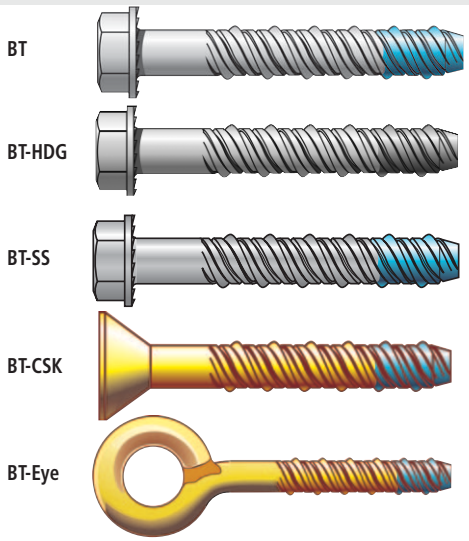
# Blue-Tip Screwbolt – BT

Blue Tip Screwbolt hex head, white zinc plating – BT
Blue Tip Screwbolt hot dipped galvanised, white zinc plating – BT-HDG
Blue Tip Screwbolt hex head, stainless steel – BT-SS
Blue Tip Screwbolt countersunk head, yellow mechanical plating – BT-CSK
Blue Tip Screwbolt eyebolt, yellow mechanical plating – BT-Eye




## Approvals and test reports

ETA Option 1 applied for

POWERS TEST LABORATORY

## Product Description

### 1. General applications

- For medium and heavy loads
- For installation in uncracked concrete (≥B15 en ≤B65), solid brick and compressive resistant stone and sand-lime stone
- Expansion free fixing
- Removable and re-usable
- Suitable for fixing for example: racks, scaffolds, (hand)rails, railings.
- Vandalism resistant
- Through fixing

### 2. Benefits

- Fast, easy, high speed installation
- Immediate, high strength loading
- Safe, controlled installation method
- Shallow embedment depth
- Finished appearance
- Ratchet teeth on headflange lock head against fixture
- Flange head provides high pull-over values
- One piece design
- Completely and easily removable
- Vibration resistant
- Blue tip indicates if re-use is possible
- Tension-free fixing
- Smaller diameter possible due to steel strength
- Low embedment for high loads

### 3. Properties

- Available with hex head, countersunk head and eyebolt
- Wide range of lengths and diameters, from Ø 5mm to Ø 16 mm
- ETA option 1 applied for

## Base materials


Uncracked Concrete


Solid brick


Stone


Sand-lime stone



www.powerseurope.nl info@powerseurope.nl +31 (0) 227 594740

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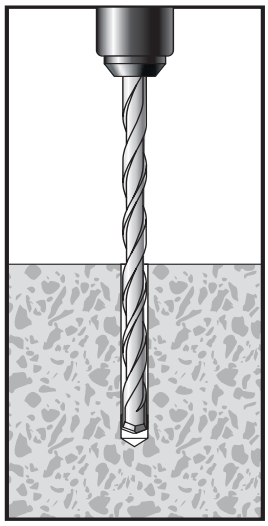
# Blue-Tip Screwbolt – BT

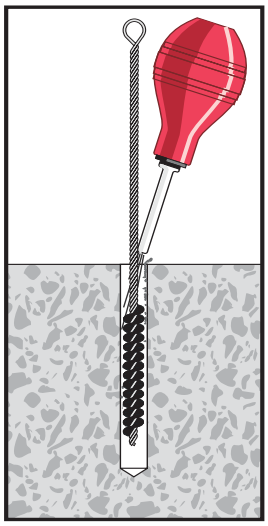
## Specifications

| Anker componenten | Carbon steel | SS Steel |
|---|---|---|
| Anchor body | DIN 1.0462 / DIN 1.1186 Carbon steel (heat treated) | SS 304 |
| Zinc plating | 5 microns (minimum) | |
| Mechanical plating | 15 microns (minimum) | |

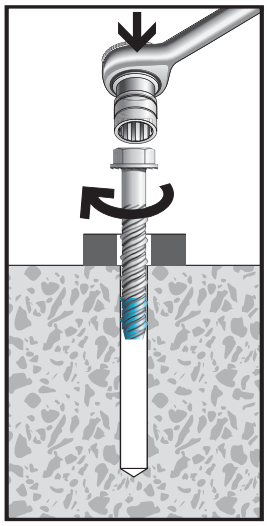
## Installation

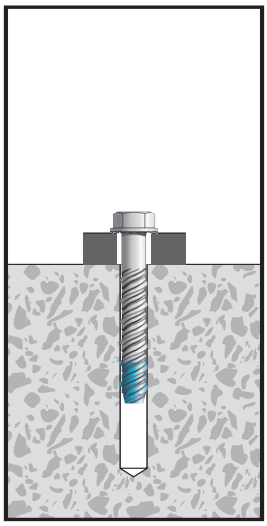


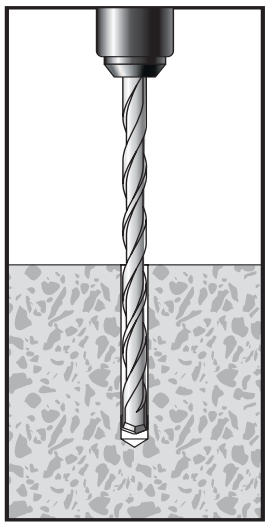
Using the proper diameter bit, drill a hole into the base material to a depth of at least one anchor diameter deeper than the embedment required.

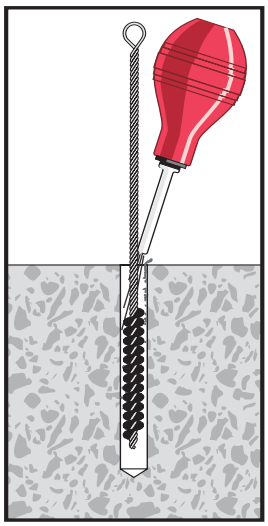


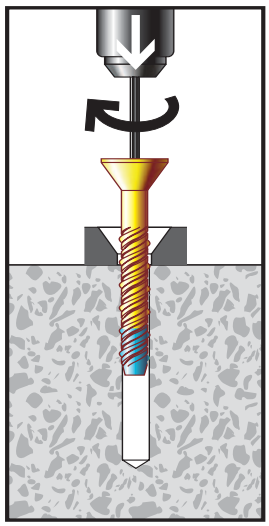
Blow and brush the hole clean of dust and other material.

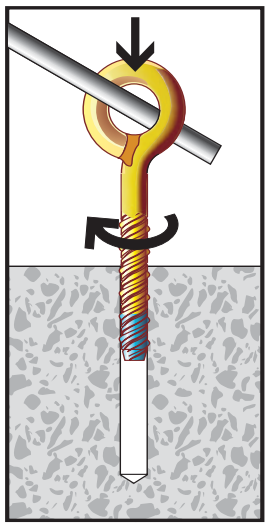












Insert the anchor through the fixture into the anchor hole.
Begin tightening the anchor by applying forward pressure when engaging the first thread.
Additional initial forward pressure may be required for installation in high strength, dense base materials.
Continue tightening the anchor until the head is firmly seated against the fixture.
In extremely dense materials, use of an impact wrench is recommended.

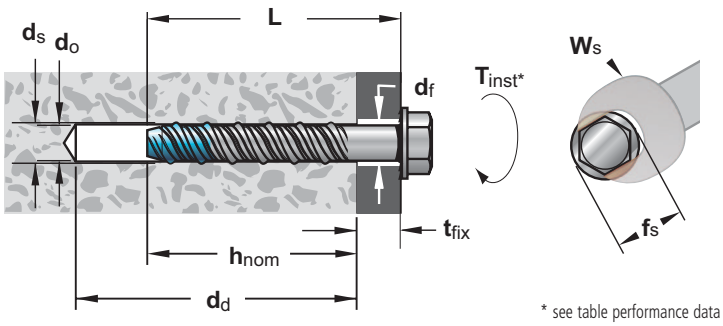
- Don't exceed the maximum clamping torque!

### Installation tips:

Use quality hexagonal socket with a ratchet spanner.
Where substrate allows, a torque controlled impact wrench can be used.
During installation debris or dust created by the thread cutting action may cause some resistance to be experienced. This is easily overcome by unscrewing the Blue -Tip SCREWBOLT™ for one turn, or more and then continue to fix to the full embedment.

# Blue-Tip Screwbolt – BT

## Sizes and packaging information




* see table performance data

### BT Blue-Tip Screwbolt hexhead - zinc plated

| Type | art.nr. | L [mm] | do [mm] | ds [mm] | dd [mm] | df [mm] | fs [mm] | ws [mm] | hnom [mm] | tfix [mm] | box | carton |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BT 5x50 | 27005 | 50 | 5 | 6.5 | 60 | 7 | 12 | 7 | 25 | 25 | 100 | 1200 |
| BT 6.5x30 | 27010 | 30 | 6.5 | 7.8 | 40 | 8 | 13 | 10 | 27 | 3 | 100 | 1200 |
| BT 6.5x50 | 27015 | 50 | 6.5 | 7.8 | 60 | 8 | 13 | 10 | 30 | 20 | 100 | 1200 |
| BT 6.5x75 | 27020 | 75 | 6.5 | 7.8 | 85 | 8 | 13 | 10 | 30 | 45 | 50 | 600 |
| BT 6.5x100 | 27025 | 100 | 6.5 | 7.8 | 110 | 8 | 13 | 10 | 30 | 70 | 50 | 300 |
| BT 8x50 | 27030 | 50 | 8 | 9.5 | 60 | 10 | 17 | 13 | 40 | 10 | 50 | 600 |
| BT 8x75 | 27035 | 75 | 8 | 9.5 | 85 | 10 | 17 | 13 | 40 | 35 | 50 | 300 |
| BT 8x100 | 27040 | 100 | 8 | 9.5 | 110 | 10 | 17 | 13 | 40 | 60 | 50 | 300 |
| BT 10x60 | 27045 | 60 | 10 | 11.5 | 70 | 12 | 22 | 17 | 50 | 10 | 50 | 300 |
| BT 10x75 | 27050 | 75 | 10 | 11.5 | 85 | 12 | 22 | 17 | 50 | 25 | 50 | 300 |
| BT 10x100 | 27055 | 100 | 10 | 11.5 | 110 | 12 | 22 | 17 | 50 | 50 | 40 | 240 |
| BT 10x120 | 27060 | 120 | 10 | 11.5 | 130 | 12 | 22 | 17 | 50 | 70 | 40 | 240 |
| BT 12x75 | 27065 | 75 | 12 | 13.5 | 85 | 15 | 25 | 19 | 60 | 15 | 25 | 150 |
| BT 12x100 | 27070 | 100 | 12 | 13.5 | 110 | 15 | 25 | 19 | 60 | 40 | 25 | 150 |
| BT 12x150 | 27075 | 150 | 12 | 13.5 | 160 | 15 | 25 | 19 | 60 | 90 | 20 | 120 |
| BT 16x100 | 27080 | 100 | 16 | 17.5 | 110 | 19 | 30 | 24 | 80 | 20 | 15 | 90 |
| BT 16x150 | 27085 | 150 | 16 | 17.5 | 160 | 19 | 30 | 24 | 80 | 70 | 10 | 60 |

### BT-HDG Blue-Tip Screwbolt hexhead - Blue-Tip Screwbolt hot dip galvanised

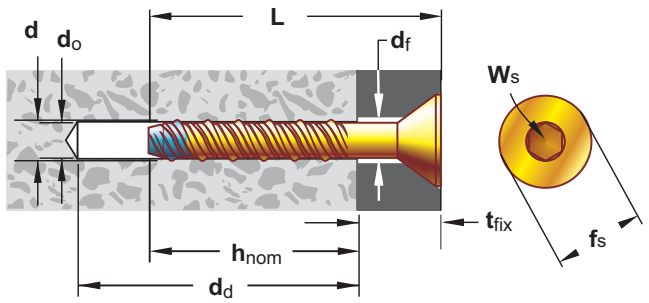
| Type | art.nr. | L [mm] | do [mm] | ds [mm] | dd [mm] | df [mm] | fs [mm] | ws [mm] | hnom [mm] | tfix [mm] | box | carton |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BT 8x50 HDG | 27100 | 50 | 8 | 9.5 | 60 | 10 | 40 | 10 | 40 | 10 | 50 | 600 |
| BT 10x60 HDG | 27105 | 60 | 10 | 11.5 | 70 | 12 | 50 | 10 | 50 | 10 | 50 | 300 |

### BT-SS Blue-Tip Screwbolt hexhead - Black-Tip Screwbolt stainless steel

| Type | art.nr. | L [mm] | d0 [mm] | ds [mm] | dd [mm] | df [mm] | fs [mm] | ws [mm] | hnom [mm] | tfix [mm] | box | carton |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BT 6.5x50 SS | 27155 | 50 | 6.5 | 7.8 | 60 | 8 | 13 | 10 | 30 | 20 | 100 | 1200 |
| BT 6.5x60 SS | 27160 | 60 | 6.5 | 7.8 | 70 | 8 | 13 | 10 | 30 | 30 | 50 | 250 |
| BT 8x70 SS | 27165 | 70 | 8 | 9.5 | 80 | 10 | 17 | 13 | 40 | 30 | 50 | 300 |
| BT 8x80 SS | 27170 | 80 | 8 | 9.5 | 90 | 10 | 17 | 13 | 40 | 40 | 50 | 300 |
| BT 10x80 SS | 27175 | 80 | 10 | 11.5 | 90 | 12 | 22 | 17 | 50 | 30 | 40 | 240 |
| BT 10x100 SS | 27180 | 100 | 10 | 11.5 | 110 | 12 | 22 | 17 | 50 | 50 | 40 | 240 |
| BT 12x80 SS | 27185 | 80 | 12 | 13.5 | 90 | 15 | 25 | 19 | 60 | 20 | 25 | 150 |
| BT 12x100 SS | 27190 | 100 | 12 | 13.5 | 110 | 15 | 25 | 19 | 60 | 40 | 25 | 150 |
| BT 12x150 SS | 27195 | 150 | 12 | 13.5 | 160 | 15 | 25 | 19 | 60 | 90 | 20 | 120 |

# Blue-Tip Screwbolt – BT

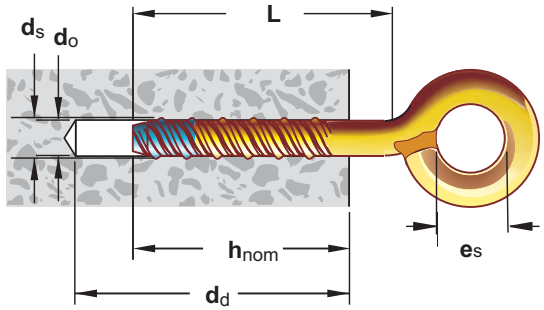
## Sizes and packaging information




### BT-CSK Blue-Tip Screwbolt with countersunk head

| Type | art.nr. | L [mm] | d0 [mm] | ds [mm] | dd [mm] | df [mm] | fs [mm] | ws [mm] | hnom [mm] | tfix [mm] | box | carton |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BT6550CSK | 27300 | 50 | 6.5 | 7.8 | 60 | 7 | 16 | A/F5mm | 30 | 20 | 100 | 500 |
| BT6575CSK | 27305 | 75 | 6.5 | 7.8 | 85 | 7 | 16 | A/F5mm | 30 | 45 | 50 | 250 |
| BT850CSK | 27310 | 50 | 8 | 9.5 | 60 | 10 | 20 | A/F6mm | 40 | 10 | 50 | 250 |
| BT875CSK | 27315 | 75 | 8 | 9.5 | 85 | 10 | 20 | A/F6mm | 40 | 35 | 50 | 250 |
| BT8100CSK | 27320 | 100 | 8 | 9.5 | 110 | 10 | 20 | A/F6mm | 40 | 60 | 50 | 250 |
| BT1060CSK | 27325 | 60 | 10 | 11.5 | 70 | 12 | 24.5 | A/F8mm | 50 | 10 | 50 | 250 |
| BT1075CSK | 27330 | 75 | 10 | 11.5 | 85 | 12 | 24.5 | A/F8mm | 50 | 25 | 50 | 250 |
| BT10100CSK | 27335 | 100 | 10 | 11.5 | 110 | 12 | 24.5 | A/F8mm | 50 | 50 | 50 | 250 |
| BT1275CSK | 27340 | 75 | 12 | 13.5 | 85 | 15 | 27.5 | A/F10mm | 60 | 15 | 50 | 150 |
| BT12100CSK | 27345 | 100 | 12 | 13.5 | 110 | 15 | 27.5 | A/F10mm | 60 | 40 | 50 | 150 |
| BT12125CSK | 27350 | 125 | 12 | 13.5 | 135 | 15 | 27.5 | A/F10mm | 60 | 65 | 25 | 75 |

### BT Eye Blue-Tip Screwbolt with eye




| Type | art.nr. | L [mm] | d0 [mm] | ds [mm] | dd [mm] | es [mm] | hnom [mm] | box | carton |
|---|---|---|---|---|---|---|---|---|---|
| BT6550EYE | 27200 | 50 | 6.5 | 7.8 | 60 | 12.7 | 50 | 100 | 500 |
| BT855EYE | 27205 | 55 | 8 | 9.5 | 65 | 15.2 | 55 | 50 | 250 |
| BT1065EYE | 27210 | 65 | 10 | 11.5 | 75 | 17.0 | 65 | 50 | 250 |
| BT1275EYE | 27215 | 75 | 12 | 13.5 | 85 | 21.6 | 75 | 50 | 250 |

# Blue-Tip Screwbolt – BT

## Performance data Powers Blue-Tip Screwbolt in concrete

| Anchor type | $d_0$ (mm) | $h_{nom}$ (mm) | $d_d$ (mm) | Concrete B25 (=C20/25) uncracked | | | Concrete B65 (=C50/60) uncracked | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Allowable working load (kN) | | | Allowable working load (kN) | |
| | | | | $T_{inst}$ (Nm) | Tension $N_{all}$ | Shear $V_{all}$ | *$T_{inst}$ (Nm) | Tension $N_{all}$ | Shear $V_{all}$ |
| 5 mm | 5 | 25 | 33 | 15 | 0.8 | 2.0 | 20 | 1.1 | 2.0 |
| | | 40 | 48 | 20 | 1.1 | 2.4 | 25 | 1.7 | 2.4 |
| 6,5 mm | 6.5 | 30 | 40 | 20 | 1.3 | 2.9 | 32 | 1.7 | 2.9 |
| | | 45 | 55 | 25 | 2.8 | 3.6 | 32 | 4.2 | 3.6 |
| 8 mm | 8 | 40 | 52 | 45 | 3.6 | 5.6 | 55 | 5.1 | 5.6 |
| | | 60 | 72 | 55 | 5.2 | 6.3 | 70 | 7.1 | 6.3 |
| 10 mm | 10 | 50 | 65 | 55 | 4.7 | 10.1 | 55 | 7.2 | 10.1 |
| | | 75 | 90 | 80 | 8.3 | 11.5 | 80 | 12.0 | 11.5 |
| 12 mm | 12 | 60 | 78 | 80 | 6.6 | 12.8 | 80 | 9.7 | 12.8 |
| | | 90 | 108 | 80 | 10.7 | 14.9 | 80 | 17.2 | 14.9 |
| 16 mm | 16 | 80 | 104 | 100 | 11.2 | 15.8 | 110 | 12.9 | 15.8 |
| | | 120 | 144 | 100 | 18.2 | 17.5 | 110 | 21.1 | 17.5 |

Values in these table are determined by using the working stress design
Incorporated safety factor (tension and shear) Fsc = 4 (concrete and steel)

If there are both tension loading and shear loading on the anchor, the loading should be checked by using the combined loading formula:

$$\left(\frac{T_S}{T_A}\right)^{5/3} + \left(\frac{S_S}{S_A}\right)^{5/3} \leq 1$$

$T_S$= Applied Tension Load
$T_A$= Allowable Tension Load
$S_S$= Applied Shear Load
$S_A$= Allowable Shear Load

These values are valid for the carbon steel anchore as well as for the stainless steel anchor

## Performance data Powers Blue-Tip Screwbolt in solid brickwork, compressive strength 40 Mpa

| Anchor type | $d_0$ (mm) | $h_{nom}$ (mm) | $d_d$ (mm) | *$T_{inst}$ (Nm) | Allowable working load (kN) | |
|---|---|---|---|---|---|---|
| | | | | | Tension $N_{all}$ | Shear $V_{all}$ |
| 5 mm | 5 | 25 | 33 | 8 | 0.8 | 1.5 |
| 6,5 mm | 6.5 | 45 | 55 | 10 | 1.3 | 1.8 |
| 8 mm | 8 | 45 | 57 | 15 | 2.0 | 2.0 |
| 10 mm | 10 | 45 | 60 | 20 | 2.9 | 2.9 |
| 12 mm | 12 | 50 | 68 | 20 | 3.7 | 3.7 |
| 16 mm | 16 | 50 | 74 | 22 | 3.7 | 3.7 |

Values in these table are determined by using the working stress design
Incorporated safety factor (tension and shear) Fsc = 4 (brickwork and steel)

If there are both tension loading and shear loading on the anchor, the loading should be checked by using the combined loading formula, as published above

These values are valid for the carbon steel anchore as well as for the stainless steel anchor

## Spacing and edge distance for anchor groups*

| Anchor type | Characteristic spacing Scr (mm) | Minimum Spacing** Smin (mm) | Reduction factor Rs tension & shear | Characteristic edge distance Ccr (mm) | Minimum edge distance** Cmin (mm) | Reduction factor Rc | |
|---|---|---|---|---|---|---|---|
| | | | | | | Tension | Shear |
| 5 mm | 50 | 25 | 0,5 | 50 | 20 | 0,7 | 0,3 |
| 6,5 mm | 65 | 33 | 0,5 | 65 | 25 | 0,7 | 0,3 |
| 8 mm | 80 | 40 | 0,5 | 80 | 32 | 0,7 | 0,3 |
| 10 mm | 100 | 50 | 0,5 | 100 | 40 | 0,7 | 0,3 |
| 12 mm | 120 | 60 | 0,5 | 120 | 48 | 0,7 | 0,3 |
| 16 mm | 160 | 80 | 0,5 | 160 | 64 | 0,7 | 0,3 |

* In brickwork position anchors a minimum of 300mm from an edge and with a spacing from minimal 300mm and avoid fixing into mortar joints
** apply a reduction factor