



Instructions for use (IFU)

Manufacturer

Access Technologies Ltd
Internet: www.beamclamp.com

ETA 15 / 0768

Your distributor

Specific applications

BoxBolt® is a blind fixing solution designed for hollow sections or other building elements where access is difficult. BoxBolt® is suitable for use with rectangular, square or circular hollow sections.

BoxBolt® may be used with other bolts, subject to the manufacturer's approval (contact your distributor). All bolts must satisfy class 8.8 resistance requirements in accordance with standard CE 20898-1.

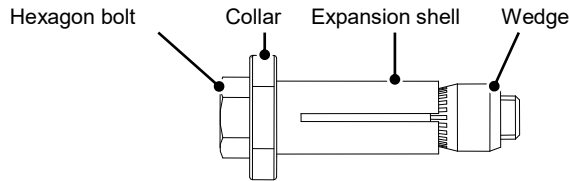
BoxBolt® may be used only once.

This system may be used in aggressive environments, provided that the zinc coating on the BoxBolt® fixings is intact. At the first signs of corrosion, inspect the steel structure and replace it, wholly or partially, if necessary. Stainless Steel BoxBolt® are available.



Safety instructions!

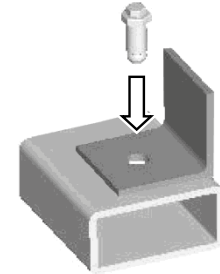
- Never exceed the maximum permissible overloads. Before using the BoxBolt® system it is essential to check that the steel framework can support the imposed loads.
- Use BoxBolt® fixings only as described in these installation instructions.
- When choosing BoxBolt® fixings, take the following parameters into account:
 - The total fixing thickness of the connection
 - Diameter and spacing of holes
 - Tightening torque
 - Load (e.g. tensile load or shear load)
 - Resistance of the materials
 - If the section or load for the intended application is not covered in these installation instructions, it is essential to contact your distributor to obtain the appropriate BoxBolt® fixing!
- Check that your Box Bolt fixing includes all the elements shown below:



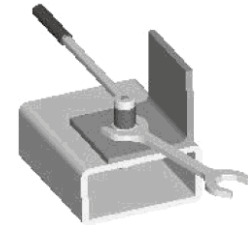
Installation instructions

BoxBolt® fixings are installed as follows:

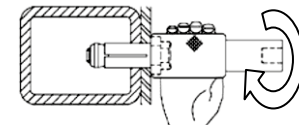
1. Drill the sections to be fixed, ensuring that the holes required have the correct diameter and spacing.
2. De-burr the holes.
3. Position the sections one on top of the other, ensuring:
 - that the two sections are lined up and rest one on top of the other without any gap. If necessary, use a clamp to hold the two sections and prevent a gap forming
 - that the holes are aligned, using a mandrel if necessary.
4. Position the BoxBolt® in the holes. Check that the collar is resting flat on the section with no gap.



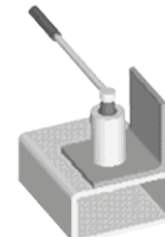
5. Advice: Use of the special BoxSok™ tool is recommended for installation. If you are using this tool, go to step 7.
6. Hold the collar in position using a suitable open-ended spanner, then tighten the bolt to the torque specified. An impact wrench is recommended for initially tightening to speed up installation. This should not over tighten the core bolt and a torque wrench should always be used for final tightening to the correct torque value as specified overleaf. Go to step 9.



7. Fit the BoxSok™ onto the BoxBolt®, so that the BoxSok™ is resting on the section. If necessary, adjust the BoxSok™ so that it fits properly on the BoxBolt®.



8. Hold the outer casing of the BoxSok™ straight and tighten the BoxBolt® using the BoxSok™.



9. Remove the tool and check the tightening torque on the bolt. If necessary, correct the tightening torque (see technical table overleaf for more details)

Part Number & description			Dimensional information							Technical		Load information			
BoxBolt	Product code	Size	Setscrew length (mm)	Fixing range (dim x)		Across Flats of collar (mm)	Collar thickness (mm)	Dim A (mm)	Dim B (mm)	Hole size (mm)	Torque (Nm)	Galvanised/Zinc Plated Tensile Shear (kN)		Stainless Steel Tensile Shear (kN)	
				Min	Max										
M06	BQ1Z06*	1	45	4	24	17	5	30	11	11+1.0,-0.25	13	7.12	12.21	6.6	11.43
M08	BQ1_08	1	50	5	26	22	6	35	13	14+1.0,-0.25	25	12.26	21.62	12.00	20.52
	BQ2_08	2	70	18	46	22	6	35	13	14+1.0,-0.25	25	12.26	21.62	12.00	20.52
	BQ3_08	3	90	30	66	22	6	35	13	14+1.0,-0.25	25	12.26	21.62	12.00	20.52
M10	BQ1_10	1	50	5	23	24	7	40	15	18+1.0,-0.25	45	21.71	37.99	18.96	37.08
	BQ2_10	2	70	18	43	24	7	40	15	18+1.0,-0.25	45	21.71	37.99	18.96	37.08
	BQ3_10	3	90	35	63	24	7	40	15	18+1.0,-0.25	45	21.71	37.99	18.96	37.08
M12	BQ1_12	1	55	5	25	26	8	50	18	20+1.0,-0.25	80	27.90	49.55	27.58	47.01
	BQ2_12	2	80	20	50	26	8	50	18	20+1.0,-0.25	80	27.90	49.55	27.58	47.01
	BQ3_12	3	100	40	70	26	8	50	18	20+1.0,-0.25	80	27.90	49.55	27.58	47.01
M16	BQ1_16	1	75	5	35	36	9	55	20	26+2.0,-0.25	190	49.87	90.45	51.38	85.45
	BQ2_16	2	100	30	60	36	9	55	20	26+2.0,-0.25	190	49.87	90.45	51.38	85.45
	BQ3_16	3	120	55	80	36	9	55	20	26+2.0,-0.25	190	49.87	90.45	51.38	85.45
M20	BQ1_20	1	100	8	42	46	11	70	25	33+2.0,-0.25	320	87.27	149.29	80.21	142.99
	BQ2_20	2	120	35	72	46	11	70	25	33+2.0,-0.25	320	87.27	149.29	80.21	142.99
	BQ3_20	3	150	65	102	46	11	70	25	33+2.0,-0.25	320	87.27	149.29	80.21	142.99

Select the type and finish you require on the **BoxBolt** by replacing the _ in the part code with a **Z** for Zinc Plated, a **G** for Hot Dip Galvanised or a **S** for Stainless Steel. Example: **BQ2G12** is a **M12 BoxBolt** size **2** in **Hot Dip Galvanised** Finish.

The above loads are working loads that have the following Factor of Safety (FOS) Applied: Tensile = 1.925:1 Shear = 1.54:1

The loads shown above are working loads based on the rated loads (taken from our ETA 15-0768) factored by 1.4 which is an average value between 1.35 used for static loading and 1.5 used for live loads. The rated loads stated already have a 1.375 factor for tensile and 1.1 factor for shear applied to them. This therefore means that the above loads have a $1.375 \times 1.4 = 1.925$ to 1 FOS in tensile and $1.1 \times 1.4 = 1.54$ FOS for shear.

The **BoxBolt** complies with the DIN 18800 and Eurocode 3 design methods for bolted steel connections. A design guide and calculator is available when using these methods, please ask our technical team for more information.

The **BoxBolt** is also Lloyds Register type approved for use, should you require a copy of the approval certificate our technical team will be able to assist.

In addition, the **BoxBolt** product is CE marked, should you require a copy of the approval certificate our technical team will be able to assist.

The strength of the material our **BoxBolt** is connecting into should be checked for structural capacity by a structural engineer.

Fig. 1

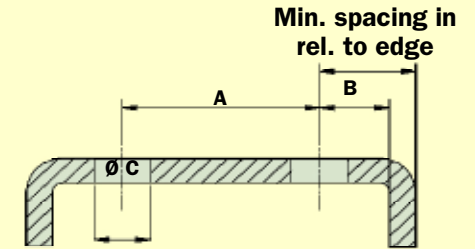
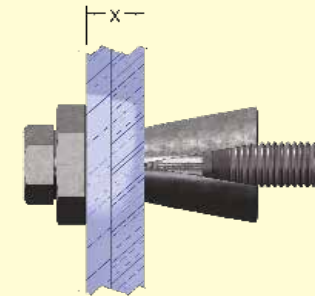


Fig. 2



Diameter and positioning of holes

BOXBOLT SIZE	Ø C HOLE SIZE (mm)		MINIMUM EDGE & HOLE SPACINGS (mm)	
	MIN	MAX	A	B
BQ_06	10.8	12.0	30.0	15.0
BQ_08	13.8	15.0	35.0	18.0
BQ_10	17.8	19.0	42.0	23.0
BQ_12	19.8	21.0	50.0	26.0
BQ_16	25.8	28.0	66.0	33.0
BQ_20	32.8	35.0	75.0	41.0