



BT-Spannschloss® - Connect precast concrete elements dry and fast

Call us:
+49 391 73 52 0

Write to us:
info@bt-innovation.de

www.bt-innovation.de



BT INNOVATION - FOR FASTER CONSTRUCTION

Products for structural and civil engineering

CONSTRUCTION SITES ARE COMPLEX. The opportunities are in the details. We have a precise understanding of the processes, including practical experience. We know what takes how long and when construction gets expensive. That's why we develop products that go a step further, tighten up processes, and make building faster.

Everything under one roof: research and development, design and sales – our multi-disciplinary teams are continuously in close communication with each other. Solutions that perfectly match the needs of customers are developed here cooperatively. Numerous patents protect our innovative ideas. The name BT innovation stands for quality products that are recognised around the world and are trusted and used by our many customers in over 70 countries. We attend national and international trade fairs and cooperate with trade partners.

Our expertise in the area of precast concrete elements is also value and frequently in demand. Our team is very experienced and globally active.

The service modules for analysis, planning, and implementation include all of the steps necessary to create sustainable competitive advantages.

BT innovation: Our name stands for pioneering product developments, solid consulting and customer orientation. We always maintain a high standard to offer the best possible solution for specific topics in the field of concrete construction, thus enabling a significant increase in the efficiency of all work processes. In this way, we send a clear signal about the strength of our innovations.

PRODUCT HIGHLIGHTS

Why the BT-Spannschloss® (turnbuckle) makes construction faster:

- ⋮ dry, force-fitting, permanent connections
off precast concrete elements without concreting
- ⋮ simply screw it together by hand
- ⋮ weather-independent construction



CONNECT PRECAST CONCRETE ELEMENTS DRY AND FAST**ETA-19/0013**
European Technical Assessment

BT-Spannschloss® (turnbuckle)

The BT-Spannschloss® (turnbuckle) is part of an easy to use connection system – without additional materials and tools.

The BT-Spannschloss® (turnbuckle) enables efficient and precise assembly and durable connections for precast concrete elements. Using BT-Spannschloss® (turnbuckle) and corresponding connection materials, precast elements can be joined together without using mineral grouting. This means no curing

or standstill times due to low temperatures. The BT-Spannschloss® (turnbuckle) can be fully loaded straight away.

The building authority approval (Z-14.4-599) certifies the reliability of the product. The BT-Spannschloss® (turnbuckle) is offered in three sizes – M12, M16 and M20 – and is available in galvanised design or stainless steel.

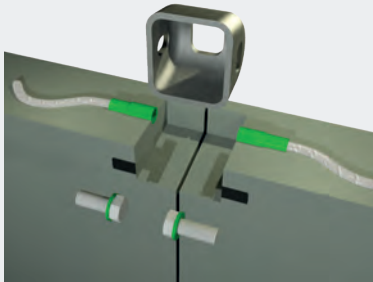
Applications

- ✓ **L-shaped retaining walls in flood protection**
- ✓ **Residential and commercial construction**
- ✓ **Agricultural systems**
(e. g. biogas plants, silos)
- ✓ **Sewer and civil engineering**
(e.g. shaft structures, media channels, amphibian tunnels)
- ✓ **Temporary structures**

Benefits

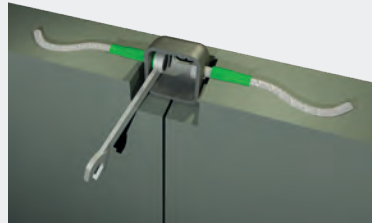
- ✓ **Dry bolted connection**
- ✓ **No joint grouting, no special tools**
- ✓ **Can be loaded immediately, no curing times**
- ✓ **Assembly regardless of weather, even at low temperatures or in case of precipitation**
- ✓ **Can be disassembled – removal of temporarily installed structures**
- ✓ **Three-point connection possible**

Application



01

Place the precast concrete elements next to each other and insert the BT-Spannschloss® in the recess provided. Then screw the bolts by hand to the fixing anchors.



02

Tighten the BT-Spannschloss® (turnbuckle) connection by using the ratchet combination wrench until the required joint width has been reached.



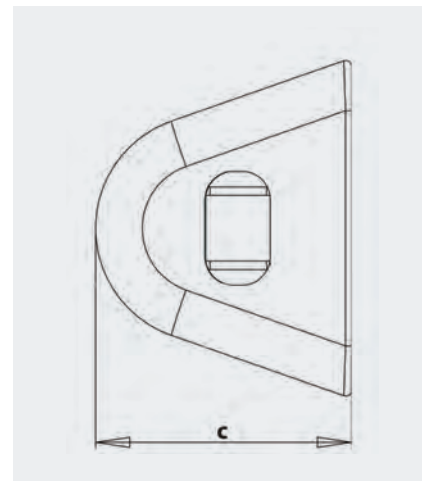
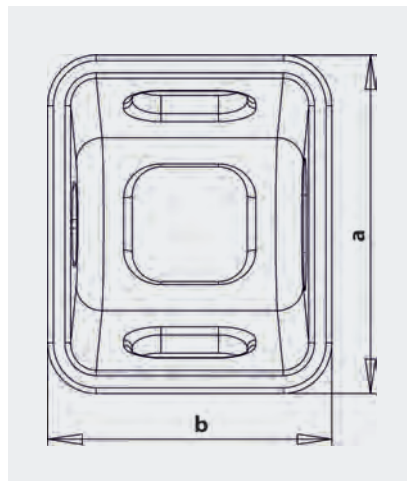
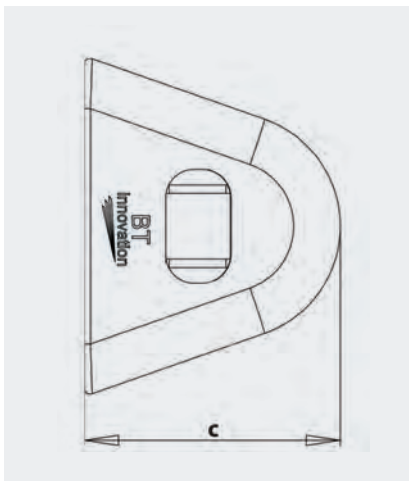
03

Fill the recess with a suitable mortar to protect the BT-Spannschloss® (turnbuckle) against corrosion.



THREE-POINT CONNECTION POSSIBLE!

Technical data



Product	a [mm]	b [mm]	c [mm]	Tensile strength N [kN]	Shear strength V [kN]
BT-Spannschloss® (turnbuckle) M12	70	70	51	33.7	9.4
BT-Spannschloss® (turnbuckle) M16	90	90	65	43.5	26.2
BT-Spannschloss® (turnbuckle) M20	120	100	90	52.2	24.8

*According to DIBt Approval Z-14.4-599

Item overview



Accessory fixing anchor



Accessory recess former, available with or without magnet

BT-Spannschloss® (turnbuckle) available in 3 sizes, material: Stainless steel or galvanised

BT-Spannschloss® (turnbuckle)

Item. no.	Product	Description	Info
4009086	BT-Spannschloss® (turnbuckle) M12 galvanised, set	including: 2 hexagon head bolts (ISO 4017 – M12 x 40 – 8.8 – tZn) 2 washers (ISO 7093 – 1-12-200 HV – tZn)	for wall thickness ≥ 6 cm ETA-19/0013
4009084	BT-Spannschloss® (turnbuckle) M12 stainless steel, set	including: 2 hexagon head bolts (ISO 4017 – M12 x 40 – A4-70) 2 washers (ISO 7093-1 – 12 – 200 HV – A4)	for wall thickness ≥ 6 cm
4009074	BT-Spannschloss® (turnbuckle) M16 galvanised, set	including: 1 hexagon head bolt (ISO 4017 – M16 x 40 – 8.8 – tZn) 1 hexagon head bolt (ISO 4017 – M16 x 50 – 8.8 – tZn) 2 washers (ISO 7093-1 – 16 – 200 HV – tZn)	for wall thickness ≥ 12 cm ETA-19/0013
4009083	BT-Spannschloss® (turnbuckle) M16 stainless steel, set	including: 1 hexagon head bolt (ISO 4017 – M16 x 40 – A4-70) 1 hexagon head bolt (ISO 4017 – M16 x 50 – A4-70) 2 washers (ISO 7093-1 – 16 – 200 HV – A4)	for wall thickness ≥ 12 cm
4009072	BT-Spannschloss® (turnbuckle) M20 galvanised, set	including: 2 hexagon head bolts (ISO 4017 – M20 x 60 – 8.8 – tZn) 2 washers (ISO 7093-1 – 20 – 200 HV – tZn)	for wall thickness ≥ 14 cm ETA-19/0013
4009085	BT-Spannschloss® (turnbuckle) M20 stainless steel, set	including: 2 hexagon head bolts (ISO 4017 – M20 x 60 – A4-70) 2 washers (ISO 7093-1 – 20 – 200 HV – A4)	for wall thickness ≥ 14 cm
4009123	BT-Spannschloss® (turnbuckle) starter set M16	including: 6 BT-Spannschloss® (turnbuckles) M16 galvanised, 6 M16 x 50 bolts, 6 M16 x 40 bolts, 12 washers M16, 12 T-Fixx® anchors M16 x 100	plus, free of charge: 1 ratcht combination wrench 24 mm, 6 disposable recess formers, 6 nailing plates M16
4009152	BT-Spannschloss® (turnbuckle) starter set M20	including: 6 BT-Spannschloss® (turnbuckles) M20 galvanised, 12 M20 x 60 bolts, 12 washers M20 12 T-Fixx® anchors M20	plus, free of charge: 1 ratchet combination wrench 30 mm, 6 disposable recess formers, 6 nailing plates M20

Accessories

Item. no.	Product	Description
8009132800	Recess former set for BT-Spannschloss® (turnbuckle) M12 magnetic	including: 2 cylinder head bolts ISO 4762 – M12 x 40 1 cylinder head bolt ISO 4762 – M12 x 80
8009100800	Recess former set for BT-Spannschloss® (turnbuckle) M16 magnetic	including: 2 cylinder head bolts ISO 4762 – M16 x 45 1 cylinder head bolt ISO 4762 – M16 x 90
8009099800	Recess former set for BT-Spannschloss® (turnbuckle) M20 magnetic	including: 2 cylinder head bolts ISO 4762 – M20 x 45 1 cylinder head bolt ISO 4762 – M20 x 100
3003213	T-FIXX® sleeve anchor® – M12 x 50 – gv	with European Technical Assessment ETA-13/0222
3003214	T-FIXX® sleeve anchor® – M12 x 70 – gv	with European Technical Assessment ETA-13/0222
3003203	T-FIXX® sleeve anchor® – M12 x 95 – gv	with European Technical Assessment ETA-13/0222
3003151	T-FIXX® sleeve anchor® – M16 x 60 – gv	with European Technical Assessment ETA-13/0222
3003150	T-FIXX® sleeve anchor® – M16 x 100 – gv	with European Technical Assessment ETA-13/0222
3003149	T-FIXX® sleeve anchor® – M16 x 125 – gv	with European Technical Assessment ETA-13/0222
3003212	T-FIXX® sleeve anchor® – M20 x 70 – gv	with European Technical Assessment ETA-13/0222
3003153	T-FIXX® sleeve anchor® – M20 x 100 – gv	with European Technical Assessment ETA-13/0222
3003152	T-FIXX® sleeve anchor® – M20 x 145 – gv	with European Technical Assessment ETA-13/0222
3003163	DB 682 waved anchor – M12 x 108 – gv	with European Technical Assessment ETA-11/0288
3003067	DB 682 waved anchor – M16 x 172 – gv	with European Technical Assessment ETA-11/0288
3003064	DB 682 waved anchor – M20 x 192 – gv	with European Technical Assessment ETA-11/0288
3003331	DB 682 waved anchor – M12 x 108 stainless steel	with European Technical Assessment ETA-11/0288
3003134	DB 682 waved anchor – M16 x 172 stainless steel	with European Technical Assessment ETA-11/0288
3003184	DB 682 waved anchor – M20 x 192 stainless steel	with European Technical Assessment ETA-11/0288
4009089	Three-point adapter for BT-Spannschloss® (turnbuckle) M12 galvanised	for manufacturing three-point connections ETA-19/0013
4009090	Three-point adapter for BT-Spannschloss® (turnbuckle) M16 galvanised	for manufacturing three-point connections ETA-19/0013
4009091	Three-point adapter for BT-Spannschloss® (turnbuckle) M20 galvanised	for manufacturing three-point connections ETA-19/0013



Application examples

- 01 BT-Spannschloss® (turnbuckle) in **residential construction** (Deutsche Reihenhaus AG)
- 02 BT-Spannschloss® (turnbuckle) in **agricultural construction** (biogas plant)
- 03 BT-Spannschloss® (turnbuckle) in combination with RubberElast in **sewer construction**
- 04 **Flood protection wall** under construction
- 05 BT-Spannschloss® (turnbuckle), **three-point connection**



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