

2

02

CONCEALED CONNECTORS



CONCEALED CONNECTORS

(Invisible connectors)

TOP UV CONCEALED CONNECTORS

- Invisible dovetail connection
 - Safety catch
 - Optimised hole pattern
 - For loading in 4 load directions
 - Quick assembly of secondary beams
 - Conical dovetail guide pulls together
 - Milling radii
- up to 72 kN**



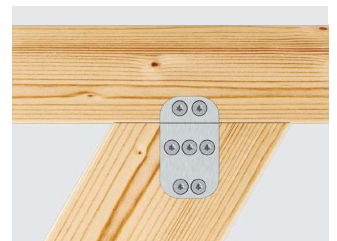
Basics of statics **from page 68** / Products & statics **from page 66**

CONCEALED CONNECTORS TOP OV

„Simple and ingenious“

More flexibility in connection technology

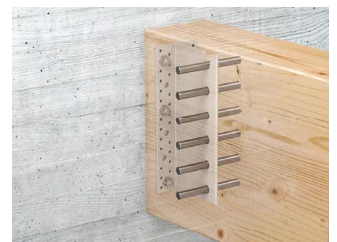
- **In the factory:** Simply mill out the connection form or attach and mount on the secondary beam with a maximum of 4 tensile and 2 pressure screws.
 - **On the building site:** Insert the secondary beam in the recess of the main beam or only place it down. Turn 2 pressure screws into the main beam/support.
- up to 27 kN**



Basics of statics **from page 84** / Products & statics **from page 82**

BEAM HANGER

- Connection to timber, concrete and masonry
 - Type alu combi without holes for rod dowels. By drilling through the secondary beam and connector, you receive a connection with a perfect fit.
 - Type alu SD 12 and SD 16 with assembly fix tab.
- up to 258 kN**



Basics of statics **from page 90** / Products & statics **from page 88**

INTEGRAL CONNECTORS

- GH integral connectors type M, 2- and 4-row with assembly fix tab for concealed connections with connections between the main/secondary beam and connections to the columns. For both versions, the secondary beam with pre-fitted rod dowel is suspended in the assembly fix tab.
 - 2-row integral connectors with embossed reinforcement studs. This gives you the necessary accuracy of fit and the same slot width as with a 4-row integral connector.
 - 4-row integral connections with even higher load-bearing capacities!
- up to 58 kN**



Basics of statics **from page 90** / Products & statics **from page 88**

CONCEALED CONNECTORS

2 ASSORTMENT

					Basics Statics & Diagrams from page	Products & Statics from page
TOP UV CONNECTORS TIMBER/TIMBER						65 66
TOP UVB CONNECTORS TIMBER/CONCRETE						65 / 68 78
TOP OV CONNECTORS						65 / 84 82
BEAM HANGER TYPE ALU COMBI					 	65 / 90 88
BEAM HANGER TYPE ALU COMBI SD 12					 	65 / 90 88
BEAM HANGER TYPE ALU COMBI SD 16					 	65 / 90 88
INTEGRAL CONNECTOR 2-ROW TYPE M						65 / 90 88
INTEGRAL CONNECTOR 4-ROW TYPE M						65 / 90 88
INTEGRAL CONNECTOR ANGLED CONNECTION						102



CE symbol



Steel with indication of the steel quality and galvanisation



Aluminium



Timber/timber connection



Timber/concrete-connection

**Usage class 1**

Moisture content in the building materials that corresponds to a temperature of 20° C and a relative humidity of the ambient air that only exceeds a value of 65% for a few weeks per year, e.g. in the case of buildings that are closed on all sides and heated. Comment: In UC 1, the average moisture content of most softwoods does not exceed 12 %.

**Usage class 2**

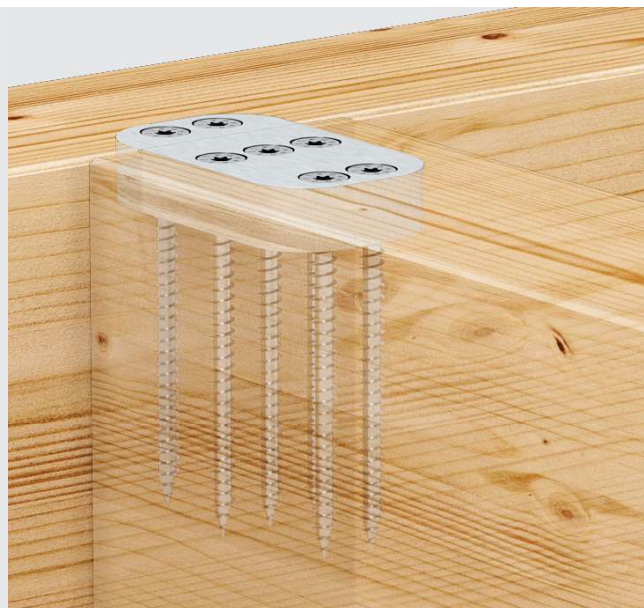
Moisture content in the building materials that corresponds to a temperature of 20° C and a relative humidity of the ambient air that only exceeds a value of 85% for a few weeks per year, e.g. in the case of open buildings covered by a roof. Comment: In UC 2, the average moisture content of most softwoods does not exceed 20 %.

**Usage class 3**

Includes climatic conditions that lead to higher moisture contents than in UC 2, e.g. structures that are exposed to the weather without protection. Eurocode 5 / DIN EN 1995-1-1 section 2.3.1.3

TOP OV CONNECTORS

2 “SIMPLE AND INGENIOUS”



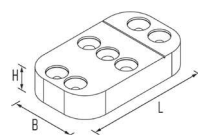
ADVANTAGES

- Cost savings due to reduction of working time
- No templates required
- Does not weaken the timber cross-section
- For narrow cross-sections (from 60 mm)
- No one-sided load on the main beam
- Connections on both sides possible due to the low contact surface
- For complete ceiling elements in timber framework construction

TWO STEPS TO SUCCESS

- In the factory:
Mill in TOP OV connectors or only position. Mount the TOP OV connectors with maximum 4 tensile and 2 pressure screws on the secondary beam
- On the building site:
Place the secondary beam in or on the main beam and turn in 2 pressure screws



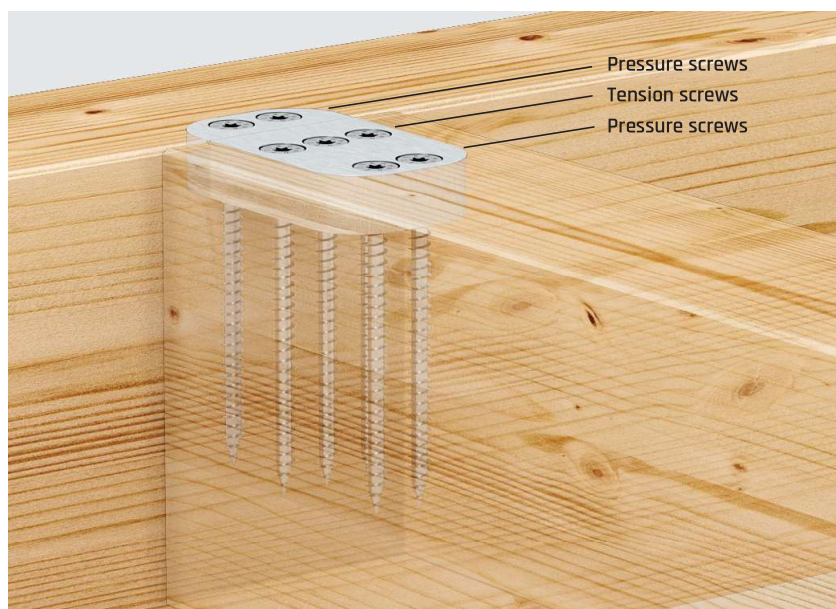


TOP OV CONNECTORS

TIMBER/TIMBER 2

Art. No.	Type	Dimensions [mm]					nH	nN	EAN	Weight kg	Pallet	PU
		W(B)	x	L	x	H						
110040	OV 40	40	x	104	x	20	1	3	017692	0.200	480	10
110060	OV 60	60	x	104	x	20	2	5	017708	0.304	480	10
110100	OV 100	100	x	104	x	20	2	6	017722	0.537	480	10

Number of screws required: nH = maximum number of connecting elements in the main beam
nN = maximum number of connecting elements in the secondary beam



TOP-OV FULL THREAD SCREWS

Art. No.	Dimensions [mm]				TX	EAN	Weight kg	Pallet	PU
	Ø	x	L						
110120	8,0	x	120		TX40	017739	3.000	14500	50
110160	8,0	x	160		TX40	017753	3.520	11000	50
110200	8,0	x	200		TX40	017777	4.370	11000	50

TOP OV CONNECTORS

2 TECHNICAL FEATURES

Geometry

W(B)	Width (mm)
H	Height (mm)
T(S)	Material thickness (mm)

Tables

n_{HT}	Number of holes in main beam
n_{NT}	Number of holes in secondary beam
n_v	Number of connecting elements for full screw fitting
HT	Main beam
NT	Secondary beam
H_{HT}	Minimum height of main beam
B_{HT}	Minimum width of main beam
H_{NT}	Minimum height of secondary beam
B_{NT}	Minimum width of secondary beam

Timber connecting element

$\emptyset$ [mm]	Diameter of connecting element
L [mm]	Length of connecting element
	Grain direction of component

Force directions

$F_{Z,G,Rk}$ ↓	Pressure load directly downward (main load)
$F_{Z,t,Rk}$ ↑	Upwards directed, lifting load



User video
for our TOP OV connectors



Aluminium



Usage class 1

Moisture content in the building materials that corresponds to a temperature of 20° C and a relative humidity of the ambient air that only exceeds a value of 65% for a few weeks per year, e.g. in the case of buildings that are closed on all sides and heated. Comment: In UC 1, the average moisture content of most softwoods does not exceed 12 %.



Usage class 2

Moisture content in the building materials that corresponds to a temperature of 20° C and a relative humidity of the ambient air that only exceeds a value of 85% for a few weeks per year, e.g. in the case of open buildings covered by a roof. Comment: In UC 2, the average moisture content of most softwoods does not exceed 20 %.



Usage class 3

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TOP OV CONNECTORS

APPLICATIONS 2

Application:

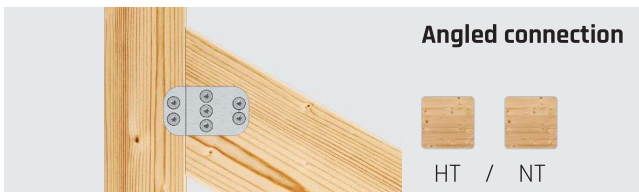
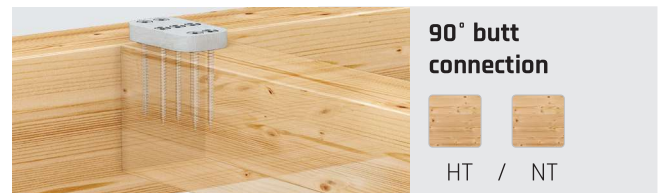
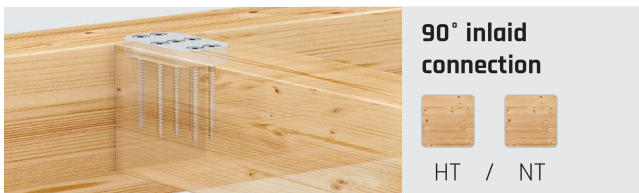
Timber-timber/steel connection

Materials:



Material thickness:

20 mm



For use in usage classes



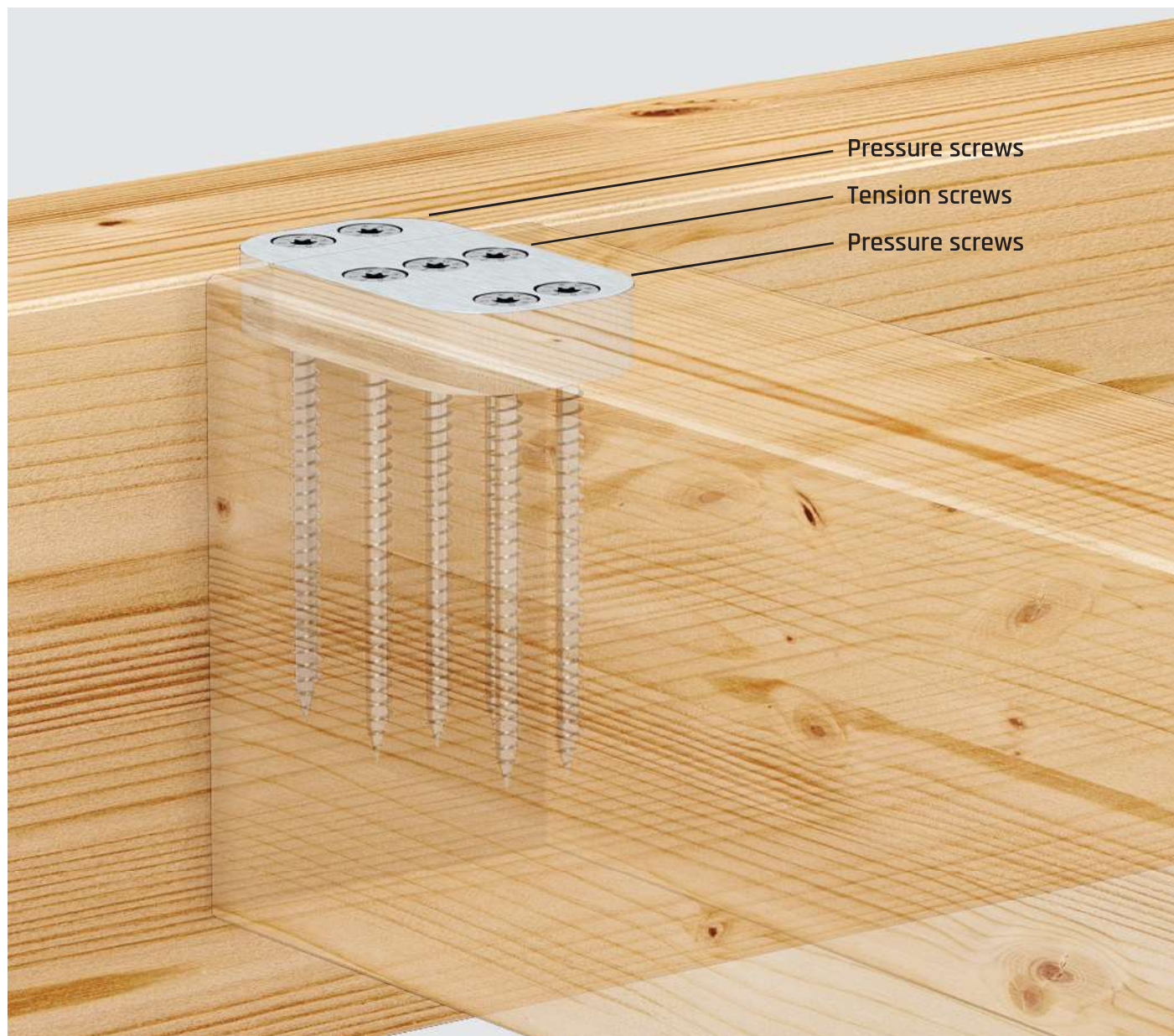
Connecting element:

GH OV full thread screws Ø 8.0 x 120 / 140 / 160 / 200 / 220 mm



TOP OV CONNECTORS

2 “SIMPLE AND INGENIOUS”



Function of pressure screws

When turning in the OV full thread screws, a thread cuts into the OV connector. This creates a flush-fitting connection between the OV connector and the OV screw.

Effect of pressure screws

Due to the flush-fit connection, load $F_{z,down}$ is transferred from the secondary beam via the OV screws into the main beam.