

Automatic Tensioning Device TENSOREX C+

Maintenance and operating control



- Basically the device C+ does not require any particular maintenance procedure or operations due to the following reasons:
 - Ropes are stainless steel made and therefore do not require to be greased
 - Bearings of the pulleys are pre greased and completely sealed: no need to be greased at all
 - Pulley are aluminium made and therefore they do not require any particular maintenance cycle

- Nevertheless here below we list few operations/activities that can be followed in order to check the regular working of the tensioning device C+:
 - Check the closing of bolts and nuts on the triangular hot dip galvanized still part connecting C+ to the line

 - Check the position indicated from the arrow on the lateral diagram as follows:
 - 1) the span length (distance between C+ and next fixed point) must be known
 - 2) refer to the upper diagram on the cover of C+. In order to avoid to lift up to C+, copy of the same diagram should be given to the maintenance people by copying it from the

installation manual or by asking specifically one copy of it to Pfisterer in accordance to the specific type of C+ supplied.

- 3) take the measurement of the ambient temperature at the time of the maintenance operation
- 4) cross on the above mentioned diagram ambient temperature and span length
- 5) take the reported figure indicating the supposed position
- 6) control the lateral diagram: the above figure should match with the number indicated by the still arrow

		lunghezza linea - line length [m]										cod 000400476	
temperatura [°C] temperature		100	200	300	400	500	600	700	800	900	1000		
	-25	284	344	403									
	-20	276	327	378	429								
	-15	267	310	352	395	437							
	-10	259	293	327	361	395	429						
	-5	250	276	301	327	352	378	403	429				
	0	242	259	276	293	310	327	344	361	378	395		
5	233	242	250	259	267	276	284	293	301	310			
10	225	225	225	225	225	225	225	225	225	225	225		
temperatura [°C] temperature	10	225	225	225	225	225	225	225	225	225	225		
	15	216	208	199	191	182	174	165	157	148	140		
	20	208	191	174	157	140	123	106	89	72	55		
	25	199	174	148	123	97	72	46	21				
	30	191	157	123	89	55	21						
	35	182	140	97	55	12							
	40	174	123	72	21								
	45	165	106	46									
		100	200	300	400	500	600	700	800	900	1000		
			lunghezza linea - line length [m]										cod 000400476

Example: span length = 700
 Measured ambient temperature: - 5°C
 Right position to be seen under the arrow : 403

- in case both numbers indicating position are not matching, that means that C+ is not set anymore in the right position. This normally depends from one of the following issues:
 - Some accessory or part along the catenary system is not working properly (suspensions, arms, fixed point etc.)
 - In case of new line, with new copper wire and/or contact wire, these must be re-pulled by adjusting its normal elongation.

- No other checks and control are recommended during the normal working of C+
- The above described cycle can be adopted
 - o In case of complete new installed lines or in case of refurbished copper: every months until the final adjustment of the copper
 - o In case of normal lines during normal traffic: 1 or 2 times per year depending from traffic frequency (therefore depending from the consumption of the copper contact wire)