Mounting guidelines for electric point-heating-systems by Wolff

Heating types

Normally the stock-rail, the point interlocking and the movable frogs will be heated.
The switch blade can be heated optional.

General

The tubular heating-element, with flat-oval profile, is working after the principle of electric resistant heating, with specific heating power of roundabout 300 W/m.
The heating elements are of protection class IP 65. Every heating element has a connecting head to be fitted with a flexible cable.
Optional there are heating elements with fixed grouted cables available. But to reach protection class IP 65 it is not necessary to have fixed grouted connecting heads.
The connecting head and the tubular part of heating-elements will be mounted with special fixing elements, that guarantees a good heat transfer to the stock rail and the switch blade and in spite of that not prevent the length expansion of the heating-element by warming.
The connecting head fastener fixes the connecting head of the heating-element at the stock rail and preventing the agitation of the heating element lengthwise the stock rail.
Moreover that the connecting head fastener is a fix metal connection between the heating element and the stock rail and cares for protective earthing of the heating element at the stock rail.

Installation of heating-elements

To allow fixing of the heating elements with the special fixing elements at the rail, you need free space of ≥ 65mm below the bottom of the rail. If you have a ballast bed remove some ballast under the rail and place it back after mounting the heating elements.
The connecting head fasteners have to be fixed very carefully with a torque of 65 Nm!

It is not allowed to use own additional mounting material like toothed locked washers or something else!

Stock rail heating (rail heating)

At this form of point heating the tubular heating-elements, with 180° bent off connecting head, are fitted with special clamps at the stock rail, two clamps in each space between the sleepers – and with one connecting head fastener for each heating-element
At the tip of the switch (point) the heating element should be between 200 – 600 mm longer at the stock rail than the switch blade.

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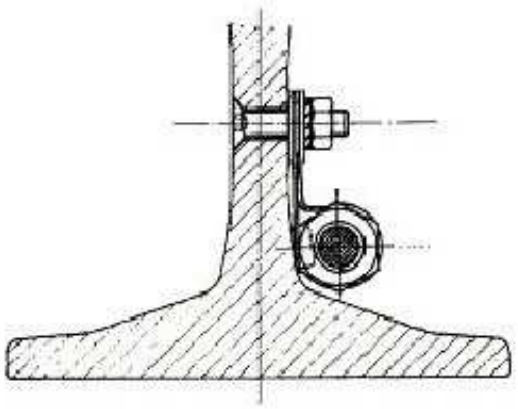
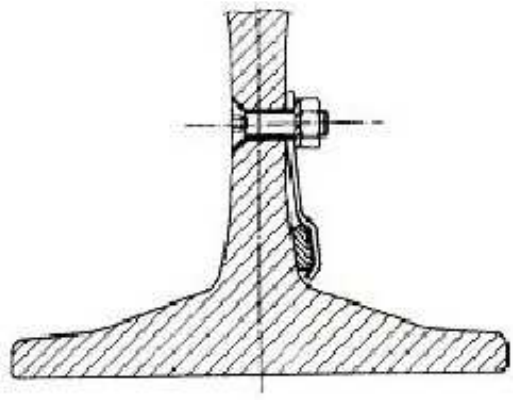
Heating of movable frogs

In opposition to the stock-rail heating with connecting heads bent off by 180°, the movable frogs are heated by means of straight heating elements with affixed connecting head brackets and heating element brackets at the web of the rail.





Point interlocking heating system (P.i.h.s.)

Stock rail heating is usually combined with a point interlocking heating consisting of inside-, center- and frog-lockings.
Otherwise, melting water caused by the stock rail heating will penetrate into the point interlocking. This liquid together with the possibly existing snow in the point interlocking can build a big block of ice that will freeze the point interlocking.
Free space of ≥ 70mm is needed below the lower edge of the point interlocking elements.
In case of a ballast bed it could be necessary to remove some ballast.
The connecting steel plates with the heating elements are placed underneath the switch rodding embedded in ballast. It is not necessary to fix them.
The distance between the heating-elements and the lower edge of the point interlocking is 40 – 50 mm.
The protective earthing is made by a short cable between the steel plates and the stock rail.