

# TECHNICAL MANUAL



## JENKA Lifting System

Threaded Lifting System for all Load Directions

Version PEIKKO GROUP 11/2022



# JENKA Lifting System

## Threaded Lifting System for all load directions

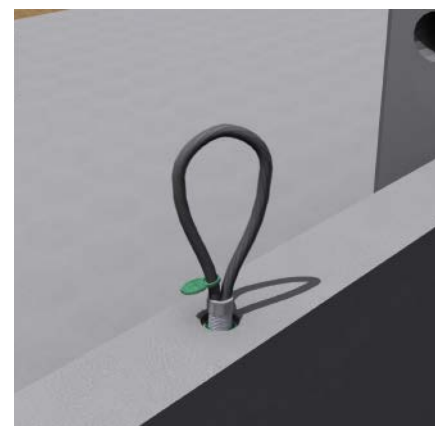
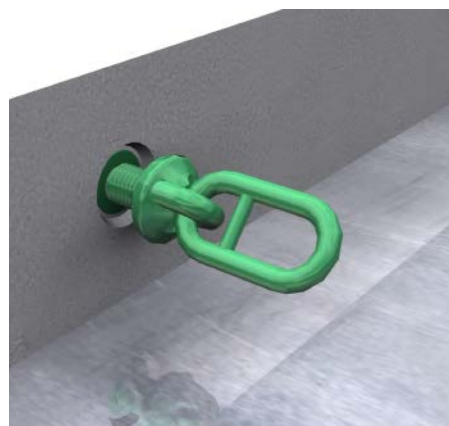
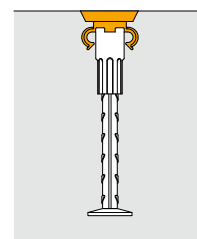
The JENKA Lifting System consists of a threaded JENKA Lifting Insert cast into a concrete element and a JENKA Lifting Key, together enabling a crane hook or lifting accessories such as lifting slings or spreader beams to be connected to the precast concrete element for lifting and handling.

The anchoring of the JENKA Lifting System is based on effective rebar and threaded sockets assembled on plane or recessed leaving the element surface free.

- Wide range of applications
- Safe working load ( $R_{zul}$ ) capacities up to 125kN
- Robust Rd-thread
- Cover plugs flush with surface
- Sockets made of galvanized-steel or stainless-steel

All Peikko Lifting Systems are designed and manufactured in accordance with EU Machinery Directive 2006/42/EC and VDI/BV-BS 6205. Conformity is certified by CE marking.

Product safety in use has been verified by a series of tests conducted in cooperation with the Technical University TU Darmstadt.



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## Chapter headers explanation:

Chapters are marked by a unique header to explain suitability of information for target group.

DESIGNERS	PRECAST PLANTS	USERS
Designers: Information is intended for designers, civil and structural engineers.	Precast plants: Information is intended for fabricators and companies manufacturing, transporting and mounting precast elements.	Users: Information is intended for persons responsible for selection and ordering of particular lifting elements.

DESIGNERS	PRECAST PLANTS	USERS
Gray color in header means that particular information is not targeted directly to group indicated in gray color.		

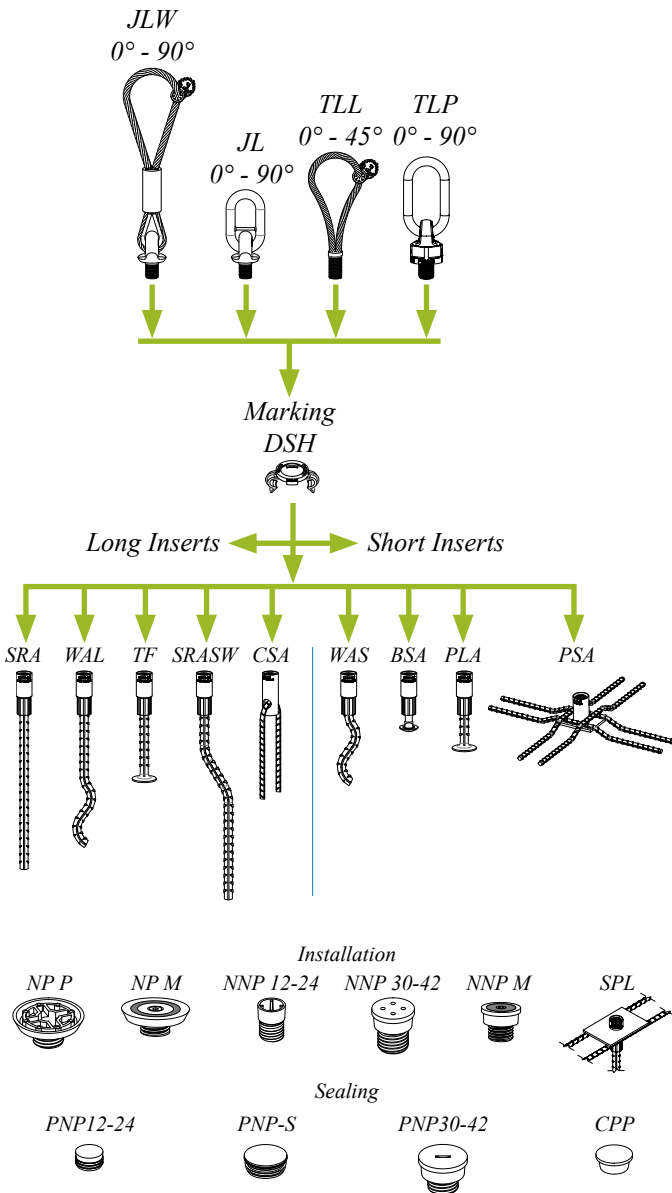


# About JENKA Lifting System

## 1. JENKA Lifting System components

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The JENKA Lifting System is designed for lifting precast concrete elements. It consists of a JENKA Lifting Insert that is permanently anchored in the precast element and a corresponding JENKA Lifting Key, which hooks temporarily onto the embedded JENKA Lifting Insert. *Figure 1* is an overview of the parts of the JENKA Lifting System.



The JENKA Lifting Keys are screwed into the JENKA Lifting Inserts and can be re-used several times for different lifting applications.

The JENKA DSH Marking accessory is used to identify the insert after concreting and enables positioning of additional reinforcement.

JENKA Long Inserts are for application with sufficient anchoring depth such as walls and beams.

JENKA Short inserts are for application with limited anchoring depth such as slabs. They are not intended for tilting up processes and the load angle is limited to 45°.

JENKA Installation Accessories are used temporarily allowing user to fix JENKA Lifting Inserts into the formwork.

JENKA Sealing Accessories are for closing and protecting the opening of JENKA Lifting Inserts from dirt and pollution.

Figure 1. JENKA Lifting System overview.

For derogating applications such as turning of elements, please refer to our specific Technical Manual for Element Turning. Product CAD files are available in ProDLib design library. <https://www.prodlib.com/library/peikko>

### 1.1 Limitations for application

DESIGNERS	PRECAST PLANTS	USERS
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Peikko Lifting Systems consists of the Technical Manual and the product. Both yield into a complete unit which follows the safety and health requirements of the machinery directive (2006/42/EC).

The Technical Manual consists of Peikko General Information for Lifting Systems and the specific JENKA Technical Manual. Peikko JENKA products are useable only in combination with the Technical Manuals and knowledge of the content within (see Figure 2).



Figure 2. JENKA Lifting System – complete product definition.

When using Peikko Lifting Systems in concrete elements, the **minimum concrete cube compressive strength must be 15N/mm<sup>2</sup> at first lifting.**

$f_{cc} = \text{min. } 15 \text{ MPa}$

An increase in concrete compressive strength does not automatically lead to an increase in the resistance of the lifting system. Further limitations, restrictions and application conditions are given in manual General Information for Lifting Systems.

### 1.2 JENKA Lifting System color coding and marking information

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JENKA Lifting System has a color code of every thread size. System parts are either colored itself or with a tag or can be identified by a marking.

The marking and the tag information provide information as shown in Figure 3 and helps to find right combination of JENKA System parts.

Type/Size	Color
Rd 12	Pastel Orange
Rd 16	Flame Red
Rd 20	Pastel Green
Rd 24	Anthracite Grey
Rd 30	Emerald Green
Rd 36	Light Blue
Rd 42	Silver Grey
Rd 52	Sulphur Yellow

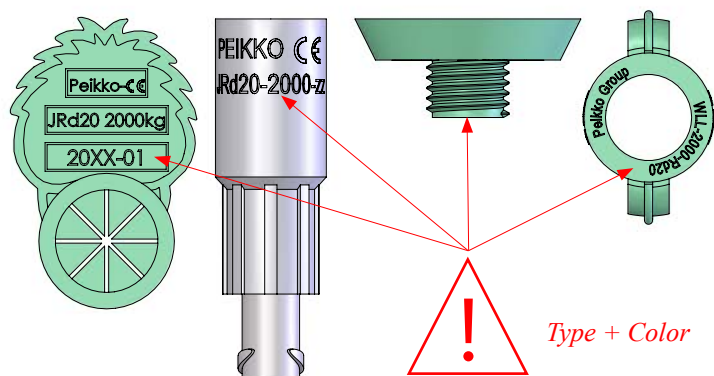


Figure 3. JENKA color coding and marking information.

### 1.3 JENKA System product weights

DESIGNERS	PRECAST PLANTS	USERS
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The individual weights of the JENKA products can be found in *Table 1*.

*Table 1. JENKA Lifting System – item weights.*

Type	12	16	20	24	30	36	42	52
Load class	500	1200	2000	2500	4000	6300	8000	12500
<b>JENKA Lifting Insert [kg/pcs]</b>								
SRA	0.1	0.3	0.5	0.8	1.6	3.1	4.9	7.7
WAL	0.1	0.3	0.5	0.7	1.5	2.7	3.9	7.3
CSA	0.1	0.1	0.1	0.2	0.5	0.7	1.1	2.4
TF	0.1	0.2	0.4	0.5	1.2	2.0	3.0	5.4
SRASW			0.9	1.3	2.5	4.7	6.9	10.8
WAS	0.1	0.2	0.4	0.6	1.2	2.0	3.1	
PLA			0.1	0.3	0.6	1.2		
BSA	0.1	0.1	0.3	0.4	0.7			
PSA	0.1	0.1	0.3	0.4	0.7	1.2	1.8	2.9
<b>JENKA Lifting Key [kg/pcs]</b>								
TLL	0.1	0.2	0.3	0.5	0.9	1.5	2.1	4.6
JL	0.5	0.5	1.0	1.0	2.4	2.5	4.8	5.2
JLW	0.3	0.5	1.1	1.4	3.0	3.8	6.3	10.2
TLP		0.5	0.9	1.5	2.7	3.8		

## 2. JENKA Lifting System – product properties

This section describes the product properties, dimensions, geometrical and reinforcement requirements, and safe working loads of JENKA Lifting System parts. All dimensions are valid for galvanized and stainless sockets.

### 2.1 JENKA Lifting Inserts

DESIGNERS	PRECAST PLANTS	USERS
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#### 2.1.1 Material options

JENKA Lifting System offers electro galvanized and stainless sockets (see Figure 4) as material selection. Selected material is presented in product code during ordering as it is presented in the Figure below.

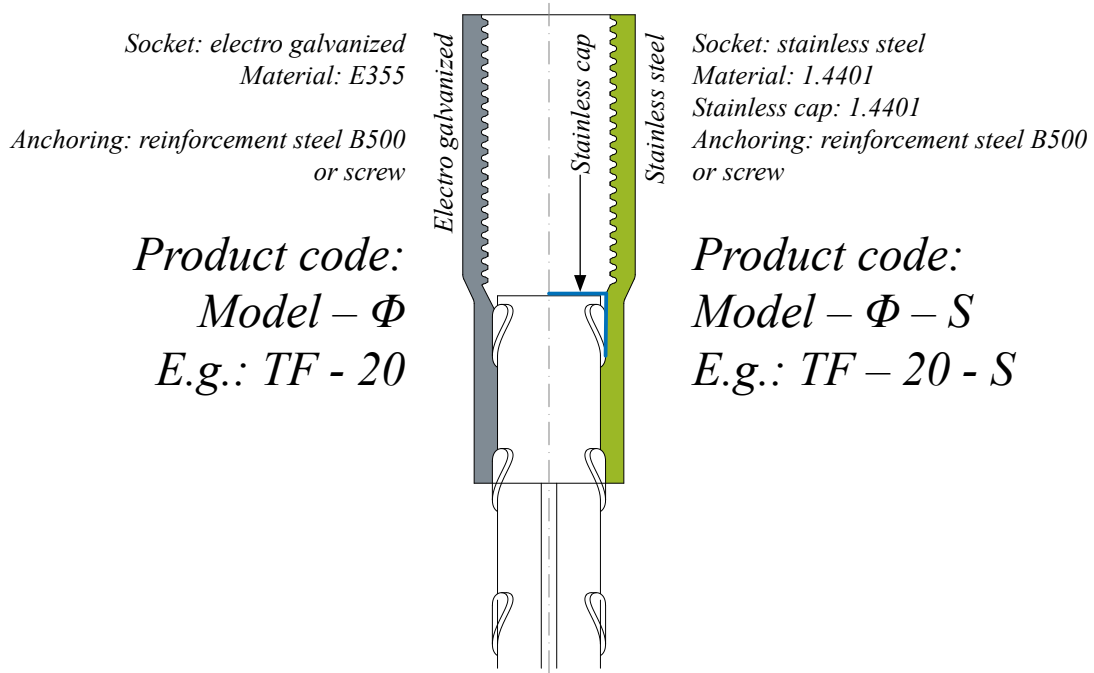


Figure 4. JENKA Material options.

#### 2.1.2 Dimensions and geometry

The minimum element thickness ( $d$  or  $d_{red}$  and  $c$ ), minimum edge ( $a$ ) and axial distances ( $b$ ) are shown in consolidated tables for the individual JENKA Lifting Insert.

#### 2.1.3 Reinforcement

The required surface reinforcement must be at least equal to that shown into the following (Table 2 to Table 5). The use of CSA Inserts (Table 4), always require the use of an anchoring bar. The bending diameter " $d_{br}$ " must correspond to applicable standards.



### 2.1.4 Additional reinforcement

Additional reinforcement is used to support the JENKA Lifting Inserts. *Figure 5* shows the optimum position for the additional reinforcement. This can be achieved by using Peikko DSH item or by installing the Peikko SPL plate.

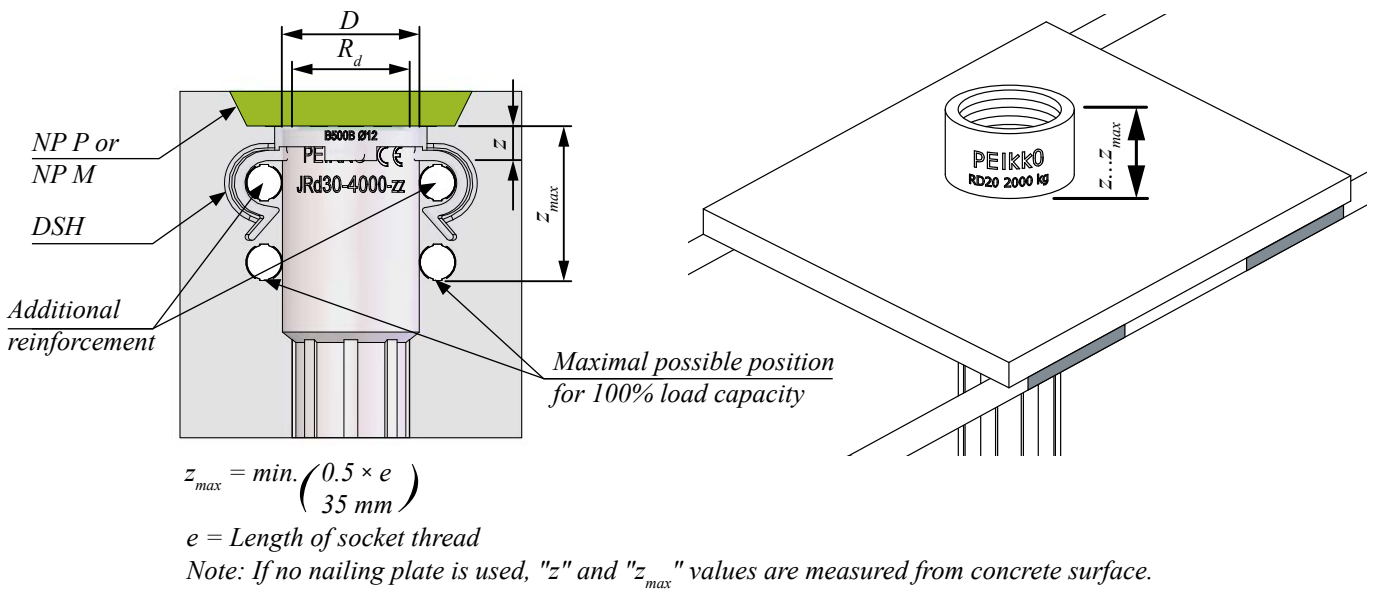


Figure 5. JENKA Inserts - position of the additional reinforcement.

The load direction is the criteria if additional reinforcement is selected (see *Figure 6*). For diagonal pull or lateral pull additional reinforcement is always mandatory.

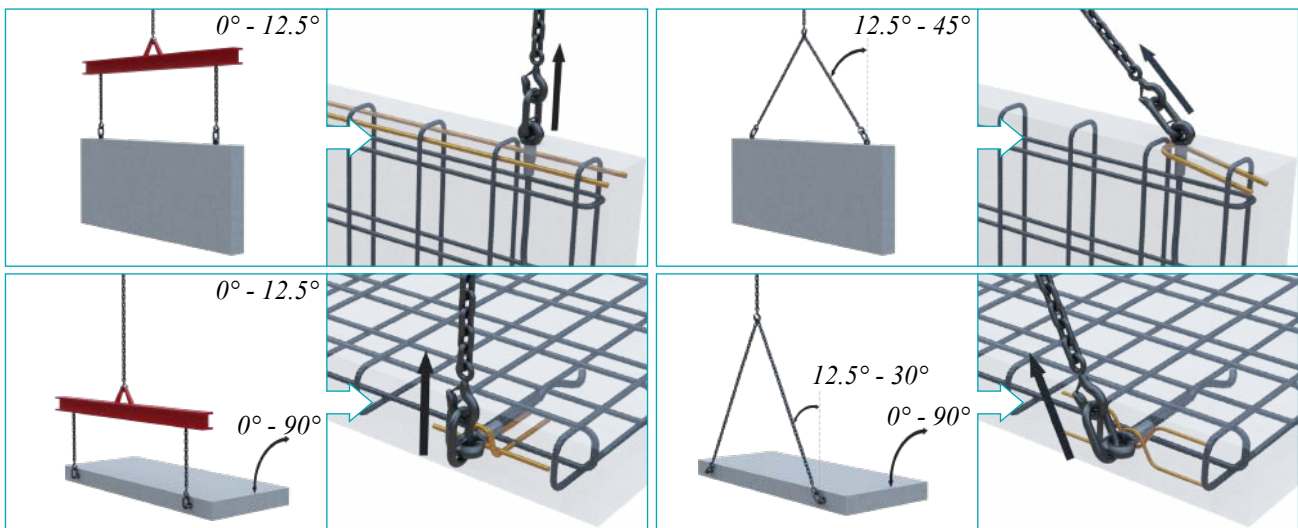


Figure 6. JENKA Inserts - load directions.

The bending diameter "*d<sub>br</sub>*" must correspond to outer diameter of the insert socket or alternative applicable standards such as EN 1992-1-1:2011.

#### Reinforcement for diagonal pull (from 12.5° to 45°)

A diagonal pull of up to 45° requires additional reinforcement which has a pressure contact to the socket to support it. In slim elements where a higher concrete coverage is achieved with a smaller rebar diameter, the angular pull is limited up to 30°. The installation of the additional reinforcement happens with an angle of approximately 20°.

## INFORMATION

### Reinforcement for lateral pull (90°)

Lateral pull requires additional reinforcement with pressure contact to the socket and applies to JENKA Long Inserts such as SRA, WAL, CSA or TF. When lowering and raising the component, the installation direction of the reinforcement must be considered.

Additional reinforcement for a combination of diagonal and lateral tension must be installed. It offers the widest flexibility in use, with the advantage that there is no need to consider the load and reinforcement installation direction. Diagonal pull must be limited to a maximum of 30° (see also *Figure 6*).



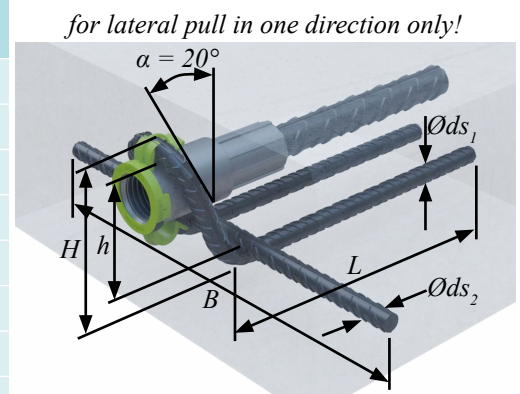
*One rebar = lateral pull in one direction  
Two rebars = lateral pull in two directions + diagonal pull*

*Figure 7. Installation detail for combined lateral reinforcement for SRA, WAL and TF inserts.*

For ordinary lifting and hoisting activity where a single tilt-up lift is necessary, and the installation direction of the lateral pull reinforcement is secondary the lateral pull rebar (for one direction only) according to *Table 2* can be used.

*Table 2. JENKA Lateral pull reinforcement (if  $\gamma \geq 15^\circ$ ) for JENKA inserts.*

Item	$\varnothing ds_1$ [mm]	L [mm]	h [mm]	H [mm]	$\varnothing d_{br}$ [mm]	B [mm]	$\varnothing ds_2$ [mm]
Rd12	6	270	23	35	24	280	8
Rd16	8	420	33	49	32	400	12
Rd20	10	490	44	64	40	490	14
Rd24	12	520	51	75	48	550	14
Rd30	12	570	68	92	48	580	16
Rd36	14	690	90	118	56	700	16
Rd42	16	830	111	143	64	850	20
Rd52	20	930	134	174	140	1000	20



### 2.1.5 JENKA Lifting Inserts Safe working loads $R_{zul}$

The admissible load directions and safe working loads ( $R_{zul}$ ) for the JENKA Lifting Inserts are in *Table 2* to *Table 5* for the individual JENKA Lifting Insert. Take care to select inserts that are suitable for the planned load directions. More information to the design concept can be found in the General Information Manual.



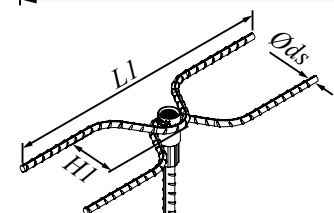
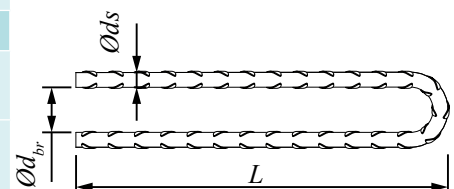
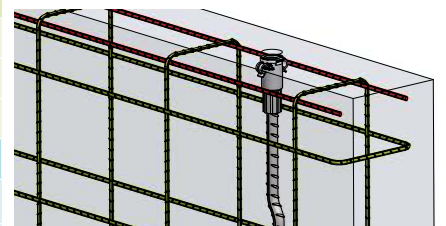
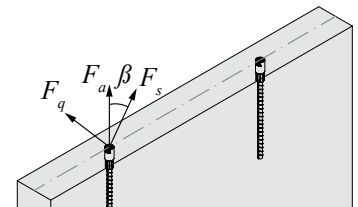
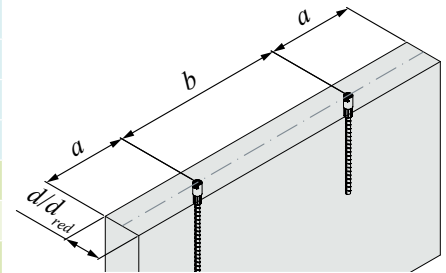
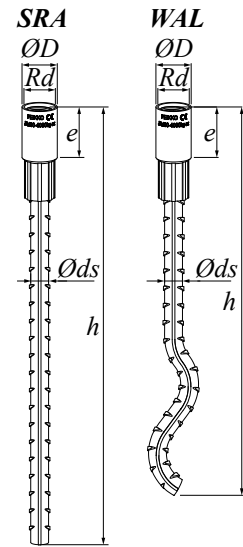
#### PLEASE NOTE:

Diagonal pull between 12.5° and 45° and lateral pull resulting from tilting up is only permitted with additional reinforcement according to the following section. The geometry specification requires that the installation be within the tolerances as defined in the General Information for all Peikko Lifting Systems.

JENKA SRA and WAL Long Lifting Inserts for walls and slender concrete structures

Table 3. JENKA SRA and WAL.

Color Code		12	16	20	24	30	36	42	52	
Type		12	16	20	24	30	36	42	52	
Load Class		500	1200	2000	2500	4000	6300	8000	12500	
GEOMETRY	Dimensions									
	SRA	$Rd$ [mm]	12	16	20	24	30	36	42	52
		$\varnothing D$ [mm]	15	21	27	31	40	47	54	67
		$e$ [mm]	22	27	35	43	56	68	80	100
		$\varnothing ds$ [mm]	8	12	14	16	20	25	28	32
		$h$ [mm]	195	275	360	400	505	690	840	950
	Galvanized	●	●	●	●	●	●	●	●	
	Stainless	●	●	●	●	●	●	●	●	
	WAL	$h$ [mm]	135	215	270	350	450	570	620	880
		Galvanized	●	●	●	●	●	●	●	●
Stainless		●	●	●	●	●	●	●	●	
Element geometry ( $d_{red}$ is for SRA insert only.)										
	$d$ [mm]	60	80	100	120	140	200	240	275	
	$d_{red}$ [mm]	60	65	90	100	120	150	160	180	
	$a$ [mm]	150	200	275	300	325	400	500	600	
	$b$ [mm]	300	400	550	600	650	800	1000	1200	
RESISTANCES	Resistance $R_{zul}$ [kN] for axial pull ( $F_a$ ) up to 12.5° at $f_{cc}$ of									
	SRA + WAL	15 MPa	5	12	20	25	40	63	80	125
	Resistance $R_{zul}$ [kN] for diagonal pull ( $F_s$ ) up to 45° and thickness $d$ and $d_{red}$ at $f_{cc}$ of									
	SRA	15 MPa	4.1	9.4	15.6	19.7	30.5	55.2	74.7	95.7
		20 MPa	4.7	10.8	18.0	22.7	35.2	63.0	80.0	110.4
		25 MPa	5.0	12.0	20.0	25.0	40.0			125.0
	WAL	15 MPa	5	12	20	25	40	63	80	125
Resistance $R_{zul}$ [kN] for diagonal pull ( $F_s$ ) up to 45° and thickness $d$ at $f_{cc}$ of										
WAL	15 MPa	5	12	20	25	40	63	80	125	
Resistance $R_{zul}$ [kN] for lateral pull ( $F_q$ ) at 90° and thickness $d$ at $f_{cc}$ of										
SRA + WAL	15 MPa	1.9	3.8	6.0	9.3	15.9	27.8	52.4	69.0	
	20 MPa	2.2	4.4	7.0	10.7	18.4	32.1	60.5	79.6	
	25 MPa	2.5	5.0	8.0	12.0	20.5	35.8	67.7	89.1	
Surface reinforcement for all load directions SRA + WAL										
	Surface [mm <sup>2</sup> /m]	131	131	188	188	188	188	188	188	
	Edge rebars $\varnothing$ [mm]			≥ 8	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12	
REINFORCEMENT	Diagonal pull reinforcement up to 45° SRA + WAL									
	Diagonal 0° – 30°	$\varnothing ds$ [mm]	Ø6	Ø6	Ø8	Ø8	Ø10	Ø12	Ø14	Ø16
		$L$ [mm]	150	250	250	300	350	450	600	700
	30° – 45°	$\varnothing ds$ [mm]	Ø6	Ø8	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20
		$L$ [mm]	150	200	300	300	400	550	600	750
	Lateral pull reinforcement 90° SRA + WAL									
	Lateral 90°	$\varnothing ds$ [mm]	Ø6	Ø8	Ø10	Ø12	Ø12	Ø14	Ø16	Ø20
$L1$ [mm]		270	420	490	520	570	690	830	930	
$H1$ [mm]		35	49	64	75	92	118	143	174	

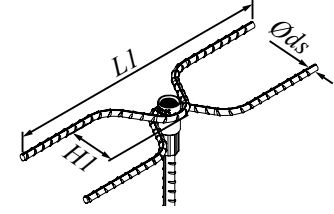
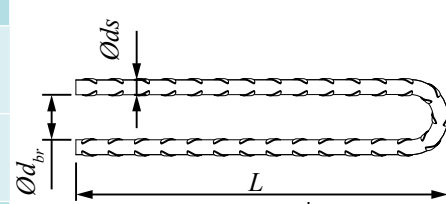
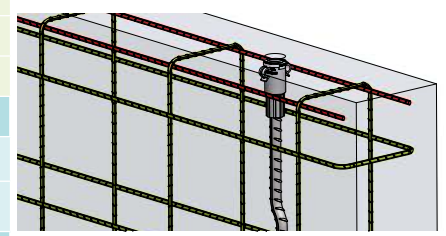
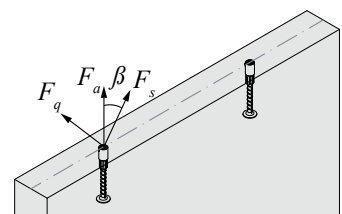
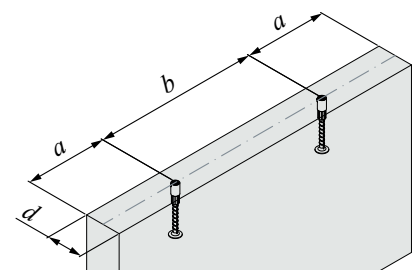
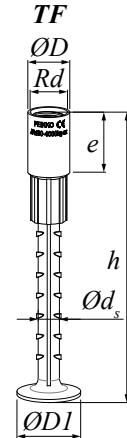


Note: Value of  $\varnothing d_{br}$  is presented in Table 2.

JENKA TF Long Lifting Inserts for columns, foundations

Table 4. JENKA TF.

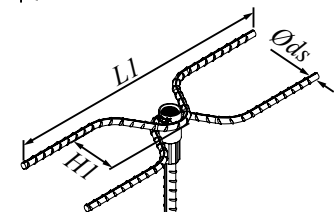
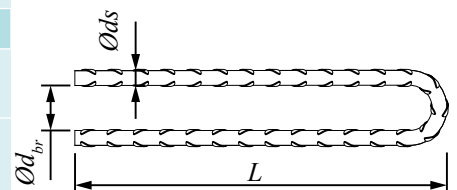
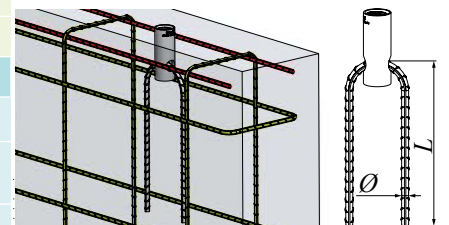
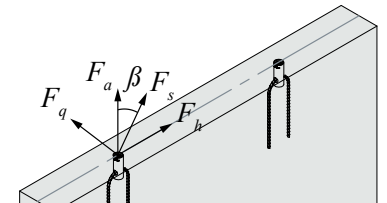
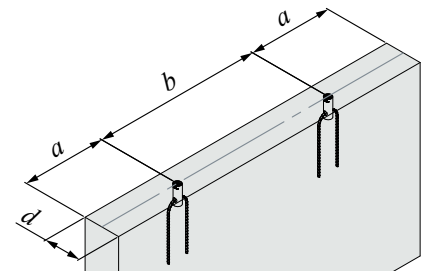
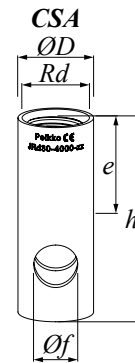
Color Code										
Type		12	16	20	24	30	36	42	52	
Load Class		500	1200	2000	2500	4000	6300	8000	12500	
GEOMETRY	Dimensions									
	TF	Rd [mm]	12	16	20	24	30	36	42	52
		ØD [mm]	15	21	27	31	40	47	54	67
		e [mm]	22	27	35	43	56	68	80	100
		Øds [mm]	8	12	14	16	20	25	28	32
		ØDI [mm]	24	36	42	48	60	75	84	96
		h [mm]	100	130	185	200	275	335	385	550
		Galvanized	●	●	●	●	●	●	●	●
	Stainless	●	●	●	●	●	●	●	●	
	Element geometry									
	d [mm]	60	80	100	120	140	200	240	275	
	a [mm]	150	200	275	300	325	400	500	600	
	b [mm]	300	400	550	600	650	800	1000	1200	
RESISTANCES	Resistance $R_{zul}$ [kN] for axial pull ( $F_a$ ) up to 12.5° at $f_{cc}$ of									
		15 MPa	5	12	20	25	40	63	80	125
	Resistance $R_{zul}$ [kN] for diagonal pull ( $F_s$ ) up to 45° at $f_{cc}$ of									
		15 MPa						54.5	67.6	112.2
		20 MPa	5.0	12.0	20.0	25.0	40.0	63.0	78.0	125
	25 MPa							80.0		
Resistance $R_{zul}$ [kN] for lateral pull ( $F_q$ ) at 90° at $f_{cc}$ of										
	15 MPa	2.1	4.2	6.5	10.1	17.3	30.2	57.0	75.0	
	20 MPa	2.4	4.8	7.6	11.6	19.9	34.8	65.7	86.5	
	25 MPa	2.7	5.4	8.5	13.0	22.4	38.9	73.5	96.8	
REINFORCEMENT	Surface reinforcement for all load directions									
		Surface [mm <sup>2</sup> /m]	131	131	188	188	188	188	188	188
		Edge rebars Ø [mm]			≥ 8	≥ 12	≥ 12	≥ 12	≥ 12	≥ 16
	Diagonal pull reinforcement up to 45°									
	Diagonal 0° – 30°	Øds [mm]	Ø6	Ø6	Ø8	Ø8	Ø10	Ø12	Ø14	Ø16
		L [mm]	150	250	250	300	350	450	600	700
	0° – 45°	Øds [mm]	Ø6	Ø8	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20
		L [mm]	150	200	300	300	400	550	600	750
	Lateral pull reinforcement 90°									
	Lateral 90°	Øds [mm]	Ø6	Ø8	Ø10	Ø12	Ø12	Ø14	Ø16	Ø20
L1 [mm]		270	420	490	520	570	690	830	930	
H1 [mm]		35	49	64	75	92	118	143	174	



JENKA CSA Long Lifting Inserts for general application in walls and other slender structures

Table 5. JENKA CSA Long Inserts.

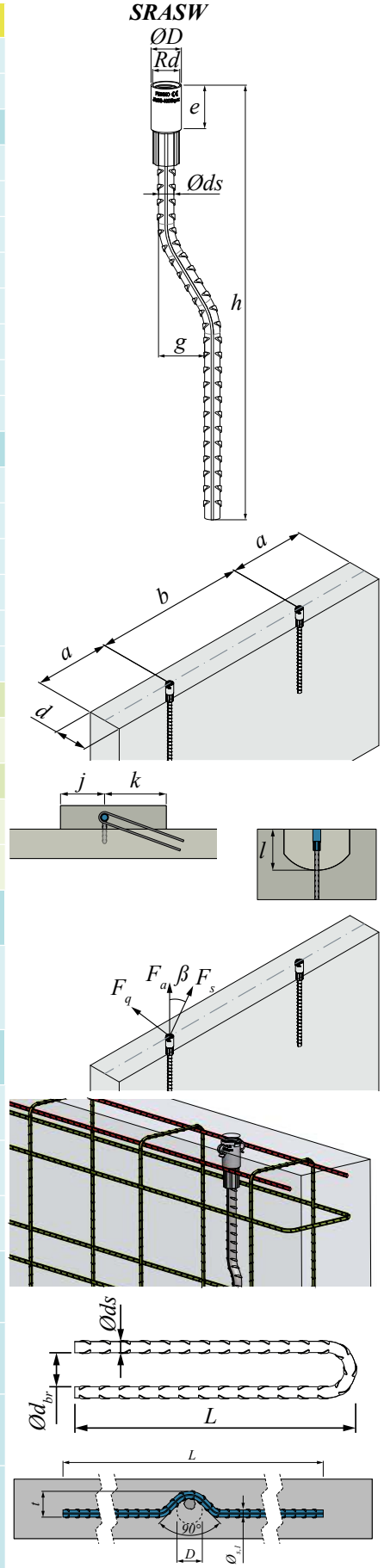
Color Code										
Type	12	16	20	24	30	36	42	52		
Load Class	500	1200	2000	2500	4000	6300	8000	12500		
GEOMETRY	Dimensions									
	$Rd$ [mm]	12	16	20	24	30	36	42	52	
	$\varnothing D$ [mm]	15	21	27	31	40	47	54	67	
	$e$ [mm]	22	27	35	43	56	68	80	100	
	$\varnothing f$ [mm]	8.0	13.0	15.5	18.0	22.5	27.5	32.0	40.0	
	$h$ [mm]	40	54	67	77	105	125	145	195	
	Galvanized	●	●	●	●	●	●	●	●	
	Stainless	●	●	●	●	●	●	●	●	
	Element geometry									
	$d$ [mm]	60	80	100	120	140	200	240	275	
$a$ [mm]	150	200	275	300	325	400	500	600		
$b$ [mm]	300	400	550	600	650	800	1000	1200		
RESISTANCES	Resistance $R_{zul}$ [kN] for axial pull ( $F_a$ ) up to 12.5° at $f_{cc}$ of									
	15 MPa	5	12	20	25	40	63	80	125	
	Resistance $R_{zul}$ [kN] for diagonal pull ( $F_s$ ) up to 45° at $f_{cc}$ of									
	15 MPa							74.6	113.7	
	20 MPa	5.0	12.0	20.0	25.0	40.0	63.0	80.0	125.0	
	Resistance $R_{zul}$ [kN] for lateral pull ( $F_q$ ) at 90° at $f_{cc}$ of									
15 MPa	2.0	3.7	5.0	6.9	11.9	22.2	34.1	45.3		
20 MPa	2.3	4.2	5.8	8.0	13.8	25.6	39.4	52.2		
25 MPa	2.6	4.7	6.5	8.9	15.4	28.7	40.0	58.4		
REINFORCEMENT	Surface reinforcement for all load directions									
	Surface	[mm <sup>2</sup> /m]	131	131	188	188	188	188	188	
	Anchoring bar	$\varnothing$ [mm]	$\varnothing 6$	$\varnothing 10$	$\varnothing 12$	$\varnothing 14$	$\varnothing 16$	$\varnothing 20$	$\varnothing 25$	$\varnothing 28$
		$L$ [mm]	240	330	440	480	650	820	860	1200
	Diagonal pull reinforcement up to 45°									
	Diagonal 0° – 30°	$\varnothing ds$ [mm]	$\varnothing 6$	$\varnothing 6$	$\varnothing 8$	$\varnothing 8$	$\varnothing 10$	$\varnothing 12$	$\varnothing 14$	$\varnothing 16$
		$L$ [mm]	150	250	250	300	350	450	600	700
	0° – 45°	$\varnothing ds$ [mm]	$\varnothing 6$	$\varnothing 8$	$\varnothing 8$	$\varnothing 10$	$\varnothing 12$	$\varnothing 14$	$\varnothing 16$	$\varnothing 20$
		$L$ [mm]	150	200	300	300	400	550	600	750
	Lateral pull reinforcement 90°									
Lateral 90°	$\varnothing ds$ [mm]	$\varnothing 6$	$\varnothing 8$	$\varnothing 10$	$\varnothing 12$	$\varnothing 12$	$\varnothing 14$	$\varnothing 16$	$\varnothing 20$	
	$L I$ [mm]	270	420	490	520	570	690	830	930	
	$H I$ [mm]	35	49	64	75	92	118	143	174	



JENKA SRASW Long Lifting Inserts

Table 6. JENKA SRASW Long Inserts.

Color Code								
Type		20	24	30	36	42	52	
Load Class		2000	2500	4000	6300	8000	12500	
GEOMETRY	Dimensions							
	SRASW	Rd [mm]	20	24	30	36	42	52
		ØD [mm]	27	31	40	47	54	67
		e [mm]	35	43	56	68	80	100
		Øds [mm]	14	16	20	25	28	32
		g [mm]	50	60	60	70	70	70
		h [mm]	605	715	850	1100	1250	1500
	Galvanized	●	●	●	●	●	●	
	Stainless	●	●	●	●	●	●	
	Element geometry							
		d [mm]	90	100	120	150	160	180
		a [mm]	275	300	325	400	500	600
		b [mm]	550	600	650	800	1000	1200
		j [mm]	130	150	170	200	210	230
k [mm]		200	250	250	400	420	450	
l [mm]		200	250	300	300	350	430	
RESISTANCES	Resistance $R_{zul}$ [kN] for axial pull ( $F_a$ ) up to 12.5° at $f_{cc}$ of							
	15 MPa	20	25	40	63	80	125	
	Resistance $R_{zul}$ [kN] for diagonal pull ( $F_s$ ) up to 30° at $f_{cc}$ of							
	15 MPa	18.0	22.7	36.0	58.0	78.0	111.0	
	20 MPa	20.0	25.0	40.0	63.0	80.0	125.0	
REINFORCEMENT	Surface reinforcement and diagonal pull reinforcement up to 30°							
	Surface	[mm <sup>2</sup> /mm]	188	188	188	188	188	188
	Diagonal	Øs2 [mm]	Ø8	Ø8	Ø10	Ø12	Ø14	Ø16
	0° – 30°	L [mm]	250	300	350	450	600	700
	Additional reinforcement 90°							
	Øs1 × L	[mm]	10×700	10×700	12×700	14×1000	16×1200	20×1300
	t	[mm]	42	42	50	74	90	90
	D	[mm]	40	40	48	56	64	140
	n × Ø Pos 3		6×8	6×8	6×10	6×10	6×12	6×14
	L3	[mm]	700	750	950	1100	1200	1300
n × Ø Pos 4		3×8	3×8	3×8	3×10	3×12	3×12	
L4	[mm]	1500	1500	1500	1500	1500	1500	



Additional reinforcement for diagonal pull must be installed according to *Figure 8*. As shown, the rebar is bent down into the element to have sufficient anchorage depth. The diagonal pull angle  $\beta$  for SRASW inserts is limited to a maximum of  $30^\circ$ .

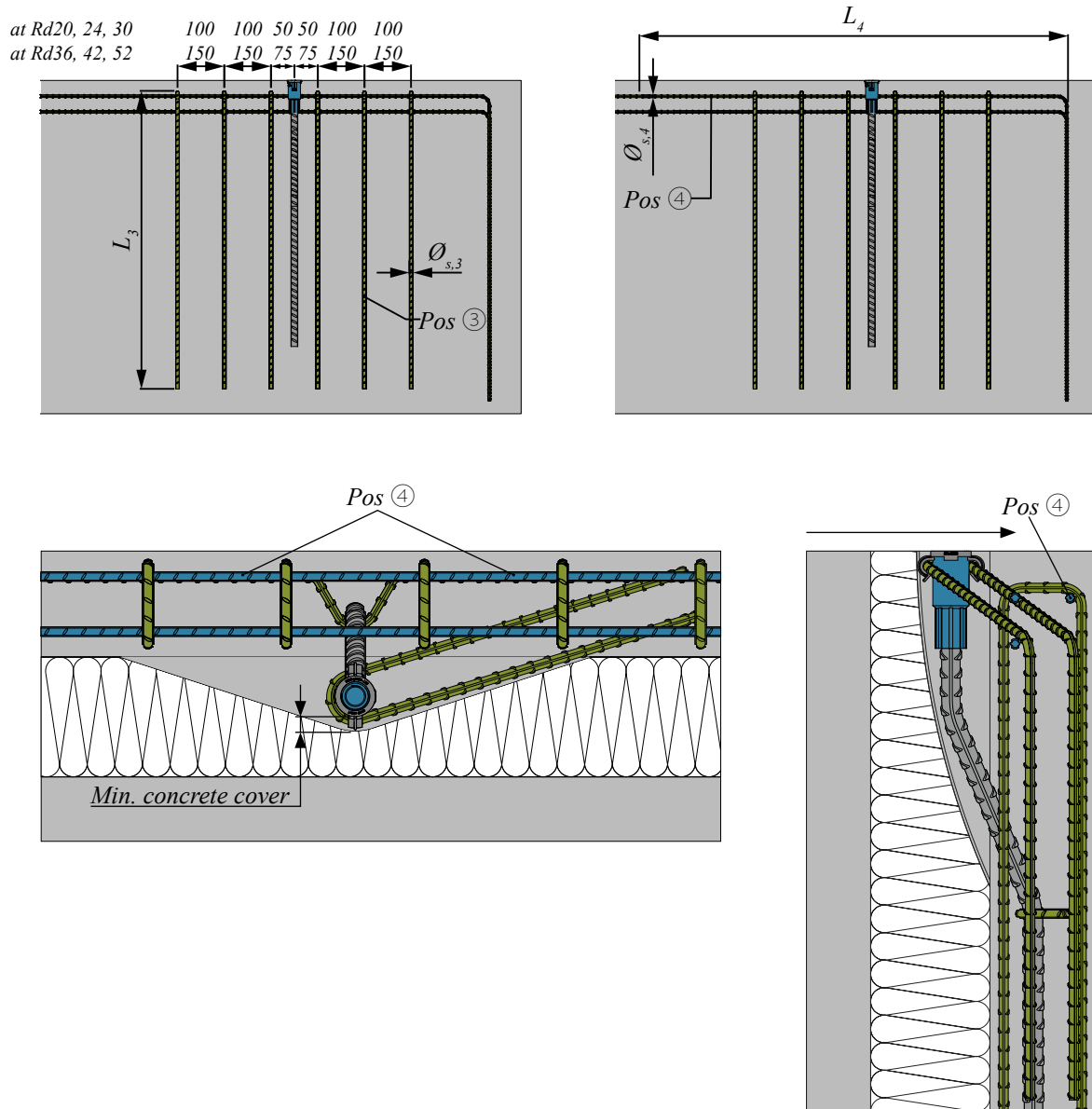


Figure 8. Installation for axial and diagonal loads up to  $30^\circ$  for SRASW inserts.

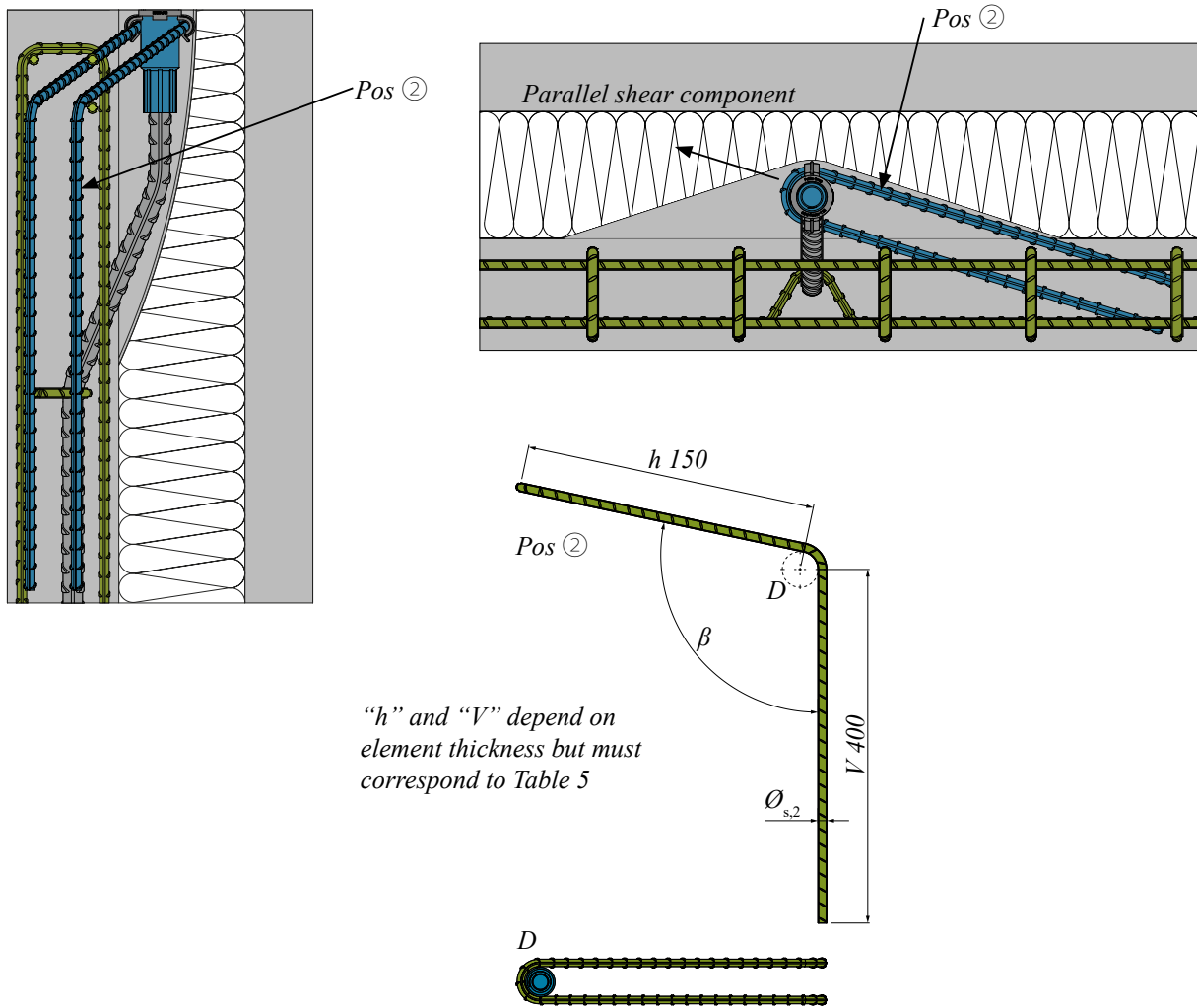


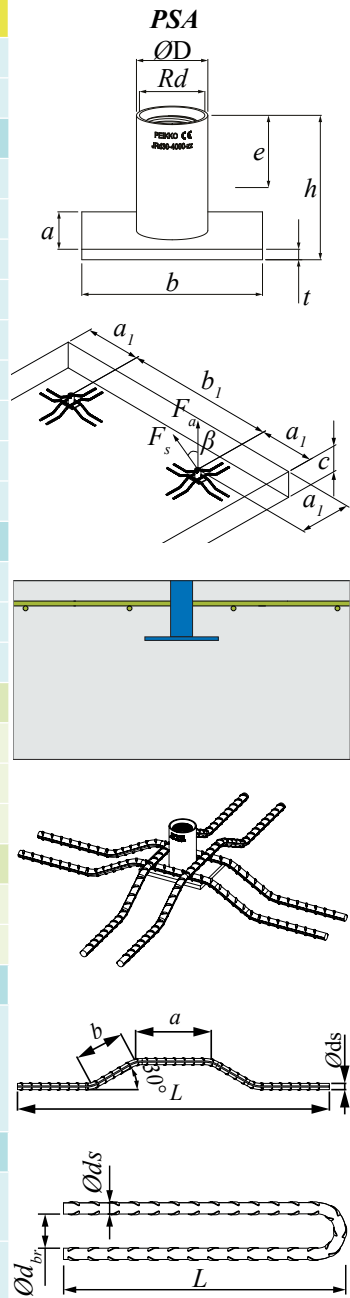
Figure 9. Installation for JENKA SRASW Inserts.



JENKA PSA Short Lifting Inserts for thin concrete slabs

Table 7. JENKA PSA Short Inserts.

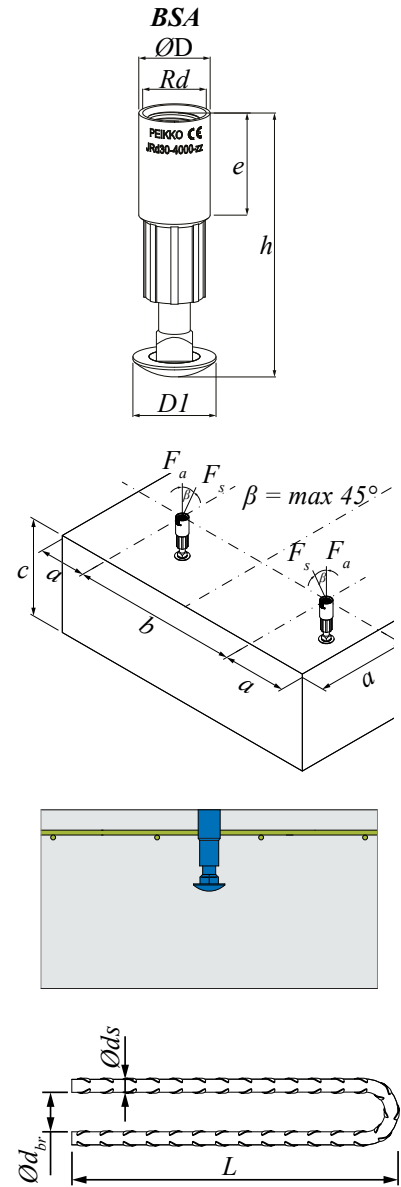
Color Code										
Type		12	16	20	24	30	36	42	52	
Load Class		500	1200	2000	2500	4000	6300	8000	12500	
GEOMETRY	Dimensions									
	PSA	$Rd$ [mm]	12	16	20	24	30	36	42	52
		$\varnothing D$ [mm]	15	21	27	31	40	47	54	67
		$e$ [mm]	22	27	35	43	56	68	80	100
		$t$ [mm]	4	4	5	5	6	6	8	10
		$a$ [mm]	25	35	60	60	80	100	130	130
		$b$ [mm]	35	50	60	80	100	130	130	150
		$h$ [mm]	30	35	47	54	72	84	98	117
	Galvanized	●	●	●	●	●	●	●	●	
	Stainless	●	●	●	●	●	●	●	●	
Element geometry										
PSA	$c$ [mm]	70	85	100	115	140	160	175	215	
	$a_1$ [mm]	180	250	300	400	500	650	650	750	
	$b_1$ [mm]	350	500	600	800	1000	1300	1300	1500	
RESISTANCES	Resistance $R_{zul}$ [kN] for axial pull ( $F_a$ ) up to 12.5° at $f_{cc}$ of									
	15 MPa		8.4	16.5		34.7		49.9	86.0	
	20 MPa	5	9.7	19.1	25.0	40.0	63.0	58.0	99.3	
	25 MPa		11.0	20.0				65.0	111.1	
	Resistance $R_{zul}$ [kN] for diagonal pull ( $F_s$ ) up to 45° at $f_{cc}$ of									
15 MPa	5	11.7	20.0	25	40.0	63.0	80.0	120.3		
20 MPa		12.0						125.0		
REINFORCEMENT	Surface reinforcement for all load directions									
	PSA	[mm <sup>2</sup> /m]	131	131	188	188	221	221	513	513
		$\varnothing ds$	2Ø6	2Ø8	2Ø8	4Ø10	4Ø12	4Ø14	4Ø16	4Ø20
		$L$ [mm]	250	420	640	640	830	1140	1250	1530
		$a/b$ [mm]	60/60	90/70	90/80	90/100	90/110	140/120	140/120	140/150
	Diagonal pull reinforcement up to 45°									
	Diagonal 0° – 30°	$\varnothing ds$ [mm]	Ø6	Ø6	Ø8	Ø8	Ø10	Ø12	Ø14	
$L$ [mm]		150	250	250	300	350	450	600		
0° – 45°	$\varnothing ds$ [mm]	Ø6	Ø8	Ø8	Ø10	Ø12	Ø14	Ø16		
	$L$ [mm]	150	200	300	300	400	550	600		



JENKA BSA Short Lifting Inserts for thin concrete slabs

Table 8. JENKA BSA Short Inserts.

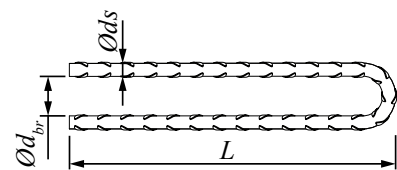
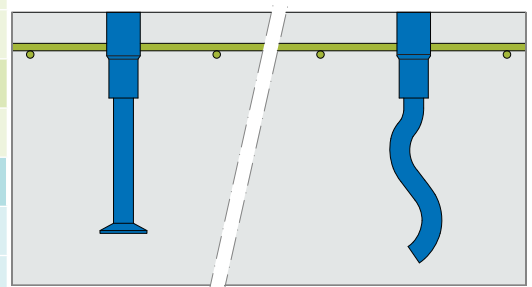
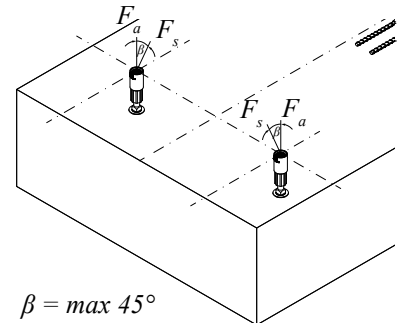
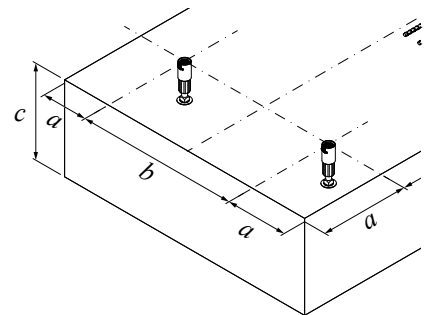
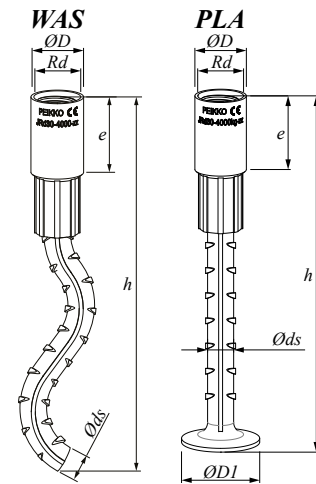
Color Code							
Type		12	16	20	24	30	
Load Class		500	1200	2000	2500	4000	
GEOMETRY	Dimensions						
	<i>Rd</i> [mm]	12	16	20	24	30	
	$\varnothing D$ [mm]	15	21	27	31	40	
	<i>e</i> [mm]	22	27	35	43	56	
	$\varnothing DI$ [mm]	20	30	38	46	46	
	<i>h</i> [mm]	60	80	100	115	150	
	Galvanized	●	●	●	●	●	
	Stainless	●	●	●	●	●	
	Element geometry						
	<i>c</i> [mm]	80	100	120	135	170	
<i>a</i> [mm]	90	120	150	175	225		
<i>b</i> [mm]	180	240	300	350	450		
RESISTANCES	Resistance $R_{zul}$ [kN] for axial pull ( $F_a$ ) up to 12.5° at $f_{cc}$ of						
	15 MPa	5.0	12.0	19.3	23.5	36.3	
	20 MPa			20.0	25.0	40.0	
	Resistance $R_{zul}$ [kN] for diagonal pull ( $F_s$ ) up to 45° at $f_{cc}$ of						
15 MPa	5.0	12.0	20.0	25.0	40.0		
REINFORCEMENT	Surface reinforcement for all load directions						
	[mm <sup>2</sup> /m]	131	131	188	188	188	
	Diagonal pull reinforcement up to 45°						
	Diagonal 0° – 30°	$\varnothing ds$ [mm] <i>L</i> [mm]	$\varnothing 6$ 150	$\varnothing 6$ 250	$\varnothing 8$ 250	$\varnothing 8$ 300	$\varnothing 10$ 350
	0° – 45°	$\varnothing ds$ [mm] <i>L</i> [mm]	$\varnothing 6$ 150	$\varnothing 8$ 200	$\varnothing 8$ 300	$\varnothing 10$ 300	$\varnothing 12$ 400



JENKA WAS and PLA Short Lifting Inserts for foundations and massive slabs

Table 9. JENKA WAS and PLA Short Inserts.

Color Code									
Type		12	16	20	24	30	36	42	
Load Class		500	1200	2000	2500	4000	6300	8000	
GEOMETRY	Dimensions								
	WAS & PLA	Rd [mm]	12	16	20	24	30	36	42
		ØD [mm]	15	21	27	31	40	47	54
		e [mm]	22	27	35	43	56	68	80
		Øds [mm]	8	12	14	16	20	25	28
	WAS	h [mm]	105	165	195	240	300	380	450
		Galvanized	●	●	●	●	●	●	●
		Stainless	●	●	●	●	●	●	●
	PLA	h [mm]			120	135	180	230	
		ØDI [mm]			42	48	60	75	
		Galvanized			●	●	●	●	
		Stainless			●	●	●	●	
	Element geometry								
WAS & PLA	a [mm]	95	135	170	220	275	340	400	
	b [mm]	200	260	350	440	550	680	800	
WAS	c [mm]	140	190	215	270	335	420	480	
PLA	c [mm]			145	160	205	255		
Resistance $R_{zul}$ [kN] for axial pull ( $F_a$ ) up to 12.5° at $f_{cc}$ of									
WAS	15 MPa	5	12	20	25	40	63	80	
Resistance $R_{zul}$ [kN] for diagonal pull ( $F_s$ ) up to 45° at $f_{cc}$ of									
WAS	15 MPa		11.2				54.5	67.6	
	20 MPa	5.0		20.0	25.0	40.0		78.0	
	25 MPa		12.0				63.0	80.0	
Resistance $R_{zul}$ [kN] for axial pull ( $F_a$ ) and diagonal pull ( $F_s$ ) up to 45° at $f_{cc}$ of									
PLA	15 MPa			20.0	25.0	40.0	63.0		
Surface reinforcement for all load directions									
WAS		131	131	188	188	188	188	188	
PLA	[mm <sup>2</sup> /m]			188	188	188	188		
Diagonal pull reinforcement up to 45° WAS + PLA									
Diagonal 0° – 30°	Øds [mm]	Ø6	Ø6	Ø8	Ø8	Ø10	Ø12	Ø14	
	L [mm]	150	250	250	300	350	450	600	
0° – 45°	Øds [mm]	Ø6	Ø8	Ø8	Ø10	Ø12	Ø14	Ø16	
	L [mm]	150	200	300	300	400	550	600	



## 2.2 JENKA Lifting Keys

DESIGNERS	PRECAST PLANTS	USERS
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JENKA Lifting Keys are used to attach the hoisting hardware to the JENKA Lifting Insert, which is cast into the concrete element. JENKA Lifting Keys can be used with all JENKA Lifting System’s insert types.

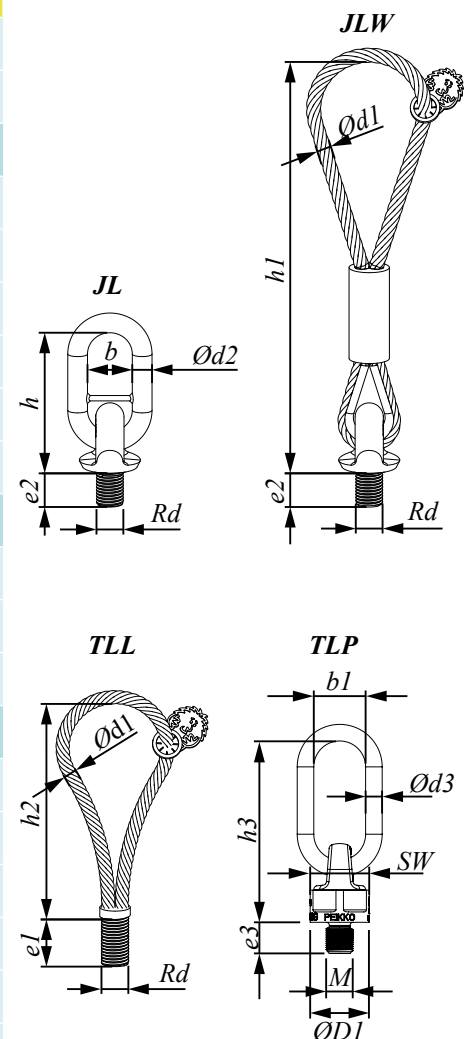
Before use select the appropriate JENKA Lifting Key that fits your application.

### 2.2.1 Dimensions

JENKA Lifting Keys are available in standard dimensions as shown in *Table 10* and comes with Peikko Rd thread (JL, JLW and TLL) or with M thread (TLP).

Table 10. JENKA Lifting keys - dimensions.

Color Code								
Type	12	16	20	24	30	36	42	52
Load Class	500	1200	2000	2500	4000	6300	8000	12500
<b>JL and JLW - Rd Thread</b>								
<i>h</i> [mm]	137	137	146	146	155	155	192	192
<i>h1</i> [mm]	205	335	385	410	475	525	615	710
<i>Ød1</i> [mm]	6	8	10	12	16	18	20	26
<i>Ød2</i> [mm]	13	13	16	16	22	22	26	26
<i>e2</i> [mm]	19	24	29	35	43	52	60	73
<i>b</i> [mm]	50	50	50	50	50	50	65	65
<b>TLL – Rd Thread</b>								
<i>h2</i> [mm]	133	138	180	212	245	293	350	435
<i>Ød1</i> [mm]	6	8	10	12	16	18	20	26
<i>e1</i> [mm]	22	27	35	43	55	67	75	95
<b>TLP – M Thread</b>								
<i>h3</i> [mm]		101	121	148	171	179		
<i>Ød3</i> [mm]		13	16	18	22	22		
<i>e3</i> [mm]		20	25	30	40	63		
<i>b1</i> [mm]		33	34	40	50	50		
<i>ØD1</i> [mm]		39	50	57	73	83		
<i>SW</i> [mm]		36	46	50	65	70		



### 2.2.2 Using JENKA Lifting Keys

When JENKA Lifting Systems components are used together with JENKA Lifting Keys, this manual and the General Information for Peikko Lifting Systems, including the instructions for safe use, must be considered. In particular, the General Lifting Information manual provides essential information for lifting actions. Before using any of these Peikko products on building sites, the contractor must ensure that the instructions are available and have been read, understood, and followed. Misuse, misapplication, or lack of proper supervision and/or inspection can result in serious accidents.

The Peikko JENKA Lifting System has a color code (TLL and JLW) or a marking (JL and TLP) that defines which JENKA Lifting Key fits which insert (see *Figure 10*).



Figure 10. Correct combination of JENKA Lifting Insert and JENKA Lifting Key.

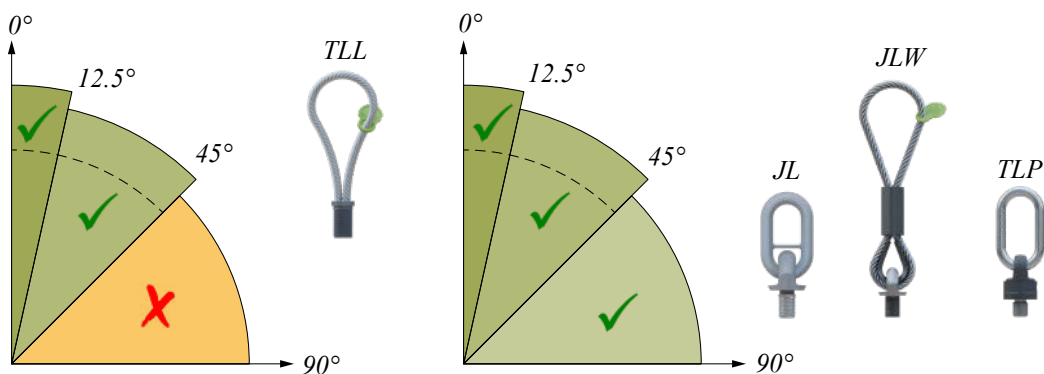


Figure 11. Permitted load directions.

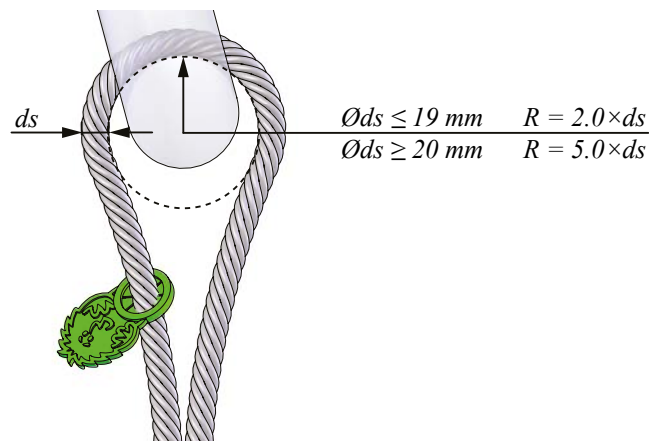
## INFORMATION

The safe use of any lifting system requires the JENKA Lifting Key and the insert to fit properly together. All threaded JENKA Lifting Keys must be screwed into the insert with full length of the thread. The admissible load directions must be considered prior to use as shown in *Table 11*.

*Table 11. Admissible load directions of JENKA Lifting Inserts and JENKA Lifting Keys.*

SRA	✓	✓	✗
WAL	✓	✓	✗
TF	✓	✓	✗
SRASW	✗	✓	✗
CSA	✓	✓	✗
PSA	✗	✗	✓
BSA	✗	✗	✓
PLA	✗	✗	✓
WAS	✗	✗	✓

To prevent loss of rope capacity (combined tension and pressure forces) when using JENKA Lifting Keys TLL and JLW, ensure that a sufficient big lifting hardware with a minimum radius is used (see *Figure 12*).



*Figure 12. Minimum radius for the wire.*

Do not break the concrete around the JENKA Lifting Insert and never mechanically rework the items (see *Figure 13*).



Figure 13. Rework at JENKA Lifting Insert.

### 2.2.3 JENKA TLL Lifting Key

The JENKA TLL Lifting Key can be used without any special adjustment to the insert up to 45° diagonal pull. After it is fully screwed in and tightened, back rotation is not allowed. *Figure 14* and *Figure 15* shows the correct usage and permissible load directions for TLL Lifting Key.

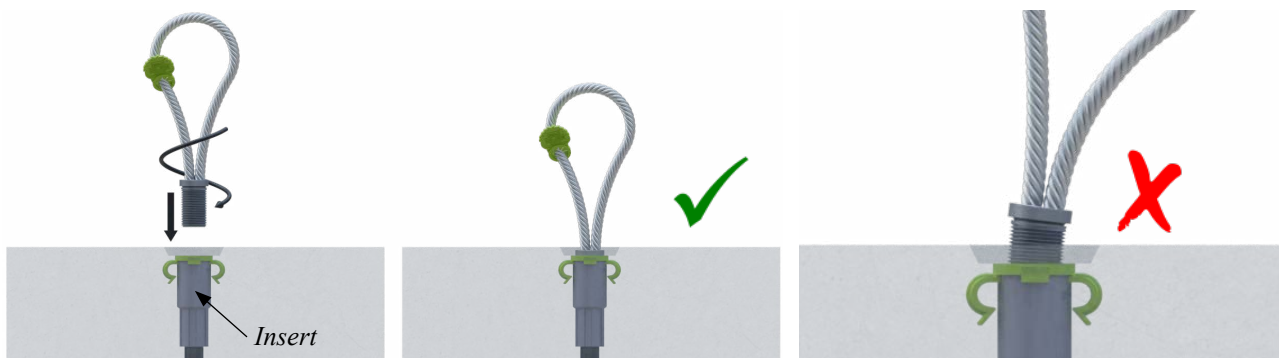


Figure 14. Screwing detail for TLL Lifting Key.

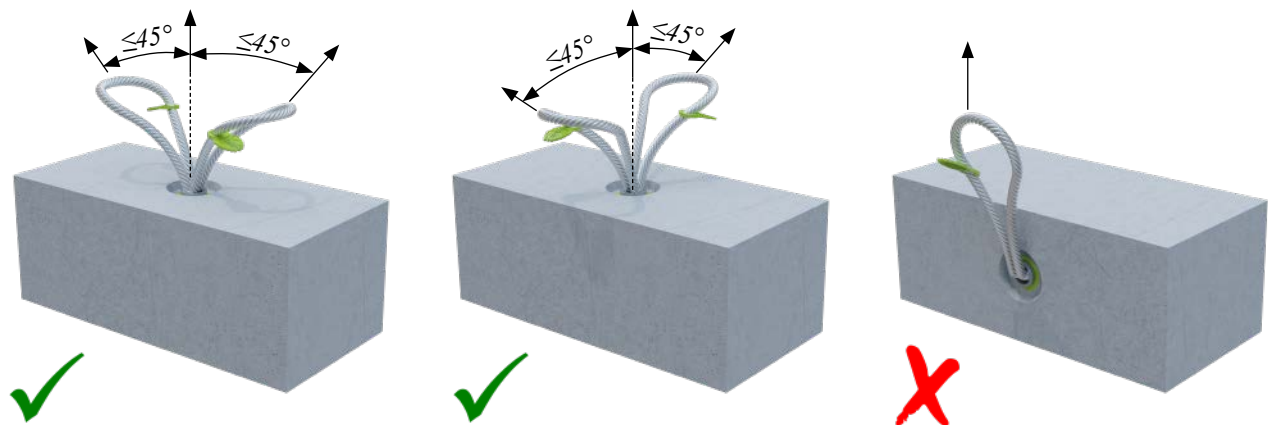


Figure 15. Permissible load directions for TLL Lifting Key

## INFORMATION

### 2.2.4 JENKA JL and JLW Lifting Keys

JENKA JL and JLW Lifting Keys require the correct loop/ring direction to transfer loads to the insert and concrete. When the Lifting Key is fully screwed in and tightened, a back rotation up to a maximum of 90° is allowed to adjust the loop/ring direction correctly towards the load.

The NP P and NP M nailing plates create a recess for the pressure plate of the JL/JLW Lifting Key that corresponds to its geometry. During lifting the recess supports the Lifting Key by taking diagonal or shear loads via contact pressure. The JL and JLW Lifting Keys must only be used with NP P or NP M nailing plates. *Figure 16* describes the correct application direction and the impact of loads and the correct use with NP P or NP M.

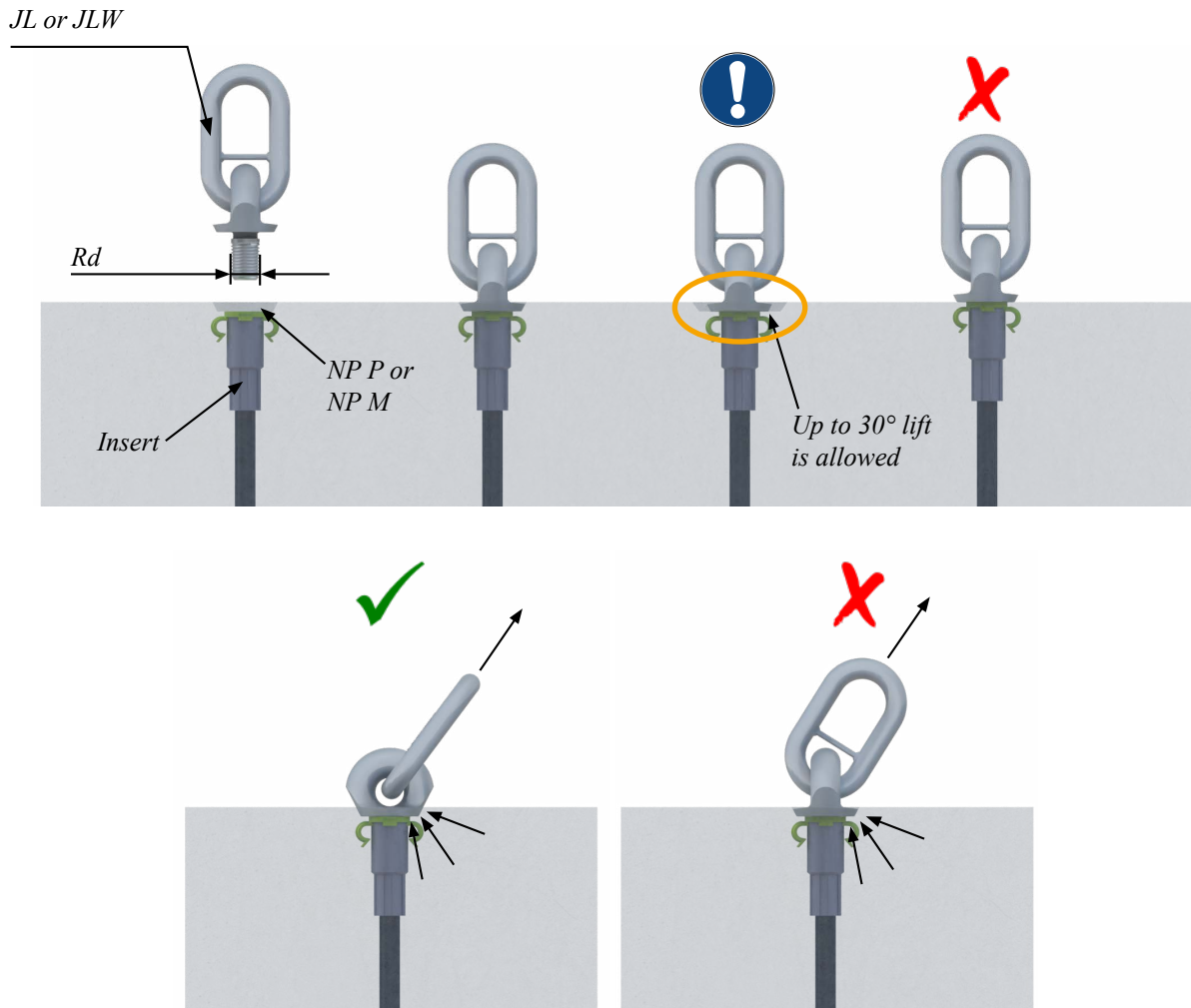


Figure 16. Correct direction of JENKA JL and JLW Lifting Keys.

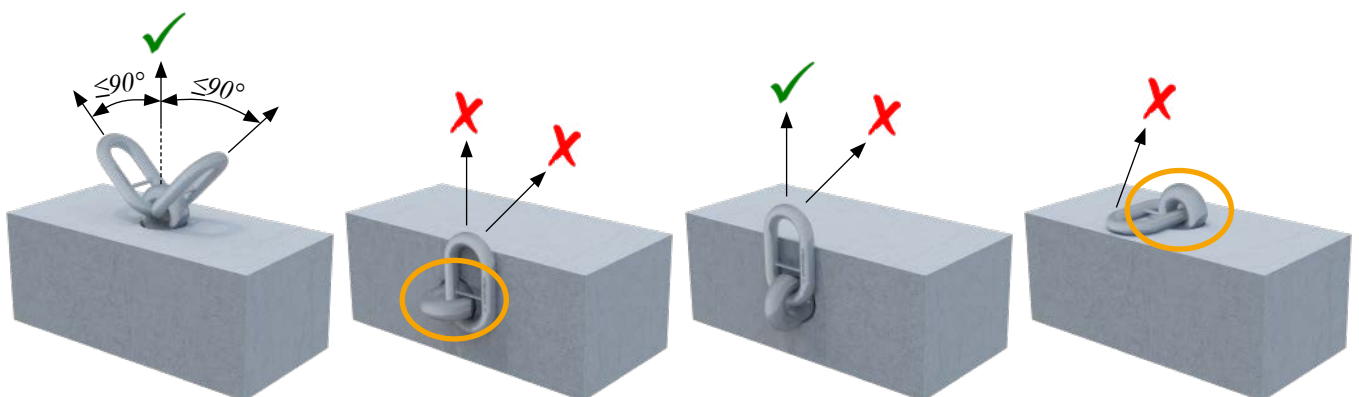


Figure 17. Correct use of JENKA JL and JLW Lifting Keys.



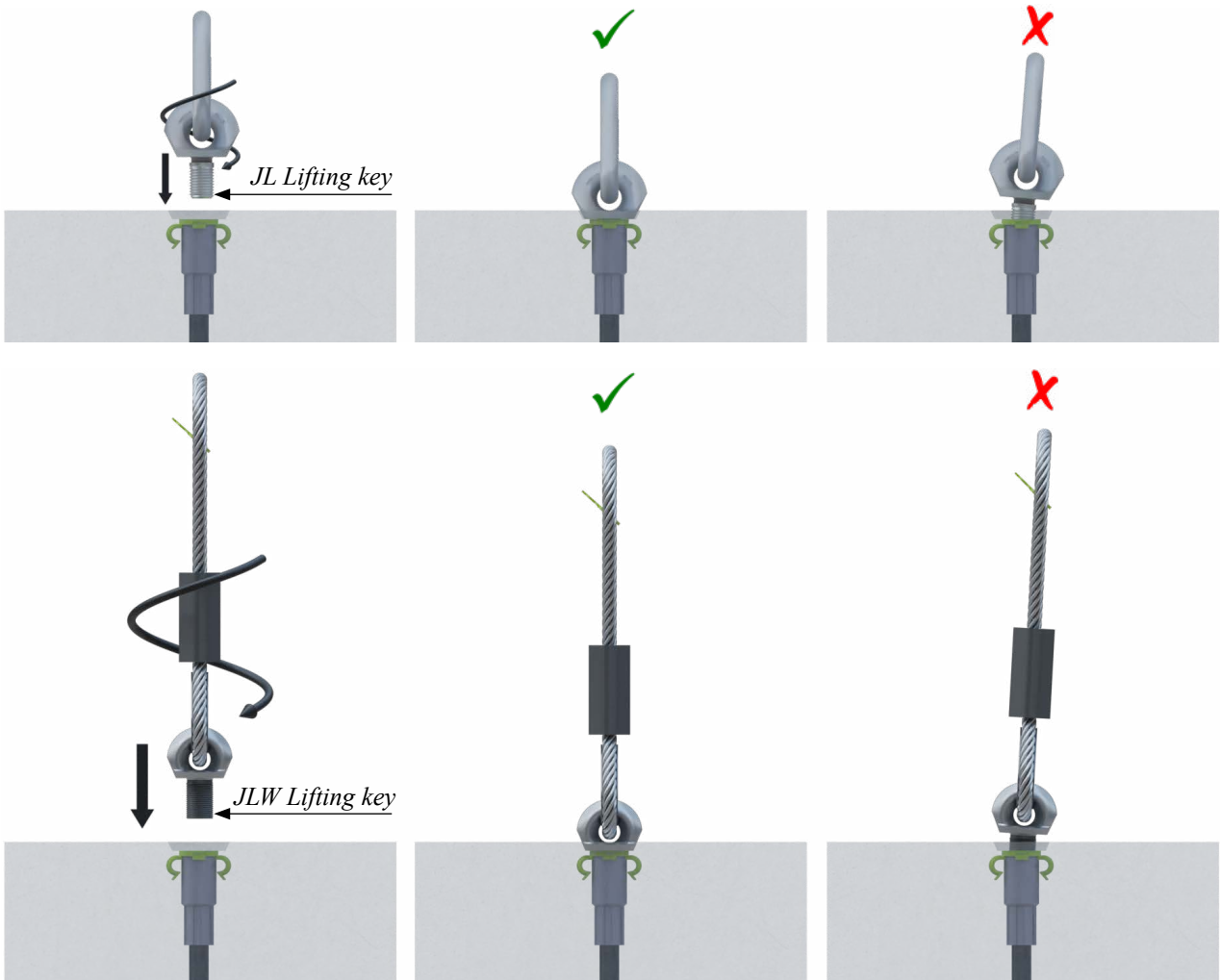


Figure 18. Screwing detail for JL and JLW Lifting Keys.

## INFORMATION

### 2.2.5 JENKA TLP Lifting Key

TLP Lifting Key is a fully rotational lifting key for all load directions. Its wide pressure plate distributes the impact pressure to the surrounding concrete element. The TLP Lifting Key requires the correct loop/ring direction to transfer loads to the insert and concrete. TLP lifting key shall be tightened by the use of a wrench.

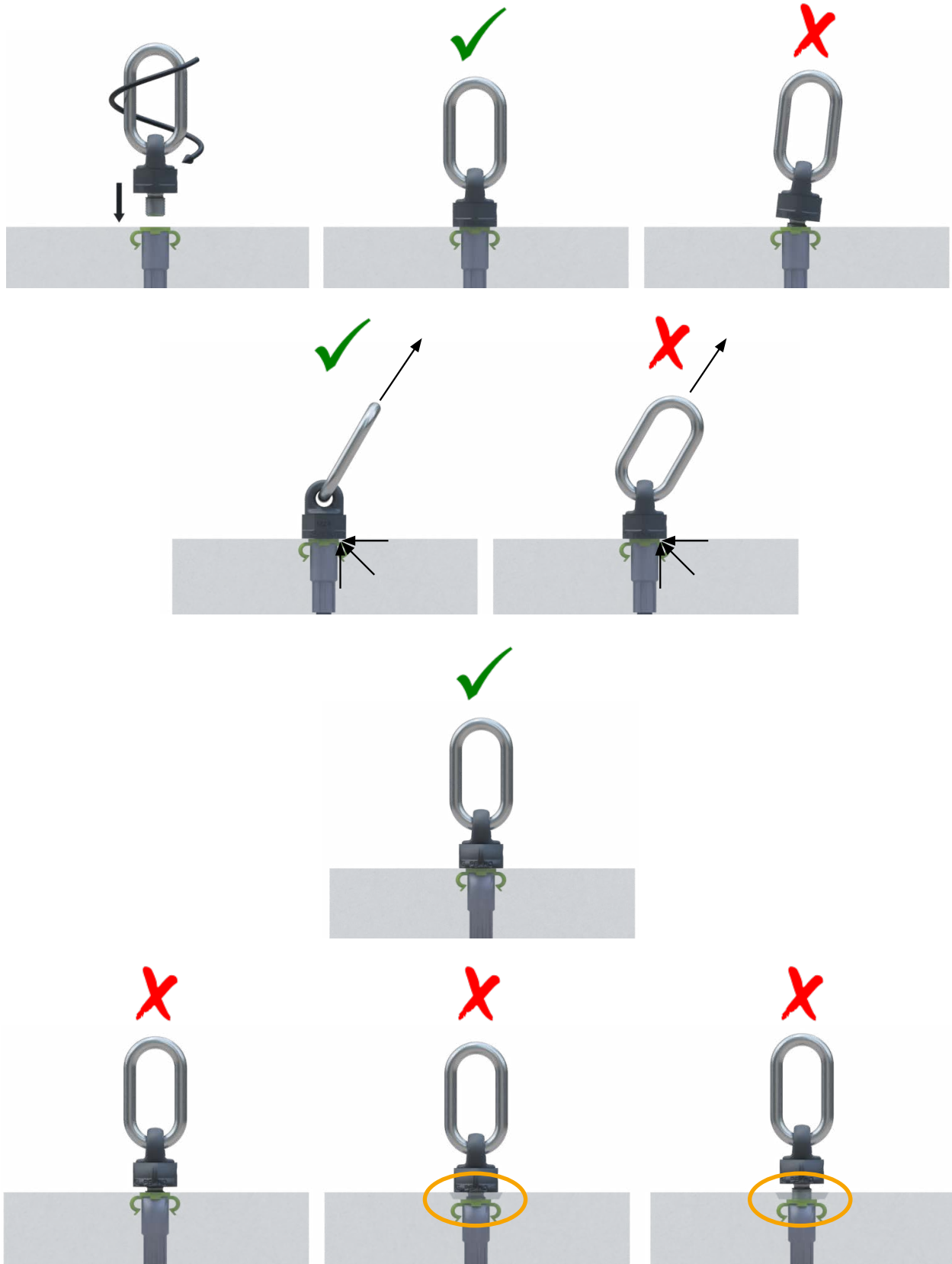


Figure 19. Correct ring direction and screwing of JENKA TLP Lifting Key.

The top part of the Lifting Key including attachment ring must always be freely movable. It must not rest on or be supported by other structural parts. When attaching the components make sure the position of the Lifting Key always enables forces to be exerted in a longitudinal direction. Make sure only the top part of the Lifting Key turns into loading direction and not the firmly secured stationary portion.

Check the correct positioning of the Lifting Keys each time the load is turned and/or rotated, especially when the load is applied parallel to the screw-on surface.

The correct use of TLP Lifting Keys is shown in *Figure 19* and *Figure 20*. TLP Lifting Keys can be used for each load directions (between 0° to 45° and for 90° tilt-up procedures). Peikko JENKA TLP Lifting Keys are designed for occasionally turning or rotating loads. Continuous or long-term turning or rotation under load is not allowed.

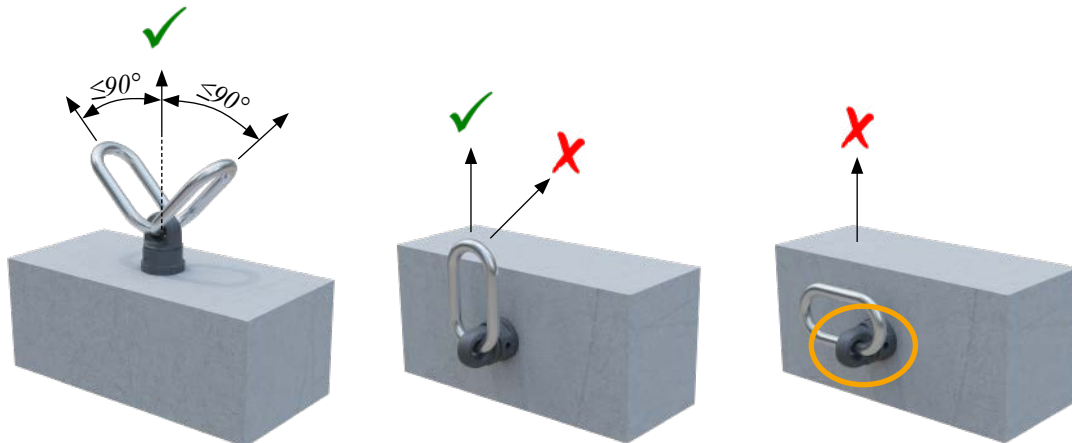


Figure 20. Correct load directions of JENKA TLP Lifting Key.

TLP Lifting Keys must be used with inserts attached flush to the surface of precast element.



Figure 21. Correct assembly of Lifting insert for TLP Lifting Key.















2.3 JENKA Lifting Accessories

DESIGNERS	PRECAST PLANTS	USERS
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The JENKA Lifting System has a wide range of accessories for different application. JENKA Lifting Accessories are rotation-symmetric and easy to install.

Before selecting a lifting system, the user must know which system parts fit together. *Table 12* shows the JENKA Lifting Accessories and which combinations of JENKA Lifting Keys and JENKA Lifting Accessories fit together.

Table 12. Combination of JENKA Lifting Keys and JENKA Lifting Accessories.

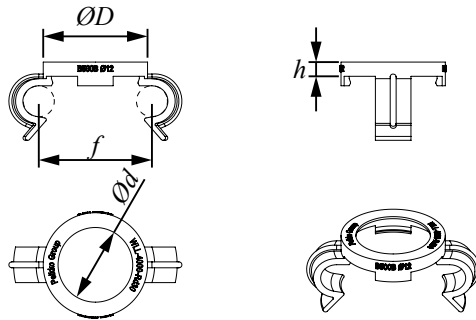
	 NP P / NP M	 NNP / NNP M	 Metric Screw		 NP P / NP M	 NNP / NNP M	 Metric Screw
 TLL	✓	✓	✓	 CPP	✓	✓	✓
 JL	✓	✗	✗	 PNP	✗	✓	✗
 JLW	✓	✗	✗	 PNP-S	✗	✓	✗
 TLP	✗	✗	✓	 DSH	✓	✓	✓

### 2.3.1 JENKA Marking Accessories

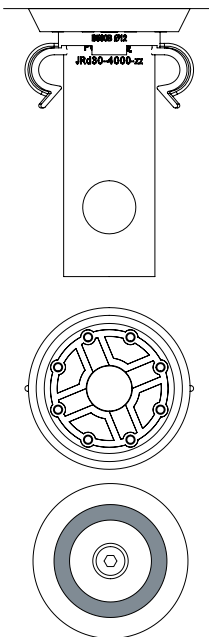
The JENKA DSH Marking accessory is used to identify the insert after concreting and enables positioning of additional reinforcement. DSH is color coded and marking is visible after cast into concrete. *Figure 22* shows an application example and *Table 13* the dimensions.

Table 13. DSH dimensions.

Item	Color	$\text{ØD}$	$\text{Ød}$	$f$	$h$
		[mm]			
DSH12	Orange	18.5	12.5	20	4.5
DSH16	Red	25.5	17.0	28	5.0
DSH20	Light Green	31.5	21.0	34	6.0
DSH24	Dark Grey	35.5	25.5	40	6.0
DSH30	Dark Green	44.0	31.5	50	6.0
DSH36	Blue	52.5	37.5	60	8.0
DSH42	Grey	59.5	44.0	69	8.0
DSH52	Yellow	73.0	54.0	85	9.0



Recessed installed



Even installed

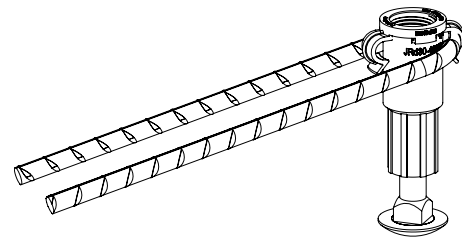
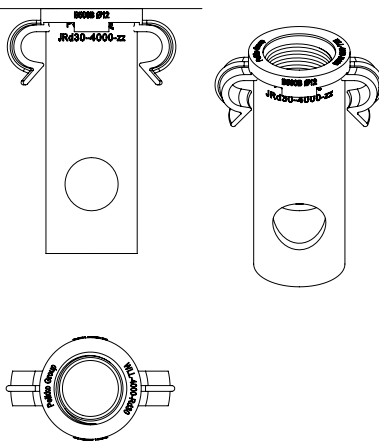










Figure 22. Installation of DSH marking accessories.

2.3.2 JENKA Installation Accessories

JENKA Installation Accessories are used temporarily allowing user to fix JENKA Lifting Inserts into the formwork and can be screwed, nailed, or fixed with melt adhesives depending on the individual application. Peikko recommends greasing the accessories to prevent concrete pollution from limiting their usability.

NP P nailing plates are made of plastic and are compatible with all JENKA Lifting Inserts. For the use of JENKA JL and JLW Lifting Keys the use of NP P nailing plates are required. NP M is the magnetic version of nailing plate. It is made of steel and used together with steel formwork.

Table 14. NP P dimensions.

Item		<i>M</i>	$\varnothing D1$	$\varnothing D2$	<i>H</i>	<i>h</i>
		[mm]				
NP P 12		12	40	30	20	10
NP P 16		16	40	30	20	10
NP P 20		20	55	45	25	10
NP P 24		24	55	45	25	10
NP P 30		30	70	60	30	10
NP P 36		36	70	60	30	10
NP P 42		42	96	86	35	12
NP P 52		52	96	86	35	12

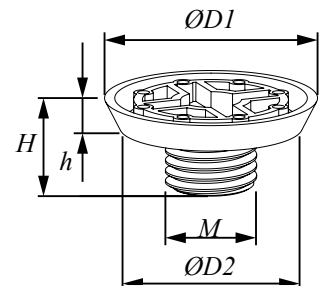
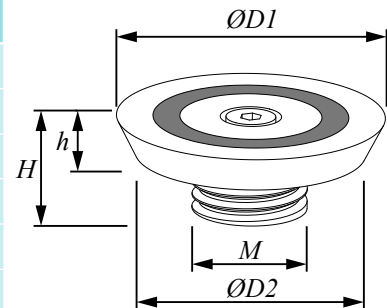


Table 15. NP M dimensions.

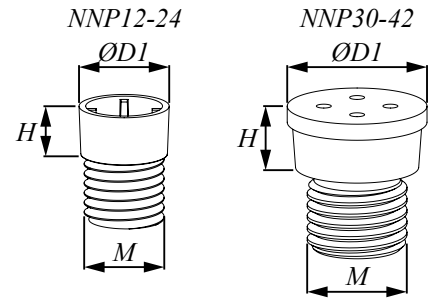
Item		<i>M</i>	$\varnothing D1$	$\varnothing D2$	<i>H</i>	<i>h</i>
		[mm]				
NP M 12		12	40	30	30	10
NP M 16		16	40	30	30	10
NP M 20		20	55	45	30	10
NP M 24		24	55	45	30	10
NP M 30		30	70	60	30	10
NP M 36		36	70	60	30	10
NP M 42		42	96	86	32	12
NP M 52		52	96	86	48	12



NNP narrow nailing plates offer a very small recess and are compatible with all JENKA Lifting System inserts. Sizes from Rd12 to Rd24 are from plastic and have the same outer diameter. Sizes from Rd30 to Rd42 are from steel with a consistent outer diameter.

Table 16. NNP dimensions.

Item	<i>M</i>	$\varnothing D1$	<i>H</i>
NNP 12	12	27	15
NNP 16	16	27	15
NNP 20	20	27	15
NNP 24	24	27	15
NNP 30	N/A	48	19
NNP 36	N/A	48	19
NNP 42	N/A	48	19



NNP narrow nailing plates are much smaller in diameter than NP P or NP M recess items. This enables the recess size to be minimized as shown in Figure 23.

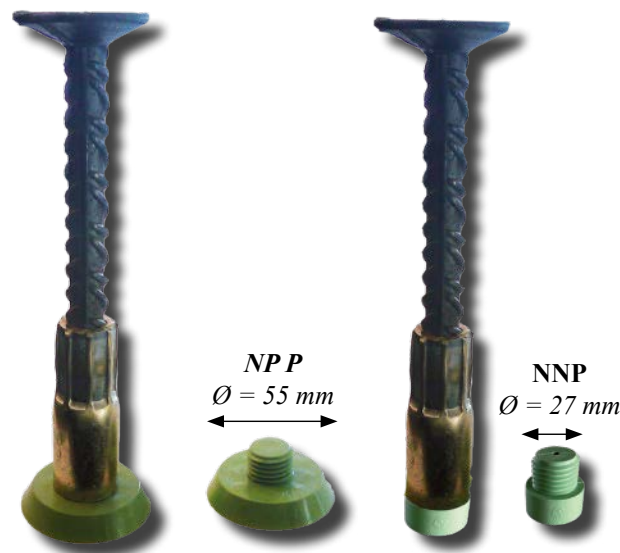
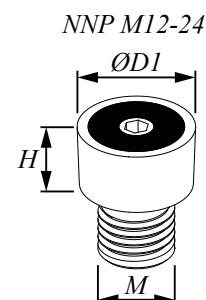


Figure 23. Comparison of NP P and NNP recess size.

NNP M narrow magnetic plates are placed on the steel formwork and offer a very small recess with the possibility for magnetic fixation. The dimensions are matching with the NNP recess. They are compatible with all JENKA Lifting System inserts.

Table 17. NNP M dimensions.

Item	<i>M</i>	$\varnothing D1$	<i>H</i>
NNP M 12	12	27	15
NNP M 16	16	27	15
NNP M 20	20	27	15
NNP M 24	24	27	15

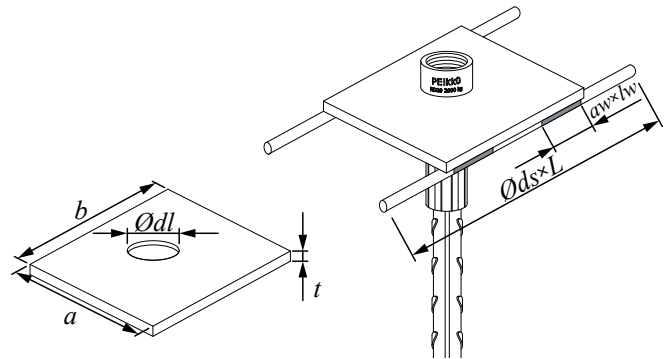


## INFORMATION

SPL Steel Plates are used to create support for additional reinforcement bars. They are placed on the insert socket instead of additional bent rebar reinforcement for diagonal and lateral pull. The user must weld reinforcement to it. They are compatible with all JENKA Lifting System Inserts.

Table 18. SPL dimensions.

Item	$a \times b \times t$	$\varnothing d_l$	$\varnothing d_s \times L$
	[mm]		
SPL 12	30×60×4	16.0	6×150
SPL 16	50×80×5	21.0	6×250
SPL 20	60×80×6	28.0	8×250
SPL 24	70×100×6	32.0	8×300
SPL 30	90×120×8	41.0	10×350
SPL 36	120×140×8	48.0	12×450
SPL 42	130×160×10	54.0	14×600
SPL 52	160×200×12	68.0	16×700



$a_w \times l_w$  to follow EN17660, plate material min. S235.

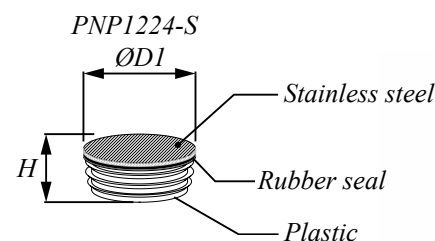
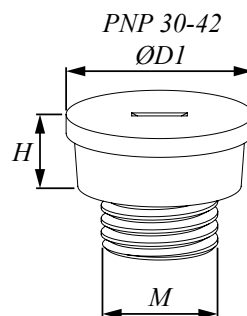
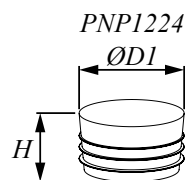
### 2.3.3 JENKA Sealing Accessories

JENKA Sealing Accessories are for closing and protecting the opening of JENKA Lifting Inserts from dirt and pollution. The user can choose from a selection of sealing accessories to cover thread openings.

PNP and PNP-S plugs offer good alternatives for architectural concrete. Recesses created by NNP plugs are very small and can be covered either with a stainless-steel finish (PNP-S and PNP30-42) or with a standard concrete-colored plastic finish (PNP1224). Both sealing plugs are flush with the surface and no embedded part remains visible after sealing.

Table 19. PNP and PNP-S dimensions.

Item	$M$	$\varnothing D_1$	$H$
	[mm]		
PNP1224	12 - 24	27	15
PNP 30	30	48	19
PNP 36	36	48	19
PNP 42	42	48	19
PNP1224-S	12 - 24	27	15

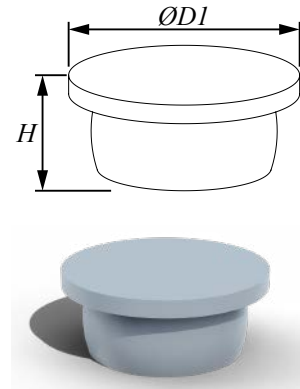




CPP plugs are cover plugs are made from grey plastic and are compatible with all of the JENKA Lifting System’s inserts. They are used to cover the thread openings of the inserts. CPP plugs are compatible with all JENKA Lifting Inserts.

Table 20. CPP dimensions.

Item	<i>M</i>	<i>ØD1</i>	<i>H</i>
	[mm]		
CPP 12	12	16	8
CPP 16	16	20	10
CPP 20	20	25	11
CPP 24	24	28	12
CPP 30	30	36	15
CPP 36	36	36	15
CPP 42	42	42	18
CPP 52	52	56	15



## Selecting JENKA Lifting System

DESIGNERS	PRECAST PLANTS	USERS
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Prior to the use of JENKA Lifting Systems components the individual selection of the correct product for the related lifting case must be done. The selection criteria as well as the design are prescribed in our Manual for General Lifting Information.

Calculation examples which show the correct design for the different systems are given in the Manual for General Lifting Information.

The overview below (see *Figure 24*) gives a quick orientation which Lifting Insert type should be used in which element type.

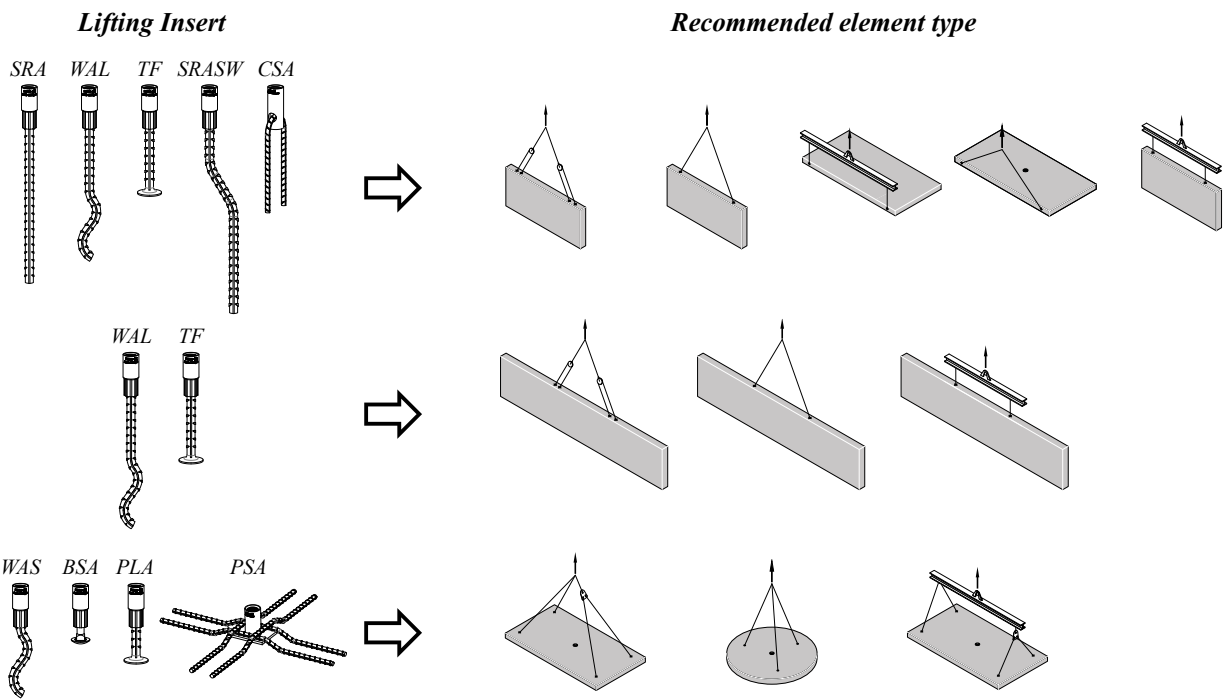
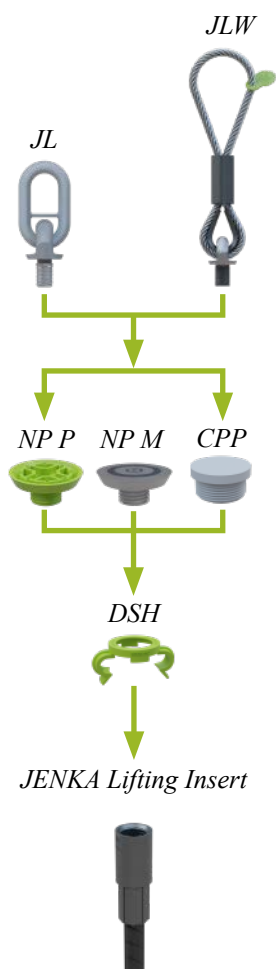
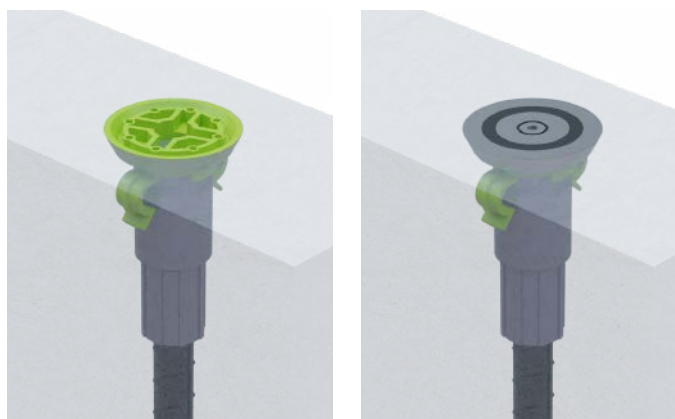


Figure 24. Recommended element types.

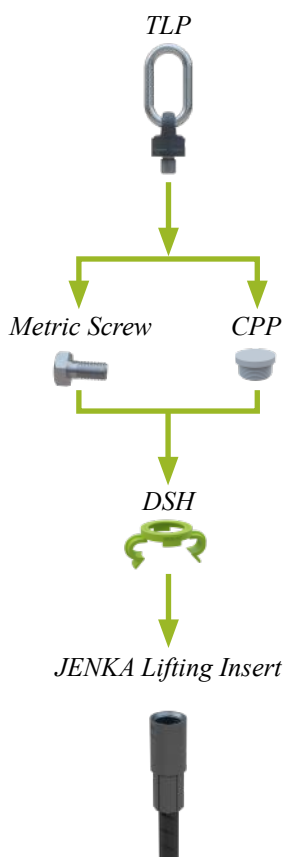
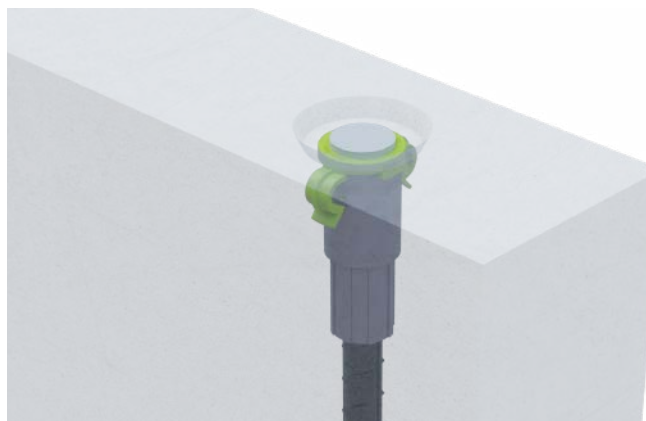
The combinations of the JENKA systems accessories ease the use and the application. The individual configurations and how the installation and final sealing of the thread opening looks like is shown in the following illustrations.



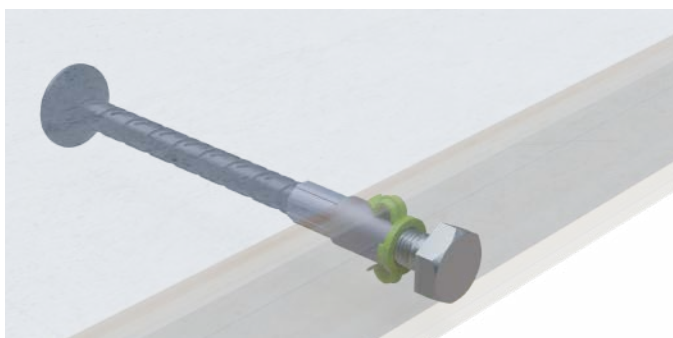
Installation



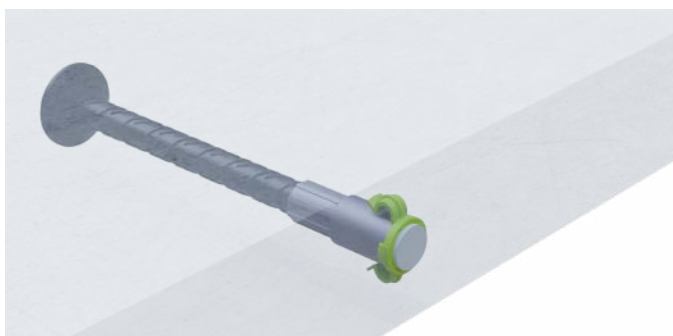
Sealing



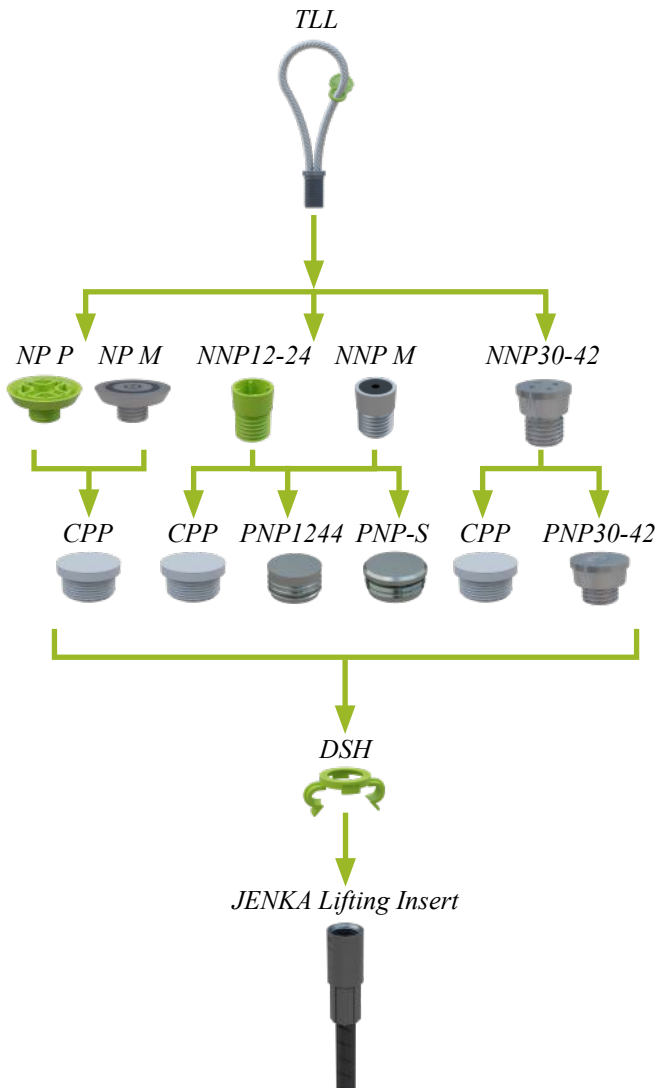
Installation



Sealing

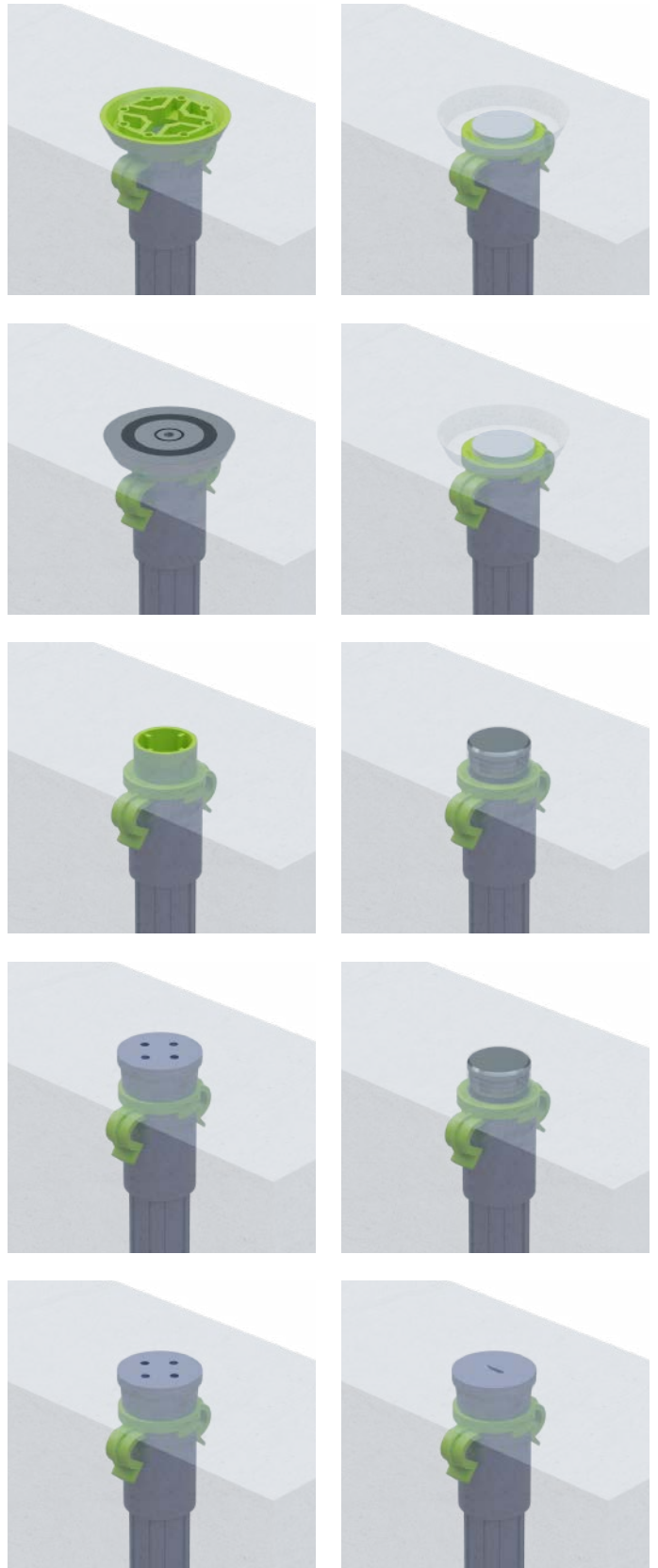


**SELECTING**



*Installation*

*Sealing*



## Annex A – ProdLib and Element Turning

DESIGNERS

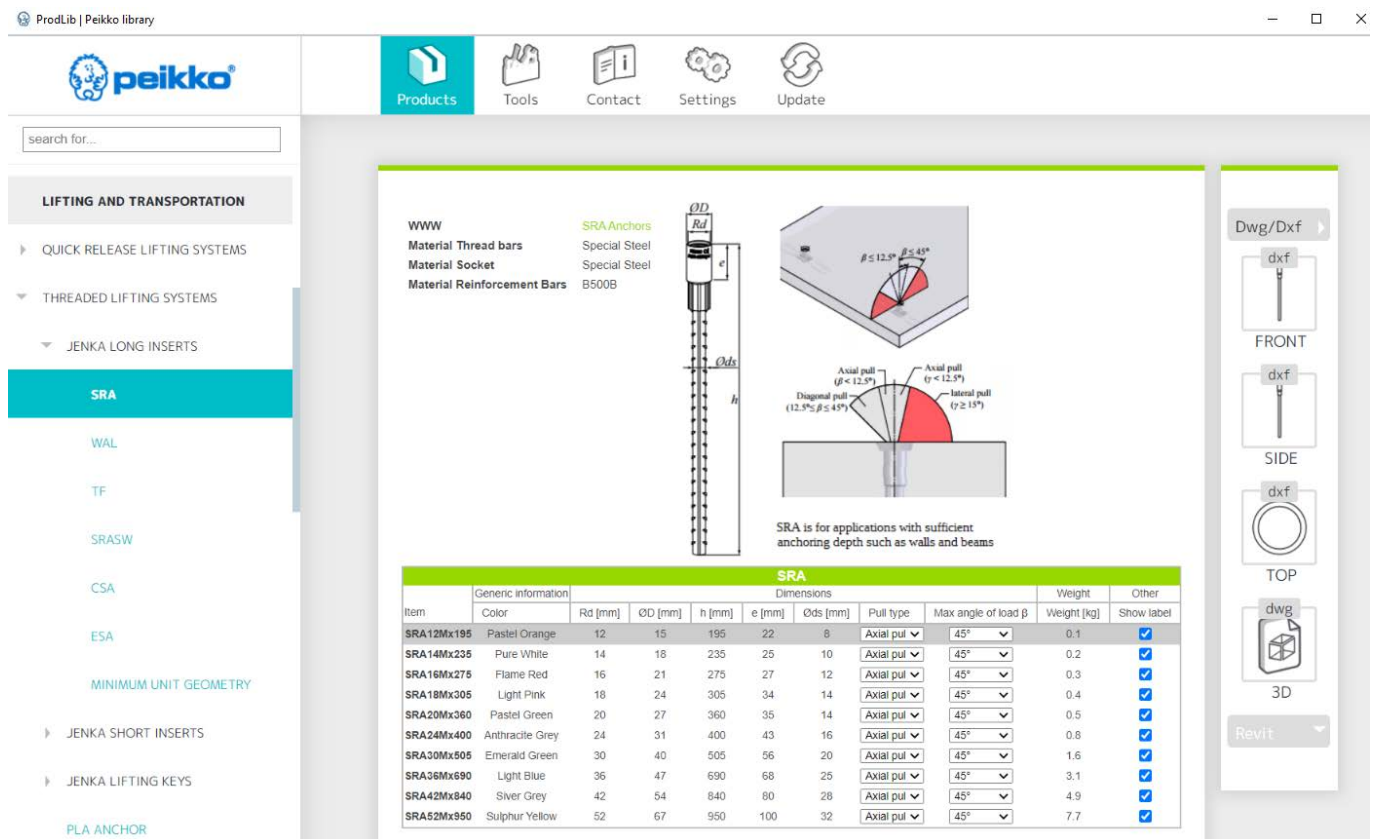
PRECAST PLANTS

USERS

For the design work Peikko offers ProdLib add-ons for JENKA Lifting Systems with products to be placed into your designs. Peikko's library of design components can be installed as add-on to Revit and AutoCAD. As an alternative, the library can be used as an online version.

The product information has been compiled into one organized product library that is kept automatically up to date. Peikko product library is available in English.

<https://www.prodlib.com/peikko>



The screenshot displays the ProdLib Peikko library interface. The left sidebar shows a navigation menu with categories like 'LIFTING AND TRANSPORTATION', 'QUICK RELEASE LIFTING SYSTEMS', 'THREADED LIFTING SYSTEMS', 'JENKA LONG INSERTS', 'SRA', 'WAL', 'TF', 'SRASW', 'CSA', 'ESA', 'MINIMUM UNIT GEOMETRY', 'JENKA SHORT INSERTS', 'JENKA LIFTING KEYS', and 'PLA ANCHOR'. The main content area shows the 'SRA' product page, which includes a technical diagram of the anchor, a table of dimensions and weights, and a list of product variants.

**WWW**  
Material Thread bars  
Material Socket  
Material Reinforcement Bars

**SRA Anchors**  
Special Steel  
Special Steel  
B500B

**SRA**

Item	Generic information		Dimensions						Pull type	Max angle of load $\beta$	Weight [kg]	Other
	Color		Rd [mm]	$\text{OD}$ [mm]	h [mm]	e [mm]	$\text{Ods}$ [mm]					
SRA12Mx195	Pastel Orange		12	15	195	22	8		Axial pul	45°	0.1	<input checked="" type="checkbox"/>
SRA14Mx235	Pure White		14	18	235	25	10		Axial pul	45°	0.2	<input checked="" type="checkbox"/>
SRA16Mx275	Flame Red		16	21	275	27	12		Axial pul	45°	0.3	<input checked="" type="checkbox"/>
SRA18Mx305	Light Pink		18	24	305	34	14		Axial pul	45°	0.4	<input checked="" type="checkbox"/>
SRA20Mx360	Pastel Green		20	27	360	35	14		Axial pul	45°	0.5	<input checked="" type="checkbox"/>
SRA24Mx400	Anthracte Grey		24	31	400	43	16		Axial pul	45°	0.8	<input checked="" type="checkbox"/>
SRA30Mx505	Emerald Green		30	40	505	56	20		Axial pul	45°	1.6	<input checked="" type="checkbox"/>
SRA36Mx690	Light Blue		36	47	690	68	25		Axial pul	45°	3.1	<input checked="" type="checkbox"/>
SRA42Mx840	Silver Grey		42	54	840	80	28		Axial pul	45°	4.9	<input checked="" type="checkbox"/>
SRA52Mx950	Sulphur Yellow		52	67	950	100	32		Axial pul	45°	7.7	<input checked="" type="checkbox"/>

SRA is for applications with sufficient anchoring depth such as walls and beams

RIGHT SIDE BAR: Dwg/Dxf, FRONT, dxfl, SIDE, dxfl, TOP, dxfl, 3D, Revit

Figure 25. ProdLib with Peikko products.

Applications for Element turning are specified in Peikko Technical Manual for Element Turning.



Figure 26. Element Turning manual.

## Annex B – BSA in lattice girder slabs

DESIGNERS	PRECAST PLANTS	USERS
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The use of Jenka BSA inserts in lattice girder slabs (see *Figure 27*) is possible. The fixation happens mostly with NP M magnetic plates. The total length of the insert together with the magnetic plate is longer than the thickness of the lattice girder slab which causes an overstanding of the insert (see *Figure 28*).



Figure 27. Lattice girder slabs.

The load transfer into concrete happens over the headed end. The insert can be loaded when the top concrete of the lattice girder slab is casted and carefully compacted in the anchoring region. The minimum compressive strength of  $25\text{N/mm}^2$  must be considered. The space between the anchoring head and the lattice girder slab must enable the top concrete to fill out the space with at least the maximum gravel size.

During installation the spacing of surface reinforcement and the concrete coverage must be kept. The surface reinforcement must be installed cross wise in the anchoring region.

As an alternative the use of Peikko WAS or PLA inserts may be considered.

If the space between the anchoring head and the lattice girder slab surface is insufficient some space must be mechanically crated of at least the maximum gravel size of the top concrete. If conditions and load transfer are unclear the installation of additional reinforcement as shown in *Figure 28* is recommended.

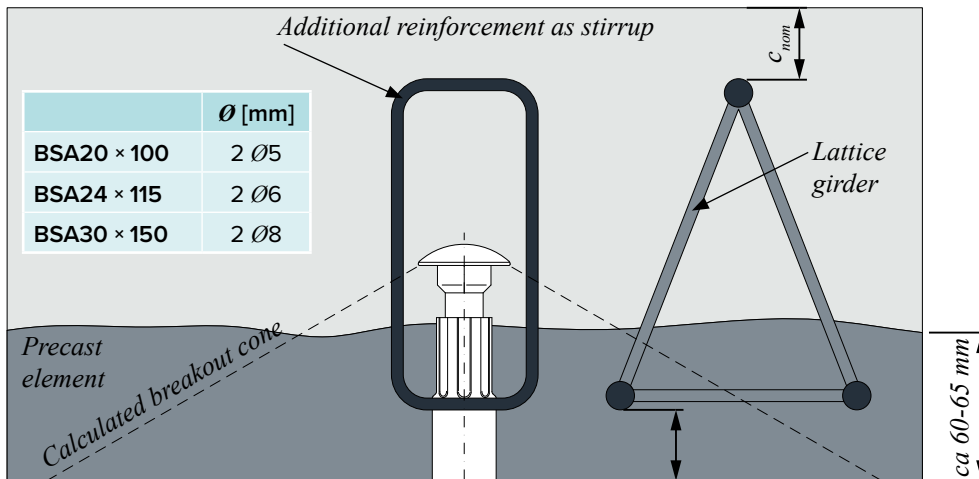


Figure 28. Additional reinforcement in lattice girder slabs.

## Installation of Peikko Lifting Systems

### INSTALL THE PRODUCT – PRECAST FACTORY – END USER

DESIGNERS

PRECAST PLANTS

USERS

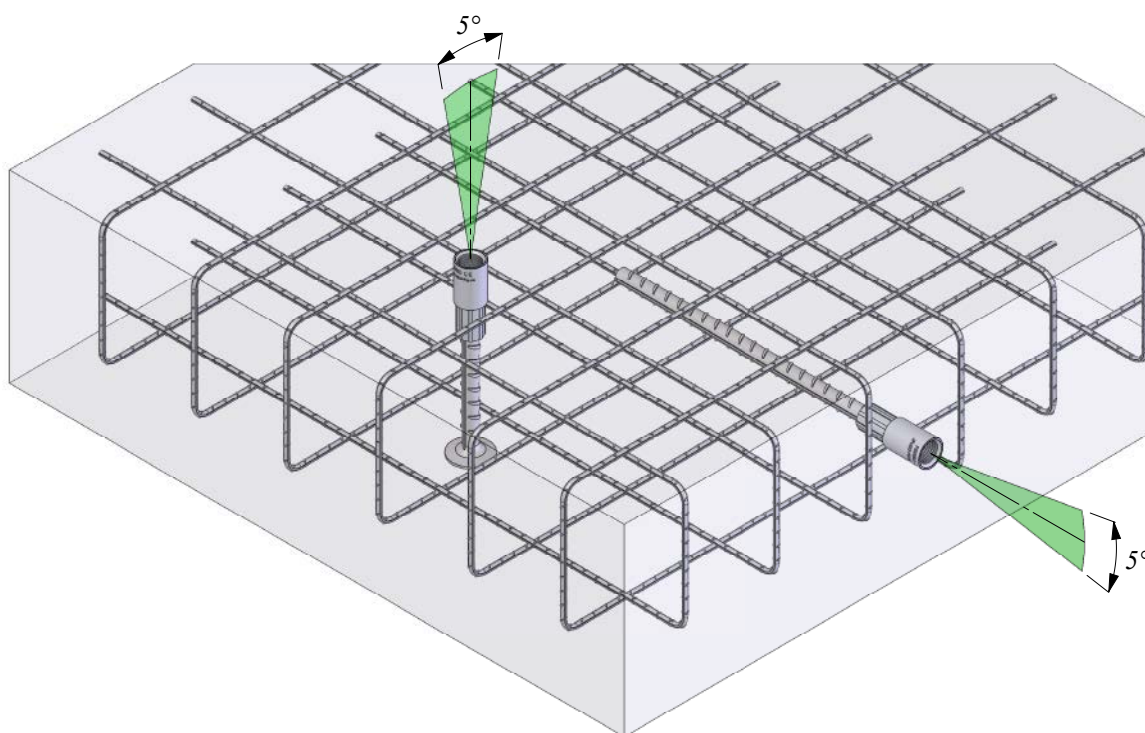
The Peikko Lifting System components are installed either on the construction site or in a precast plant. Peikko Lifting Systems Accessories should be used to facilitate the installation process.

Ensure that the surroundings and environmental conditions are dry and clean for installation. Environmental pollution of all kinds should be avoided or minimized at all times. For easier removal, all Peikko Lifting Systems Accessories used for installation should be lubricated.

The following must be taken into account prior to installing any type of lifting system:

- All workers fulfill the requirements of the documentation and are familiar with it
- The limitations of applications and restrictions are known
- The design assumptions are defined and known

During installation of Peikko Lifting Systems the specified installation tolerances must be kept. The installation tolerances for vertical and horizontal positions are given in *Figure 29*. The installed Lifting insert can incline a maximum of 2.5° in either direction and angle tolerance must remain within 5° of tolerance towards the insert axis.



*Figure 29. Angle tolerances for installation of Peikko Lifting Systems.*

Installation into concrete elements requires the insert to stay in its initial position. If the insert moves out of place, the following chapters and *Table 21* defines the permitted installation tolerances for JENKA Lifting inserts.

JENKA Lifting System

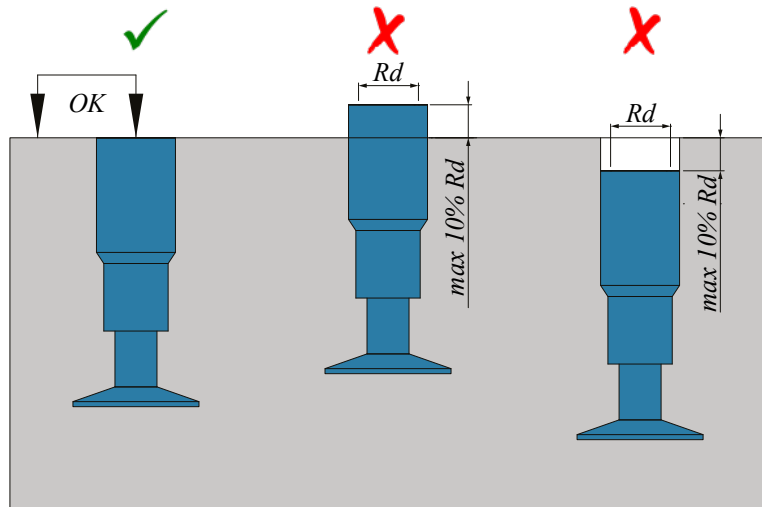
DESIGNERS	PRECAST PLANTS	USERS
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For JENKA Inserts a DSH marking ring must always be used. The insert is to be fixed into the formwork using installation accessories (NP P, NNP, NP M). The rotation symmetric shape of the fixing items and inserts facilitates installation. No special assembly direction need be considered, except on wavy ends (WAL or WAS) where the waved part must be installed parallel to the longitudinal direction of the element as shown in Installing section – 2. Installation on page 41.

For JENKA JL and JLW lifting keys, the NP P or NP M nailing plate must be used. It supports the JENKA Lifting Key by the recess to impact the loads on the concrete. JENKA Lifting Keys JL and JLW without NP P or NP M can be used with a maximum of 30° of angular pull. The JENKA TLP Lifting Key can be used up to 90° without any nailing plate.

Table 21. Installation tolerances for JENKA Lifting Inserts.

Type	10% of $R_d$
	[mm]
RD12	±1.2
RD16	±1.6
RD20	±2.0
RD24	±2.4
RD30	±3.0
RD36	±3.6
RD42	±4.2
RD52	±5.2



**PLEASE NOTE:**

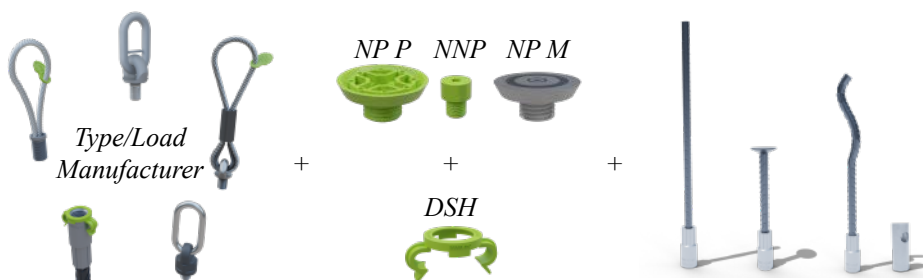
The tolerances given in Table 21 are to be considered for recessed installation with NP P, NP M or NNP.



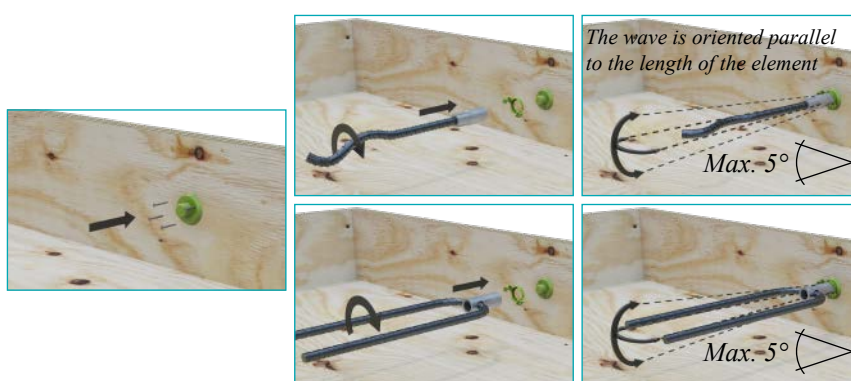
# SRA, TF, WAL, CSA

## 1. Selection

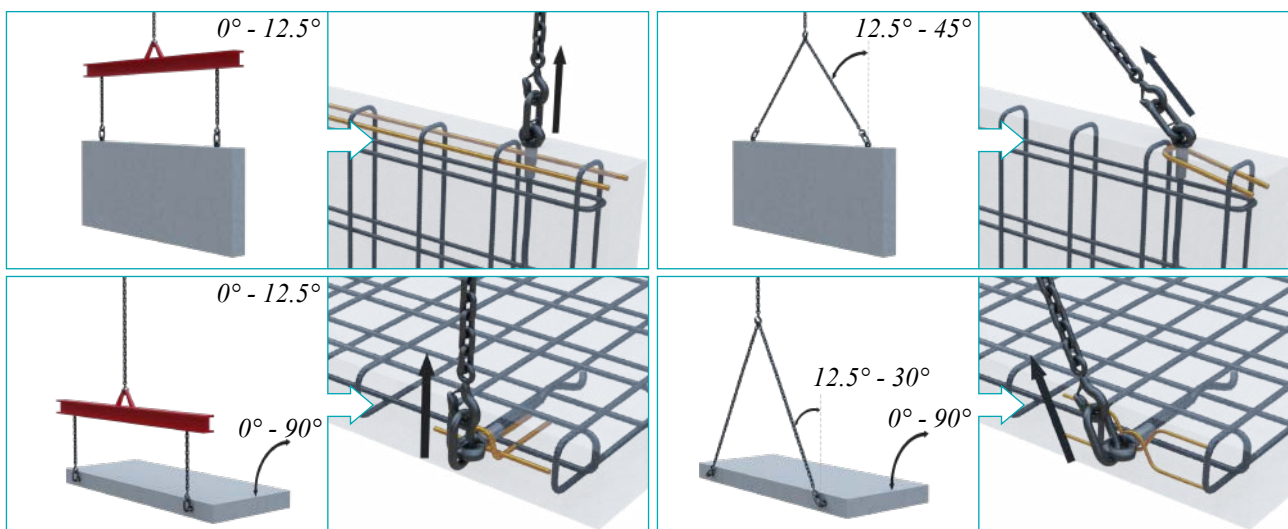
Type	Load Class	Color
Rd12	500	Pastel Orange
Rd16	1200	Flame Red
Rd20	2000	Pastel Green
Rd24	2500	Anthracite Gray
Rd30	4000	Emerald Green
Rd36	6300	Light Blue
Rd42	8000	Silver Grey
Rd52	12500	Sulphur Yellow



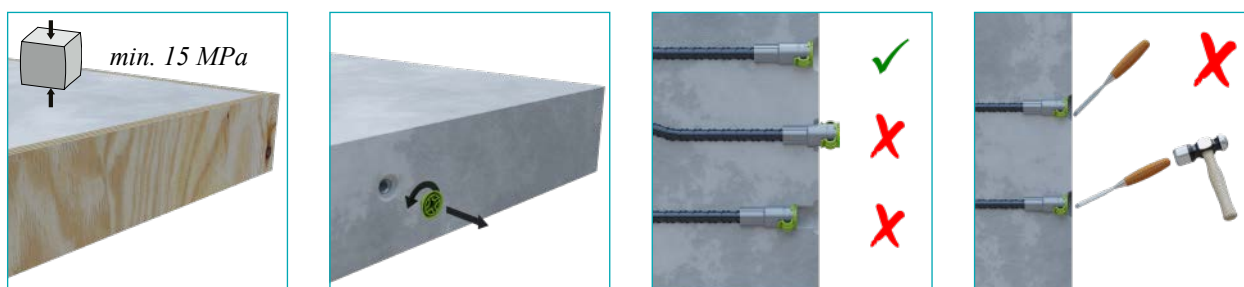
## 2. Installation



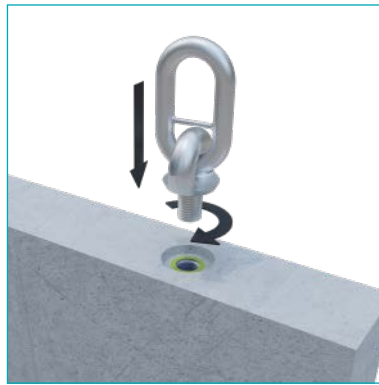
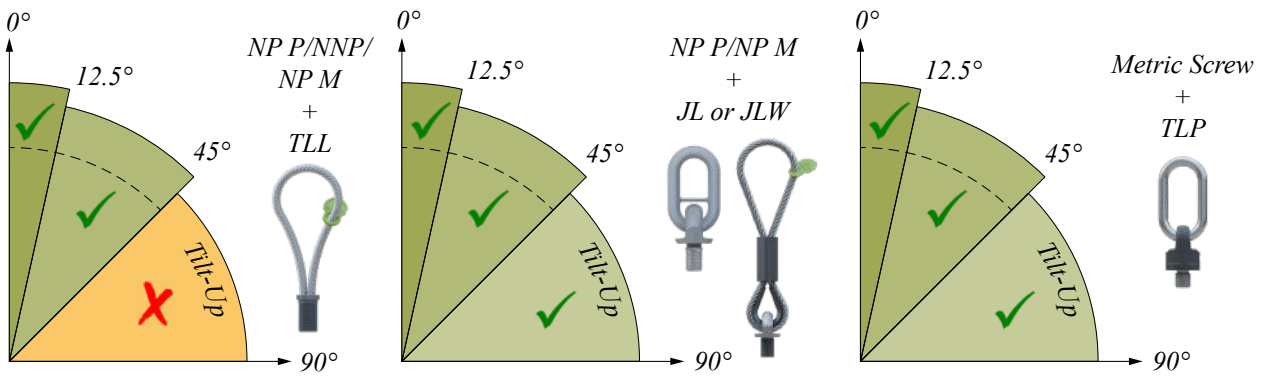
## 3. Reinforcement



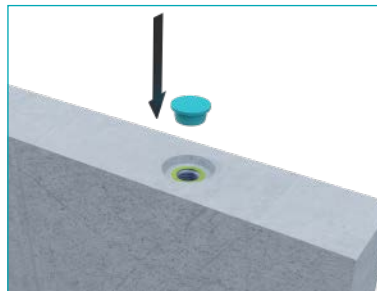
## 4. Casting



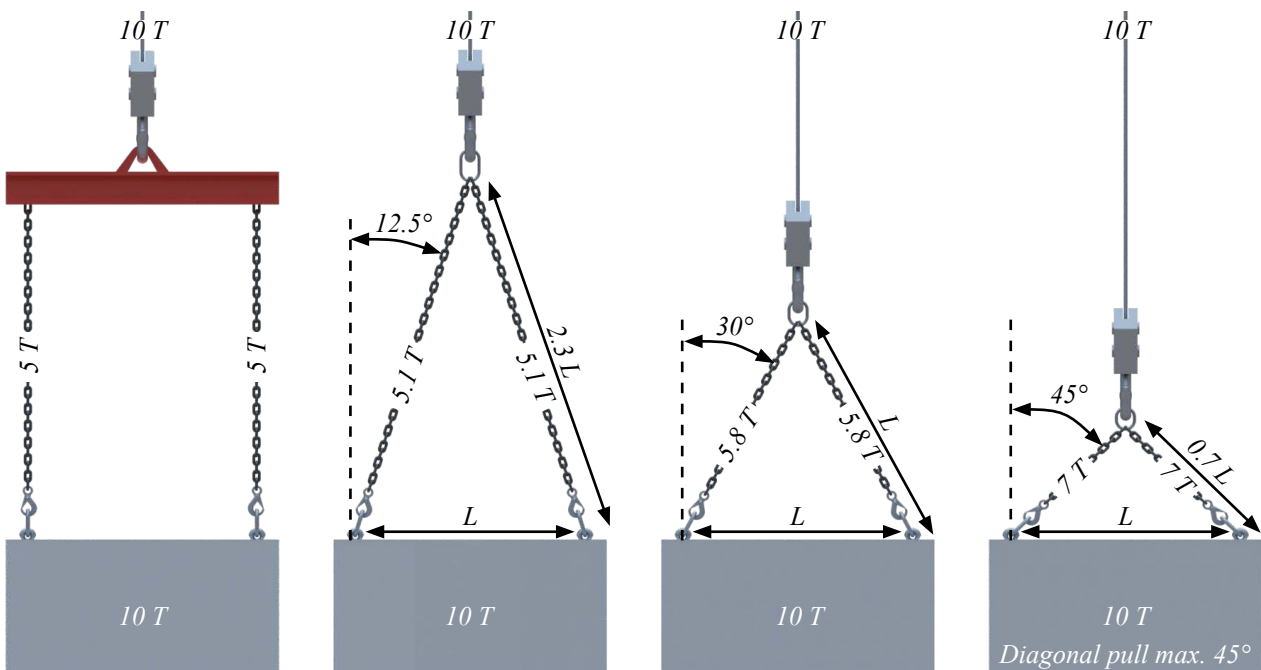
5. Lifting



6. Sealing



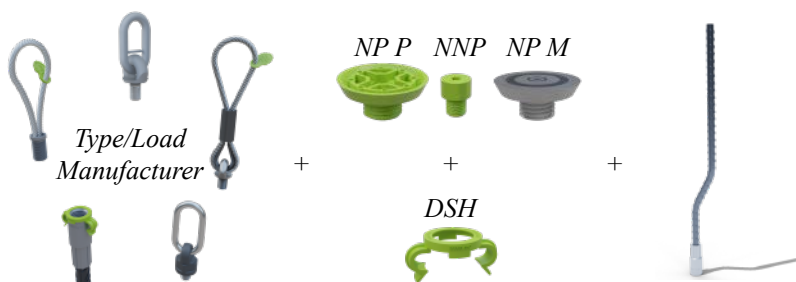
7. Lifting angle influence



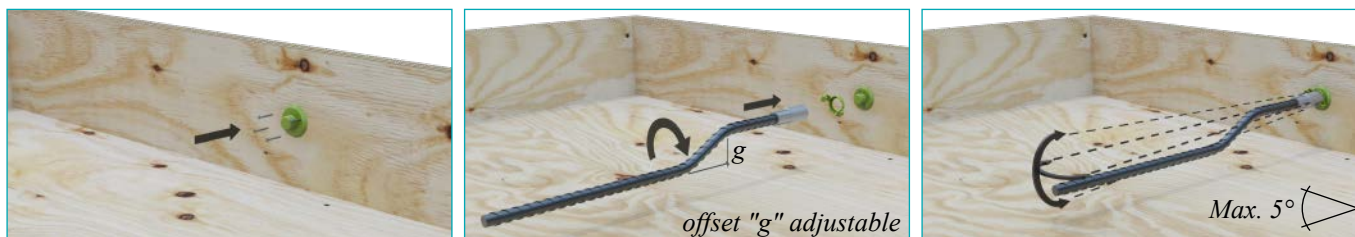
# SRASW

## 1. Selection

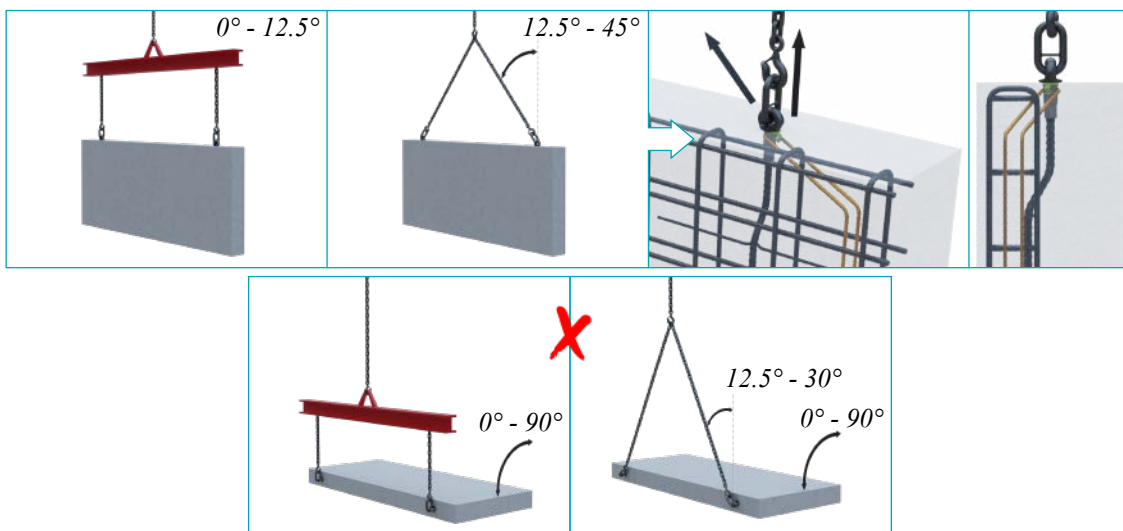
Type	Load Class	Color
Rd20	2000	Pastel Green
Rd24	2500	Anthracite Gray
Rd30	4000	Emerald Green
Rd36	6300	Light Blue
Rd42	8000	Silver Grey
Rd52	12500	Sulphur Yellow



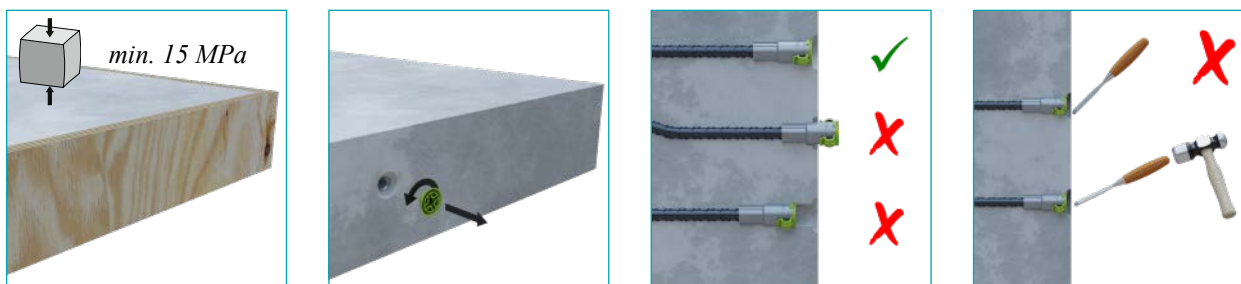
## 2. Installation



## 3. Reinforcement



## 4. Casting



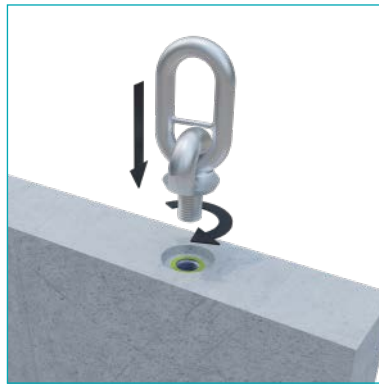
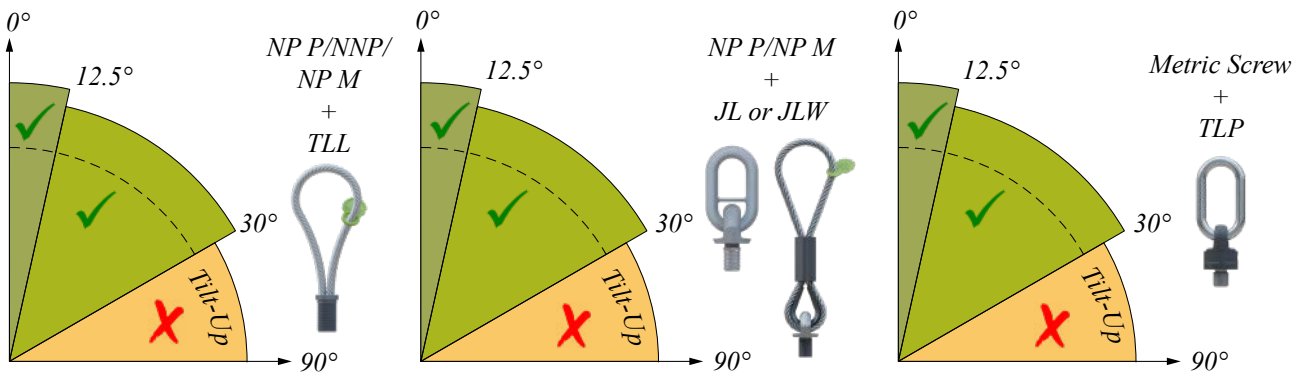
DESIGNERS

PRECAST PLANTS

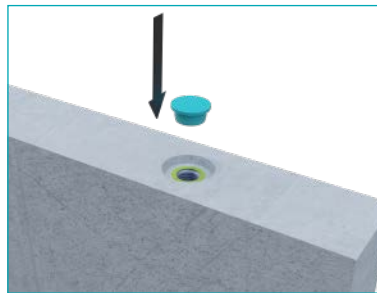
USERS

SRASW

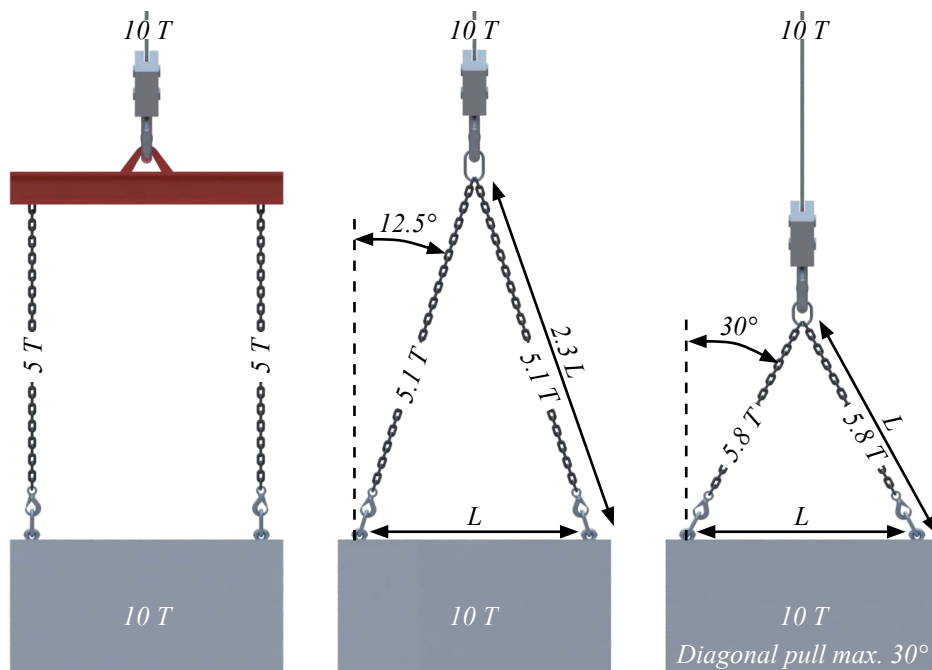
5. Lifting



6. Sealing



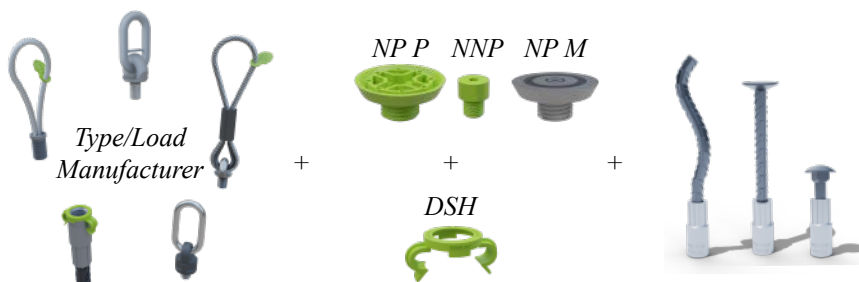
7. Lifting angle influence



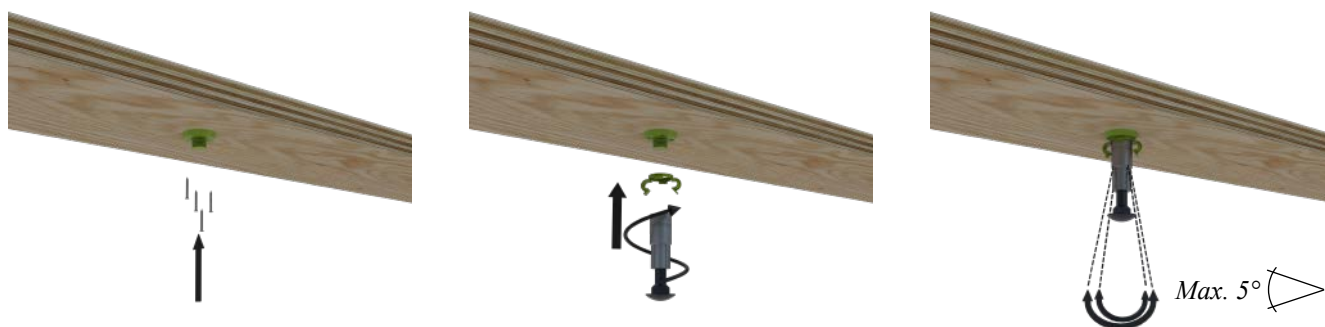
# WAS, PLA, BSA

## 1. Selection

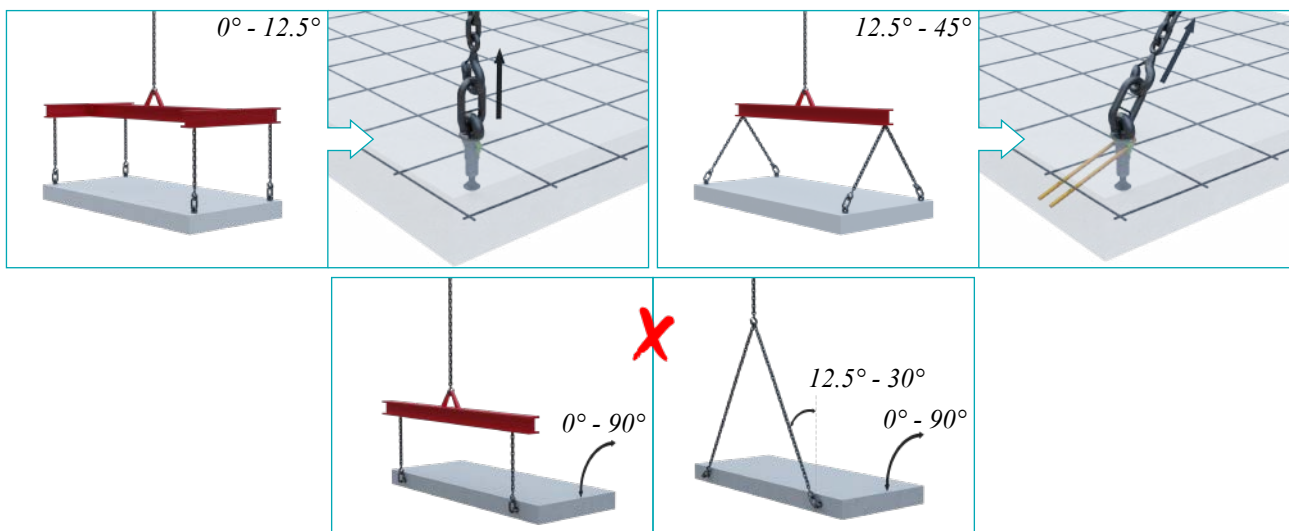
Type	Load Class	Color
Rd12	500	Pastel Orange
Rd16	1200	Flame Red
Rd20	2000	Pastel Green
Rd24	2500	Anthracite Gray
Rd30	4000	Emerald Green
Rd36	6300	Light Blue
Rd42	8000	Silver Grey



## 2. Installation



## 3. Reinforcement



## 4. Casting



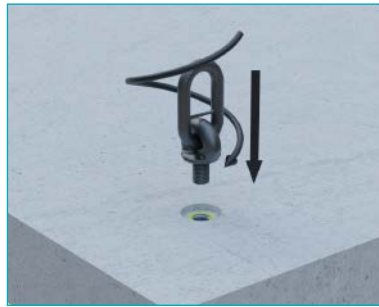
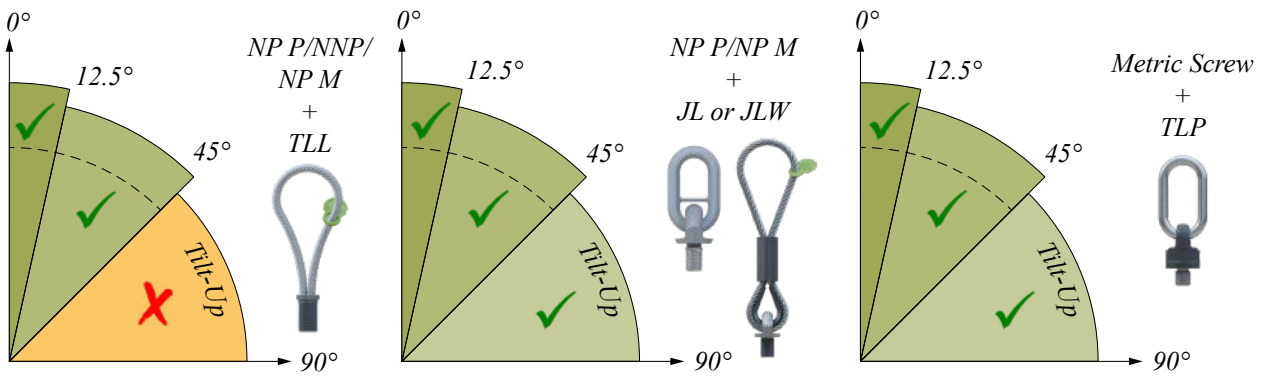
DESIGNERS

PRECAST PLANTS

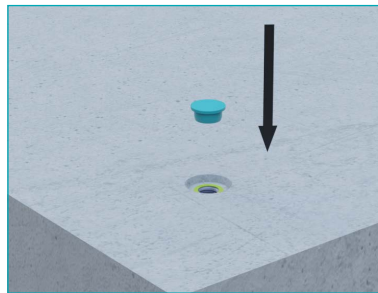
USERS

WAS, PLA, BSA

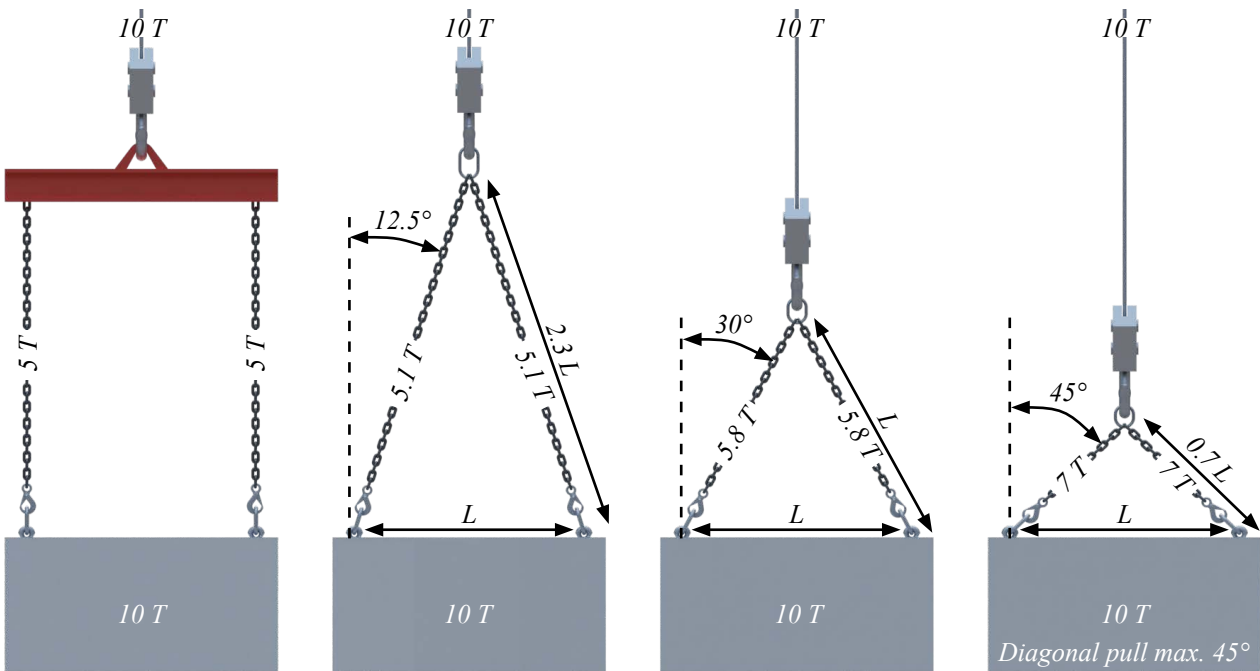
5. Lifting



6. Sealing



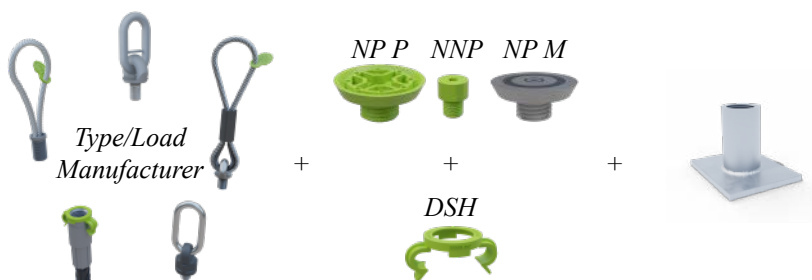
7. Lifting angle influence



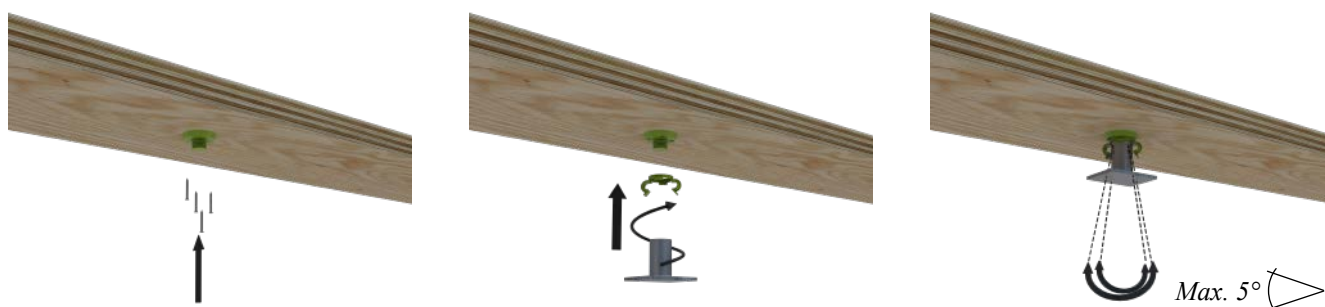
# PSA

## 1. Selection

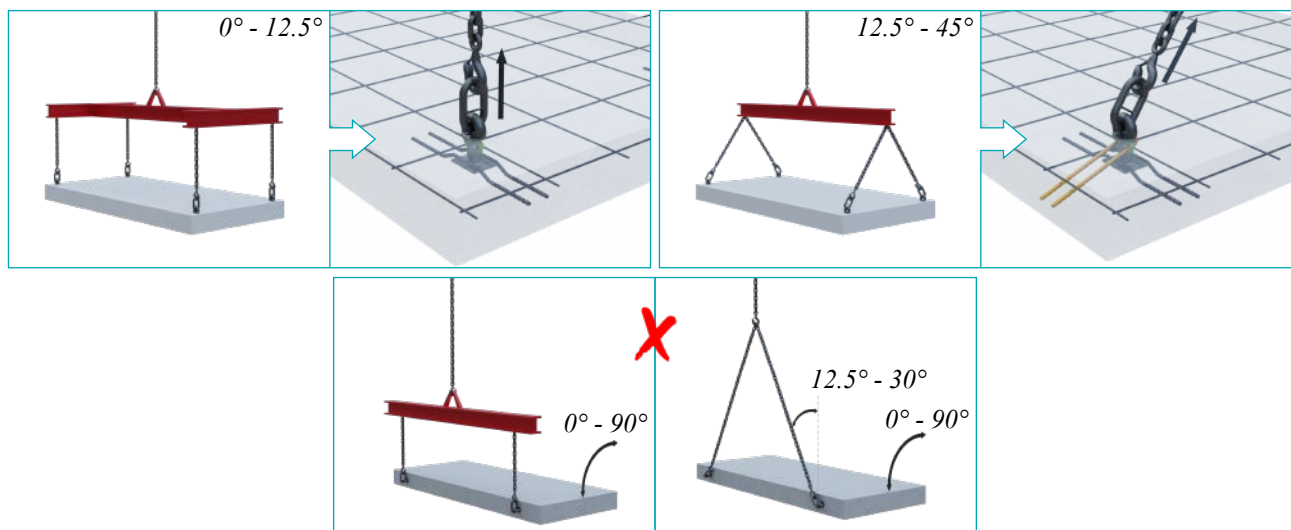
Type	Load Class	Color
Rd12	500	Pastel Orange
Rd16	1200	Flame Red
Rd20	2000	Pastel Green
Rd24	2500	Anthracite Gray
Rd30	4000	Emerald Green
Rd36	6300	Light Blue
Rd42	8000	Silver Grey
Rd52	12500	Sulphur Yellow



## 2. Installation



## 3. Reinforcement

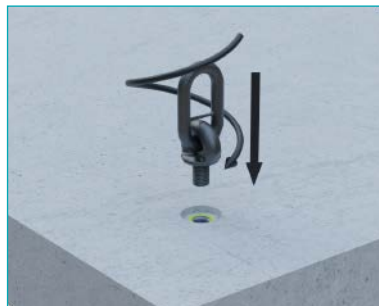
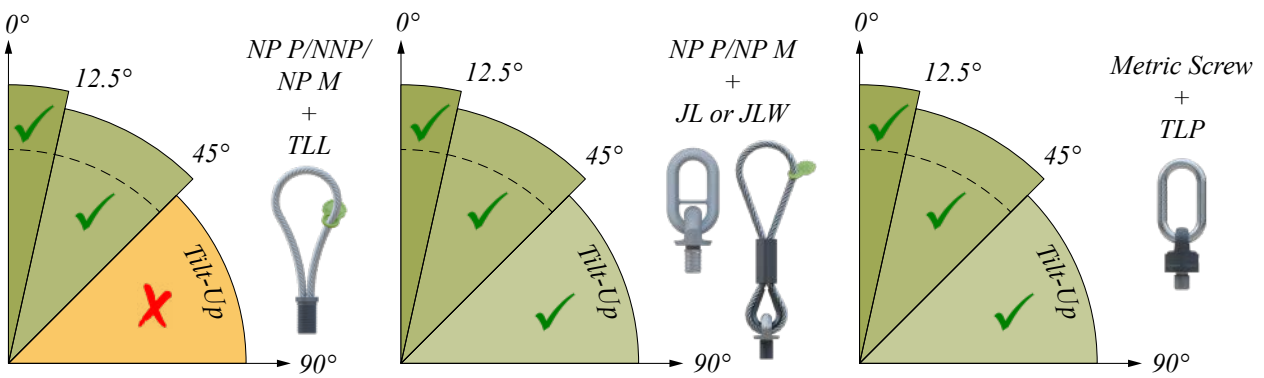


## 4. Casting

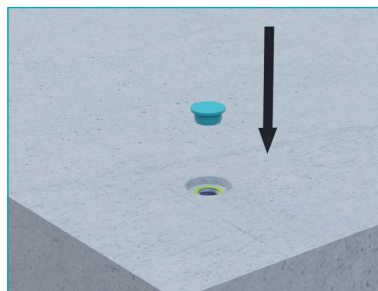


PSA

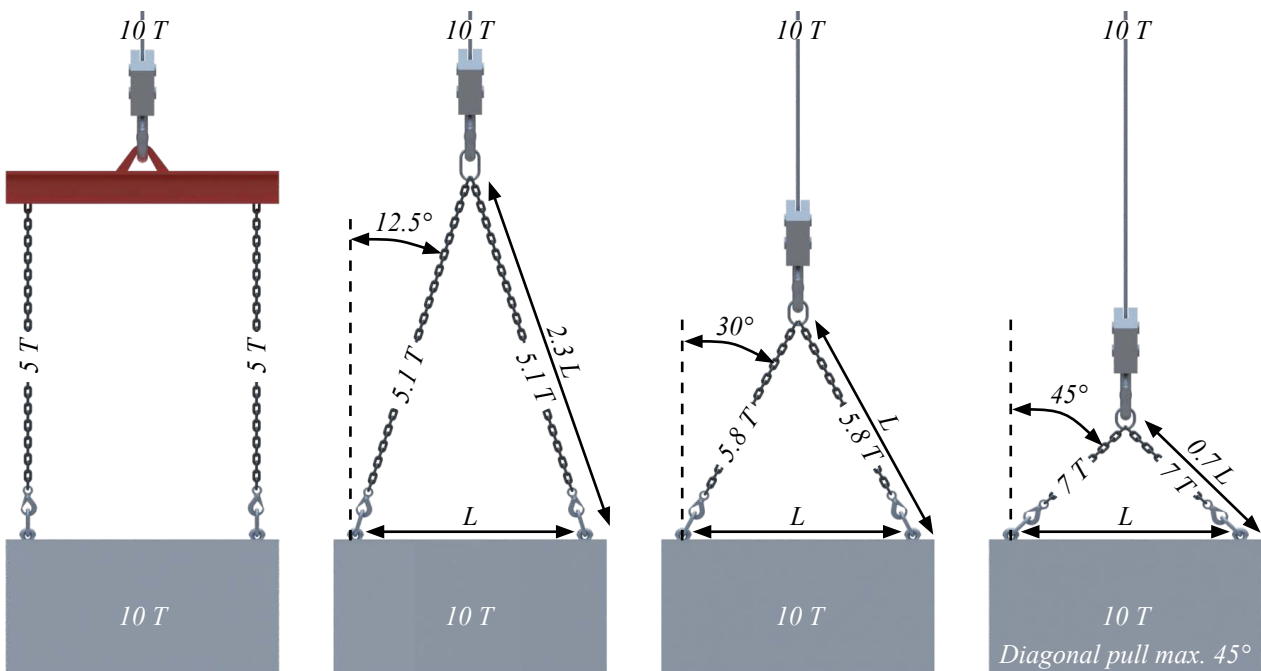
5. Lifting



6. Sealing



7. Lifting angle influence





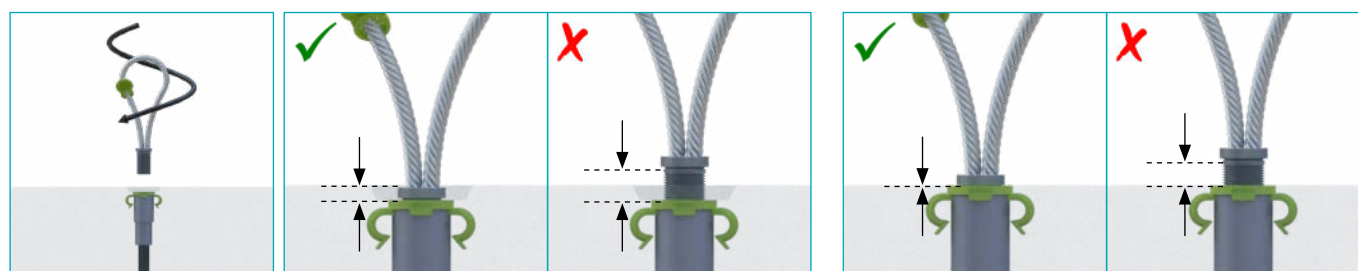
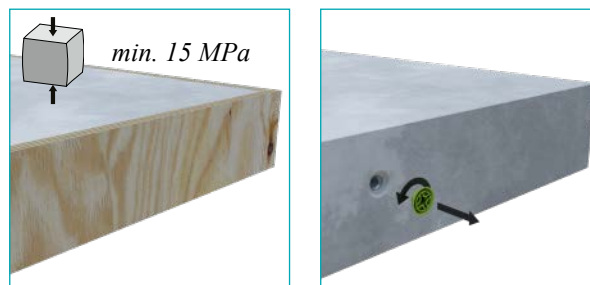
# TLL

## 1. Selection

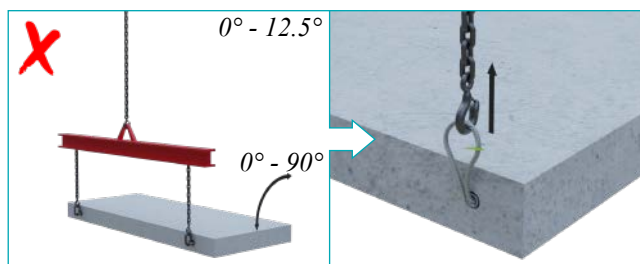
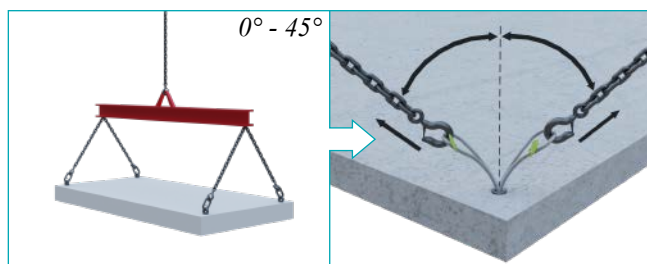
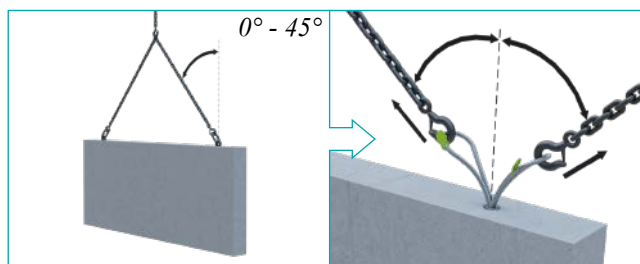
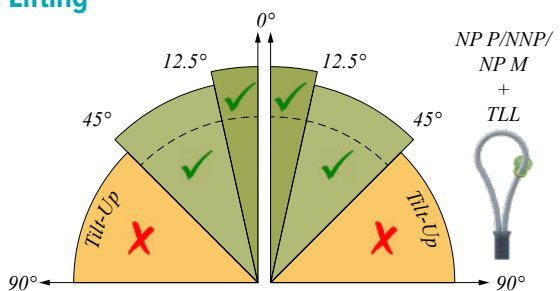
Type	Load Class	Color
Rd12	500	Pastel Orange
Rd16	1200	Flame Red
Rd20	2000	Pastel Green
Rd24	2500	Anthracite Gray
Rd30	4000	Emerald Green
Rd36	6300	Light Blue
Rd42	8000	Silver Grey
Rd52	12500	Sulphur Yellow



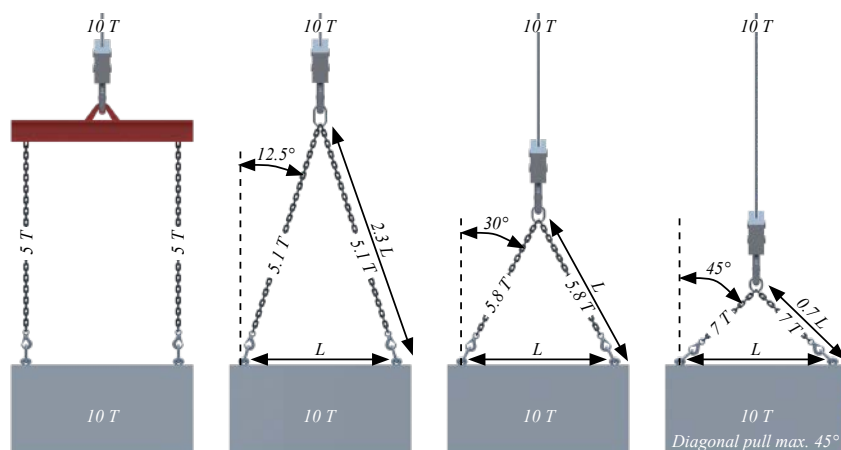
## 2. Application



## 3. Lifting



## 4. Lifting Angle Influence



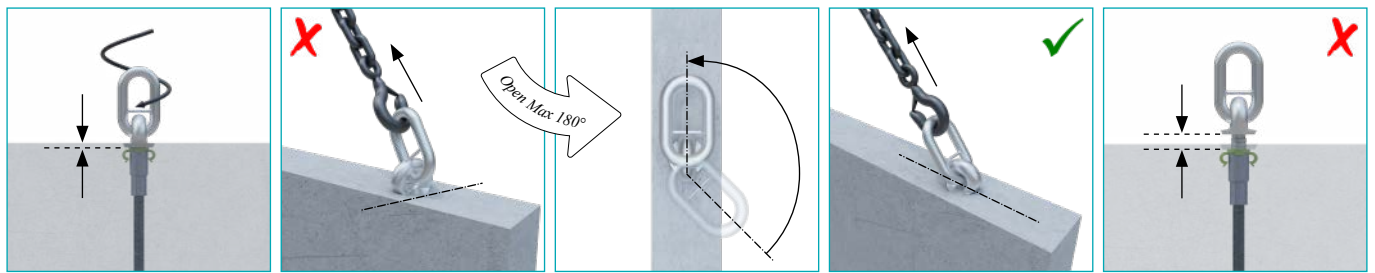
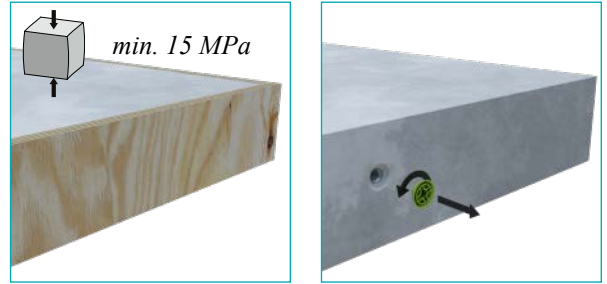
JLW, JL

1. Selection

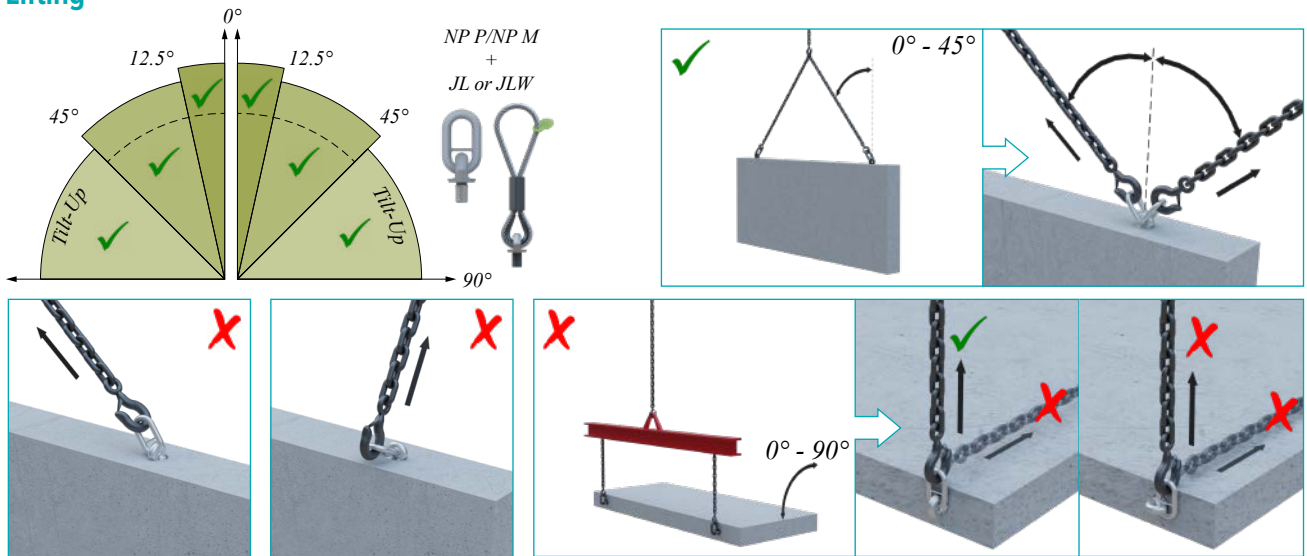
Type	Load Class	Color
Rd12	500	Pastel Orange
Rd16	1200	Flame Red
Rd20	2000	Pastel Green
Rd24	2500	Anthracite Gray
Rd30	4000	Emerald Green
Rd36	6300	Light Blue
Rd42	8000	Silver Grey
Rd52	12500	Sulphur Yellow



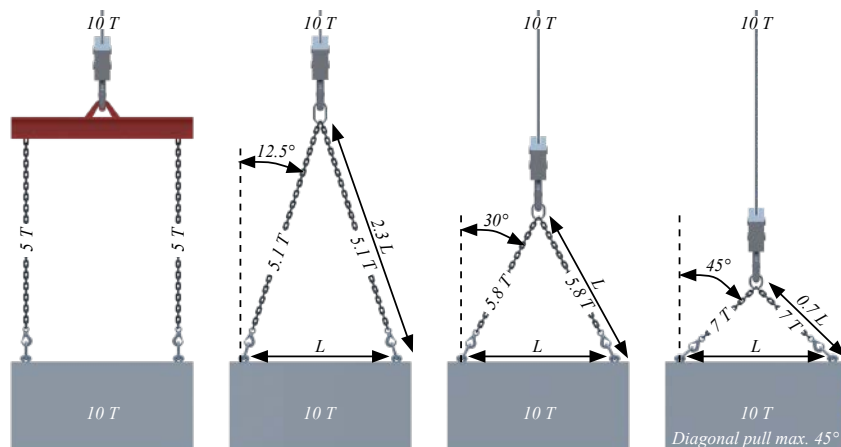
2. Application



3. Lifting



4. Lifting Angle Influence



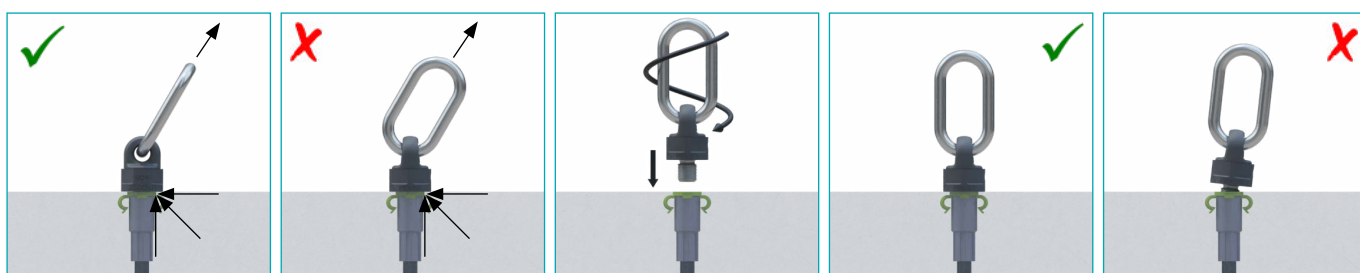
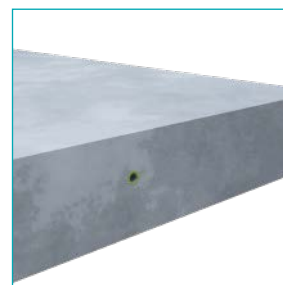
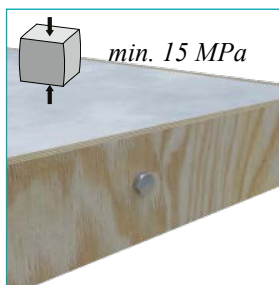
# TLP

## 1. Selection

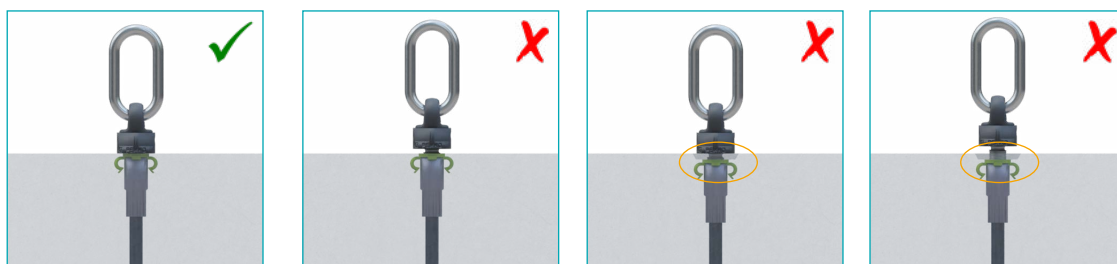
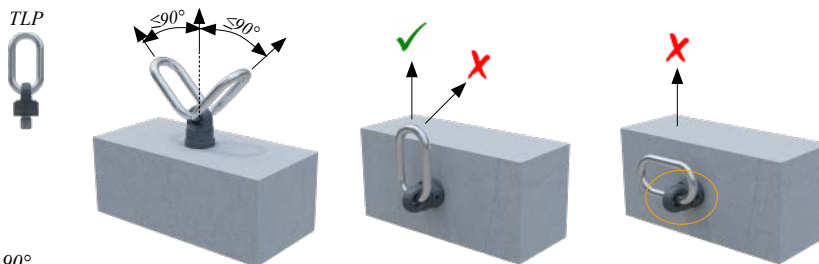
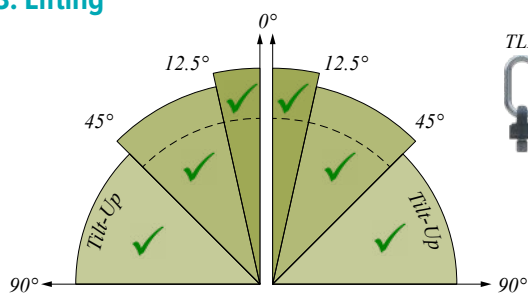
Type	Load Class	Color
M16	1200	Flame Red
M20	2000	Pastel Green
M24	2500	Anthracite Gray
M30	4000	Emerald Green
M36	6300	Light Blue



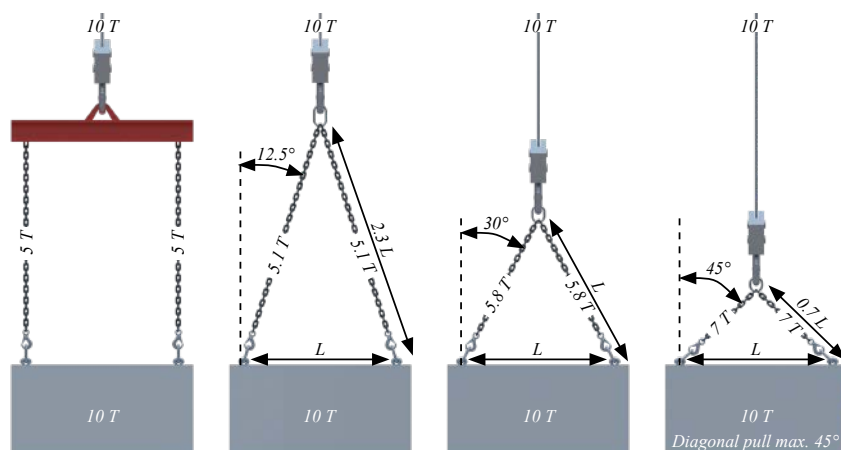
## 2. Application



## 3. Lifting



## 4. Lifting Angle Influence









## Revisions

**Version: PEIKKO GROUP 11/2022. Revision: 004**

- Corrections to Figures 2, and 5.
- Corrections to Tables 3, 4, 5, 6, 10, and 20.
- Small corrections to installation section.

**Version: PEIKKO GROUP 05/2022. Revision: 003**

- New compact and more user-friendly layout.
- Added TLP lifter, PLA insert and SPL accessory.
- Removal of all 14 and 18 diameter items.
- Removal ESA and FS inserts.
- Name change for Nailing plate and NP M dimensions.
- Installation illustration updates.
- Various corrections to text, figure and tables.

**Version: PEIKKO GROUP 06/2016. Revision: 002\***

- New cover design for 2018 added.

# Resources

## DESIGN TOOLS

Use our powerful software every day to make your work faster, easier and more reliable. Peikko design tools include design software, 3D components for modeling programs, installation instructions, technical manuals and product approvals of Peikko's products.

[peikko.com/design-tools](https://peikko.com/design-tools)

## TECHNICAL SUPPORT

Our technical support teams around the world are available to assist you with all of your questions regarding design, installation etc.

[peikko.com/technical-support](https://peikko.com/technical-support)

## APPROVALS

Approvals, certificates and documents related to CE-marking (DoP, DoC) can be found on our websites under each products' product page.

[peikko.com/products](https://peikko.com/products)

## EPDS AND MANAGEMENT SYSTEM CERTIFICATES

Environmental Product Declarations and management system certificates can be found at the quality section of our websites.

[peikko.com/qehs](https://peikko.com/qehs)



COMPANY WITH  
MANAGEMENT SYSTEM  
CERTIFIED BY DNV  
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ISO 45001