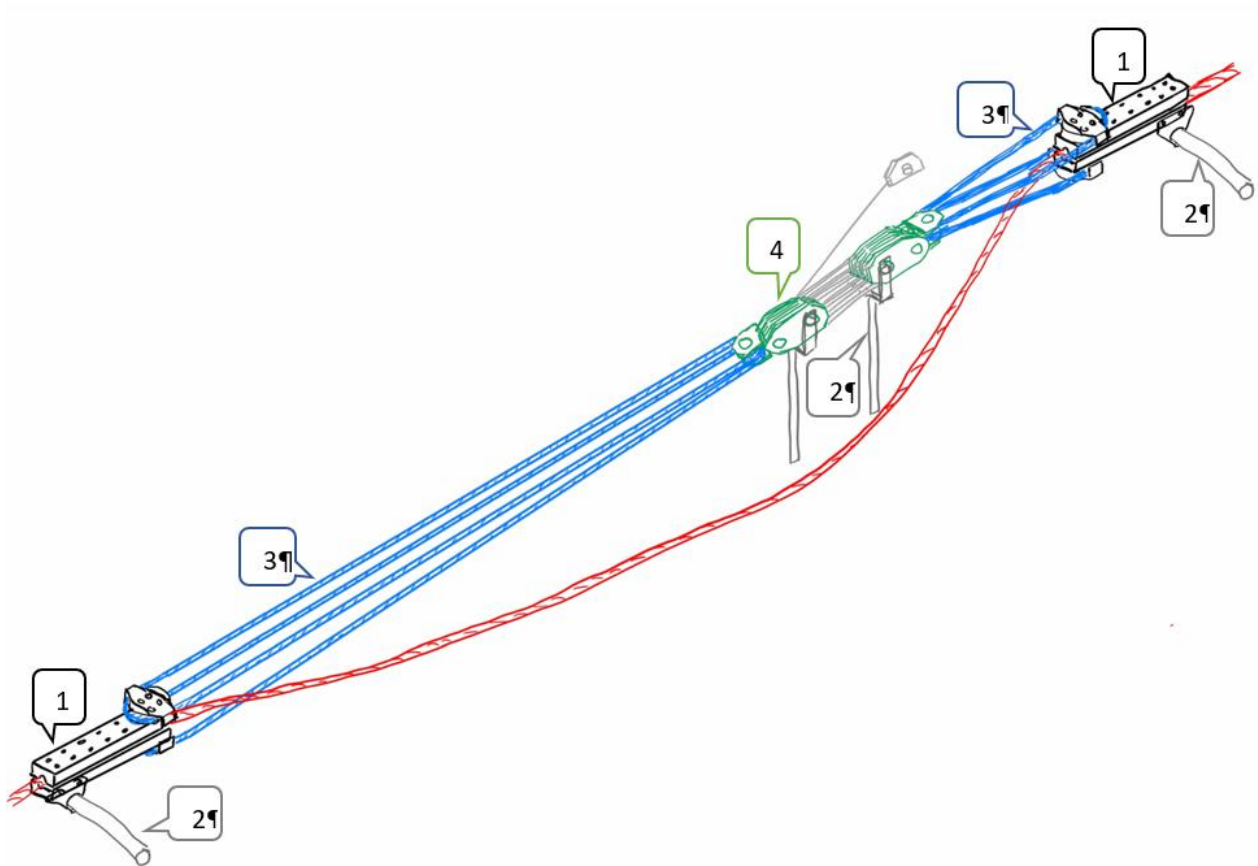
- See data sheet for each type of pulley block



## 4. Technical data

Type	FZ 300	FZ 500	FZ 650
<b>Pull capacity in kN</b> <i>lbs</i>	<b>300</b> <b>65000</b>	<b>500</b> <b>110000</b>	<b>650</b> <b>143000</b>
Length without connecting link in mm	400	400	465
Length with connecting link in mm	595	595	750
Width in mm	200	270	315
Height in mm	220	220	220
Pulley diameter in mm	200	200	200
Numbers of pulleys	5	7	9
Theoretical pull on each rope in kN	30	32	36
Max diameter of tension cable in mm	20	20	20
Weight (for each pulley block) in kg	78	88	98

## 5. Example of detensioning installation



Name	
1	Clamp plate
2	Anti twist
3	Tension slings
4	Pulley block

## 6. Accessories

### 6.1. Anti twist bar

Installation:

- Remove safety latch and nut on one side of the threaded rod
- Put anti twister bar frame over the pulley block by the center axle hole
- Run the threaded rod into the hole
- Tighten the nut on threaded rod until it is tight but the frame is still able to move
- **Install safety latch at the end**



- Insert the tube or rod to the end stop
- **Fasten the tube or rod with the locking screw so that it cannot come out and turn**

## 7. Maintenance

### 7.1. Maintenance by customer



- The pulley block is not to be installed or operated on the ground or in dirt. In case that happens, the pulley block has to be cleaned with a rag.



- **Do not use any solvent to clean.**
- **Do not use pressure washer (open bearings).**
- **The pulley block must not be disassembled by the customer.**

### 7.2. Maintenance by the manufacturer

The pulley block has to be sent to *Zurbrügg Seilbahnen und Montagen GmbH* for any inspections and maintenance:



- **If the pulley does not turn free and evenly.**
- **If side walls are bent or if they have worn from the wire rope touching them.**



- **If thread or nuts got damaged.**
- **If the pulley block had any shock loads or got hit.**

### 7.3. Periodic factory revision

After 12 years, an overhaul at the manufacturer is necessary.

## 8. Lifetime

The calculated service life of the pulley block is 24 years. The pulley must be replaced by a new one at the end of this period.

## 9. Disposal

The pulley block must be taken out of service at the end of the calculated service life and disposed of properly. The customary regulations on disposal must be observed. Remember that protecting the environment and recycling materials benefits us all.