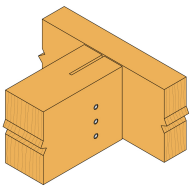
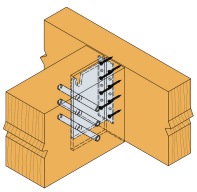
Technical Sheet

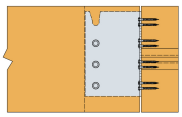
BTN
Concealed joist hanger BTN

The beam hanger are used as concealed connections of secondary beams on main beams or on posts.

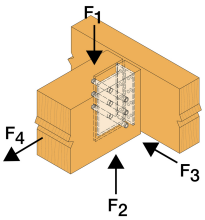












Features

Material

Steel quality:
S 250 GD + Z 275 according to DIN EN 10346

Corrosion protection:
275 g / m galvanized on both sides 20mm

Benefits

- Connections with inclinations up to 45 ° can be executed.
- The mounting slot allows a safe and convenient hanging of the secondary beam.
- With this type of mounting, additional supports are no longer required.
- Fire protection according to DIN 4102.

Applications

Applicatons

Supporting member:
Solid wood, engineered wood
Supported member:
Solid wood, engineered wood

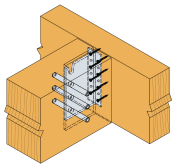
When to Use

• For connecting secondary beams of wood or wooden materials to the main support structure of wood / wood materials.

Technical Sheet

BTN
Concealed joist hanger BTN

Technical Data





Product Dimensions

Reference	Connector Dimensions												
	Other				Timber size[mm]		Product Dimensions[mm]					Header holes[mm]	Joist holes[mm]
	Tun / DB nr.	NOB nr.	Qty per Box	Weight[kg]	Width Min[mm]	Height[mm] Min[mm]	A[mm]	B[mm]	C[mm]	t1[mm]	t2[mm]	Round Ø5	Round Ø13[mm]
BTN90	3399813	28997633	25.0	0.52	60	90	90	106	46	3	6	8	4 (Ø8.5)
BTN120	1480114	28997641	25.0	0.67	60	152	120	106	46	3	6	10	3
BTN160	1480115	28997658	20.0	0.9	60	192	160	106	46	3	6	14	4
BTN200	3399847	28998466	15.0	1.1	60	232	200	106	46	3	6	18	5
BTN240	1480116	28998474	15.0	1.3	60	272	240	106	46	3	6	22	6

Combined load:
\sum\frac{F_{i,d}} {R_{i,d}}\le1

Wood/wood fastening- Characteristic values in kn

Reference	Hanger capacity													
	Product Capacities[kN]													
	Number of Fasteners				Product characteristic capacities - Timber C24[kN]									
	Header		Joist		R1,k (2)						$R_{2,k}$			
	Qty	Type	Qty	Type	Dowels length[mm]						Dowels length[mm]			
					60	80	100	120	140	160	60	80	100	120	140	160
BTN90	8.0	CNA4.0x50	4.0	STD8	8.3	9.2	10.3	11	11	11	6.2	6.9	7.7	8.2	8.2	8.2
BTN120	10.0	CNA4.0x50	3.0	STD12	13.8	14.5	15.6	16.9	18.3	19.5	9.2	9.7	10.4	11.3	12.2	13
BTN160	14.0	CNA4.0x50	4.0	STD12	22	23.2	24.7	26.6	28.5	30.1	16.5	17.4	18.5	20	21.4	22.6
BTN200	18.0	CNA4.0x50	5.0	STD12	31.1	32.7	34.7	37	39.1	39.9	24.9	26.2	27.8	29.6	31.3	31.9
BTN240	22.0	CNA4.0x50	6.0	STD12	40.5	42.6	45	47.5	48.8	48.8	33.8	35.5	37.5	39.6	40.7	40.7

The joist shall have as minimum a width = length of steel dowel.
For beams with a slope β the capacities shall be multiply with the factor.

β	0°	15°	30°	45°
factor	1.0	0.95	0.9	0.85

$R_{2,k}$ capacities are calculated as $R_{2,k} = R_{1,k}$ x (nb of dowels - 1) / (nb of dowels).
The top dowel is not considered for the uplift capacities as it is placed in an open hole.
More detailed information are given in the ETA.

Technical Sheet

BTN
Concealed joist hanger BTN

Product characteristic capacities - Timber beam to timber beam - $R_{3,k}$ and $R_{4,k}$

Reference	Hanger capacity											
	Product Capacities[kN]											
	Number of Fasteners				Product characteristic capacities - Timber C24[kN]							
	Header		Joist		$R_{4,k}$[kN]	$R_{3,k}$						
	Qty	Type	Qty	Type		Dowels length[mm]						
						60	80	100	120	140	160	
BTN90	8.0	CNA4.0x50	4.0	STD8	3.9	1.5	1.9	2.3	2.7	3.1	3.6	
BTN120	10.0	CNA4.0x50	3.0	STD12	4.9	2.2	2.9	3.5	4.1	4.6	5.2	
BTN160	14.0	CNA4.0x50	4.0	STD12	6.9	2.9	3.6	4.4	5.2	6	6.6	
BTN200	18.0	CNA4.0x50	5.0	STD12	8.8	3.5	4.4	5.4	6.4	7.2	8.1	
BTN240	22.0	CNA4.0x50	6.0	STD12	10.8	4.2	5.3	6.4	7.4	8.6	9.5	

The joist shall have as minimum a width = length of steel dowel.
The capacities R_4 are for all length of steel dowel.

Product characteristic capacities - Timber beam to timber post

Reference	Hanger capacity																Connector Dimensions
	Product characteristic capacities - Timber beam to timber post - partial nailing																Header dimensions[mm]
	Number of Fasteners				Product characteristic capacities - Timber C24[kN]												Post Width
	Header		Joist		$R_{1,k}$						$R_{2,k}$						Min[mm]
	Qty	Type	Qty	Type	Dowels length[mm]						Dowels length[mm]						
					60	80	100	120	140	160	60	80	100	120	140	160	
BTN90	4.0	CNA4.0x50	4.0	STD8	7.1	7.9	8.6	8.9	8.9	8.9	5.3	5.9	6.4	6.7	6.7	6.7	66
BTN120	6.0	CNA4.0x50	3.0	STD12	12.4	13	13.3	13.3	13.3	13.3	8.3	8.7	8.9	8.9	8.9	8.9	66
BTN160	8.0	CNA4.0x50	4.0	STD12	16.8	17.7	17.7	17.7	17.7	17.7	12.6	13.3	13.3	13.3	13.3	13.3	66
BTN200	10.0	CNA4.0x50	5.0	STD12	21.1	22.2	22.2	22.2	22.2	22.2	16.9	17.8	17.8	17.8	17.8	17.8	66
BTN240	12.0	CNA4.0x50	6.0	STD12	25.3	26.6	26.6	26.6	26.6	26.6	21.1	22.2	22.2	22.2	22.2	22.2	66

The joist shall have as minimum a width = length of steel dowel.
For beams with a slope β the capacities shall be multiply with the factor.

β	0°	15°	30°	45°
factor	1.0	0.95	0.9	0.85

The capacities from this table are also valid for partial nailing beam to beam.
$R_{2,k}$ capacities are calculated as $R_{2,k} = R_{1,k}$ x (nb of dowels - 1) / (nb of dowels).
The top dowel is not considered for the uplift capacities as it is placed in an open hole.
More detailed information are given in the ETA.

Technical Sheet

BTN
Concealed joist hanger BTN

Product characteristic capacities - Timber beam to timber post - $R_{3.k}$ and $R_{4.k}$

Reference	Hanger capacity											Connector Dimensions
	Product characteristic capacities - Timber beam to timber post - partial nailing											Header dimensions[mm]
	Number of Fasteners				Product characteristic capacities - Timber C24[kN]							Post Width
	Header		Joist			$R_{3,k}$						
	Qty	Type	Qty	Type	$R_{4.k}$[kN]	Dowels length[mm]						Min[mm]
						60	80	100	120	140	160	
BTN90	4.0	CNA4.0x50	4.0	STD8	3.9	1.2	1.6	2	2.4	2.4	2.4	66
BTN120	6.0	CNA4.0x50	3.0	STD12	5.9	1.8	2.4	3	3.6	4.1	4.1	66
BTN160	8.0	CNA4.0x50	4.0	STD12	7.8	2.3	3	3.6	3.9	3.9	3.9	66
BTN200	10.0	CNA4.0x50	5.0	STD12	9.8	2.9	3.8	4.6	5.5	6.2	6.3	66
BTN240	12.0	CNA4.0x50	6.0	STD12	11.8	3.4	4.2	5.2	6	6.1	6.1	66

Bæreevnerne $R_{4.k}$ gælder for alle længder dorne.

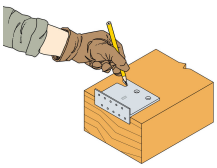
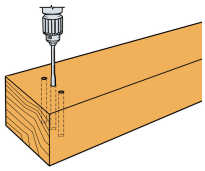
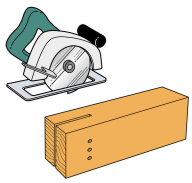
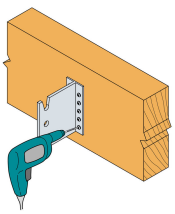
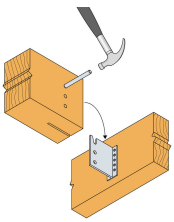
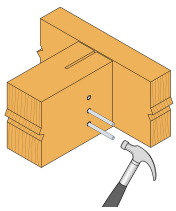
Installation

Fasteners

- **CNA4,0 × L Nails**
- **Or CSA5,0 x L screws and plugs Ø 8mm and Ø12mm**

Other

d

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