

LOCK T MIDI



CONCEALED TIMBER-TO-TIMBER CONNECTOR

POST AND BEAM

Ideal for carports, pergolas, canopies or small post-and-beam structures can be concealed in wooden members with small cross-section.

OUTDOOR

For outdoor use (Service class 3). Choosing the right screw allows any fastening requirement to be met, even in aggressive environments or in the presence of aggressive timber containing tannin, such as chestnut and oak.

VERSATILE

Easy and quick to install, it can be fastened with a single type of screw. Joint that can be easily disassembled, ideal for the construction of temporary structures. Certified strengths calculated in all directions: vertical, horizontal and axial.



CHARACTERISTICS

FOCUS	medium-small post-and-beam systems
TIMBER SECTIONS	from 68 x 135 mm to 240 x 400 mm
STRENGTH	$R_{v,k}$ up to 121 kN
FASTENERS	LBS, HBSPEVO, KKF AISI410



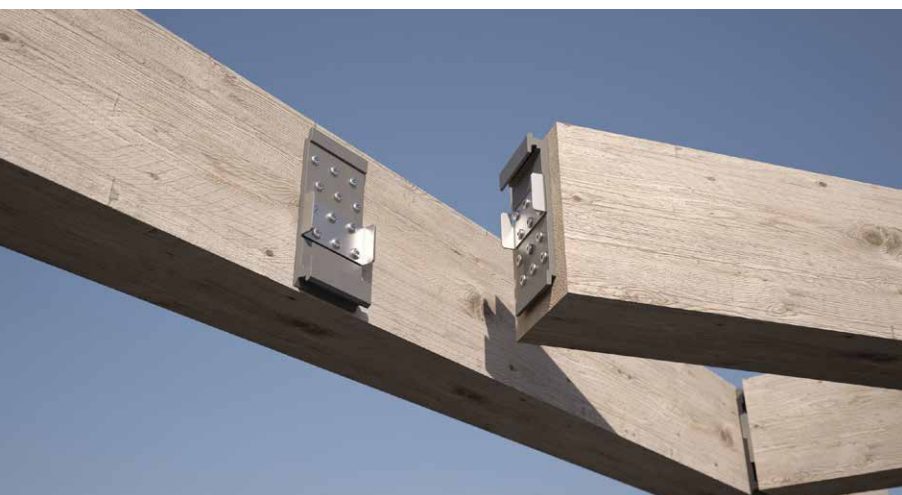
MATERIAL

LOCK T MIDI made of aluminium alloy.
LOCK T MIDI EVO made of aluminium alloy with special coating in graphite black colour.

FIELDS OF USE

Outdoor and indoor timber-to-timber joints:

- solid timber and glulam
- CLT, LVL
- aggressive woods (containing tannin)
- chemically treated woods



INCLINED BEAMS

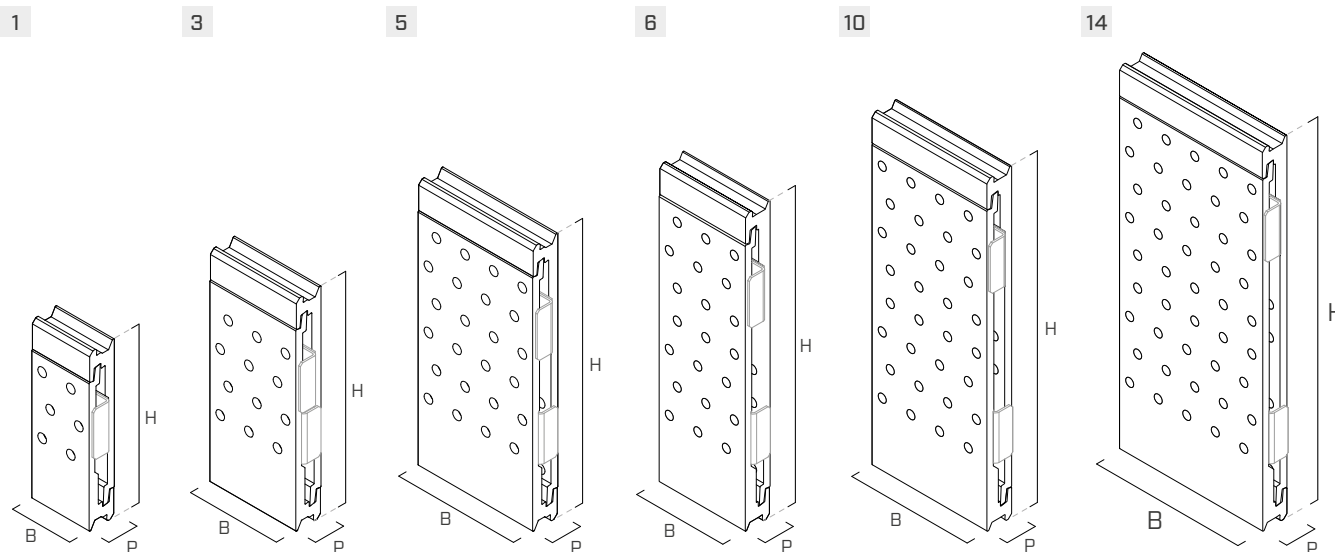
Also suitable for installation on inclined beams, with both horizontal and vertical inclination. The post-and-beam connector can be pre-assembled on the beam without adding screws at the construction site.

SPECIAL PROCESSING

The connector can be installed without special fabrication or processing of the beams. The LOCK STOP locking device enables secure installation and provides strength for lateral forces.

CODES AND DIMENSIONS

LOCK T MIDI - LOCK T MIDI EVO



CODE		B	H	P	n _{screw} x Ø ⁽¹⁾	n _{LOCKSTOP} x type ⁽²⁾	pcs. ⁽³⁾	
LOCK T MIDI	LOCK T MIDI EVO	[mm]	[mm]	[mm]	pcs			
1 LOCKT50135	LOCKTEVO50135 NEW	50	135	22	12 x Ø7	2 x LOCKSTOP7 1 x LOCKSTOP50	25	●
2 LOCKT50175	LOCKTEVO50175	50	175	22	16 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP50	18	●
3 LOCKT75175	LOCKTEVO75175 NEW	75	175	22	24 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP75	12	●
4 LOCKT75215	LOCKTEVO75215	75	215	22	36 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP75	12	●
5 LOCKT100215	LOCKTEV100215 NEW	100	215	22	48 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP100	8	●
6 LOCKT75240 NEW	LOCKTEV75240 ⁽⁴⁾ NEW	75	240	22	42 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP75	20	●
7 LOCKT100240 NEW	LOCKTEV100240 ⁽⁴⁾ NEW	100	240	22	56 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP100	10	●
8 LOCKT125240 NEW	LOCKTEV125240 ⁽⁴⁾ NEW	125	240	22	70 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP125	10	●
9 LOCKT75265 NEW	LOCKTEV75265 ⁽⁴⁾ NEW	75	265	22	48 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP75	20	●
10 LOCKT100265 NEW	LOCKTEV100265 ⁽⁴⁾ NEW	100	265	22	64 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP100	10	●
11 LOCKT125265 NEW	LOCKTEV125265 ⁽⁴⁾ NEW	125	265	22	80 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP125	10	●
12 LOCKT75290 NEW	LOCKTEV75290 ⁽⁴⁾ NEW	75	290	22	54 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP75	20	●
13 LOCKT100290 NEW	LOCKTEV100290 ⁽⁴⁾ NEW	100	290	22	72 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP100	10	●
14 LOCKT125290 NEW	LOCKTEV125290 ⁽⁴⁾ NEW	125	290	22	90 x Ø7	4 x LOCKSTOP7 2 x LOCKSTOP125	10	●

Screws and LOCK STOP are not included in the package.

NOTES:

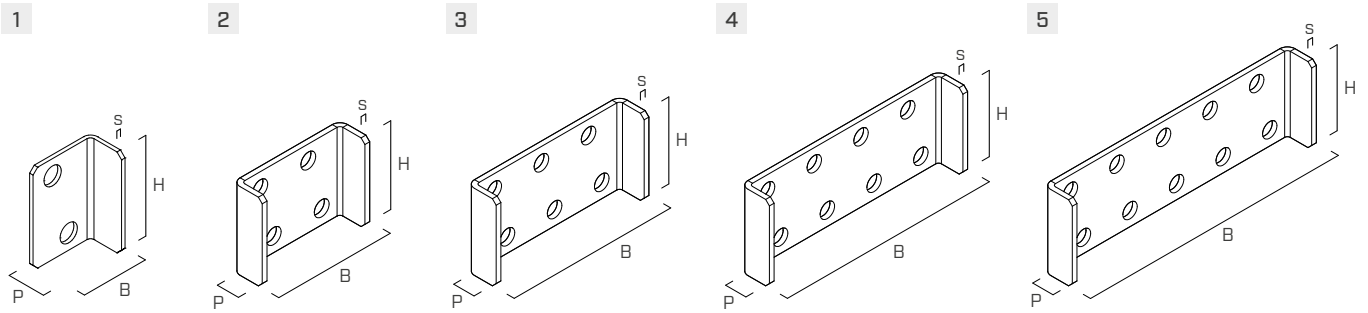
⁽¹⁾ Number of screws for connector pairs.

⁽²⁾ The LOCK STOP installation options are indicated on page 8.

⁽³⁾ Number of connector pairs.

⁽⁴⁾ Available on special request.

LOCK STOP | LOCKING DEVICE FOR F_{lat}



CODE		description	B [mm]	H [mm]	P [mm]	s [mm]	pcs
1	LOCKSTOP7	carbon steel DX51D+Z275	26,5	38	15	1,5	50
2	LOCKSTOP50	NEW stainless steel A2 AISI 304	56	40	15,5	2,5	40
3	LOCKSTOP75	NEW stainless steel A2 AISI 304	81	40	15,5	2,5	20
4	LOCKSTOP100	NEW stainless steel A2 AISI 304	106	40	15,5	2,5	20
5	LOCKSTOP125	NEW stainless steel A2 AISI 304	131	40	15,5	2,5	20

MATERIAL AND DURABILITY

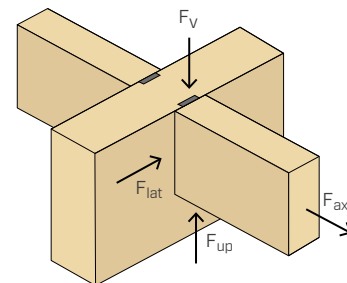
LOCK T MIDI - LOCK T MIDI EVO: EN AW-6005A aluminum alloy.
To be used in service classes 1, 2 and 3 (EN 1995-1-1).

For information on the application areas of LOCK T MIDI and LOCK T MIDI EVO with reference to environment service class, atmospheric corrosivity class and timber corrosion class, refer to the website (www.rothoblaas.com).

FIELD OF USE

- Timber-to-timber joints between solid timber, glulam, LVL and CLT structural elements

EXTERNAL LOADS

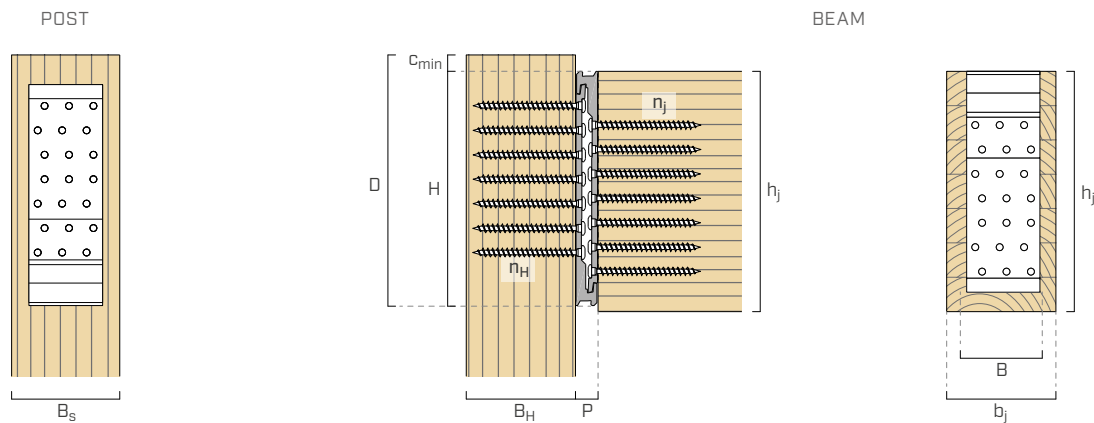


ADDITIONAL PRODUCTS - FASTENING

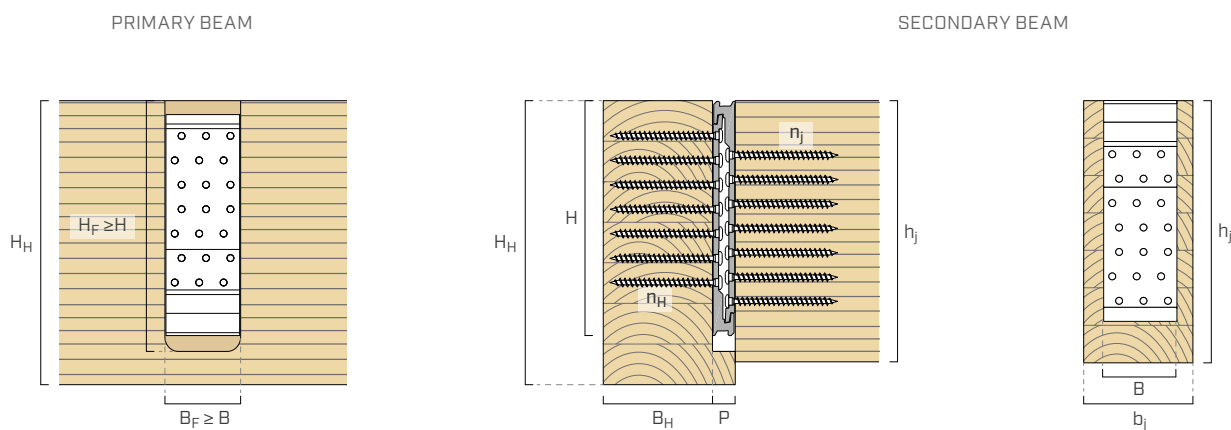
CODE	description	material		d ₁ [mm]	L [mm]	TX	pcs
LBS780	round head screw for plates	bright zinc plated carbon steel		7	80	TX 30	100
HBSPEVO680	pan head screw	carbon steel with C4 EVO coating		6	80	TX 30	100
KKF680	pan head screw	AISI410 martensitic stainless steel		6	80	TX 30	100

LOCK T MIDI - LOCK T MIDI EVO INSTALLATION

EXPOSED INSTALLATION ON COLUMN



CONCEALED INSTALLATION ON BEAM



The H_F dimension refers to the minimum height of the rebate at constant width. The milling radius must be taken into account when cutting the rebate.

CONNECTOR POSITIONING

CODE		c_{min} [mm]	D [mm]
LOCKT50135	LOCKTEVO50135	15	150
LOCKT50175	LOCKTEVO50175	5	180
LOCKT75175	LOCKTEVO75175	5	180
LOCKT75215	LOCKTEVO75215	15	230
LOCKT100215	LOCKTEV100215	15	230
LOCKT75240	LOCKTEV75240	15	255
LOCKT100240	LOCKTEV100240	15	255
LOCKT125240	LOCKTEV125240	15	255
LOCKT75265	LOCKTEV75265	15	280
LOCKT100265	LOCKTEV100265	15	280
LOCKT125265	LOCKTEV125265	15	280
LOCKT75290	LOCKTEV75290	15	305
LOCKT100290	LOCKTEV100290	15	305
LOCKT125290	LOCKTEV125290	15	305

The connector on column must be lowered by an amount c_{min} from the top of the beam to meet the minimum distance of the screws from the unloaded end of the column. It is recommended to use dimension "D" for positioning the connector on column. Alignment between the top of column and beam can be achieved by lowering the connector by an amount c_{min} relative to the top of beam (minimum beam height $h_j + c_{min}$).

LOCK T MIDI - LOCK T MIDI EVO INSTALLATION

CODE	connector		fasteners		main element		secondary beam	
	B x H	[mm]	type	n _H + n _J - Ø x L	column ⁽¹⁾ B _{S,min} x B _{H,min}	beam B _{H,min} x H _{H,min}	b _{J,min} x h _{J,min}	
							with pre-drilling hole	without pre-drilling hole
				[mm]	[mm]	[mm]	[mm]	[mm]
LOCKT50135 LOCKTEVO50135	50 x 135		LBS HBSPEVO KKF	6 + 6 - Ø7 x 80 6 + 6 - Ø6 x 80	74 x 80 68 x 80	80 x 155 80 x 145	74 x 135 68 x 135	80 x 140 ⁽²⁾
LOCKT50175 LOCKTEVO50175	50 x 175		LBS HBSPEVO KKF	8 + 8 - Ø7 x 80 8 + 8 - Ø6 x 80	74 x 80 68 x 80	80 x 190 80 x 180	74 x 175 68 x 175	80 x 175
LOCKT75175 LOCKTEVO75175	75 x 175		LBS HBSPEVO KKF	12 + 12 - Ø7 x 80 12 + 12 - Ø6 x 80	99 x 80 93 x 80	80 x 190 80 x 180	99 x 175 93 x 175	105 x 175
LOCKT75215 LOCKTEVO75215	75 x 215		LBS HBSPEVO KKF	18 + 18 - Ø7 x 80 18 + 18 - Ø6 x 80	99 x 80 93 x 80	80 x 230 80 x 220	99 x 215 93 x 215	105 x 215
LOCKT100215 LOCKTEV100215	100 x 215		LBS HBSPEVO KKF	24 + 24 - Ø7 x 80 24 + 24 - Ø6 x 80	124 x 80 118 x 80	80 x 230 80 x 220	124 x 215 118 x 215	130 x 215
LOCKT75240 LOCKTEV75240	75 x 240		LBS HBSPEVO KKF	21 + 21 - Ø7 x 80 21 + 21 - Ø6 x 80	99 x 80 93 x 80	80 x 255 80 x 245	99 x 240 93 x 240	105 x 240
LOCKT100240 LOCKTEV100240	100 x 240		LBS HBSPEVO KKF	28 + 28 - Ø7 x 80 28 + 28 - Ø6 x 80	124 x 80 118 x 80	80 x 255 80 x 245	124 x 240 118 x 240	130 x 240
LOCKT125240 LOCKTEV125240	125 x 240		LBS HBSPEVO KKF	35 + 35 - Ø7 x 80 35 + 35 - Ø6 x 80	149 x 80 143 x 80	80 x 255 80 x 245	149 x 240 143 x 240	155 x 240
LOCKT75265 LOCKTEV75265	75 x 265		LBS HBSPEVO KKF	24 + 24 - Ø7 x 80 24 + 24 - Ø6 x 80	99 x 80 93 x 80	80 x 280 80 x 270	99 x 265 93 x 265	105 x 265
LOCKT100265 LOCKTEV100265	100 x 265		LBS HBSPEVO KKF	32 + 32 - Ø7 x 80 32 + 32 - Ø6 x 80	124 x 80 118 x 80	80 x 280 80 x 270	124 x 265 118 x 240	130 x 265
LOCKT125265 LOCKTEV125265	125 x 265		LBS HBSPEVO KKF	40 + 40 - Ø7 x 80 40 + 40 - Ø6 x 80	149 x 80 143 x 80	80 x 280 80 x 270	149 x 265 143 x 265	155 x 265
LOCKT75290 LOCKTEV75290	75 x 290		LBS HBSPEVO KKF	27 + 27 - Ø7 x 80 27 + 27 - Ø6 x 80	99 x 80 93 x 80	80 x 305 80 x 295	99 x 290 93 x 290	105 x 290
LOCKT100290 LOCKTEV100290	100 x 290		LBS HBSPEVO KKF	36 + 36 - Ø7 x 80 36 + 36 - Ø6 x 80	124 x 80 118 x 80	80 x 305 80 x 295	124 x 290 118 x 290	130 x 290
LOCKT125290 LOCKTEV125290	125 x 290		LBS HBSPEVO KKF	45 + 45 - Ø7 x 80 45 + 45 - Ø6 x 80	149 x 80 143 x 80	80 x 305 80 x 295	149 x 290 143 x 290	155 x 290
2 x LOCKT50135 2 x LOCKTEVO50135	100 x 135 ⁽³⁾		LBS HBSPEVO KKF	12 + 12 - Ø7 x 80 12 + 12 - Ø6 x 80	124 x 80 118 x 80	80 x 155 80 x 145	124 x 135 118 x 135	130 x 140 ⁽²⁾
2 x LOCKT50175 2 x LOCKTEVO50175	100 x 175 ⁽³⁾		LBS HBSPEVO KKF	16 + 16 - Ø7 x 80 16 + 16 - Ø6 x 80	124 x 80 118 x 80	80 x 190 80 x 180	124 x 175 118 x 175	130 x 175
1 x LOCKT75175 + 1 x LOCKT50175	125 x 175 ⁽³⁾		LBS	20 + 20 - Ø7 x 80	149 x 80	80 x 190	149 x 175	155 x 175
1 x LOCKTEVO75175 + 1 x LOCKTEVO50175			HBSPEVO KKF	20 + 20 - Ø6 x 80	143 x 80	80 x 180	143 x 175	
2 x LOCKT75215 2 x LOCKTEVO75215	150 x 215 ⁽³⁾		LBS HBSPEVO KKF	36 + 36 - Ø7 x 80 36 + 36 - Ø6 x 80	174 x 80 168 x 80	80 x 230 80 x 220	174 x 215 168 x 215	180 x 215
1 x LOCKT100215 + 1 x LOCKT75215	175 x 215 ⁽³⁾		LBS	42 + 42 - Ø7 x 80	199 x 80	80 x 230	199 x 215	205 x 215
1 x LOCKTEV100215 + 1 x LOCKTEVO75215			HBSPEVO KKF	42 + 42 - Ø6 x 80	193 x 80	80 x 220	193 x 215	

NOTES:

⁽¹⁾ The screws must be installed in the column with pre-drilled holes.

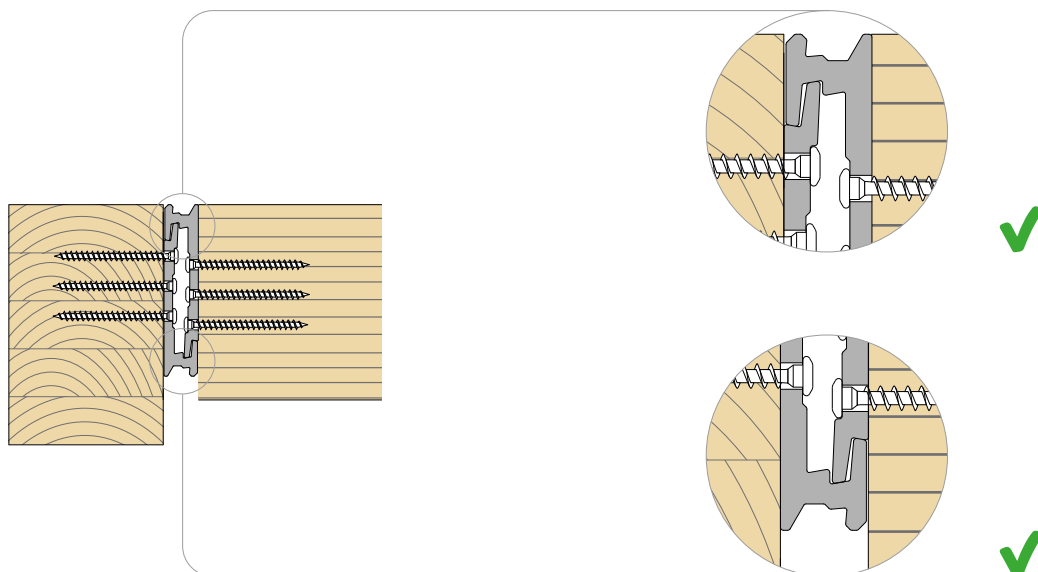
⁽²⁾ In case of installation without pre-drilled holes, the connector must be installed 5 mm lower than the top of secondary beam, in order to respect the minimum distances of the screws.

⁽³⁾ Measurement obtained by coupling two connectors with the same height H. For example, LOCK T 100 x 135 mm is obtained by placing two LOCK T 50 x 135 mm connectors side by side.

■ INSTALLATION METHODS

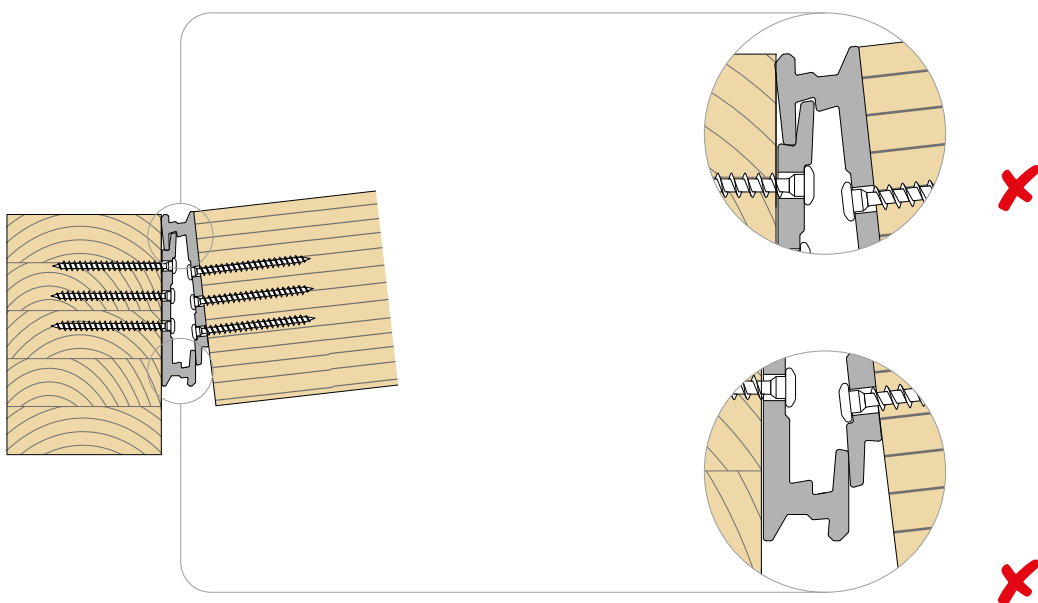
CORRECT INSTALLATION

Install the beam by lowering it from the top, without tilting it. Ensure proper fitting and coupling of the connector at both the top and bottom, as shown in the figure.



INCORRECT INSTALLATION

Partial and incorrect coupling of the connector. Ensure that both flanges of the connector are properly seated in their respective seats.



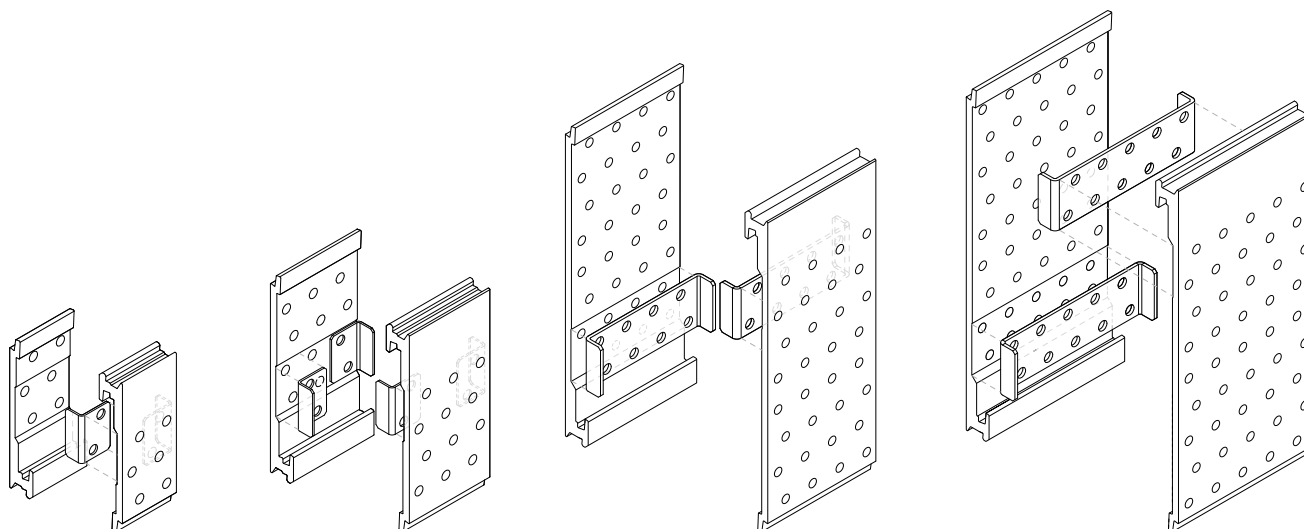
LOCK STOP INSTALLATION ON LOCK T MIDI

LOCKT50135 +
2 x LOCKSTOP7

LOCKT75175 +
4 x LOCKSTOP7

LOCKT100265 +
2 x LOCKSTOP100

LOCKT125290 +
2 x LOCKSTOP125



LOCK STOP| assembly

connector ⁽¹⁾		assembly configuration									
CODE	B x H [mm]	LOCKSTOP7		LOCKSTOP50		LOCKSTOP75		LOCKSTOP100		LOCKSTOP125	
		application	pcs	application	pcs	application	pcs	application	pcs	application	pcs
LOCKT50135	50 x 135	●	x 2	●	x 1	-	-	-	-	-	-
LOCKT50175	50 x 175	●	x 4	●	x 2	-	-	-	-	-	-
LOCKT75175	75 x 175	●	x 4	-	-	●	x 2	-	-	-	-
LOCKT75215	75 x 215	●	x 4	-	-	●	x 2	-	-	-	-
LOCKT75240	75 x 240	●	x 4	-	-	●	x 2	-	-	-	-
LOCKT75265	75 x 265	●	x 4	-	-	●	x 2	-	-	-	-
LOCKT75290	75 x 290	●	x 4	-	-	●	x 2	-	-	-	-
LOCKT100215	100 x 215	●	x 4	-	-	-	-	●	x 2	-	-
LOCKT100240	100 x 240	●	x 4	-	-	-	-	●	x 2	-	-
LOCKT100265	100 x 265	●	x 4	-	-	-	-	●	x 2	-	-
LOCKT100290	100 x 290	●	x 4	-	-	-	-	●	x 2	-	-
LOCKT125240	125 x 240	●	x 4	-	-	-	-	-	-	●	x 2
LOCKT125265	125 x 265	●	x 4	-	-	-	-	-	-	●	x 2
LOCKT125290	125 x 290	●	x 4	-	-	-	-	-	-	●	x 2

LOCK STOP INSTALLATION ON LOCK T MIDI COUPLED

LOCK STOP| assembly

connector ⁽¹⁾		assembly configuration					
CODE	B x H [mm]	LOCKSTOP7		LOCKSTOP100		LOCKSTOP125	
		application	pcs	application	pcs	application	pcs
LOCKT100135 (LOCKT50135 + LOCKT50135)	100 x 135	●	2	●	1	-	-
LOCKT100175 (LOCKT50175 + LOCKT50175)	100 x 175	●	4	●	2	-	-
LOCKT125175 (LOCKT50175 + LOCKT75175)	125 x 175	●	4	-	-	●	2
LOCKT150215 (LOCKT75215 + LOCKT75215)	150 x 215	●	4	-	-	-	-
LOCKT175215 (LOCKT75215 + LOCKT100215)	175 x 215	●	4	-	-	-	-

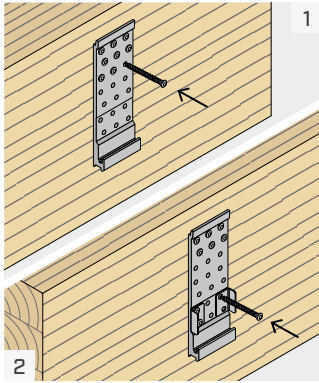
NOTES:

⁽¹⁾ Assembly configuration also valid for the corresponding LOCK EVO connectors.

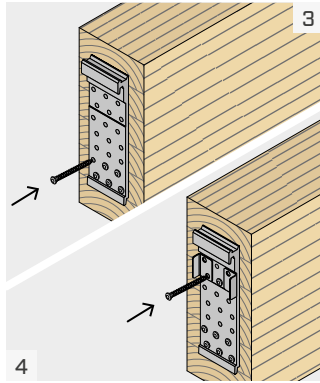
INSTALLATION



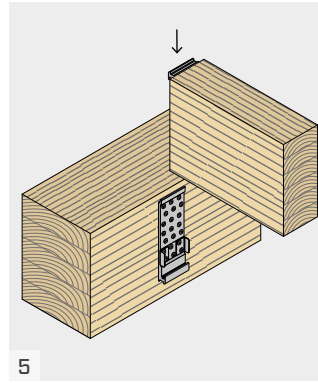
EXPOSED INSTALLATION WITH LOCK STOP



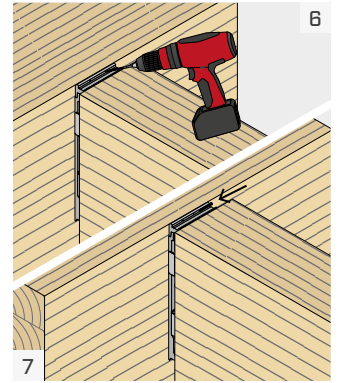
Place the connector on the main element and fasten the upper screws. When using LOCK STOP, position LOCK STOP and fasten the remaining screws.



Place the connector on the secondary beam and fasten the lower screws. When using LOCK STOP, position LOCK STOP and fasten the remaining screws.

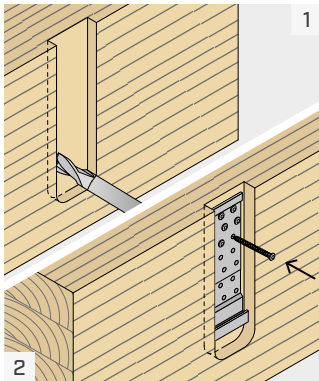


Hang the secondary beam from the main member by lowering it into place. Make sure that the two LOCK connectors are parallel to each other and avoid subjecting them to excessive strain during installation.

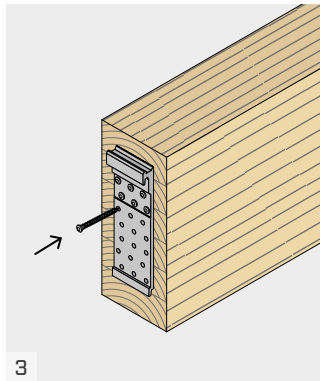


It is possible to install an uplift screw for F_{up} by drilling one hole $\varnothing 5$ inclined at 45° in the upper part of the connector. A $\varnothing 5$ screw must be inserted in the hole.

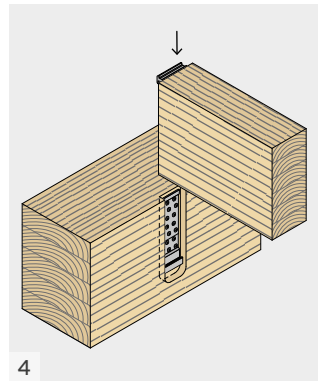
CONCEALED INSTALLATION



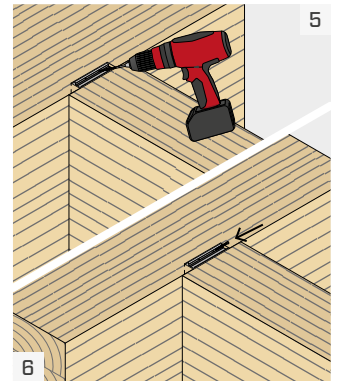
Carry out the rebate on the main element. Place the connector on the main element and fasten all screws.



Place the connector on the secondary beam and fasten all screws.

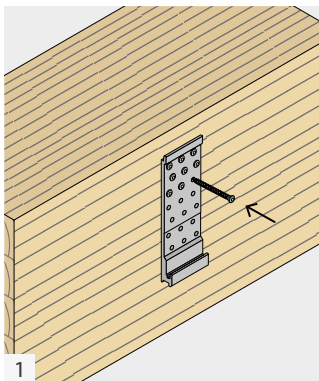


Hang the secondary beam from the main member by lowering it into place. Make sure that the two LOCK connectors are parallel to each other and avoid subjecting them to excessive strain during installation.

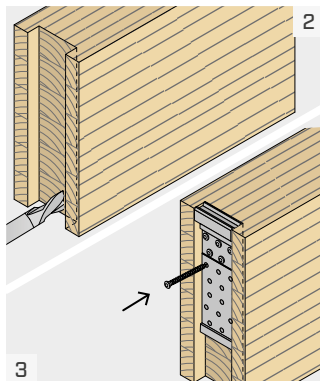


It is possible to install an uplift screw for F_{up} by drilling one hole $\varnothing 5$ inclined at 45° in the upper part of the connector. A $\varnothing 5$ screw must be inserted in the hole.

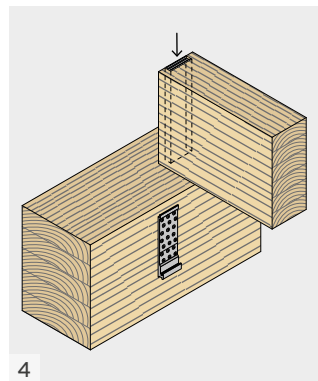
SEMI-CONCEALED INSTALLATION - CONNECTOR VISIBLE FROM BELOW



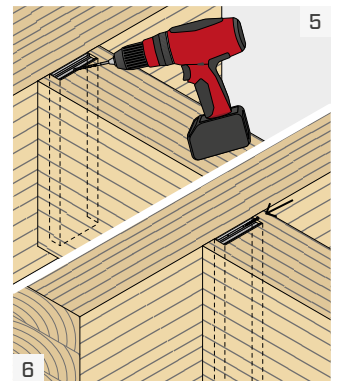
Place the connector on the main element and fasten all screws.



Cut a full depth rebate on the secondary beam. Position the connector and fasten all screws.

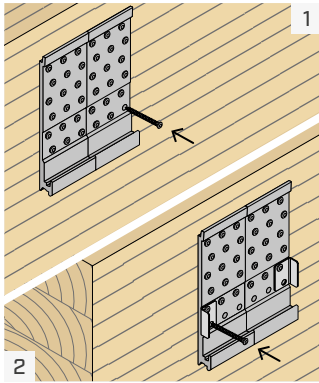


Hang the secondary beam from the main member by lowering it into place. Make sure that the two LOCK connectors are parallel to each other and avoid subjecting them to excessive strain during installation.

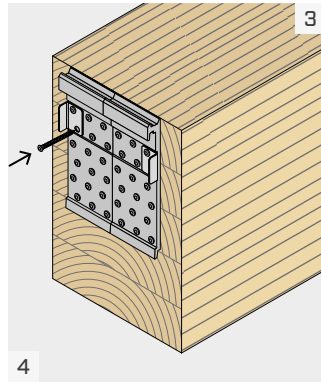


It is possible to install an uplift screw for F_{up} by drilling one hole $\varnothing 5$ inclined at 45° in the upper part of the connector. A $\varnothing 5$ screw must be inserted in the hole.

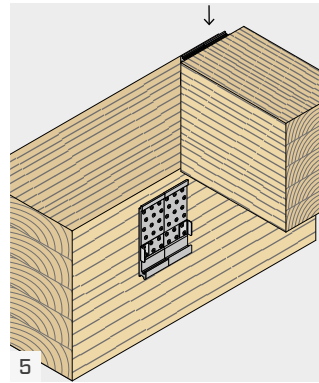
COUPLED ON LOCK T MINI INSTALLATION



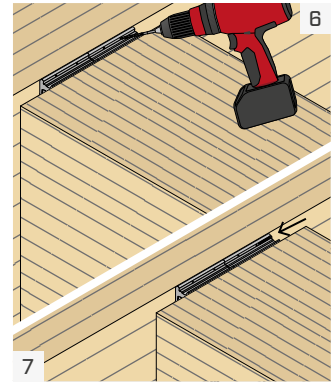
Place the connectors on the main element and fasten the top screws, making sure the connectors are aligned with each other. When using LOCK STOP, position LOCK STOP and fasten the remaining screws.



Place the connectors on the secondary beam and fasten the lower screws, making sure the connectors are aligned with each other. When using LOCK STOP, position LOCK STOP and fasten the remaining screws.



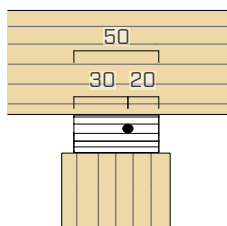
Hang the secondary beam from the main member by lowering it into place. Make sure that the two LOCK connectors are parallel to each other and avoid subjecting them to excessive strain during installation.



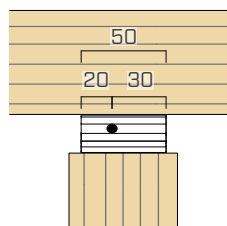
It is possible to install an up-lift screw for F_{up} by drilling one hole $\varnothing 5$ inclined at 45° in the upper part of the connector. A $\varnothing 5$ screw must be inserted in the hole.

OPTIONAL INCLINED SCREW

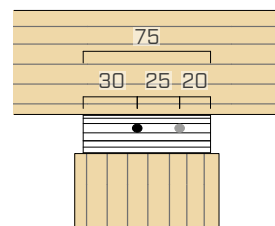
The holes inclined at 45° must be drilled on site using a drill and iron drill bit with a diameter of 5 mm. The image shows the positions for the optional inclined holes.



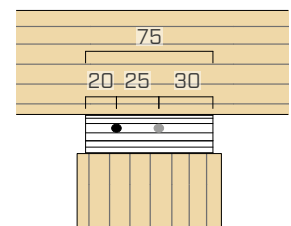
LOCKT50135 |
LOCKTEVO50135



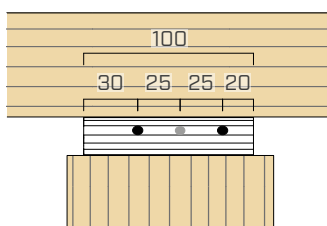
LOCKT50175 |
LOCKTEVO50175



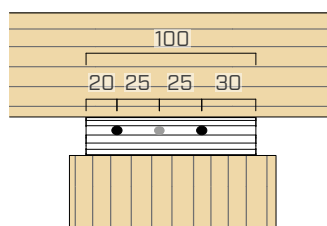
LOCKT75240 | LOCKTEVO75240
LOCKT75290 | LOCKTEVO75290



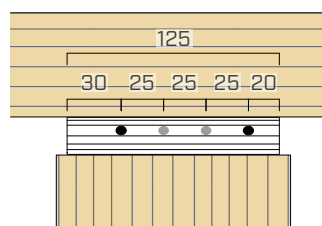
LOCKT75175 | LOCKTEVO75175
LOCKT75215 | LOCKTEVO75215
LOCKT75265 | LOCKTEVO75265



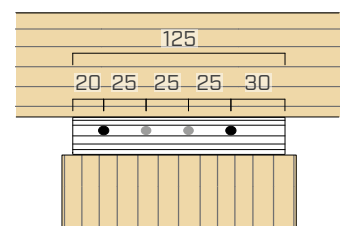
LOCKT100240 | LOCKTEV100240
LOCKT100290 | LOCKTEV100290



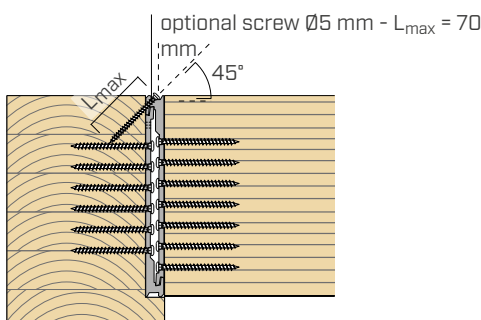
LOCKT100215 | LOCKTEV100215
LOCKT100265 | LOCKTEV100265



LOCKT125240 | LOCKTEV125240
LOCKT125290 | LOCKTEV125290

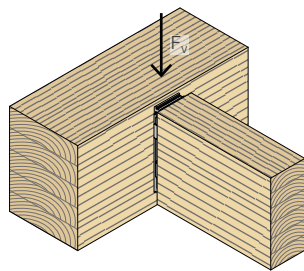


LOCKT125265 | LOCKTEV125265



- inclined screws for F_{lat} strength
- + ● inclined screws for F_{up} strength

STRUCTURAL VALUES | TIMBER-TO-TIMBER JOINT | F_v



connector		fasteners		TIMBER			ALUMINIUM
CODE	B x H [mm]	type	n _H + n _j - Ø x L [mm]	GL24h [kN]	R _{v,k timber} C50 [kN]	LVL [kN]	R _{v,k alu} [kN]
LOCKT50135 LOCKTEVO50135	50 x 135	LBS HBSPEVO KKF	6 + 6 - Ø7 x 80 6 + 6 - Ø6 x 80	16,1 11,1	19,8 13,7	15,7 10,9	30
LOCKT50175 LOCKTEVO50175	50 x 175	LBS HBSPEVO KKF	8 + 8 - Ø7 x 80 8 + 8 - Ø6 x 80	21,5 14,7	26,4 18,2	20,9 14,6	40
LOCKT75175 LOCKTEVO75175	75 x 175	LBS HBSPEVO KKF	12 + 12 - Ø7 x 80 12 + 12 - Ø6 x 80	32,2 22,1	39,6 27,3	31,4 21,9	60
LOCKT75215 LOCKTEVO75215	75 x 215	LBS HBSPEVO KKF	18 + 18 - Ø7 x 80 18 + 18 - Ø6 x 80	48,3 33,2	59,5 41,0	47,1 32,8	60
LOCKT100215 LOCKTEV100215	100 x 215	LBS HBSPEVO KKF	24 + 24 - Ø7 x 80 24 + 24 - Ø6 x 80	64,5 44,2	79,3 54,6	62,8 43,8	80
LOCKT75240 LOCKTEV75240	75 x 240	LBS HBSPEVO KKF	21 + 21 - Ø7 x 80 21 + 21 - Ø6 x 80	56,4 38,7	69,4 47,8	55,0 38,3	72
LOCKT100240 LOCKTEV100240	100 x 240	LBS HBSPEVO KKF	28 + 28 - Ø7 x 80 28 + 28 - Ø6 x 80	75,2 51,6	92,5 63,7	73,3 51,1	96
LOCKT125240 LOCKTEV125240	125 x 240	LBS HBSPEVO KKF	35 + 35 - Ø7 x 80 35 + 35 - Ø6 x 80	94,0 64,5	115,6 79,6	91,6 63,8	120
LOCKT75265 LOCKTEV75265	75 x 265	LBS HBSPEVO KKF	24 + 24 - Ø7 x 80 24 + 24 - Ø6 x 80	64,5 44,2	79,3 54,6	62,8 43,8	72
LOCKT100265 LOCKTEV100265	100 x 265	LBS HBSPEVO KKF	32 + 32 - Ø7 x 80 32 + 32 - Ø6 x 80	85,9 59,0	105,7 72,8	83,7 58,4	96
LOCKT125265 LOCKTEV125265	125 x 265	LBS HBSPEVO KKF	40 + 40 - Ø7 x 80 40 + 40 - Ø6 x 80	107,4 73,7	132,2 91,0	104,7 73,0	120
LOCKT75290 LOCKTEV75290	75 x 290	LBS HBSPEVO KKF	27 + 27 - Ø7 x 80 27 + 27 - Ø6 x 80	72,5 49,8	89,2 61,4	70,7 49,3	72
LOCKT100290 LOCKTEV100290	100 x 290	LBS HBSPEVO KKF	36 + 36 - Ø7 x 80 36 + 36 - Ø6 x 80	96,7 66,4	118,9 81,9	94,2 65,7	96
LOCKT125290 LOCKTEV125290	125 x 290	LBS HBSPEVO KKF	45 + 45 - Ø7 x 80 45 + 45 - Ø6 x 80	120,8 83,0	148,7 102,4	117,8 82,1	120
2 x LOCKT50135 2 x LOCKTEVO50135	100 x 135 ⁽¹⁾	LBS HBSPEVO KKF	12 + 12 - Ø7 x 80 12 + 12 - Ø6 x 80	32,2 22,1	39,6 27,3	31,4 21,9	60
2 x LOCKT50175 2 x LOCKTEVO50175	100 x 175 ⁽¹⁾	LBS HBSPEVO KKF	16 + 16 - Ø7 x 80 16 + 16 - Ø6 x 80	43,0 29,5	52,9 36,4	41,9 29,2	80
1 x LOCKT75175 + 1 x LOCKT50175	125 x 175 ⁽¹⁾	LBS	20 + 20 - Ø7 x 80	53,7	66,1	52,3	100
1 x LOCKTEVO75175 + 1 x LOCKTEVO50175		HBSPEVO KKF	20 + 20 - Ø6 x 80	36,9	45,5	36,5	
2 x LOCKT75215 2 x LOCKTEVO75215	150 x 215 ⁽¹⁾	LBS HBSPEVO KKF	36 + 36 - Ø7 x 80 36 + 36 - Ø6 x 80	96,7 66,4	118,9 81,9	94,2 65,7	120
1 x LOCKT100215 + 1 x LOCKT75215	175 x 215 ⁽¹⁾	LBS	42 + 42 - Ø7 x 80	112,8	138,8	109,9	140
1 x LOCKTEV100215 + 1 x LOCKTEVO75215		HBSPEVO KKF	42 + 42 - Ø6 x 80	77,4	95,6	76,6	

NOTES:

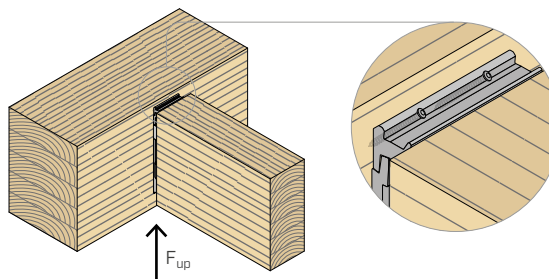
⁽¹⁾ Measurement obtained by coupling two connectors with the same height H.

GENERAL PRINCIPLES:

- For the general principles of calculation, see page 18.

■ STRUCTURAL VALUES | TIMBER-TO-TIMBER JOINT | F_{up}

INCLINED SCREW



connector		fasteners	TIMBER
CODE	B x H [mm]	inclined screw - LBS n - Ø x L [mm]	R _{up,k timber} ⁽¹⁾ [kN]
LOCKT50135 LOCKTEVO50135	50 x 135	1 - Ø5 x 70	3,2
LOCKT50175 LOCKTEVO50175	50 x 175	1 - Ø5 x 70	3,2
LOCKT75175 LOCKTEVO75175	75 x 175	2 - Ø5 x 70	6,0
LOCKT75215 LOCKTEVO75215	75 x 215	2 - Ø5 x 70	6,0
LOCKT100215 LOCKTEV100215	100 x 215	3 - Ø5 x 70	8,7
LOCKT75240 LOCKTEV75240	75 x 240	2 - Ø5 x 70	6,0
LOCKT100240 LOCKTEV100240	100 x 240	3 - Ø5 x 70	8,7
LOCKT125240 LOCKTEV125240	125 x 240	4 - Ø5 x 70	11,7
LOCKT75265 LOCKTEV75265	75 x 265	2 - Ø5 x 70	6,0
LOCKT100265 LOCKTEV100265	100 x 265	3 - Ø5 x 70	8,7
LOCKT125265 LOCKTEV125265	125 x 265	4 - Ø5 x 70	11,7
LOCKT75290 LOCKTEV75290	75 x 290	2 - Ø5 x 70	6,0
LOCKT100290 LOCKTEV100290	100 x 290	3 - Ø5 x 70	8,7
LOCKT125290 LOCKTEV125290	125 x 290	4 - Ø5 x 70	11,7
2 x LOCKT50135 2 x LOCKTEVO50135	100 x 135 ⁽²⁾	2 - Ø5 x 70	6,0
2 x LOCKT50175 2 x LOCKTEVO50175	100 x 175 ⁽²⁾	2 - Ø5 x 70	6,0
1 x LOCKT75175 + 1 x LOCKT50175 1 x LOCKTEVO75175 + 1 x LOCKTEVO50175	125 x 175 ⁽²⁾	3 - Ø5 x 70	8,7
2 x LOCKT75215 2 x LOCKTEVO75215	150 x 215 ⁽²⁾	4 - Ø5 x 70	11,7
1 x LOCKT100215 + 1 x LOCKT75215 1 x LOCKTEV100215 + 1 x LOCKTEVO75215	175 x 215 ⁽²⁾	5 - Ø5 x 70	14,6

NOTES:

⁽¹⁾ For the configurations shown in the table, the static values are independent of the type of screw in the primary beam and secondary beam.

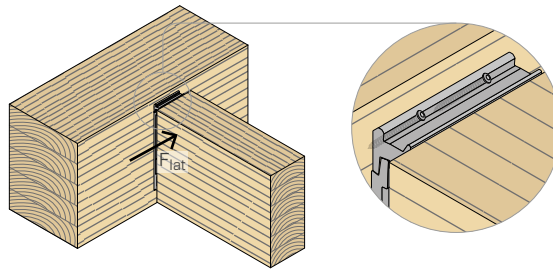
⁽²⁾ Measurement obtained by coupling two connectors with the same height H.

GENERAL PRINCIPLES:

- For the general principles of calculation, see page 18.

STRUCTURAL VALUES | TIMBER-TO-TIMBER JOINT | F_{lat}

INCLINED SCREW



CODE	connector B x H [mm]	fasteners		TIMBER $R_{lat,k \text{ timber}}^{(1)}$ [kN]
		HBSPEVO KKF $n_H + n_j - \varnothing \times L$ [mm]	inclined screw - LBS $n - \varnothing \times L$ [mm]	
LOCKT50135 LOCKTEVO50135	50 x 135	6 + 6 - $\varnothing 6 \times 80$	1 - $\varnothing 5 \times 70$	2,2
LOCKT50175 LOCKTEVO50175	50 x 175	8 + 8 - $\varnothing 6 \times 80$	1 - $\varnothing 5 \times 70$	2,2
LOCKT75175 LOCKTEVO75175	75 x 175	12 + 12 - $\varnothing 6 \times 80$	1 - $\varnothing 5 \times 70$	2,2
LOCKT75215 LOCKTEVO75215	75 x 215	18 + 18 - $\varnothing 6 \times 80$	1 - $\varnothing 5 \times 70$	2,2
LOCKT100215 LOCKTEV100215	100 x 215	24 + 24 - $\varnothing 6 \times 80$	2 - $\varnothing 5 \times 70$	4,7
LOCKT75240 LOCKTEV75240	75 x 240	21 + 21 - $\varnothing 6 \times 80$	1 - $\varnothing 5 \times 70$	2,2
LOCKT100240 LOCKTEV100240	100 x 240	28 + 28 - $\varnothing 6 \times 80$	2 - $\varnothing 5 \times 70$	4,7
LOCKT125240 LOCKTEV125240	125 x 240	35 + 35 - $\varnothing 6 \times 80$	2 - $\varnothing 5 \times 70$	5,2
LOCKT75265 LOCKTEV75265	75 x 265	24 + 24 - $\varnothing 6 \times 80$	1 - $\varnothing 5 \times 70$	2,2
LOCKT100265 LOCKTEV100265	100 x 265	32 + 32 - $\varnothing 6 \times 80$	2 - $\varnothing 5 \times 70$	4,7
LOCKT125265 LOCKTEV125265	125 x 265	40 + 40 - $\varnothing 6 \times 80$	2 - $\varnothing 5 \times 70$	5,2
LOCKT75290 LOCKTEV75290	75 x 290	27 + 27 - $\varnothing 6 \times 80$	1 - $\varnothing 5 \times 70$	2,2
LOCKT100290 LOCKTEV100290	100 x 290	36 + 36 - $\varnothing 6 \times 80$	2 - $\varnothing 5 \times 70$	4,7
LOCKT125290 LOCKTEV125290	125 x 290	45 + 45 - $\varnothing 6 \times 80$	2 - $\varnothing 5 \times 70$	5,2
2 x LOCKT50135 2 x LOCKTEVO50135	100 x 135 ⁽²⁾	12 + 12 - $\varnothing 6 \times 80$	2 - $\varnothing 5 \times 70$	4,7
2 x LOCKT50175 2 x LOCKTEVO50175	100 x 175 ⁽²⁾	16 + 16 - $\varnothing 6 \times 80$	2 - $\varnothing 5 \times 70$	4,7
1 x LOCKT75175 + 1 x LOCKT50175	125 x 175 ⁽²⁾	20 + 20 - $\varnothing 6 \times 80$	2 - $\varnothing 5 \times 70$	4,7
1 x LOCKTEVO75175 + 1 x LOCKTEVO50175				
2 x LOCKT75215 2 x LOCKTEVO75215	150 x 215 ⁽²⁾	36 + 36 - $\varnothing 6 \times 80$	2 - $\varnothing 5 \times 70$	5,2
1 x LOCKT100215 + 1 x LOCKT75215	175 x 215 ⁽²⁾	42 + 42 - $\varnothing 6 \times 80$	3 - $\varnothing 5 \times 70$	6,6
1 x LOCKTEV100215 + 1 x LOCKTEVO75215				

NOTES:

⁽¹⁾ Strength values can be accepted as valid, for higher safety standards, for LBS screws.

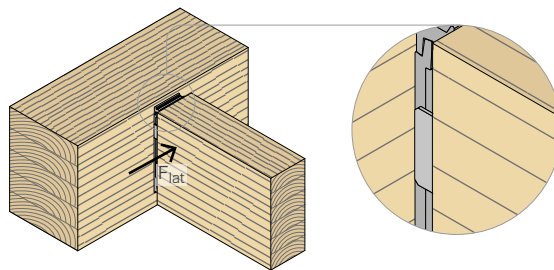
⁽²⁾ Measurement obtained by coupling two connectors with the same height H.

GENERAL PRINCIPLES:

- For the general principles of calculation, see page 18.

STRUCTURAL VALUES | TIMBER-TO-TIMBER JOINT | F_{lat}

LOCK STOP



connector		LOCK STOP	
CODE	B x H [mm]	$n_{LOCKSTOP} \times \text{type}$	$R_{lat,k \text{ steel}}^{(1)}$ [kN]
LOCKT50135 LOCKTEVO50135	50 x 135	2 x LOCKSTOP7 1 x LOCKSTOP50	0,3 0,8
LOCKT50175 LOCKTEVO50175	50 x 175	4 x LOCKSTOP7 2 x LOCKSTOP50	0,6 1,6
LOCKT75175 LOCKTEVO75175	75 x 175	4 x LOCKSTOP7 2 x LOCKSTOP75	0,6 1,6
LOCKT75215 LOCKTEVO75215	75 x 215	4 x LOCKSTOP7 2 x LOCKSTOP75	0,6 1,6
LOCKT100215 LOCKTEV100215	100 x 215	4 x LOCKSTOP7 2 x LOCKSTOP100	0,6 1,6
LOCKT75240 LOCKTEV75240	75 x 240	4 x LOCKSTOP7 2 x LOCKSTOP75	0,6 1,6
LOCKT100240 LOCKTEV100240	100 x 240	4 x LOCKSTOP7 2 x LOCKSTOP100	0,6 1,6
LOCKT125240 LOCKTEV125240	125 x 240	4 x LOCKSTOP7 2 x LOCKSTOP125	0,6 1,6
LOCKT75265 LOCKTEV75265	75 x 265	4 x LOCKSTOP7 2 x LOCKSTOP75	0,6 1,6
LOCKT100265 LOCKTEV100265	100 x 265	4 x LOCKSTOP7 2 x LOCKSTOP100	0,6 1,6
LOCKT125265 LOCKTEV125265	125 x 265	4 x LOCKSTOP7 2 x LOCKSTOP125	0,6 1,6
LOCKT75290 LOCKTEV75290	75 x 290	4 x LOCKSTOP7 2 x LOCKSTOP75	0,6 1,6
LOCKT100290 LOCKTEV100290	100 x 290	4 x LOCKSTOP7 2 x LOCKSTOP100	0,6 1,6
LOCKT125290 LOCKTEV125290	125 x 290	4 x LOCKSTOP7 2 x LOCKSTOP125	0,6 1,6
2 x LOCKT50135 2 x LOCKTEVO50135	100 x 135 ⁽²⁾	2 x LOCKSTOP7 1 x LOCKSTOP100	0,3 0,8
2 x LOCKT50175 2 x LOCKTEVO50175	100 x 175 ⁽²⁾	4 x LOCKSTOP7 2 x LOCKSTOP100	0,6 1,6
1 x LOCKT75175 + 1 x LOCKT50175	125 x 175 ⁽²⁾	4 x LOCKSTOP7	0,6
1 x LOCKTEVO75175 + 1 x LOCKTEVO50175	125 x 175 ⁽²⁾	2 x LOCKSTOP125	1,6
2 x LOCKT75215 2 x LOCKTEVO75215	150 x 215 ⁽²⁾	4 x LOCKSTOP7	0,6
1 x LOCKT100215 + 1 x LOCKT75215	175 x 215 ⁽²⁾	4 x LOCKSTOP7	0,6
1 x LOCKTEV100215 + 1 x LOCKTEVO75215	175 x 215 ⁽²⁾	4 x LOCKSTOP7	0,6

NOTES:

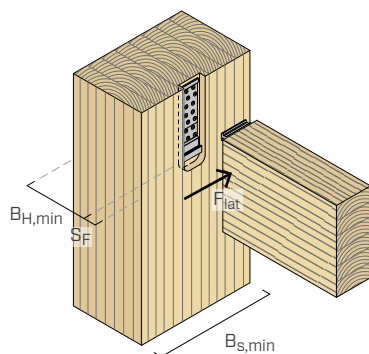
⁽¹⁾ For the configurations shown in the table, the static values are independent of the type of screw and the fastening to column or beam.

⁽²⁾ Measurement obtained by coupling two connectors with the same height H.

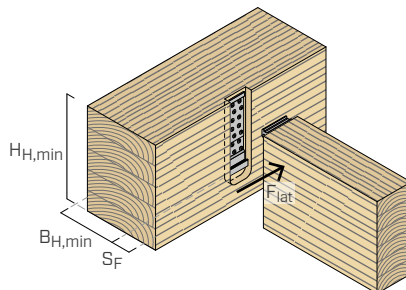
GENERAL PRINCIPLES:

- For the general principles of calculation, see page 18.

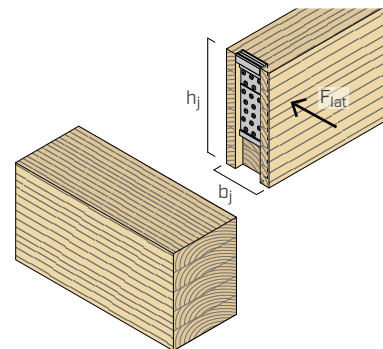
STRUCTURAL VALUES | TIMBER-TO-TIMBER JOINT | F_{lat}



1. COLUMN REBATE



2. PRIMARY BEAM REBATE



3. SECONDARY BEAM REBATE

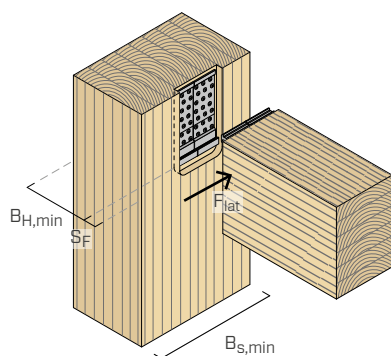
connector		fasteners		R_{lat} , k timber					
CODE	B x H [mm]	type	$n_H + n_J - \varnothing \times L$ [mm]	column rebate ⁽¹⁾ $B_{S,min} \times B_{H,min}$ [mm]	1 [kN]	primary beam rebate $B_{H,min} \times H_{H,min}$ [mm]	2 [kN]	secondary beam rebate $b_{J,min} \times h_{J,min}$ [mm]	3 [kN]
LOCKT50135 LOCKTEVO50135	50 x 135	LBS HBSPEVO KKF	6 + 6 - $\varnothing 7 \times 80$ 6 + 6 - $\varnothing 6 \times 80$	100 x 80	2,3	80 x 155 80 x 145	7,0 4,7	100 x 140	4,6
LOCKT50175 LOCKTEVO50175	50 x 175	LBS HBSPEVO KKF	8 + 8 - $\varnothing 7 \times 80$ 8 + 8 - $\varnothing 6 \times 80$	100 x 80	2,9	80 x 190 80 x 180	10,4 7,0	100 x 175	5,9
LOCKT75175 LOCKTEVO75175	75 x 175	LBS HBSPEVO KKF	12 + 12 - $\varnothing 7 \times 80$ 12 + 12 - $\varnothing 6 \times 80$	120 x 80	2,9	80 x 190 80 x 180	17,2 11,7	120 x 175	5,9
LOCKT75215 LOCKTEVO75215	75 x 215	LBS HBSPEVO KKF	18 + 18 - $\varnothing 7 \times 80$ 18 + 18 - $\varnothing 6 \times 80$	120 x 80	3,5	80 x 230 80 x 220	25,4 17,4	120 x 215	7,1
LOCKT100215 LOCKTEV100215	100 x 215	LBS HBSPEVO KKF	24 + 24 - $\varnothing 7 \times 80$ 24 + 24 - $\varnothing 6 \times 80$	140 x 80	3,5	80 x 230 80 x 220	33,9 24,4	140 x 215	7,1
LOCKT75240 LOCKTEV75240	75 x 240	LBS HBSPEVO KKF	21 + 21 - $\varnothing 7 \times 80$ 21 + 21 - $\varnothing 6 \times 80$	120 x 80	4,1	80 x 255 80 x 245	29,4 20,1	120 x 240	8,2
LOCKT100240 LOCKTEV100240	100 x 240	LBS HBSPEVO KKF	28 + 28 - $\varnothing 7 \times 80$ 28 + 28 - $\varnothing 6 \times 80$	140 x 80	4,1	80 x 255 80 x 245	39,5 28,1	140 x 240	8,2
LOCKT125240 LOCKTEV125240	125 x 240	LBS HBSPEVO KKF	35 + 35 - $\varnothing 7 \times 80$ 35 + 35 - $\varnothing 6 \times 80$	160 x 80	4,1	80 x 255 80 x 245	39,5 36,8	160 x 240	8,2
LOCKT75265 LOCKTEV75265	75 x 265	LBS HBSPEVO KKF	24 + 24 - $\varnothing 7 \times 80$ 24 + 24 - $\varnothing 6 \times 80$	120 x 80	4,5	80 x 280 80 x 270	34,7 23,7	120 x 240	9,0
LOCKT100265 LOCKTEV100265	100 x 265	LBS HBSPEVO KKF	32 + 32 - $\varnothing 7 \times 80$ 32 + 32 - $\varnothing 6 \times 80$	140 x 80	4,5	80 x 280 80 x 270	43,1 33,0	140 x 240	9,0
LOCKT125265 LOCKTEV125265	125 x 265	LBS HBSPEVO KKF	40 + 40 - $\varnothing 7 \times 80$ 40 + 40 - $\varnothing 6 \times 80$	160 x 80	4,5	80 x 280 80 x 270	43,1 42,8	160 x 240	9,0
LOCKT75290 LOCKTEV75290	75 x 290	LBS HBSPEVO KKF	27 + 27 - $\varnothing 7 \times 80$ 27 + 27 - $\varnothing 6 \times 80$	120 x 80	4,9	80 x 305 80 x 295	40,5 27,7	120 x 240	9,7
LOCKT100290 LOCKTEV100290	100 x 290	LBS HBSPEVO KKF	36 + 36 - $\varnothing 7 \times 80$ 36 + 36 - $\varnothing 6 \times 80$	140 x 80	4,9	80 x 305 80 x 295	46,7 38,1	140 x 240	9,7
LOCKT125290 LOCKTEV125290	125 x 290	LBS HBSPEVO KKF	45 + 45 - $\varnothing 7 \times 80$ 45 + 45 - $\varnothing 6 \times 80$	160 x 80	4,9	80 x 305 80 x 295	46,7 46,7	160 x 240	9,7

NOTES:

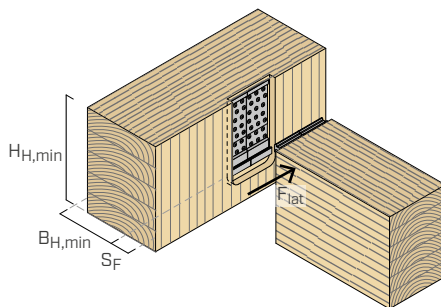
⁽¹⁾ The screws must be installed in the column with pre-drilled holes.

GENERAL PRINCIPLES:

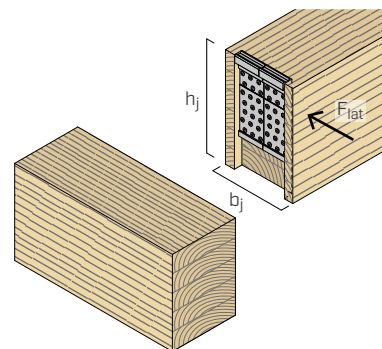
- For the general principles of calculation, see page 18.



1. COLUMN REBATE



2. PRIMARY BEAM REBATE



3. SECONDARY BEAM REBATE

connector		fasteners		R_{lat} , k timber					
CODE	B x H [mm]	type	$n_H + n_J - \varnothing \times L$ [mm]	column rebate ⁽¹⁾ $B_{S,min} \times B_{H,min}$ [mm]	1 [kN]	primary beam rebate $B_{H,min} \times H_{H,min}$ [mm]	2 [kN]	secondary beam rebate $b_{J,min} \times h_{J,min}$ [mm]	3 [kN]
2 x LOCKT50135 2 x LOCKTEVO50135	100 x 135 ⁽²⁾	LBS HBSPEVO KKF	12 + 12 - $\varnothing 7 \times 80$ 12 + 12 - $\varnothing 6 \times 80$	140 x 80	2,3	80 x 155 80 x 145	13,9 9,4	140 x 140	4,6
2 x LOCKT50175 2 x LOCKTEVO50175	100 x 175 ⁽²⁾	LBS HBSPEVO KKF	16 + 16 - $\varnothing 7 \times 80$ 16 + 16 - $\varnothing 6 \times 80$	140 x 80	2,9	80 x 190 80 x 180	20,8 14,1	140 x 175	5,9
1 x LOCKT75175 + 1 x LOCKT50175 1 x LOCKTEVO75175 + 1 x LOCKTEVO50175	125 x 175 ⁽²⁾	LBS HBSPEVO KKF	20 + 20 - $\varnothing 7 \times 80$ 20 + 20 - $\varnothing 6 \times 80$	160 x 80	2,9	80 x 190 80 x 180	27,6 18,9	160 x 175	5,9
2 x LOCKT75215 2 x LOCKTEVO75215	150 x 215 ⁽²⁾	LBS HBSPEVO KKF	36 + 36 - $\varnothing 7 \times 80$ 36 + 36 - $\varnothing 6 \times 80$	200 x 80	3,5	80 x 230 80 x 220	33,9 33,9	200 x 215	7,1
1 x LOCKT100215 + 1 x LOCKT75215 1 x LOCKTEV100215 + 1 x LOCKTEVO75215	175 x 215 ⁽²⁾	LBS HBSPEVO KKF	42 + 42 - $\varnothing 7 \times 80$ 42 + 42 - $\varnothing 6 \times 80$	220 x 80	3,5	80 x 230 80 x 220	33,9 33,9	220 x 215	7,1

NOTES:

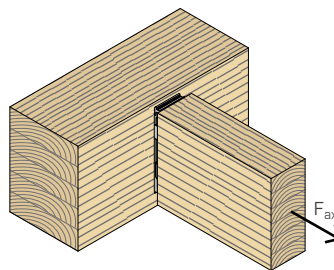
⁽¹⁾ The screws must be installed in the column with pre-drilled holes.

⁽²⁾ Measurement obtained by coupling two connectors with the same height H.

GENERAL PRINCIPLES:

- For the general principles of calculation, see page 18.

STRUCTURAL VALUES | TIMBER-TO-TIMBER JOINT | F_{ax}



connector		fasteners		TIMBER	ALUMINIUM
CODE	B x H [mm]	type	n _H + n _j - Ø x L [mm]	R _{ax,k timber} [kN]	R _{ax,k alu} [kN]
LOCKT50135 LOCKTEVO50135	50 x 135	LBS HBSPEVO KKF	6 + 6 - Ø7 x 80 6 + 6 - Ø6 x 80	5,9 3,5	5,4
LOCKT50175 LOCKTEVO50175	50 x 175	LBS HBSPEVO KKF	8 + 8 - Ø7 x 80 8 + 8 - Ø6 x 80	6,7 4,0	5,4
LOCKT75175 LOCKTEVO75175	75 x 175	LBS HBSPEVO KKF	12 + 12 - Ø7 x 80 12 + 12 - Ø6 x 80	10,1 6,0	8,1
LOCKT75215 LOCKTEVO75215	75 x 215	LBS HBSPEVO KKF	18 + 18 - Ø7 x 80 18 + 18 - Ø6 x 80	9,9 5,9	6,9
LOCKT100215 LOCKTEV100215	100 x 215	LBS HBSPEVO KKF	24 + 24 - Ø7 x 80 24 + 24 - Ø6 x 80	13,2 7,8	9,2
LOCKT75240 LOCKTEV75240	75 x 240	LBS HBSPEVO KKF	21 + 21 - Ø7 x 80 21 + 21 - Ø6 x 80	10,0 6,0	8,4
LOCKT100240 LOCKTEV100240	100 x 240	LBS HBSPEVO KKF	28 + 28 - Ø7 x 80 28 + 28 - Ø6 x 80	13,4 8,0	11,2
LOCKT125240 LOCKTEV125240	125 x 240	LBS HBSPEVO KKF	35 + 35 - Ø7 x 80 35 + 35 - Ø6 x 80	16,7 10,0	14,0
LOCKT75265 LOCKTEV75265	75 x 265	LBS HBSPEVO KKF	24 + 24 - Ø7 x 80 24 + 24 - Ø6 x 80	10,2 6,1	8,4
LOCKT100265 LOCKTEV100265	100 x 265	LBS HBSPEVO KKF	32 + 32 - Ø7 x 80 32 + 32 - Ø6 x 80	13,6 8,1	11,2
LOCKT125265 LOCKTEV125265	125 x 265	LBS HBSPEVO KKF	40 + 40 - Ø7 x 80 40 + 40 - Ø6 x 80	17,0 10,1	14,0
LOCKT75290 LOCKTEV75290	75 x 290	LBS HBSPEVO KKF	27 + 27 - Ø7 x 80 27 + 27 - Ø6 x 80	10,4 6,2	8,4
LOCKT100290 LOCKTEV100290	100 x 290	LBS HBSPEVO KKF	36 + 36 - Ø7 x 80 36 + 36 - Ø6 x 80	13,9 8,3	11,2
LOCKT125290 LOCKTEV125290	125 x 290	LBS HBSPEVO KKF	45 + 45 - Ø7 x 80 45 + 45 - Ø6 x 80	17,4 10,3	14,0
2 x LOCKT50135 2 x LOCKTEVO50135	100 x 135 ⁽¹⁾	LBS HBSPEVO KKF	12 + 12 - Ø7 x 80 12 + 12 - Ø6 x 80	11,7 7,0	10,8
2 x LOCKT50175 2 x LOCKTEVO50175	100 x 175 ⁽¹⁾	LBS HBSPEVO KKF	16 + 16 - Ø7 x 80 16 + 16 - Ø6 x 80	13,4 8,0	10,8
1 x LOCKT75175 + 1 x LOCKT50175	125 x 175 ⁽¹⁾	LBS	20 + 20 - Ø7 x 80	16,7	13,5
1 x LOCKTEVO75175 + 1 x LOCKTEVO50175		HBSPEVO KKF	20 + 20 - Ø6 x 80	10,0	
2 x LOCKT75215 2 x LOCKTEVO75215	150 x 215 ⁽¹⁾	LBS HBSPEVO KKF	36 + 36 - Ø7 x 80 36 + 36 - Ø6 x 80	19,8 11,8	13,8
1 x LOCKT100215 + 1 x LOCKT75215	175 x 215 ⁽¹⁾	LBS	42 + 42 - Ø7 x 80	23,0	16,1
1 x LOCKTEV100215 + 1 x LOCKTEVO75215		HBSPEVO KKF	42 + 42 - Ø6 x 80	13,7	

NOTES:

⁽¹⁾ Measurement obtained by coupling two connectors with the same height H.

GENERAL PRINCIPLES:

- For the general principles of calculation, see page 18.

GENERAL PRINCIPLES:

- Dimensioning and verification of the timber elements must be carried out separately. In particular, for loads perpendicular to the beam axis, it is recommended to perform a splitting check in both wooden elements.
- If coupled connectors are used, special care must be taken in alignment during installation to avoid different stresses in the two connectors.
- The connector must always be fully fastened using all the holes.
- Fastening with partial nailing is not allowed. Screws with the same length must be used for each connector half.
- The pre-drill is not required for screws on primary or secondary beam, with characteristic density $\rho_k \leq 420 \text{ kg/m}^3$. The pre-drill is mandatory on primary or secondary beam with characteristic density $\rho_k > 420 \text{ kg/m}^3$. For screws on column, pre-drilling is always mandatory.
- Static values were calculated assuming a constant thickness of the metal element, including the thickness of the LOCK STOP.
- In case of combined loading the following verification shall be satisfied:

$$\left(\frac{F_{ax,d}}{R_{ax,d}}\right)^2 + \left(\frac{F_{v,d}}{R_{v,d}}\right)^2 + \left(\frac{F_{up,d}}{R_{up,d}}\right)^2 + \left(\frac{F_{lat,d}}{R_{lat,d}}\right)^2 \leq 1$$

$F_{v,d}$ and $F_{up,d}$ are forces acting in opposite directions. Therefore only one of the forces $F_{v,d}$ and $F_{up,d}$ can act in combination with the forces $F_{ax,d}$ or $F_{lat,d}$.

STRUCTURAL VALUES | F_v | F_{up} | F_{ax}

- GL24h (F_v , F_{up} and F_{ax}): values calculated according to ETA-19/0831, ETA-11/0030 and EN 1995-1-1 for screws without pre-drilling hole. The strength value can be accepted as valid, for higher safety standards, even in the presence of pre-drill. $\rho_k = 385 \text{ kg/m}^3$ has been taken in consideration in the calculation.
- C50 (F_v): values calculated according to ETA-19/0831, ETA-11/0030 and EN 1995-1-1 for screws with pre-drilling hole. $\rho_k = 430 \text{ kg/m}^3$ has been taken in consideration in the calculation.
- LVL (F_v): values calculated according to ETA-19/0831, ETA-11/0030 and EN 1995-1-1 for screws with pre-drilling hole. $\rho_k = 480 \text{ kg/m}^3$ has been taken in consideration in the calculation.
- Design values can be obtained from characteristic values as follows:

$$R_{v,d} = \min \begin{cases} R_{v,d \text{ timber}} = \frac{R_{v,k \text{ timber}} \cdot k_{mod}}{\gamma_M} \\ R_{v,d \text{ alu}} = \frac{R_{v,k \text{ alu}}}{\gamma_{M2}} \end{cases}$$

where:

- γ_M is the partial safety coefficient of timber.
- γ_{M2} is the partial safety coefficient of the aluminum material subject to tensile stress, to be taken according to the current standard used for calculation. If there are no other provisions, it is suggested to use the value provided by EN 1999-1-1, equal to $\gamma_{M2} = 1,25$.
- For configurations for which only the timber-side strength is reported, the aluminium-side overstrength can be assumed.
- The F_{up} strength with inclined screw was calculated considering the effective number for axially loaded screws according to ETA-11/0030.

STRUCTURAL VALUES | F_{lat}

- Values calculated according to ETA-19/0831, ETA-11/0030 and EN 1995-1-1 for screws without pre-drilling hole and GL24h timber elements with a density of $\rho_k = 385 \text{ kg/m}^3$.
- Special care must be taken in the execution of cutting the rebate in the main element or secondary beam to limit the lateral sliding of the connection.
- The F_{lat} strength with inclined screw was calculated considering the effective number of screws arranged parallel to the fibre according to EN 1995-1-1.
- The configurations for F_{lat} strength (column rebate, primary beam rebate, secondary beam rebate, LOCK STOP and inclined screw) have different stiffness levels. Therefore, combining two or more configurations in order to increase the strength is not allowed.
- Design values can be obtained from characteristic values as follows:

Housing in the column, primary beam or secondary beam and inclined screw

$$R_{lat,d} = \frac{R_{lat,k \text{ timber}} \cdot k_{mod}}{\gamma_M}$$

LOCK STOP

$$R_d = \min \begin{cases} R_{lat,d \text{ timber}} = \frac{R_{lat,k \text{ timber}} \cdot k_{mod}}{\gamma_M} \\ R_{lat,d \text{ steel}} = \frac{R_{lat,k \text{ steel}}}{\gamma_{steel}} \end{cases}$$

where:

- γ_M is the partial safety coefficient of timber
- γ_{steel} is the partial safety coefficient of steel

CONNECTION STIFFNESS | F_v

- Connection stiffness can be calculated according to ETA-19/0831, with the following equation:

$$K_{v,ser} = \frac{n \cdot \rho_m^{1,5} \cdot d^{0,8}}{30} \text{ N/mm}$$

where:

- d is the diameter of the screw thread in the secondary beam, in mm;
- ρ_m is the average density of the secondary beam, in kg/m^3 ;
- n is the number of screws in the secondary beam.