

## Technical data sheet\* - BT-Spannschloss® M12/M16/M20

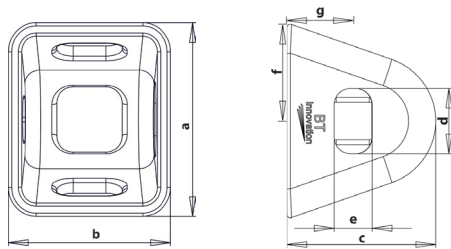
### Product description

The BT-Spannschloss® (turnbuckle) is part of an easy to use connection system – without additional materials and tools. The BT-Spannschloss® (turnbuckle) makes efficient and precise assemblies and durable connections for precast concrete elements possible.

### Product features

- ::: dry screw connection
- ::: no joint grouting, no special tools
- ::: can be loaded immediately, no curing times
- ::: assembly regardless of weather, even in low temperatures or precipitation
- ::: able to be disassembled – removal of temporarily installed structures
- ::: three-point connection possible

### Geometry



Sizes (mm)	a	b	c	d	e	f	g
M12	70	70	51,5	25	14	35	21,5
M16	90	90	65	30	18	45	30
M20	100	120	90	40	22	60	45

### Item and delivery type



Item No.	Description
4009086	BT-Spannschloss® M12 set, galvanised
4009084	BT-Spannschloss® M12 set, stainless steel 1.4462
4009074	BT-Spannschloss® M16 set, galvanised
4009083	BT-Spannschloss® M16 set, stainless steel 1.4462
4009072	BT-Spannschloss® M20 set, galvanised
4009085	BT-Spannschloss® M20 set, stainless steel 1.4462
4009123	BT-Spannschloss® M16 starter kit

### Loadability

Rated values for tensile load bearing capacity (limit tensile force)  $N_{R,d}$  and lateral load bearing capacity (limit lateral force)  $V_{R,d}$  are listed in the table below:

BT-Spannschloss®	Tensile force, in direction of connection to the connecting element centre line $N_{R,d}$ [kN]	Lateral force, perpendicular to the connecting element centre line $V_{R,d}$ [kN]
M12	33,7	9,4
M16	43,5	26,2
M20	52,5	24,8

In case of a combined strain (tensile forces  $N$  – lateral forces  $V$ ), a verification of interaction has to be carried out in accordance with National Technical Approval Z-30, 3-6.

### Material

The BT-Spannschloss® M12, M16 and M20 can be made of two different cast materials. Size and material derive from respective operating conditions and load parameters.

Mechanically highly resilient connections of the BT-Spannschloss® is ensured through an improved melting based on grade EN GJMB-550-4. A high tenacity at low temperatures is a feature of this material. Thus, it meets all requirements for tough connections of concrete elements under wide range of conditions.

BT-Spannschloss® is made of stainless steel corresponding with grade 1.4462 that ensures highest resilience in respect of mechanical loads and corrosion.

### Connection elements

Fastening elements are screws, threaded rods, nuts and washers.

Fastening elements with CE marking according DIN EN 15048-1:2007:07 or DIN EN 14399-1:2015-04:

- ::: Hexagonal head screws of property class 8.8 or 10.9 in accordance with DIN EN ISO 4017: 2001-03, DIN EN ISO 4014: 2001-03 or the standard series DIN EN 14399

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- ::: Nuts of property class 8 or 10.9 in accordance with DIN EN ISO 4032:2001-03 or the standard series DIN EN 14399
- ::: Round disks (large series) in accordance with DIN EN ISO 7093-1:2000-11

Corresponding stainless steel connecting elements are used in accordance with National Technical Approval Z-30.3-6 with a minimum strength class of 70.

### Corrosion-proofing

Corrosion-proofing specifications for the turnbuckles are met after their complete fixing in mortar by using cement mortar according to DIN 1045-2:2008-08, Section 5.3.8, or in accordance with the DAfStb [German Committee for Reinforced Concrete] Directive on Grouting Mortar with verification of exposure classes.

The cement mortar is used to be under observance of minimum concrete cover in accordance with DIN EN 1992-1-1:2011-01 in connection with the National Annex.

The Technical Building Regulations applies to corrosion-proofing of cast-iron turnbuckle and connection elements. The specifications of National Technical Approval Z-30.3-6 applies to the corrosion-proofing of stainless steel turnbuckles.

### Provision regarding execution

#### ::: General

Die Connection elements are only inserted through the long holes in turnbuckle surfaces and are arranged parallel to each other. Washers must be installed on the turnbuckle sides.

#### ::: Detailing

While using threaded rods as connection elements, the length is essential. The space beyond the nut of the threaded rods in the turnbuckle project must be a minimum of half the diameter of the threaded rod.

#### ::: Provisions regarding installation

The provided execution instructions regarding the assignment of individual components and assembly process have to be followed and abide thereby. Each component of a turnbuckle connection has to be

inspected for its appropriate condition before the installation. Damaged parts have to be excluded. In particular, neither the screw nor the screw threads are not allowed to show any deformation or corrosion damage.

### Labeling

Packaging of turnbuckles must be labelled by the manufacturer with the certificate of compliance in accordance with the countries regulations. In order to receive this mark, the requirements of a proper quality check under the terms of the DIBt has to be fulfilled. Additionally, each packaging has to contain information about the production plant, the designation of the construction product and the used material.

Issue 11/18

The information in this data sheet has been collected with care based on our experience and the state of the art in science and technology, but is not binding. We ask for your understanding that we limit our liability for the information given in this data sheet and accept no liability for intent, gross negligence or breach of instructions.