

# INSTALLATION INSTRUCTION

SECTION INSULATOR HI 25 with adjustable contact wire splice

Edition 2011/11



## Accessories for installation of the FLURY section insulator

- 1 Ring spanner 13 and 17 mm
- 1 Torque wrench 13 (25 Nm) and 17 mm (50 Nm)
- 1 Level gauge (Article number 655.141.000)
- 1 Metal saw
- 1 Straightening wood
- 1 Hammer

1 Flat nose pliers or gas pliers

1 Measuring scale

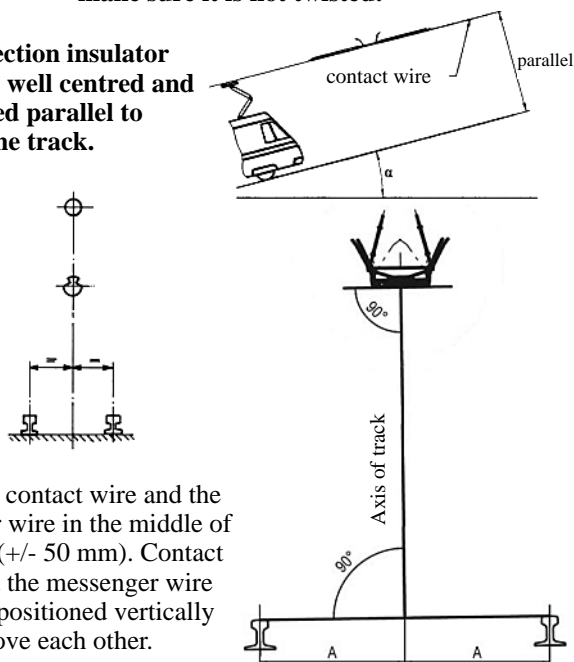
Additionally for:

- Cut-in the messenger wire insulator
- Replace of a used section insulator
- 1 Pulley block with 2 cable sockets

## Preparation of contact and messenger wire

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

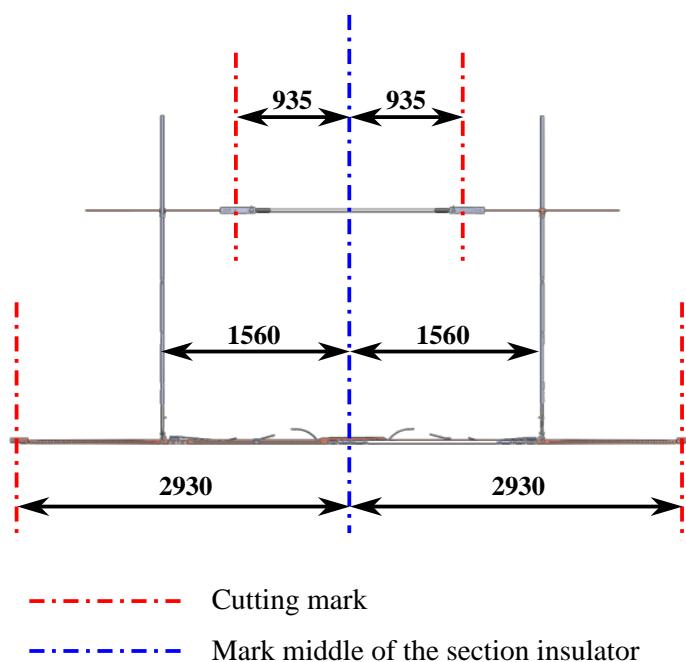
Each section insulator should be well centred and aligned parallel to the track.



Align the contact wire and the messenger wire in the middle of the track (+/- 50 mm). Contact wire and the messenger wire must be positioned vertically above each other.

## Marking instruction

Middle of the section insulator

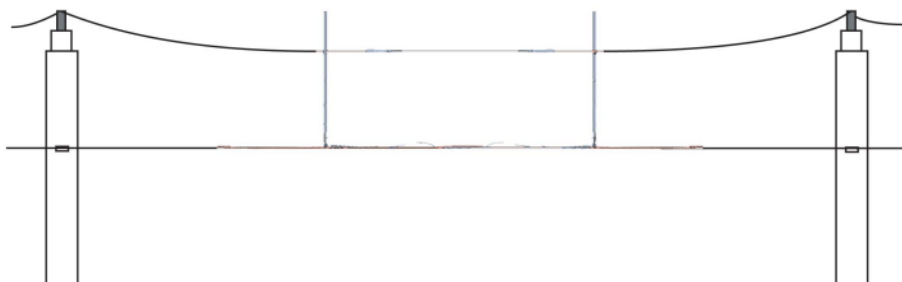


----- Cutting mark

- - - - - Mark middle of the section insulator

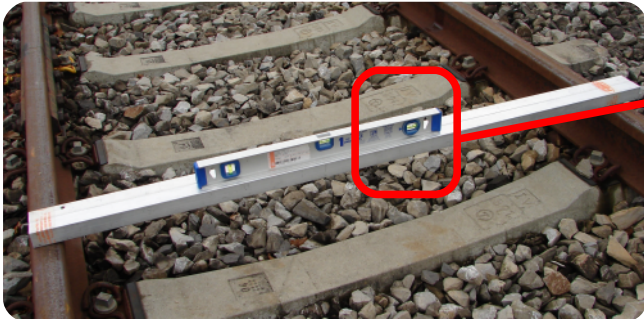
## Installation Location

We recommend installation of the section insulator in autotensioned systems. The installation location should be mid span.



# 1. Take the level of the track

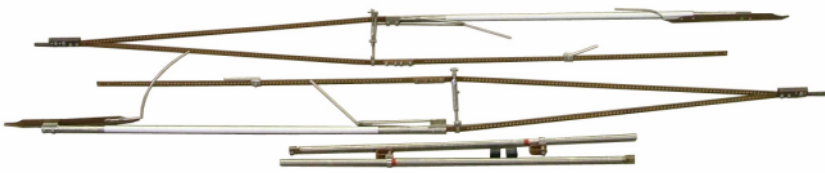
Place the level gauge as mentioned.



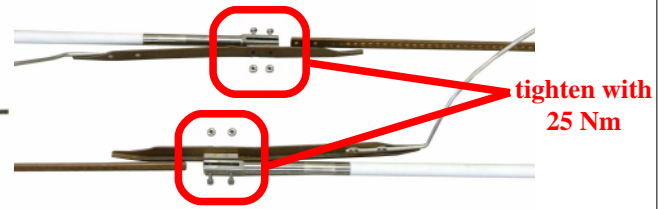
Measure the inclination of the track with a spirit level.

# 2. Installation preparation

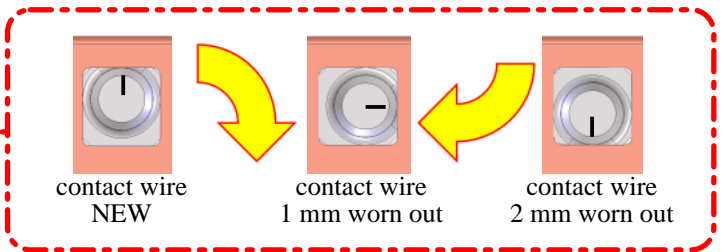
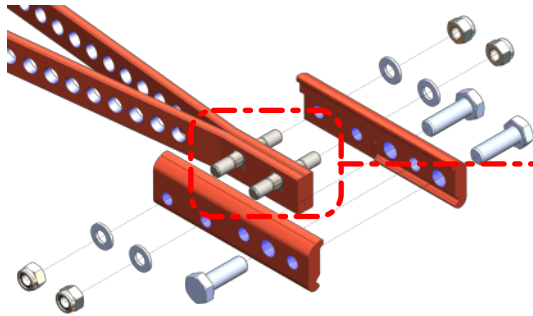
a) Check the delivered pieces.



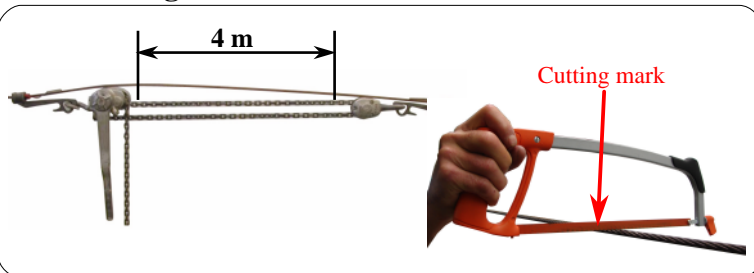
b) Assembly of the section insulator.



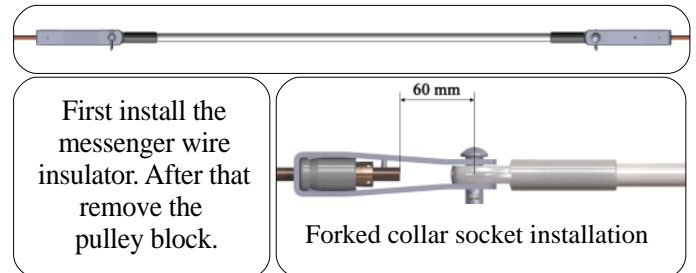
c) Setting of the adjustable contact wire splice. Measure first the wearing of the contact wire. After that, regulate the excentric axes.



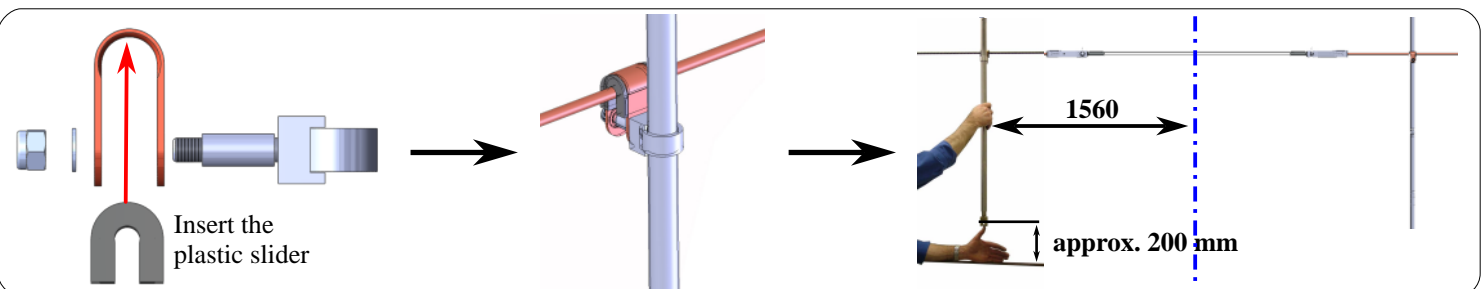
# 3. Tension the pulley block and cut the messenger wire



# 4. Install messenger wire insulator and forked collar sockets



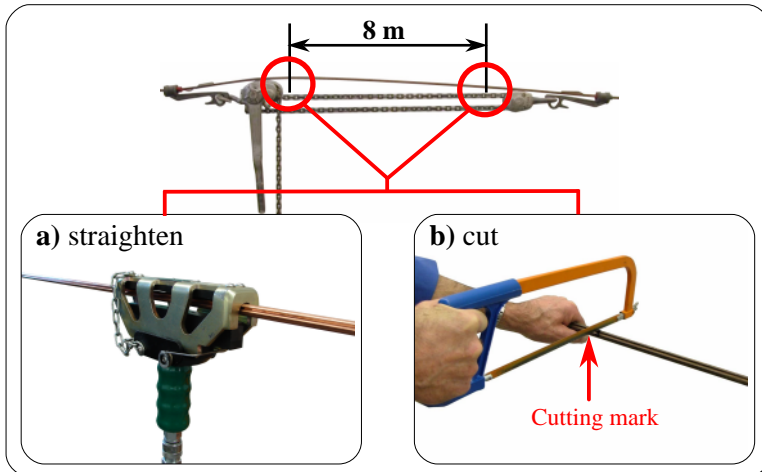
# 5. Install the spring dropper and adjust the approximate height



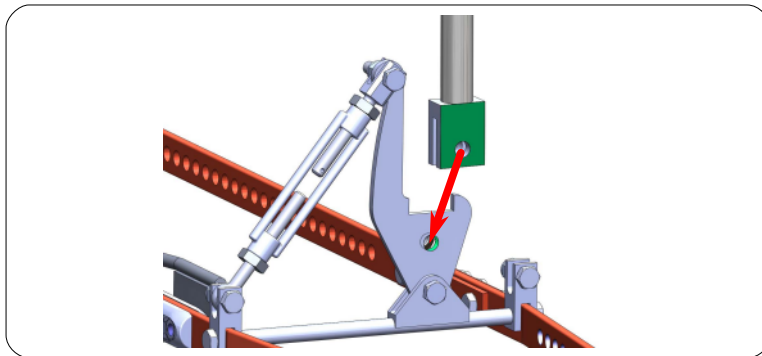
**! RISK OF DEATH !**

Do not begin to work on the overhead line before you have ensured that it is switched off and correctly grounded!

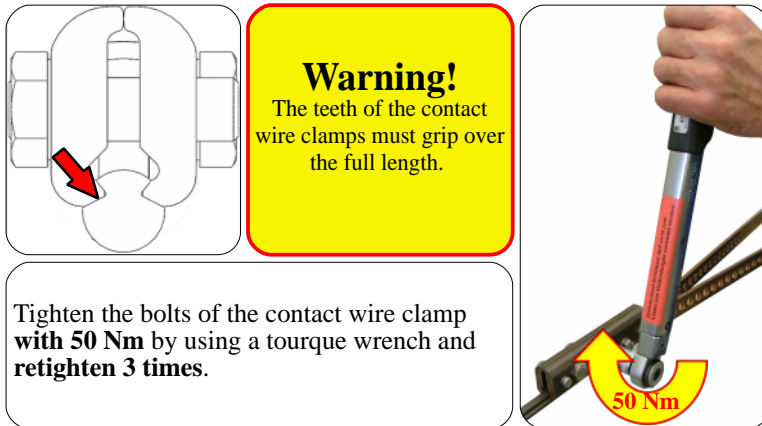
## 6. Tension the pulley block, straighten the contact wire at the mark and cut it



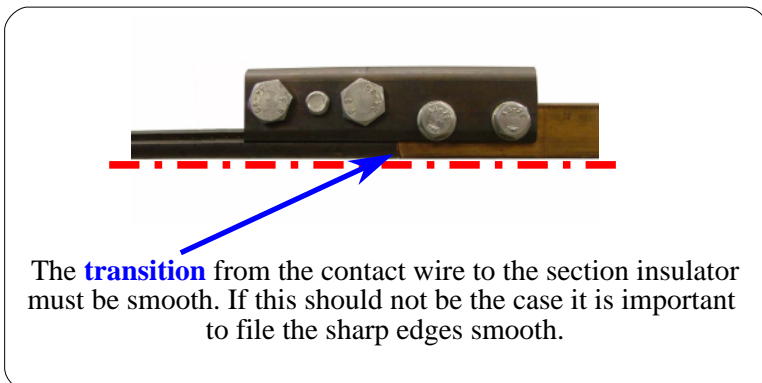
## 7. Install the section insulator on the spring dropper (25 Nm)



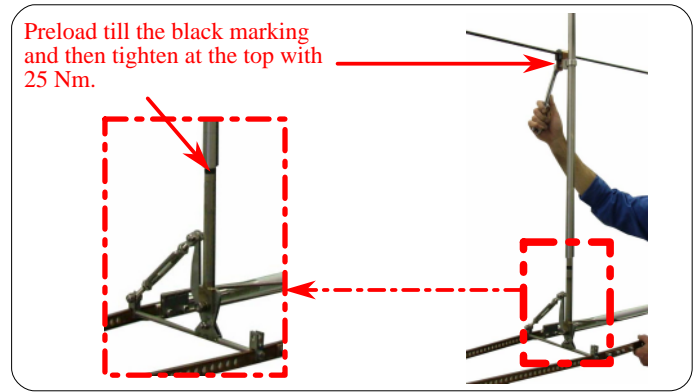
## 8a. Mount section insulator onto contact wire



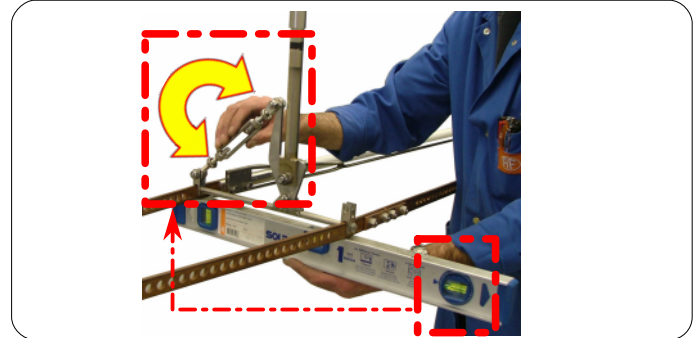
## 8b. Check transition



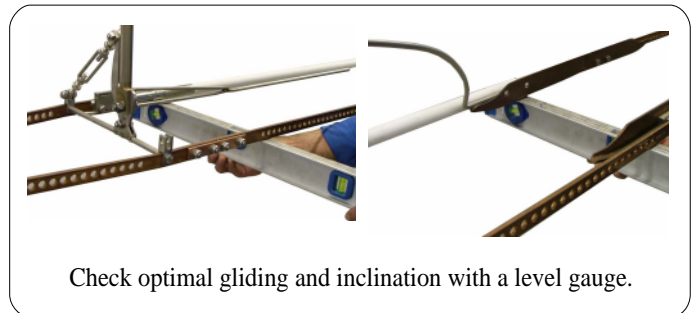
## 9a. Adjust height



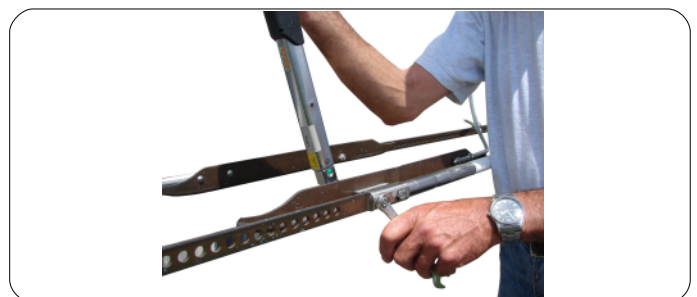
## 9b. Adjust inclination



## 10. Check gliding and inclination

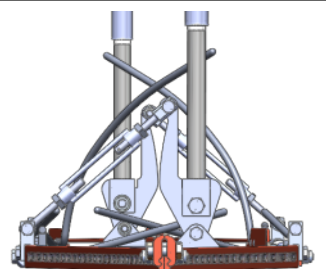


## 11. Tighten up bolts and nuts (25 Nm)

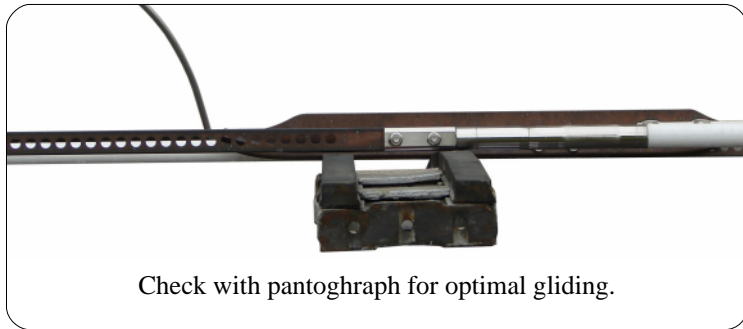


## 12. Check alignment of the section insulator by eye

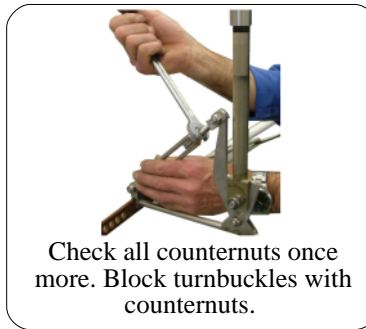
Make a visual check and ensure the section insulator is parallel to the track and that it does not lean to either side!



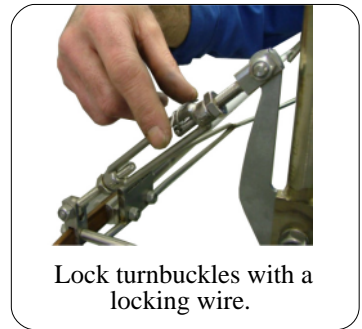
### 13. Check gliding



### 14. Block turnbuckles

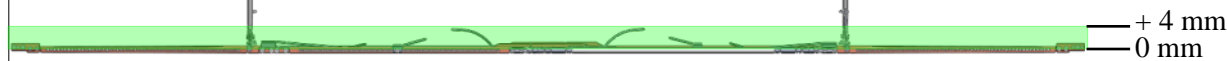


### 15. Secure turnbuckles



### 16. Check alignment

The bottom edge of the section insulator has to be between 0 and + 4 mm, the 0-line is the precise, theoretical contact wire height.



Also check the lateral alignment to the axis of track (+/- 50 mm) at the end points of the section insulator.

### Caution! Danger of accident if these points are not observed:

- The contact wire and messenger wire must lay vertically on each other at the installation location. Otherwise the hangers are not under continuous tension and optimal functioning is impossible. In extreme cases it may even occur that the current collector hooks into the runners at the spark gap which leads to damage.
  - The screws at the contact wire clamps must be retightened three times. Otherwise the teeth do not grip the contact wire completely. The contact wire could therefore slide out later and falling parts could cause damage of material or even injure people.
  - All screws and nuts must be tightened correctly according to the description. They could otherwise become loosened by vibration and cause malfunction of the overhead line.
  - The screws must be restrained with a ring wrench when tightening the conternuts at the contact wire clamps. The screws could otherwise get loosened when tightening the conternuts and this could cause the contact wire to slide out, damage material and injure people.
  - The runners and arcing horns of the section insulator must be correctly adjusted as described. Otherwise shocks might damage the section insulator or the carbon sliders.
  - Turnbuckles must be locked with conternuts and secured with locking wires. These could otherwise open and the resulting incorrect position of the section insulator could cause malfunction of the overhead line.
  - Should the protective plastic finish of Silicone or PTFE of one of our insulators be so severely damaged, either that the glass fiber inside is visible or that humidity and dirt can obviously penetrate, the insulator must be replaced immediately. Otherwise a high-voltage flash-over could damage the insulator and the overhead line.
- Arthur Flury AG rejects responsibility for any damage caused by not observing this installation instruction.**

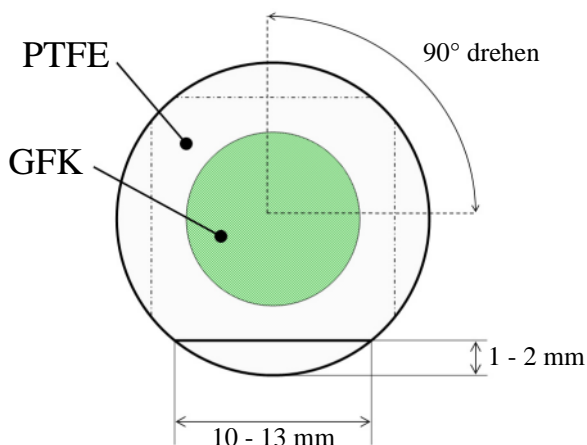
### Maintenance and Service

A well adjusted section insulator of Arthur Flury AG does not require any maintenance for a long period of time.

#### Insulator

In case of possible wear (max. 2 mm) the insulator rod can be turned 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 in the same direction. The insulator can be used in 4 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.

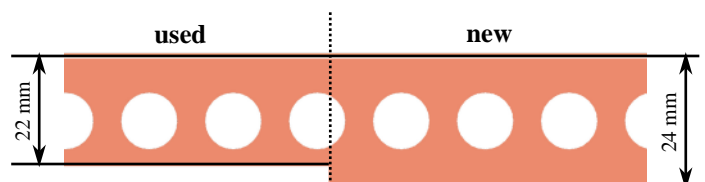


The PTFE cover of the insulating rod is cleaned well enough by rain water under normal circumstances. In case of exceptionally strong dirt accumulation (for instance from frequent diesel traffic, installation in a tunnel and so on) we suggest cleaning the insulator every 2-3 years with our Special Cleaner for High Voltage Insulators (order no 655.168.000).

#### Runners

The lifetime of the section insulator is limited by its runners. During the maintenance of the insulator also the abrasion of the runners has to be checked.

The section insulator must be replaced, once the thickness of the runners is eroded to 22mm or less.



### Recommendations and Trouble shooting of AF Insulators

#### Performance

The AF section insulator must provide a constant performance for passing current collectors and remain stable. Observe the suspension while passing current collectors. If one of the spring droppers should be blocked it has to be replaced immediately.

