

# Magnus hook connector

Aluminium/timber connector for main/secondary beam joints



## Suitable for use in virtually all areas of timber-frame construction

The Magnus hook connector is used to create node joints in timber-frame construction. This joint is impressive above all because it can be completely prefabricated, which in turn minimises assembly times on the construction site. The connector consists of two different components, as well as wood construction screws and fixing screws. The two separate parts of Magnus are attached to the respective structural members using the wood construction screws and then slotted into one another smoothly without the need to apply force. The two components are braced against one another using fixing screws. This provides effective prevention against the joint being loosened inadvertently. With high verified load values, joints created by the Magnus can be statically loaded in five directions. Installation can be both visible (for shadow-groove connections) and hidden (milled in).

### Installation instructions

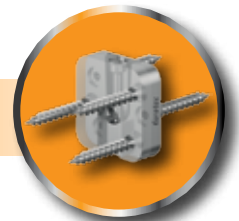
Hidden (milled-in) main/secondary beam joints

- 1** Adjust the end stop of the milling and assembly jig to the desired size of the Magnus hook connector, apply and screw on the milling and assembly jig, and create a routed slot with the corresponding groove-milling cutter.
- 2** The Magnus is then inserted into the routed slot and fastened in place using the supplied system screws. Following this, the milling and assembly jig is placed in the same position as before on the component that is to be connected, and the second part of the Magnus hook connector is screwed on. Pre-assembly is now complete, and the component being connected is hooked in place.
- 3** The fixing screws are then inserted into the Magnus. This pulls the Magnus hook connector together, if necessary, and ensures correct positioning of the node joint.

Installation can be both visible (for shadow-groove joints) and hidden (milled in). The assembly example shows hidden installation. In this type of installation, there is no need to mill out a slot, and the milling and assembly jig is used only as an assembly jig.

## Magnus XS

Aluminium



| Art. no. | Name                  | PU                   | Included in delivery   |
|----------|-----------------------|----------------------|--|
| 944874   | Magnus XS, 30 x 30 mm | 40 (= 20 connectors) | 120 x TX15 fully threaded screws <sup>1)</sup><br>20 x TX15 fixing screws <sup>2)</sup><br>1 x assembly instructions |

<sup>1)</sup> 4,0 x 30 mm, blue galvanised, <sup>2)</sup> 4,2 x 26 mm, blue galvanised

## Magnus L

Aluminium

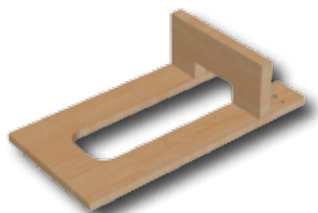


| Art. no. | Name                   | PU                 | Included in delivery   |
|----------|------------------------|--------------------|--|
| 944883   | Magnus L, 110 x 260 mm | 8 (= 4 connectors) | 68 x TX30 fully threaded screws <sup>1)</sup><br>8 x TX20 fixing screws <sup>2)</sup><br>1 x assembly instructions |
| 944884   | Magnus L, 110 x 300 mm | 8 (= 4 connectors) | 80 x TX30 fully threaded screws <sup>1)</sup><br>8 x TX20 fixing screws <sup>2)</sup><br>1 x assembly instructions |

<sup>1)</sup> 8,0 x 120 mm, blue galvanised, <sup>2)</sup> 4,8 x 60 mm, blue galvanised

## Milling and assembly jig

for Magnus hook connector



| Art. no. | Suitable for | PU |
|----------|--------------|----|
| 944867   | Magnus XS    | 1  |
| 944870   | Magnus L     | 1  |

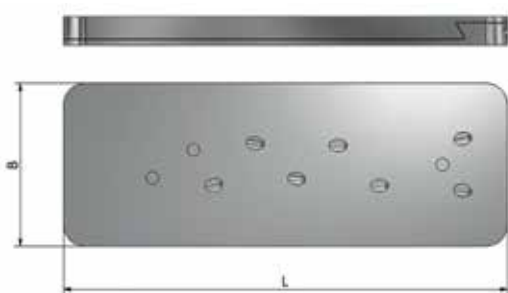
## Milling cutter

for Magnus hook connector



| Art. no. | Suitable for | PU |
|----------|--------------|----|
| 944936   | Magnus XS    | 1  |
| 29696    | Magnus L     | 1  |

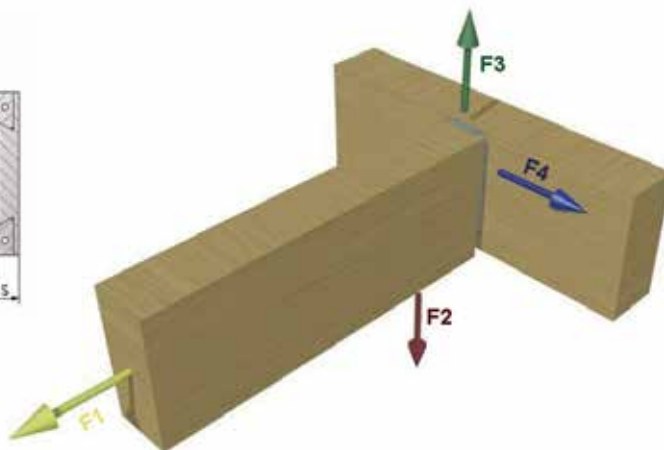
## Technical data



Fully threaded screw



Fixing screw



| Art. no. | Name      | Dimensions<br>W x L x T <sup>a)</sup><br>[mm] | No. of<br>fully threaded<br>screws<br>[pcs.] | No. of<br>fixing<br>screws<br>[pcs.] | Main beam             |                        | Secondary beam        |                        | Char. value of load-bearing capacity R <sub>k</sub> <sup>b)</sup> |                            |                            |                            |
|----------|-----------|---|--|--------------------------------------|-----------------------|------------------------|-----------------------|------------------------|---|----------------------------|----------------------------|----------------------------|
|          |           |   |  |                                      | Min.<br>width<br>[mm] | Min.<br>height<br>[mm] | Min.<br>width<br>[mm] | Min.<br>height<br>[mm] | F <sub>1, Rk</sub><br>[kN]  | F <sub>2, Rk</sub><br>[kN] | F <sub>3, Rk</sub><br>[kN] | F <sub>4, Rk</sub><br>[kN] |
| 944874   | Magnus XS | 30 x 30 x 9                                   | 6  | 1                                    | 40                    | 40                     | 40                    | 40                     | 1,12  | 1,57                       | 1,70                       | 1,19                       |
| 944883   | Magnus L  | 110 x 260 x 19                                | 17   | 2                                    | 120                   | 280                    | 120                   | 280                    | 13,93   | 45,13                      | 23,00                      | 17,98                      |
| 944884   | Magnus L  | 110 x 300 x 19                                | 20   | 2                                    | 120                   | 320                    | 120                   | 320                    | 13,93   | 54,15                      | 23,00                      | 20,56                      |

a) Width x length x thickness (assembly).

Calculation according to ETA-15/0761. Wood density  $\rho_k = 380 \text{ kg/m}^3$ . All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations. All values are calculated minimum values and are subject to typographical and printing errors.

b) The characteristic values of the load-bearing capacity R<sub>k</sub> should not be treated as equivalent to the max. possible load (the max. force).

Characteristic values of the load-bearing capacity R<sub>k</sub> should be reduced to dimensioning values R<sub>d</sub> with regard to the usage class and class of the load duration:  $R_d = R_k \cdot k_{mod} / \gamma_M$ . The dimensioning values of the load-bearing capacity R<sub>d</sub> should be contrasted with the dimensioning values of the loads ( $R_d \geq E_d$ ).

Example: Characteristic value for constant load (dead weight) G<sub>k</sub> = 2,00 kN and variable load (e.g. snow load) Q<sub>k</sub> = 3,00 kN.  $k_{mod} = 0,9$ .  $\gamma_M = 1,3$ .

→ Dimensioning value of the load  $E_d = 2,00 \cdot 1,35 + 3,00 \cdot 1,5 = 7,20 \text{ kN}$ . The load-bearing capacity of the joint is therefore considered to have been demonstrated if  $R_d \geq E_d$ .

→  $\min R_k = R_d \cdot \gamma_M / k_{mod}$  D.h., i.e. the characteristic minimum value of the load-bearing capacity is calculated based on:  $\min R_k = R_d \cdot \gamma_M / k_{mod} \rightarrow R_k = 7,20 \text{ kN} \cdot 1,3 / 0,9 = 10,40 \text{ kN}$

→ comparison with table values.

Please note: These are planning aids. Projects must only be calculated by authorised persons.