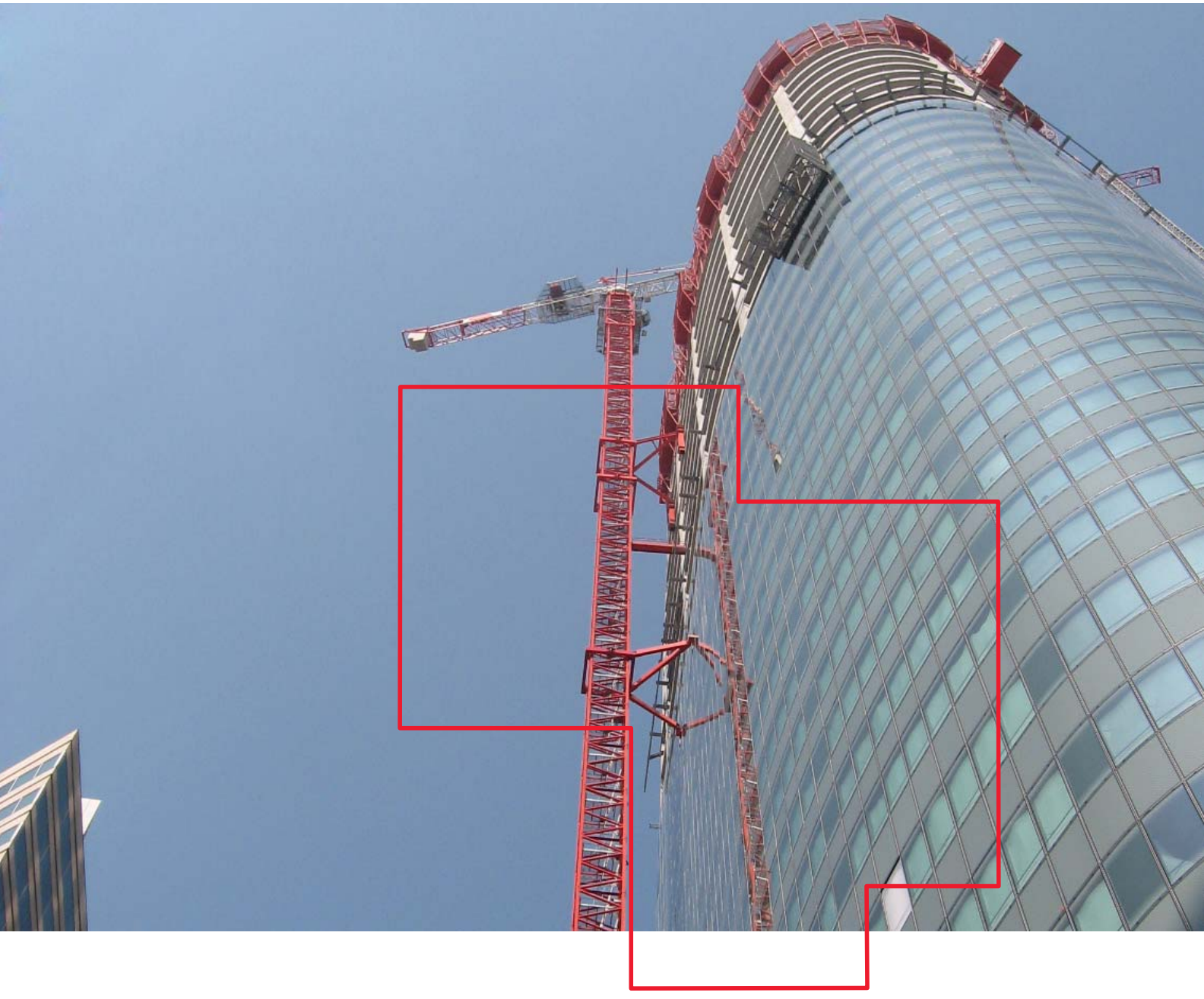
Grove Manitowoc National Crane Potain

Manitowoc Crane Care

Potain The anchorage frames

Guide Service – Ref.: 308 2009 06 EN



This document deals exclusively with the anchorage frames for the L masts of 1,20 m cross-section and K masts of 1,60 m, 2,00 m and et 2,45 m cross-section.
The anchorage frames for masts with round uprights of 2,50 m, 4,00 m and 5,50 m cross-section and for L masts of 1,60 m and 2,00 m cross-section are not subject of this document.

Notes

On this page, all the modifications or developments concerning this document will be indicated. The Guides Service are available in MyManitowoc (Tower cranes / product info / guide service).

Réalisation : Manitowoc France SAS - Service TC INFO - BP 1 – Baudemont – 71800 La Clayette Cedex France
Tél +33 (0)3 85 28 90 23 – Fax +33 (0)3 85 28 04 30 – Mail sylvie.quelin@manitowoc.com

Summary

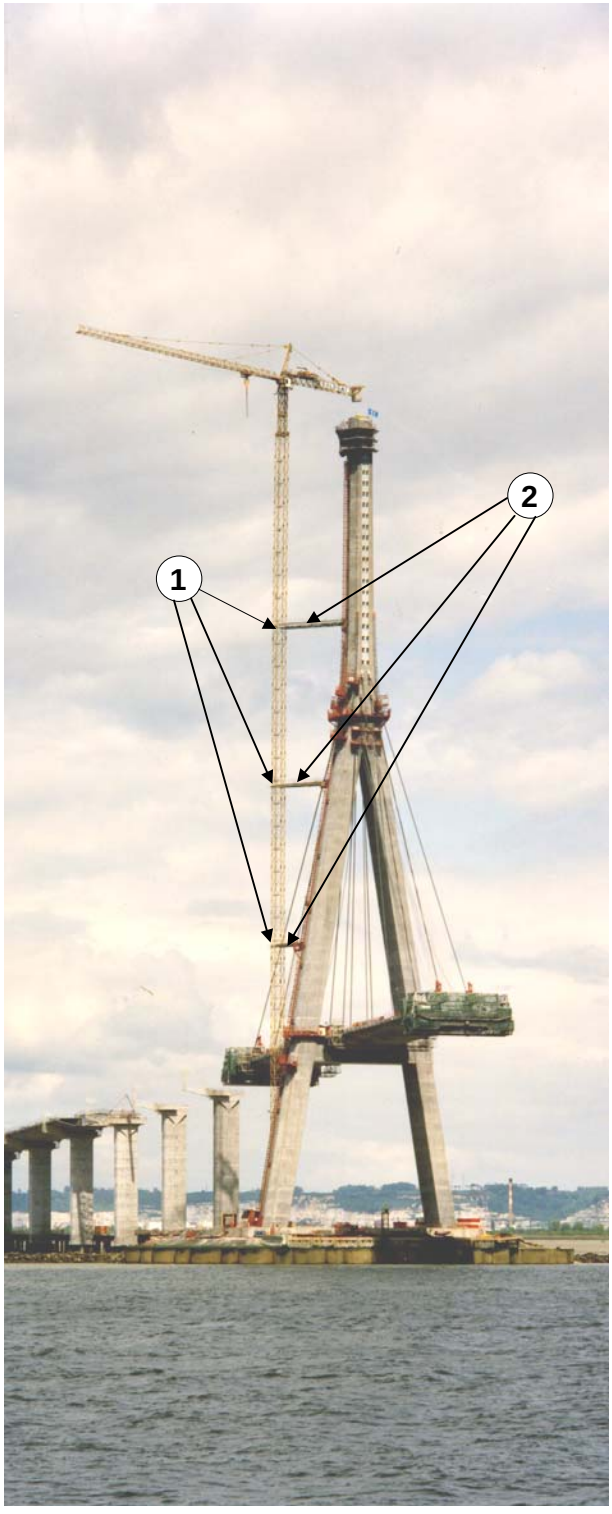
Potain The anchorage frames

Reminder: The technical data contained in this document are given as an information and illustration. In no case may this document serve as substitute for the technical instructions bearing the machine number of the crane.

General notes

The principle

Beyond the free-standing height of a crane, the permissible stresses on the masts are exceeded. In order to compensate for this situation, it is possible to fasten the crane to the building under construction by means of anchorage frames.
One or several anchorage frames (1) can be fitted depending on the final height to be reached. They are connected to the building by means of connecting elements (2).
The anchorage frames for masts of 1,20 m, 1,60 m, 2,00 m and 2,45 m cross-section are Manitowoc codified parts whereas the connecting elements are calculated and produced case by case by Manitowoc or the user.



Fitting each frame will be carried out in compliance with the technical instructions or the instructions of the Manitowoc technical support (accurate positioning on the mast section, distance between two frames, tightening or loosening the frame, etc...).

Note: *The technical documents of a crane are only dealing with the anchorage if the crane has been sold for a first erection with very high working height. Otherwise consult the Manitowoc technical support.*

Note: *The anchored crane is in general erected on fixing angles. However, an erection on chassis is possible on certain conditions (please consult the Manitowoc technical support).*
Anchoring to a building is adapted to tower cranes with horizontal jibs and to tower cranes with luffing jibs.

General notes

Anchorage connections

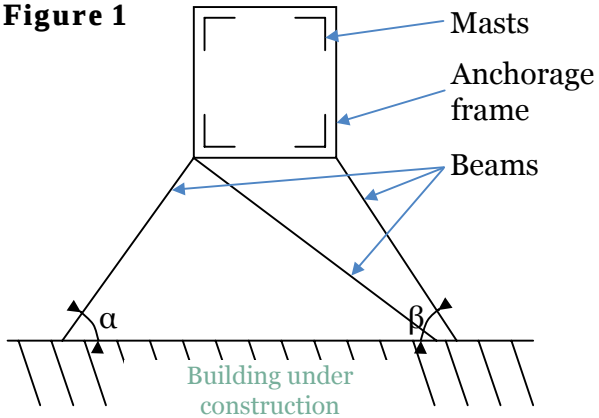
When fitting the anchorage connections, the connecting beams and guy ropes (fully locked ropes) will be connected to the crane by means of a frame which encircles the masts. Tensioning the guy ropes is ensured by various tensioning device models.

Attention: All the connecting elements must compulsorily be calculated case by case and the building must be able to withstand the stresses generated by the crane.

Note: *The design and the execution of the connecting elements connecting the anchorage frame to the building are payable by the user. However, these elements must be able to take up the loads and reactions given in the technical crane instructions or by the Manitowoc technical support concerning the anchorage heights which differ from those given in the technical instructions.*

Attention: Avoid as far as possible, anchorages by means of guy ropes. This system is only reliable if it is carried out carefully and checked periodically (figures 1 and 4).

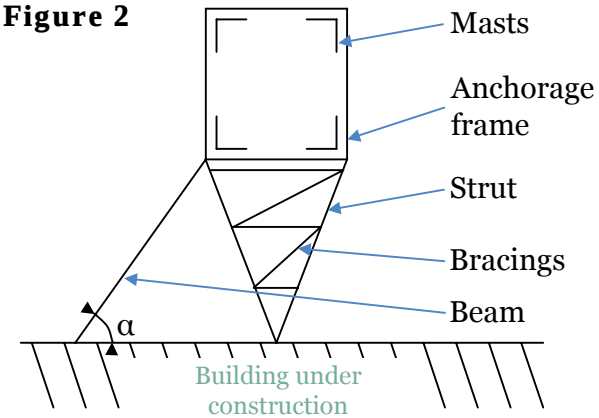
Figure 1



Anchoring the crane to the building by means of 3 beams:

Each one of the 3 connecting beams can be formed of an UPN (U-shaped section) or an angle iron. They can also be constituted of tubes or box angle irons.
Both external beams must not form with the building α and β angles either too closed or too open, but angles between 30° and 60°. A good solution will be 2 symmetrical angles of 45°.

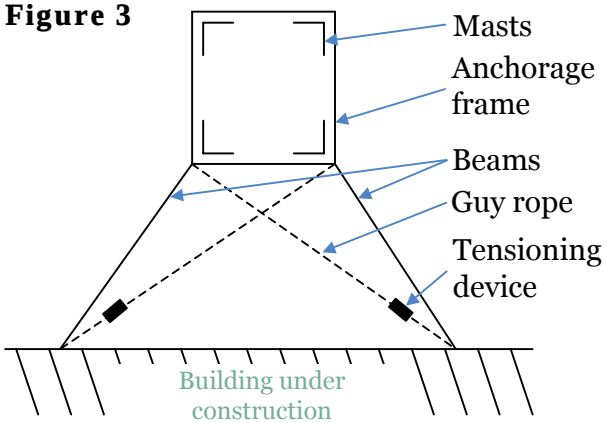
Figure 2



Anchoring the crane to the building by means of a strut and a beam:

The strut can be formed of 2 symmetrical profiles (2 UPN, 2 angle irons, 2 tubes or 2 box angle irons) with bracings.
The beam which can be constituted of the same profiles as the strut must form with the building an angle α between 30° and 60°. A good solution will be one angle of 45°.

Figure 3



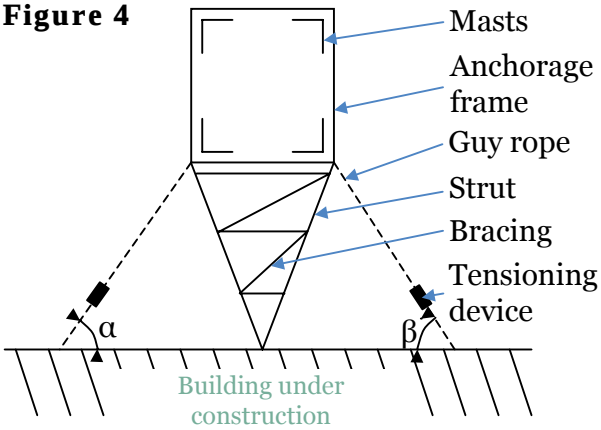
Anchoring the crane to the building by means of 2 beams and 2 guy ropes:

Beam: For their execution, see the previous case.

Guy ropes: Placed inside the beams, they are completing a system which must, as far as possible, be symmetrical with respect to the crane axis.

General notes

Figure 4



Anchoring the crane to the building by means of one strut and 2 guy ropes:

Strut: For its execution, see figure 2.

The guy ropes positioned on both sides of the strut must form with the building α and β angles between 30° and 60°. 2 symmetrical angles of 45° will be ideal.

Some examples of anchorage frame/ building connections.
All connections must be calculated.

General notes

Calculation, conception, manufacturing and fitting the connecting elements, these operations are payable by the customer. However certain rules must be observed:

▪ From a theoretical point of view the connecting elements must be calculated with respect to the fitting height of the frame on the crane which depends on the possible anchoring points on the building. From this fitting height follows the reaction values on the anchorage frame given by Manitowoc (either in the technical instructions, either by the Manitowoc technical support). The building must compulsorily withstand these reactions at the selected anchoring points.

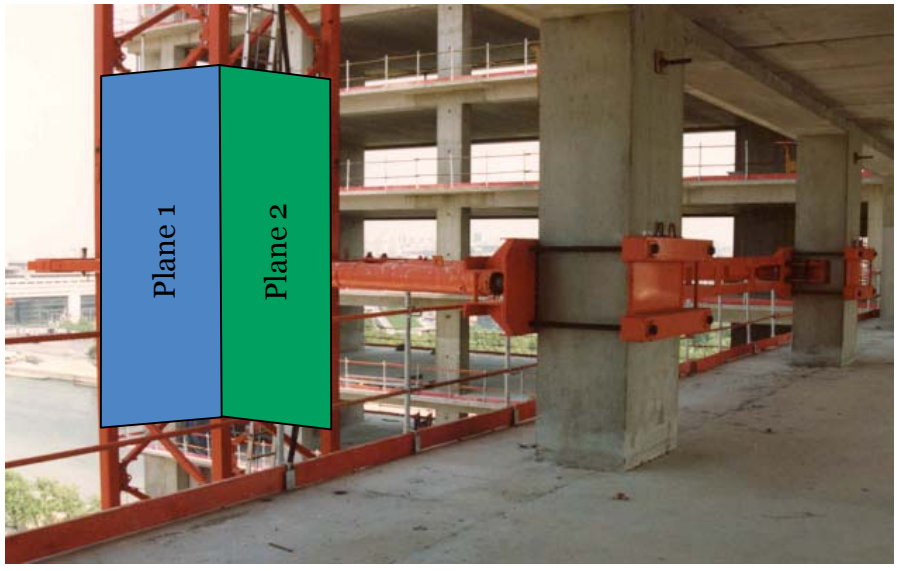
Note: *The reactions given in the technical instructions and by the technical support are without weighting coefficient. It is essential to apply to these loads the safety coefficients requested by the local metallic structure dimensioning standards.*

▪ When erecting the crane, the crane base (chassis, cross-shaped base, fixing angle...) must compulsorily observe the surface evenness tolerances indicated in the mounting instructions, in order to avoid any risk of a fault of mast verticality, which could generate pre-stressing loads unacceptable to the mast steel structures during positioning the anchorages. This horizontality check must be carried out again before fitting the first anchorage and even before checking the crane verticality. A last horizontality check must be carried out before dismantling the anchorages, for example in case of ground sinking.

▪ Before fitting the connecting elements, the customer must check their real dimensions (according to the three axes x, y and z) between the crane and the building. For these measurements and when fitting the connecting elements the crane must compulsorily be balanced and directed in such a way so that there is the best possible verticality in both mast planes.

▪ Considering the possible differences between the theoretical dimensions and the real dimensions measured between the crane and the building, it is necessary to be able to adjust the length of the connecting elements during mounting, for instance by welding on the site the end parts (preferably on the building side for a better accessibility) or by means of an adjustable system.

Attention: In case of doubt on the verticality obtained in both masts planes when measuring the dimensions and when fitting the connecting elements, please consult the Manitowoc technical support.

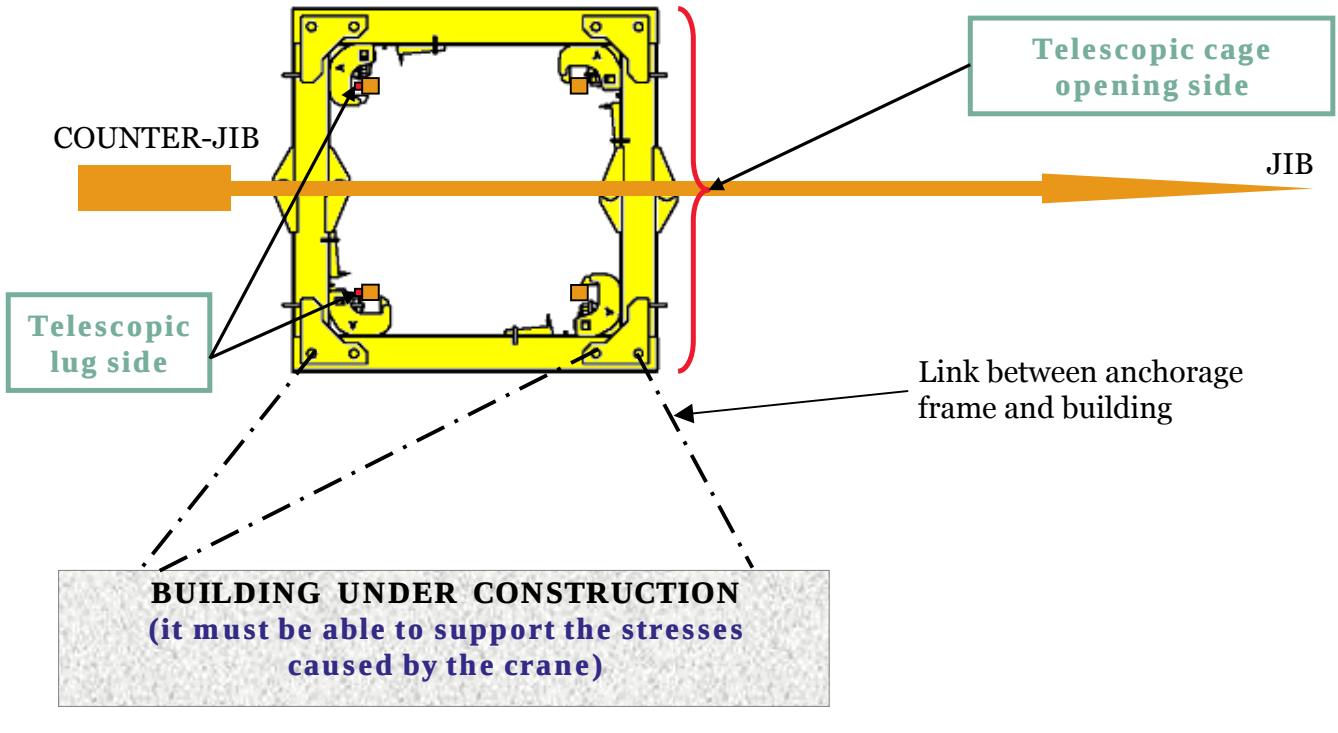


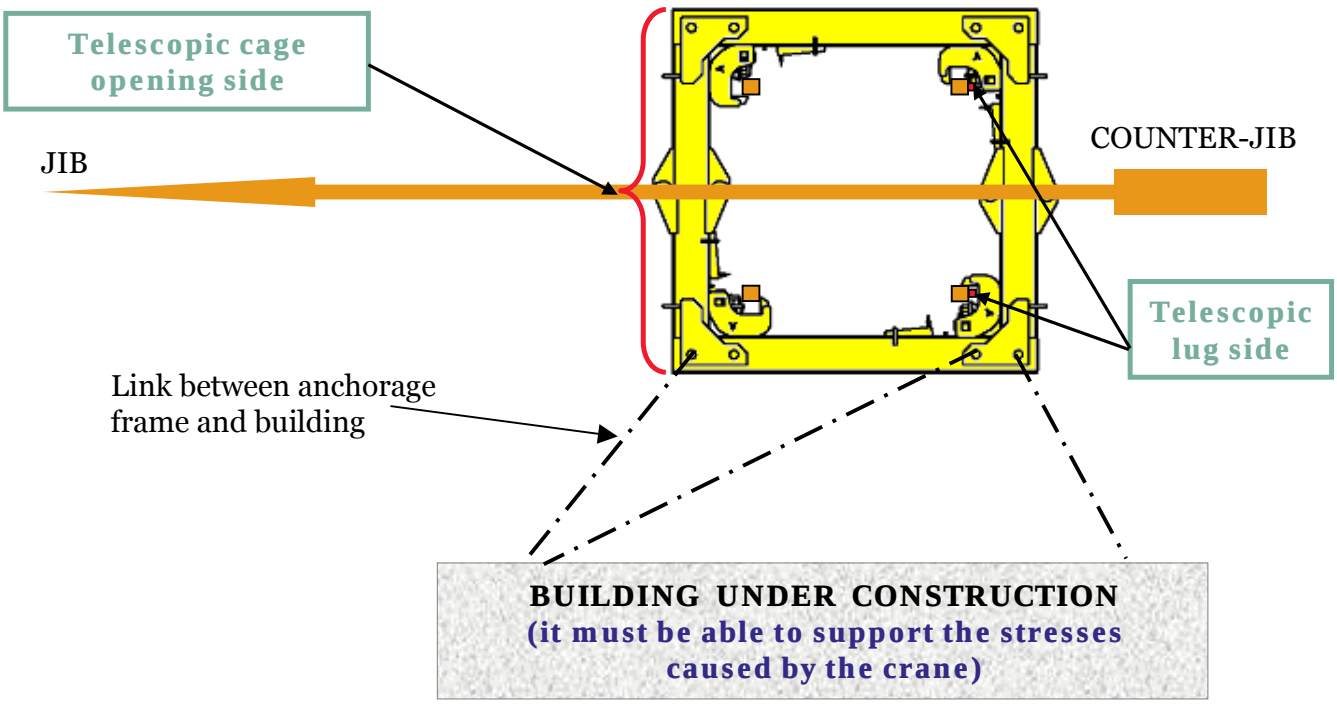
General notes

Important instructions

Attention: In certain cases, fitting an anchorage frame requires previously telescoping an additional mast (under the condition of a wind speed lower than 50 km/h). In this condition, the crane is not in its normal operating range, therefore it is forbidden to work and to let the crane free out of service without fitting the anchorage frame. So, the anchorage frame must be fitted and linked to the building **immediately** after having added this additional mast.

The direction of the **masts** with respect to the building is **very important** in order not to be hindered during the telescoping and telescoping down operations. It is compulsory to observe strictly one of the two sketches below.





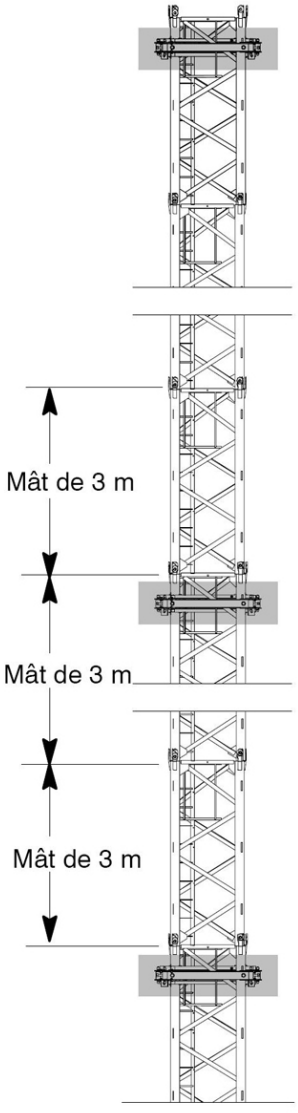
Fitting the frames on the mast sections

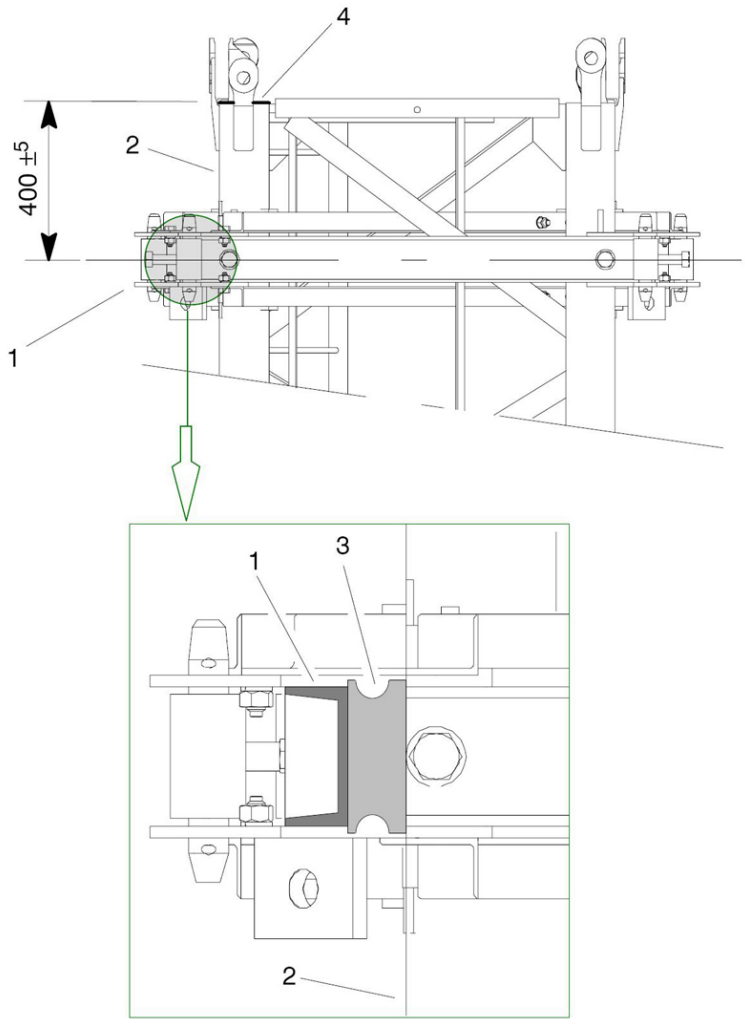
Installation depending on the anchorage heights given in the instructions

1,20 m anchorage frame

Fitting the 1,20 m anchorage frames (1) on the mast (2) is carried out at the telescopic lug level (3), 400 mm below the joint face (4) of the mast section. In this position the frames ensure taking up the loads.

Note:
- *If it is impossible to fit the frame as indicated above, compulsorily contact the Manitowoc technical support.*
- *Contrary to the 1,60 m, 2,00 m and 2,45 m anchorage frames, the fitting direction of the 1,20 frame is of no importance.*





Before fitting the 1,20 m anchorage frames, it is absolutely necessary to add an additional mast (beyond the free-standing height) above the future anchorage frame in order to start telescoping on the mast telescopic lugs.

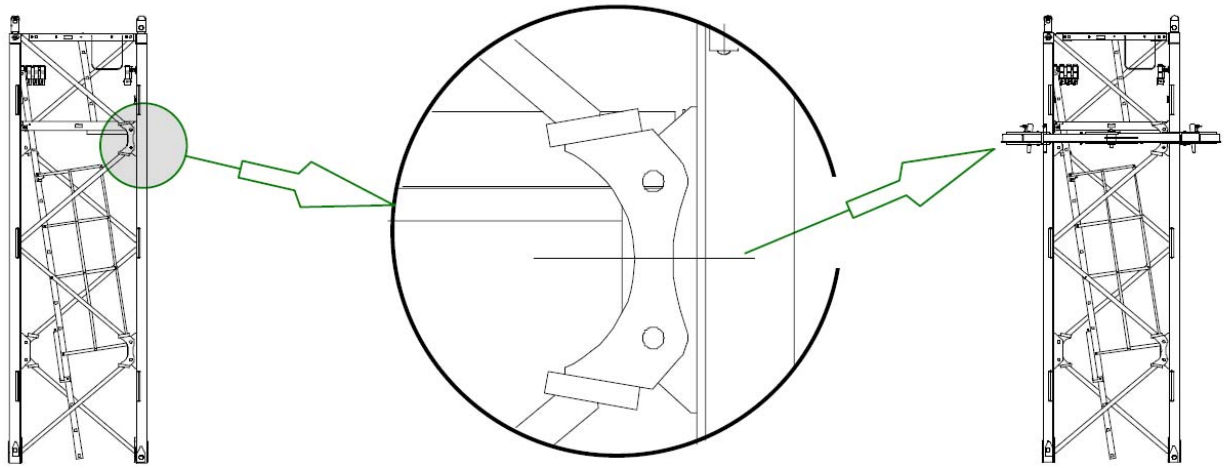
Attention: In this case, fitting the anchorage frame must be carried out **immediately** after telescoping the additional mast (see paragraph « Attention », previous page).

Fitting the frames on the mast sections

Installation depending on the anchorage heights given in the instructions

1,60 m, 2,00 m and 2,45 m anchorage frames

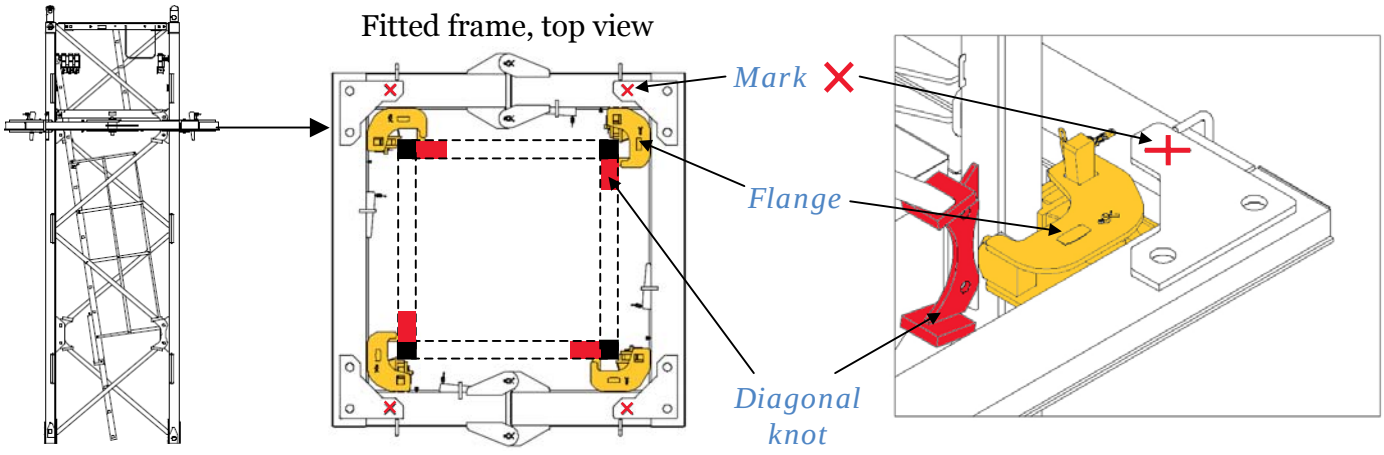
Attention: For the 1,60 m, 2,00 m and 2,45 m frames, the anchorage height given in the mast composition of the very high cranes (the one given in the technical instructions including the serial crane number) is **always** measured at the **upper knot** level of the mast diagonals indicated for reaching a maximum height (provided that the telescopic cage is lowered to the last frame level). Every other installation can lead to a downgrading of the hook height and requires consulting the Manitowoc technical support.



At the upper knot, only one mounting direction is possible: the mark ✕ must be located on the frame top.

Attention: The old frames do not have any marks: ✕ / ○ . In this case it is important to check the positioning of the flanges or stops with respect to the diagonal knots. **It is essential to pay attention to the correct mounting direction of the frame.**

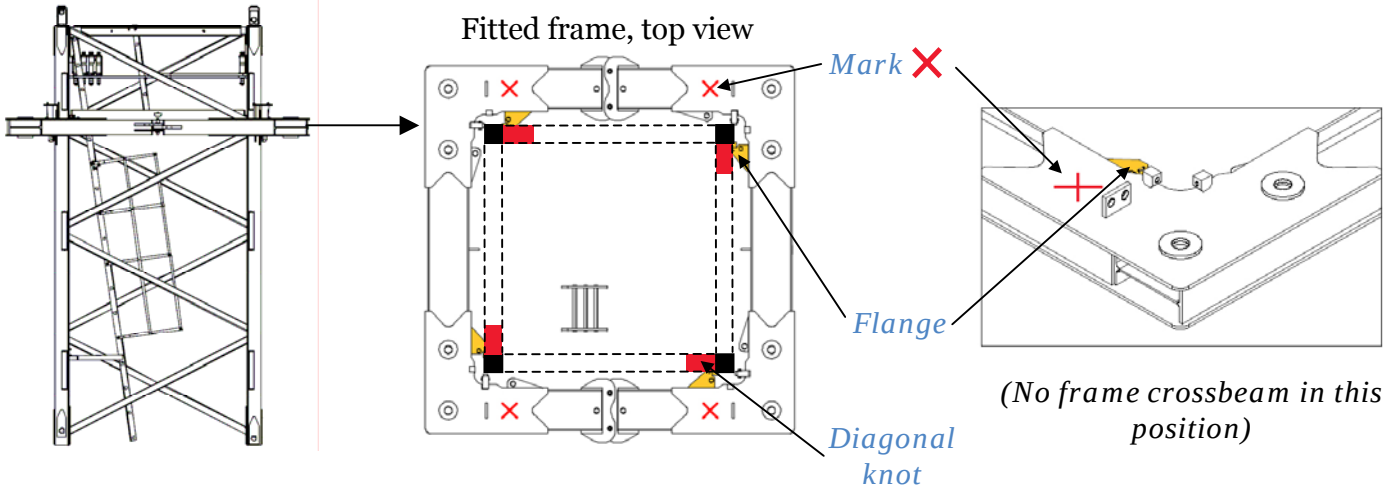
1,60 m (S-14109-51) and 2,00 m (W-25109-30) anchorage frames



Fitting the frames on the mast sections

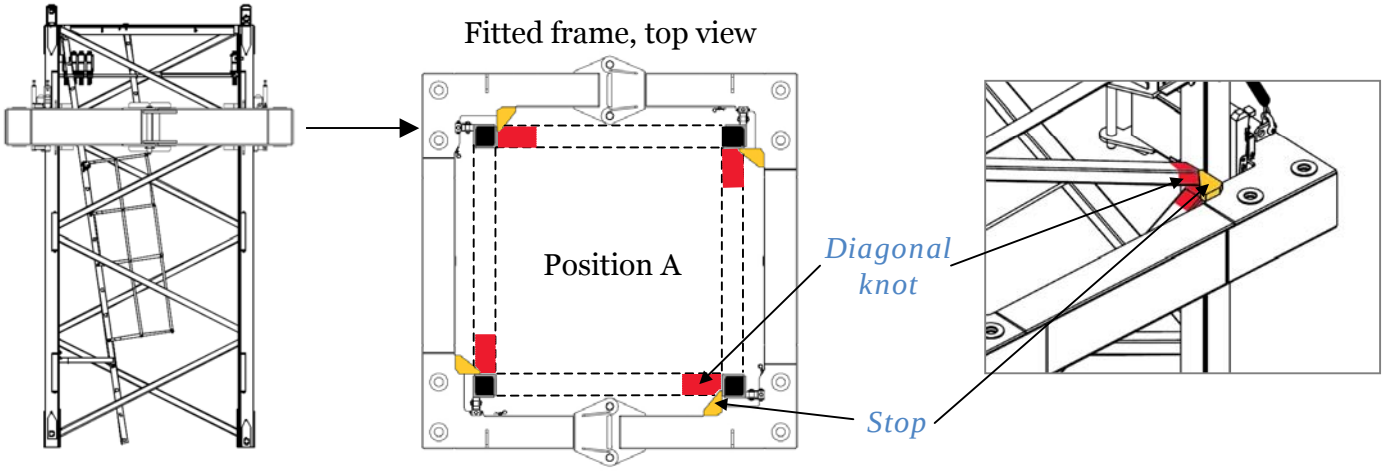
Installation depending on the anchorage heights given in the instructions

2,45 m (S-32680-86) anchorage frame



2,45 m (Z-17680-32 and D-28680-57) and 2,00 m reinforced anchorage frame (S-28680-93)

Attention: There are no marks: ✕ / ○ on these frames. The only marking of the mounting direction is the stop positioning with respect to the diagonal knots. **It is essential to pay attention to the correct mounting direction of the frame.**



Fitting the frames on the mast sections

Other installations

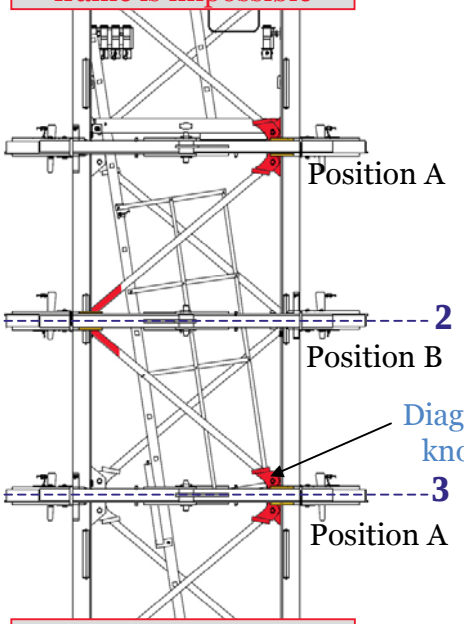
It is also possible to fit the 1,60 m, 2,00 m and 2,45 m frames at the level of knots 2 and 3.

Attention: Fitting the frame at the level of knots 2 or 3 can lead to a reduction of the hook height with respect to that given in the technical instructions. It is essential to consult the Manitowoc technical support.

Having checked the possibility of fitting a frame at the knot level 2 or 3 and calculated the new hook height, it is essential to pay attention to the correct mounting direction of the anchorage frame according to the mast bracing so that the loads are correctly taken up by the mast diagonals. These positions are shown below.

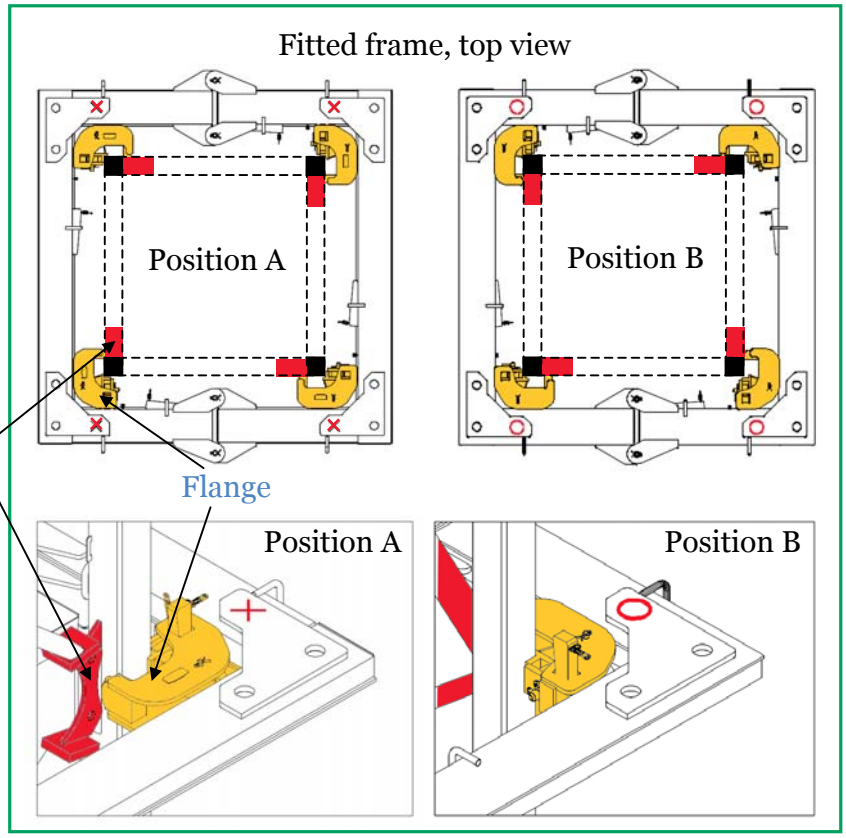
1,60 m (S-14109-51) and 2,00 m (W-25109-30) anchorage frames

Forbidden: Fitting the frame is impossible

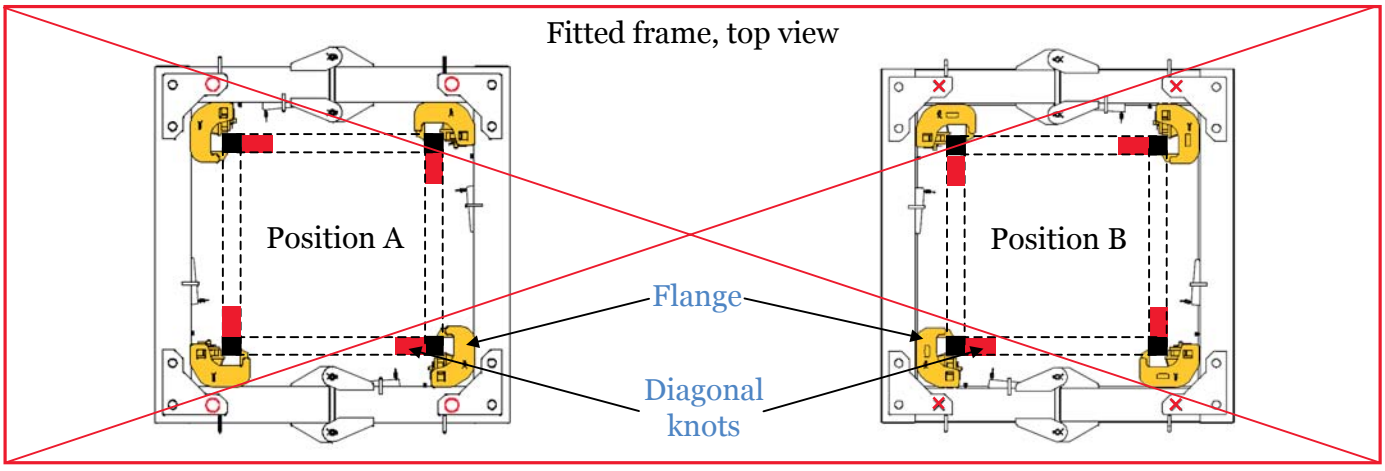


Forbidden: Fitting the frame is impossible

Correct positions:



Forbidden positions:

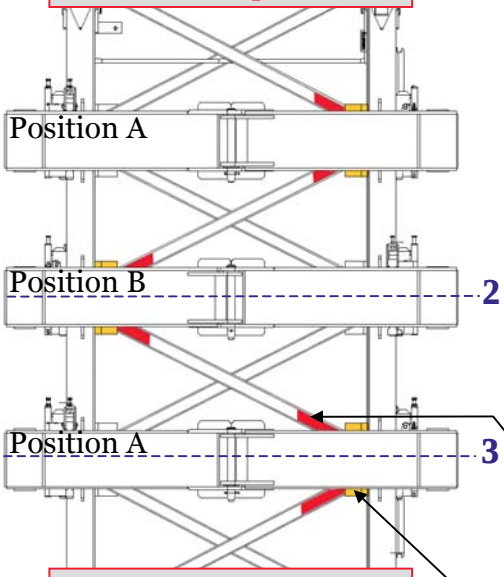


Fitting the frames on the mast sections

Other installations

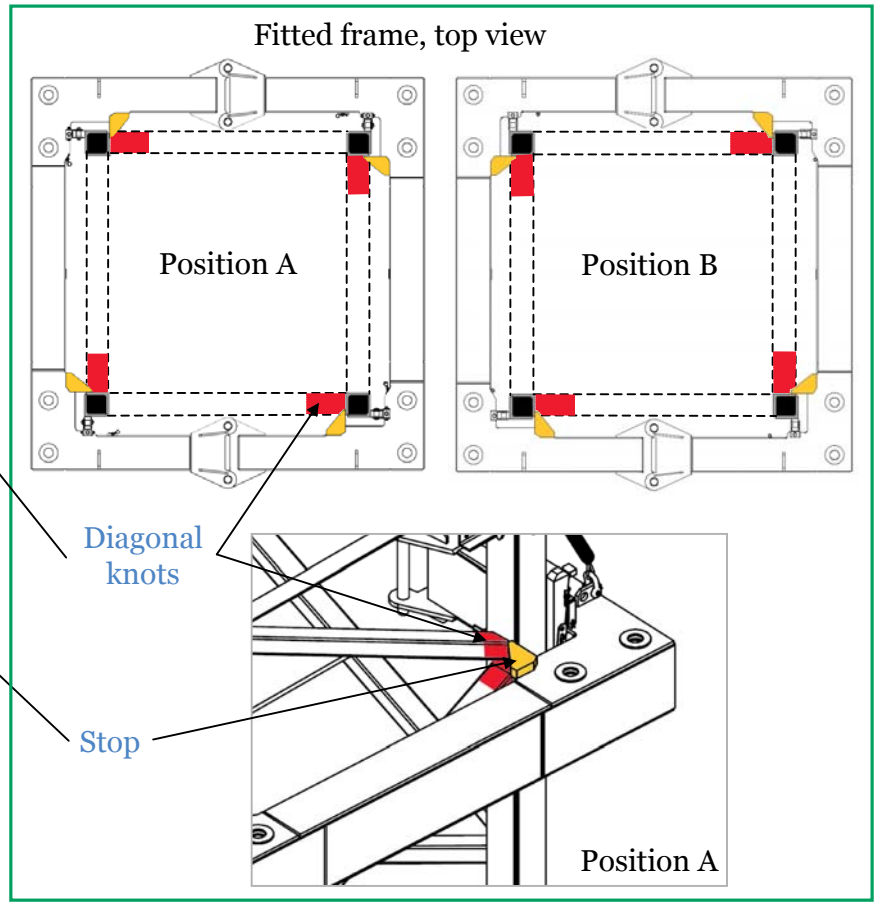
2,45 m (Z-17680-32 and D-28680-57) and reinforced 2,00 m anchorage frames (S-28680-93)

Forbidden: Fitting the frame is impossible

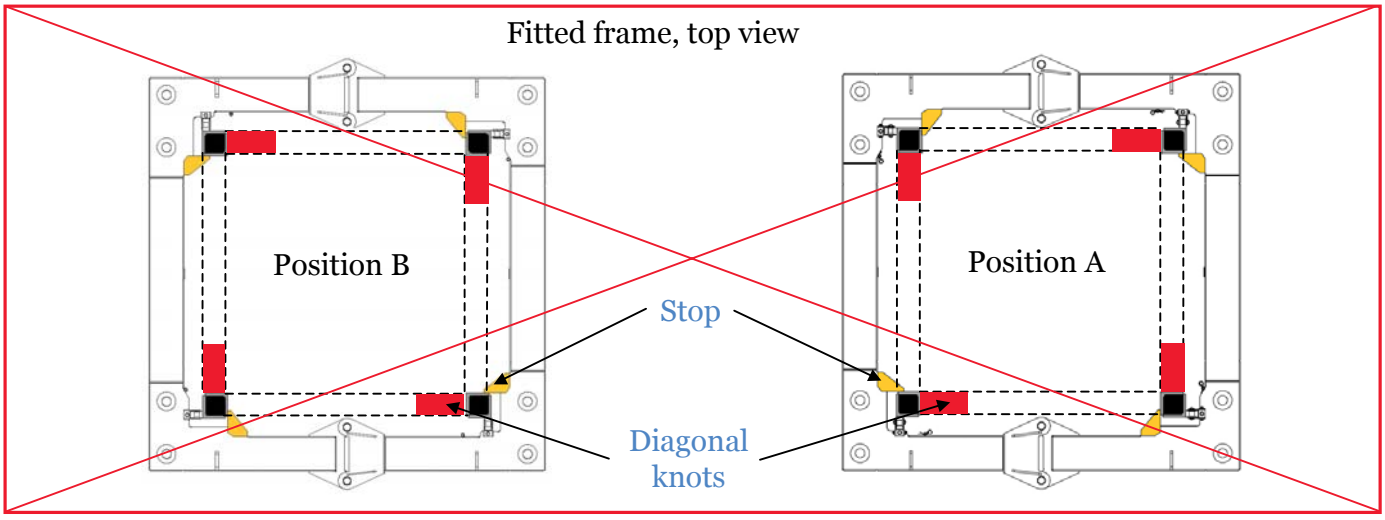


Forbidden: Fitting the frame is impossible

Correct positions:



Forbidden positions:



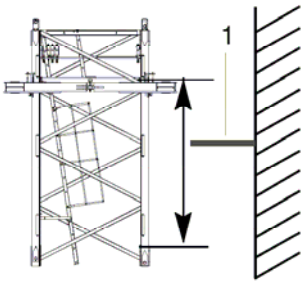
Attention: For the 1,60 m (S-14109-51), 2,00 m (W-25109-30), 2,00 m reinforced (S-28680-93) and 2,45 m (Z-17680-32 and D-28680-57) anchorage frames, in extreme cases, it can be necessary to fit the frame outside the diagonal knots. This possibility exists but causes in the most cases a reduction of the hook height. Therefore it is essential to consult the Manitowoc technical support who will determine the new mast composition in compliance with the required frame position.

Fitting the frames on the mast sections

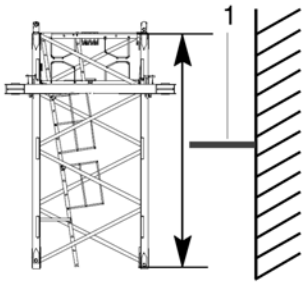
Other installations

2,45 m anchorage frame (S-32680-86)

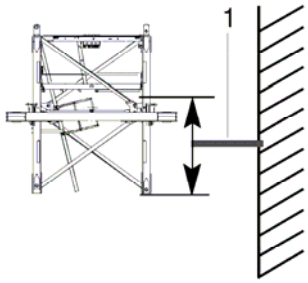
This new 2,45 m anchorage frame which replaces the frame Z-17680-32 since December 2006, offers various fitting possibilities. So, it is possible to adjust the anchorage frame level with respect to the fixing beams (1).



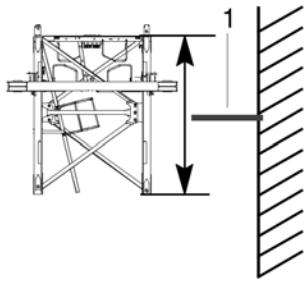
Range of possibilities on index **A** and **A1** masts



Range of possibilities on index **A2** masts



Range of possibilities on index **C** and **C1** masts



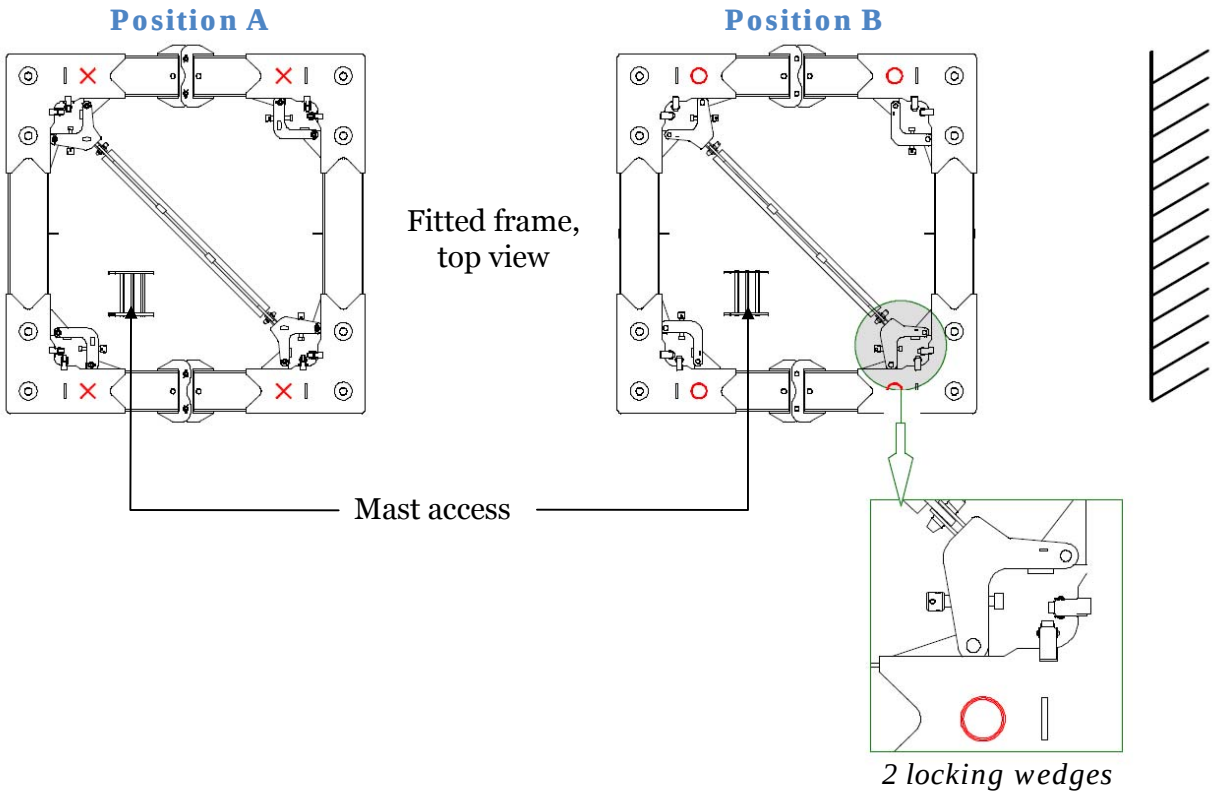
Range of possibilities on index **C2** masts

Foreword (identification of the fitting positions A, B, C and D):

Attention: The direction is indicated by 2 visual marks: ✕ and ○.

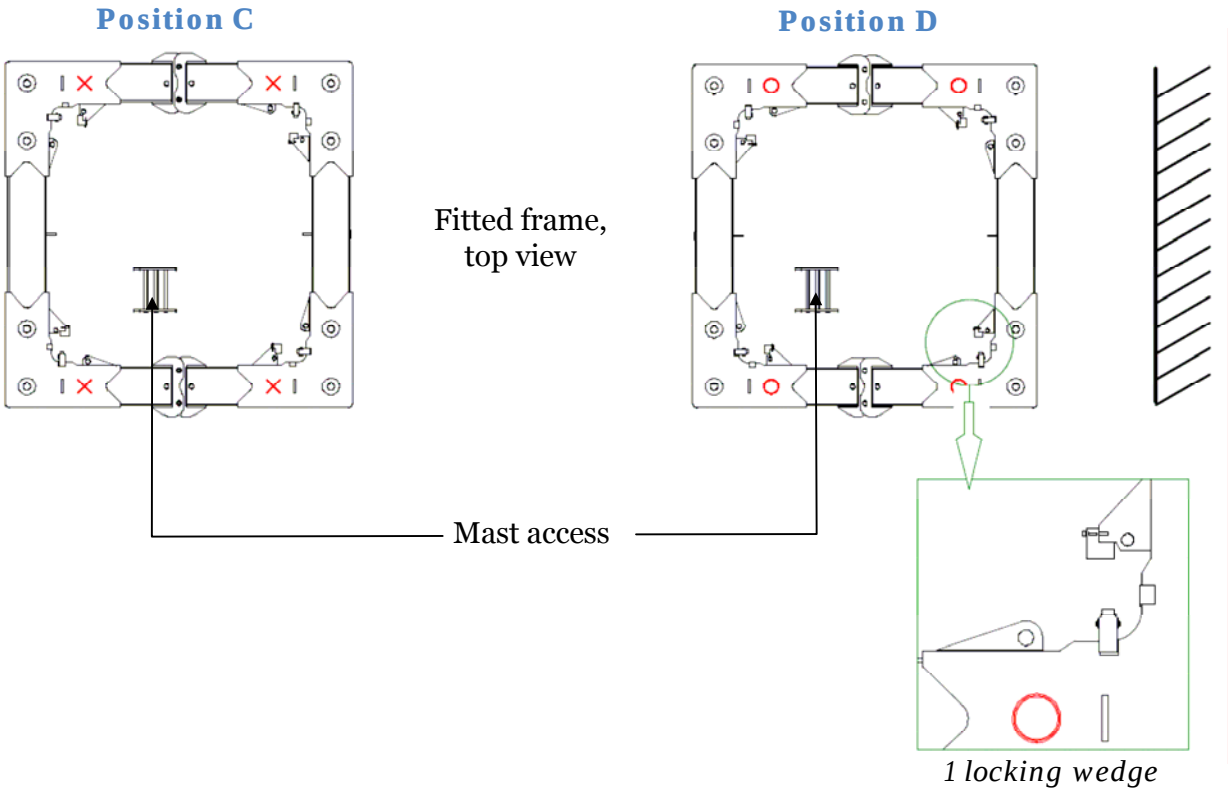
Attention: For a tightened frame, compulsorily observe the number and the position of the locking wedges in each frame angle according to the selected position A, B, C or D.

• Identification of the positions A and B (with flanges, frame yoke and 2 locking wedges in each angle)



Fitting the frames on the mast sections

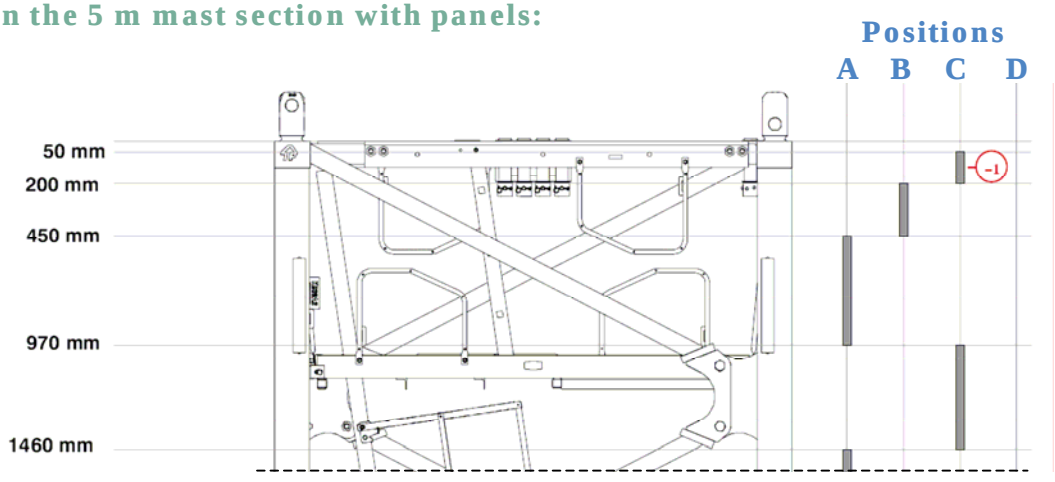
• Identification of the positions C and D (without flanges or frame yoke, with one single locking wedge in each angle)



Details of the various fitting positions of the 2,45 m anchorage frame (S-32680-86):

The grey areas correspond to possible frame positions.
The areas with the annotation (-1) or (-2) correspond to a downgrading of 1 or 2 mast sections with respect to the maximum mast composition for the considered number of anchorage frames.
The areas without annotation correspond to a mast composition without downgrading.
The areas without position correspond to forbidden anchorage frame positions.

Example on the 5 m mast section with panels:

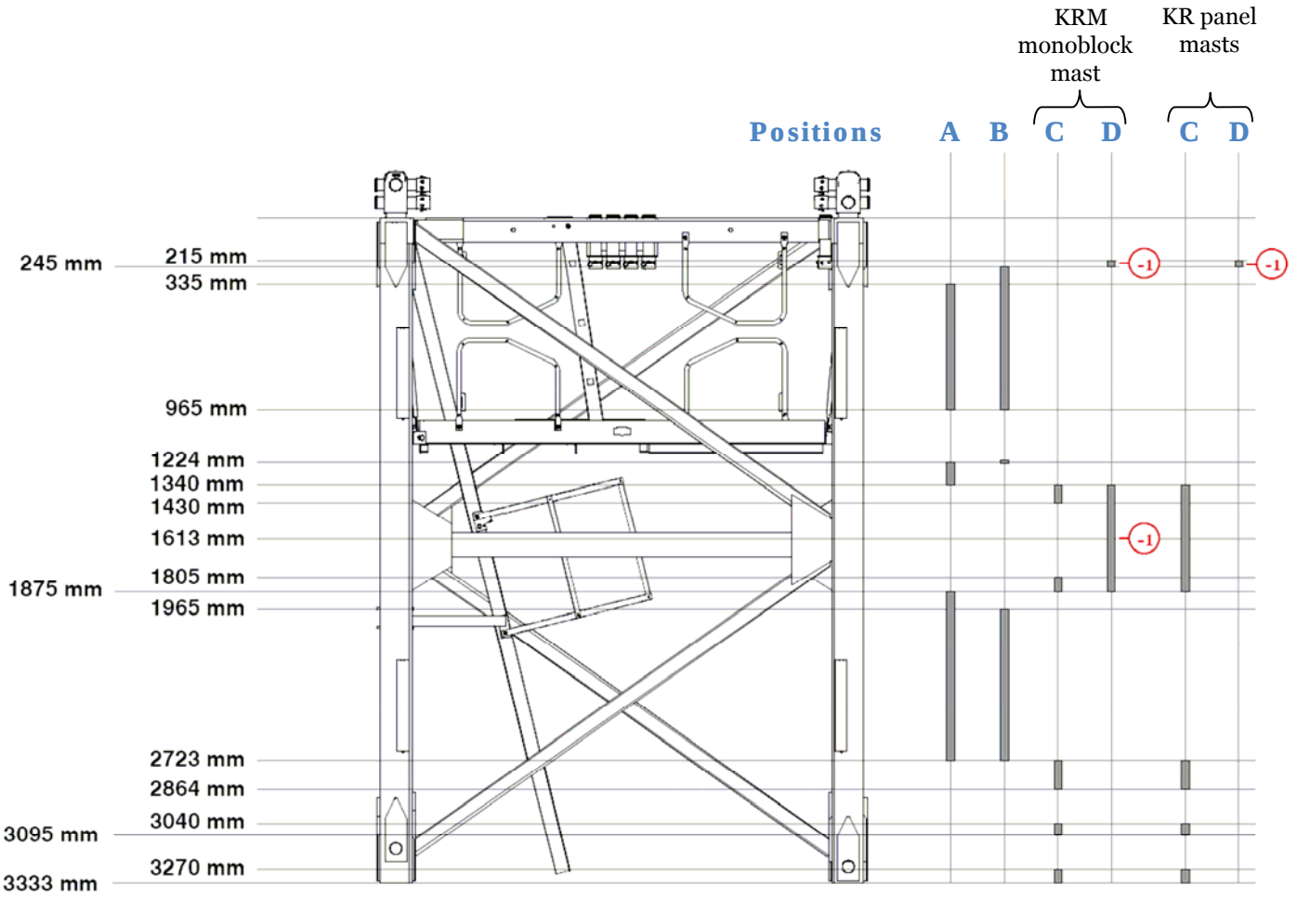


- from 50 mm to 200 mm, possibility position C with downgrading of a mast
- from 200 mm to 450 mm, possibility position B without downgrading
- from 450 mm to 970 mm, possibility position A with downgrading
- from 970 mm to 1460 mm, possibility position C without downgrading
- etc...

Fitting the frames on the mast sections

Position details on the reinforced 3,33 m mast section:

Concerned mast sections: KR 839C, KR 839C1, KR 839C2, KRMT 839C, KRMT 839C1 and KRMT 839C2

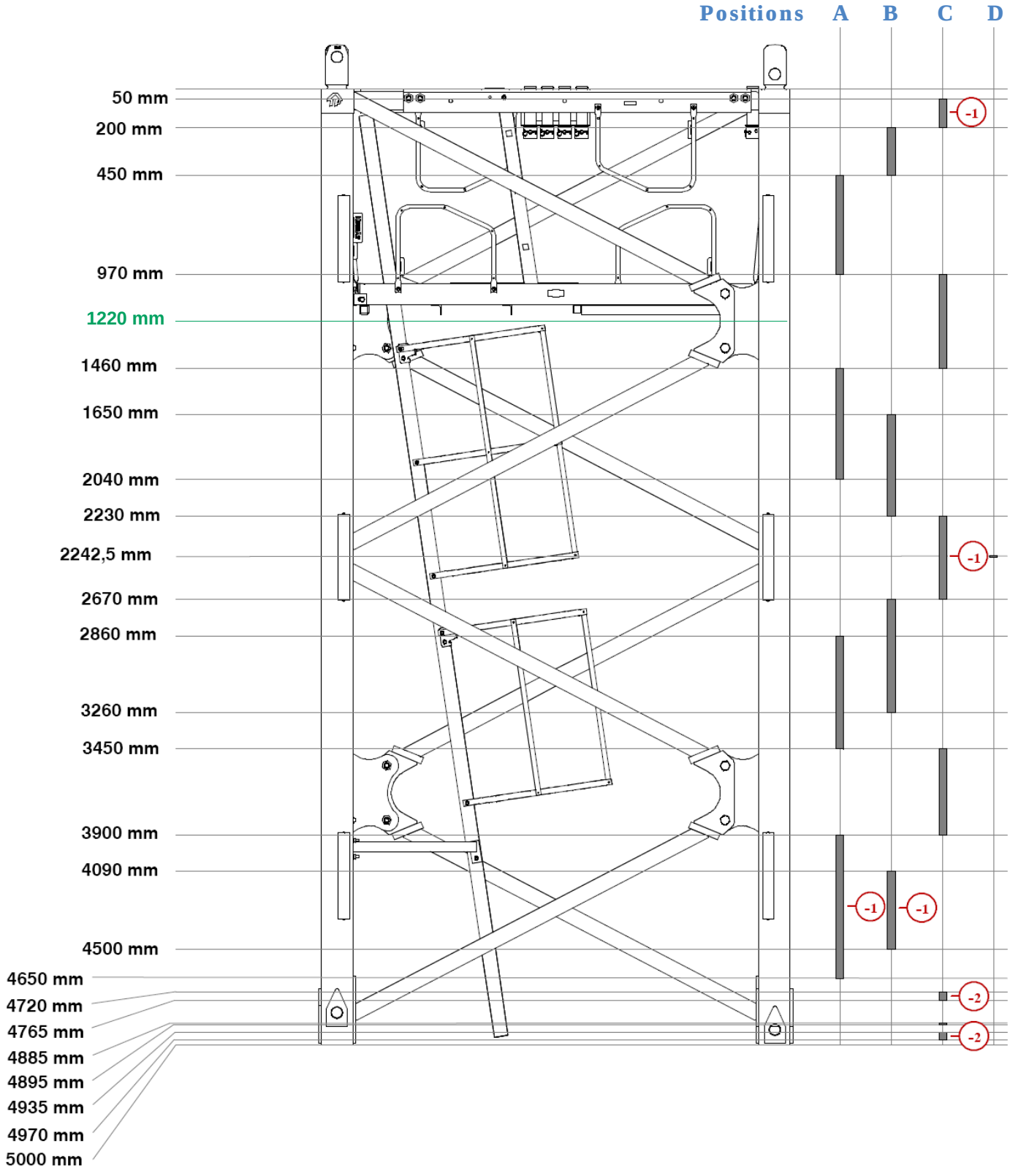


Note: *On the masts with index C and C1 (0 to 1224 mm) it is not possible to fit the anchorage frame.*

Fitting the frames on the mast sections

Position details on the 5 m panel masts:

Concerned masts: K 839A, K 839A1 and K 839A2



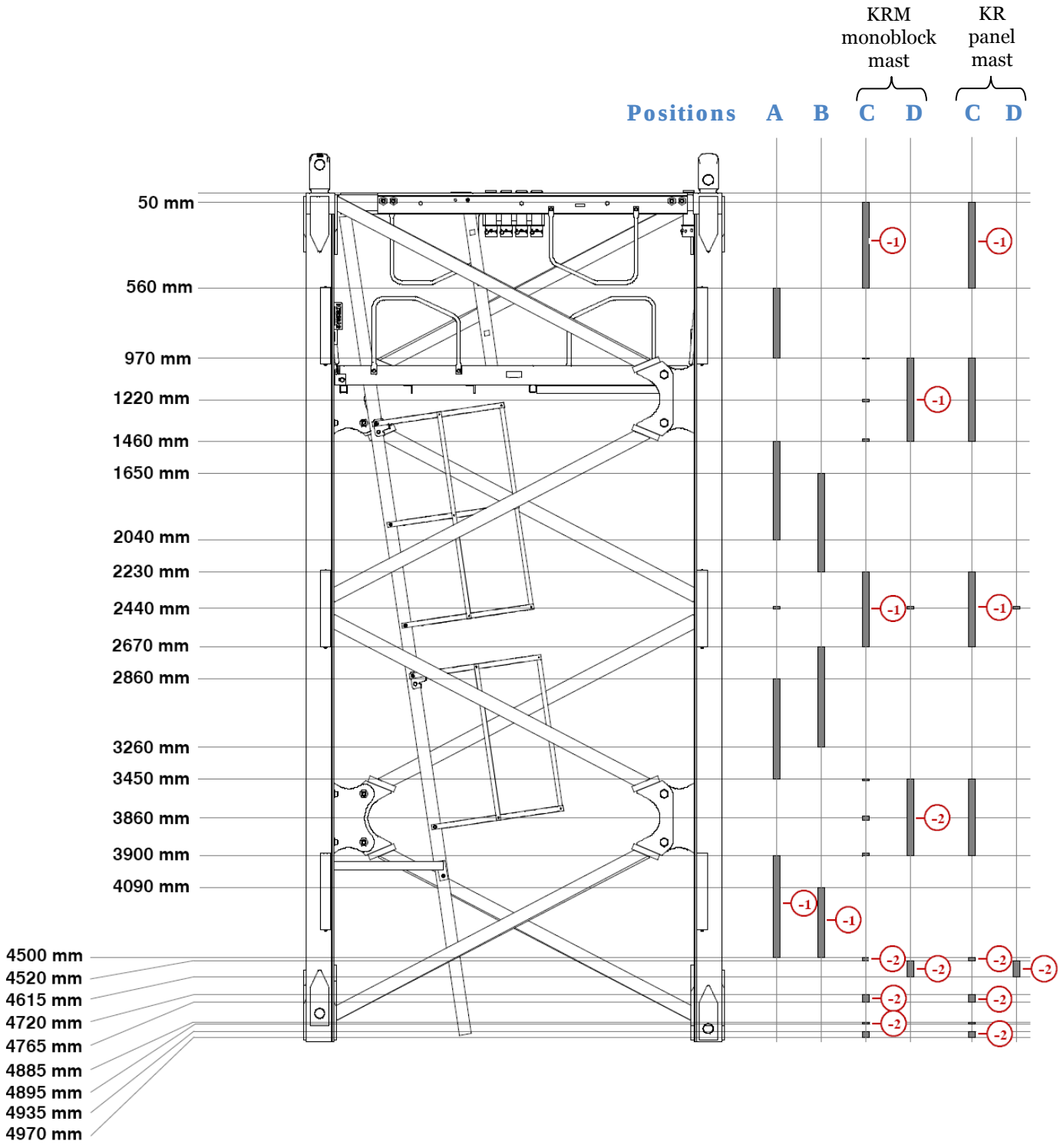
Note:

- *On the mast with index A and A1 (0 to 1220 mm) it is not possible to fit the anchorage frame.*
- *From 4650 mm, although possible, it is not advisable to fit the anchorage frame on the mast sections A, A1 and A2, because of the required precision and the considerable downgrading (2 mast sections).*

Fitting the frames on the mast sections

Position details on reinforced 5 m masts:

Concerned masts: KR 839A, KR 839A1, KR 839A2, KRMT 839A, KRMT 839A1 and KRMT 839A2



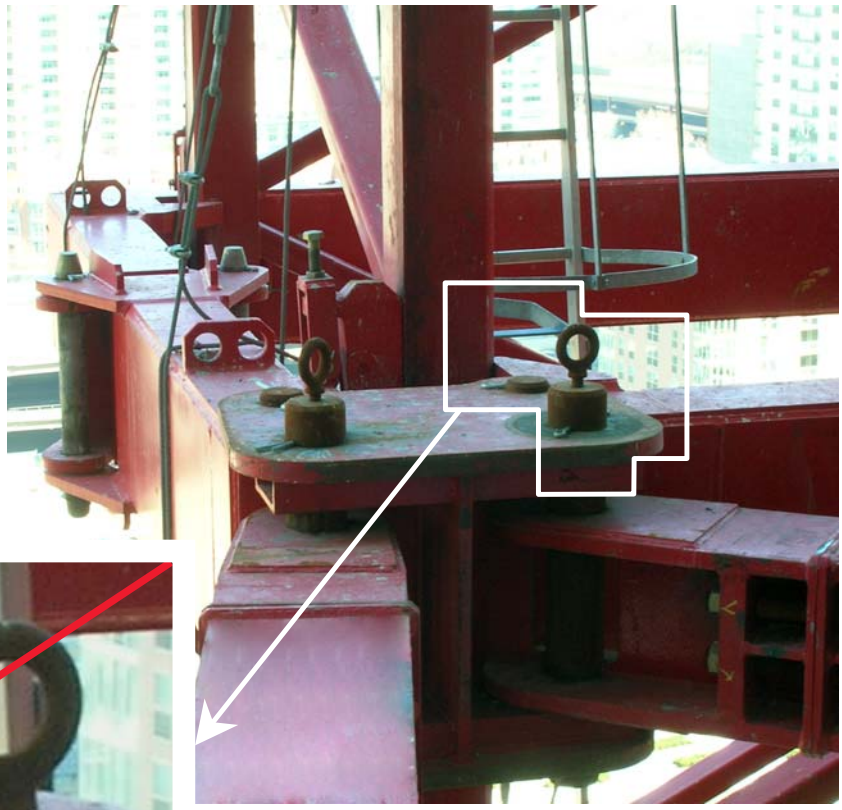
Note:

- *On the mast index A and A1 (0 to 1220 mm) it is not possible to fit the anchorage frame.*
- *From 4500 mm, although possible, it is not recommended to fit the anchorage frame on the mast sections A, A1 and A2, because of the required precision and the considerable downgrading (2 mast sections).*

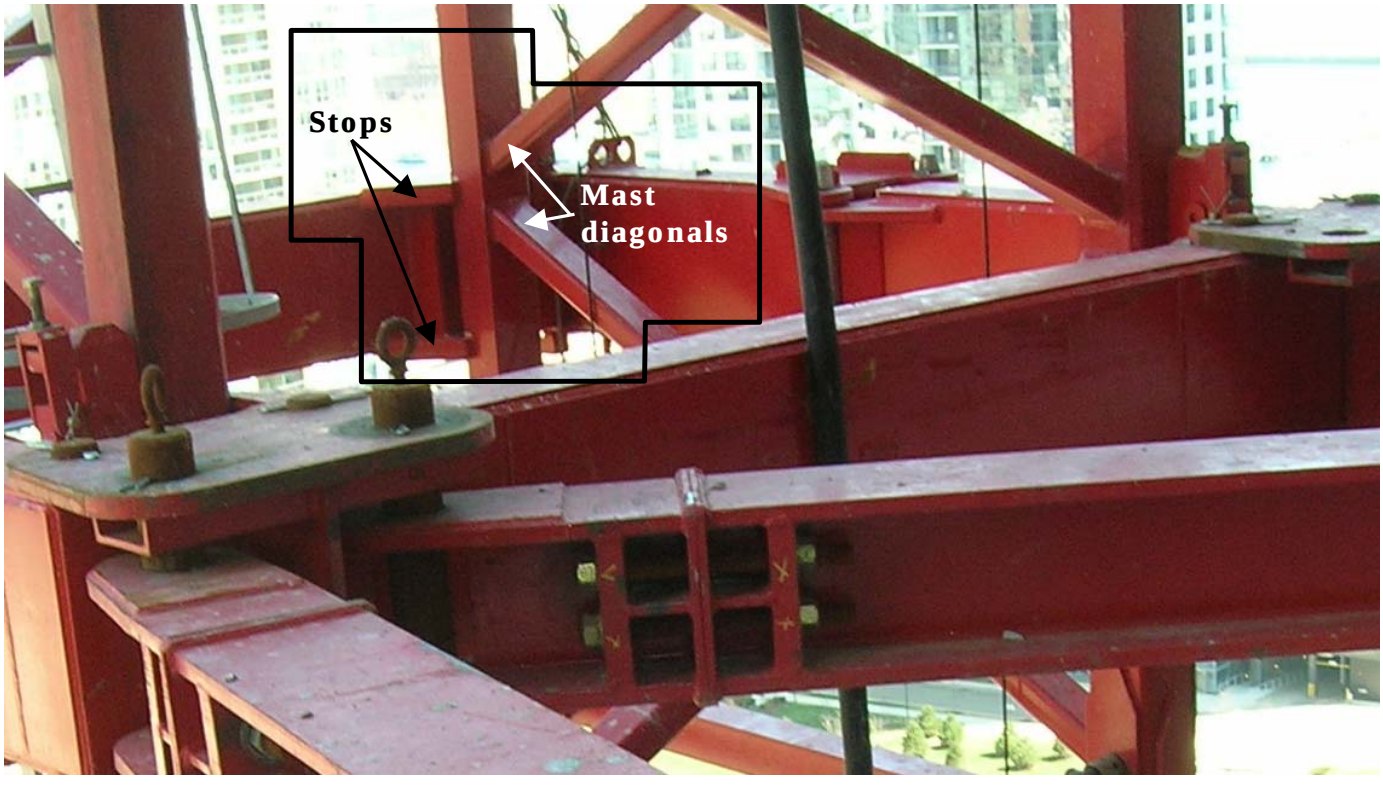
Fitting the frames on the mast sections

Example of a frame incorrectly fitted

These photos present a 2,45 m anchorage frame (Z-17680-32) fitted the wrong way (upside down):
ATTENTION: DANGER !



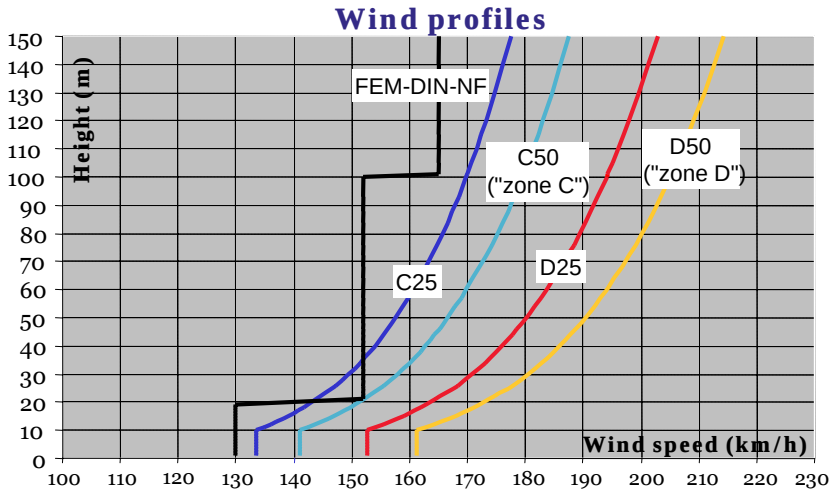
Positioned in this way, the stops do not transmit the loads of the anchorage frame to the mast diagonals.



Besides being fitted the wrong way, this anchorage frame is not centred with respect to the mast diagonal knots. The stops should be of both sides of the two diagonals.

Mast compositions of very high cranes

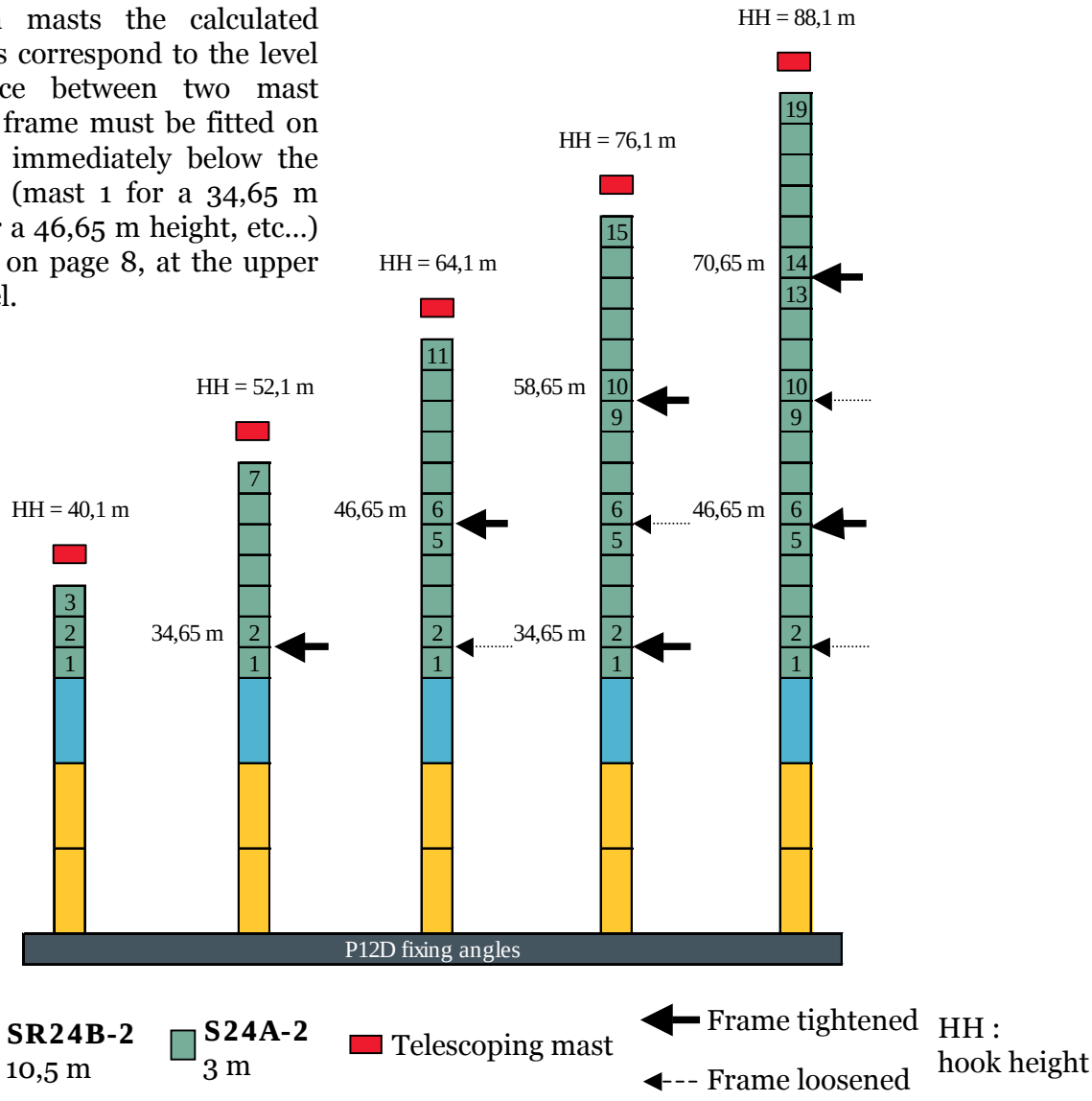
In the technical instructions the mast compositions are defined for gusts which can reach the speeds given in the opposite graph. The user is responsible that these maximum values are not exceeded. Otherwise compulsorily consult the Manitowoc technical support.



Note: *Depending on the crane height and the number of anchorage frames fitted, certain frames must be tightened and other loosened. The details of these operations are given in the technical instructions bearing the serial crane number.*

Example 1 (MCT 88 – P12D fixing angles – 1,20 m masts – all jibs – FEM 1.001 Standard – with cab – max. permissible gust: 150 km/h)

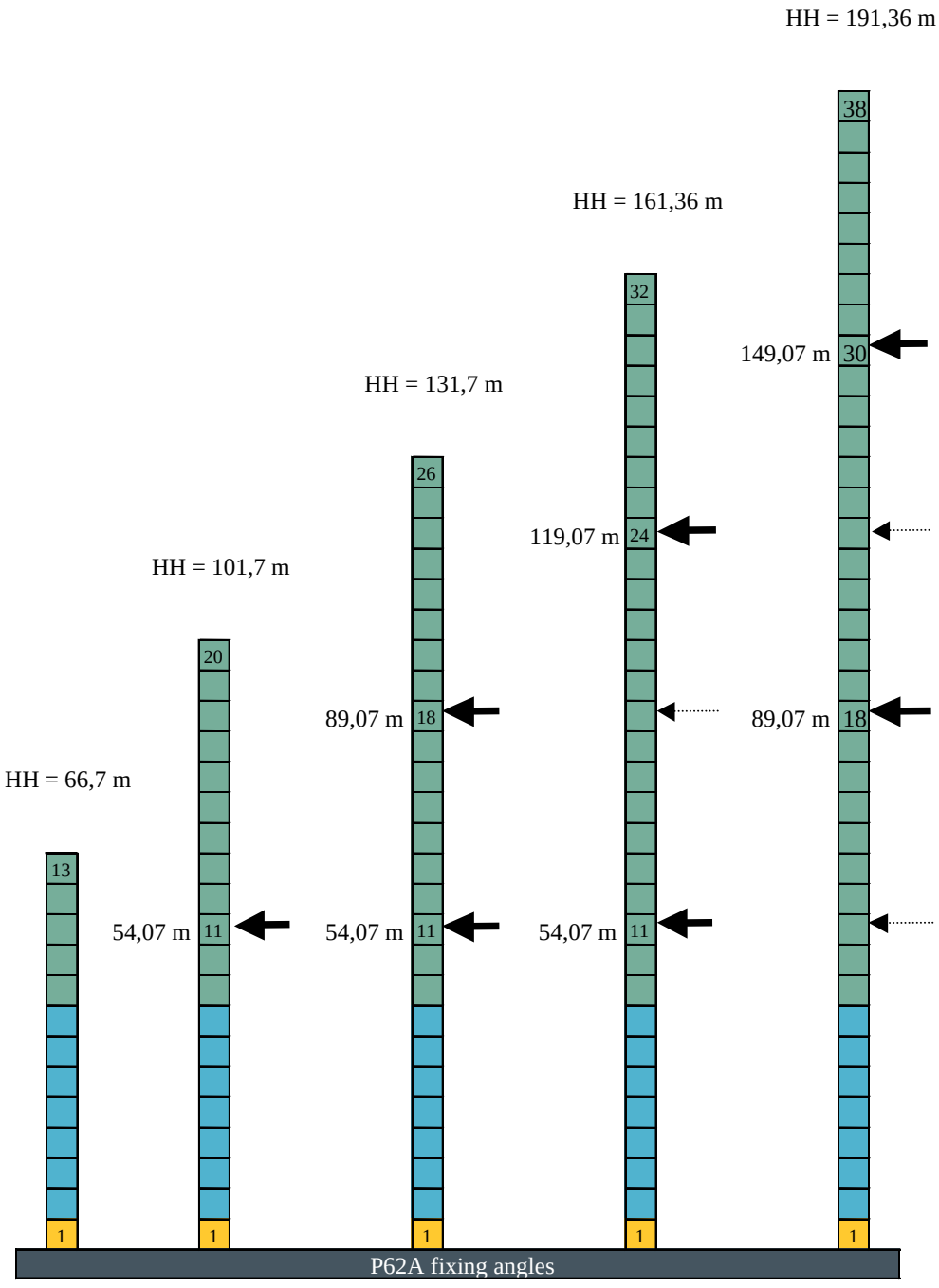
On the 1,20 m masts the calculated anchorage heights correspond to the level of the joint face between two mast sections. But the frame must be fitted on the mast section immediately below the calculated height (mast 1 for a 34,65 m height, mast 5 for a 46,65 m height, etc...) and, as indicated on page 8, at the upper telescopic lug level.



Mast compositions of very high cranes

Example 2 (MD 310C – P62A fixing angles – 2,00 m masts – all jibs – FEM 1.001 Standard – max. permissible gust: 165 km/h)

On the 1,60 m and 2,00 m masts, the anchorage frames must compulsorily be fitted at the upper mast knot level indicated in the standard mast composition of very high cranes.



KR639A 5 m

K639A 5 m

K637A 5 m

Frame tightened

Frame loosened

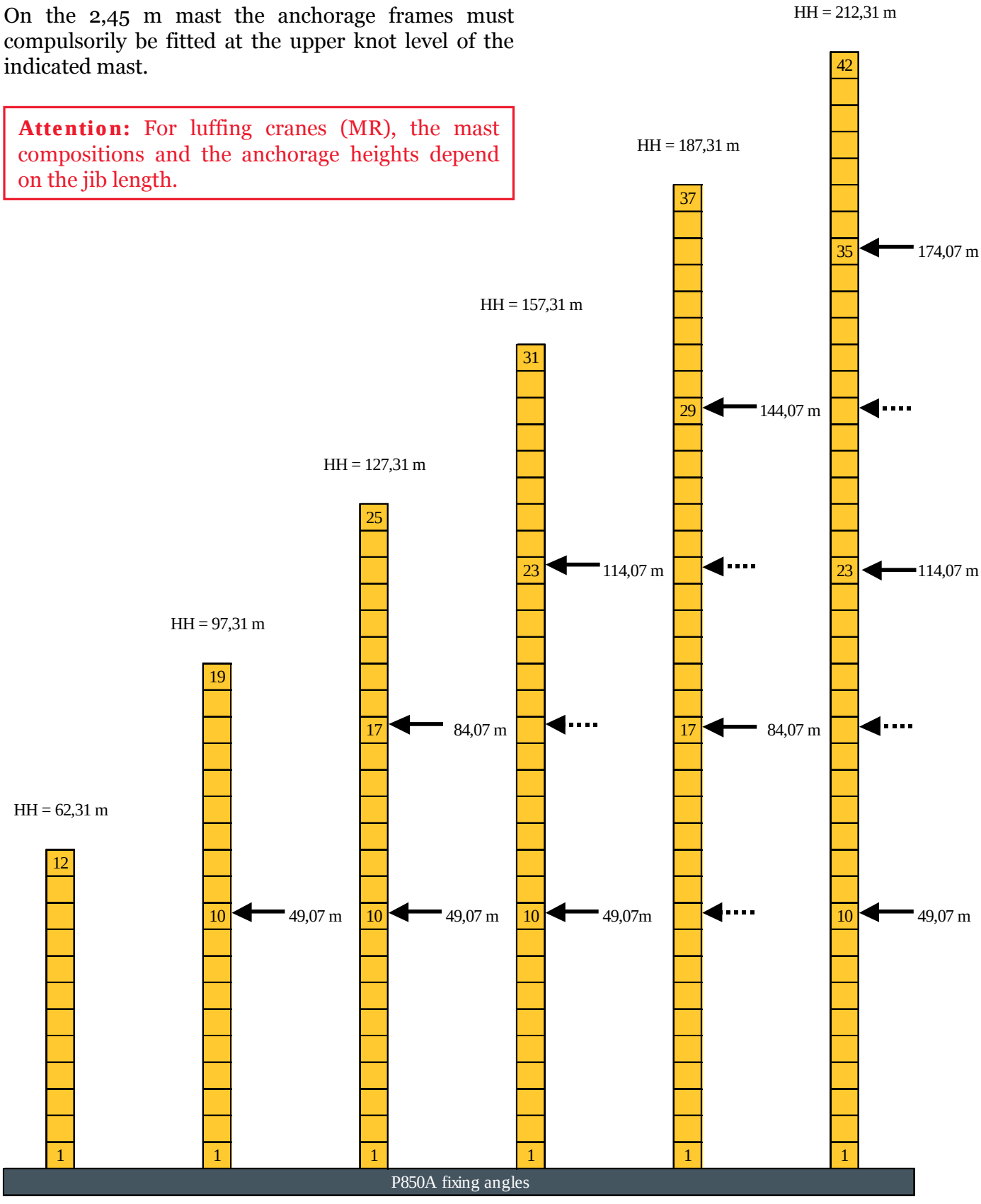
HH : hook height

Mast compositions of very high cranes

Example 3 (MR 615 – P850A fixing angles – 2,45 m masts – 60 m jib – FEM 1.001 Standard – max. permissible gust: 165 km/h)

On the 2,45 m mast the anchorage frames must compulsorily be fitted at the upper knot level of the indicated mast.

Attention: For luffing cranes (MR), the mast compositions and the anchorage heights depend on the jib length.



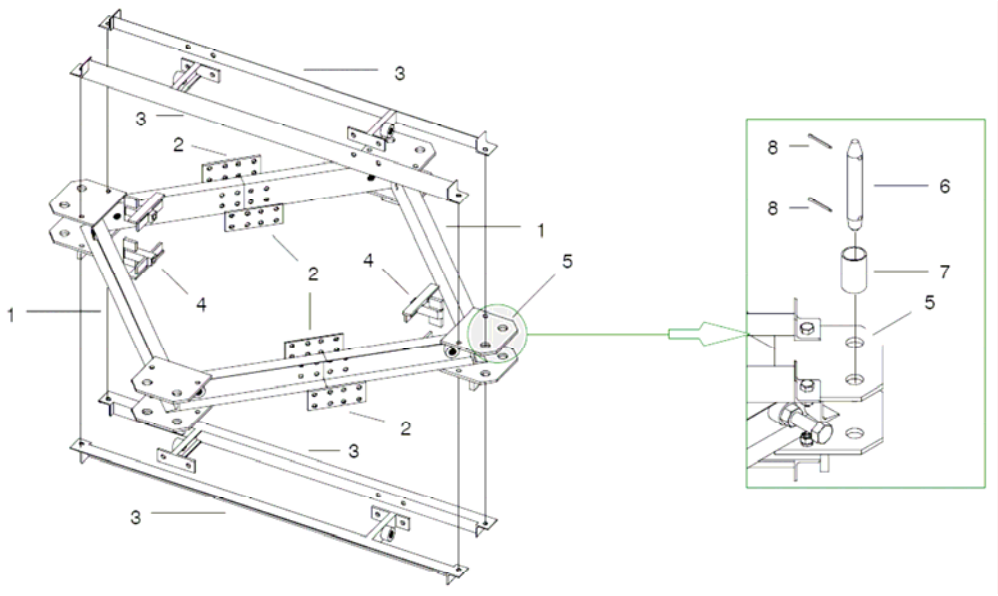
Anchorage frame 1,20 m (Q-06102-04)

Description

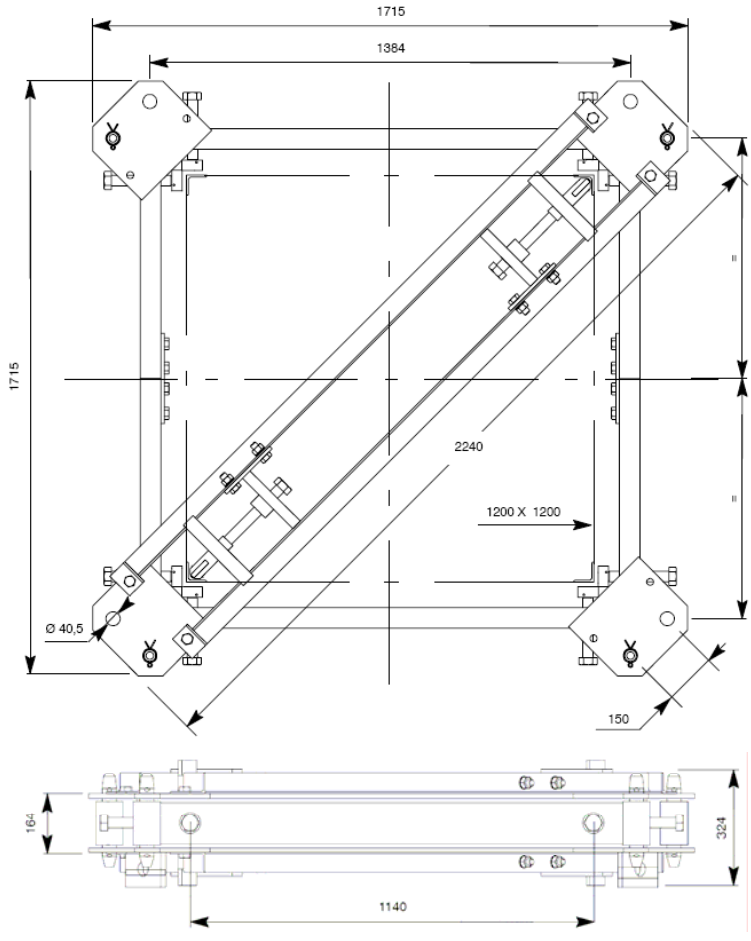
A complete frame is composed of:

- 2 unequipped identical half frames (1)
- 4 flanges (2)
- 4 bracings (3)
- 4 locking stops (4)

Each half frame (1) is drilled by four holes (5) in order to allow fixing the connecting beams to the building by means of pins (6), spacers (7) and split pins (8).

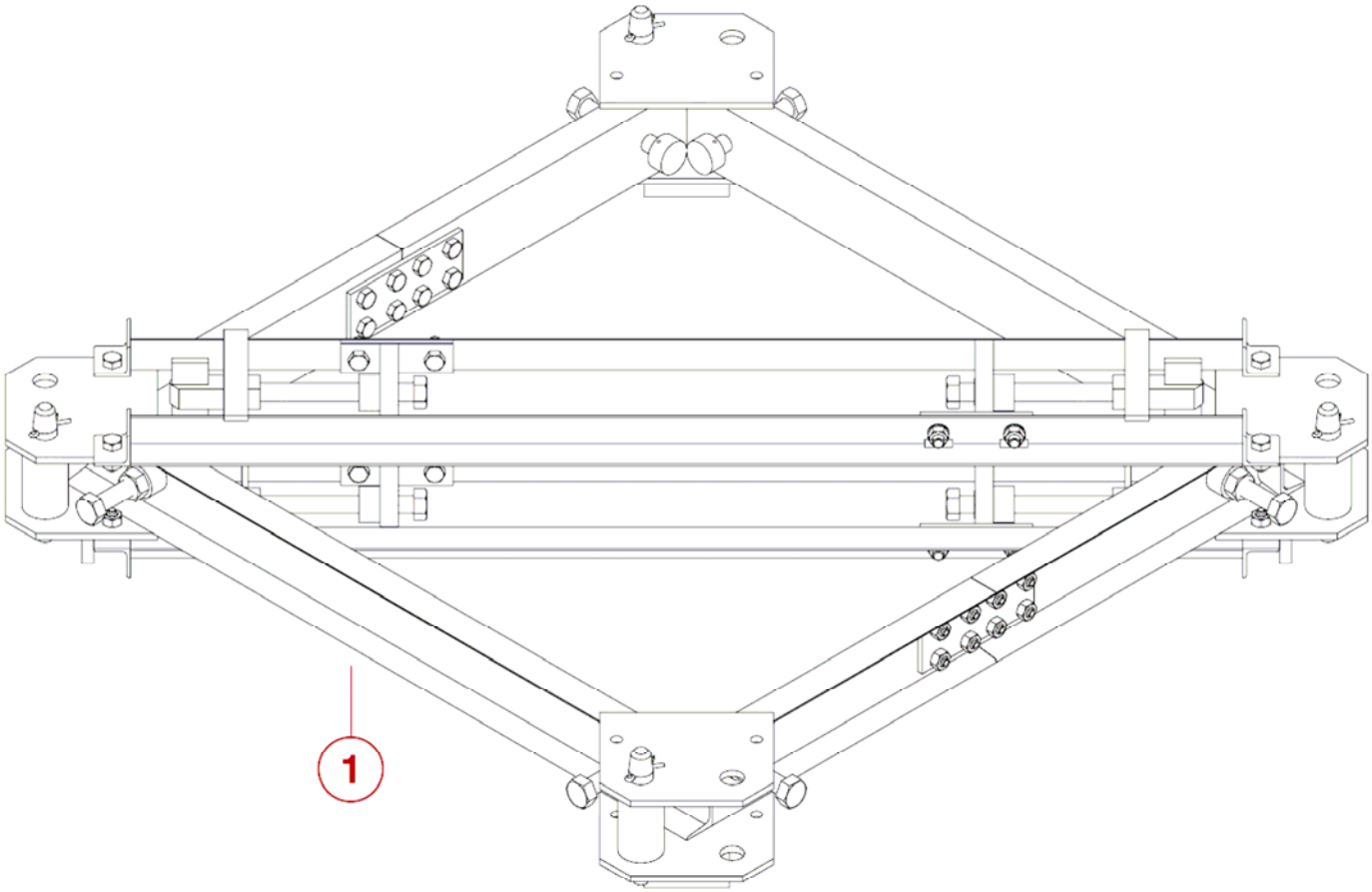


Dimensions



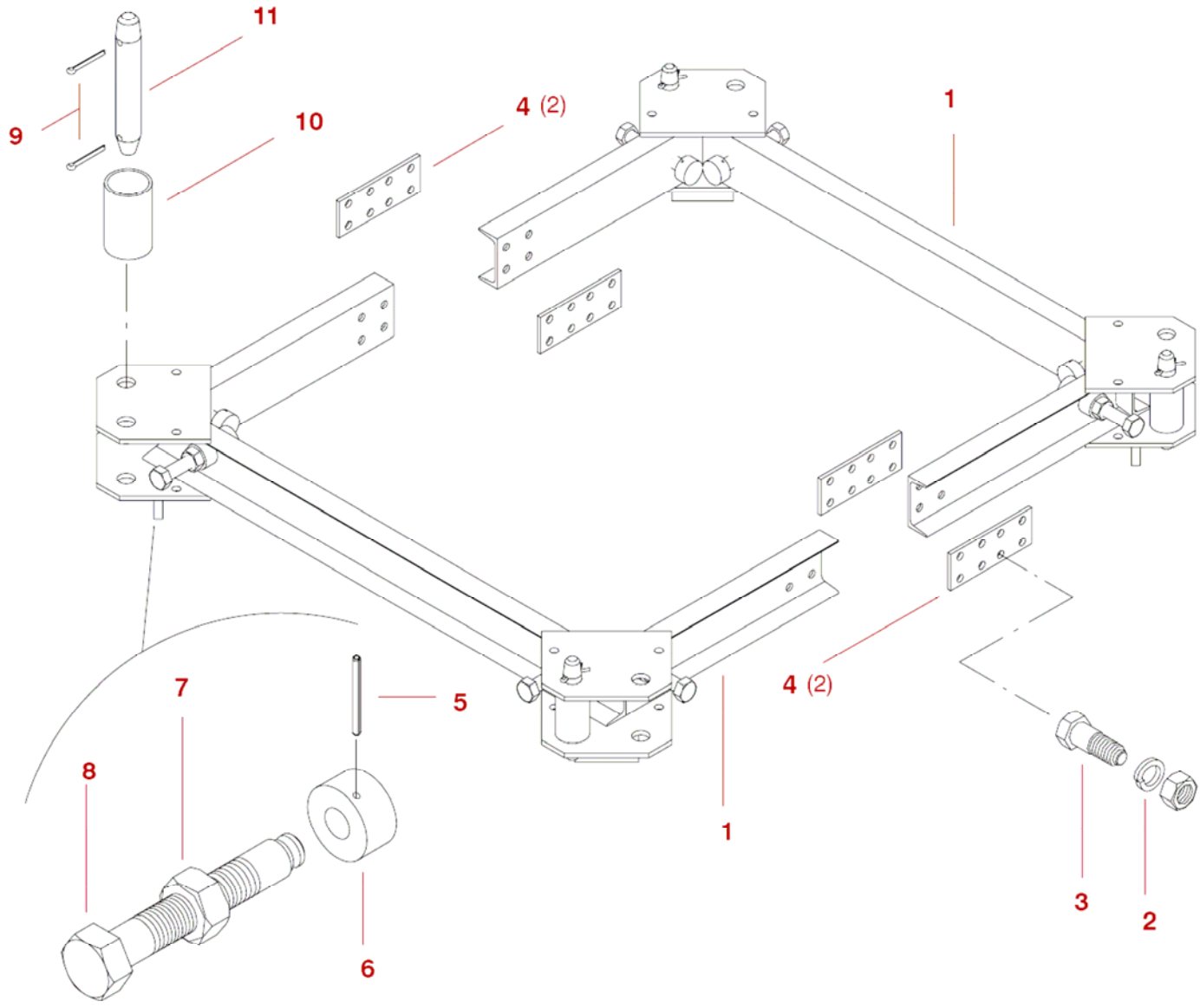
Anchorage frame 1,20 m (Q-06102-04)

Spare parts



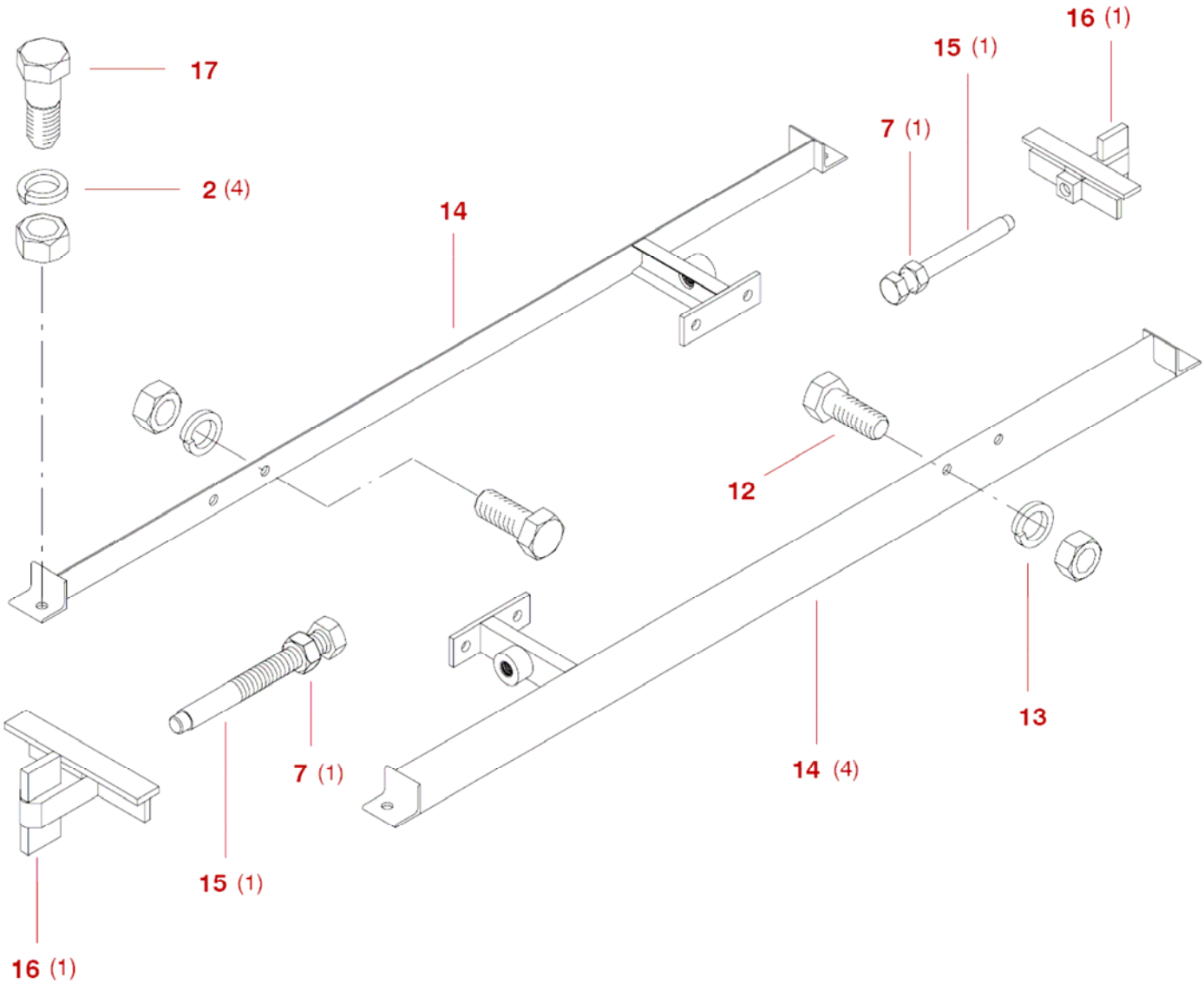
Mark	Reference	Designation	
		French	English
1	Q–06102–04	CADRE-ANCRAGE 1,2M	ANCHORAGE FRAME 1,2M

Anchorage frame 1,20 m (Q-06102-04)



Mark	Reference	Quantity	Minimum quantity supplied	Designation		Tighte--ning torque
				French	English	
1	W–03102–44	2	-	DEMI–CADRE ANCRAGE	HALF ANCHORAGE FRAME	-
2	K–00347–16	24	100	RONDELLE W18	WASHER W18	-
3	X–00340–15	16	10	BOULON–ECLI H 20X53 P36	FISHPLATE BOLT H 20X53 P36	285 Nm
4	P–02228–60	4	-	PLAT PERCE	DRILLED FLAT	-
5	A–00357–42	8	100	GOUPILLE–ELAST E 5X60	MECANINDUS PIN E 5X60	-
6	V–01298–08	8	-	ROND BLOCAGE	LOCKING ROUND BAR	-
7	S–00341–25	12	25	ECROU H M30 CL8	NUT H M30 CL8	165 Nm
8	Q–04330–12	8	-	VIS H M30X190 TETON CL5-6	SCREW H M30X190 STUD CL5-6	385 Nm
9	Z–00355–57	8	100	GOUPILLE–V 8X63 NFE27487	SPLIT PIN 8X63 NFE27487	-
10	B–03293–61	4	-	ENTRETOISE 76,1 EP5 L125	SPACER 76,1 EP5 L125	-
11	Q–30276–42	4	-	AXE 40X175 L	PIN 40X175 L	-

Anchorage frame 1,20 m (Q-06102-04)



Mark	Reference	Quantity	Minimum quantity supplied	Designation		Tighte--ning torque
				French	English	
12	Z–00337–63	8	-	BOULON H M20X40 CL5-6	SCREW BOLT H M20X40 CL5-6	160 Nm
13	L–00347–17	8	100	RONDELLE W20	WASHER W20	-
14	M–09102–82	4	-	CROISILLON	BRACING	-
15	T–02330–30	4	-	VIS H M30X270 CL5.6 TET L	SCREW H M30X270 CL5.6 TET L	385 Nm
16	Z–06102–35	4	-	BUTEE SERRAGE	LOCKING STOP	-
17	B–00340–18	8	10	BOULON-ECLI H 20X48 P36	FISHPLATE BOLT H 20X48 P36	285 Nm

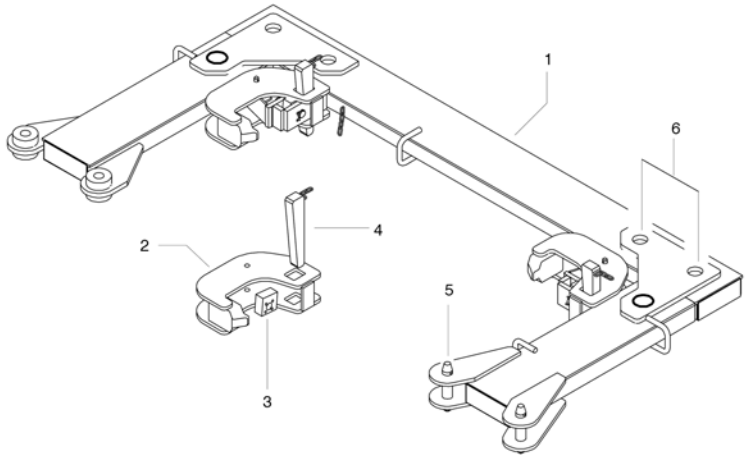
Anchorage frame 1,60 m (S-14109-51)

Description

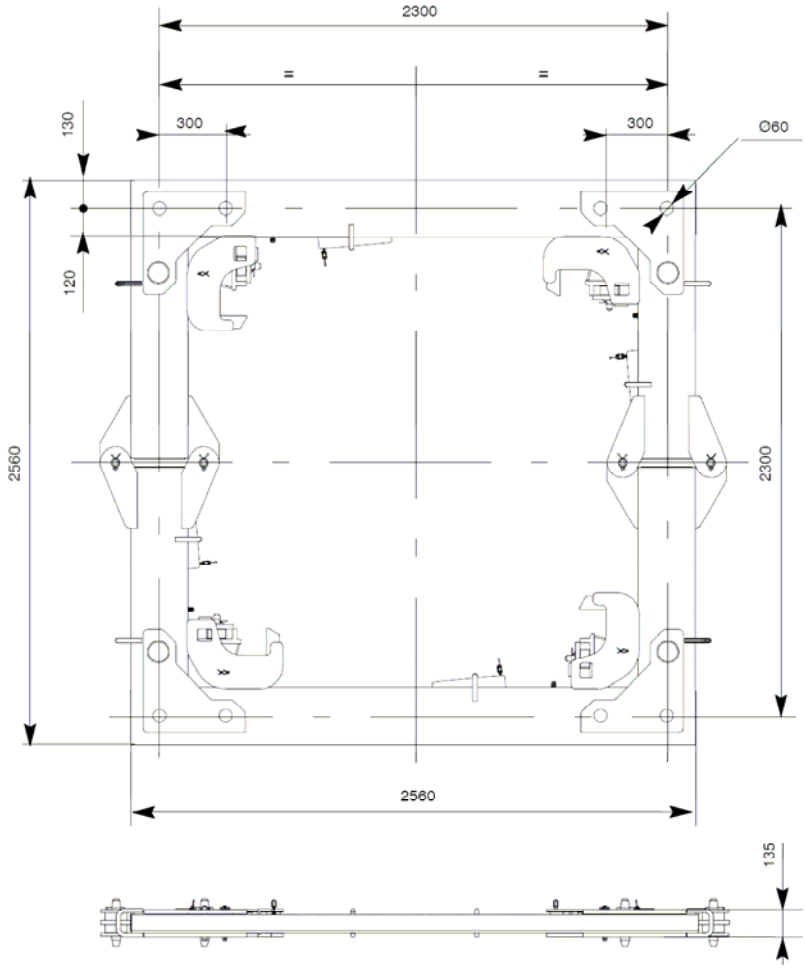
A complete frame is composed of:

- 2 unequipped identical half frames (1)
- 4 flanges (2)
- 4 adjusting wedges (3)
- 4 flange locking wedges (4)
- 4 pins (5)

Each half frame is drilled by four holes (6) in order to allow fixing the connecting beams to the building.

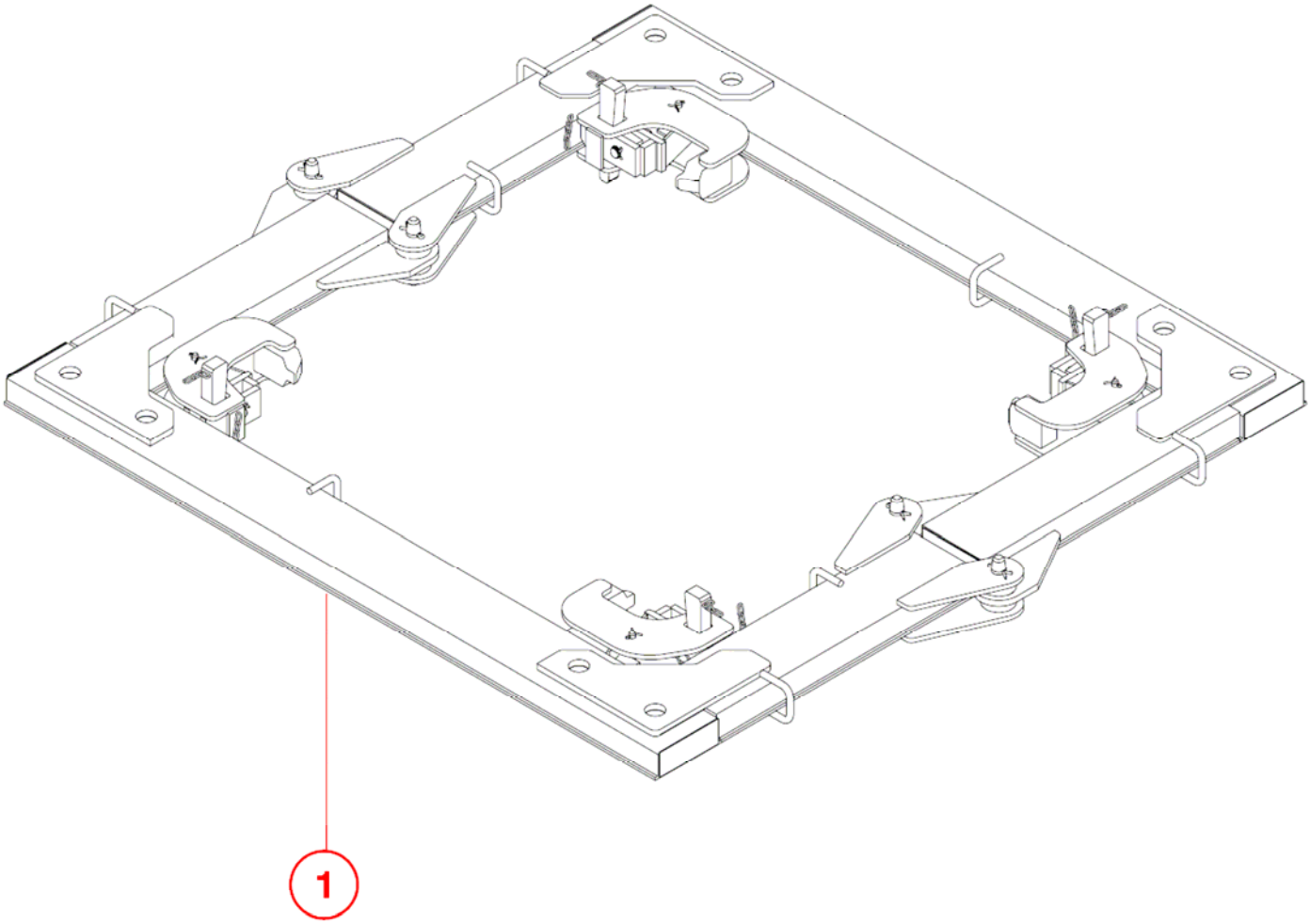


Dimensions



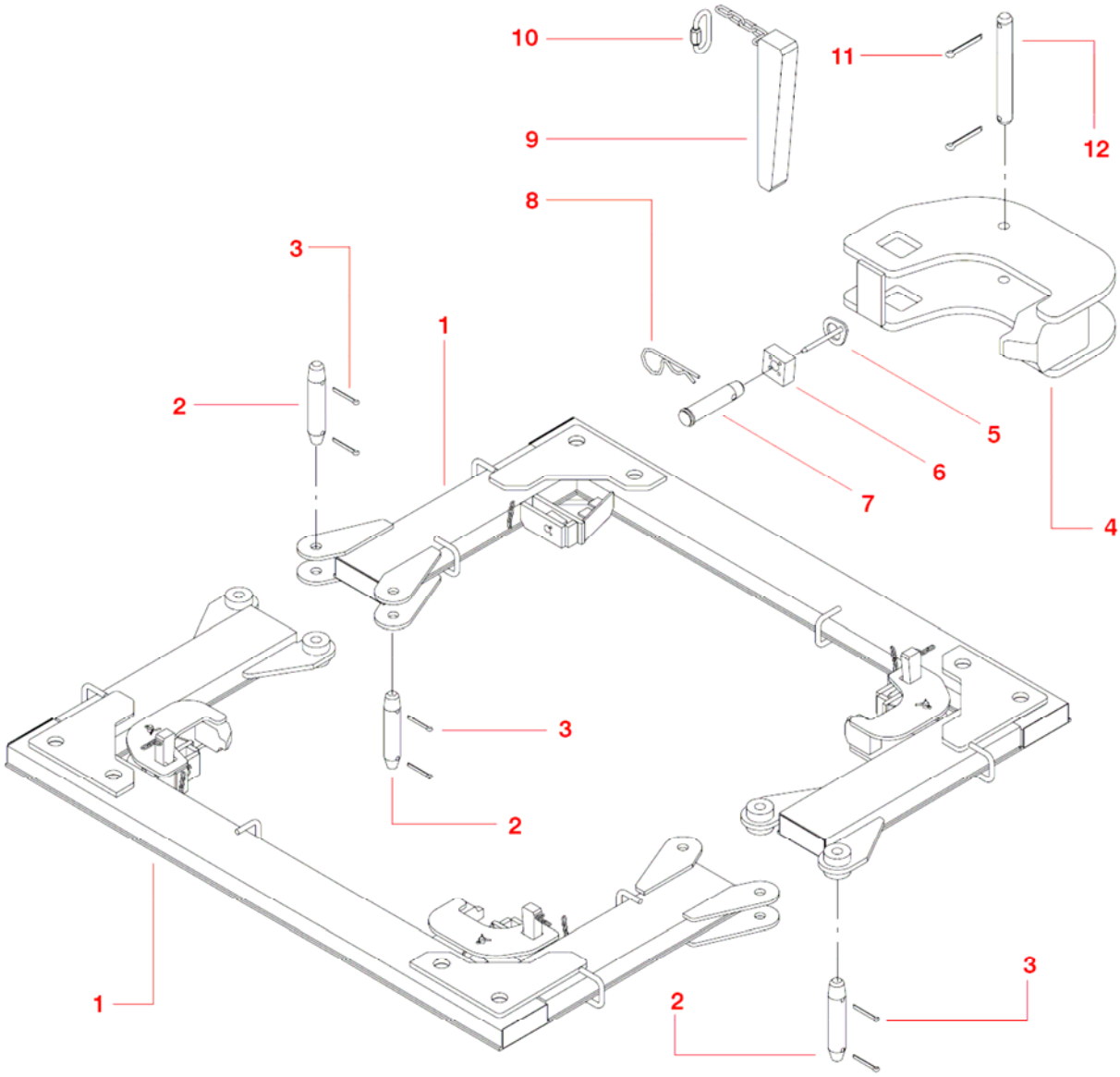
Anchorage frame 1,60 m (S-14109-51)

Spare parts



Mark	Reference	Designation	
		French	English
1	S-14109-51	CADRE D'ANCRAGE 1,60M	ANCHORAGE FRAME 1,60 M

Anchorage frame 1,60 m (S-14109-51)



Mark	Reference	Quantity	Minimum quantity supplied	Designation	
				French	English
1	S–14109–05	2	-	DEMI-CADRE D'ANCRAGE NU	UNEQUIPPED HALF FRAME
2	U–27276–57	4	-	AXE 40X130 L	PIN 40X130 L
3	D–00355–61	8	100	GOUPILLE–V 10X63	SPLIT PIN 10X63
4	U–14109–07	4	-	BRIDE	FLANGE
5	V–14109–08	4	-	AXE D8 SP	PIN D8 SP
6	W–14109–09	4	-	CALE	WEDGE
7	A–81278–55	4	-	AXE–TÊTE D30X94 35CD4	HEADED PIN D30X94 35CD4
8	X–00360–16	4	100	GOUPILLE D4 SIMPLE ENROU	SAFETY PIN D4
9	T–14109–06	4	-	COIN	WEDGE
10	E–09367–02	4	-	MAILLON RAPIDE D5	CONNECTING LINK D5
11	N–00355–47	8	100	GOUPILLE–V 6,3X45	SPLIT PIN 6,3X45
12	L–10276–96	4	-	AXE 20X135 C	PIN 20X135 C

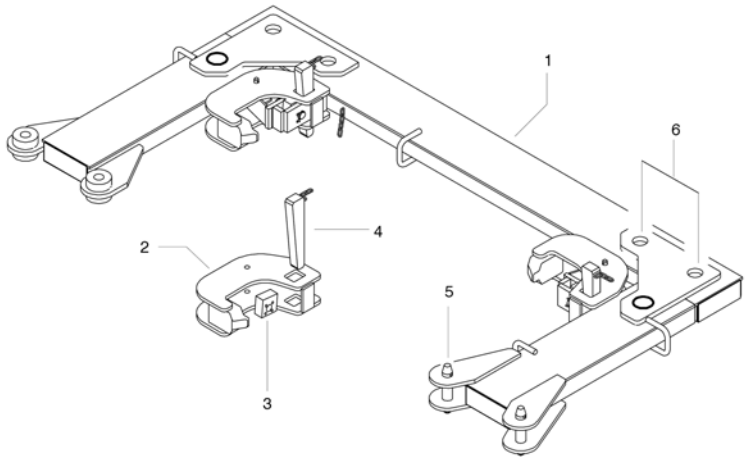
Anchorage frame 2,00 m (W-25109-30)

Description

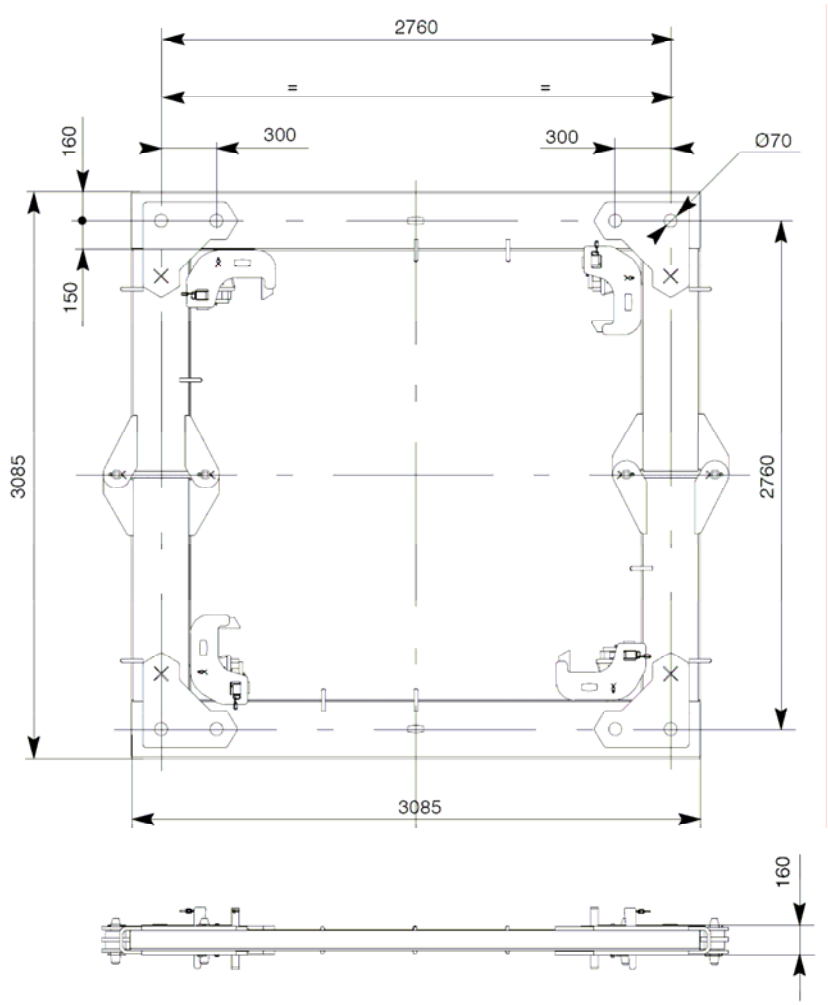
A complete frame is composed of:

- 2 unequipped identical half frames (1)
- 4 flanges (2)
- 4 adjusting wedges (3)
- 4 flange locking wedges (4)
- 4 pins (5)

Each half frame is drilled by four holes (6) in order to allow fixing the connecting beams to the building.

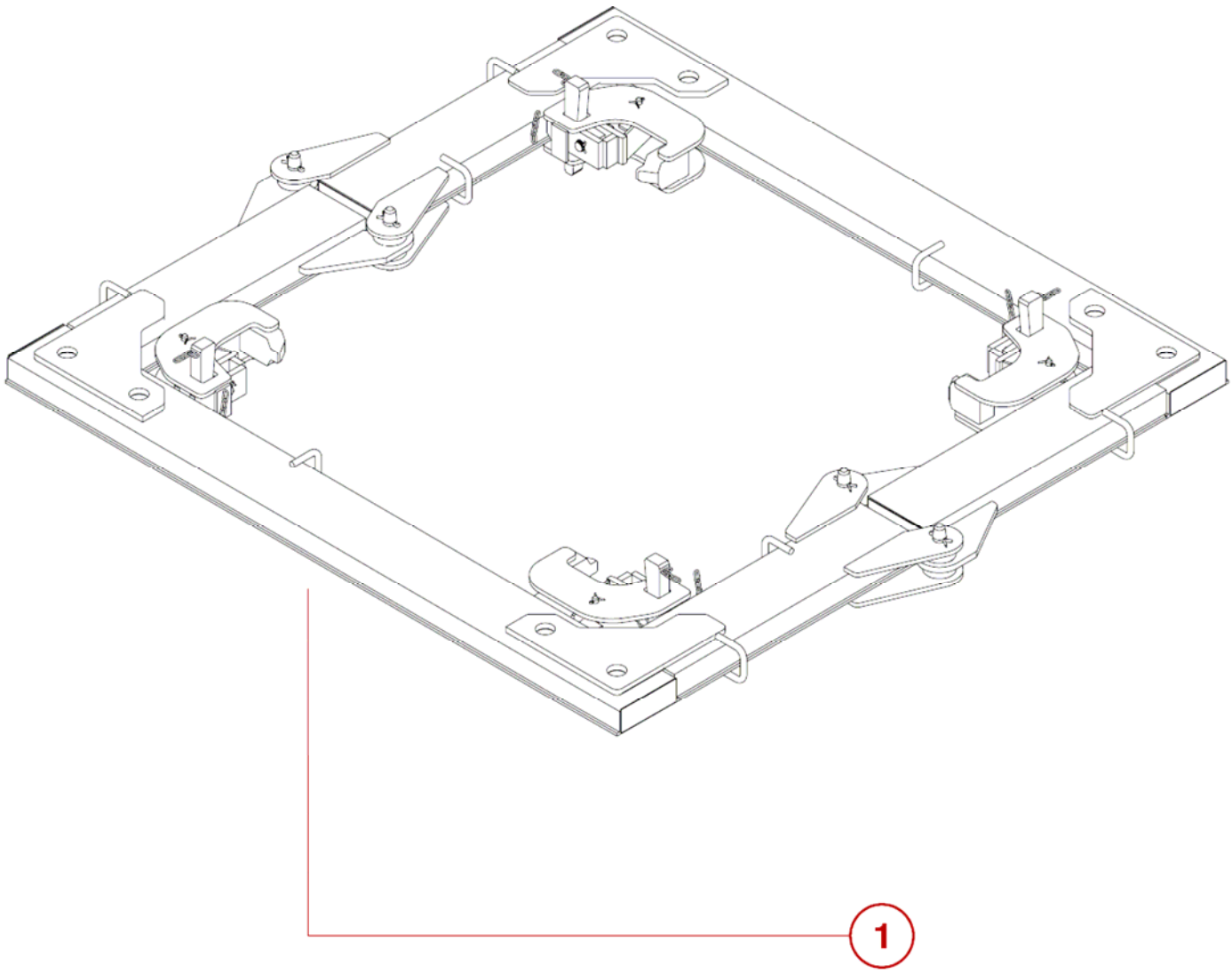


Dimensions



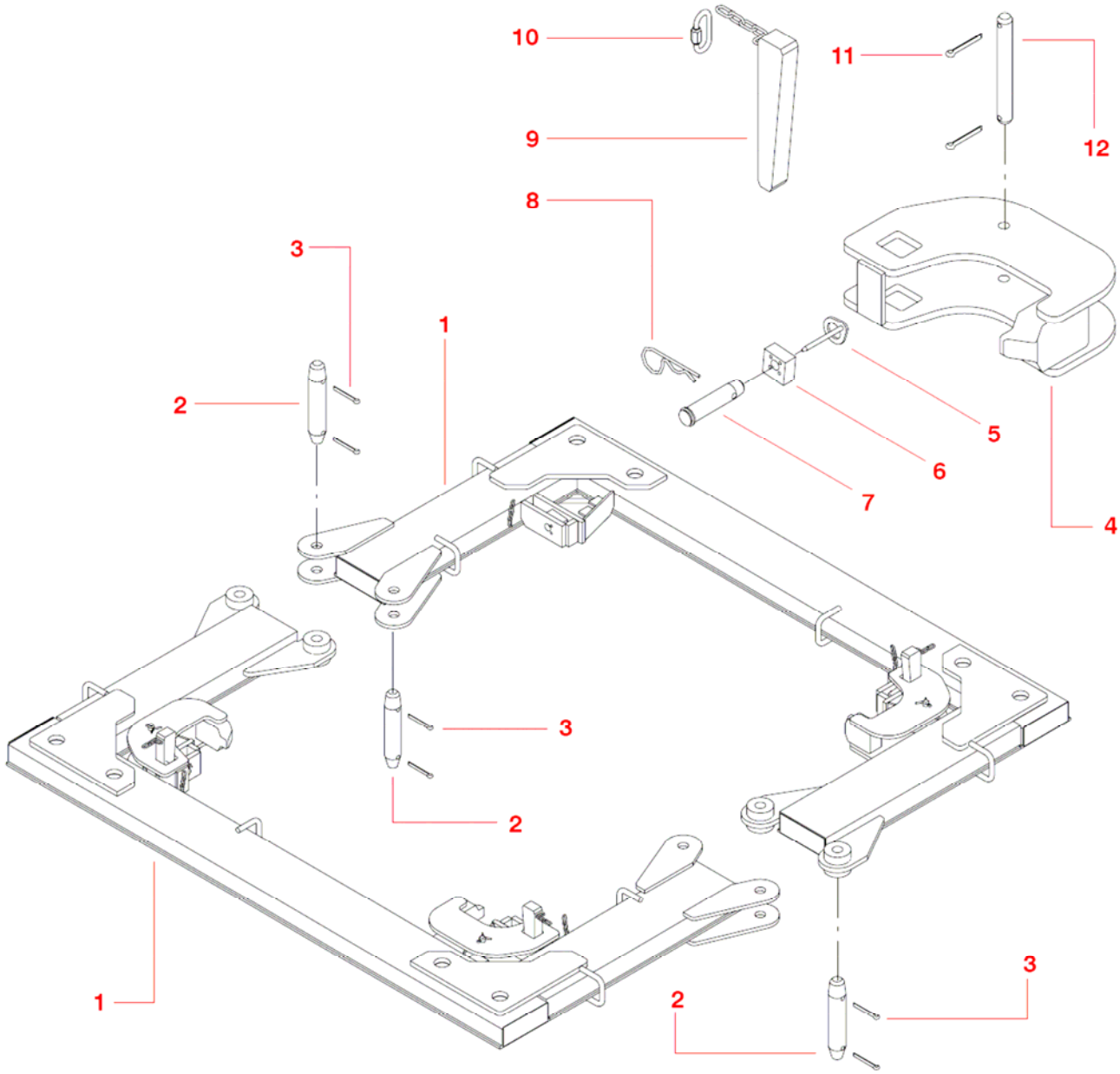
Anchorage frame 2,00 m (W-25109-30)

Spare parts



Mark	Reference	Designation	
		French	English
1	W–25109–30	CADRE–ANCRAGE 2,00M	ANCHORAGE FRAME 2,00 M

Anchorage frame 2,00 m (W-25109-30)



Mark	Reference	Quantity	Minimum quantity supplied	Designation	
				French	English
1	V–25109–29	2	-	DEMI-CADRE D'ANCRAGE NU	UNEQUIPPED HALF FRAME
2	P–30276–64	4	-	AXE 50X145 L	PIN 50X145 L
3	J–00355–66	8	50	GOUPILLE V 10X80	SPLIT PIN 10X80
4	X–25109–31	4	-	BRIDE	FLANGE
5	A–25109–33	4	-	AXE D8 SP	PIN D8 SP
6	Z–25109–32	4	-	CALE	WEDGE
7	L–81278–65	4	-	AXE-TETE D40X95 34CD4	HEADED PIN D40X95 34CD4
8	N–00360–30	4	100	GOUPILLE D4,5 SIMPLE ENR	SAFETY PIN D4,5
9	T–14109–06	4	-	COIN	WEDGE
10	E–09367–02	4	-	MAILLON RAPIDE D5	CONNECTING LINK D5
11	N–00355–47	8	100	GOUPILLE V 6,3X45	SPLIT PIN 6,3X45
12	V–13276–02	4	-	AXE 20X155 C	PIN 20X155 C

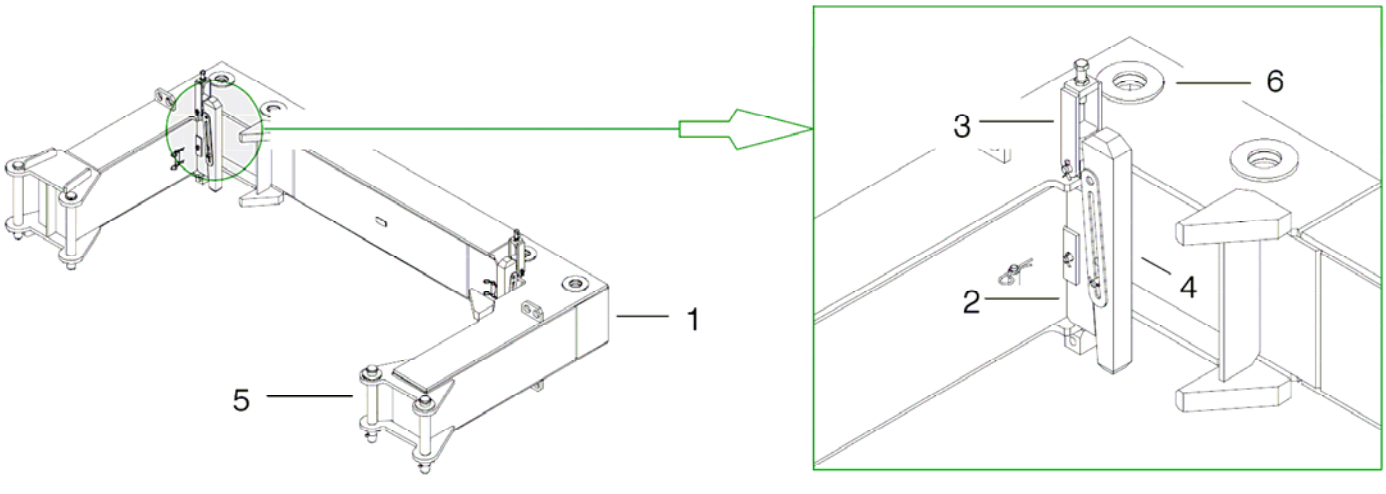
Reinforced anchorage frame 2,00 m (S-28680-93)

Description

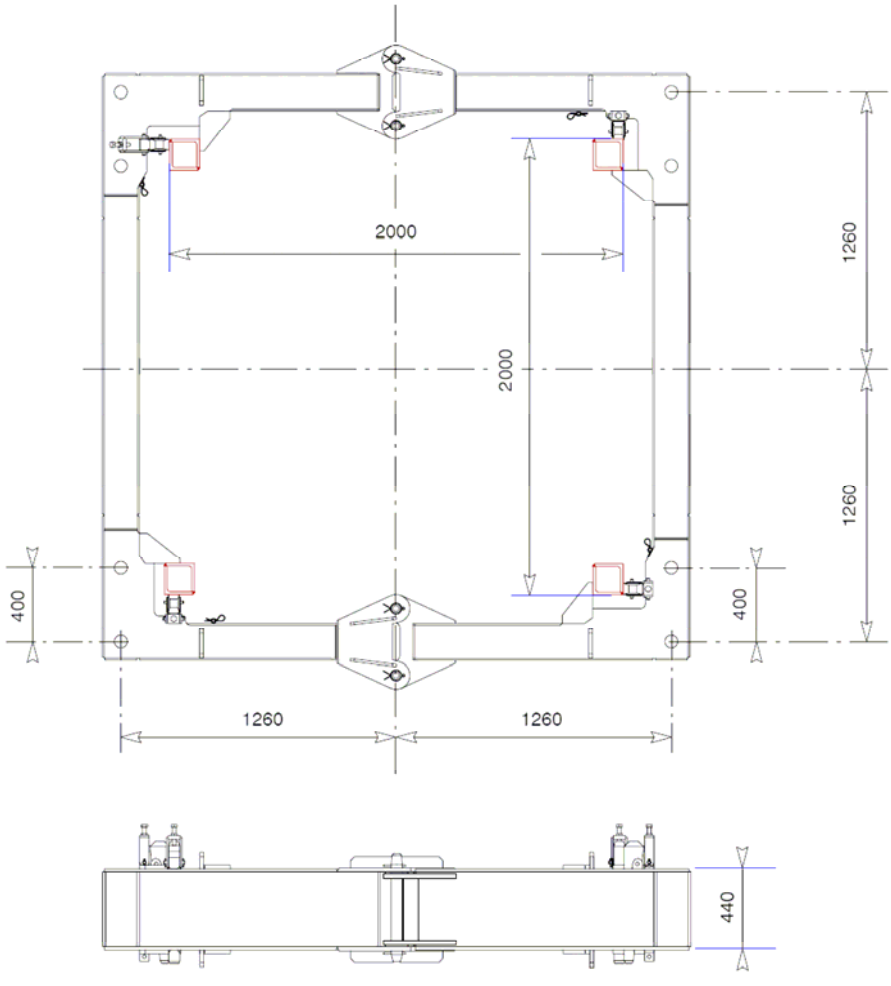
A complete frame is composed of:

- 2 half frames (1)
- 4 wedge supports (2)
- 4 pressure screw supports + 4 screws (3)
- 4 wedges (4)
- 4 pins (5)

Each half frame is drilled by four holes (6) in order to allow fixing the connecting beams to the building.

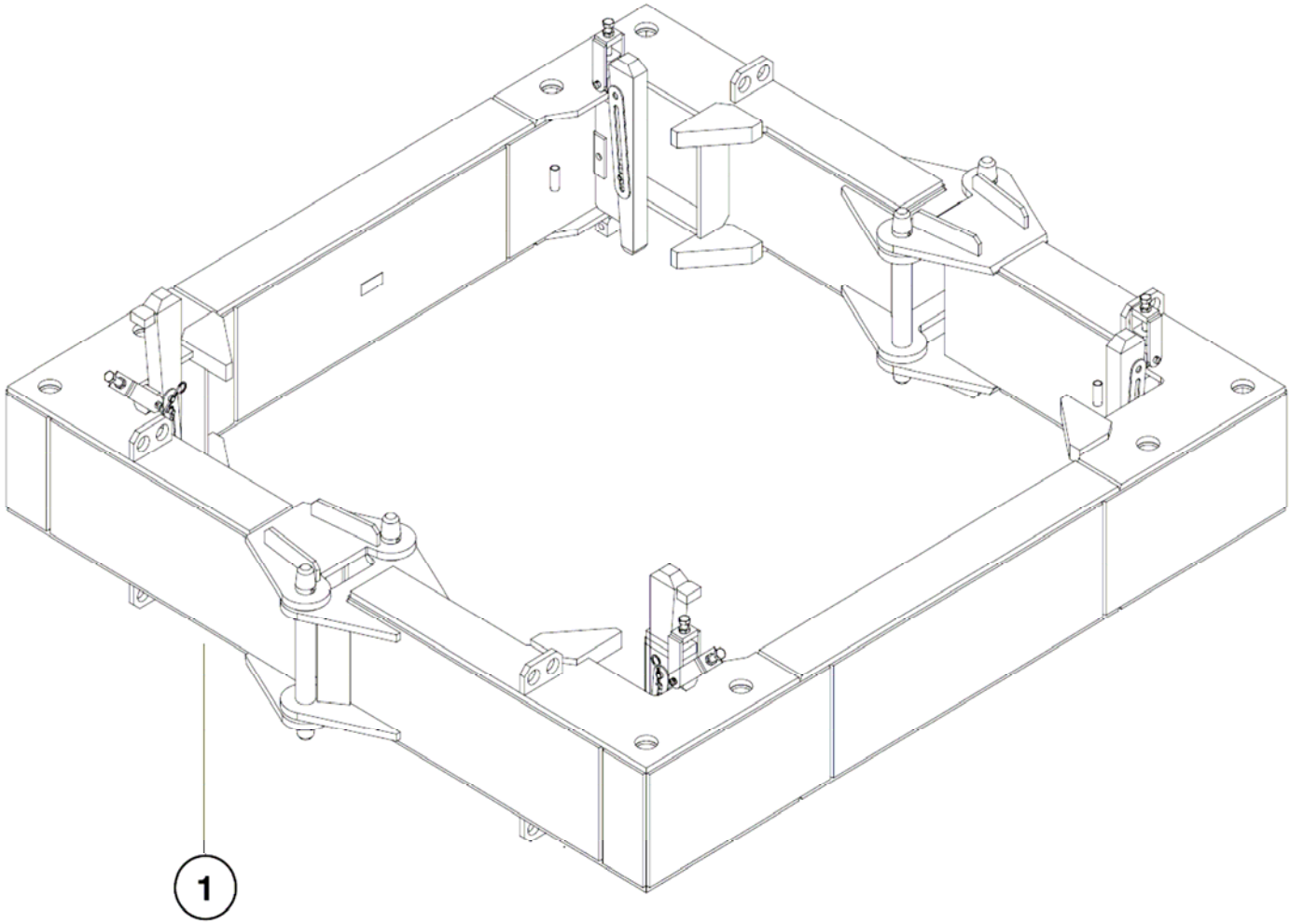


Dimensions



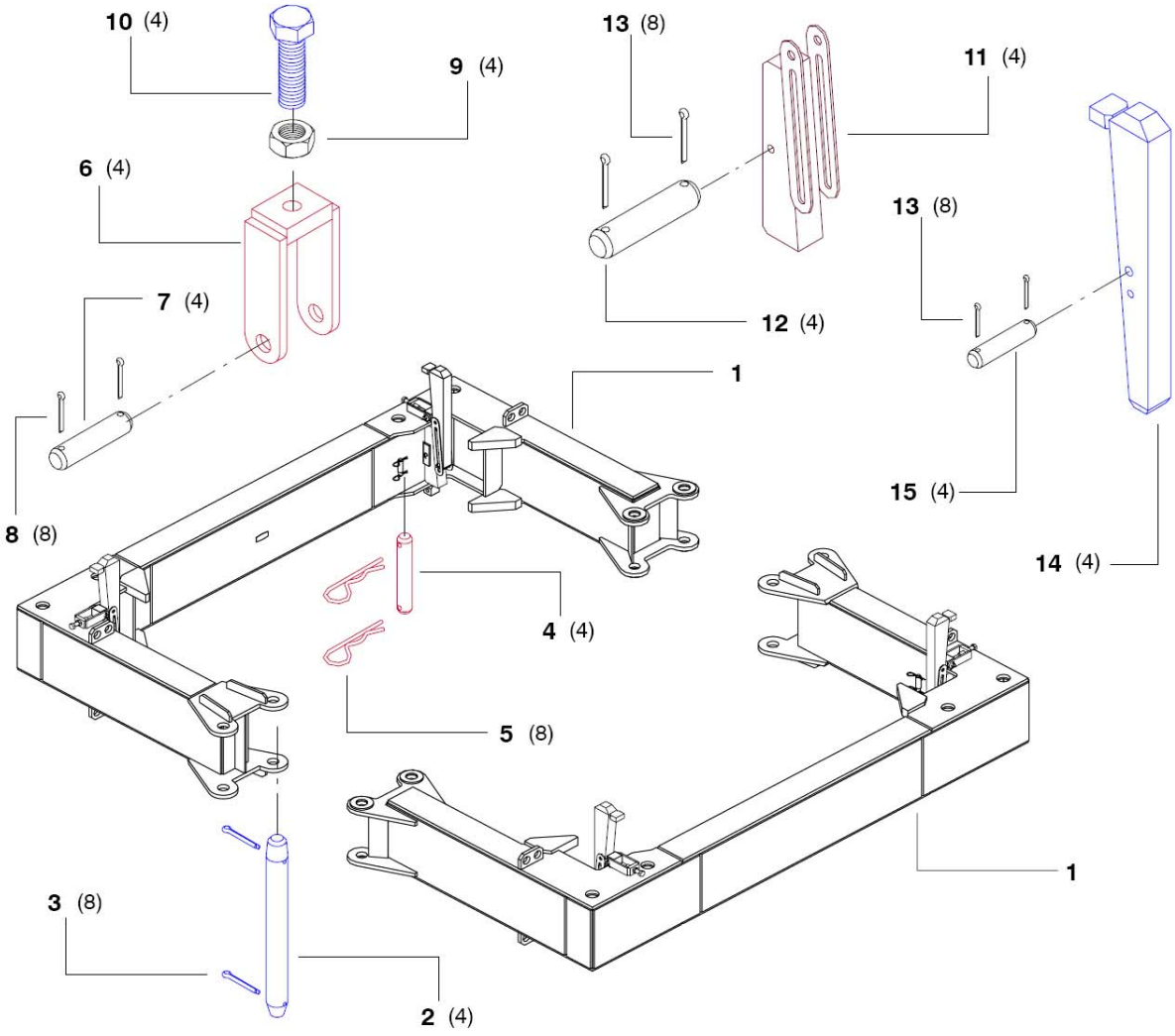
Reinforced anchorage frame 2,00 m (S-28680-93)

Spare parts



Mark	Reference	Designation	
		French	English
1	S–28680–93	CADRE ANCRAGE 2M RENFOR	REINFORCED ANCHORAGE FRAME 2 M

Reinforced anchorage frame 2,00 m (S-28680-93)



Mark	Reference	Quantity	Minimum quantity supplied	Designation		Tighte--ning torque
				French	English	
1	W–30108–58	2	-	DEMI–CADRE D'ANCRAGE	HALF ANCHORAGE FRAME	-
2	P–63276–81	4	-	AXE D60X465 L	PIN D60X465 L	-
3	L–00355–68	8	-	GOUPILLE–V	SPLIT PIN	-
4	F–01276–55	4	-	AXE 20X90 C	PIN 20X90 C	-
5	N–00360–30	8	-	GOUPILLE D4,5 SIMPLE ENR	SAFETY PIN D4,5	-
6	S–31108–12	4	-	SUPPORT VIS DE PRESSION	PRESSURE SCREW SUPPORT	-
7	F–01276–55	4	-	AXE 20X90 C	PIN 20X90 C	-
8	N–00355–47	8	-	GOUPILLE–V	SPLIT PIN	-
9	A–00342–24	4	50	ECROU HM M20 CL6	NUT HM M20 CL6	100 Nm
10	H–08338–95	4	10	VIS H M20X100/100 CL8.8	SCREW H M20X100/100 CL8.8	235 Nm
11	E–12108–39	4	-	SUPPORT COIN CADRE ANCR.	FRAME WEDGE SUPPORT	-
12	D–13276–55	4	-	AXE 16X100 C	PIN 16X100 C	-
13	V–00355–31	16	-	GOUPILLE V 4X28 NFE27487	SPLIT PIN 4X28 NFE27487	-
14	C–12108–37	4	-	COIN CADRE ANCRAGE 2,45M	FRAME WEDGE 2,45 m	-
15	H–01276–34	4	-	AXE 16X85 C	PIN 16X85 C	-

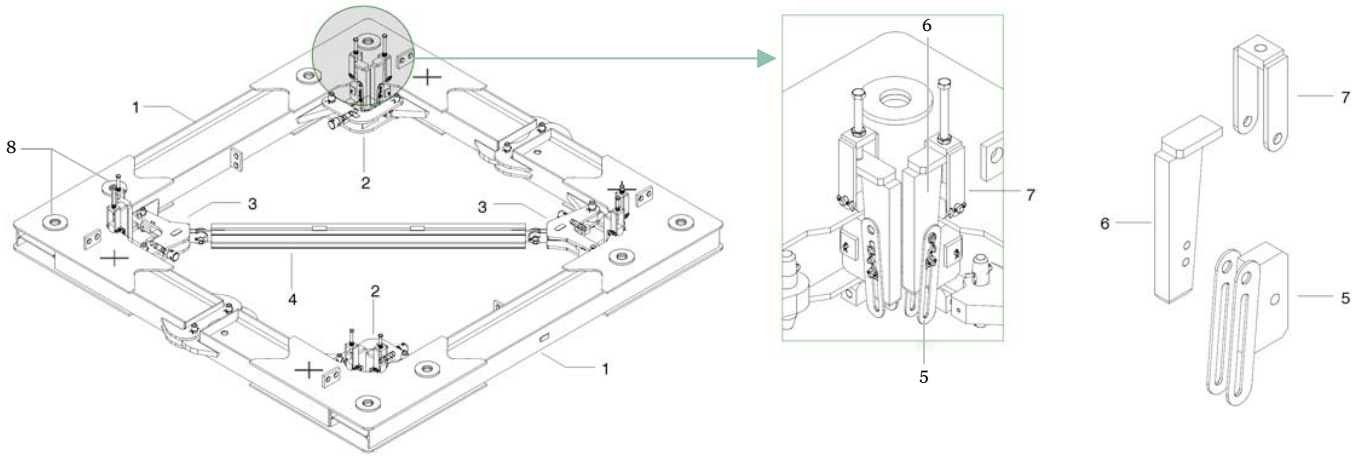
Anchorage frame 2,45 m (S-32680-86) for K830 mast section

Description

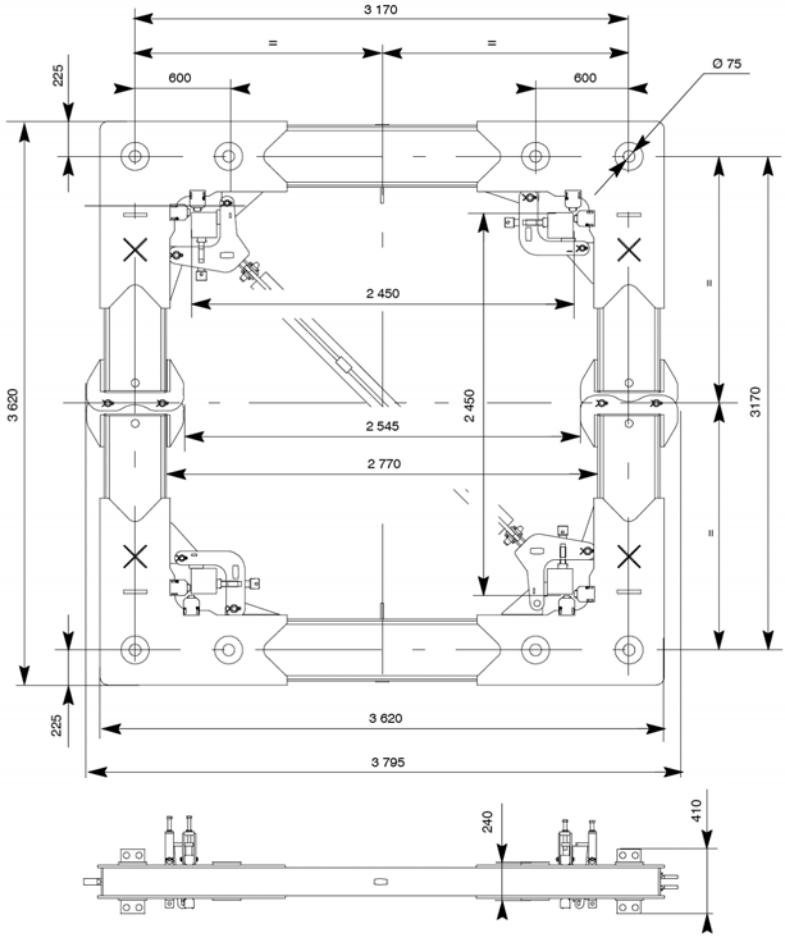
A complete frame is composed of:

- 2 unequipped identical half frames (1)
- 2 flanges (2)
- 2 flanges (3)
- 1 frame yoke (4)
- 8 locking counter-wedges (5)
- 8 flange locking wedges (6)
- 8 pressure screw supports (7)

Each half frame is drilled by four holes (8) in order to allow fixing the connecting beams to the building.

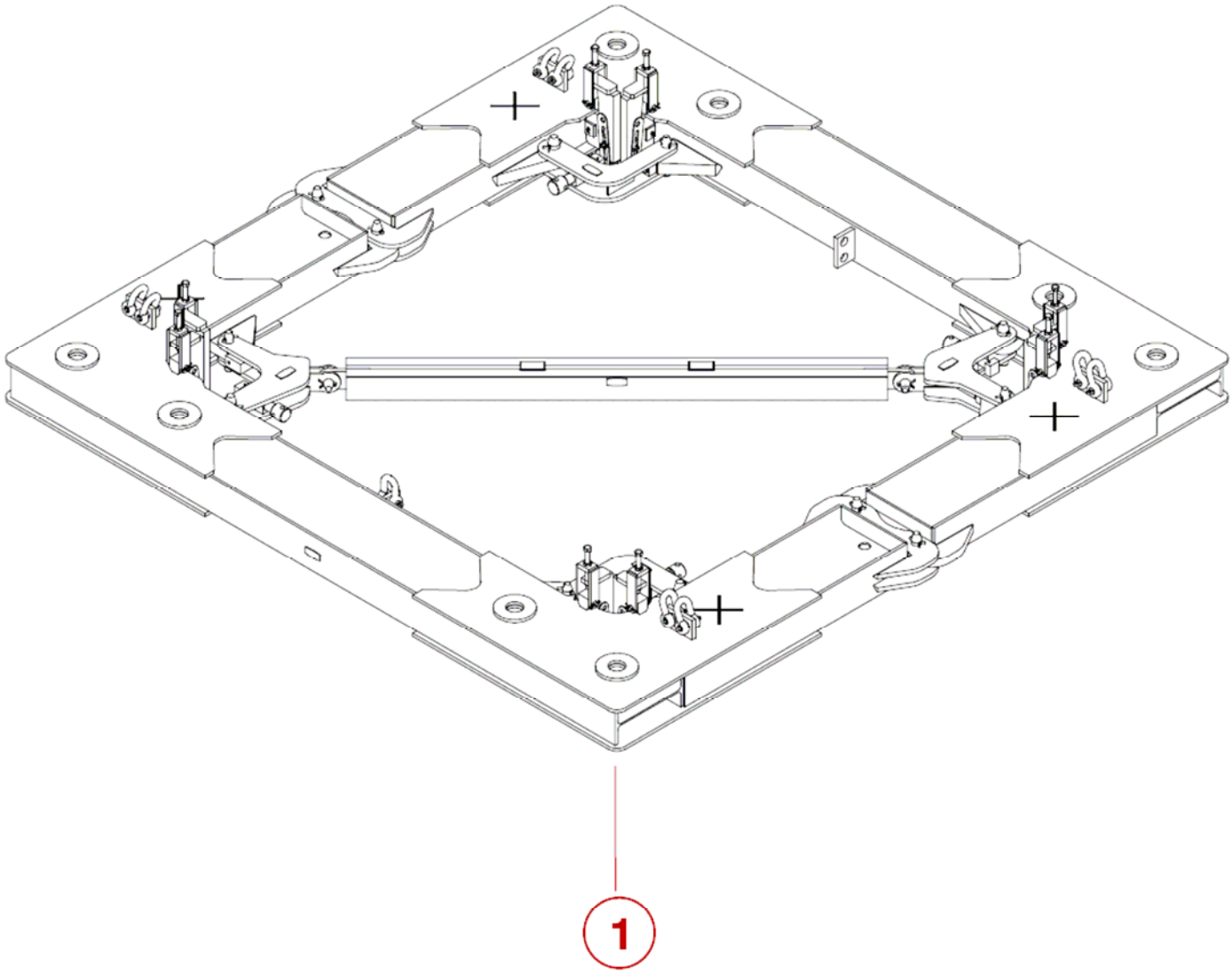


Dimensions



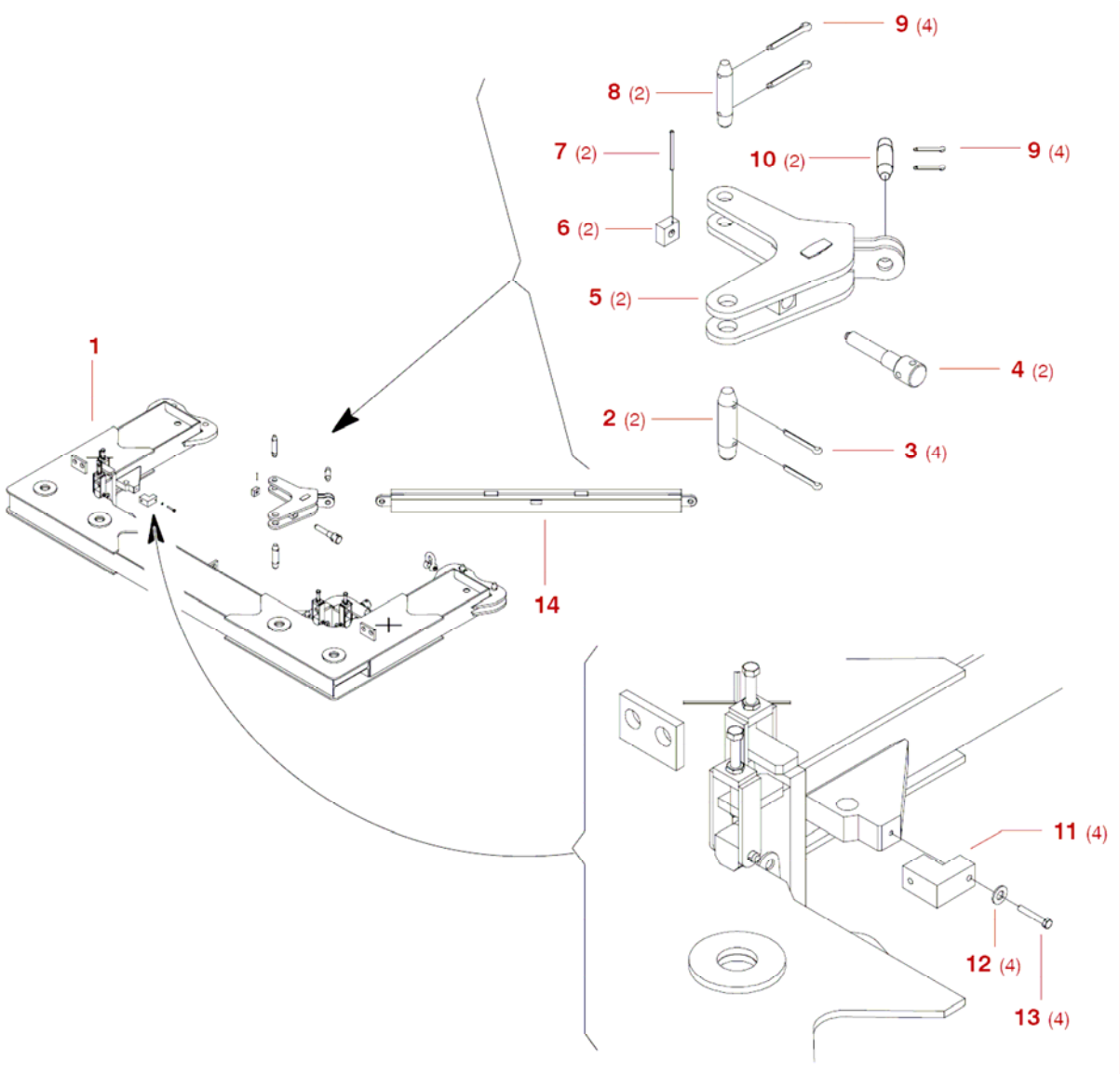
Anchorage frame 2,45 m (S-32680-86) for K830 mast section

Spare parts



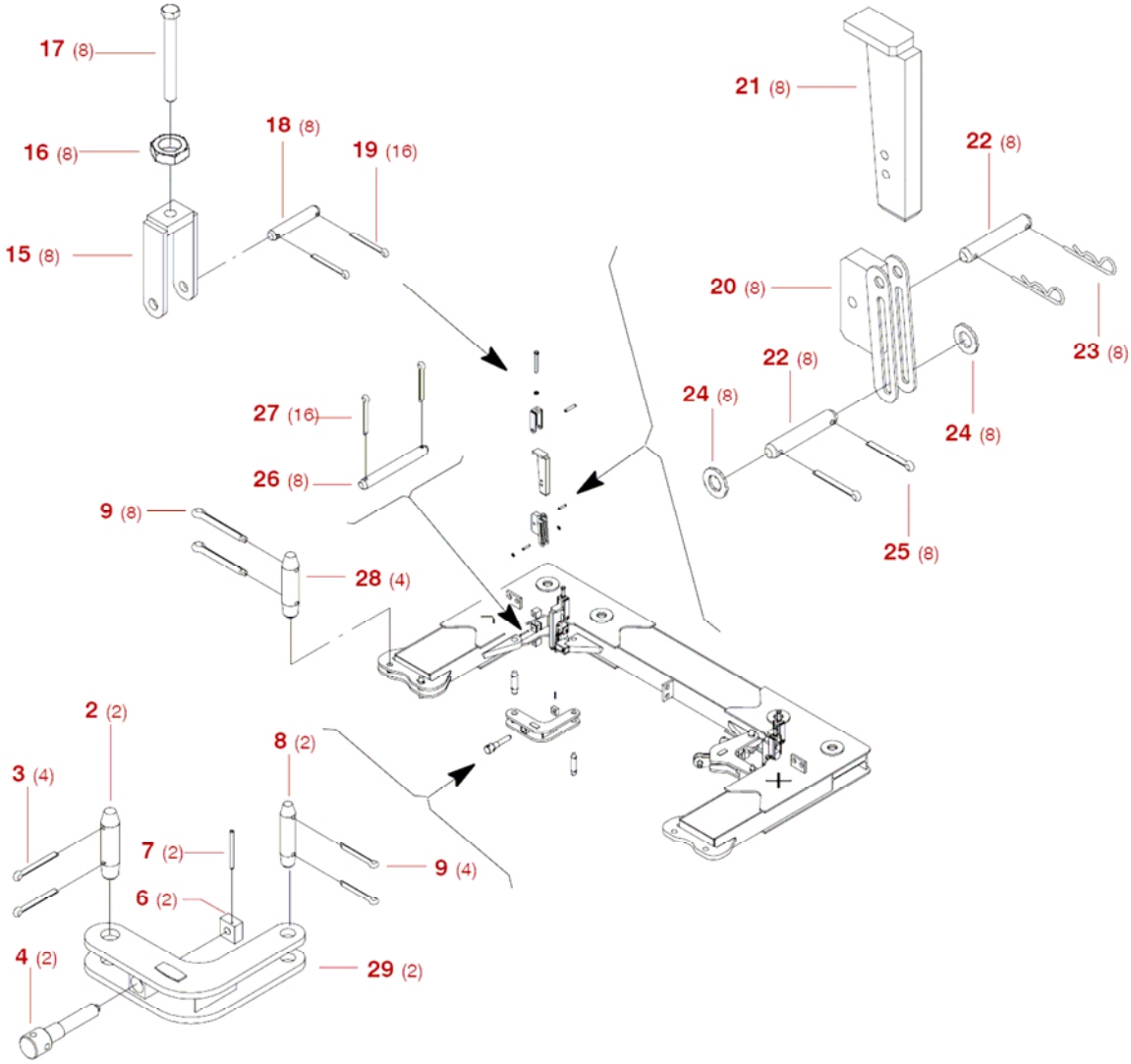
Mark	Reference	Quantity	Designation	
			French	English
1	S–32680–86	1	CADRE ANC–K800 COMPLET	COMPLETE ANCHORAGE FRAME – K800

Anchorage frame 2,45 m (S-32680-86) for K830 mast section



Mark	Reference	Quantity	Minimum quantity supplied	Designation		Tigh--tening torque
				French	English	
1	A–34108–77	2	-	DEMI–CADRE ANC–K800	HALF FRAME –K800	-
2	L–30276–61	4	-	AXE 50X105 L	PIN 50X105 L	-
3	J–00355–66	8	50	GOUPILLE V 10X80	SPLIT PIN 10X80	-
4	H–34108–84	4	-	VIS SP M36	SCREW SP M36	960 Nm
5	B–34108–78	2	-	BRIDE 1 ANC-K800	FLANGE 1 ANC - K800	-
6	X–27203–69	4	-	CARRE 55X30 S355	SQUARE 55X30 S355	-
7	A–00357–42	4	100	GOUPILLE-ELAST E 5X60	MECANINDUS PIN E 5X60	-
8	P–30276–41	4	-	AXE 40X110 L	PIN 40X110 L	-
9	D–00355–61	20	100	GOUPILLE-V 10X63	SPLIT PIN 10X63	-
10	M–30276–39	2	-	AXE 40X65 L	PIN 40X65 L	-
11	J–34108–85	4	-	TAQUET 2 HAUTEURS	2-LEVEL LUG	-
12	E–00347–11	4	100	RONDELLE W10	WASHER W10	-
13	N–09338–35	4	100	VIS H M10X70/70 CL8.8	SCREW H M10X70/70 CL8.8	45 Nm
14	D–34108–80	1	-	TRAVERSE CADRE ANC-K800	FRAME YOKE – K800	-

Anchorage frame 2,45 m (S-32680-86) for K830 mast section



Mark	Reference	Quantity	Minimum quantity supplied	Designation		Tigh--tening torque
				French	English	
15	S–31108–12	8	-	SUPPORT VIS DE PRESSION	PRESSURE SCREW SUPPORT	-
16	A–00342–24	8	50	ECROU HM M20 CL6	NUT HM M20 CL6	100 Nm
17	P–66338–11	8	-	VIS H M20X180/180 CL8–8	SCREW H M20X180/180 CL8–8	235 Nm
18	F–01276–55	8	-	AXE 20X90 C	PIN 20X90 C	-
19	N–00355–47	16	100	GOUPILLE–V	SPLIT PIN	-
20	F–34108–82	8	-	CONTRE COIN SERRAGE	COUNTER-WEDGE	-
21	Z–35108–80	8	-	COIN DE BRIDAGE ANC–K800	FLANGING WEDGE ANC–K800	-
22	F–02276–82	16	-	AXE 14X55 C	PIN 4X55 C	-
23	T–00360–12	16	100	GOUPILLE D3 SIMPL ENROUL	SAFETY PIN D3	-
24	Z–00350–05	16	10	RONDELLE M14 N	WASHER M14 N	-
25	V–00355–31	16	100	GOUPILLE V 4X28 NFE27487	SPLIT PIN 4X28 NFE27487	-
26	J–63276–76	8	-	AXE D10X75 C	PIN D10X75 C	-
27	K–00355–21	16	100	GOUPILLE–V	SPLIT PIN	-
28	A–30276–51	4	-	AXE 45X95 L	PIN 45X95 L	-
29	C–34108–79	2	-	BRIDE 2 ANC–K800	FLANGE 2 ANC–K800	-

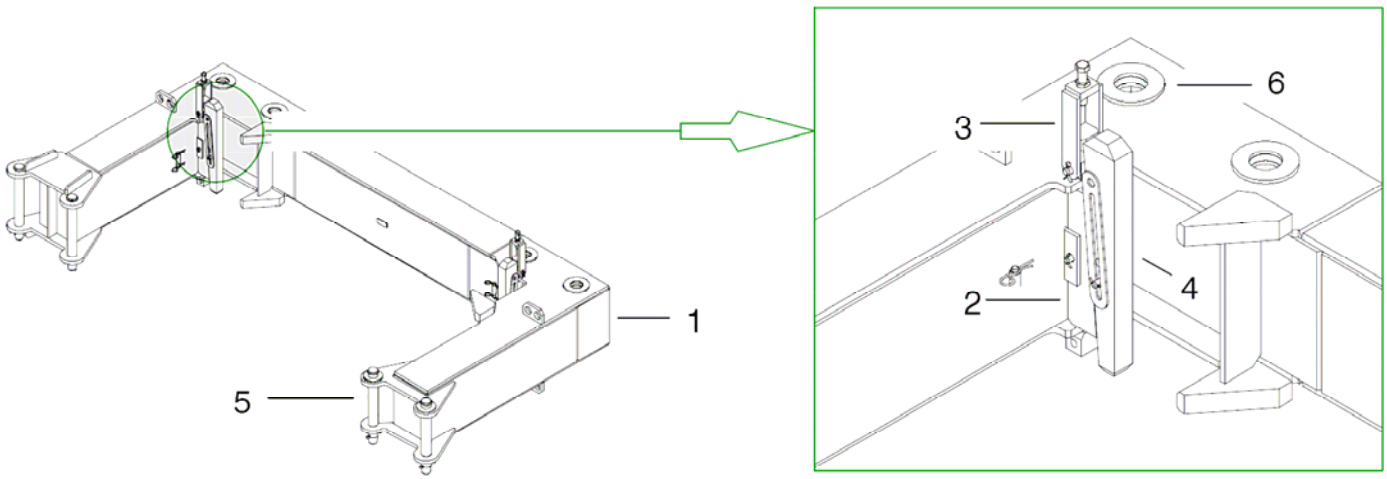
Anchorage frame 2,45 m (D-28680-57) for K850 mast section

Description

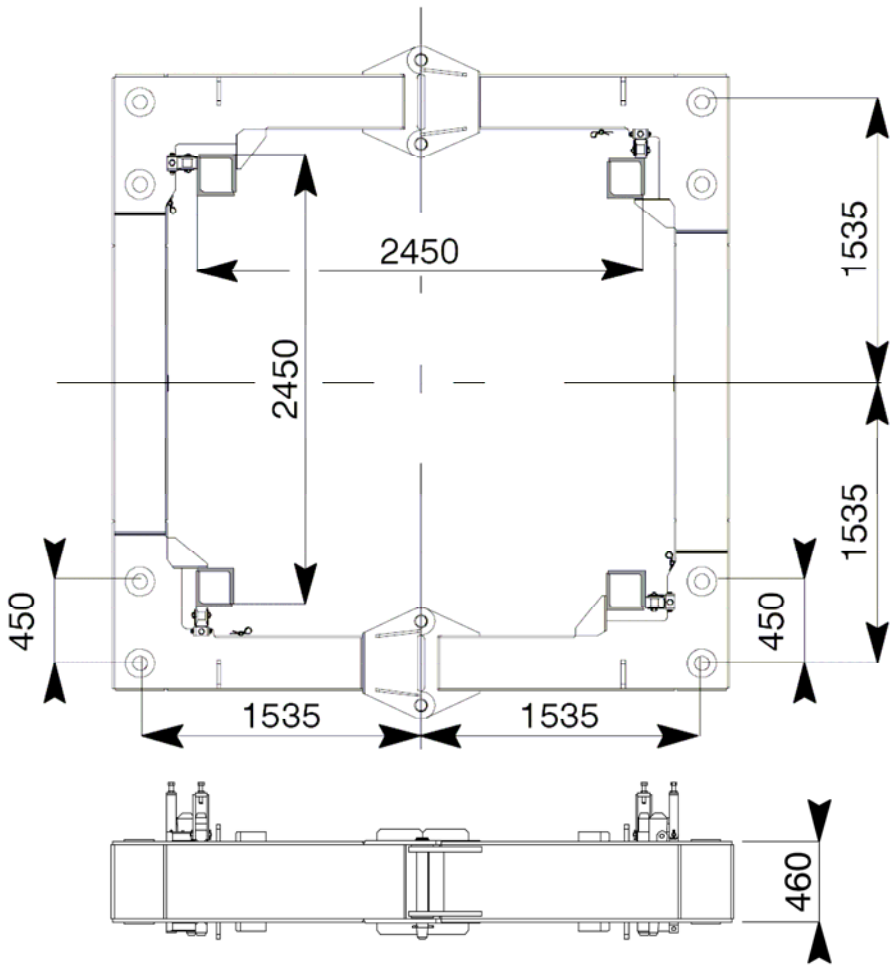
A complete frame is composed of:

- 2 half frames (1)
- 4 wedge supports (2)
- 4 pressure screw supports + 4 screws (3)
- 4 wedges (4)
- 4 pins (5)

Each half frame is drilled by four holes (6) in order to allow fixing the connecting beams to the building.

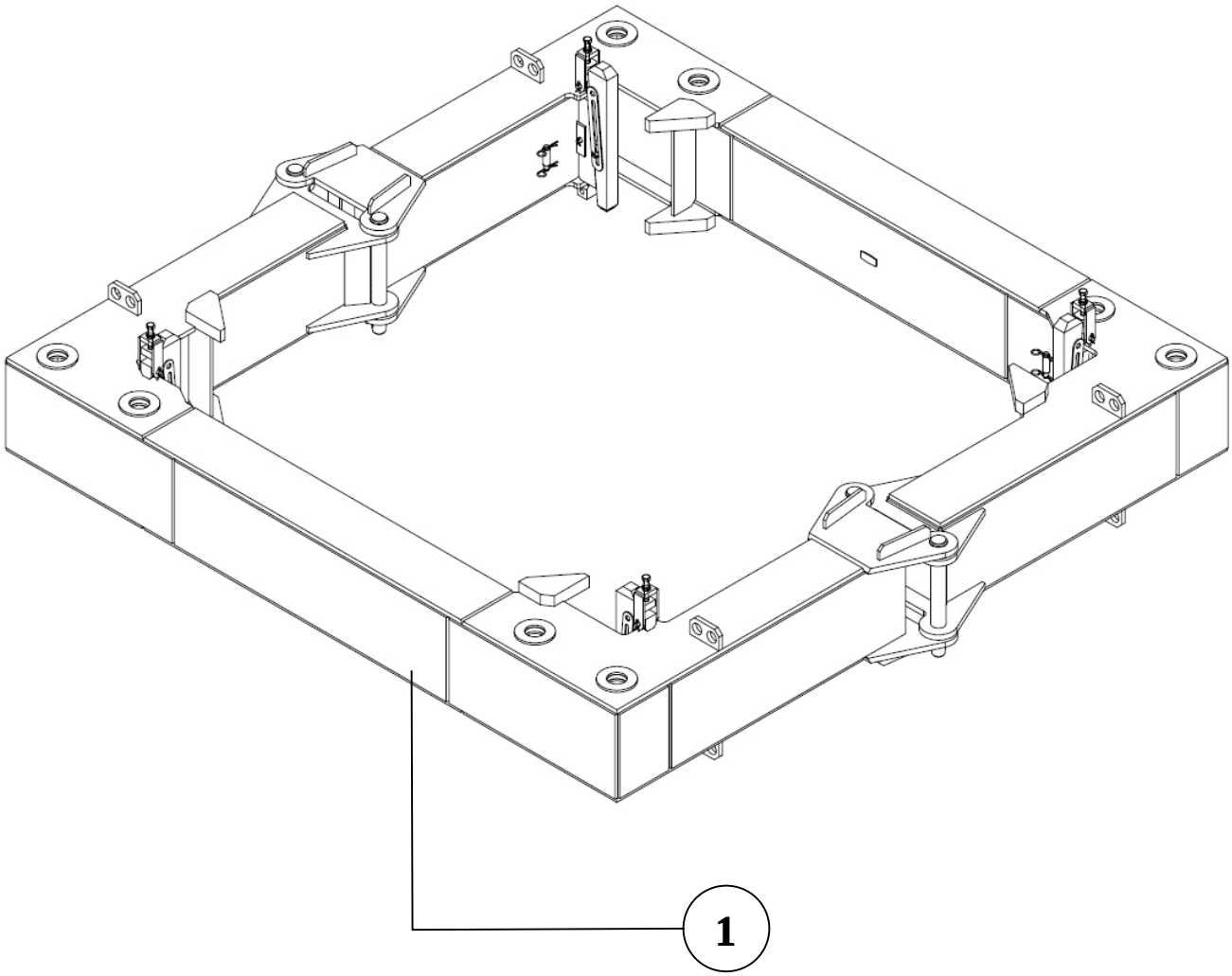


Dimensions



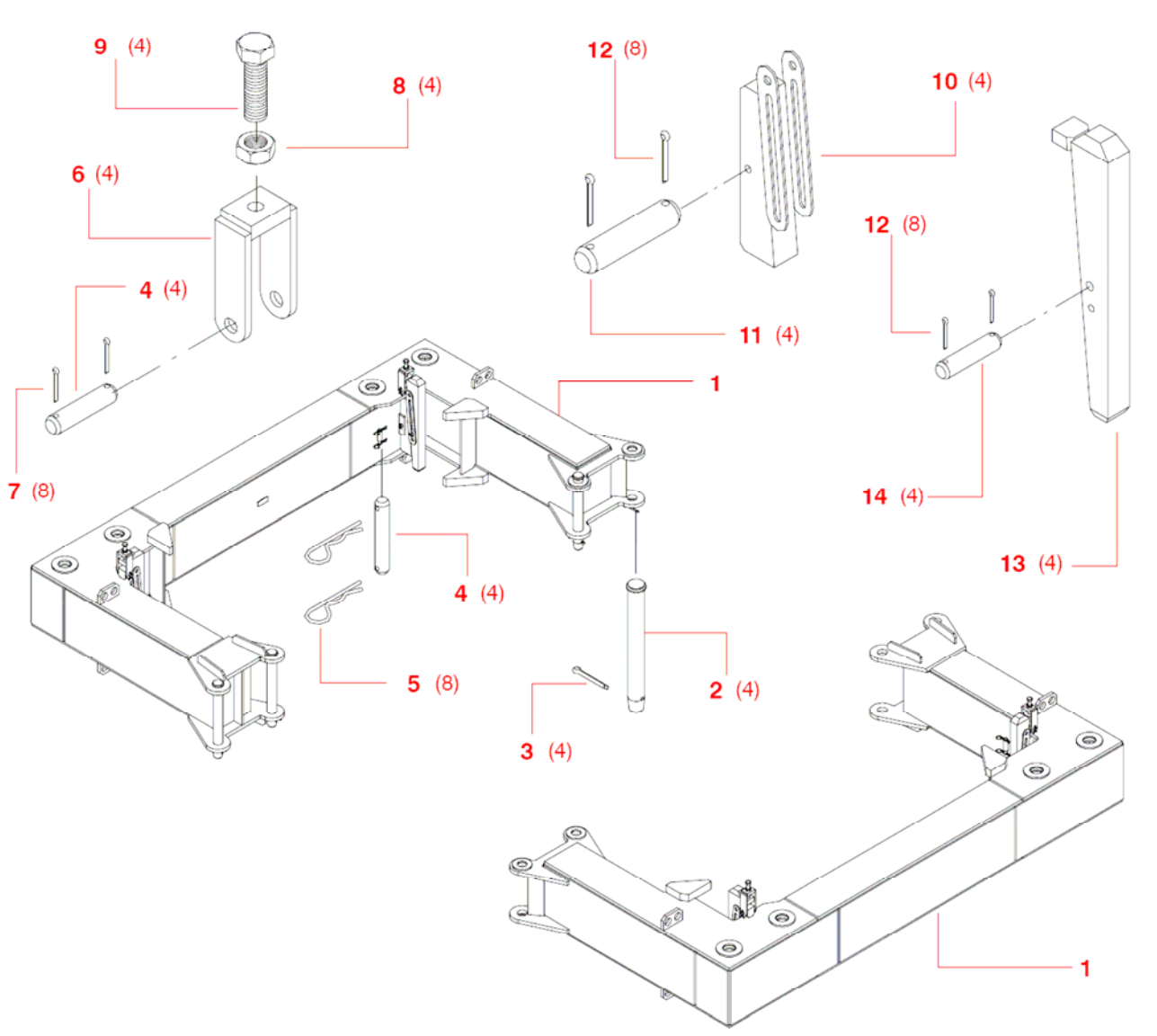
Anchorage frame 2,45 m (D-28680-57) for K850 mast section

Spare parts



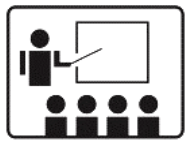
Mark	Reference	Quantity	Minimum quantity supplied	Designation	
				French	English
1	D–28680–57	1	-	CADRE D'ANCRAGE K850	ANCHORAGE FRAME K850

Anchorage frame 2,45 m (D-28680-57) for K850 mast section



Mark	Reference	Quantity	Minimum quantity supplied	Designation		Tigh--tening torque
				French	English	
1	L-30108-25	2	-	DEMI–CADRE D'ANCRAGE	HALF ANCHORAGE FRAME	-
2	D-87278-13	4	-	AXE–TETE D60X465 34CRMO4	HEADED PIN D60X465 34CRMO4	-
3	L-00355-68	4	50	GOUPILLE–V 10X100	SPLIT PIN 10X100	-
4	F-01276-55	8	-	AXE 20X90 C	PIN 20X90 C	-
5	N-00360-30	8	100	GOUPILLE D4,5 SIMPLE ENR	SAFETY PIN D4,5	-
6	M-31108-30	4	-	SUPPORT VIS DE PRESSION	PRESSURE SCREW SUPPORT	-
7	N-00355-47	8	100	GOUPILLE–V 6,3X45	SPLIT PIN 6,3X45	-
8	A-00342-24	4	50	ECROU HM M20 CL6	NUT HM M20 CL6	100 Nm
9	H-08338-95	4	10	VIS H M20X100/100 CL8.8	SCREW H M20X100/100 CL8.8	235 Nm
10	E-12108-39	4	-	SUPPORT COIN CADRE ANCR.	FRAME WEDGE SUPPORT	-
11	D-13276-55	4	-	AXE 16X100 C	PIN 16X100 C	-
12	V-00355-31	16	100	GOUPILLE V 4X28 NFE27487	SPLIT PIN 4X28 NFE27487	-
13	C-12108-37	4	-	COIN CADRE ANCRAGE 2,45M	FRAME WEDGE 2,45M	-
14	H-01276-34	4	-	AXE 16X85 C	PIN 16X85 C	-

Training - Programs



Detailed programs, registration forms are available on :
www.manitowocranes.com

Crane use

	Titels	Periods	
Driving			
- Crane drivers - learners	C1CA	14	All tower cranes
- Experienced crane drivers	C3CA	4,5	All tower cranes
- Experienced crane drivers	C3CA A	4	All tower cranes
- Experienced crane drivers	C6CA	3	GMA
- Crane driving assessment CACES	EPRC	1	GMA and / or GME
- Experienced crane drivers	C3TP	4,5	All tower cranes
- Crane drivers - learners	GM1	14	Mobile cranes category 1B
Technology			
- Prevention of risks linked to the operating mode in complete safety on tower cranes	PRIMO	2	All sites//all tower cranes
- Prevention Responsibility Obligation	PRO	1	
- Tower cranes-technology and operation	G1	4	All tower cranes
- Slinger, signalman – tower cranes	ESGAT	1	
Erection			
- Erection, putting into service, maintenance	MH	2	HD cranes.
- Erection, putting into service, maintenance	M1	4	GTMR 336 cranes.
- Erection, putting into service, maintenance	M2	3	Igo cranes.
- Erection, putting into service, maintenance	M4	4	GTMR 386 cranes.
- Erection, putting into service, maintenance	M6Igo T	4	Igo T cranes.
- Erection, putting into service, maintenance	MHDT	3	HDT 70 – 80 cranes.
- Erection, putting into service	M5	4	Tower cranes (GME).

Crane technology

Basic knowledges			
- Electrotechnical basic knowledges	Tbases	2	Application on tower cranes
- Tower cranes - putting into service	TN1	4	Adjustment of safety devices, preventive maintenance
- Maintenance of the electrical equipment	TN2	4	Wiring diagrams, corrective maintenance, configuration of frequency variation mechanisms
Usual mechanisms			
- Maintenance : advanced course	TLCC	4	LCC-RVF optima – DVF mechanisms
- Maintenance : advanced course	TRCS	4	RCS-RCV-D3V-RT mechanisms
New mechanisms			
- Frequency variation	TVF MD/MDT	4	MD/MDT cranes
- Frequency variation	TVF MCT	4	MCT cranes
- Frequency variation	TVF HD/Igo	4	HD/ Igo cranes
- Frequency variation	TVF Igo T	4	Igo T cranes
Systems			
- Fitting, adjustments	Tradiocommande	2	Mounting, adjustment of the radio controls
- Fitting, adjustments	Tinterferences	3	Top Tracing
- Authorization for carrying out electrical works	HABT	3	Preparing the authorization
- Authorization for carrying out electrical works	HABT	½	Retraining of experienced personnel
- Technology and operations of putting into service	RT1	4	Grove RT cranes (level 1)
	RT2	4	Grove RT cranes (level 2)

Checking

TMP Technology – preventive maintenance	TMP	2	All cranes
TMA Technology – detailed maintenance	TMA	2	All cranes

Training Courses for : The anchorage frames

The inter-company courses are intended to meet a part of your needs.
If the training which you plan has to include characteristics specific to your working sector or your company, it is possible to carry out really TAILOR-MADE courses.
If the means can be put at our disposal, certain INTRA-COMPANY maneuvers can be carried out on site.

Manitowoc Crane Care
MCG France SAS - Centre de Formation
BP N°1 - Baudemont - 71800 La Clayette Cedex France
Tél + 33 (0)3 85 28 25 89 - Fax + 33 (0)3 85 28 04 30
N° SIREN : 632 045 837

Regional Headquarters

Manitowoc Americas
World Headquarters
2400 S. 44th Street
Manitowoc WI 54220 USA
Tel: +1 920 684 4410
Fax: +1 920 652 9778

Manitowoc Europe, Middle East & Africa
18, rue de Charbonnières B.P. 173
69132 ECULLY Cedex FRANCE
Tel: +33 (0)4 72 18 20 20
Fax: +33 (0)4 72 18 20 00

Manitowoc Asia & Pacific
16F Xu Hui Yuan Building
1089 Zhongshan No 2 road (S)
Shanghai 200030 China
Tel: +86 21 6457 0066
Fax: +86 21 6457 4955

Regional offices

Americas

Brazil
Alphaville
Tel: +55 11 3103 0200
Fax: +55 11 4688 2013

Mexico
Monterrey
Tel: +52 81 8124 0128
Fax: +52 81 8124 0129

United States
Shady Grove, PA
Tel: +1 717 597 8121
Fax: + 1 717 597 4062

Europe, Middle East & Africa

Algeria
Hydra
Tel: +21 3 21 48 1173
Fax: +21 3 21 48 1454

Czech Republic
Netvorice
Tel: +420 317 78 9313
Fax: +420 317 78 9314

France
Baudemont
Tel: +33 (0) 3 85 28 25 89
Fax: +33 (0) 3 85 28 04 30
Cergy
Tel: +33 (0)1 30 31 31 50
Fax: +33 (0)1 30 38 60 85
Decines
Tel: +33 (0) 4 72 81 50 00
Fax: +33 (0) 4 72 81 50 10

Germany
Langenfeld
Tel: +49 (0)2173 89 09-0
Fax: +49 (0)2173 89 09-30

Hungary
Budapest
Tel: +36 13 39 86 22
Fax: +36 13 39 86 22

Italy
Parabiago
Tel: +39 (0)331 49 33 11
Fax: +39 (0)331 49 33 30

Netherlands
Breda
Tel: +31 (0)76 578 39 99
Fax: +31 (0)76 578 39 78

Poland
Warsaw
Tel: +48 22 843 3824
Fax: +48 22 843 3471

Portugal
Baltar
Tel: +351 (0)229 69 88 40
Fax: +351 (0)229 69 88 48
Lisbon
Tel: +351 (0) 212 109 340
Fax: +351 (0) 212 109 349

Russia
Moscow
Tel: +7 495 641 23 59
Fax: +7 495 641 23 58

U.A.E.
Dubai
Tel: +971 4 8862 677
Fax: +971 4 8862 678

U.K.
Buckingham
Tel: +44 (0) 1 280 81 8830
Fax: + 44 (0) 1 280 81 8831

Asia - Pacific

Australia
Brisbane
Tel: +61 7 3274 6558
Fax: +61 3274 5879
Melbourne
Tel: +61 3 9314 3338
Fax: +61 3 9336 1552
Sydney
Tel: +61 2 8863 7000
Fax: +61 2 9896 3122

China
Beijing
Tel: +86 10 5867 4761
Fax: +86 10 5867 4760
Singapore
Tel: +65 6264 1188
Fax: +65 6862 4040
Xi'an
Tel: +86 29 8863 2112
Fax: +86 29 8863 3359

Korea
Seoul
Tel: +82 2 3439 0400
Fax: +82 2 3439 0405

India
Pune
Tel: +91 20 6644 5563
Fax: +91 20 6644 5599

Philippines
Makati City
Tel: +632 844 9437
Fax: +632 844 4712

Factories
Brazil : Alphaville . **China** : Zhangjiagang . **France** : Charlieu, La clayette, Moulins
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