

**ENERGY**

**TENSOREX C+ 3D**  
**ADDITIONAL INSTRUCTIONS**  
**000 300 506**



**KEEP**  
**Ready to hand**





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## 1 Introduction

### 1.1 Purpose

This additional manual is for installation, commissioning and maintenance purpose of Tensorex C+ 3D models, and must be utilized together the main product code 000300336.

### 1.2 Info about automatic spring tensioning device Tensorex C+

TENSOREX C+ is an innovative spring automatic tensioning device that gives a constant pull force to the overhead contact lines of railways and tramways in order to compensate for the expansion and contraction caused by temperature changes during day and night through all seasons.

In comparison to the counterweight tensioning devices, it is very compact (overall dimensions) due to the use of spiral springs instead of weights.

TENSOREX C+ is mounted just in the overhead side, so it does not obstruct the pedestrian area.

TENSOREX C+, in railways applications, is a solution for train stations, tunnels, installation on portals, bridges and narrow places, or where there are safety needs.

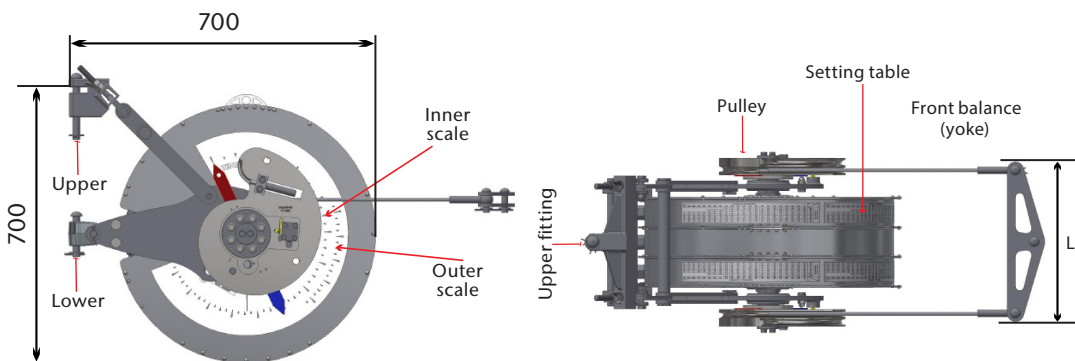
In tramway applications, it is the complete solution and fully replaces the traditional counterweights. It gives advantages in handling and installing, shipping and storing, reducing overall costs.

TENSOREX C+ can be considered as a spring giving a constant force to the overhead contact line during all the variation of its length.

A spiral spring (or springs) and two pulleys with variable radii are assembled and acting on the same shaft.

The moment applied by spiral spring is equilibrated from the moment applied to the pulley by the contact line. Therefore, the pull force remains constant throughout the complete working travel.

## 2 Technical data



Size	Springs	Drawing	Range of compensation capacity [mm]	Range of pull value [kg]	Weight [kg]	L [mm]
TRC+ 2SL	11 x 60 SL	000700718	1250 to 1350	1000 to 900	190	269,6
TRC+ 3SL	11 x 60 SL	000700717	1400 to 1300	1100 to 1500	245	339,6
TRC+ 4SL	11 x 60 SL	000700715	1350 to 1275	1680 to 2000	280	409,6
TRC+ 5SL	11 x 60 SL	000700716	1350 to 840	1985 to 3630	360	481,8

\*) Please note, that **not all** combinations of pull value and compensation capacity are possible due to technical limitations. For more details, please contact your local MOSDORFER office or search in our on-line-catalogue for available variants: <https://www.mosdorfer.com/en/produkte/railway/>



Each TENSOREX C+ has a fixed combination of compensation capacity and pull value. Each of them is identified by article number and variant code.

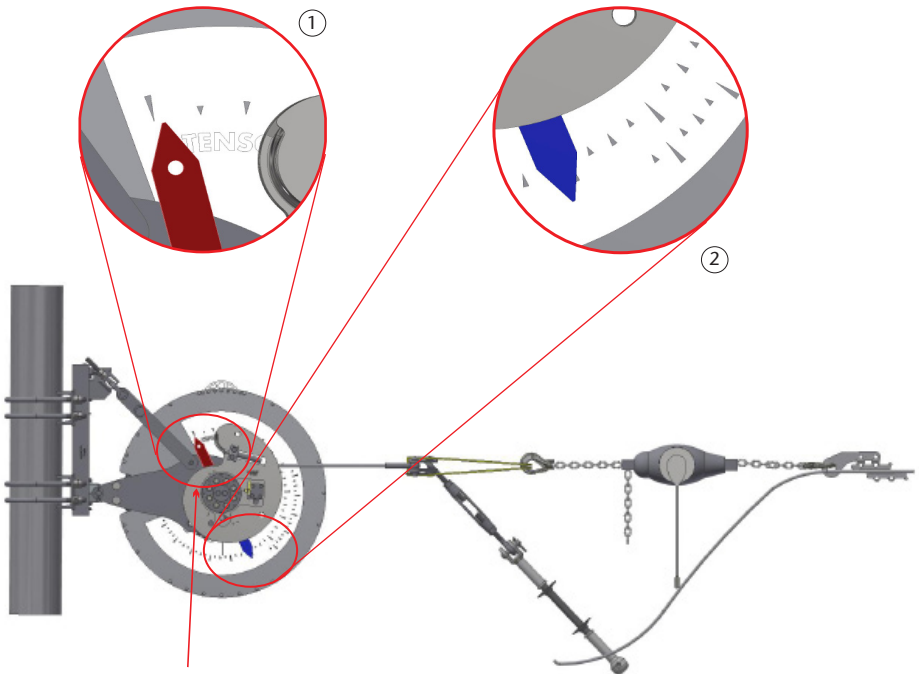
Minimum breaking load:	115 KN
Standard corrosion protection:	H.D.G.EN 1461 (2009)
IP protection:	IP20 EN ISO/IEC 17025:2005 and CEI EN 60529:1997 + A1:2000
Corrosion protection test:	1000 hours salt spray EN ISO 9227 (2006)
Standard pull tolerance:	+6% to -4%
Service temperature:	-40°C to +70°C (-40°F to +158°F).
Standard cover colour:	RAL 7040
Storage:	2 years -10°C to +40°C in dry place and dust-free conditions (preferable indoor) Relative humidity 85%. Max 3 crates on top of each other – observe symbols on the crate.

## 3 Setting

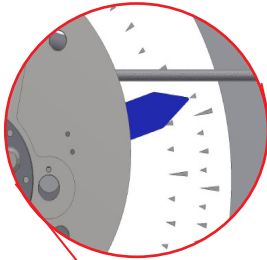
Follow the instruction of the main product manual (000300336) up to page 33.

TRC+ 3D has setting scales different then standard models. Setting scales consist of 2 concentric graduations as well 2 pointers (represented in red and blue colors). This solution permits to set/adjust Tensorex C+ 3D also for wide rotation angle, wider than 360°.

The pointer with hole (represented in red) points the inner scale (1), while the blue one points the outer scale (2).



In according to the main product manual, after the device is on 0-point (the pointer with hole - red represented) and have found the setting number, please to position the correct pointer (the one with hole or without) acting with a lever hoist.



In case the front balance is very close to the device, and the pointer without hole, (represented in blue color) is over the outer scale, it could indicate an incorrect setting number!  
The device must be reset!

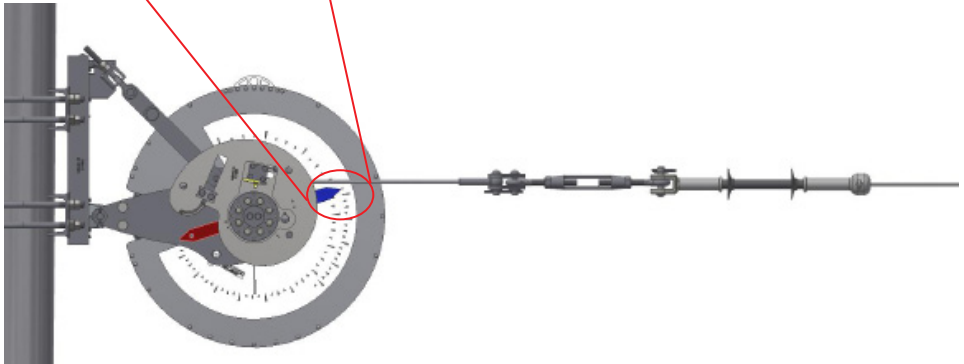
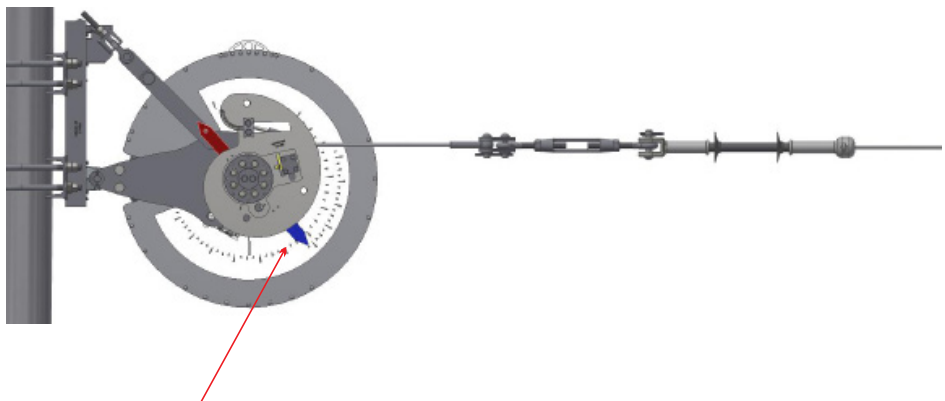


Fig. above shows Tensorex C+ 3D in the starting position of outer scale.

Fig. below shows Tensorex C+ 3D in the end position of outer scale.



## 4 End stop

The stops have a safety function for the springs. Tensorex C+ 3D has a wide angle and doesn't require any manual activation of end stops during the installation.

The stops mechanism is completely automatic.

## 5 Rope

The rope of Tensorex C+ 3D has a diameter of 9,5 mm and is made by steel galvanized and greased. Ropes are generally lubricated for life, so a re-lubrication usually is not necessary. The corrosion protection is provided by galvanization.

Nevertheless, if a re-lubrication is considered to be necessary (e.g. heavy environmental conditions), we recommend to use grease Elaskon III Star LM.

Elaskon III Star LM is supplied in liquid form and applicable by spraying, brushing, rolling or that like.

In closed pits only brushes and wipers must be used. After checking from the authorities also spraying with thin beam exuding aerosoles may be applied. The product is based on the wire rope lubricant Elaskon II Star and contains a solvent. The layer is ready after evaporation of the solvent, depending on climate conditions after 2-8 hours. The optimal application temperature is 20°C. The rope should be cleaned before using Elaskon III Star LM.

The amount of re-lubricant is depending on the individual situation.







## 6 Note

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