Technical data sheet

BTN
Concealed joist hanger BTN

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

Features

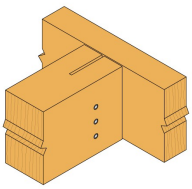
Material

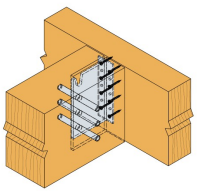
Steel quality:
S 250 GD + Z 275 according to DIN EN 10346

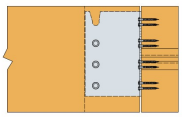
Corrosion protection:
275 g / m galvanized on both sides 20mm

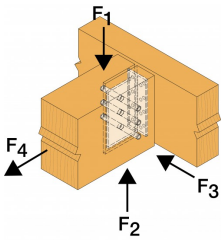
Benefits

- 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.

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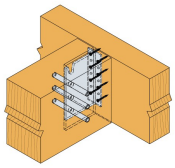
Technical Data

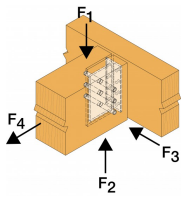


Product Dimensions

References	Tun / DB nr.	NOB nr.	Joist Size [mm]		Product Dimensions [mm]					Header holes	Joist holes	Box Quantity	Weight [kg]
			Width	Height	A	B	C	t_1	t_2	Ø5	Ø13		
			Min	Min β=0									
BTN90	3399813	28997633	60	90	90	106	46	3	6	8	4 (Ø8.5)	25	0.52
BTN120	1480114	28997641	60	152	120	106	46	3	6	10	3	25	0.67
BTN160	1480115	28997658	60	192	160	106	46	3	6	14	4	20	0.9
BTN200	3399847	28998466	60	232	200	106	46	3	6	18	5	15	1.1
BTN240	1480116	28998474	60	272	240	106	46	3	6	22	6	15	1.3

Combined load:

$$\sum \frac{F_{i,d}}{R_{i,d}} \leq 1$$



Wood/wood fastening- Characteristic values in kn

References	Product Capacities													
	Number of Fasteners				Product characteristic capacities - Timber C24 [kN]									
	Header		Joist		$R_{1,k}$						$R_{2,k}$			
	Qty	Type	Qty	Type	Dowels length [mm]						Dowels length [mm]			
					60	80	100	120	140	160	60	80	100	120	140	160
BTN90	8	CNA4.0x50	4	STD8	8.3	9.2	10.3	11	11	11	6.2	6.9	7.7	8.2	8.2	8.2
BTN120	10	CNA4.0x50	3	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	CNA4.0x50	4	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	CNA4.0x50	5	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	CNA4.0x50	6	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 data sheet

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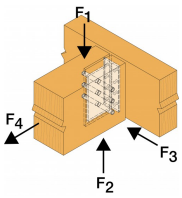
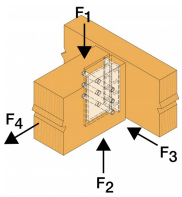
Product characteristic capacities - Timber beam to timber beam - $R_{3,k}$ and $R_{4,k}$



References	Product Capacities											
	Number of Fasteners				Product characteristic capacities - Timber C24 [kN]							
	Header		Joist		$R_{3,k}$						$R_{4,k}$	
	Qty	Type	Qty	Type	Dowels length [mm]							
					60	80	100	120	140	160		
BTN90	8	CNA4.0x50	4	STD8	1.5	1.9	2.3	2.7	3.1	3.6	3.9	
BTN120	10	CNA4.0x50	3	STD12	2.2	2.9	3.5	4.1	4.6	5.2	4.9	
BTN160	14	CNA4.0x50	4	STD12	2.9	3.6	4.4	5.2	6	6.6	6.9	
BTN200	18	CNA4.0x50	5	STD12	3.5	4.4	5.4	6.4	7.2	8.1	8.8	
BTN240	22	CNA4.0x50	6	STD12	4.2	5.3	6.4	7.4	8.6	9.5	10.8	

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



References	Product characteristic capacities - Timber beam to timber post - partial nailing													
	Number of Fasteners				Post width	Product characteristic capacities - Timber C24 [kN]								
	Header		Joist			$R_{1,k}$						$R_{2,k}$		
	Qty	Type	Qty	Type	Min	Dowels length [mm]						Dowels length [mm]		
						60	80	100	120	140	160	60	80	100	120	140	160
BTN90	4	CNA4.0x50	4	STD8	66	7.1	7.9	8.6	8.9	8.9	8.9	5.3	5.9	6.4	6.7	6.7	6.7
BTN120	6	CNA4.0x50	3	STD12	66	12.4	13	13.3	13.3	13.3	13.3	8.3	8.7	8.9	8.9	8.9	8.9
BTN160	8	CNA4.0x50	4	STD12	66	16.8	17.7	17.7	17.7	17.7	17.7	12.6	13.3	13.3	13.3	13.3	13.3
BTN200	10	CNA4.0x50	5	STD12	66	21.1	22.2	22.2	22.2	22.2	22.2	16.9	17.8	17.8	17.8	17.8	17.8
BTN240	12	CNA4.0x50	6	STD12	66	25.3	26.6	26.6	26.6	26.6	26.6	21.1	22.2	22.2	22.2	22.2	22.2

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.

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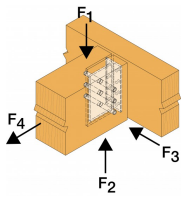
Product characteristic capacities - Timber beam to timber post - $R_{3,k}$ and $R_{4,k}$



References	Product characteristic capacities - Timber beam to timber post - partial nailing												
	Number of Fasteners				Post width	Product characteristic capacities - Timber C24 [kN]							
	Header		Joist			$R_{3,k}$						$R_{4,k}$
	Qty	Type	Qty	Type	Min	Dowels length [mm]						
						60	80	100	120	140	160	
BTN90	4	CNA4.0x50	4	STD8	66	1.2	1.6	2	2.4	2.4	2.4	3.9
BTN120	6	CNA4.0x50	3	STD12	66	1.8	2.4	3	3.6	4.1	4.1	5.9
BTN160	8	CNA4.0x50	4	STD12	66	2.3	3	3.6	3.9	3.9	3.9	7.8
BTN200	10	CNA4.0x50	5	STD12	66	2.9	3.8	4.6	5.5	6.2	6.3	9.8
BTN240	12	CNA4.0x50	6	STD12	66	3.4	4.2	5.2	6	6.1	6.1	11.8

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**