

**BoxBolt** is a fully tested and approved blind connection solution for connecting to hollow section steel or where access is restricted to one side only. The **BoxBolt** is suitable for use with rectangular, square and even circular hollow sections. The features a hexagon head design to aid installation with a standard wrench. It allows it to be installed with our unique **BoxSok™** installation tool for when installation time needs to be kept to an absolute minimum.

The **BoxBolt** is available in three finishes; Zinc Plated for the less aggressive environments, Hot Dip Galvanized for the more aggressive environments, and Stainless Steel for the most demanding of applications. These finishes combined with three lengths of **BoxBolt** make it extremely flexible to suit its environment and application. The **BoxBolt** is approved for use by **Lloyds Register (LR)** type approval and the **Deutsches Institut für Bautechnik (DIBt)** to give the specifier and user total confidence.

## BoxBolt® Technical Data

Select the type of finish you require on the **BoxBolt** by replacing the “\_” in the code with a **Z** for zinc plated, a **G** for Hot Dip Galvanized or an **S** for Stainless Steel.

Example: **BQ2G12** is a **1/2” BoxBolt size 2** in **Hot Dip Galvanized** Finish.

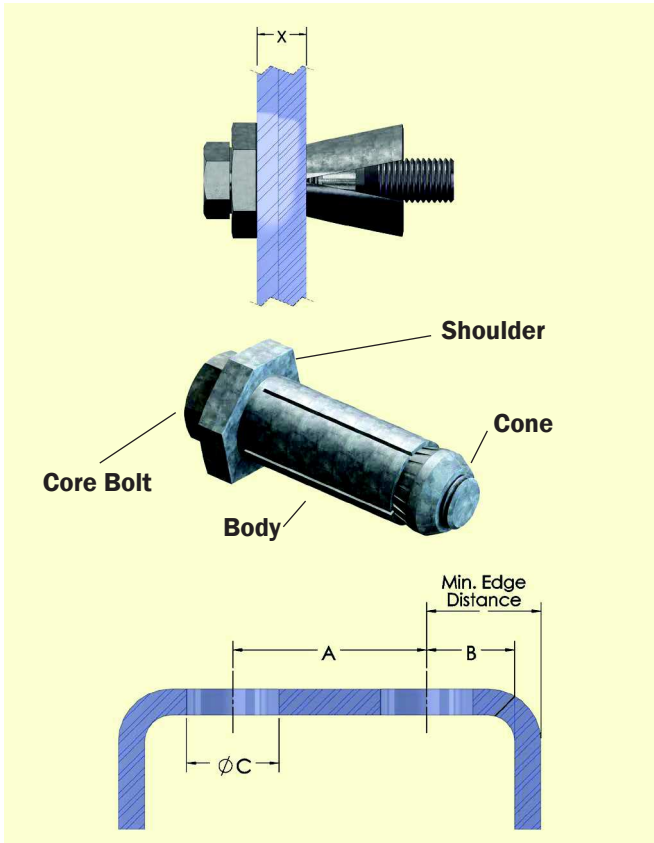
| Part Number & Description |          |                      | Dimensional Information |                    |          |                          |                    |            |               | Load Information         |       |                |
|---------------------------|----------|----------------------|-------------------------|--------------------|----------|--------------------------|--------------------|------------|---------------|--------------------------|-------|----------------|
| Product Code              | Bolt Dia | Description          | Setscrew Length         | Clamping Range (X) |          | Across Flats of Shoulder | Shoulder Thickness | Sleeve Dia | Hole Size Dia | Available Strength (lbs) |       | Torque (ft lb) |
|                           |          |                      |                         | Min                | Max      |                          |                    |            |               | Tensile                  | Shear |                |
| BQ1Z06*                   | 1/4"     | 1/4" BoxBolt Size 1  | 1-3/4"                  | 1/8"               | 7/8"     | 11/16"                   | 3/16"              | 3/8"       | 7/16"         | 2872                     | 4793  | 14             |
| BQ1_08                    | 5/16"    | 5/16" BoxBolt Size 1 | 2"                      | 3/16"              | 1"       | 7/8"                     | 1/4"               | 1/2"       | 9/16"         | 5071                     | 5917  | 18             |
| BQ2_08                    | 5/16"    | 5/16" BoxBolt Size 2 | 2-3/4"                  | 11/16"             | 1-13/16" | 7/8"                     | 1/4"               | 1/2"       | 9/16"         | 5071                     | 5917  | 18             |
| BQ3_08                    | 5/16"    | 5/16" BoxBolt Size 3 | 3-9/16"                 | 1-3/16"            | 2-5/8"   | 7/8"                     | 1/4"               | 1/2"       | 9/16"         | 5071                     | 5917  | 18             |
| BQ1_10                    | 3/8"     | 3/8" BoxBolt Size 1  | 2"                      | 3/16"              | 7/8"     | 15/16"                   | 1/4"               | 11/16"     | 3/4"          | 9718                     | 10985 | 33             |
| BQ2_10                    | 3/8"     | 3/8" BoxBolt Size 2  | 2-3/4"                  | 11/16"             | 1-11/16" | 15/16"                   | 1/4"               | 11/16"     | 3/4"          | 9718                     | 10985 | 33             |
| BQ3_10                    | 3/8"     | 3/8" BoxBolt Size 3  | 3-9/16"                 | 1-3/8"             | 2-1/2"   | 15/16"                   | 1/4"               | 11/16"     | 3/4"          | 9718                     | 10985 | 33             |
| BQ1_12                    | 1/2"     | 1/2" BoxBolt Size 1  | 2-3/16"                 | 3/16"              | 1"       | 1"                       | 5/16"              | 3/4"       | 13/16"        | 13015                    | 12676 | 59             |
| BQ2_12                    | 1/2"     | 1/2" BoxBolt Size 2  | 3-1/8"                  | 3/4"               | 2"       | 1"                       | 5/16"              | 3/4"       | 13/16"        | 13015                    | 12676 | 59             |
| BQ3_12                    | 1/2"     | 1/2" BoxBolt Size 3  | 4"                      | 1-9/16"            | 2-3/4"   | 1"                       | 5/16"              | 3/4"       | 13/16"        | 13015                    | 12676 | 59             |
| BQ1_16                    | 5/8"     | 5/8" BoxBolt Size 1  | 3"                      | 3/16"              | 1-3/8"   | 1-7/16"                  | 3/8"               | 1"         | 1-1/16"       | 26199                    | 29578 | 140            |
| BQ2_16                    | 5/8"     | 5/8" BoxBolt Size 2  | 4"                      | 1-3/16"            | 2-3/8"   | 1-7/16"                  | 3/8"               | 1"         | 1-1/16"       | 26199                    | 29578 | 140            |
| BQ3_16                    | 5/8"     | 5/8" BoxBolt Size 3  | 4-3/4"                  | 2-3/16"            | 3-1/8"   | 1-7/16"                  | 3/8"               | 1"         | 1-1/16"       | 26199                    | 29578 | 140            |
| BQ1_20                    | 3/4"     | 3/4" BoxBolt Size 1  | 4"                      | 5/16"              | 1-5/8"   | 1-13/16"                 | 7/16"              | 1-1/4"     | 1-5/16"       | 36932                    | 33804 | 221            |
| BQ2_20                    | 3/4"     | 3/4" BoxBolt Size 2  | 4-3/4"                  | 1-3/8"             | 2-13/16" | 1-13/16"                 | 7/16"              | 1-1/4"     | 1-5/16"       | 36932                    | 33804 | 221            |
| BQ3_20                    | 3/4"     | 3/4" BoxBolt Size 3  | 6"                      | 2-9/16"            | 4"       | 1-13/16"                 | 7/16"              | 1-1/4"     | 1-5/16"       | 36932                    | 33804 | 221            |

\* BQ1Z06 is tested at an external test house but is not approved by LR type or DIBt.

The loads stated above have a partial reduction factor of 0.75 applied to the ultimate tensile and shear strength to give the available strengths of the **BoxBolt**. A further reduction factor or factor of safety should be applied to these load values that is relevant to the application, code, or design guidelines. The overall strength of the connection is normally governed by the strength of material the **BoxBolt** is connecting into; therefore, the structural capacity of the connection should be checked by a structural engineer.

**Approvals** – The published loads are taken from physical testing in hollow structural section which are then verified by **Lloyds Register Type Approval**. The **BoxBolt** is also tested and approved by **DIBt (Deutsches Institut für Bautechnik)** which 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.

# BoxBolt® Technical Information



## MATERIALS

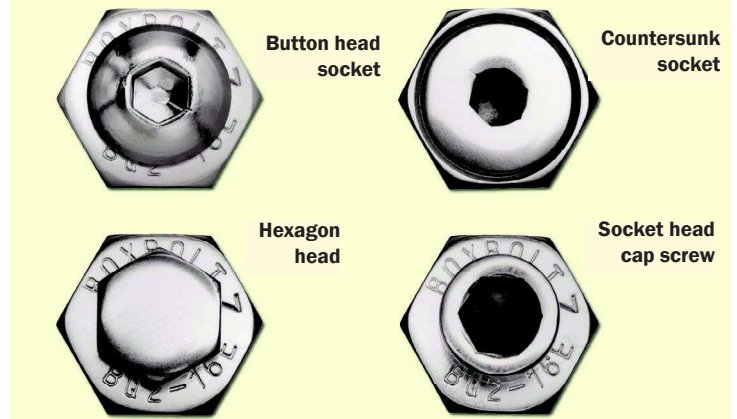
Mild steel to **BS EN 10083** Grade **1.1151**

Stainless steel to **BS EN 10088** Grade **1.4401**

## FINISHES

Zinc plated to **BS EN 12329** : Class **Fe//Zn8//A**

Hot Dip Spun Galvanized to **BS EN ISO 1461**



The **BoxBolt** is often used on high profile projects where the aesthetics of the building are essential. It is for this reason the **BoxBolt** can be adapted to suit the requirements of the Client and the Architect to make the connection pleasing to the eye. The most common versions we offer are shown above. Should you require a different style, please contact our technical department.

## Hole Dimensions & Positioning

| Box Bolt Size | Dim A  | Dim B | Dim C  |
|---------------|--------|-------|--------|
| 1/4           | 1-3/16 | 7/16  | 7/16   |
| 5/16          | 1-3/8  | 1/2   | 9/16   |
| 3/8           | 1-9/16 | 9/16  | 3/4    |
| 1/2           | 2      | 13/16 | 13/16  |
| 5/8           | 2-3/16 | 13/16 | 1-1/16 |
| 3/4           | 2-3/4  | 1     | 1-5/16 |

Minimum edge distance = Dim B + the thickness of hollow section

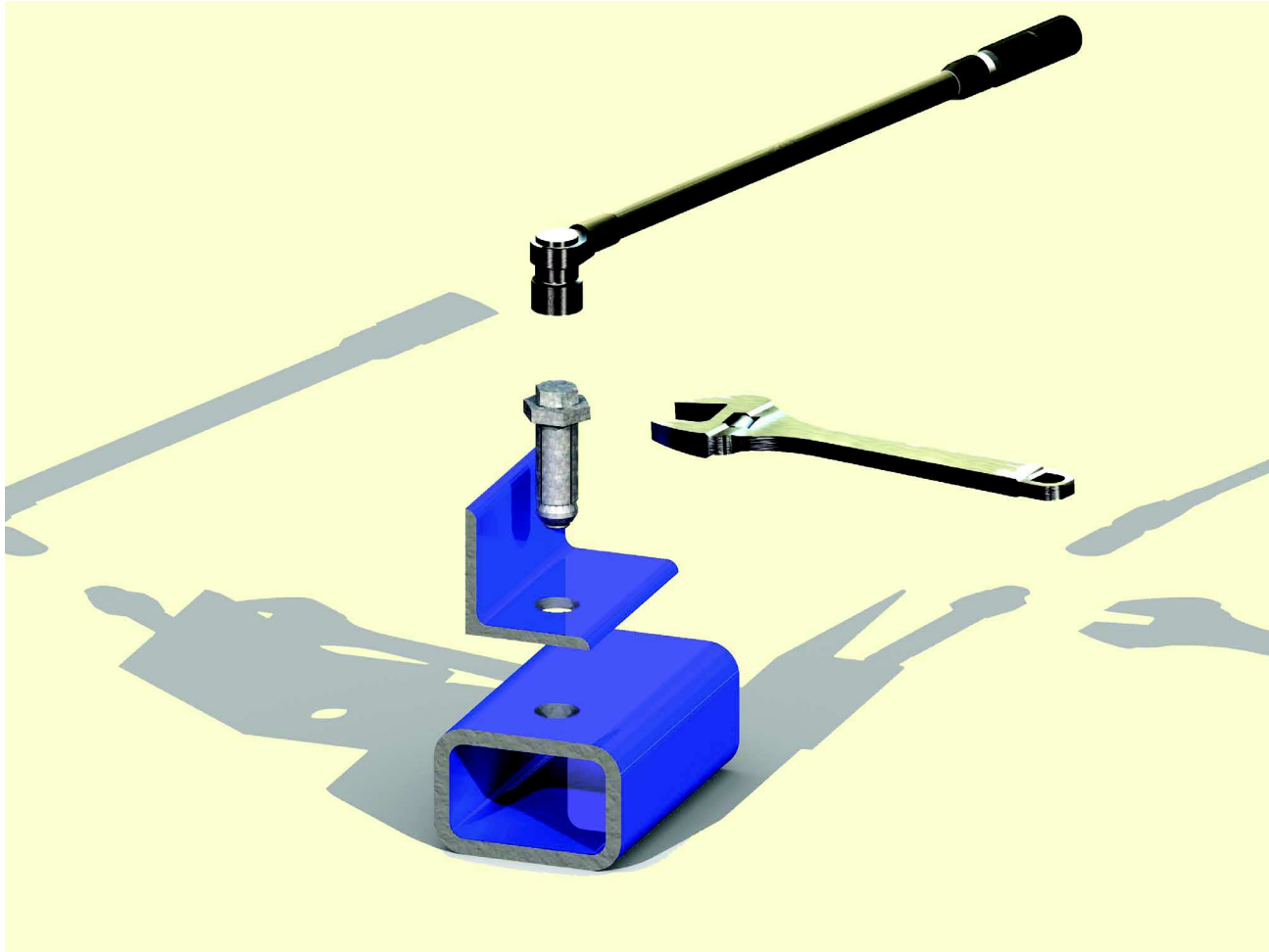
## BoxSok™ Rapid Assembly Tool



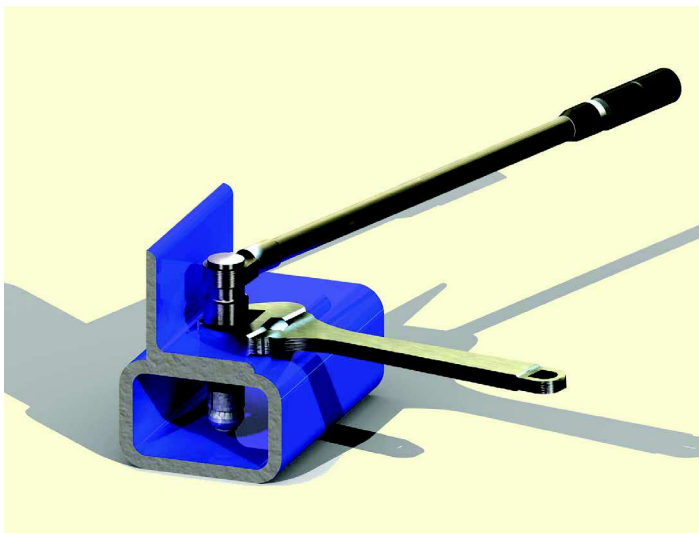
The **BoxSok™ Installation Tool** is a rapid, unique assembly tool for the **BoxBolt**. This specially designed socket holds the hexagon shoulder on the body to stop rotating while allowing the inner socket to tighten up the core bolt. The core bolt draws the cone up inside the slotted body of the sleeve and expands the individual fins inside the connection. The **BoxSok™** eliminates the need for two tools to install the **BoxBolt**; this considerably speeds up the installation process and also reduces the risk of trapping hands between two tools. The **BoxSok™** device is available to suit all **BoxBolt** diameters.

| Size | Overall Length | Body Length | Body Diameter | Drive Size |
|------|----------------|-------------|---------------|------------|
| M06  | 4-5/16         | 3-3/8       | 1-3/16        | 1/4        |
| M08  | 4-7/16         | 3-3/8       | 1-5/16        | 3/8        |
| M10  | 4-7/16         | 3-3/8       | 1-1/2         | 3/8        |
| M12  | 4-1/2          | 3-7/16      | 1-5/8         | 3/8        |
| M16  | 4-1/2          | 3-7/16      | 1-15/16       | 1/2        |
| M20  | 4-9/16         | 3-1/2       | 2-5/16        | 1/2        |

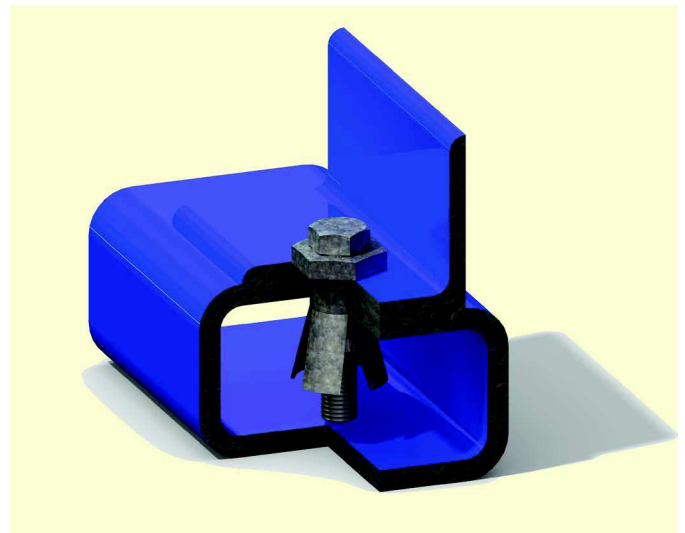
# BoxBolt® Installation Instructions



**STEP 1:** Align the holes in the bracket to be secured with the pre-drilled hole in the structural tube. Insert the BoxBolt through both pieces of steel until the underside of the shoulder is flush with the outside of the steel.



**STEP 2:** Hold the hexagon shoulder of the BoxBolt with an open ended wrench. Use an impact wrench or ratchet to tighten the core bolt.



**STEP 3:** Remove the open ended wrench and check to ensure that the core bolt is tightened to the recommended torque.