

## Technical Information – SIRIUS Variant 1

**Installation instructions**  
**Maintenance instructions**

**EN 1176-1**  
**EN 1176-1**

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ps-zert



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**Fig. 1 - SIRIUS variant 1**

Product no. 3535002

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## 1 General information

The work described must be carried out by technical personnel (min. 3 persons).

The framework unit is anchored on a hot-dip galvanised square tube frame. Concrete work is not required, meaning any change of location can be realised easily without removing foundations or leaving them buried in the soil.

### Dimensions

Unit space area	5.19 x 8.45 m
Safety space area	8.66 x 12.16 m
Height	3.48 m

### Age group

6 years and older

### Number of users

43 children

### Maximum free drop height

2.78 m

## 2 Surface conditions

Please refer to EN 1176-1 with regard to the surface type in the play area. Sand, wood chips, gravel and HIC-tested synthetic fall protection surfacing are, however, permitted. We recommend a 400 mm thick deposit of gravel (grit size 2 – 8 mm) or sand (grit size 0.2 - 2 mm).

**Fall protection must be provided over the entire safety area, including within the unit itself!**

Where synthetic fall protection surfacing is used, it must be ensured that all areas relevant to maintenance are accessible at all times (see maintenance instructions as of page 15). smb should be consulted if necessary.

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### **3 Mounting tools**

**Tools provided:**

- 1 x special socket spanner, 32 mm A/F with angled extension
- 1 x socket spanner, 32 mm A/F with extension
- 1 x socket spanner, 30 mm A/F
- 1 x socket spanner, 24 mm A/F
- 1 x Allen key, 10 mm with extension
- 1 x special TORX PLUS bit
- 1 x pulley

**Additional tools required:**

- 1 x open-end spanner, 10 mm A/F
- 2 x open-end spanner, 24 mm A/F
- 1 x open-end spanner, 30 mm A/F
- 1 x TORX T30 bit
- 1 x Allen key, 8 mm
- 1 x stepladder, approx. 2.5 m long

**Recommendation:**

- 1 x ratchet with 32 mm attachment  
(customary assembly tools)

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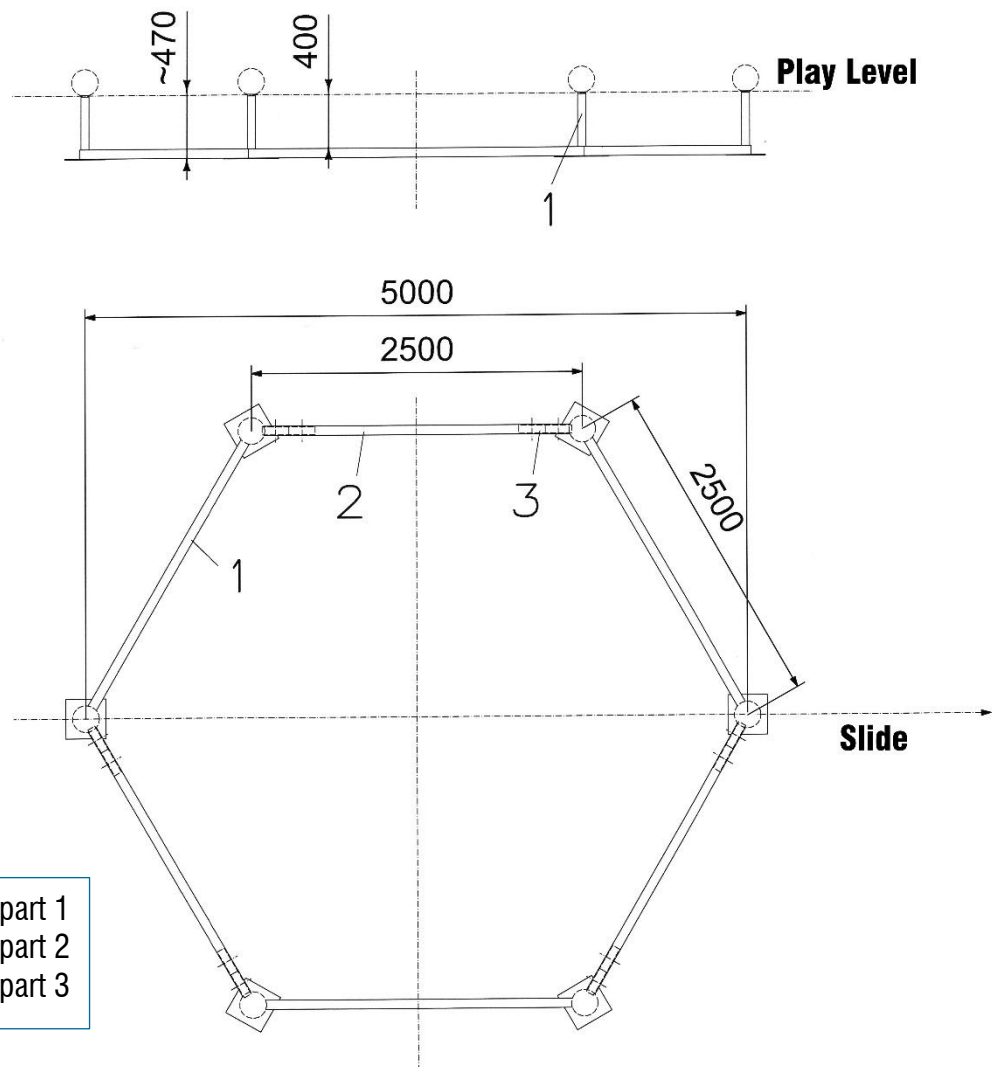
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#### 4 Anchor frame mounting

The hot-dip galvanized square tube frame is screwed in accordance with **Fig. 2** in the plug-in system with the 12 M16 x 85 mm screws and nuts supplied. This frame only needs to be aligned horizontally in the soil at a depth of 470 mm below the playground (**Fig. 2**). This frame ensures flawless screw fitting of the framework tubes and hollow ball knots.

**Caution: Please take the future position of the slide into consideration when aligning and positioning the anchor frame (Fig. 3 and Fig. 4).**



3x plug-in frame	part 1
3x plug-in frame	part 2
6x connecting tube	part 3

**Fig. 2**

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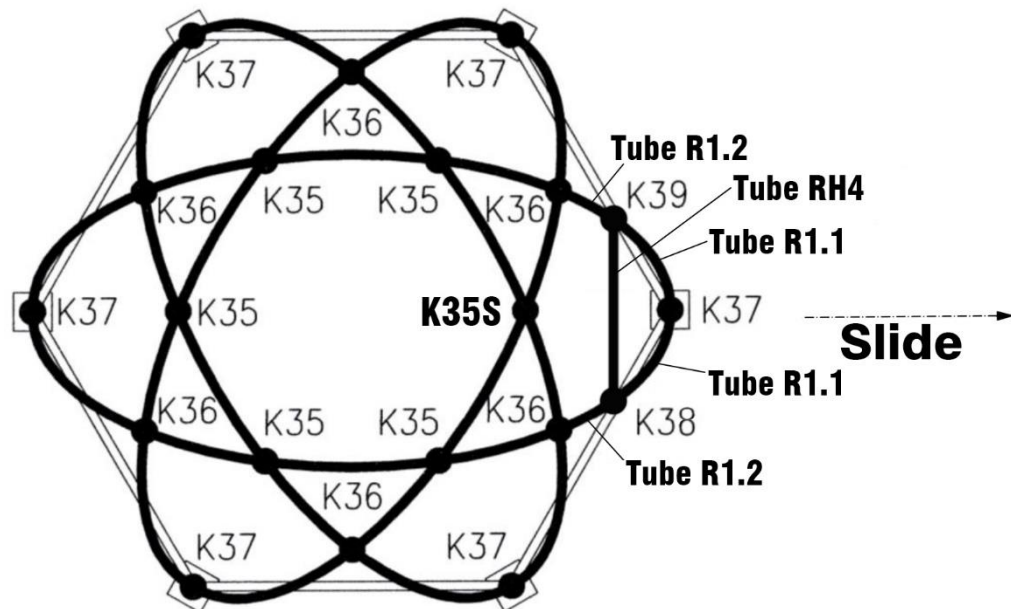
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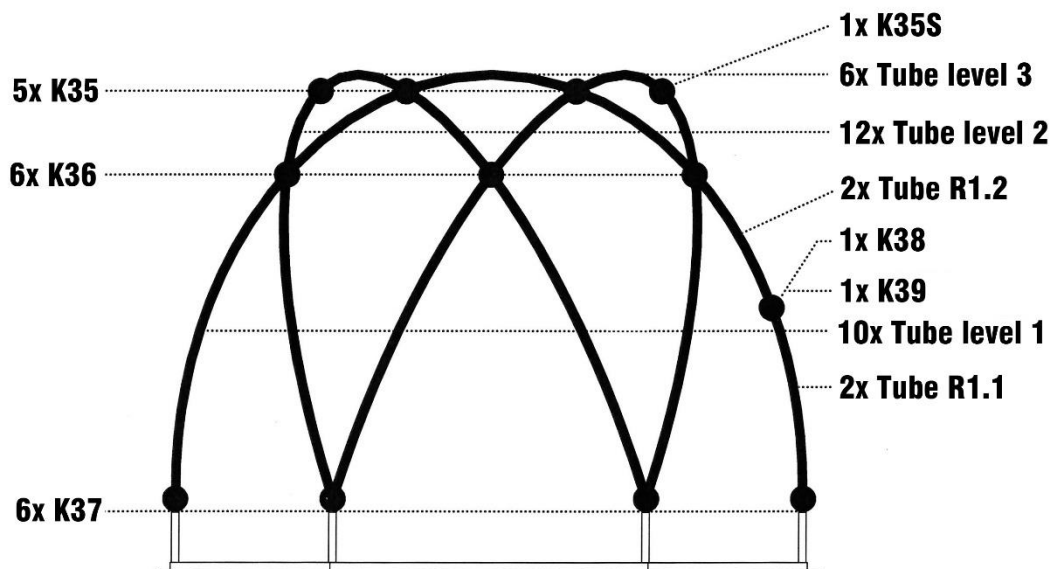
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## 5 Framework mounting

### Framework views



**Fig. 3 - Plan view**



**Fig. 4 - Side view**

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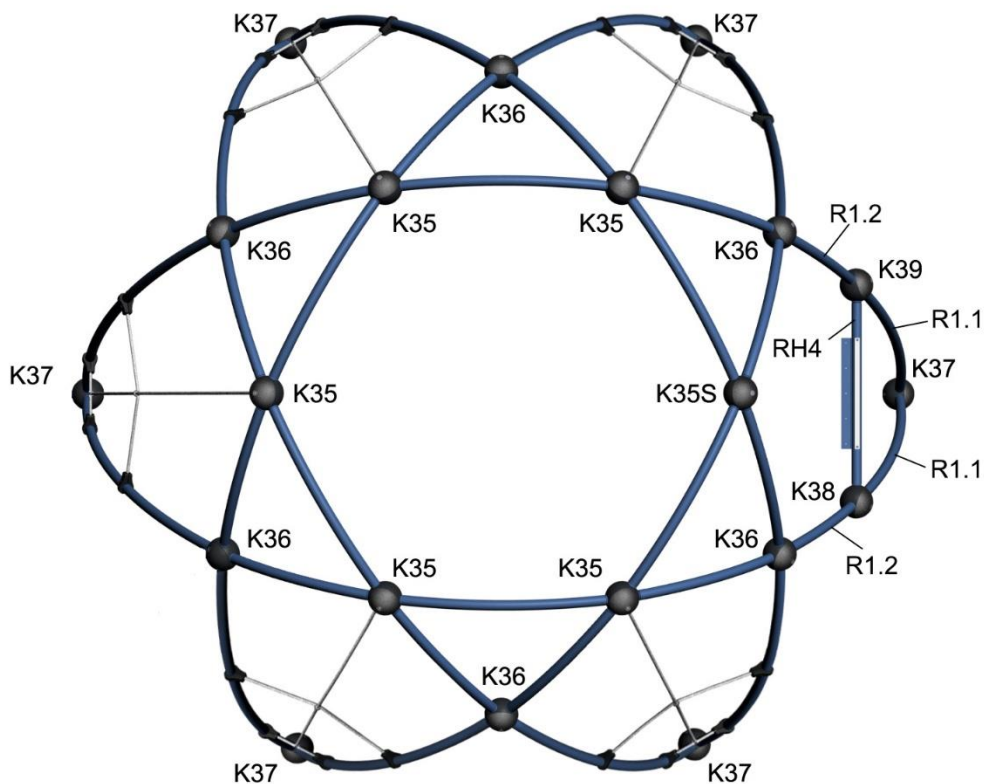
#### Framework screw fitting

A stepladder (approx. 2.5 m) is required to facilitate mounting. The constructional arrangement of the framework tubes and hollow balls is depicted in **Fig. 3**, **Fig. 4** and **Fig. 5**.

**Caution: The indicator (K35 to K39) stamped onto the exterior of the hollow ball always faces upwards on the unit (Fig. 6) when positioning the hollow balls.**

The framework tubes are marked according to their layout in the framework (tube level 1, 2 and 3). In addition, one side of the tube is marked with the hollow ball indicator to which the tube is connected.

**Screw connections (nut, M20 screw, 32 mm A/F and locking washer) should be hand-tightened initially**



**Fig. 5 – Plan view of framework with RH4 slide connection and 5 climbing nets (KN).**

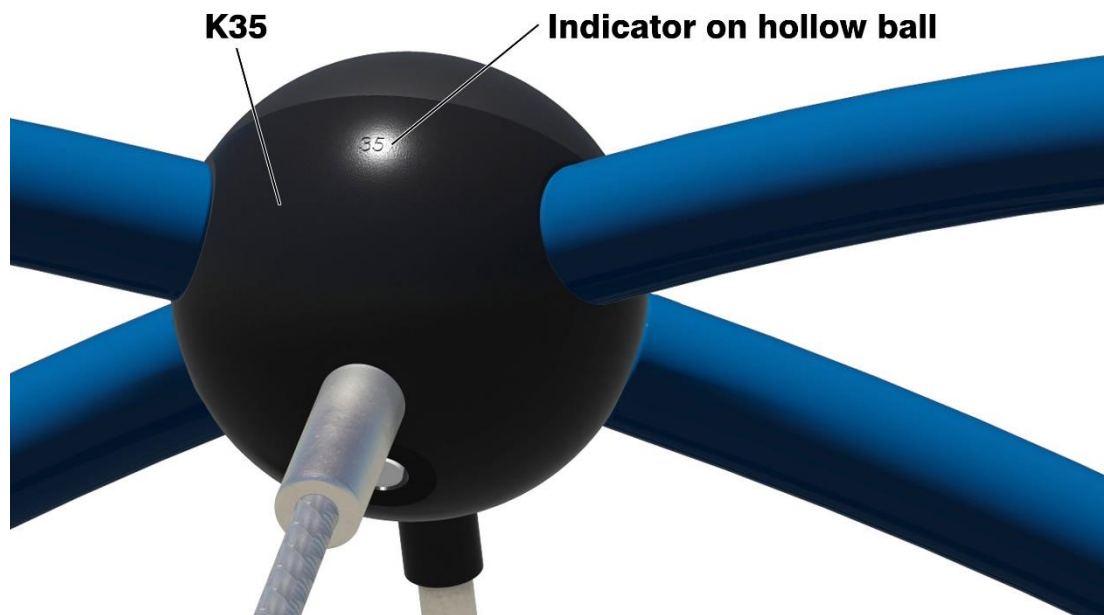
**Caution: When positioning the hollow balls, please observe the position of special hollow ball K35S above the slide connection (Fig. 5).**

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**Fig. 6 – Stamped indicator on the hollow ball**

We recommend first screw connecting the **RH4** slide connection tube on the ground to hollow ball knots **K38** and **K39 (Fig. 5)** and then fit this module to the two tubes **R1.1**.

**Caution:**

Following completion of the framework mounting, tighten all nuts as firmly as possible with the extended socket spanner. Check subsequently whether all tubes and hollow balls are correctly aligned and mounted without any gaps.

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## 6 Spacenet

### Unpacking and initial attaching of spacenet

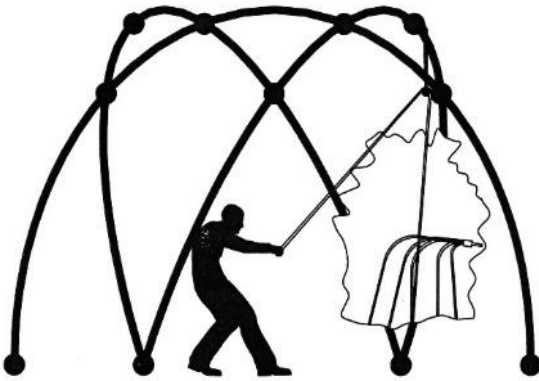


Fig. 7

After the scaffolding has been assembled, the space net must be transported vertically under a **K35** ball, as shown in **Fig. 7**. Attach the pulley provided to a hollow ball **K35**. The spacenet can now be drawn to the first attachment point using the rope attached to the net. The threaded bolt pressed onto the spacenet is attached loosely at each point to the M20 nut fitted to the hollow balls **K35** (**Fig. 8**).

**Caution:** Prior to attaching the spacenet to the hollow balls **K35**, ensure that the slide entrance membrane (**Fig. 10**) is aligned to correspond to the planned slide connection.

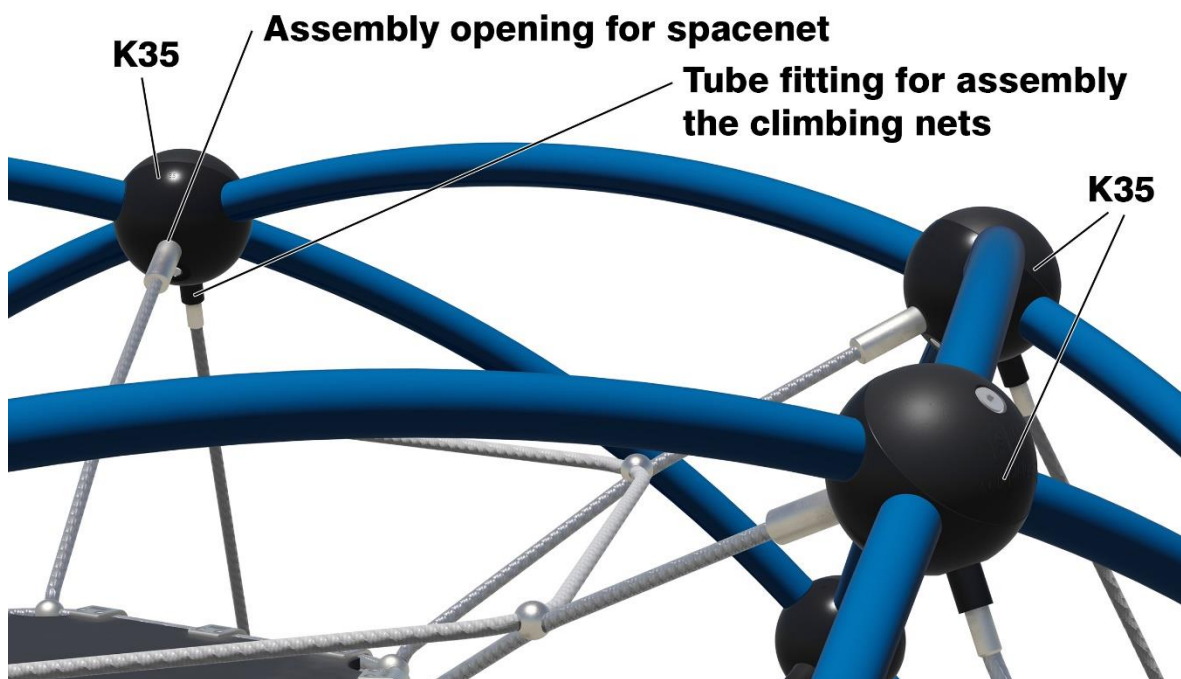


Fig. 8 – Detail K35

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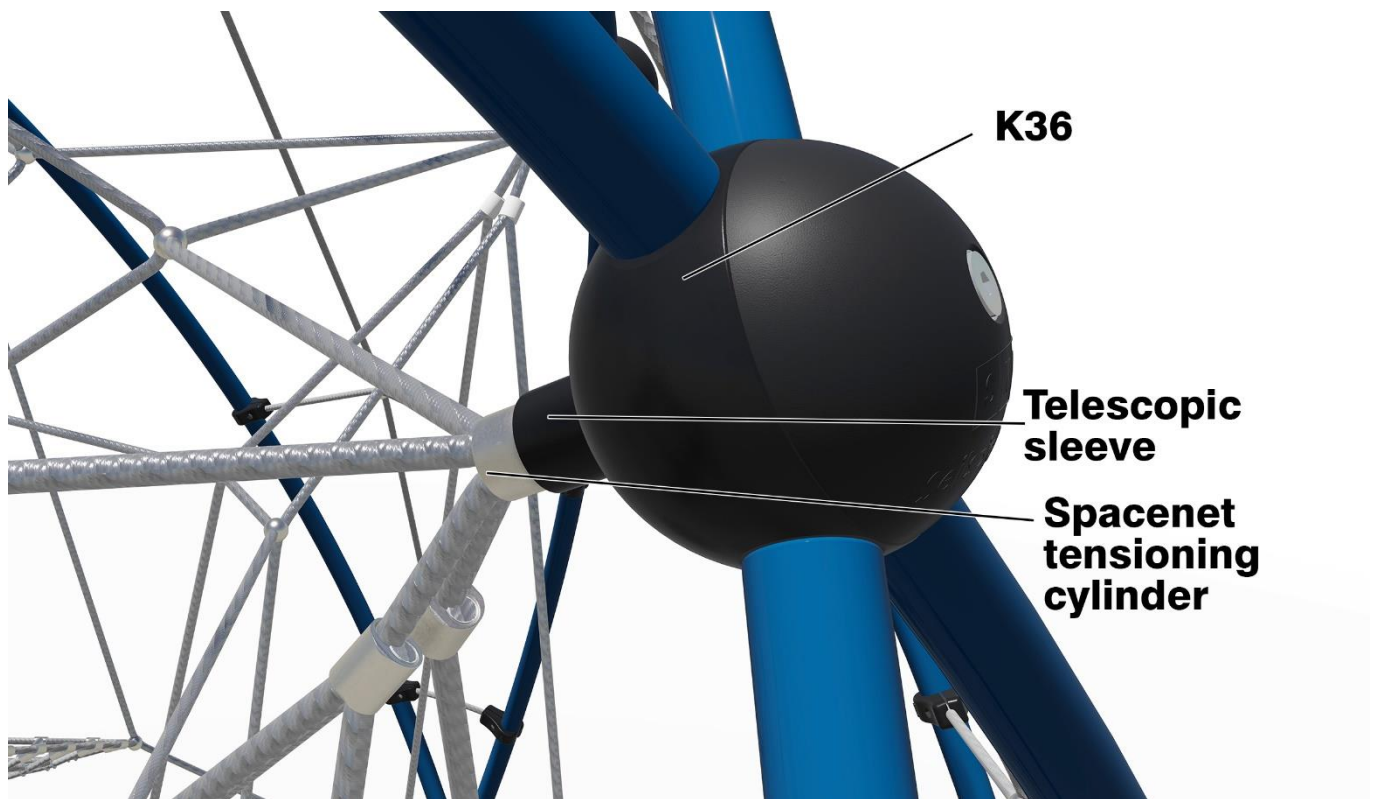
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### **Spacenet fitting**

For the further mounting of the spacenet, the tensioning systems are first pre-mounted in the hollow balls K36. The tensioning cylinder with the M20 threaded bolt is pushed into the telescopic sleeve for this purpose and held loosely initially from inside by about 5 threads using the M20 tensioning nut (32 mm A/F) (**Fig. 9**).

This is followed by the tensioning screws for the hollow balls **K37**, with the eyebolt attached to the clevises being inserted into the hollow ball and only held loosely initially from inside using the tensioning nut provided (**Fig. 11**).



**Fig. 9 – Hollow ball K36 with fitted and tensioned spacenet.**

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#### Slide membrane fitting

Prior to tensioning the spacenet, the slide membrane already fitted to the spacenet must be attached to the framework. The membrane is laid on the angle steel attached to the **RH4** tube. The flat steel strip (V2A) provided is placed on the membrane in a manner that ensures that the respective holes (flat steel – slide membrane – angle steel) correspond and then firmly screwed to the tube **RH4** using the 5 countersunk screws (M6 / Torx T30) with the cap nuts (M6 / SW10) and washers provided (**Fig. 10 and Fig. 15**).

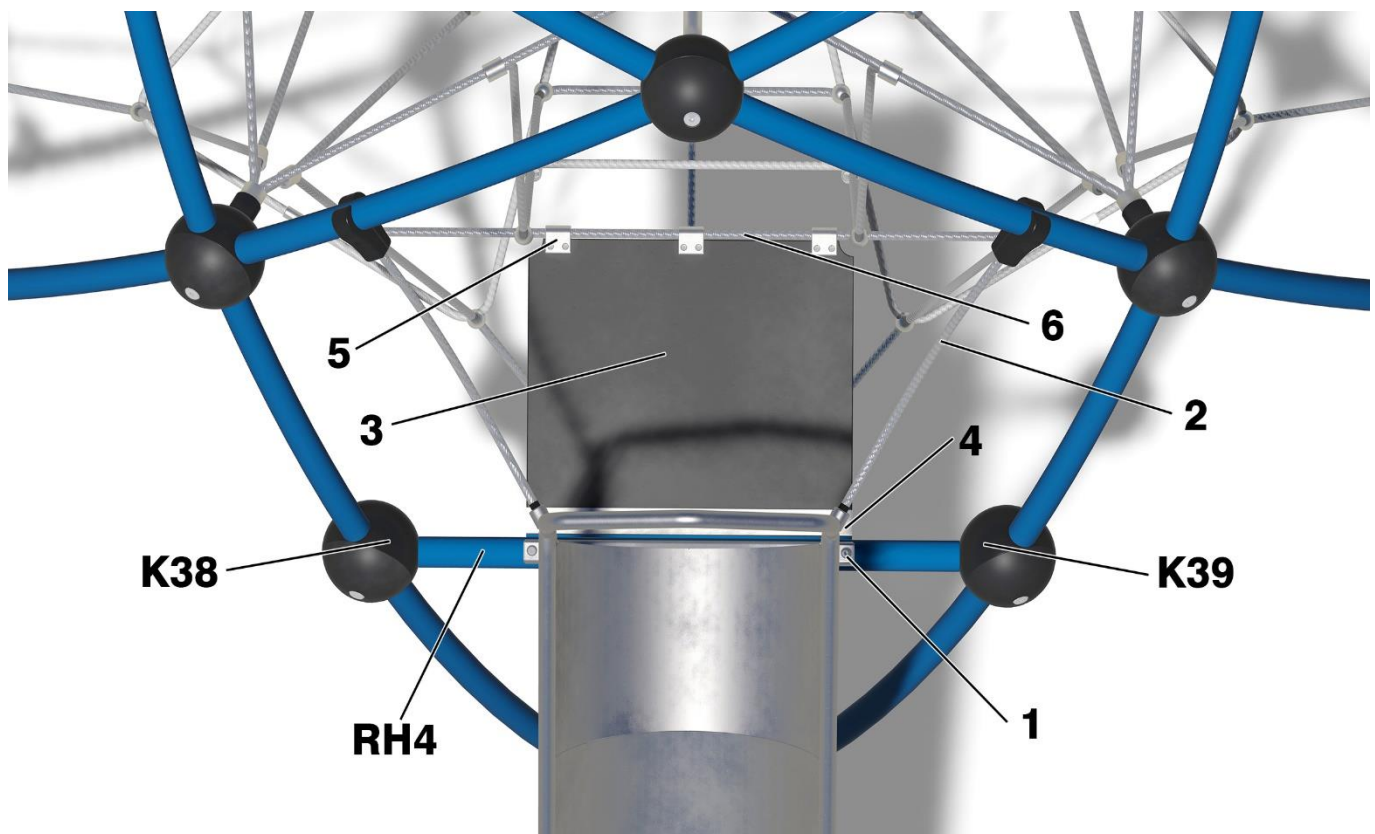


Fig. 10 – Plan view with fitted slide and slide membrane

- 1: Connecting profile for slide
- 2: Slide fall securing rope RS
- 3: Slide membrane
- 4: Flat steel strip
- 5: Membrane clip
- 6: Spacenet rope section

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## 7 Spacenet tensioning

The pressed-on threaded bolts are first tightened firmly with the M20 nuts in the hollow balls **K35**. Actual tensioning of the spacenet begins at the hollow balls **K37**, with the tensioning nuts on the eyebolts being screwed tightly up to the locknut (**Fig. 11**) using the special spanner provided.

The tensioning system is then tensioned on the hollow balls **K36** up to the pretension marking (**Fig. 12**). Tensioning of the spacenet should ultimately be uniformly strong.

**Note:** Inserting the tensioning cylinder into the hollow balls **K36** or clevis screws into the hollow balls **K37** can be facilitated through traction support using the rope provided. Ensure that the ropes are correctly aligned corresponding to their course in the spacenet when tightening the tensioning nuts.

**Caution:** The slide membrane must be fitted prior to tensioning the spacenet!

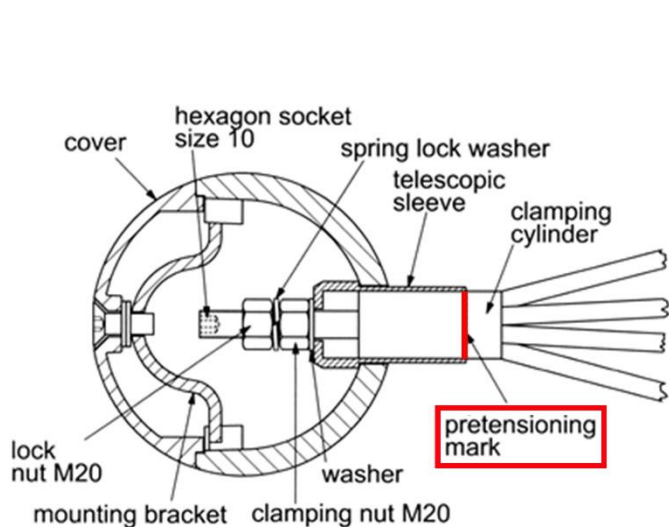


Fig. 12 – K36

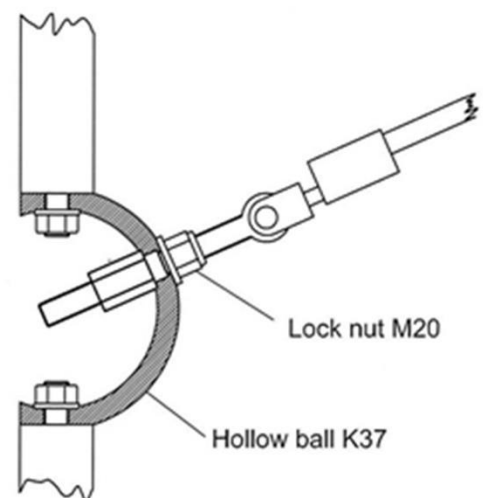


Fig. 11 – K37

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### Securing the spacenet

Following tensioning, the tensioning nuts must be locked on all hollow balls **K36** using the locknuts (M20, 32 mm A/F) and spring washers provided. The M20 threaded bolt should be held with an Allen key (10 mm A/F) when tightening the locknut (**Fig. 12**). The locknuts (30 mm A/F) (**Fig. 11**) must be checked again on the hollow balls **K37** to ensure they are firmly fitted. Finally, all hollow balls **K35S**, **K36**, **K37**, **K38** and **K39** should be sealed by screwing the balls together with the prepared caps using a bracket screw connection (**Fig. 12**).

**Caution: The balls K35 are only sealed after the following step. Please ensure that the caps are positioned uniformly so that our company logo is legible. Thank you very much!**

### Fitting the climbing nets

The 5 climbing nets **KN** (**Fig. 5** and **Fig. 13**) are attached to the tubes at level 1 (**Fig. 4**) using the pipe clamps provided and screw fitted to the hollow ball **K35** with the pressed-on threaded bolt. Ensure during this that the pipe clamps are aligned as shown in **Fig. 13**. The upper ends of the ropes are first fed through the pipe fitting welded to the hollow ball knots **K35** and held loosely from inside by the M16 tensioning nuts provided (about 3 threads). After alignment of the ropes, these can be screwed firmly to the tubes using the clamps (see **Fig. 13** for the spacing of clamps from the lower ball **K37**). The climbing net is now tensioned using the tensioning nut in the ball **K35** and then locked firmly using the M16 locknut. Then the hollow balls **K35** are closed with the caps in the same manner as the balls **K35S**, **K36**, **K37**, **K38** and **K39** previously. The hexagonal sockets on all clamp screw heads are then sealed with the caps provided.

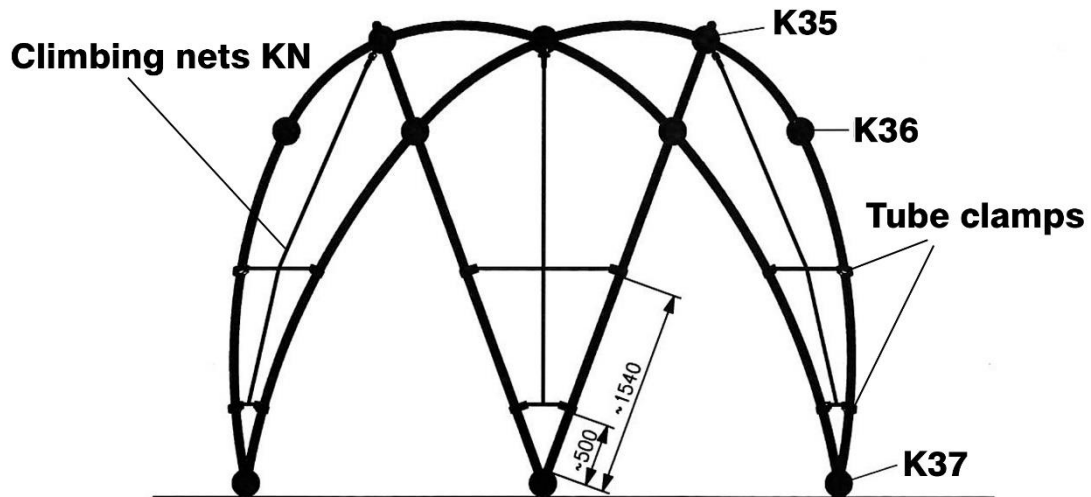
**Caution: Prior to screw fitting the clamps and M16 tensioning nuts, apply the lubricating metal gel provided to the threads to prevent the V2A screws from seizing.**

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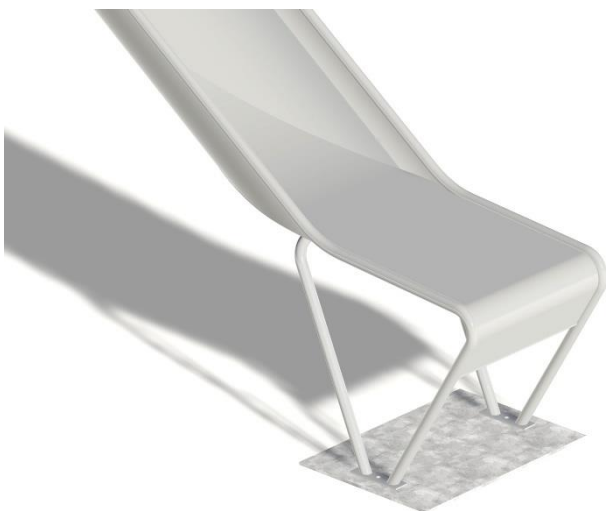


**Fig. 13**

## 8 Fitting the slide

### Fitting the slide and slide securing ropes RS

The anchor plate provided is screw fitted to the slide prior to attaching the slide (**Fig. 14**). The M12 screws and nuts required are included in the delivery.



**Fig. 14 – Slide with anchor plate**

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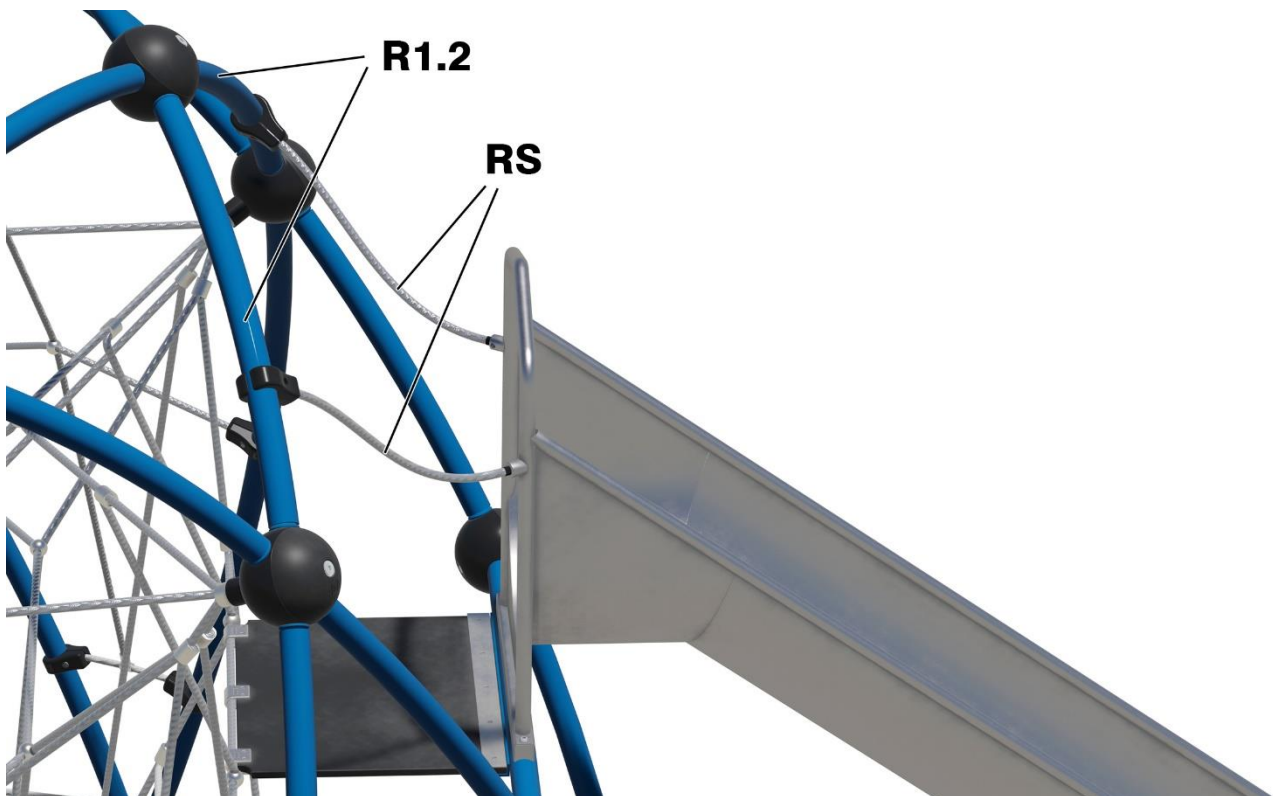
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The slide is then fitted to the connecting tube **RH4 (Fig. 10)** and only held loosely initially with the V2A M12 fillister head screws provided. If the slide seat is not aligned horizontally, the tube **RH4** on the screw fittings of both hollow ball knots can be loosened and turned into the correct position. The anchor plate may need to be adjusted further through underpinning or additional excavating.

**Caution: When screw fitting the V2A fillister head screws, it is imperative that the lubricating metal gel provided be applied to the threads to prevent the V2A screws from seizing.**

The two slide securing ropes **RS (Fig. 15)** are then fed through the two sleeves on the slide and screwed into position (safety screws and a special bit are included in the delivery). The two remaining rope ends are now secured to the two tubes **R1.2 (Fig. 15)** using the pipe clamps provided. Ensure during this that the ropes sag slightly and the pipe clamps are aligned in the direction of the rope fixing point on the slide. The hexagonal sockets on all clamp screw heads are then sealed with the caps provided.



**Fig. 15 – Slide connection**

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**Caution! Retighten!**

Retighten the spacenet for the first time after one to two weeks of use (see operative inspection for procedure).

## 9 Maintenance instructions EN 1176-1, 1176-7

### Routine visual inspection

The frequency of inspection depends on local conditions (extensive/limited stress, vandalism, air pollution, weather conditions).

Check that climbing net clamps are firmly fitted. Tighten any screw fitting that has loosened and replace any missing socket screw caps.

Check the spacenet, climbing nets and slide fall protection ropes for damage, particularly strand breakage.

Ensure that all hollow balls are sealed.

Check the slide for damage and firm fitting of the fixtures in the connection and chute exit area.

### Operative inspection (every 6 months)

**Retighten for the first time after one to two weeks of use.** Retightening is realised with the M 20 tensioning nuts in the hollow balls. The balls **K37** are first retightened. Following removal of the cap using a 10 mm Allen key and loosening of the locknut (M20, 30 mm A/F) on the exterior of the hollow ball (**Fig. 11**), the tensioning nut (30 mm A/F) inside is retightened using a socket spanner.

Always tighten the locknuts firmly again following retightening. Retightening then continues on the knots K36 and should be realised evenly. Following removal of the cap, the locknut (M20, 32 mm A/F) inside is loosened and the tensioning nut (M20, 32 mm A/F) retightened **beyond the pretension marking (Fig. 12)** using the special socket spanner provided. Always tighten the tensioning nuts on the knots K36 again with the locknuts following retightening. Please note the correct position of the spring washer between both nuts. The M20 threaded bolt can be held with an Allen key (10 mm A/F) when loosening and tightening the (M20, 32 mm A/F) tensioning and locknuts (**Fig. 12**). The opened hollow balls are then sealed again with the caps. Please ensure that the caps are positioned uniformly so that our company logo is legible. Thank you very much!

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**Caution:**

**Always ensure during retightening that the ropes to be tensioned are not twisted at all tensioning points. An appropriate tool may be used for holding if necessary to counter any movement.**

**Further retightening will be necessary on one or two occasions before rope expansion is exhausted.**

**Main inspection (annual)**

In addition to the visual and operative inspection, the following checks are also conducted:

Check the anchor frame for excessive signs of corrosion (every two years). Expose the anchor frame at the corners to the installation depth to check for corrosion.

Check that tube screw fittings are firm and attached free of gaps to the hollow balls. Retighten any screw fitting that has loosened in the interior of the ball.

Check that the locknuts **(Fig. 11)** are firmly fitted on the hollow balls **K37**.

Check tensioning of the climbing nets and correct locking of the M16 locknuts in the hollow balls **K35 (Fig. 8)**. Re-tension the climbing nets if necessary (see “Fitting the climbing nets” on page 12).

Check the tensioning systems for damage.

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