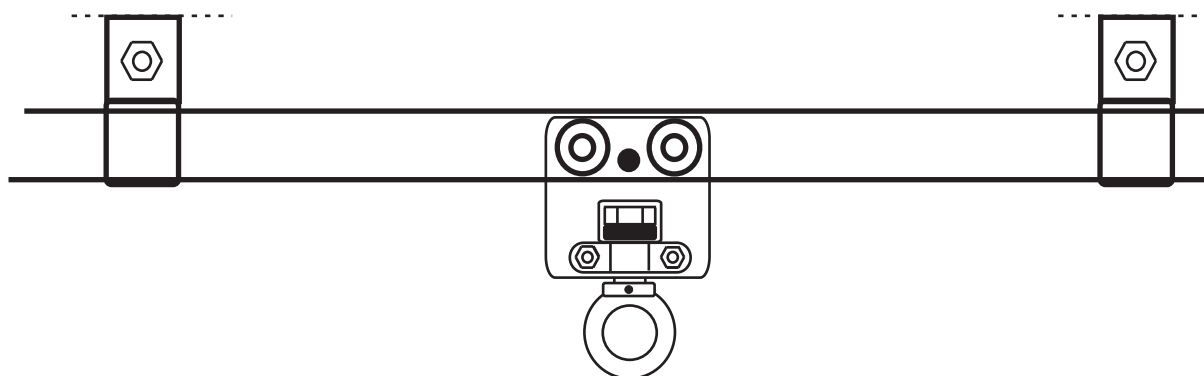


Personnel Fall Arrest System NIKO PSS 25-26-27

Horizontal Fall Arrest System with
steel track profiles NIKO



Installation and Operating Manual

Contents

1. General Instructions

- Manufacturer
- Distribution
- 1.1. Purpose

2. Safety Instructions

- 2.1. Terms of use

3. Product Description

- 3.1. Components
- 3.2. Standards
- 3.3. Assembly

4. System Elements

- 4.1. Use of components
- 4.2. Track suspension
- 4.3. Trolleys
- 4.4. Support brackets & stopper
- 4.5. Switches
- 4.6. Example of line
- 4.7. Assembly regulations

5. Safety Instructions

6. Servicing

- 6.1. Checklist

1. General Instructions

Manufacturer

Helm Hellas S.A
PO Box 209
20100 Korinthos
Greece
Tel: 0030-27410-85803
Fax: 0030-27410-25368
e-mail: info@niko.eu.com

Distribution Austria
NIKO VertriebsgmbH
Hainsfeldstraße 3
A-2564 Weissenbach
Tel: 0043-2674-81005
Fax: 0043-2674-81006
e-mail: office.at@niko.eu.com

Distribution U.K.
NIKO Limited
Unit 12, Southfield Road
Kineton Road Ind.Estate
CV47 0FB Southam
Warwickshire
Tel: 0044-19268-13111
Fax: 0044-19268-15599
e-mail: sales@niko-ltd.co.uk

Distribution Germany
NIKO TECHNIK GmbH
Friedrichstrasse 269A
42551 Velbert
Tel: 0049-2051-604736
Fax: 0049-2051-604738
e-mail: office.de@niko.eu.com

Distribution U.S.A.
NIKO TRACK
300 Highpoint Avenue
Portsmouth
RI 02871
Tel: 001-401-6837525
Fax: 001-401-6836450
e-mail: sales@nikotrack.com

1.1. Purpose

The fall arrest system NIKO PSS 25 is to be used exclusively for the safety of persons suspended after a fall.

The system does not replace personal safety harnesses (PPE – personal protective equipment).

Generally the fall arrest system is suited for maximum 3 persons per meter length of line. The maximal number of persons must be adjusted according to the requirements as follows:

- a.) Determination of the maximal number of persons
- b.) The supporting structure must be designed to withstand the worst case scenario, i.e. if all persons operating the system were to fall at once.
- c.) Calculate 10kn dynamic load affecting the system (or according to chart at 26.B06P) for one person: for each additional person add 1kn.
- d.) it is important to conduct an analysis of the rescue options for the maximum number of persons.

2. Safety Instructions

2.1. Terms of Use

1 person permitted on one trolley.

Each safety trolley must only be used in combination with a personal safety harness.
Dampers/shock absorbers are to be used.

- a) Safety harnesses must be worn during use in accordance with EN 355.
- b) Be aware of the required fall and arrest distances.
- c) Distance to collision:

This means the minimum space required to ensure that a secured person does not fall onto any obstacle. The fall height must always be reduced to a minimum. The calculation of the fall height depends on the system used: connectors/fasteners, dampers/shock absorbers, distortion of safety belt.
Minimum distance from the impact point (incl. body height) + 1m to floor or obstacle.

!!! Pay attention to spurs, mouldings or other construction obstacles !!!

3. Product Description

3.1. Components

Horizontal running track system with support brackets for wall or ceiling mounting as well as mounting to a steel beam above.

The internally running trolleys are fitted with 4 multi ball bearing rollers and a safety bolt to prevent the trolley falling due to breakage of the axle or bearings.

The track system can be assembled in a straight line or follow a specified course using several types of bends. By dividing the line in several directions, switches are installed which can lead into one or more lines. The trolleys are available in two different types.

Trolley T40P with vertical swivel bolt 360° and ring nut DIN 582.

Trolley T10P with hole (for the use of this trolley as person carrier you have to use a PPE rotating swivel). Track stoppers of type 25.X01 are screwed at the open end of the track. Swivel switches are delivered either with manually or automatically changing switch tongues. The operation can be carried out manually by switch lever or by lever with pulling chain.

3.2. Standards

The components comply with EN 795 class D.

3.3. Assembly

The track system is constructed for vertical assembly. The lines can be in straight or curved.

Mounting: The tracks are attached to steel beams or masonry with support brackets or adjustable brackets. The mounting distances are given at 4.1.

**Warning: Each mounting point must be capable of holding a load of 10KN.
Except bracket 26.B06P (look at the chart at page 5)**

During assembly the support structure must be checked and the strength of the mounting points tested. At assembly onto steel construction's you must use screws of DIN 933 M16 (8.8).

The free standing track ends are allowed to jut out over the last support bracket according to chart page 15 / 4.6. If this distance is exceeded then additional support brackets must be installed.

Free standing track ends and track joints are to be separated by at least a full section. See 4.7 assembly regulations.

For the assembly of bends, a support bracket should be fitted in the centre of each bend. The exact positioning of the support brackets is depicted at 4.6. (Example of line) and must be followed. Since the trolleys have no brake mechanism, ascending or descending track requires a different type of support or other restraint method. Please consult the manufacturer for recommendations and ensure proper testing by a qualified person.

(All non-horizontal lines require an extra examination)

The switches are connected into the system via the track joints and be positioned immediately before the joint. Track end stops must be used on open-ended track and should be secured with a steel bolt and nyloc DIN 933 M8x80 to prevent horizontal shift.

Torque for double adjustable wall bracket Type 26.B06P

The torque (AZW) for the mounting screw M16 8.8 is calculated as follows:

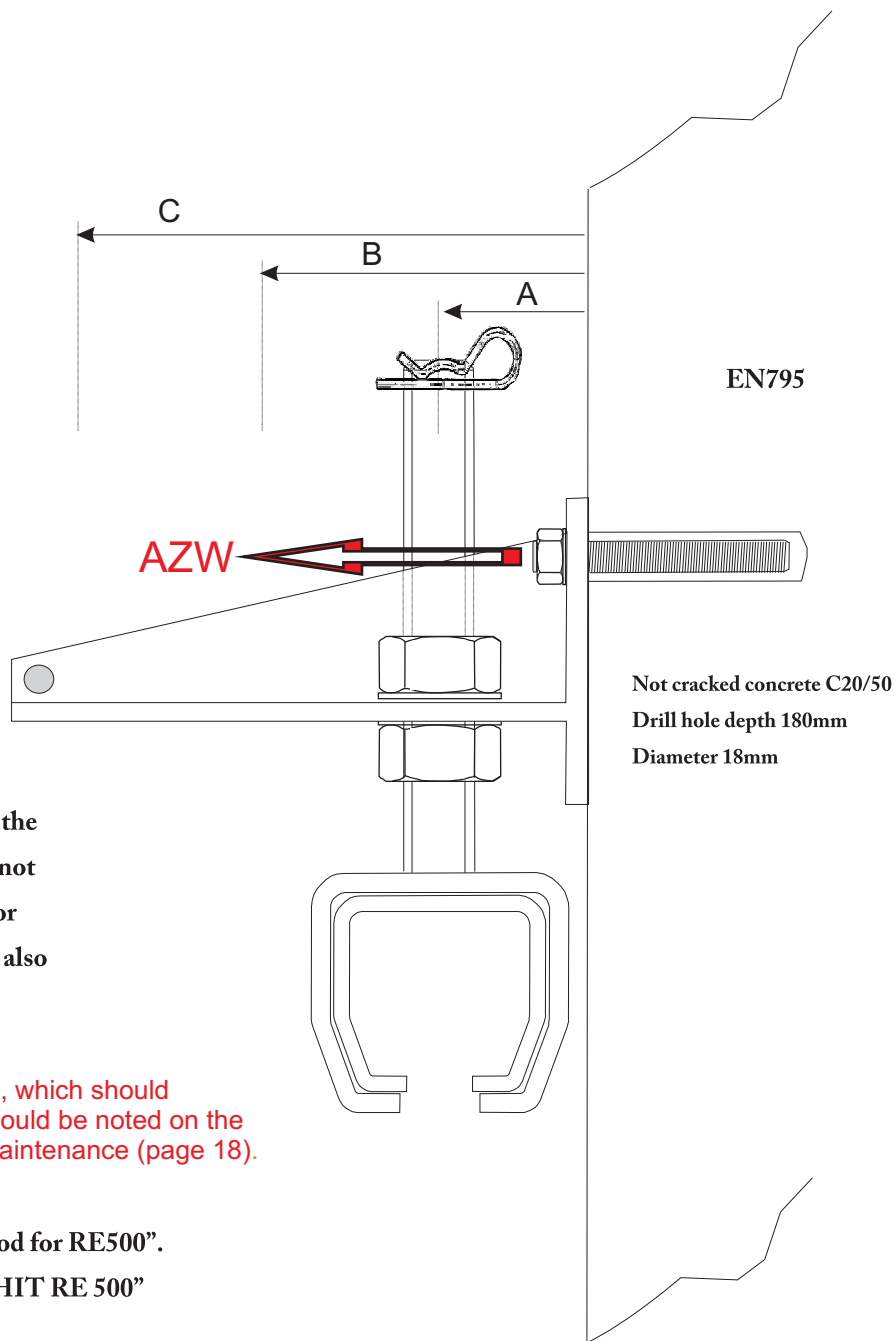
- A Projection up to 45mm **10 KN**
- B Projection up to 110 mm **17 KN**
- C Projection up to 165 mm **35 KN**

The torque should be determined in line with the instructions above before mounting and must not be changed either after mounting is complete or after handover to operator. The setting should also be noted for purposes of servicing and testing.

Once fixed, mark the position of the bracket, which should remain the same at all times. Positioning should be noted on the checklist and periodically checked during maintenance (page 18).

We recommend for mounting screw "Anchor rod for RE500".


As mounting adhesive we recommend "HILI HIT RE 500" on the basis of specification ETA-04/0027.



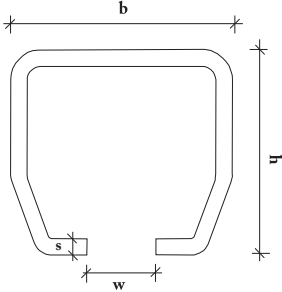
4. System Elements


4.1. Use of Components Track profiles and track bends

Material for accessories and components
Steel quality St37_2 according to DIN 17100
Ball bearing material AISI 1015, Surface hardness 58-62 HRC
Surface galvanised & yellow chromated.




Track "NIKO", standard 6000 mm lengths

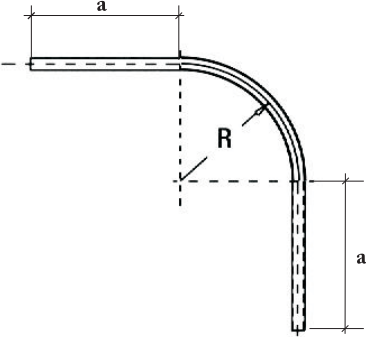





| Track Art.Nr. | b | h | s | w |
|-------------------------|-----|----|-----|----|
| 25.000 galv. | 65 | 60 | 3,6 | 18 |
| 25.060 sendzimier galv. | 65 | 60 | 3,6 | 18 |
| 26.000 galv | 80 | 75 | 4,5 | 22 |
| 27.000 galv | 110 | 90 | 6,5 | 25 |



Track bends






| Standard bends Art. Nr. | R | +/- | a |
|--------------------------|------|-----|-----|
| 25.C06 galv. | 580 | 10 | 500 |
| 25.C06W sendzimier galv. | 580 | 10 | 500 |
| 26.C08 galv. | 770 | 20 | 500 |
| 27.C10 galv. | 1035 | 20 | 500 |

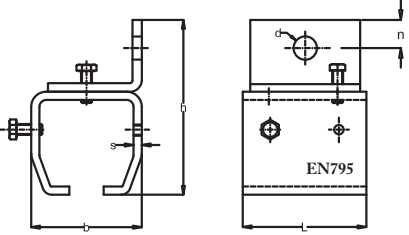
4. System Elements


4.2. Profile suspension Support brackets

! In the event of a fall, the support brackets and dowels should be examined!



Wall support bracket





| Wall support bracket Art. Nr. | b | h | s | L | n | d |
|-------------------------------|-----|-----|----|-----|----|----|
| 25.B01P | 80 | 125 | 6 | 90 | 18 | 17 |
| 26.B01P | 100 | 160 | 8 | 110 | 25 | 22 |
| 27.B01P | 118 | 210 | 10 | 120 | 32 | 27 |

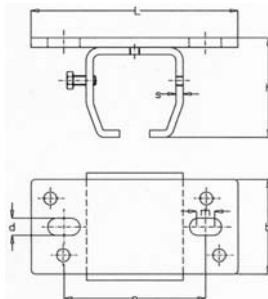
4. System Elements

4.2. Profile suspension

Support brackets



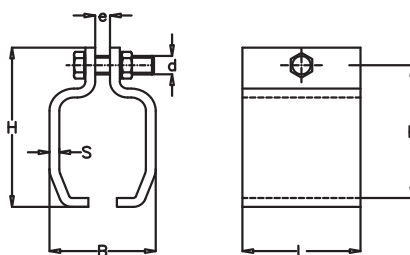
Ceiling support bracket



| Ceiling support bracket Art. Nr. | b | h | s | L | m | d |
|----------------------------------|-----|-----|----|-----|----|----|
| 25.B02P | 80 | 83 | 6 | 170 | 10 | 17 |
| 26.B02P | 100 | 103 | 8 | 210 | 12 | 22 |
| 27.B02P | 118 | 146 | 10 | 260 | 23 | 22 |



Split support bracket for flat steel



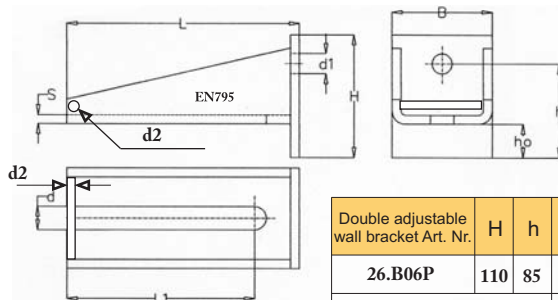
| Split support bracket Art. Nr. | B | h | s | L | e | d |
|--------------------------------|-----|-----|----|-----|----|-----|
| 25.B03P | 77 | 132 | 6 | 90 | 6 | M16 |
| 26.B03P | 96 | 150 | 8 | 110 | 8 | M16 |
| 27.B03P | 110 | 180 | 10 | 120 | 10 | M16 |

Adjustable support brackets for height and lateral adjustment



Double adjustable wall bracket

! In the event of a fall, the double adjustable wall brackets and bolts must be examined and changed if necessary!




| Double adjustable wall bracket Art. Nr. | H | h | s | B | ho | b | L | L1 | d1 | d2 |
|---|-----|----|---|---------|---------|----|-----|-----|----|----|
| 26.B06P | 110 | 85 | 8 | 90 | 31 | 21 | 208 | 168 | 18 | 8 |
| Suitable for adjustable brackets | | | | 25.B04P | 26.B04P | | | | | |

4. System Elements

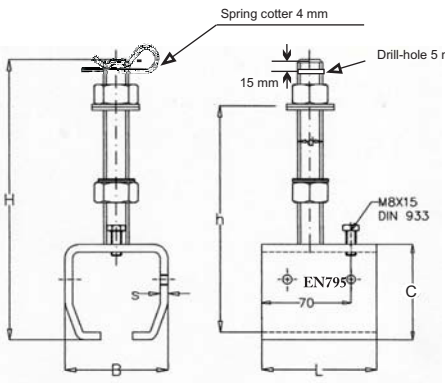
4.2. Profile suspension


Support brackets

Adjustable support brackets for height and lateral adjustment



Adjustable bracket






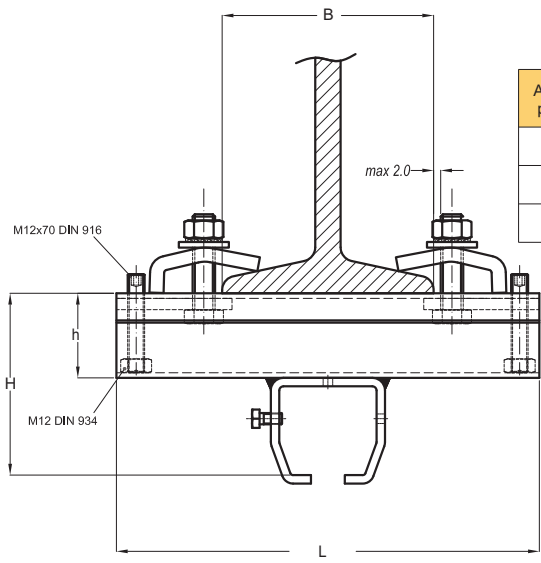
| Adjustable bracket Art. Nr. | H | h | s | B | L | C |
|-----------------------------|-----|-----|---|-----|-----|----|
| 25.B04P | 215 | 140 | 6 | 82 | 90 | 75 |
| 26.B04P | 292 | 183 | 8 | 100 | 110 | 93 |


Suitable for adjustable wall bracket 26.B06P

Components for I-Beam mounting



Adjustable joint clamp, parallel

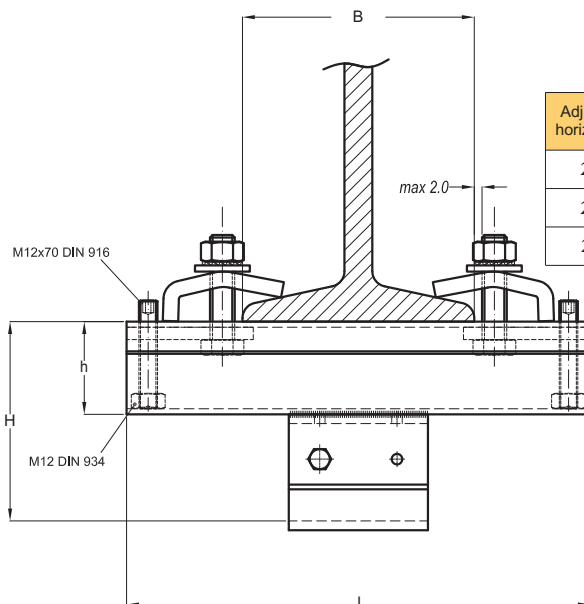




| Adj. joint clamp, parallel Art. Nr. | L | B | H | h |
|-------------------------------------|---------|---------|-----|-----|
| 25.B35P | 300-400 | 160-220 | 129 | 60 |
| 26.B35P | 300-400 | 160-220 | 146 | 60 |
| 27.B35P | 300-500 | 160-320 | 214 | 110 |

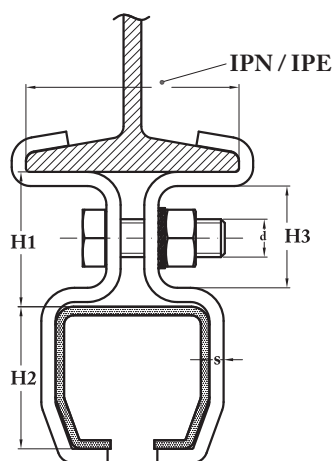
Components for I-Beam mounting

Adjustable joint clamp, horizontal



| Adj. joint clamp, horizontal Art. Nr. | L | B | H | h |
|---------------------------------------|---------|---------|-----|-----|
| 25.B36P | 300-400 | 160-220 | 129 | 60 |
| 26.B36P | 300-400 | 160-220 | 146 | 60 |
| 27.B36P | 300-500 | 160-320 | 214 | 110 |

Split suspension bracket for I-beam



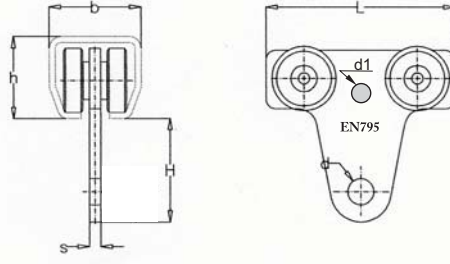
| Split suspension bracket for track profile | H1 | H2 | H3 | s | d |
|--|---------|---------|---------|----|-----|
| 25.000 | 56 | 60 | 42 | 6 | M16 |
| 26.000 | 63 | 75 | 44 | 8 | M16 |
| 27.000 | 90 | 110 | 66 | 10 | M16 |
| For I-beam IPN / IPE | 25.000 | 26.000 | 27.000 | | |
| 100 (80) | 25.B10P | | | | |
| 120 (100) | 25.B12P | | | | |
| 140 (120) | 25.B14P | | | | |
| 160 (140) | 25.B16P | 26.B16P | | | |
| 180 (160) | 25.B18P | 26.B18P | | | |
| 200 (180) | 25.B20P | 26.B20P | 27.B20P | | |
| 220 (200) | 25.B22P | 26.B22P | 27.B22P | | |
| 240 (220) | 25.B24P | 26.B24P | 27.B24P | | |
| 260 (240) | 25.B26P | 26.B26P | 27.B26P | | |

4.3. Trolleys



4-wheel Trolley

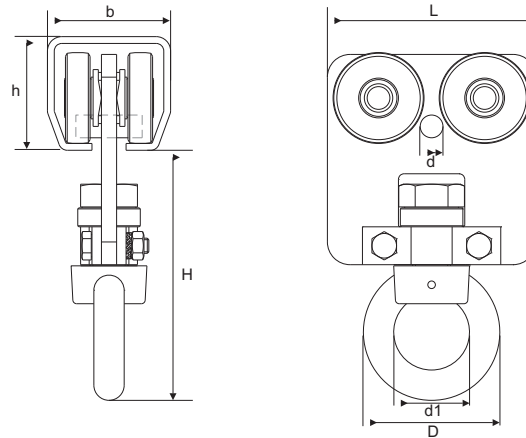
! Use of this trolley as a person carrier requires a PPE with a rotating swivel !



| Trolley Art. Nr. | H | h | s | b | L | d | d ₁ |
|------------------|-----|-----|----|----|-----|----|----------------|
| 25.T10P | 62 | 60 | 10 | 65 | 120 | 18 | 12 |
| 26.T10P | 70 | 75 | 12 | 80 | 145 | 22 | 12 |
| 27.T10P | 108 | 110 | 15 | 90 | 210 | 26 | 12 |



4-wheel Trolley for persons with rotating eye nut, DIN 582.



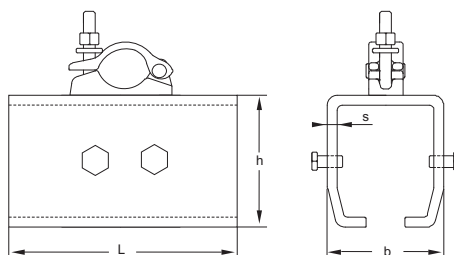
| Trolley Art. Nr. | H | h | b | L | d | d ₁ | D |
|------------------|-----|-----|----|-----|----|----------------|-----|
| 25.T40P | 122 | 60 | 65 | 110 | 12 | 12 | 72 |
| 26.T40P | 145 | 75 | 80 | 150 | 12 | 12 | 90 |
| 27.T40P | 163 | 110 | 90 | 200 | 12 | 12 | 108 |

4.4. Splice joints, brackets + track end stop

Splice joint for tracks



Scaffolding splice joint for mounting on scaffold tube 1½", 48,30 mm



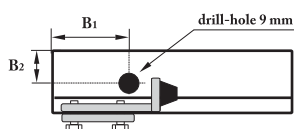
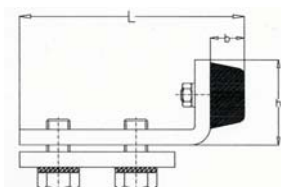
| Scaffolding splice joint Art. Nr. | b | h | s | L |
|-----------------------------------|-----|-----|----|-----|
| 25.B80P | 80 | 75 | 6 | 180 |
| 26.B80P | 100 | 93 | 8 | 200 |
| 27.B80P | 114 | 134 | 10 | 250 |

Track End Stops



Track end stop

In addition to the track end stop a safety screw is required (see sketch).




Positioning of safety screw M8x80

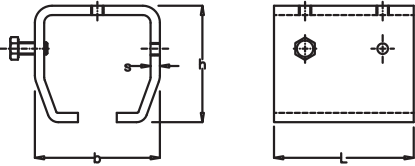
| Track endstop Art. Nr. | L | b | h | B ₁ | B ₂ |
|------------------------|-----|-----|----|----------------|----------------|
| 25.X01P | 80 | 75 | 6 | 110 | 30 |
| 26.X01P | 100 | 93 | 8 | 135 | 30 |
| 27.X01P | 114 | 134 | 10 | 135 | 50 |

4.4 Support brackets & stopper


Support bracket without mounting flange




Bracket for welding on existing building frame.

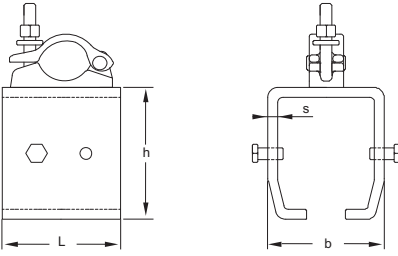


| Support bracket Art. Nr. | b | h | s | L |
|--------------------------|-----|-----|----|-----|
| 25.B00P | 80 | 75 | 6 | 90 |
| 26.B00P | 100 | 93 | 8 | 110 |
| 27.B00P | 114 | 134 | 10 | 120 |






Scaffolding support bracket for mounting of Scaffold tube 1½", 48,30 mm




| Scaffolding support bracket Art. Nr. | b | h | s | L |
|--------------------------------------|-----|-----|----|-----|
| 25.B90P | 80 | 75 | 6 | 90 |
| 26.B90P | 100 | 93 | 8 | 110 |
| 27.B90P | 114 | 134 | 10 | 120 |

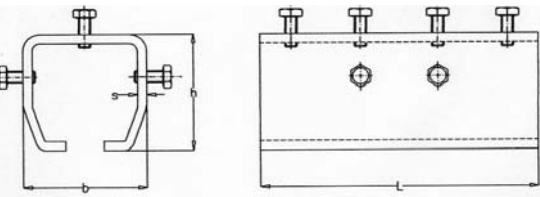


4.4 Support brackets & stopper


Splice joints for Track



Splice joint for tracks



| Splice joint Art. Nr. | b | h | s | L |
|-----------------------|-----|-----|----|-----|
| 25.B49P | 80 | 75 | 6 | 180 |
| 26.B49P | 100 | 93 | 8 | 200 |
| 27.B49P | 114 | 134 | 10 | 250 |



4.5. Switches



Tongue switches without bends

Manual operation
left or right running angle 30°



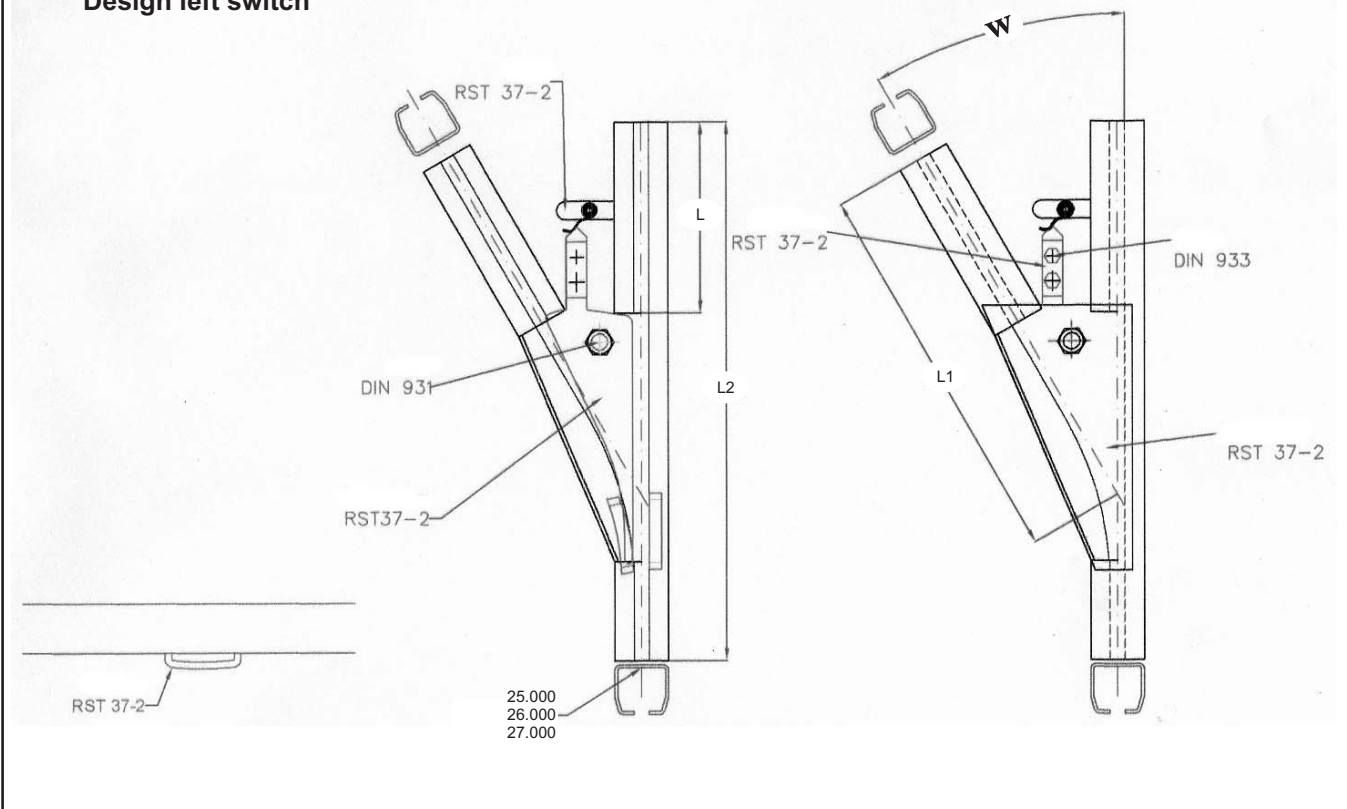
Switch left

| Tongue switch w/o bend Art. Nr. | L | L ₁ | L ₂ | W |
|---------------------------------|-----|----------------|----------------|-----|
| 25.A05 | 220 | 500 | 650 | 30° |
| 26.A05 | 280 | 550 | 750 | 30° |

Switch right

| Tongue switch w/o bend Art. Nr. | L | L ₁ | L ₂ | W |
|---------------------------------|-----|----------------|----------------|-----|
| 25.A04 | 220 | 500 | 650 | 30° |
| 26.A04 | 280 | 550 | 750 | 30° |

Design left switch



4.5. Switches

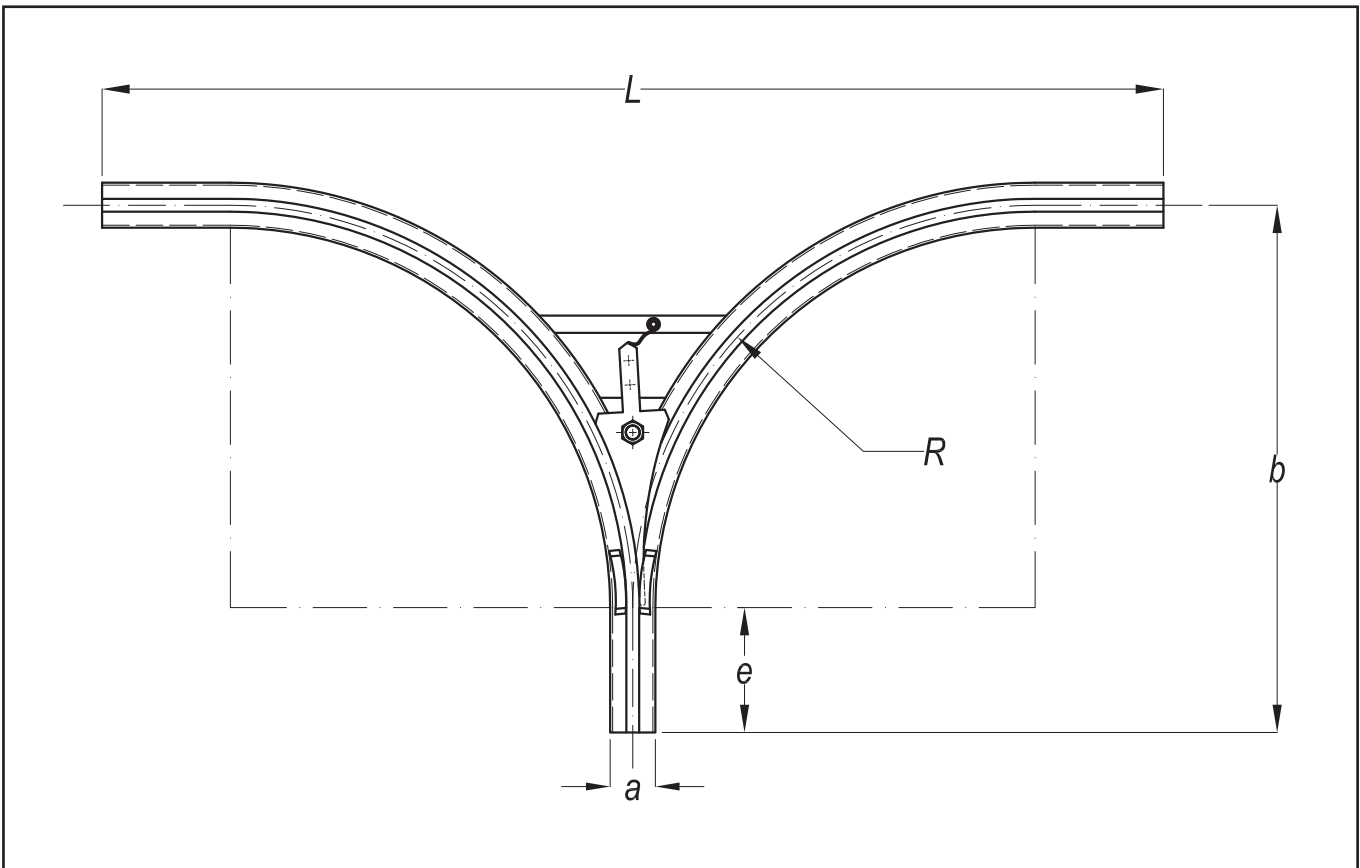


Tongue switch complete with Bends

Manual operation
left and right running in angle 90° bends
complete with two 90° bends



| Tongue switch Art. Nr. | a | b | L | e | R |
|---------------------------|----|------|------|-----|------|
| 25.A47 | 65 | 760 | 1600 | 180 | 580 |
| 26.A47 | 80 | 980 | 2000 | 210 | 770 |
| 27.A47 | 90 | 1335 | 3000 | 300 | 1035 |

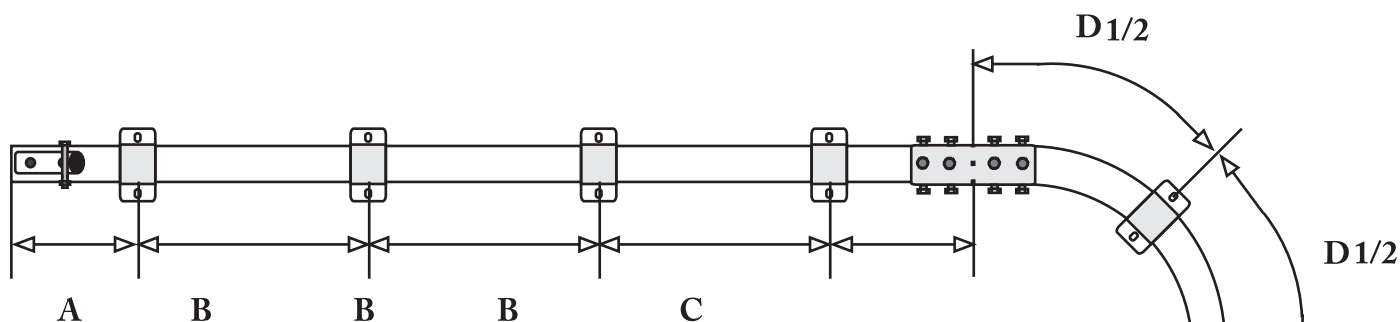


4.6. Example of line

The mounting points are shown in the diagram below.

Measurements given are maximum distances.

The example below is the top view of a system mounted with ceiling brackets.



A = max Cantilever end shown in chart

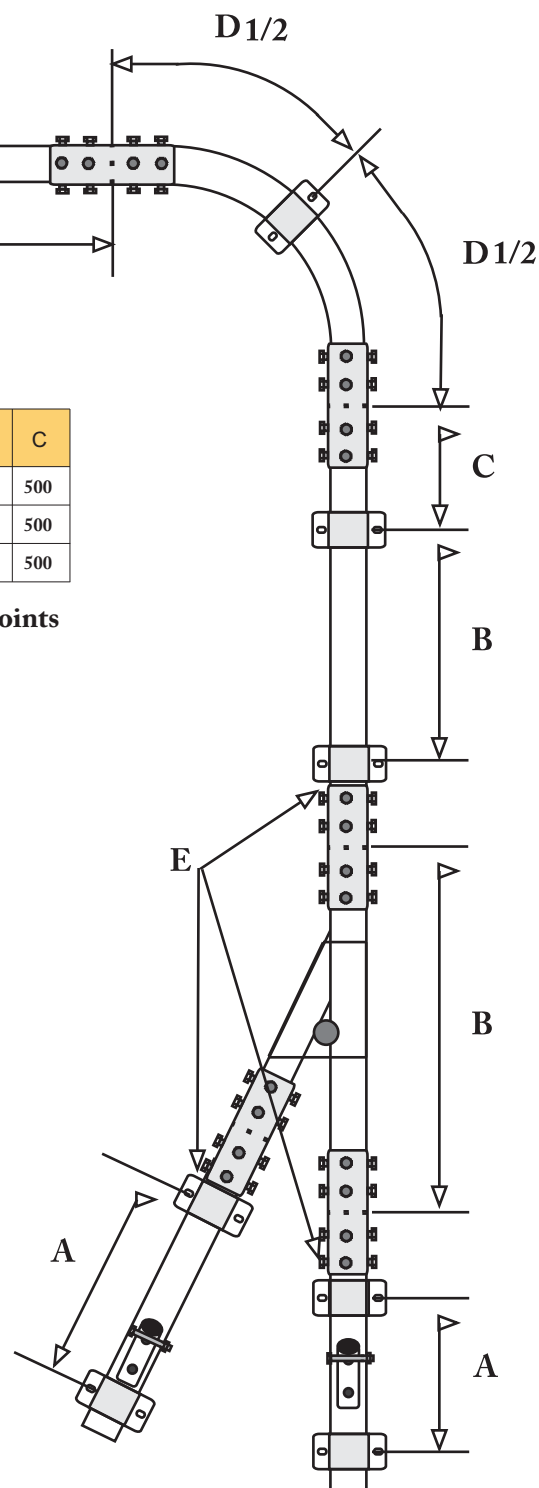
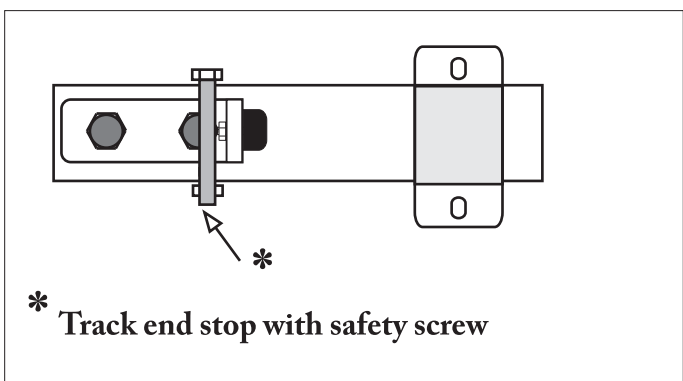
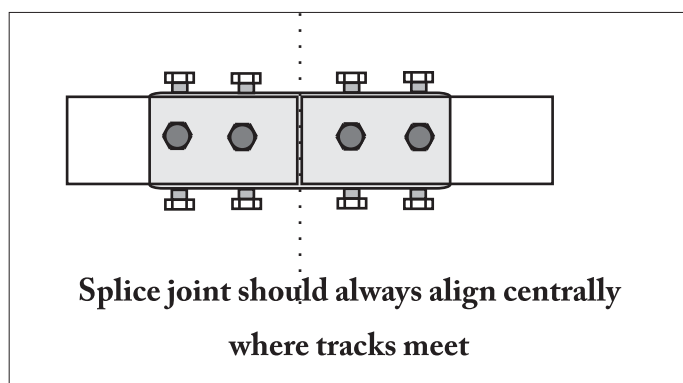
B = support centres in max mm

C = max distance between support & splice joint

D = Middle of bend max 1000 mm

E = Switch support points are positioned immediately after the splice joints

| Mounting maximum distances | B | A | C |
|----------------------------|------|-----|-----|
| 25.000 | 1100 | 300 | 500 |
| 26.000 | 1600 | 400 | 500 |
| 27.000 | 2800 | 500 | 500 |

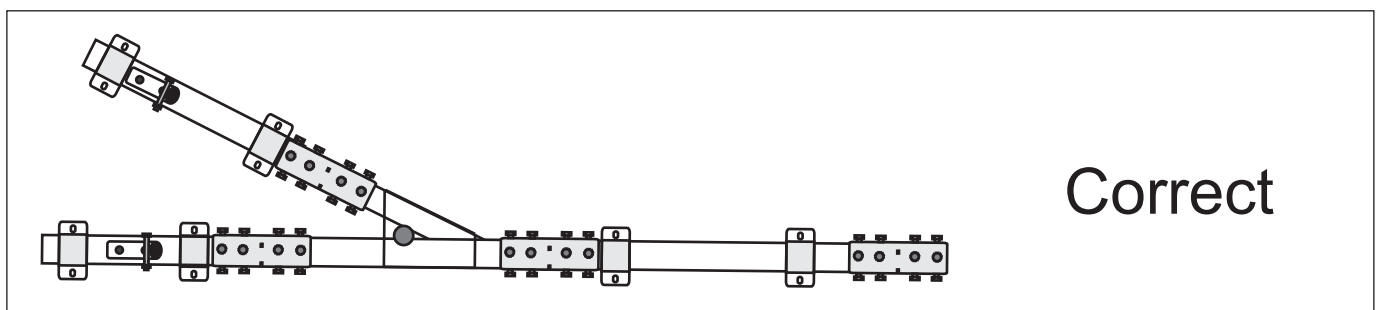
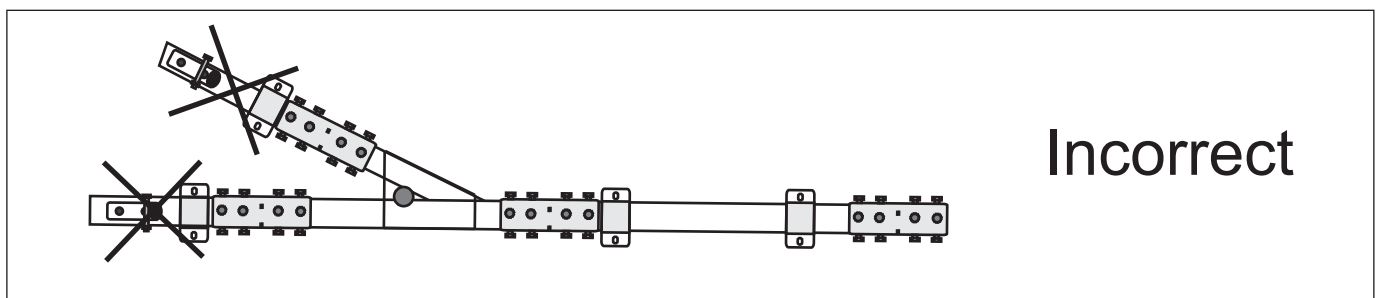
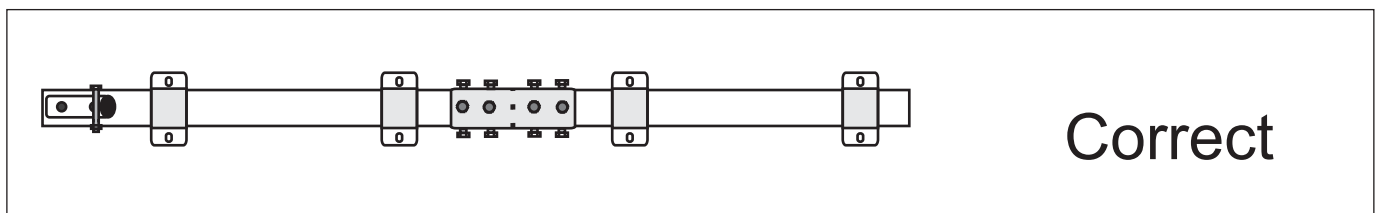
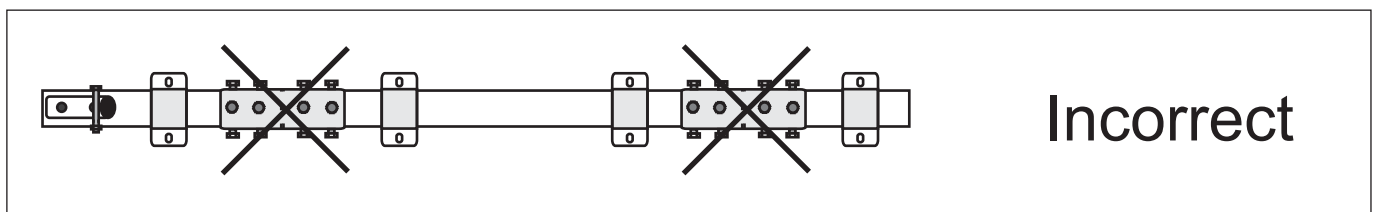


4.7. Assembly regulations

Please note the specified points in the diagram below.

Do not place track joints, bends or switches in a cantilever or in an edge section.

The same goes for track bends and switches.



Special constructions are only permitted after proper investigations and written approval from an authorised agency.

5. Safety Instruction

All mounting points must be set up as shown in example 4.6. The manufacturer takes no responsibility for incorrect assembly. Ensure all parts are correctly aligned at track crossings. Correct alignment of the parts will produce the best running quality. After assembly of the support brackets, the track is pushed into the support brackets and fixed using the overhead security screws. Poor fixing of the tracks may lead to uneven pressure, causing the track to slide out out. (Risk of falling).

The standard trolley for fall arrest application is T40P. The use of T10P trolleys (designed for carrying materials) requires a PPE rotating swivel in order to carry personnel.

6. Servicing

All Fall Arrest systems NIKO PSS 25-26-27 are subject to repeated inspection. The inspection intervals depend on the use and demands placed on equipment.

Basically the following minimum intervals are to be maintained:

For safety devices that are used no more than once a month: annual examination in accordance with checklist.

For safety devices used once a week: quarterly examination in accordance with checklist

For safety devices used daily, such as high rope courses & event facilities; weekly examination in accordance with checklist

Special installations must be approved by an authorized inspection office and should be dealt with separately.

6.1. Examination Checklist PSS 25-26-27

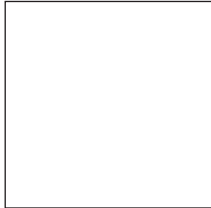
All examinations of the fall arrest system NIKO PSS 25-26-27 must be documented in this list.

| Part | Tested: | Complies: | Comments |
|---|---------|-----------|----------|
| Support brackets | | | |
| Screw connections to substructure | | | |
| Fixing screw | | | |
| Observe yielding | | | |
| After fall (change brackets and dowels) | | | |
| Projection up to the wall bracket 26.B06P | | | |
| Track profile | | | |
| Corrosion | | | |
| Material wear out | | | |
| Track crossings | | | |
| Fixing | | | |
| Track joints | | | |
| Positioning | | | |
| Fixing | | | |
| Track bends | | | |
| Corrosion | | | |
| Material wear out | | | |
| Track crossings | | | |
| Fixing | | | |
| Switches | | | |
| Corrosion | | | |
| Axle screw wear out and play | | | |
| Switch tongue function and wear out | | | |
| Switch lock function and screw connection | | | |
| Wear out & position of switch tongue support holder | | | |
| Crossings and position of the track joints | | | |
| Screw connection of track joints | | | |
| Track stopper | | | |
| Screw connection and position | | | |
| Security screw positioning | | | |
| Rubber buffer | | | |
| Trolleys | | | |
| Running quality | | | |
| Bearing play | | | |
| Position of carrying screws | | | |
| Position of clip screws | | | |
| Wear out on eye nut | | | |
| Wear out on trolley body | | | |
| Corrosion | | | |
| Other | | | |
| Equipment examined on: | | | |
| Permitted for use: Yes <input type="checkbox"/> No <input type="checkbox"/> | | | |
| Examiner: | | | |

Fall Arrest System PSS 25-26-27

Mechanism tested according to EN 795 Class D
Test. cert. No. TÜV-A- MHF/FÖT-1/04/FT04-026

Use of the system is permitted only by instructed persons.
Maximum loading weight respectively 100kg respectively 1 trolley.
Loads and persons run along separate tracks.
Pay attention to the operation instructions.

Permitted for  Persons

NIKO Vertriebsgesellschaft m.b.H.
Hainfelderstraße 3, A-2564 Weissenbach
Tel.: 0043-2674-81005

Fall Arrest System PSS 25-26-27

Test. cert. No. TÜV-A- MHF/FÖT-1/04/FT04-026

Year of Manufacture:

System No.:

Inspection Office:

Next examination due:

NIKO Vertriebsgesellschaft m.b.H.
Hainfelderstraße 3, A-2564 Weissenbach
Tel.: 0043-2674-81005

MEMO

www.niko.eu.com