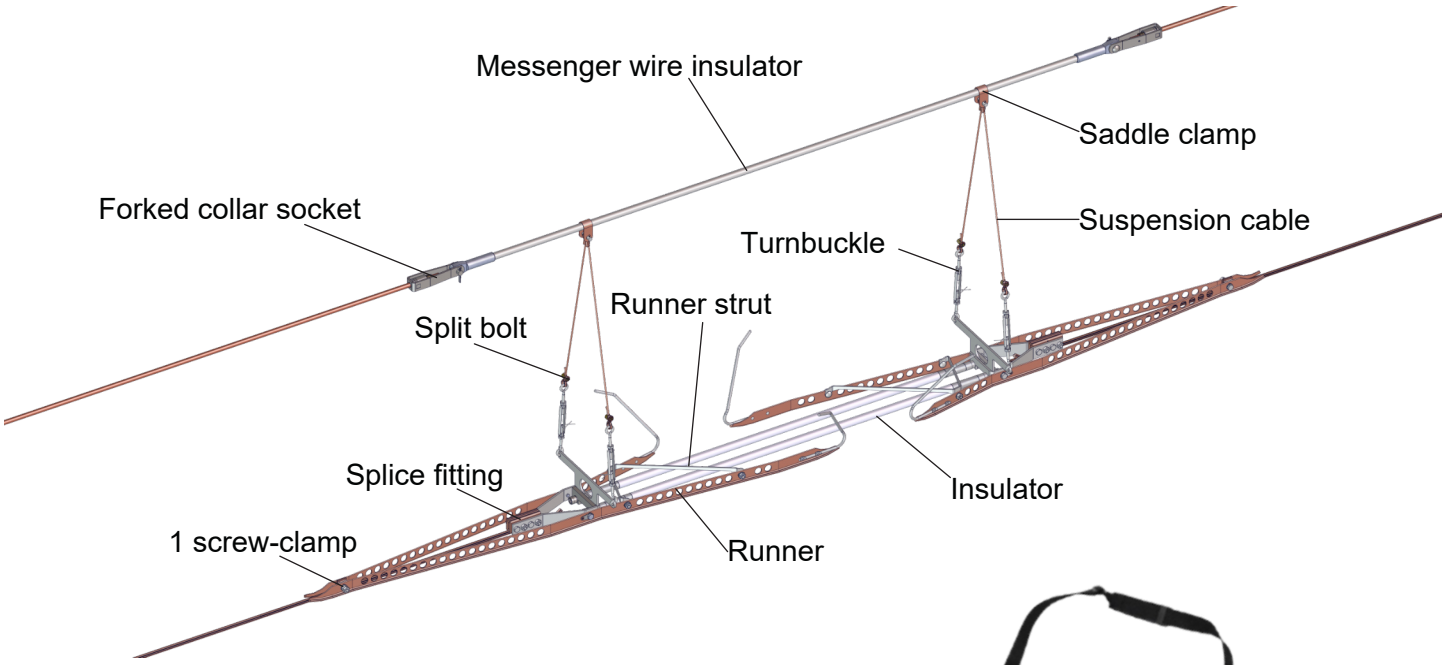
Railway technology

Installation instruction

Section insulator HS / HL

V 2026/09

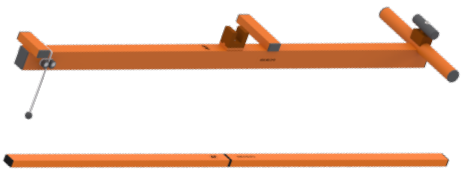


Installation Kit:

Installation kit HS25, art. no. 690.049.003 which includes:



Installation jig
Art. no. 655.540.010



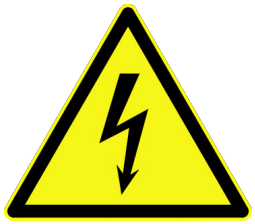
Alignment bar
Art. no. 696.016.013

Adjustable spirit level
Art. no. 655.141.000



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RISK OF DEATH
Before working on the overhead line: Ensure that the overhead line is de-energized and properly grounded according to the regulations.

A) Tools

- 1 Ring / Open-end wrench 17 mm ..... Art. no. 656.000.001
- 1 Ring / Open-end wrench 14 mm (for split bolt)
- 1 Torque wrench 17 mm (50 Nm, 37 lbf ft) ..... Art. no. 655.114.000
- 1 Adjustable spirit level ..... Art. no. 655.141.000
- 1 Measuring tape or folding ruler
- 1 Bolt cutter
- 1 Copper hammer ..... Art. no. 656.000.009
- 1 Flat nose plier or gas plier ..... Art. no. 656.000.004
- 1 Straightening wood ..... Art. no. 656.000.005

Additionally for messenger wire insulator installation or replacement of a section insulator:
- 1 Pulley block with 2 cable sockets

B) Installation

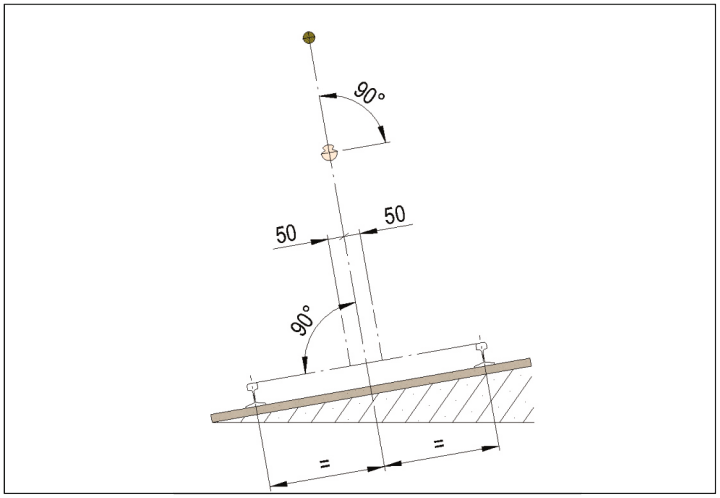
1. Preparation of contact and messenger wire

Straighten the contact wire at the installation location and make sure it is not twisted.

The section insulator should be well centred and aligned parallel to the track. The carbon strip of the pantograph must run centred over the section insulator.

Align the contact and messenger wire in the middle of the track (**+/- 50 mm**).

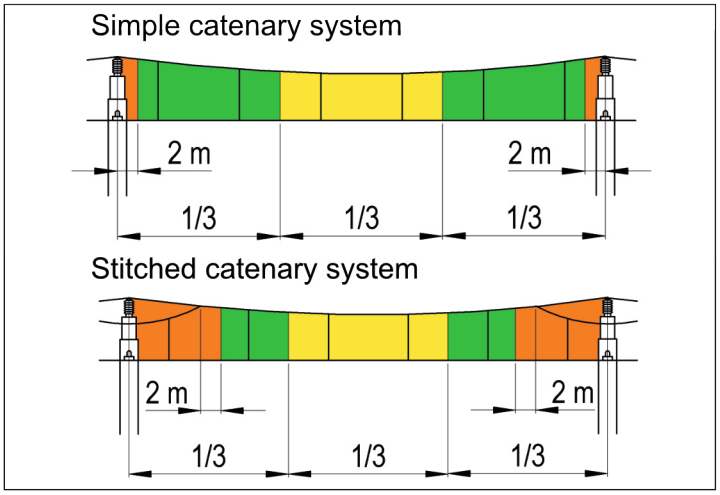
The contact and messenger wire must be positioned vertically within **50 mm** above each other.



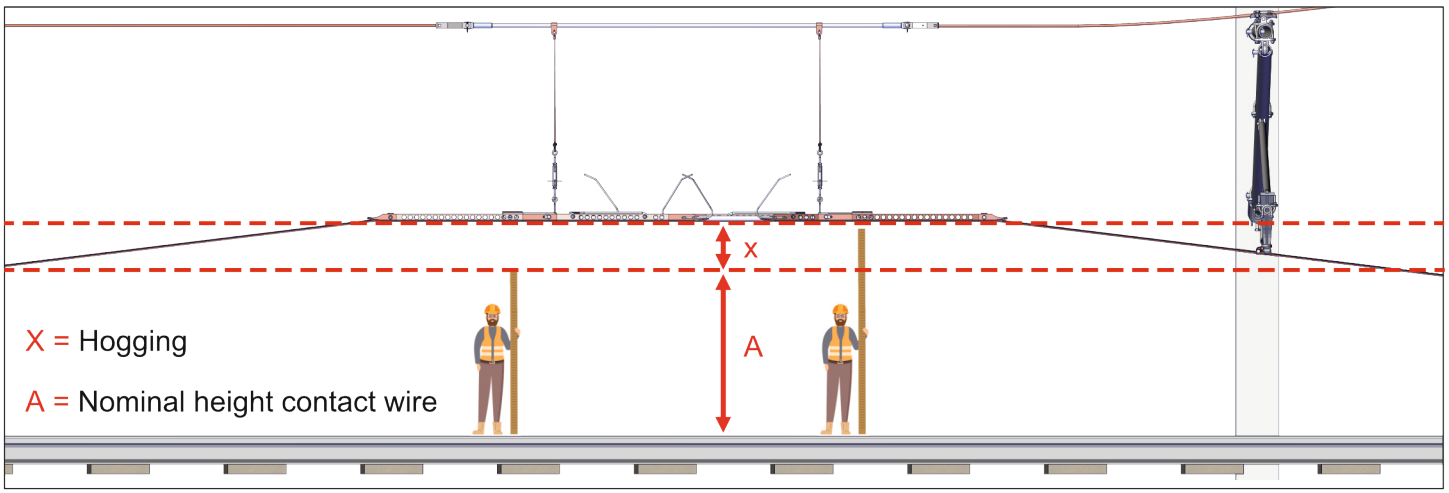
2. Installation location

It is recommended to install the section insulator in the green zone, at least 2 m away from the guide arm or the Y-cable (stitch wire). An installation in the yellow zone is less optimal and an installation in the orange zone should be avoided.

If the suspension is able to glide on the messenger wire the maximum allowable angle of the messenger wire is 5°.

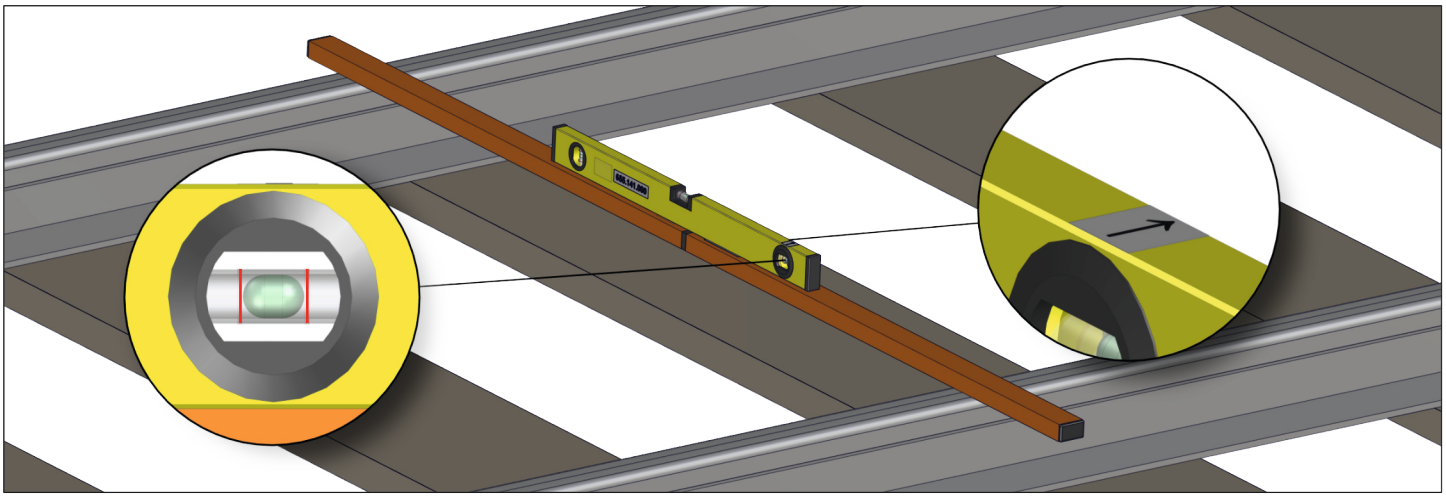


3. Installation height of the section insulator after the installation



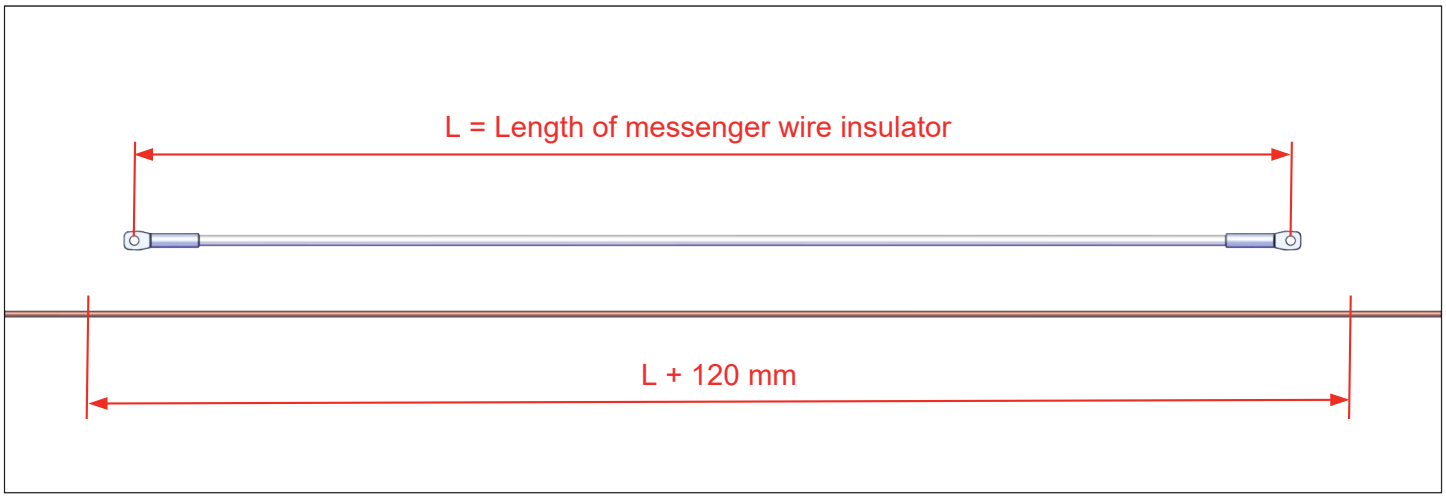
Set the hogging. The mentioned value is a recommendation and must be optimized to the specific overheadline.

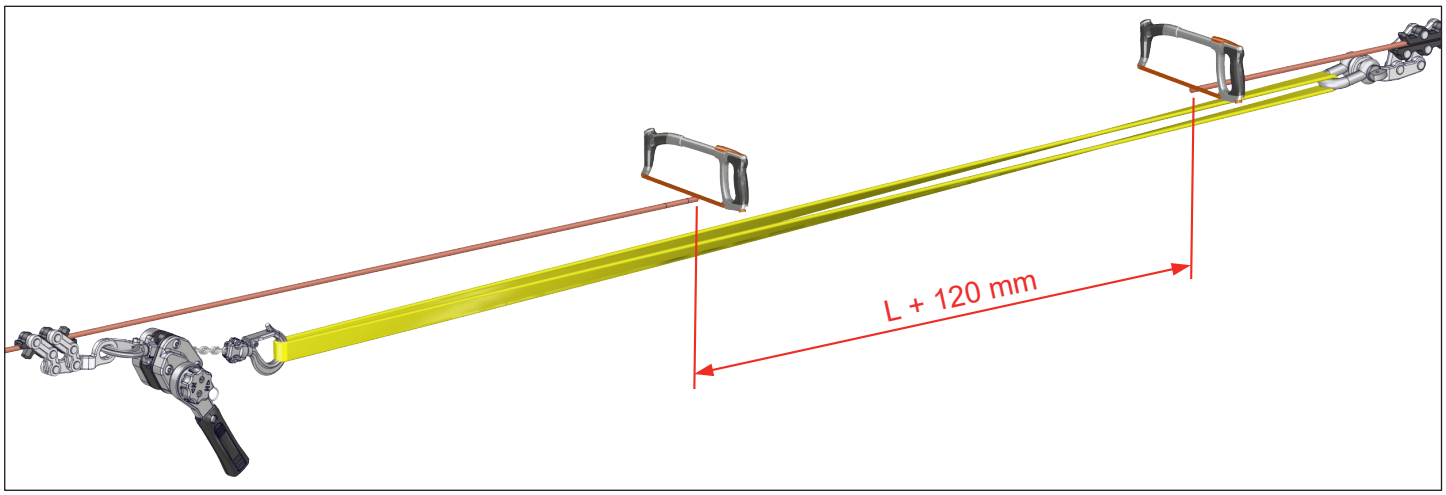
4. Measuring the cant of the track



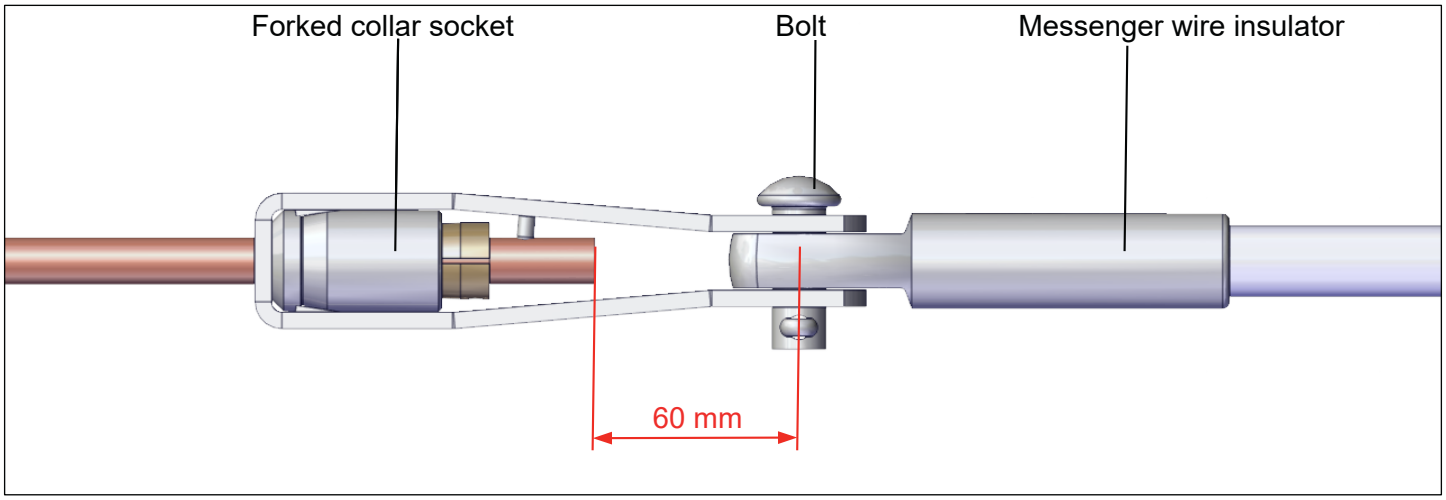
Determine the main driving direction. The direction can be chosen as desired, but must be maintained during installation in the overhead line. Calibrate the spirit level.

5. Installing the messenger wire insulator

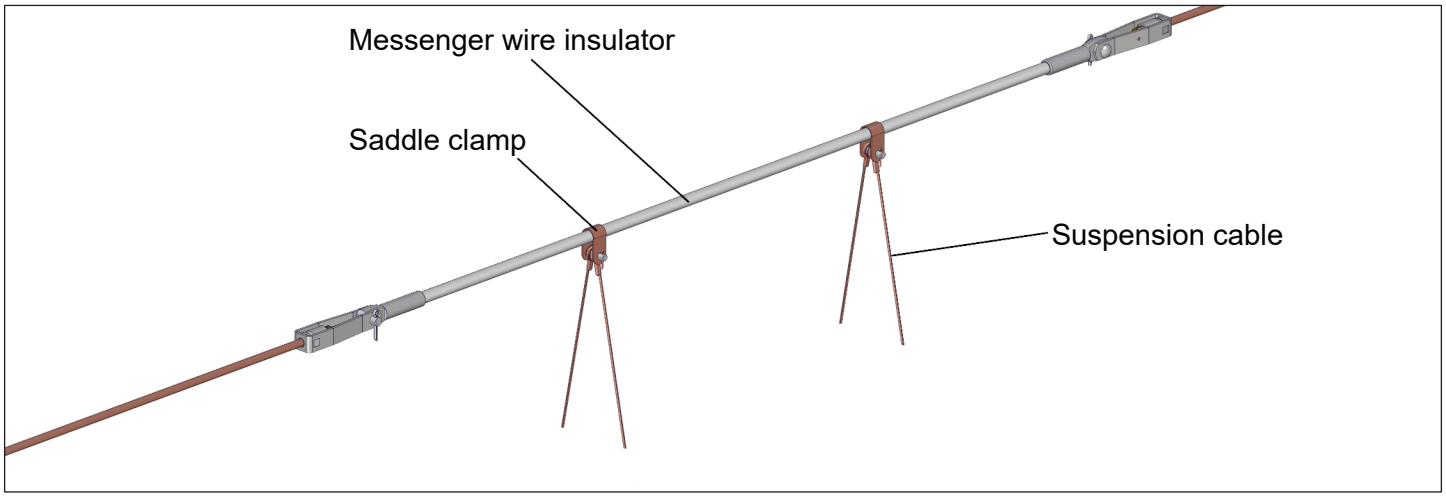




L + 120 mm = Length of the messenger wire to be cut for the installation of the messenger wire insulator.

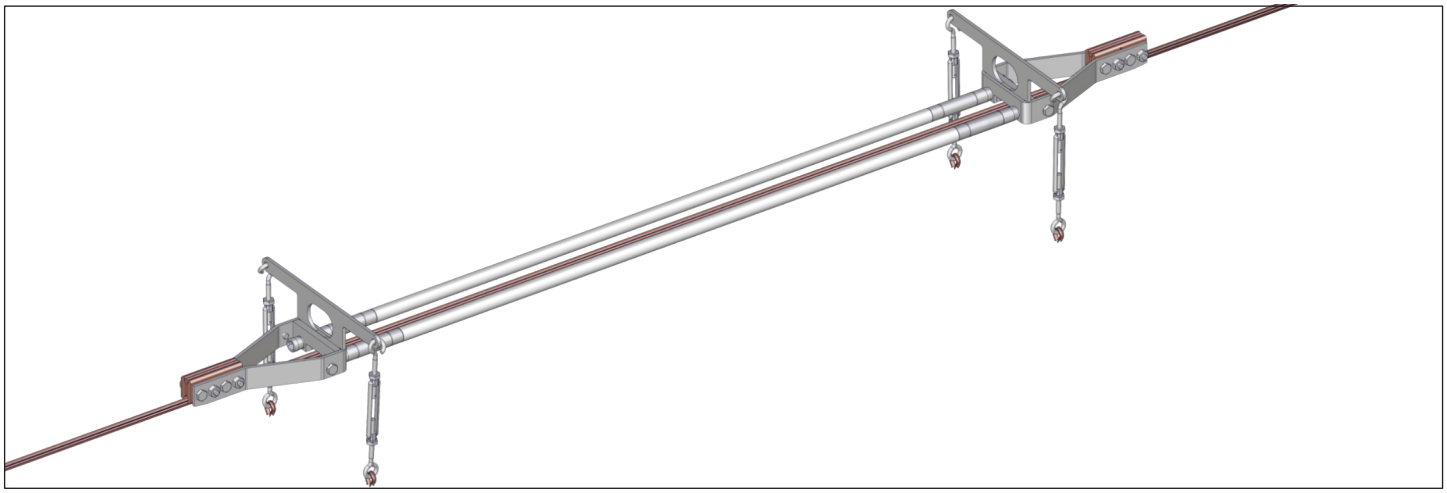


Attach the messenger wire insulator to the forked collar socket on both sides.

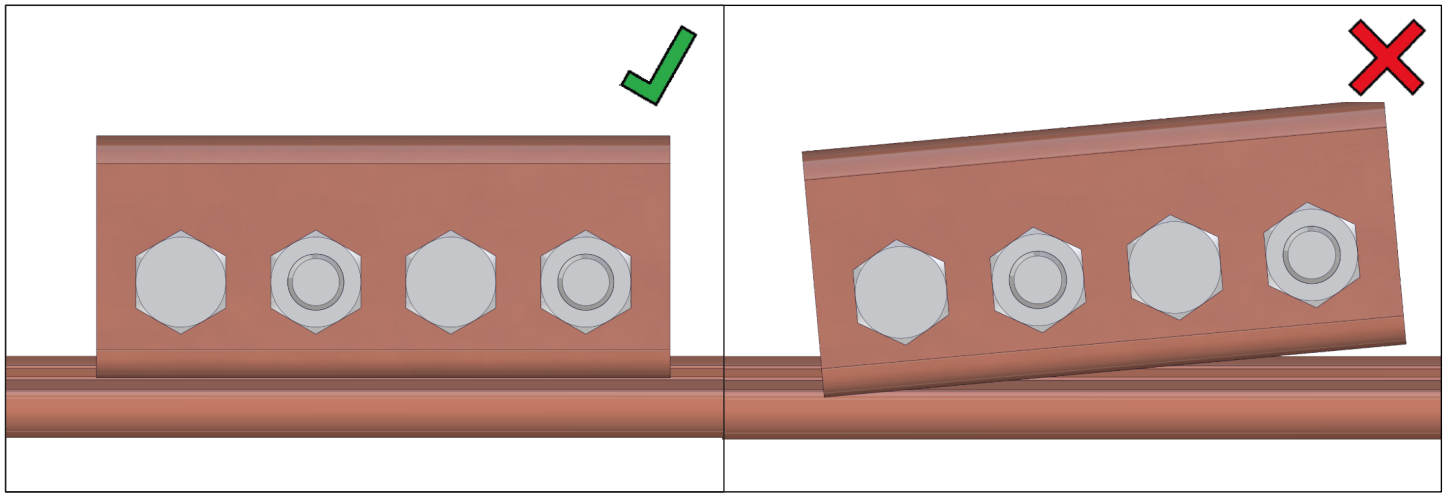


Attach both suspensions with the saddle clamp to the messenger wire insulator.

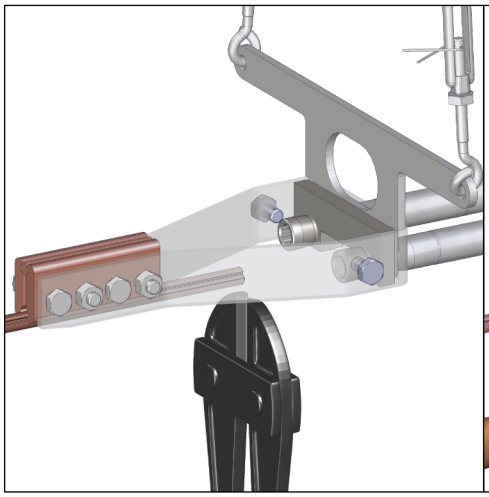
6. Installing the section insulator body onto the contact wire



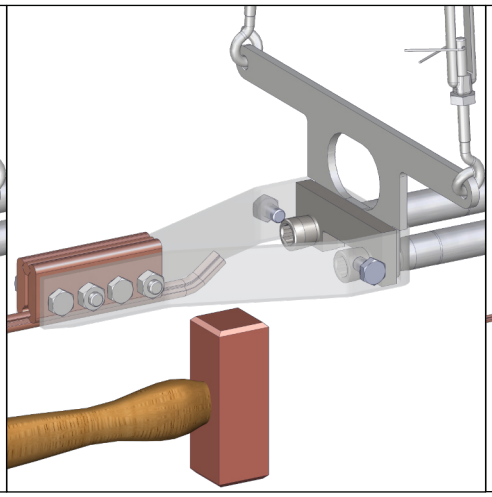
Place the section insulator with slightly opened splice fittings onto the contact wire.
Open the turnbuckles completely.



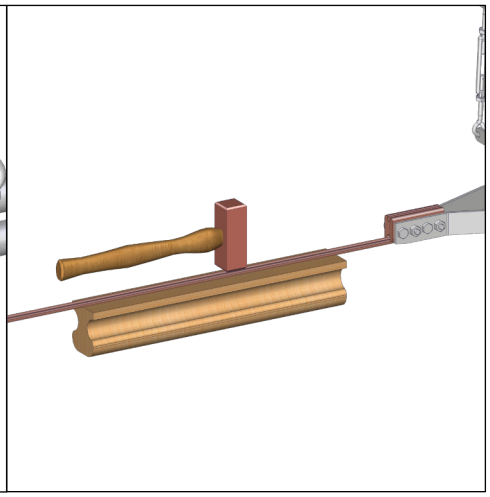
The splice fittings must grip into the contact wire groove over the full length.
Tighten all bolts sequentially with a torque wrench to **50 Nm**. Repeat the tightening sequence two more times, so that each bolt is tightened to **50 Nm** three times in total.



Cut the contact wire on both sides of the section insulator body.

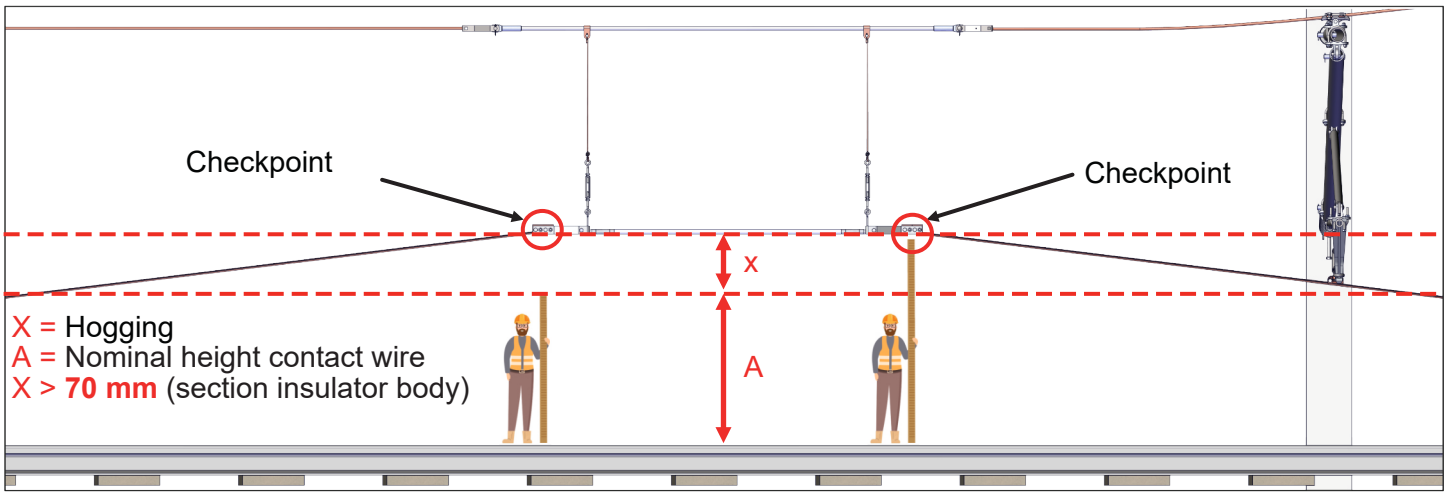


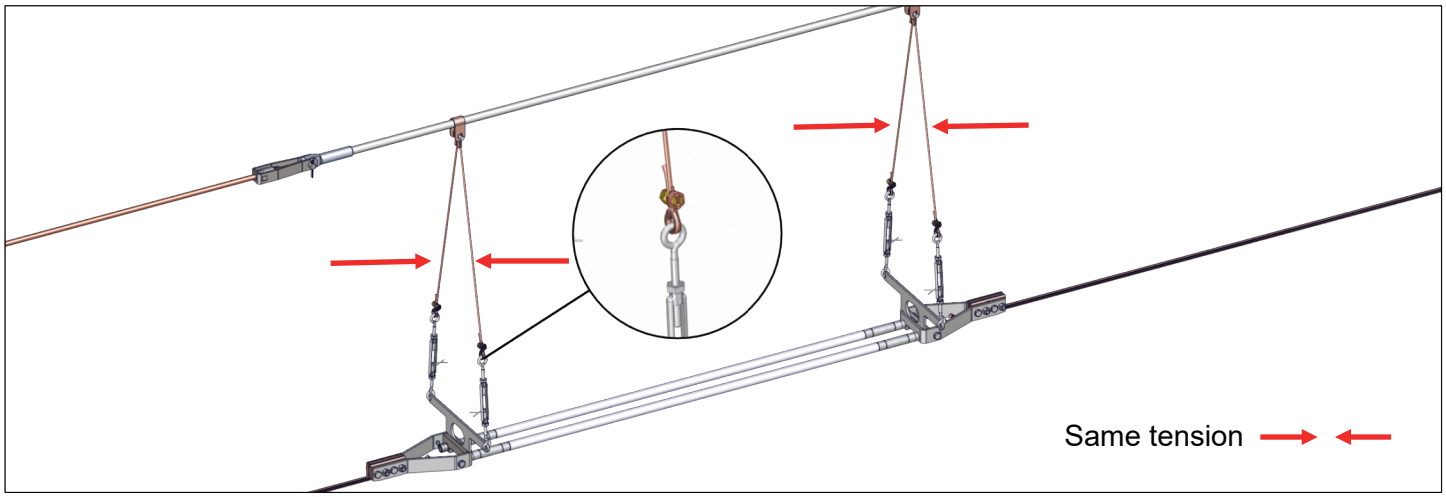
Bend up the contact wire ends on both sides (at least 30°).



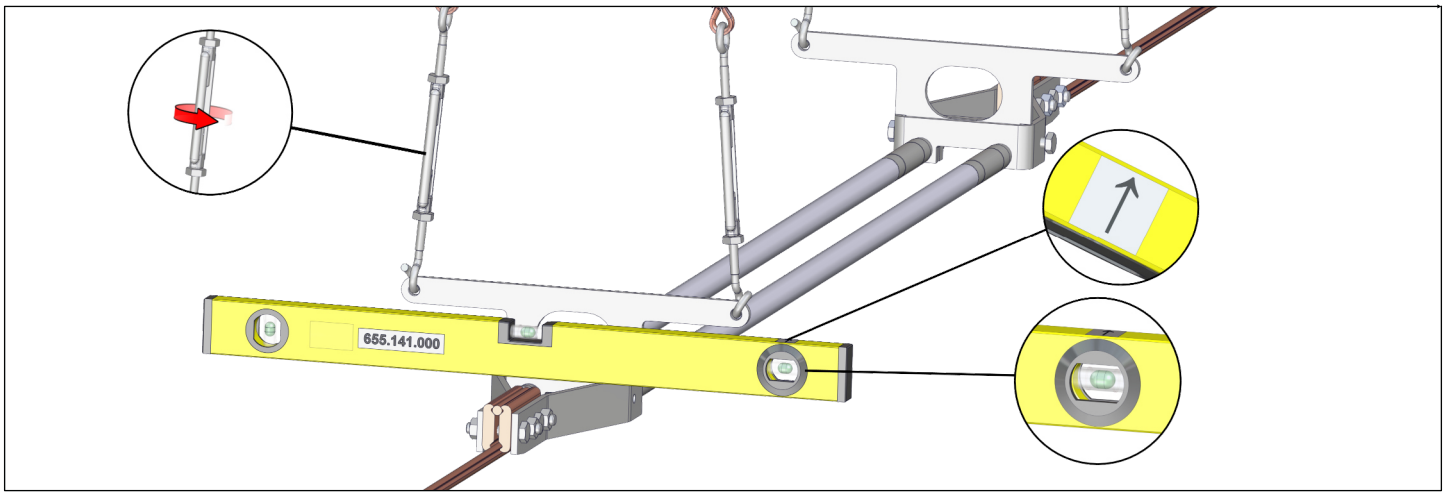
Straighten the contact wire on both sides.

7. Adjusting the hogging



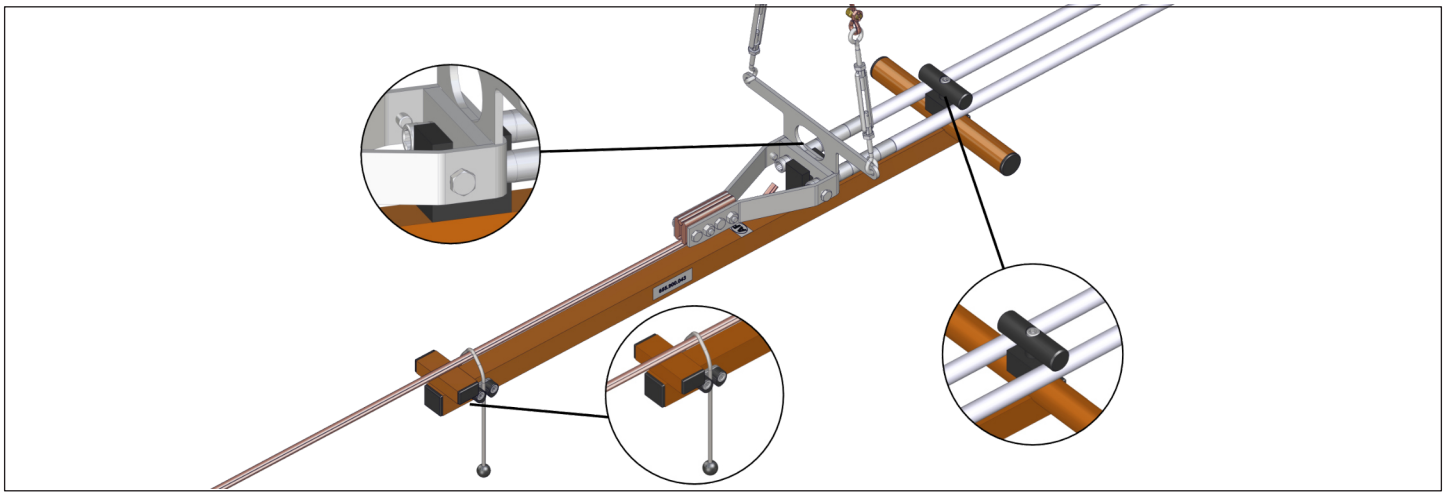


Attach the suspensions to the section insulator. Open the turnbuckles completely. The tension must be the same for all suspension cables. Move the Serrodur close to the thimble and tighten.

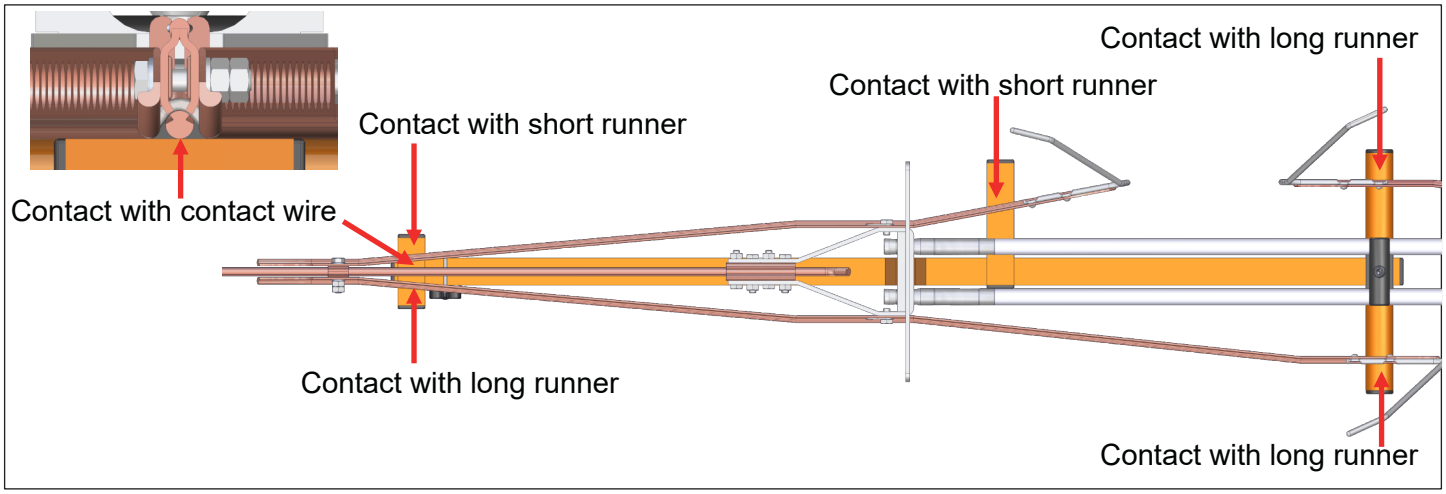


After hogging, align the section insulator using the calibrated spirit level and the turnbuckles. After that adjust by moving the turnbuckles on one side, together and synchronised.

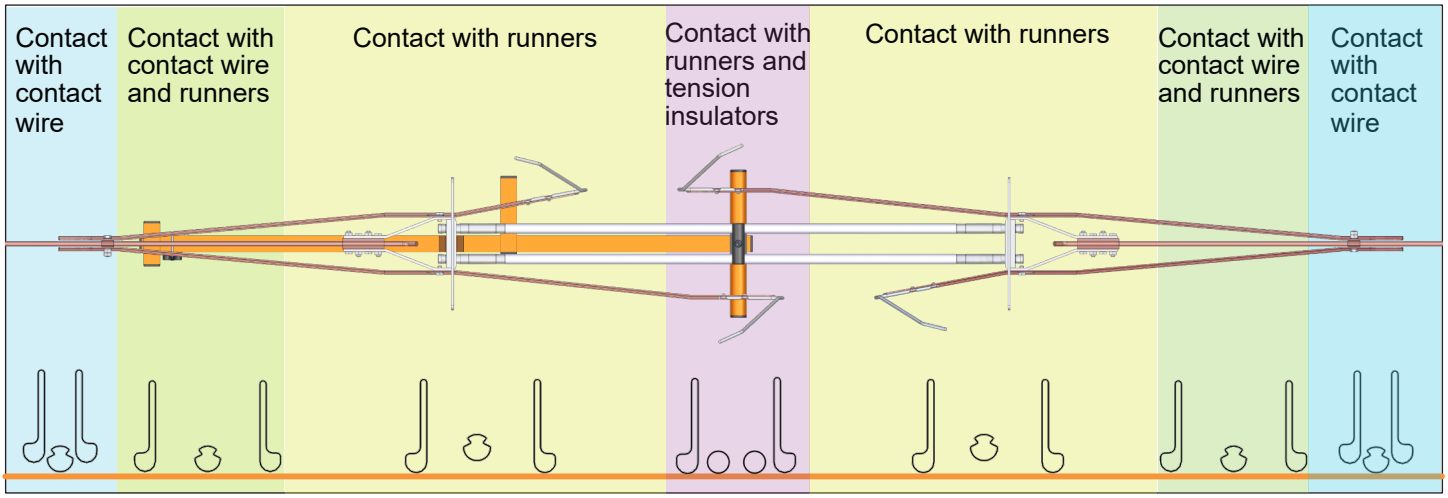
8. Mounting the runners

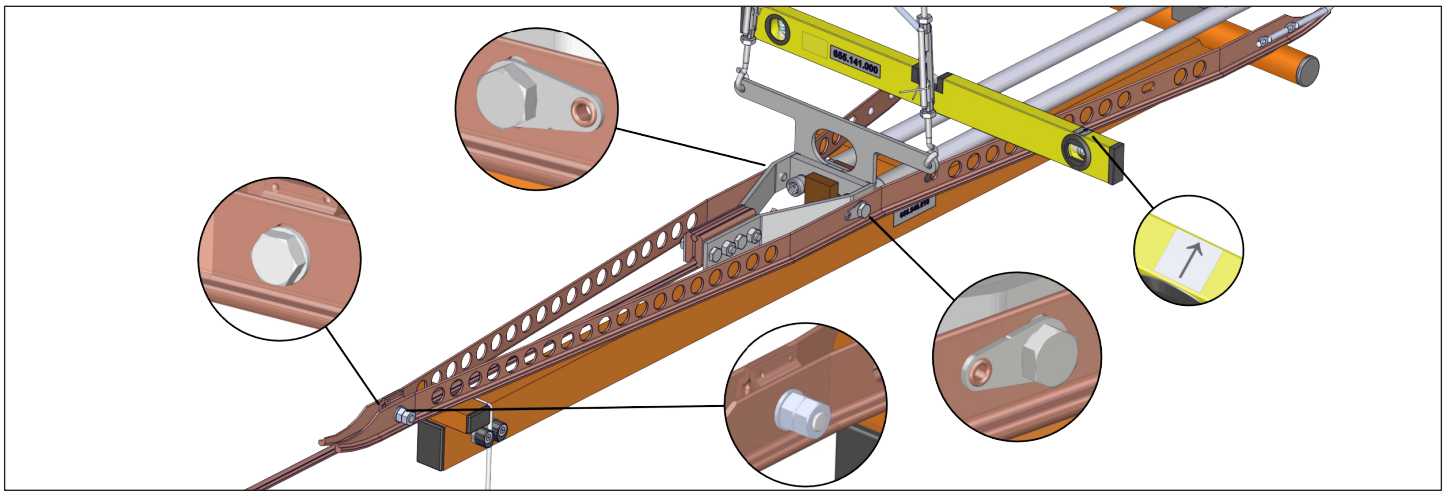


Attach the installation jig to the section insulator.

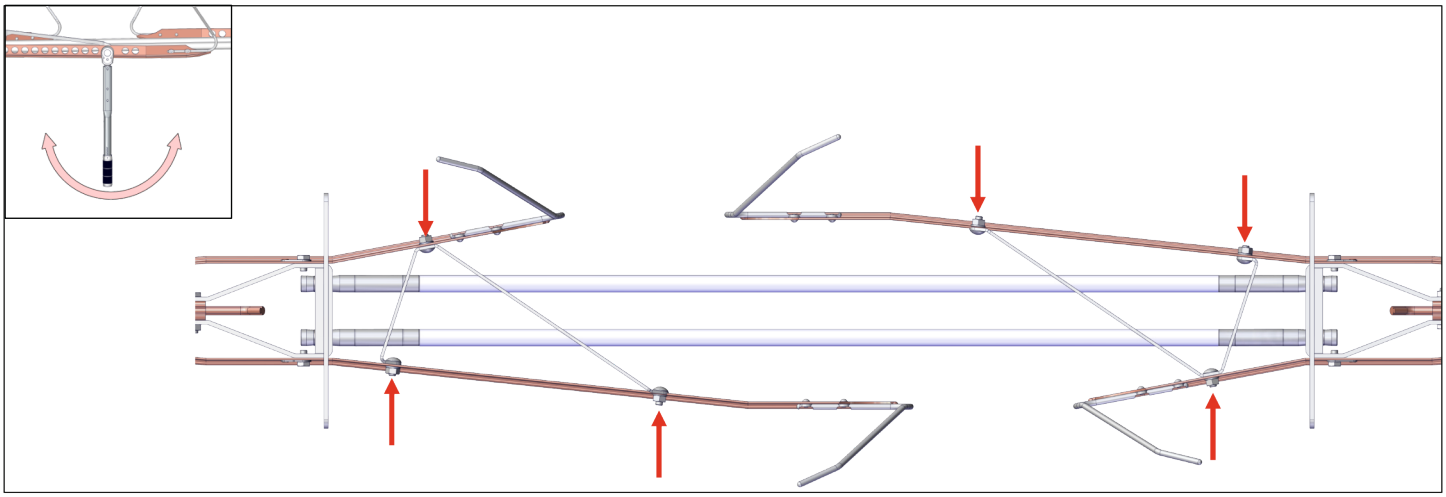


Mount the runners and tighten the nuts and bolts by hand.



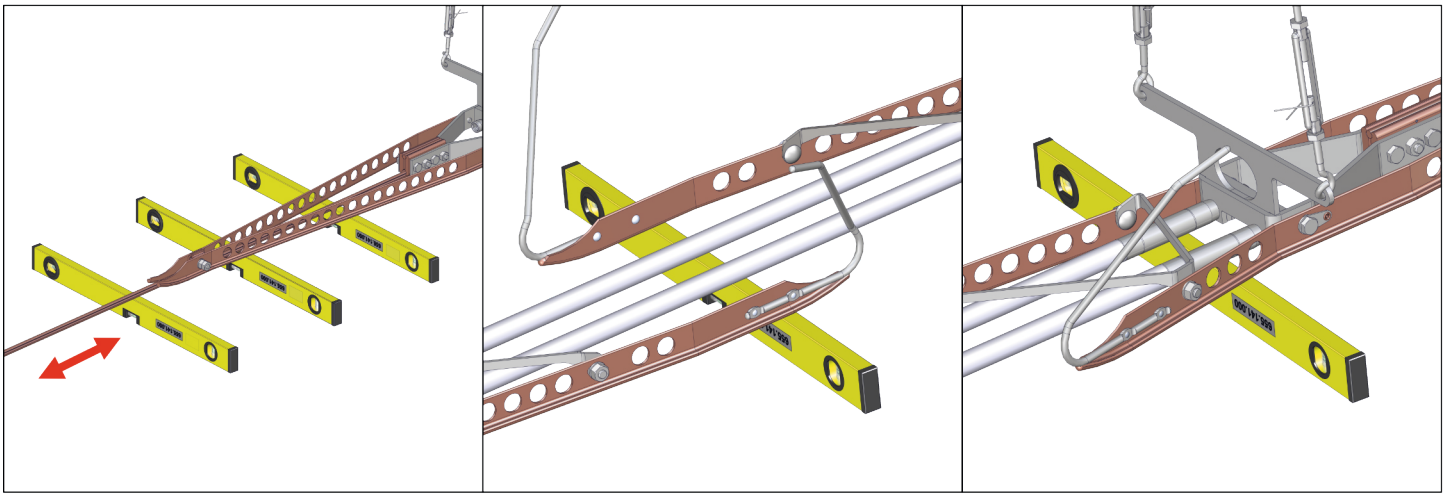


Use the calibrated spirit level to check whether the runners are aligned in accordance to point 4. Tighten all screws and nuts of the runners with a torque wrench to **50 Nm**. Remove the installation jig.

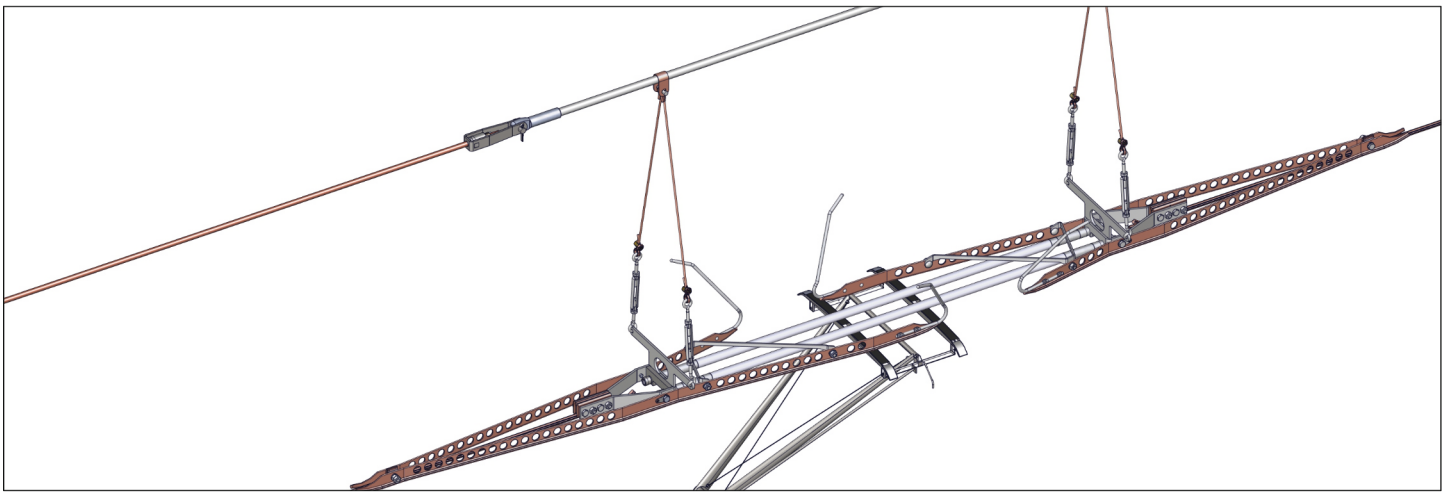


Tighten all bolts and nuts of the runner struts with a torque wrench to **25 Nm**.

9. Checking the gliding and the cant

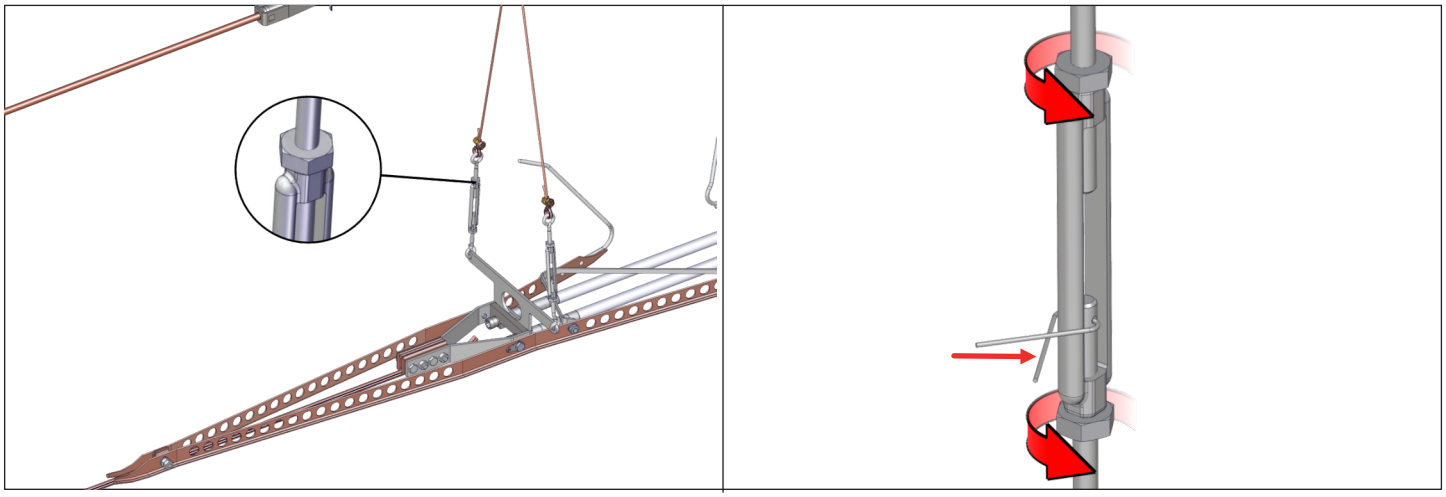


The gliding must be smooth and the runners must be parallel to the track.

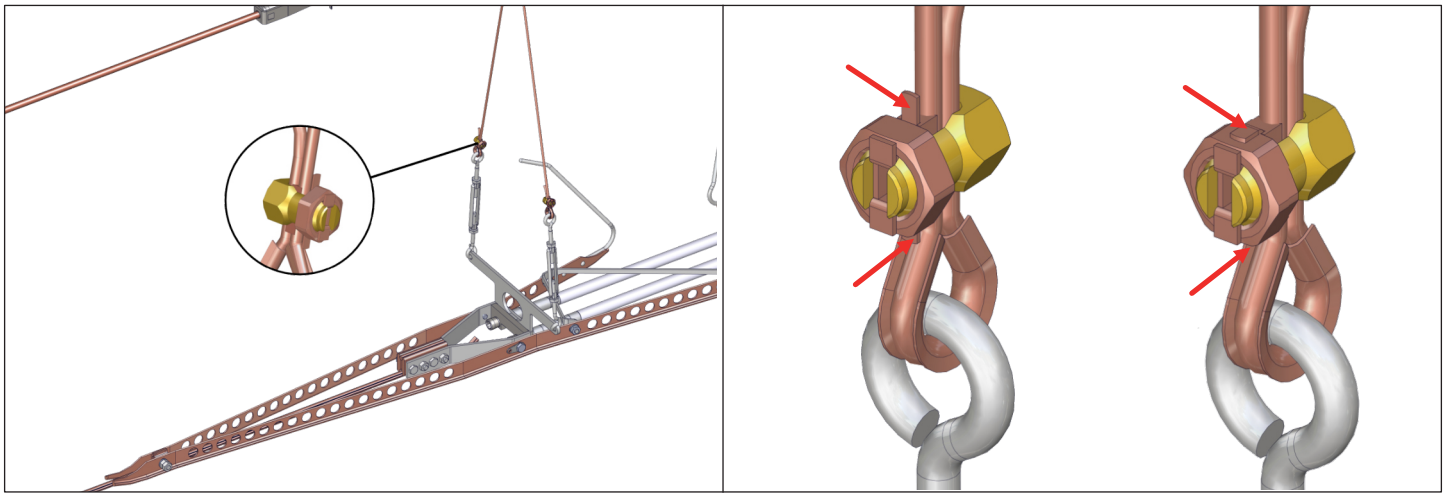


Test alternatively with a pantograph.

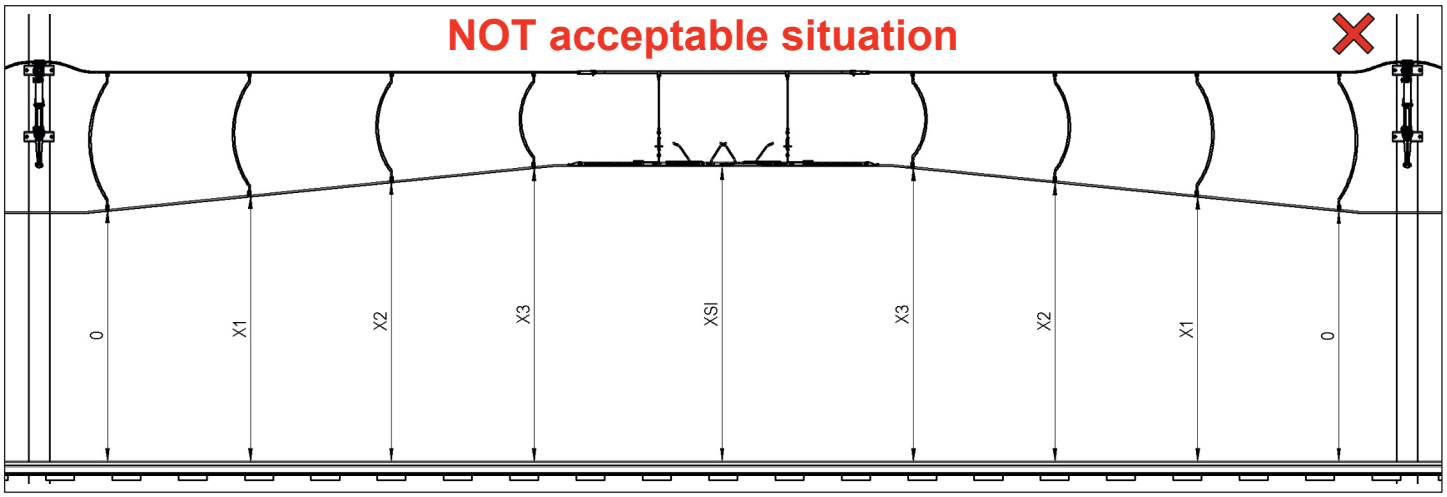
10. Countering the turnbuckles and secure with a safety wire



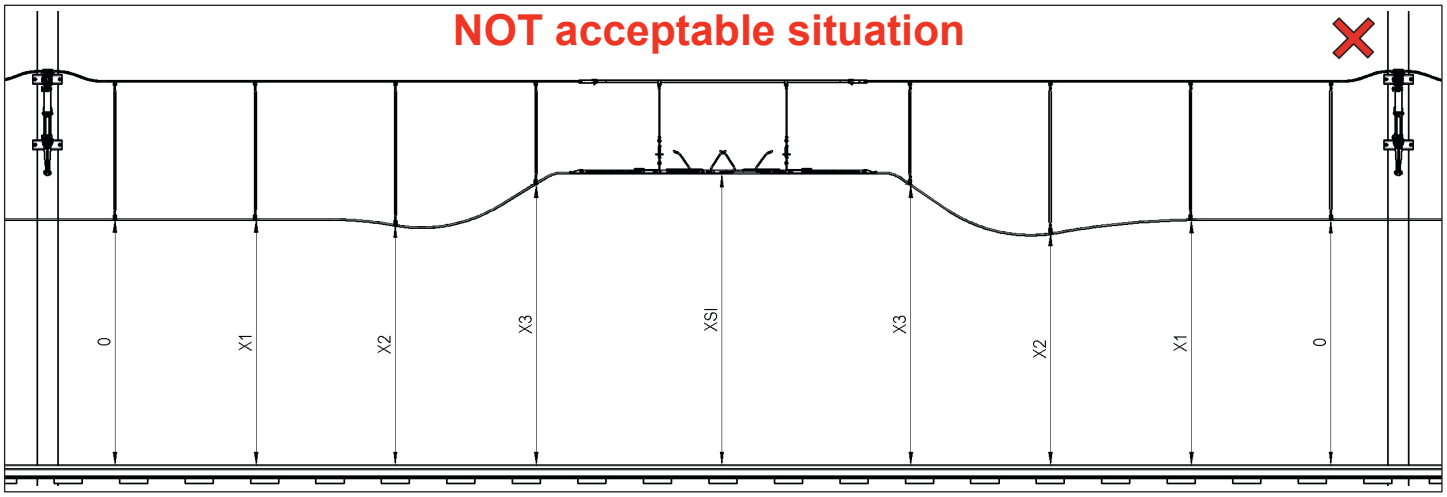
11. Securing the split bolts and shorten the exceeding suspension cables



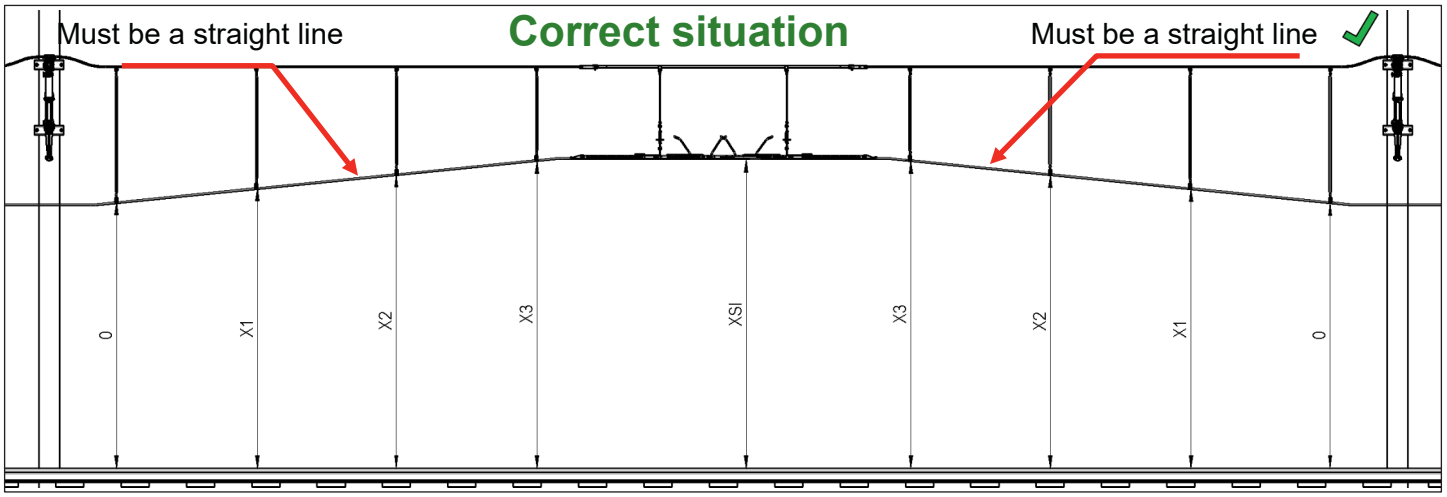
12. Aligning the droppers



The cable droppers close to the section insulator must be tensioned.



The contact wire must be a straight line.



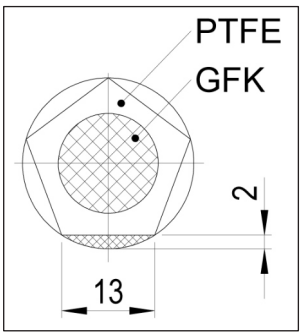
The contact wire must be a straight line and the cable droppers close to the section insulator must be tensioned.

C) Maintenance

A correctly adjusted Arthur Flury AG phase break requires no maintenance over a long period of time.

Insulators

In case of possible wear (max. 2 mm) the insulator rod can be turned by 2 marks at full mechanical load as follows:
Use a cylinder wrench to turn the steel sleeves, first on one side and then on the other side, each by 2 marks in the same direction. Tighten screws if they have been loosened by the turning process. The insulator can be used in 5 positions at most. After that it must be replaced. The insulator must be replaced if the GRP rod becomes visible through damage of the PTFE cover. The PTFE cover of the insulating rod is cleaned well enough by rain water under normal circumstances. In case of exceptionally strong dirt accumulation (for instance from frequent diesel traffic) we suggest cleaning the insulator every 2-3 years with our Special Cleaner for High Voltage Insulators (order no 655.168.000).

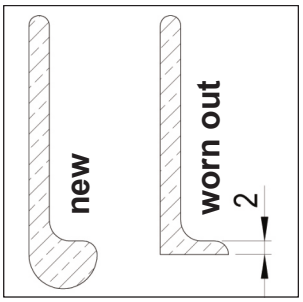


Runners

If the runners show increased wear at the entry, it indicates that they have not been adjusted accurately enough. The runners must be readjusted according to the installation instructions.

A well adjusted section insulator shows even wear over the entire length.

Should the wear have reached the maximum value (bulb only 2 mm) the runners must be replaced.



Running properties

The section insulator must remain stable during the passage of a panthograph.The section insulator and any installed suspension must be observed while passing with the pantograph. If the installation vibrates strongly or even becomes loose, this is a sign that the pantograph is creating too much pressure on the section insulator. In this case the section insulator must be positioned higher (increase hogging).

D) Legal information

The product must only be operated by trained specialists.

The product can be permanently damaged by loads that exceed the maximum values. If the product is exposed to absolute maximum loading for an extended period, it may impair the product's reliability and life. Arthur Flury AG will not accept any liability in this case.

Arthur Flury AG will not accept any liability for incorrect use and use for applications other than those specified in these instructions.

If damage to the product is suspected, any use or operation must be stopped immediately. Arthur Flury AG will not accept any liability in the event of continued use despite suspected damage.

Due to the diverse ways in which this product can be used, the instructions for use represent a general guide only and do not constitute a guarantee of the product's suitability for use in a specific application. The user is responsible for checking the full product data and clarifying the product's suitability for the intended use. The user is responsible for the choice of product and compliance with all the safety regulations and warnings. Please contact Arthur Flury AG if you require additional product information.

Our products comply with the current legal requirements and regulations (including RoHS, REACH, WEEE) in the markets where we operate. Please refer to Arthur Flury AG's Code of Conduct, available on our website, for further information.

These instructions are intended to provide the customer with information and should not be supplied unless accompanied by the product. The products and information in this publication require appropriately trained specialist personnel. Despite the greatest care being taken, the instructions may contain inaccuracies or typographical errors for Arthur Flury AG will not accept any liability. Arthur Flury AG may amend the instructions at any time, without notice, in the interests of technical progress. The customer is responsible for downloading an up-to-date version of the instructions from Arthur Flury AG's website before using the product.

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