



TRAMWAY OVERHEAD CONTACT LINE SYSTEMS





CONTACT WIRE CLAMPS

SUPPORTING AND TENSIONING EQUIPMENT



Our designers continuously develop new better solutions of supporting and tensioning equipment.



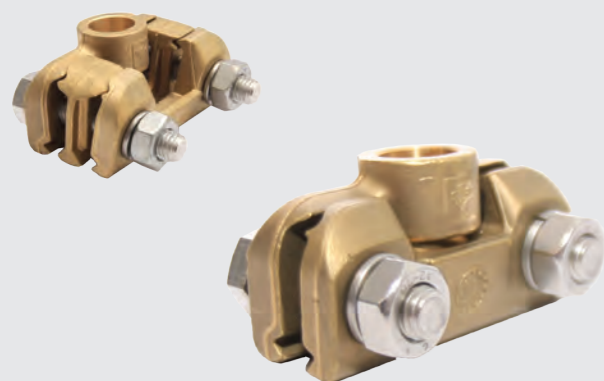
Elektroline offers customized solutions for different kinds of material (e.g. waterproof terminals for insulated ropes - KEVLAR).



The conception of the clamps enables an easy and fast installation.

Elektroline company provides wide assortment of self made contact wire clamps whose parts are manufactured from various kind of material, eg. copper alloy, stainless steel, and others.

Our clamps are designed for any kind of contact wire cross section profile.



Most of the contact wire clamps are designed in our design studio.

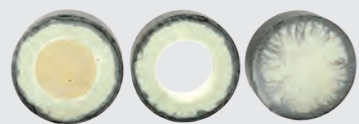


GRP CANTILEVERS

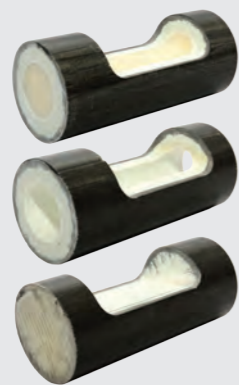
A preferable solution for tracks with cantilevers is the use of insulated cantilevers made of GRP (glass fiber reinforced plastic).

Main advantages:

- insulated cantilever
- high safety during assembly
- maintenance free
- very good elasticity
- aesthetics, good visual impression



Our offer encompasses production of different cross-section types, diameters and also colours of GRP cantilevers.



We produce 38, 42 and 55 mm diameters and foam filled, tubular and solid section type.

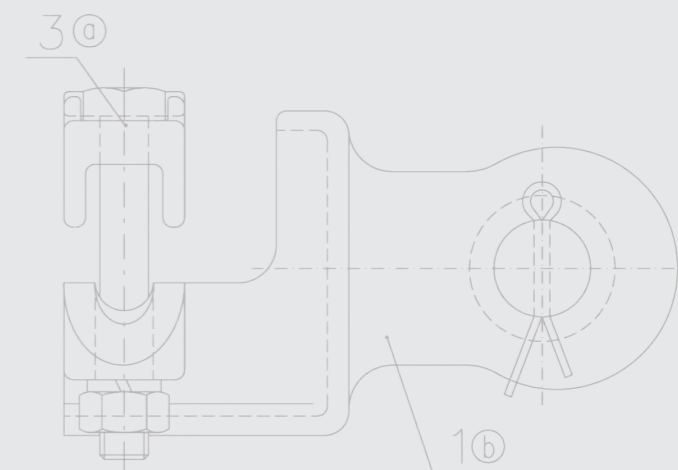
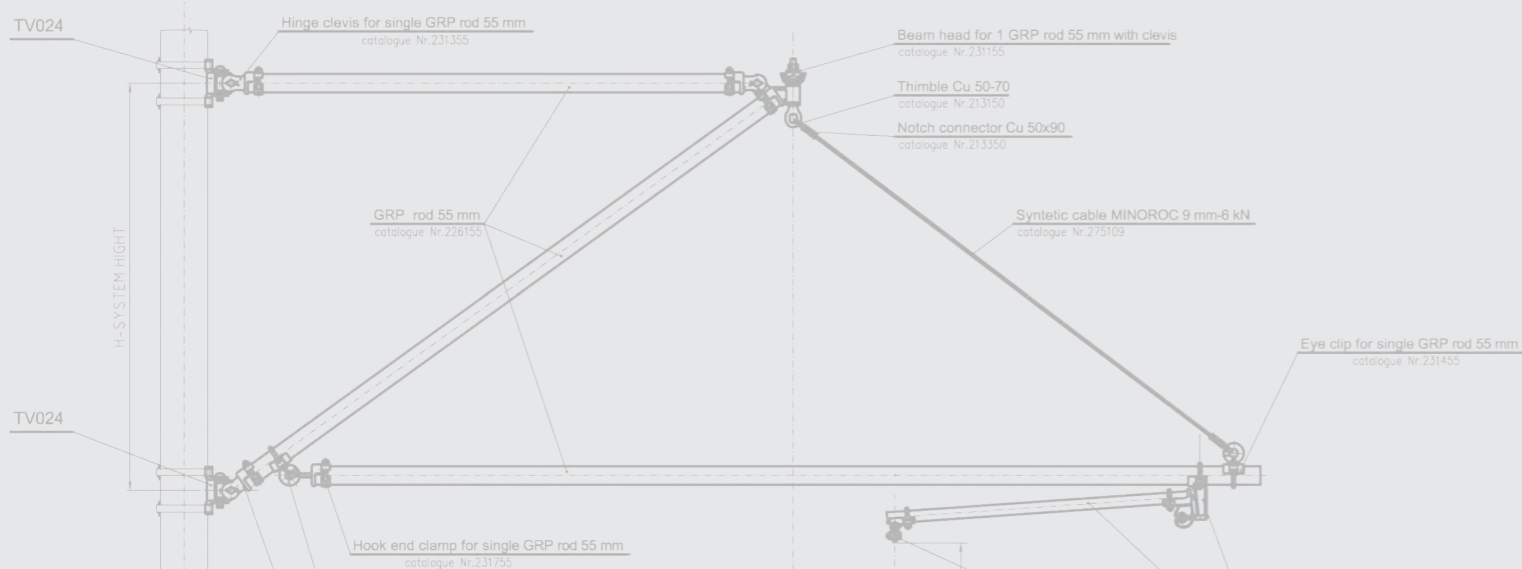


Thereby we can adapt the colour of cantilevers to the client's request. And we put maximal accent on aesthetical point of view.



Our assortment contains wide range of cantilever armatures that fit to desired diameter of cantilever - 38, 42 and 55 mm.

Installation of armatures is very simple; the armatures are designed in such a way which allows an easy adjustment.



CATENARY SYSTEM



Catenary system is usually used on the tracks where higher operating speed of vehicles (over 90 km/h) is required.

Significant advantage of this system is its long pole distance - up to 60 meters.



Main features:

- high and constant elasticity
- used for heavy current loads
- usually used together with temperature compensation
- long lifetime



COMPONENTS FOR CANTILEVERS



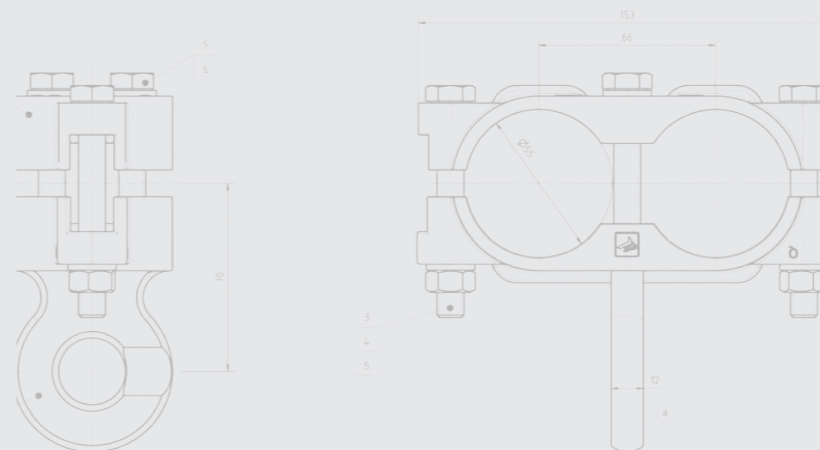
Usually used materials:

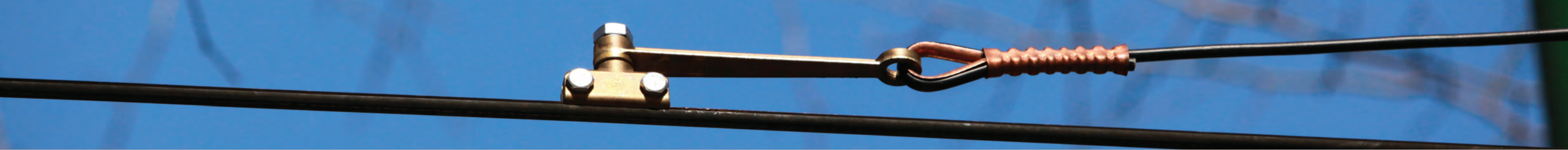
- various copper alloy
- copper
- stainless steel
- insulated GRP cantilever



You will find a lot of model complete sets on our website: www.elektroline.cz

A modular system enables to solve various atypical situations. Our experts will help you to find the best solution for your city.





ADDITIONAL ROPE SYSTEM (DELTA SYSTEM)

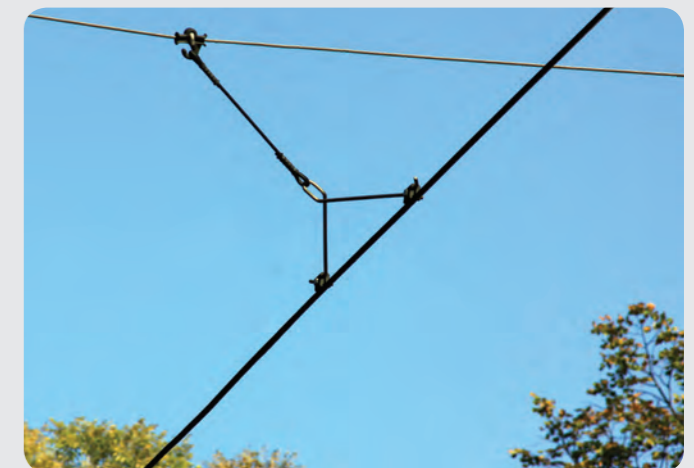
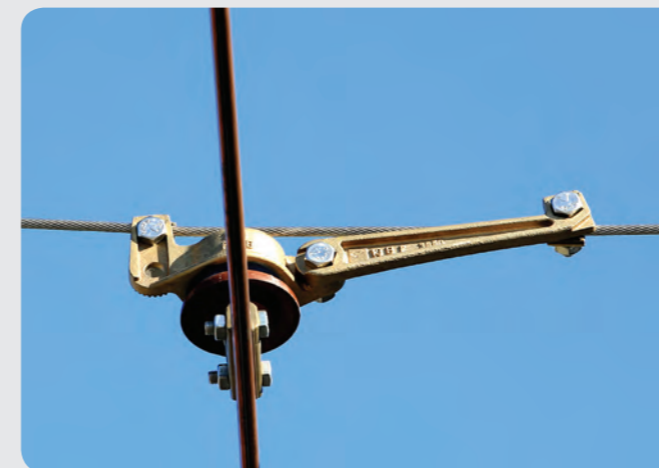
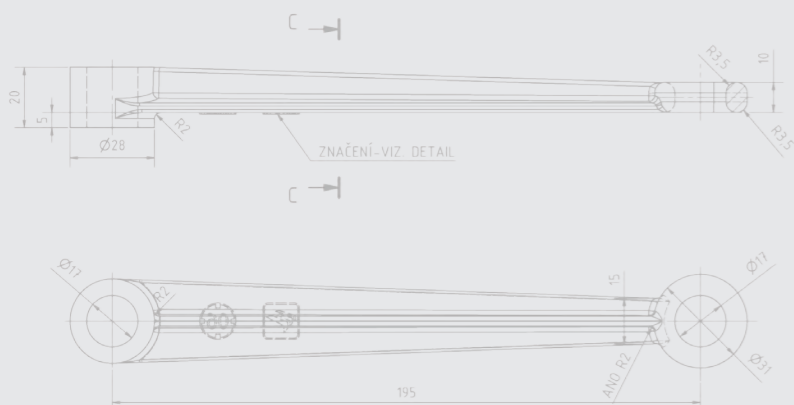
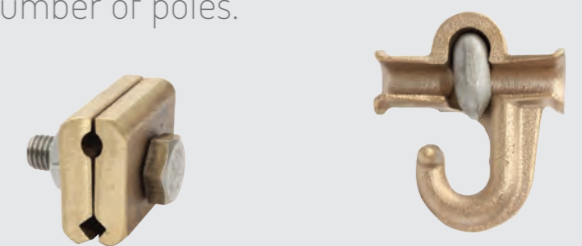
SIMPLE WIRE SYSTEM



The overhead contact line with suspension of delta type in combination with temperature compensation represents a modern type of overhead contact system. This type of contact line satisfies high requirements imposed on the tram operation.

The type of overhead contact line gets chosen also with regards to the aesthetical point of view. For city centres we prefer a simple system suspended by means of DELTA suspension or a simple wire system. This option offers an aesthetical...

...and silent solution maintaining the elasticity, high operation speed, and low number of poles.



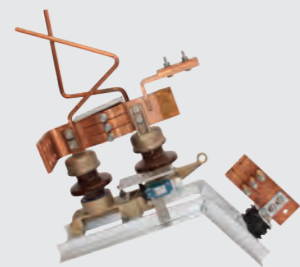


DISCONNECTOR AND FEEDING

SECTION INSULATORS



Narrow construction enables installation into HEB poles and also installation even on central poles between tracks on a double-track.



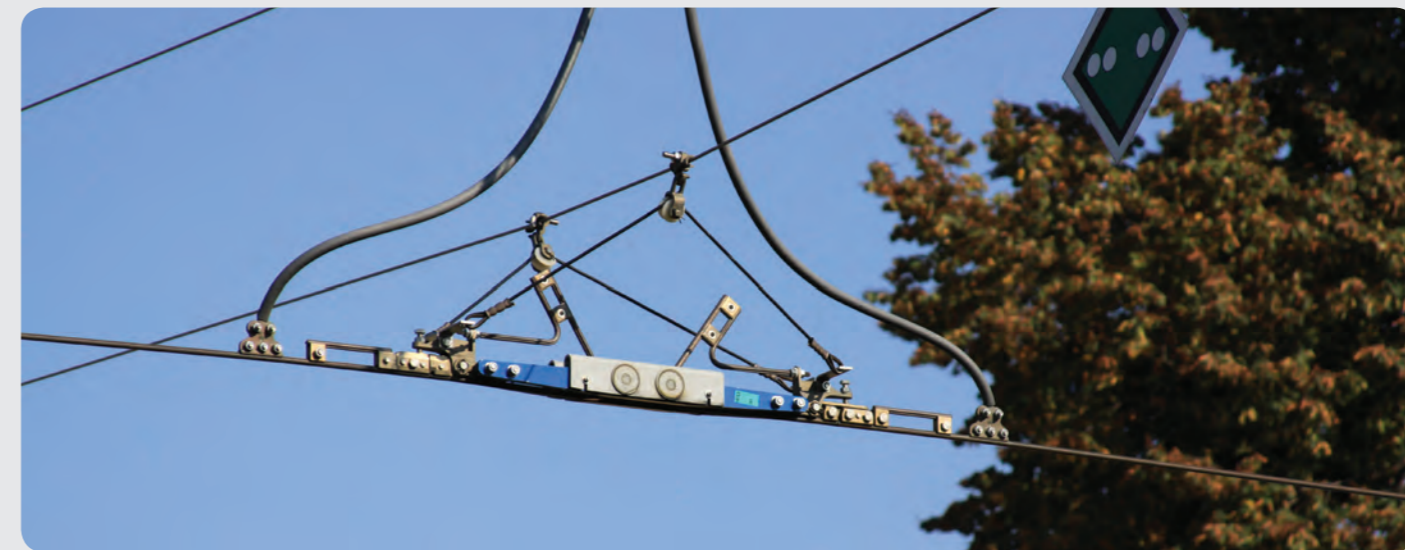
We offer several types of disconnectors. Usage of any type depends mainly on the load current and track characteristics.



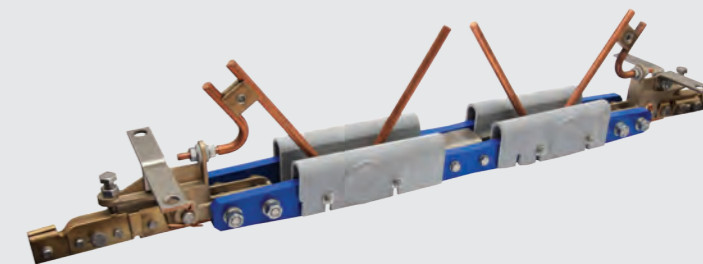
Options of disconnector control:

- remote control from a control office
- local control by pushbuttons
- manual operation

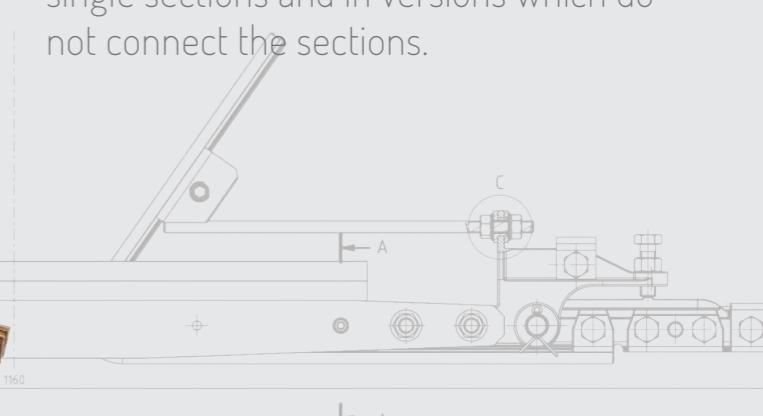
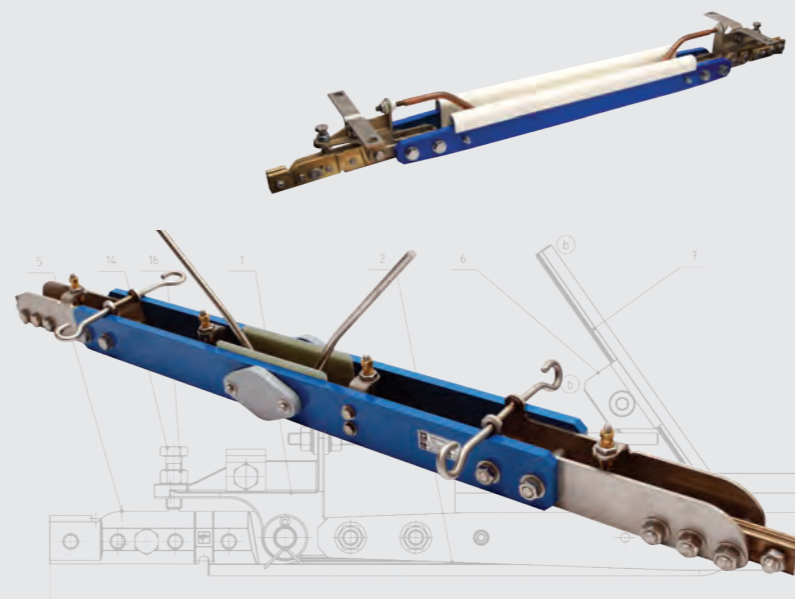
The motor drive can be ordered in 24V DC, 230V AC or 110 V AC versions. The stroke of the motor drive can be adjusted so as it could work together with an installed type of disconnector.



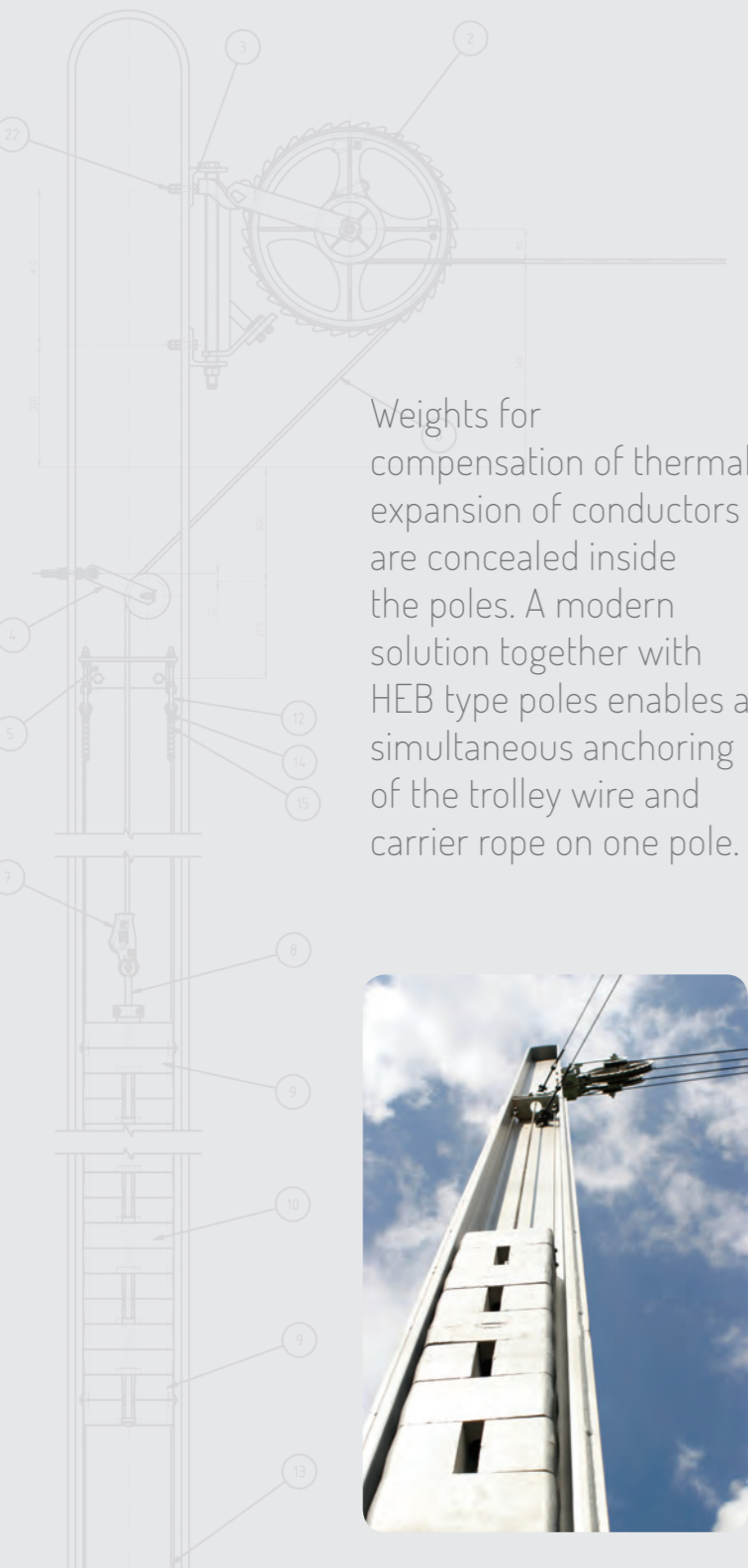
A special construction of our section insulators allows a silent and fast passage of the pantograph. Our section insulators are designed in such a way to safely interrupt both common equalizing currents and contingent short-circuit currents.



We offer different types of section insulators which are developed for high speed, their assembly is easy and they are maintenance friendly. We offer section insulators in versions which connect the single sections and in versions which do not connect the sections.



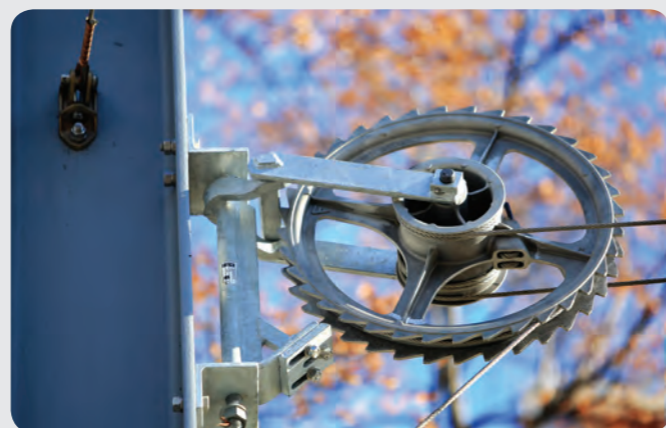
TENSIONING MECHANISM



Weights for compensation of thermal expansion of conductors are concealed inside the poles. A modern solution together with HEB type poles enables a simultaneous anchoring of the trolley wire and carrier rope on one pole.

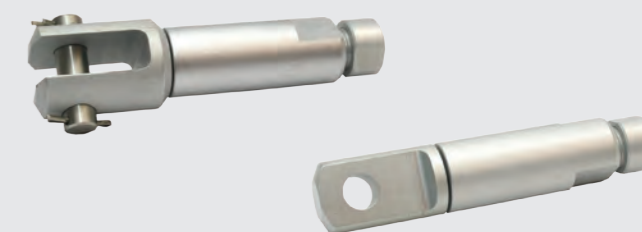


A latch on the compensation wheel prevents the weights from falling to the ground during OCL accidents. Wheel compensation transmission ratio is 1:3.



OCL ANCHORAGE AND FIX POINT

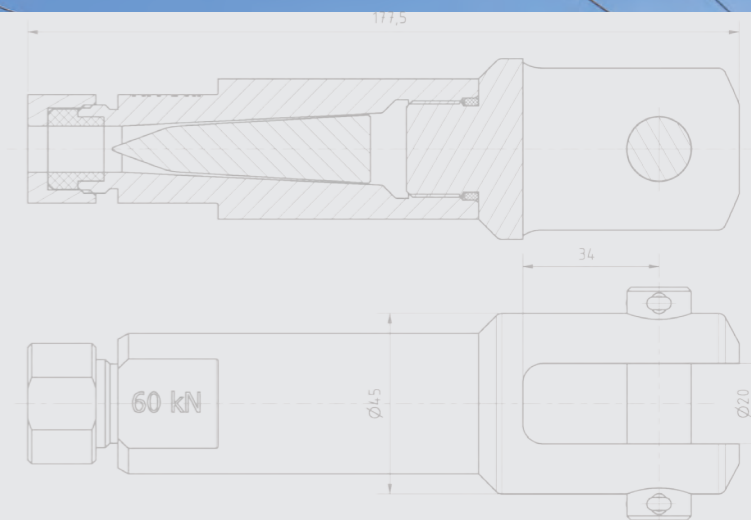
Fix points are situated in the centre of compensated section. They are used for a stabilization of compensated contact line.



For the construction of the middle fix point we usually use terminal clamps manufactured from aluminium alloy.



For the client who use the insulated ropes of "Kevlar" type we offer a wide assortment of special clamps. It is a modern solution with growing popularity among our clients.



CHOSEN REFERENCES OF OCL PROJECTS

AUSTRALIA

Adelaide

Material supply for 5 km TRAM track; Cooperation on the project together with SKM company.



ITALY

Florence

Material supply for tramway track and depot, especially:

- special cantilevers according to customer requirements
- section insulators
- supporting and tensioning equipment, components for cantilevers, insulators, contact wire clamps, etc.



POLAND

Warszawa

Elektroline was responsible for delivery of TRAM OCL material and signaling components for Warszawa city. We supplied especially following products:

- sleeves and pole fastening
- supporting and tensioning equipment
- section insulators and OCL insulators
- GRP cantilevers and their components
- contact wire clamps



NETHERLANDS

Rotterdam

Delivery of OCL material for tramway track and public lightning.





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