BLINDBOLT®

The smart solution for steelwork connections,
now exclusively distributed in New Zealand,
by Milsons®

milsons®

milsons.co.nz 0800 507 444

BLINDBOLT®

Blind Bolt offers an innovative and highly effective fixing solution for both horizontal and vertical applications in all types of constructional cavities. Its success lies in its straightforward operation. The design is both simple and ingenious: a metal bar is threaded at one end and slotted at the other, equipped with a pivoting toggle that holds it securely in place. Whether used horizontally or vertically, the Blind Bolt ensures a perfect fix.

Applying the Blind Bolt is a breeze with just three steps: drill, rotate, and tighten. No welding gear or specialised tools are necessary, making it ideal for restricted access or working at height. This efficiency means you can work quickly without sacrificing quality, ultimately saving both time and money – a key consideration for anyone in construction or engineering.

Blind Bolts are perfect for a range of applications, including fixing cladding and facades to building exteriors and securing masonry support systems. From hollow section bolts to box section fixings, Blind Bolt products are making a significant impact on the working lives of designers, engineers, architects, planners, and builders.

The Standard Blindbolt

Flexible, high speed blind fixing for multiple applications

The Heavy Duty Blindbolt

For heavy-duty applications available in multiple finishes

The Thin Wall Blindbolt

For fixing light weight materials, such as sheet steel or cladding

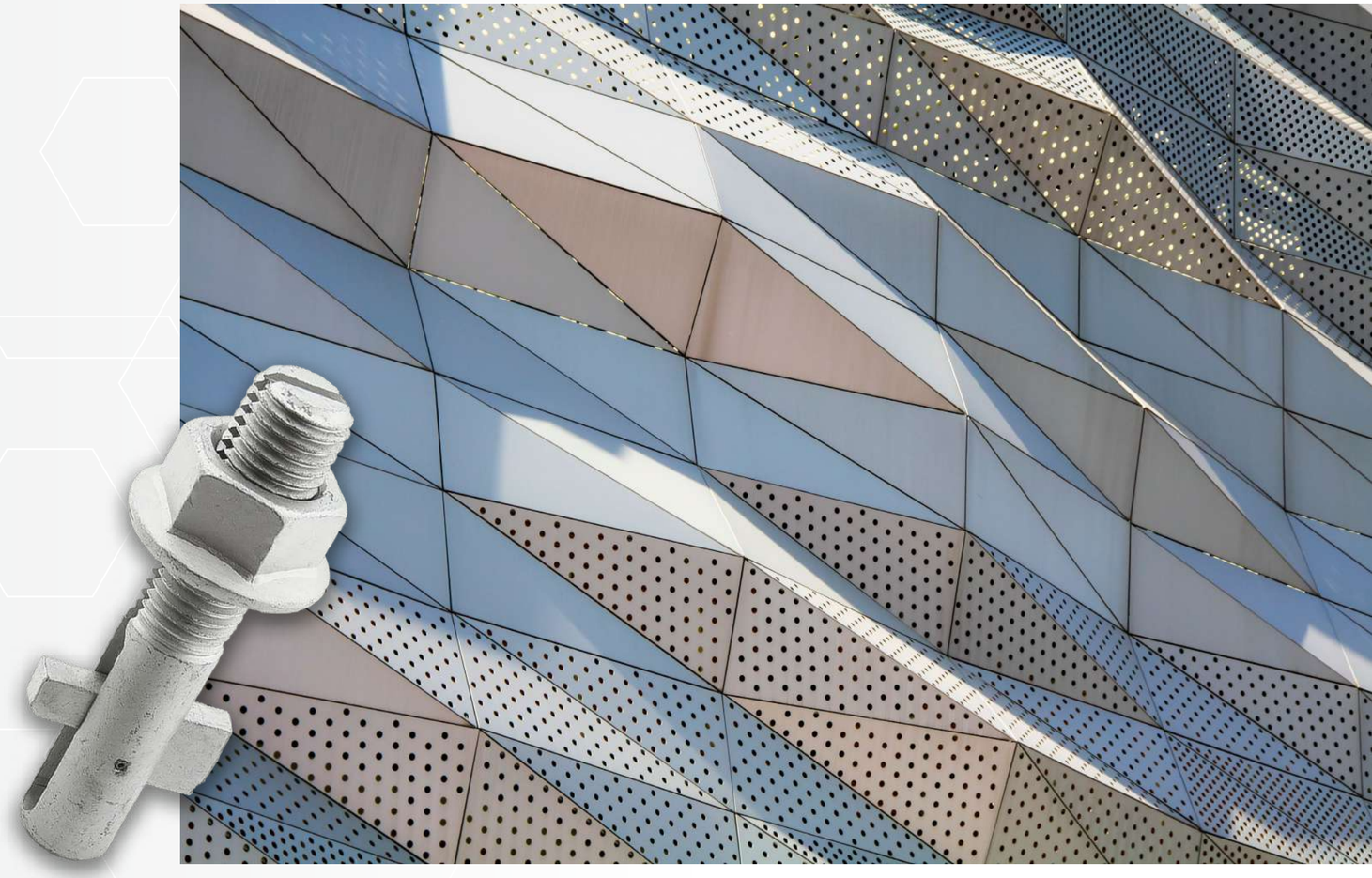
For more information: **blindbolt.co.nz**

The Standard Blind Bolt
Introduction

Thanks to the unique flexibility of the Blind Bolt we are constantly finding new areas where the product can save time and money, as well as increasing our range of sizes to suit your requirements.

The Blind Bolt brings exceptional qualities to the market in that it has transcended the first generation of blind fixings and fasteners become a product that is widely utilised throughout the construction industry. There aren't many fixing products which can change the way designers and architects think, but we can honestly state that about our blind bolts.

No longer is fixing into a girder cavity or box section a problem. The Blind Bolt has provided a solid solution whilst also reducing costs, in most cases. The Blind Bolt is now being used in areas where never expected and we are sure there are many more uses for the system.



The Standard Blind Bolt **Technical Data**

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Blind Bolt Product Specification – **Zinc Flake 1000Hr SSP – Property Class 10.9[1]**

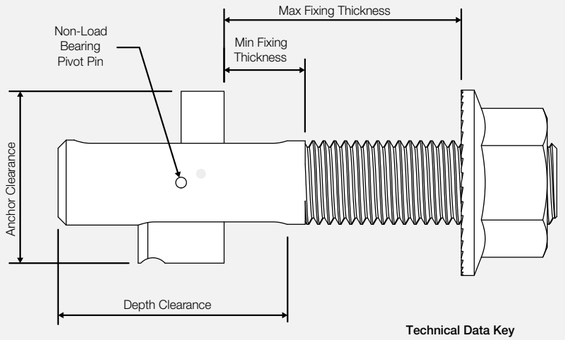
Product Code	Bolt Size	Box Qty	Hole Diameter, mm	Fixing Thickness, min, mm	Fixing Thickness, max, mm	Anchor Clearance, mm	Depth Clearance, mm	Minimum Hole Centres, mm
BB0850ZF	**M8 x 50**	50	9	9	24	19	25	20
BB1060ZF	**M10 x 60**	40	11	10	30	23	30	20
BB1095ZF	**M10 x 95**	20	11	25	65	23	30	20
BB10130ZF	**M10 x 130**	20	11	55	100	23	30	20
BB1270ZF	**M12 x 70**	20	13	12	35	26	35	25
GBB30140ZF	**M30 x 140***	5	32	27	60	65	72	75

Blind Bolt Product Specification – **Hot Dip Galvanised – Property Class 10.9[1]**

Product Code	Bolt Size	Box Qty	Hole Diameter, mm	Fixing Thickness, min, mm	Fixing Thickness, max, mm	Anchor Clearance, mm	Depth Clearance, mm	Minimum Hole Centres, mm
BB1270HDG	**M12 x 70**	20	13	12	35	26	35	25
BB12120HDG	**M12 x 120**	25	13	30	85	26	35	25
BB12180HDG	**M12 x 180**	20	13	80	140	26	35	25
GBB1475HDG	**M14 x 75***	20	15	14	35	32	38	32
GBB14125HDG	**M14 x 125***	20	15	28	82	32	38	32
GBB14185HDG	**M14 x 185***	20	15	75	142	32	38	32
GBB1690HDG	**M16 x 90***	20	17	13	43	36	43	35
GBB16130HDG	**M16 x 130***	15	17	40	75	36	43	35
GBB16180HDG	**M16 x 180**	10	17	55	125	36	43	35
GBB20110HDG	**M20 x 110***	10	22	21	56	44	56	48
GBB20140HDG	**M20 x 140***	8	22	21	86	44	56	48
GBB20180HDG	**M20 x 180***	10	22	80	120	44	56	48
GBB20250HDG	**M20 x 250***	10	22	130	185	44	56	48
GBB24130HDG	**M24 x 130***	5	26	21	62	53	64	60

[1] Property Class 10.9 means f_{ur} = 1000 MPa

* We strongly recommend the use of our installation gauges when installing these bolts



Technical Data Key

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The Standard Blind Bolt **Technical Data**

BLINDBOLT®

Hot Dip Galvanised And Zinc Flake Blind Bolt Property Class 10.9[1]
Design resistances to the principles of NZS 3404

Diameter	Tension Capacity ϕN_{tf} (kN)	Shear Capacity over thread ϕV_f (kN)	Shear Capacity over slot ϕV_f (kN)	Recommended tightening torque (Nm)
M8	9.8	14.6	9.1	15
M10	14.1	23.2	19.0	24
M12	22.4	33.7	26.4	30
M14	34.8	46.0	34.8	40
M16	38.8	62.8	49.1	50
M20	71.4	98.0	76.1	65
M24	117	141	105	75
M30	175	224	165	85

[1] Property Class 10.9 means f_{uf} = 1000 MPa

These are design values and should be compared directly with the design shear force $\boldsymbol{V_f}^*$ and design tension force $\boldsymbol{N_{tf}}^*$.

Bolt bearing capacity should be calculated in accordance with NZS 3404 clause 9.3.2.4.1, using the nominal diameter of the bolt.

Combined shear and tension should satisfy the following equation:

$$\left(\frac{V_f^*}{\phi V_f}\right)^2 + \left(\frac{N_{tf}^*}{\phi N_{tf}}\right)^2 \leq 1.0$$

using the values o $\boldsymbol{\phi V_f}$ and $\boldsymbol{\phi N_{tf}}$ from the adjacent table.

The design tension resistances make no allowance for the deformation of the connected parts, which is likely to be the critical check when connecting thin material.

The Standard Blind Bolt **Technical Data**

BLINDBOLT®

Blind Bolt Product Specification **- Stainless Steel A4-70**

Product Code	Bolt Size	Box Qty	Hole Diameter, mm	Fixing Thickness, min, mm	Fixing Thickness, max, mm	Anchor Clearance, mm	Depth Clearance, mm	Minimum Hole Centres, mm
BB0850A4ASM	**M8 x 50**	50	9	9	24	19	25	20
BB1060A4ASM	**M10 x 60**	40	11	10	330	23	30	20
BB1290A4ASM	**M12 x 90**	20	13	12	55	26	35	25
GBB16100A4ASM	**M16 x 100***	20	17	13	53	36	43	35

Stainless Steel Blind Bolt – **Design resistances to the principles of NZS 3404#**

Diameter	Tension Capacity ϕN_{tf} (kN)	Shear Capacity over thread ϕV_f (kN)	Shear Capacity over slot ϕV_f (kN)	Recommended tightening torque (Nm)
M8	5.3	12.3	7.8	15
M10	12.7	19.5	13.3	22
M12	22.0	28.3	18.4	28
M16	42.9	52.8	36.1	45

* We strongly recommend the use of our installation gauges when installing these bolts

NZS 3403 does not cover the design of stainless steel. The values on this table have been determined in accordance with EN 1993-1-8, which is compatible with NZS 3404.

These are design values and should be compared directly with the design shear force V_f^* and design tension force N_{tf}^*.

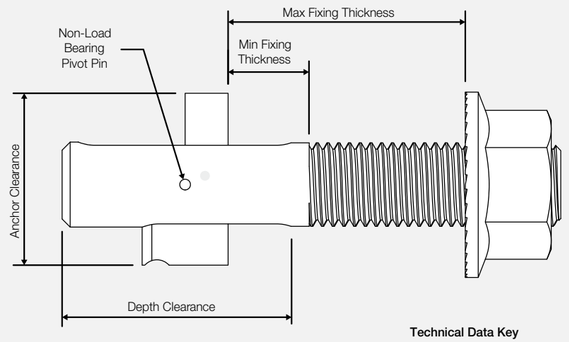
Bolt bearing capacity should be calculated in accordance with NZS 3404 clause 9.3.2.4.1, using the nominal diameter of the bolt.

Combined shear and tension should satisfy the following equation:

$$\left(\frac{V_f^*}{\phi V_f}\right)^2 + \left(\frac{N_{tf}^*}{\phi N_{tf}}\right)^2 \leq 1.0$$

using the values of ϕV_f and ϕN_{tf} from the adjacent table.

The design tension resistances make no allowance for the deformation of the connected parts, which is likely to be the critical check when connecting thin material.



Technical Data Key

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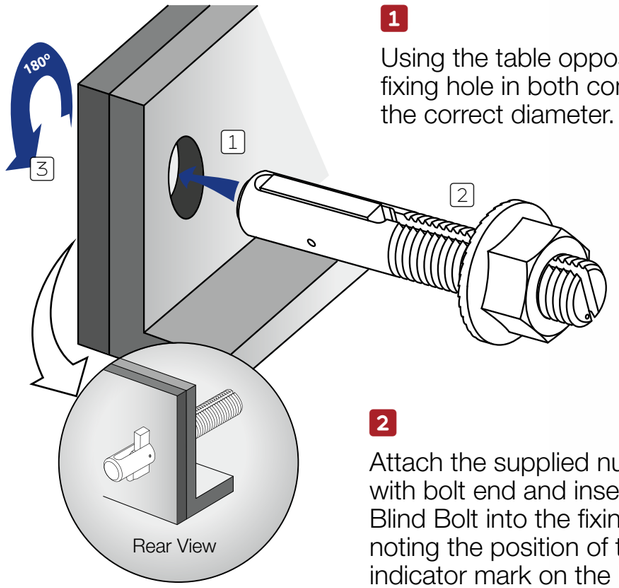
Blind Bolt **Installation Instructions**

The Standard Blind Bolt Installation



1

Using the table opposite drill a fixing hole in both components to the correct diameter.

2

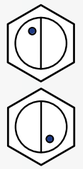
Attach the supplied nut flush with bolt end and insert the Blind Bolt into the fixing hole noting the position of the indicator mark on the head of the bolt, (see indicator mark diagram).

3

Rotate the Blind Bolt through 180°. This action will release the locking anchor, (see rear view).

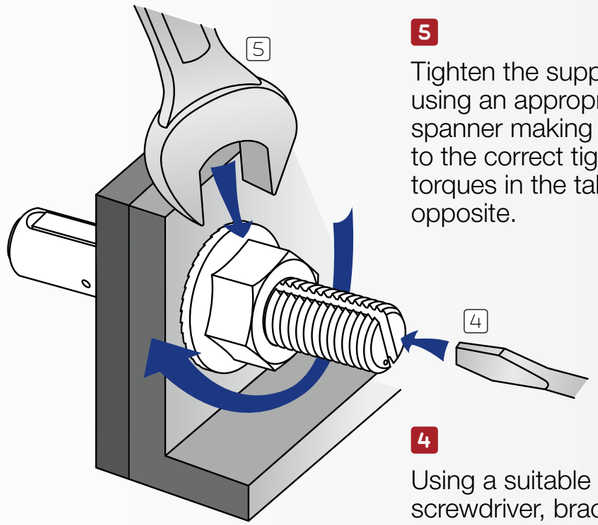
! Important

Overspray or other contamination on the “blind” side of the joint should be avoided, as this may prevent the application of the recommended tightening torque



Indicator Mark
Anchor Stowed

Indicator Mark
Anchor Deployed



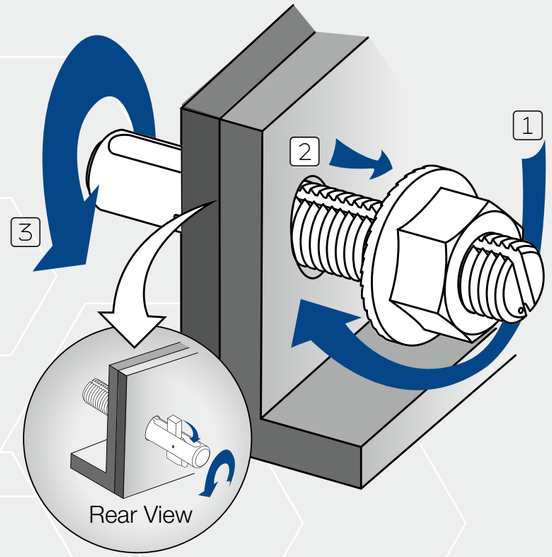
4

Using a suitable screwdriver, brace the bolt to prevent the body from rotating.

5

Tighten the supplied nut using an appropriate spanner making reference to the correct tightening torques in the table opposite.

Removal



1

To remove a Blind Bolt release the fixing nut but DO NOT remove it

2

Push the Blind Bolt Further into the fixing hole and rotate the entire bolt 180°. (See indicator mark diagram for reference.)

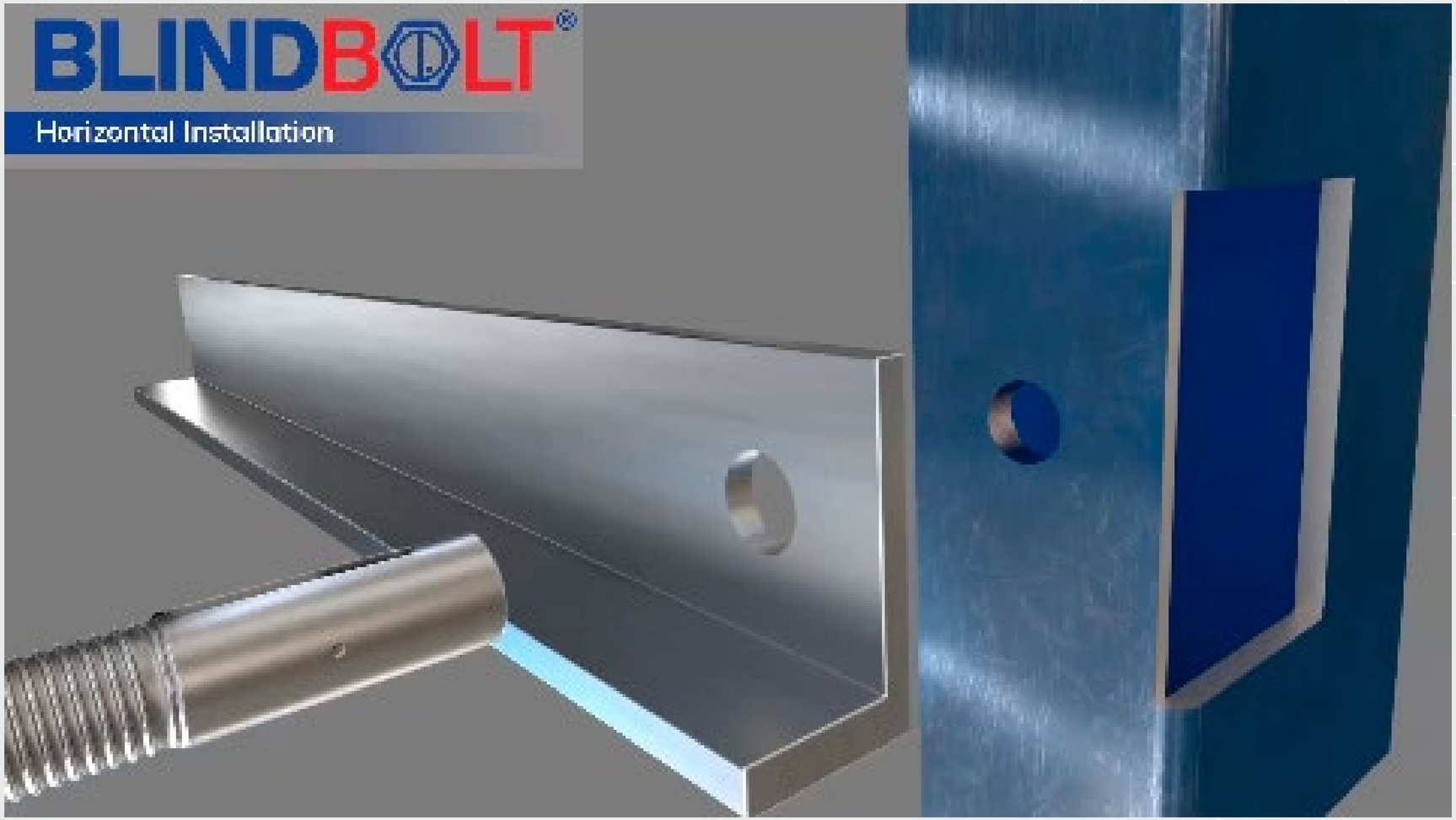
3

Remove the Blind Bolt once anchor has been stowed.

Diameter & Torque Reference

Bolt Size, mm	Hole Diameter, mm	Hot Dip Galv & Zinc Flake Recommended Tightening Torque, Nm	A4-70 Stainless Steel Recommended Tightening Torque, Nm
M8	**9**	15	15
M10	**11**	24	22
M12	**13**	30	28
M14	**15**	34	-
M16	**17**	50	45
M20	**22**	65	-
M24	**26**	75	-
M30	**32**	85	-

Blind Bolt **Horizontal Installation**



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Blind Bolt **Horizontal Removal**

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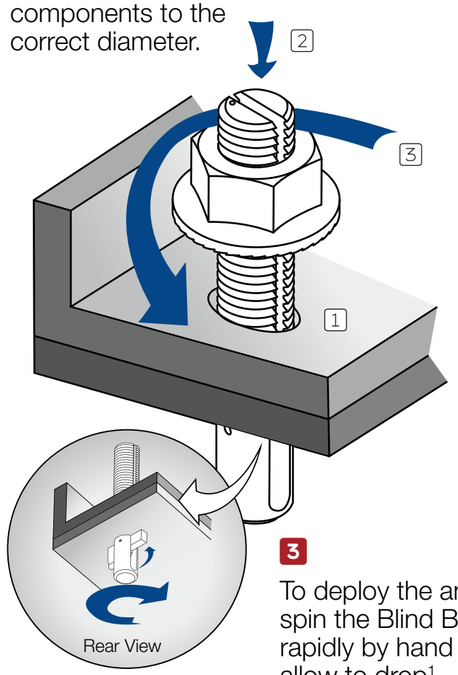
The Standard Blind Bolt **Installation Guide**

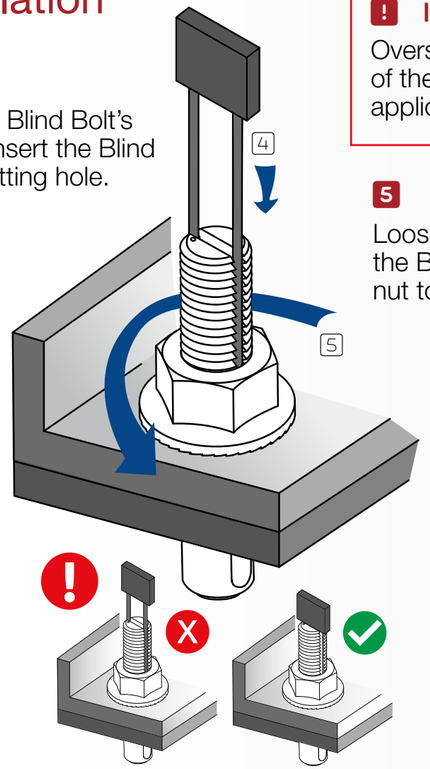
Vertical Blind Bolt Installation

1
Using the table, drill a fixing hole in both components to the correct diameter.

2
Loosely fit the Blind Bolt's nut and fully insert the Blind Bolt into the fitting hole.



3
To deploy the anchor spin the Blind Bolt rapidly by hand and allow to drop[1].

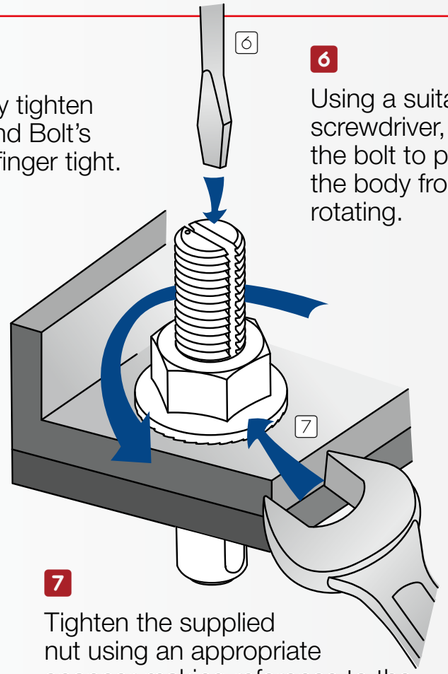


4
For M14 Blind Bolts and above, using the Installation Gauge supplied, insert both legs into the lateral grooves fully to ensure the anchor has correctly deployed[2].

> **! Important**
> Overspray or other contamination on the "blind" side of the joint should be avoided, as this may prevent the application of the recommended tightening torque

5
Loosely tighten the Blind Bolt's nut to finger tight.

6
Using a suitable screwdriver, brace the bolt to prevent the body from rotating.



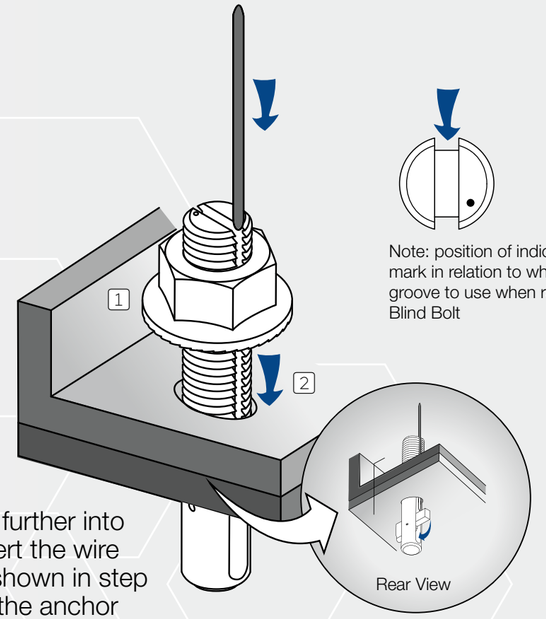
7
Tighten the supplied nut using an appropriate spanner making reference to the correct tightening torques in the table opposite.

[1] Anchors on M14 and above Blind Bolts can also be activated using the provided wire tool, see removal steps opposite.

[2] The head of the Installation Gauge should sit flush on the head of the Blind Bolt if deployment was successful. If a gap is present repeat step 1 and re-test.

Removal

1
To remove a Blind Bolt release the fixing nut but **DO NOT** remove it.



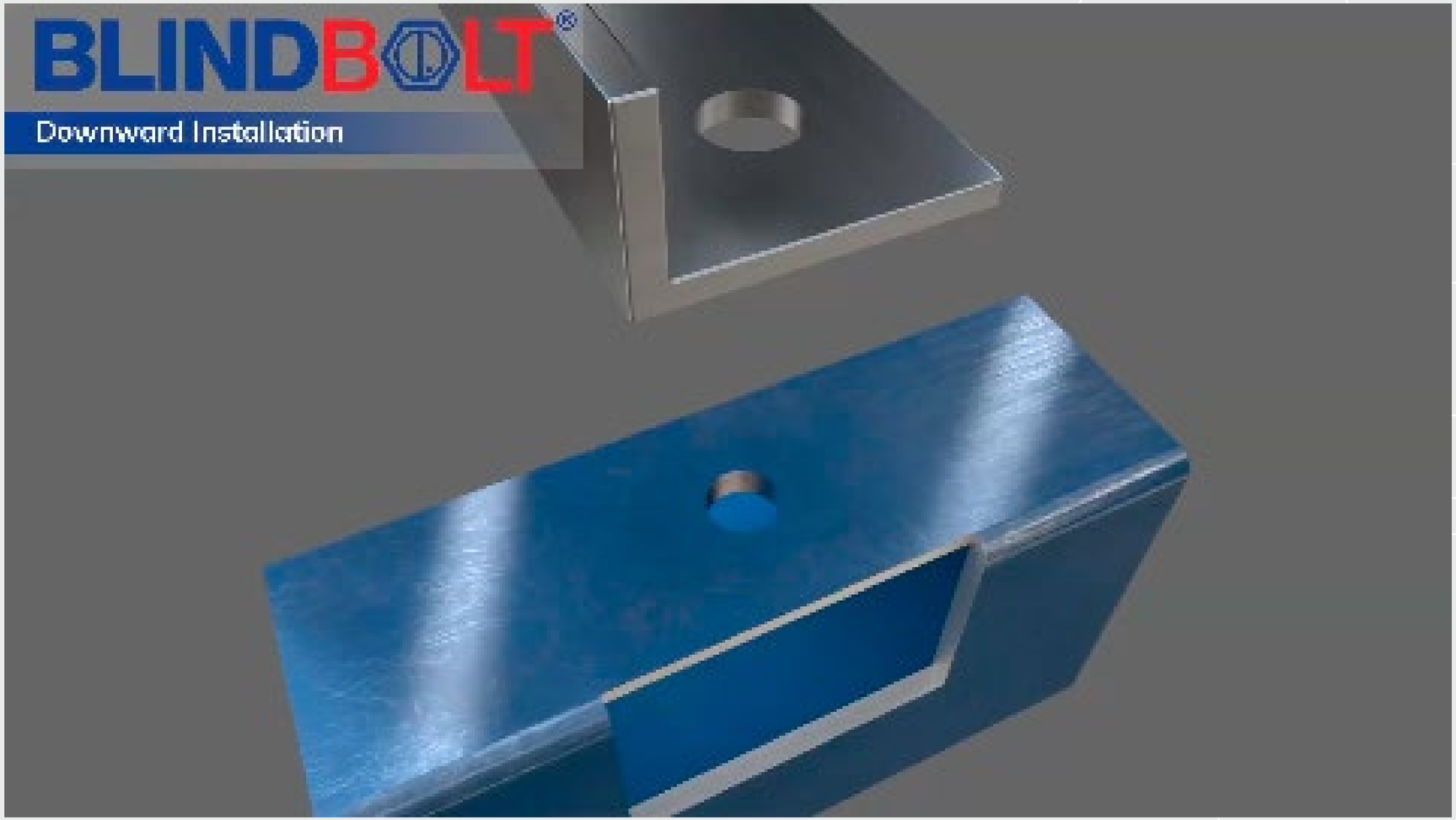
Note: position of indicator mark in relation to which groove to use when removing Blind Bolt

2
Push the Blind Bolt further into the fixing holes, insert the wire tool into the grove shown in step 3a. This will retract the anchor back into the body allowing it to be removed from the fixing hole.

Diameter & Torque Reference

Bolt Size, mm	Hole Diameter, mm	Hot Dip Galv & Zinc Flake Recommended Tightening Torque, Nm	A4-70 Stainless Steel Recommended Tightening Torque, Nm
M8	**9**	15	15
M10	**11**	24	22
M12	**13**	30	28
M14	**15**	34	-
M16	**17**	50	45
M20	**22**	65	-
M24	**26**	75	-
M30	**32**	85	-

Blind Bolt **Downward Installation**



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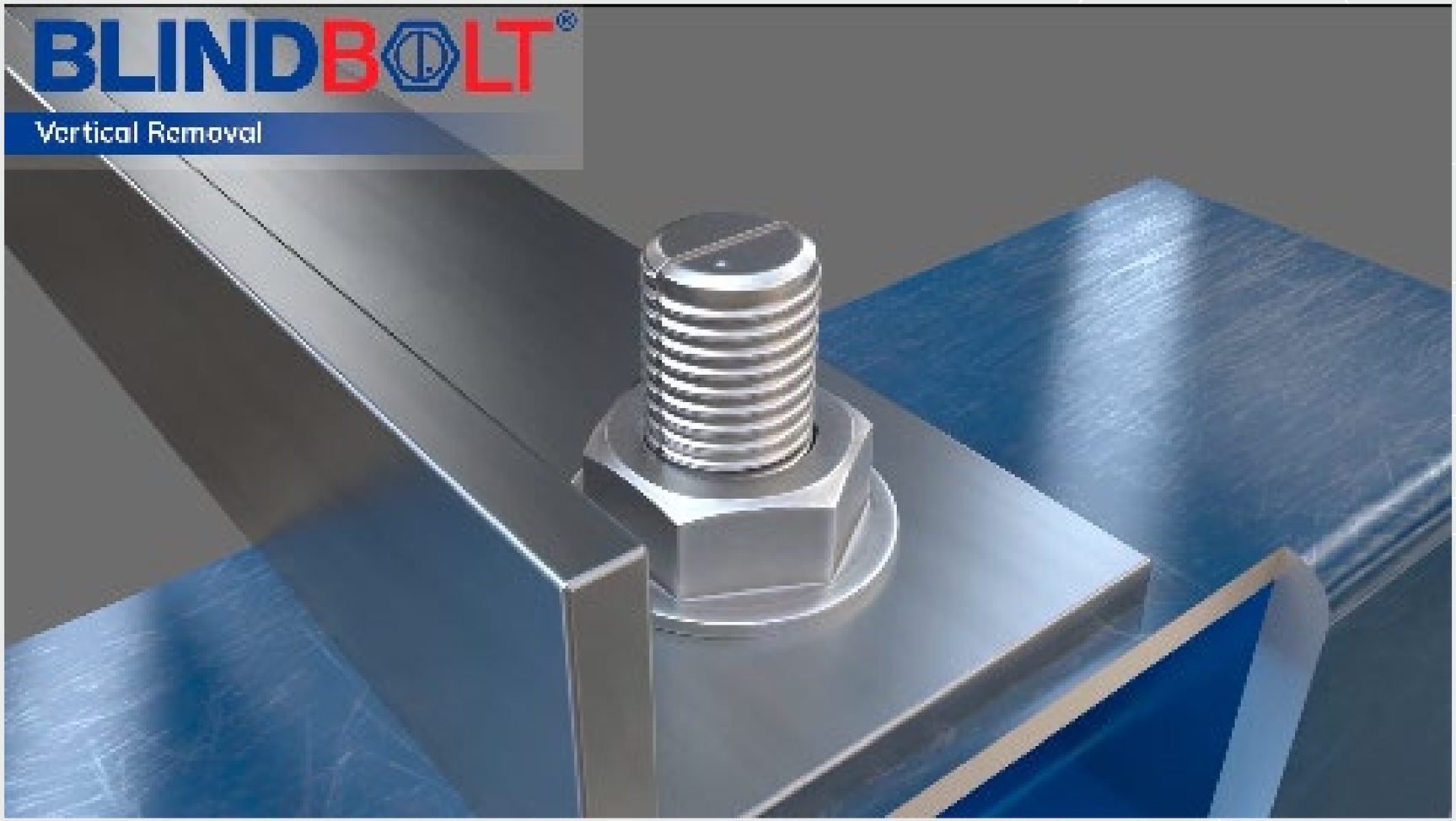
Blind Bolt **Vertical Removal**



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The Heavy Duty Blind Bolt
Introduction

The HD, or Heavy Duty Bolt was developed to address the need for a shorter blind fixing with improved performance where a shear plane would fall across the legs of a Blind Bolt.

With its expanding base and unique pin locking mechanism the HD bolt is the idea fixing solution between heavy weight steel sections. The HD bolt employs a simple activation method designed to reduce installation time and expense. A hammer and a spanner are all that's required to activate the Heavy Duty Bolt removing the need for costly specialist equipment required with similar products.

- Quick and easy to install.
- No oversized hole required.
- Finished with a Zinc Flake coating giving 1000 hours salt spray protection.
- Increased assembly efficiency.
- Available in 316 stainless steel for high corrosion areas.
- Unique pin locking design.

The Heavy Duty Bolt **Technical Data**

BLINDBOLT®

Heavy Duty Product Specification

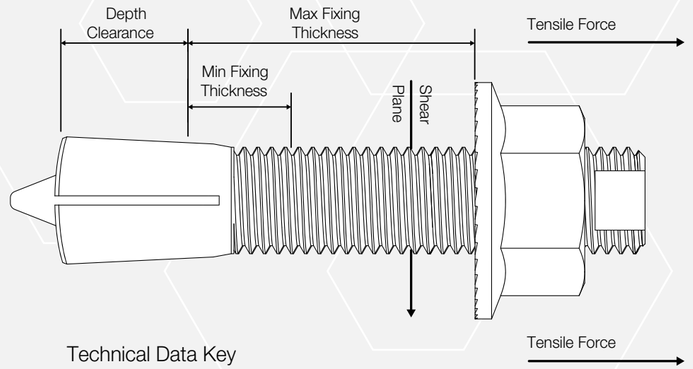
Zinc Flake 1000Hr SSP (1000 hour Salt Spray Protection)

Product Code	Bolt Size	Hole Diameter, mm	Clamping Range, min, mm	Clamping Range, max, mm	Depth Clearance, mm	Corrosion Protection Salt Spray (hours)
HD0845ZF	**M8 x 45**	8	7	25	10	Zinc Flake 1000 Hr
HD1045ZF	**M10 x 45**	10	7	25	12	Zinc Flake 1000 Hr
HD1060ZF	**M10 x 60**	10	7	40	12	Zinc Flake 1000 Hr
HD1245ZF	**M12 x 45**	12	8	22	15	Zinc Flake 1000 Hr
HD1260ZF	**M12 x 60**	12	8	34	15	Zinc Flake 1000 Hr
HD1275ZF	**M12 x 75**	12	8	48	15	Zinc Flake 1000 Hr
HD1660ZF	**M16 x 60**	16	12	30	25	Zinc Flake 1000 Hr
HD1675ZF	**M16 x 75**	16	12	45	25	Zinc Flake 1000 Hr
HD2070ZF	**M20 x 70**	20	15	32	30	Zinc Flake 1000 Hr
HD2085ZF	**M20 x 85**	20	15	47	30	Zinc Flake 1000 Hr

Design Resistances for HD Type Blind Bolts

Design to BS EN 1993-1-8 Zinc Flake 1000Hr SSP HD Bolts

Bolt Size	Single Shear, kN	Tension, kN	Recommended Pre-load Tightening Torque, Nm
M8	13.6	13.6	20
M10	21.9	31.7	35
M12	32.2	46.6	45
M16	60.8	69.6	95
M20	95.5	88.2	120



Technical Data Key

The Heavy Duty Bolt **Technical Data**

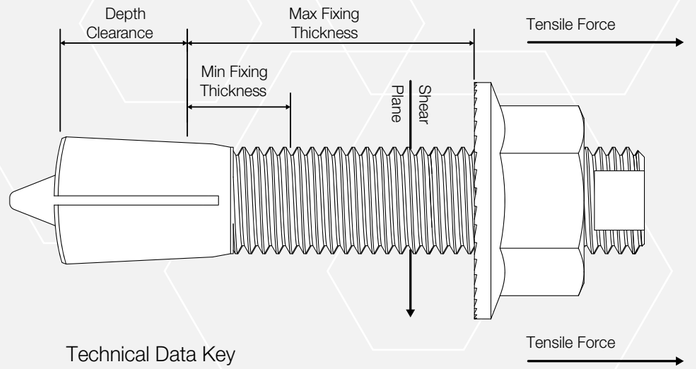
BLINDBOLT®

Heavy Duty Product Specification – **A4-70 Stainless Steel**

Product Code	Bolt Size	Hole Diameter, mm	Clamping Range, min, mm	Clamping Range, max, mm	Depth Clearance, mm
HD0845SS	**M8 x 45**	8	7	25	10
HD1045SS	**M10 x 45**	10	7	25	12
HD1060SS	**M10 x 60**	10	7	40	12
HD 1245SS	**M12 x 45**	12	8	22	15
HD1260SS	**M12 x 60**	12	8	37	15
HD1660SS	**M16 x 60**	16	12	30	25
HD2070SS	**M20 x 70**	20	15	32	30

Design Resistances for HD Type Blind Bolts
Design to BS EN 1993-1-8 A4-70 Stainless Steel

Bolt Size	Shear, kN	Tension, kN	Recommended Pre-load Tightening Torque, Nm
M8	11.5	11.0	18
M10	18.4	10.1	24
M12	27.1	25.3	30
M16	51.1	29.4	45
M20	80.2	59.5	80



Technical Data Key

The Heavy Duty Bolt **Installation Guide**

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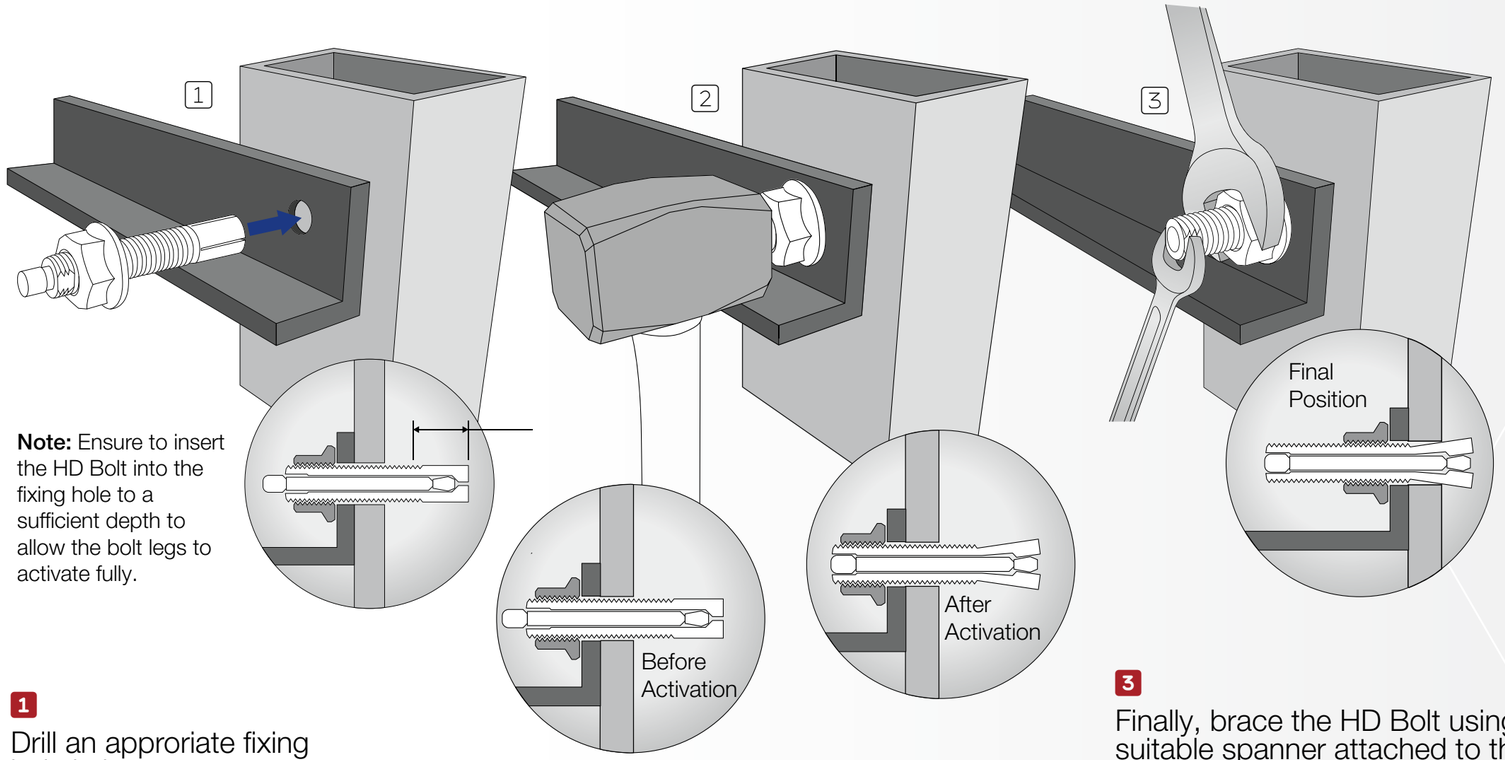

Note: Ensure to insert the HD Bolt into the fixing hole to a sufficient depth to allow the bolt legs to activate fully.

1

Drill an approriate fixing hole in box components to be connected, also note clamping range and depth clearance required.

2

Using a suitable weighted hammer strike the activation pin at the head of the bolt until flush with the bolt head. This will force apart the anchoring legs at the base of the bolt into their locked position.

3

Finally, brace the HD Bolt using a suitable spanner attached to the machined flats at the head of the bolt and tighten the supplied nut to the recommended pre-load torque found adjacent.

Diameter & Torque Reference

Bolt Size	Zinc Flake 1000hr SSP Recommended Tightening Torque (Nm)	A4-70 Stainless Steel Recommended Tightening Torque (Nm)
M8	**20**	18
M10	**35**	24
M12	**45**	30
M16	**95**	45
M20	**120**	80

Heavy Duty Bolt **Installation**

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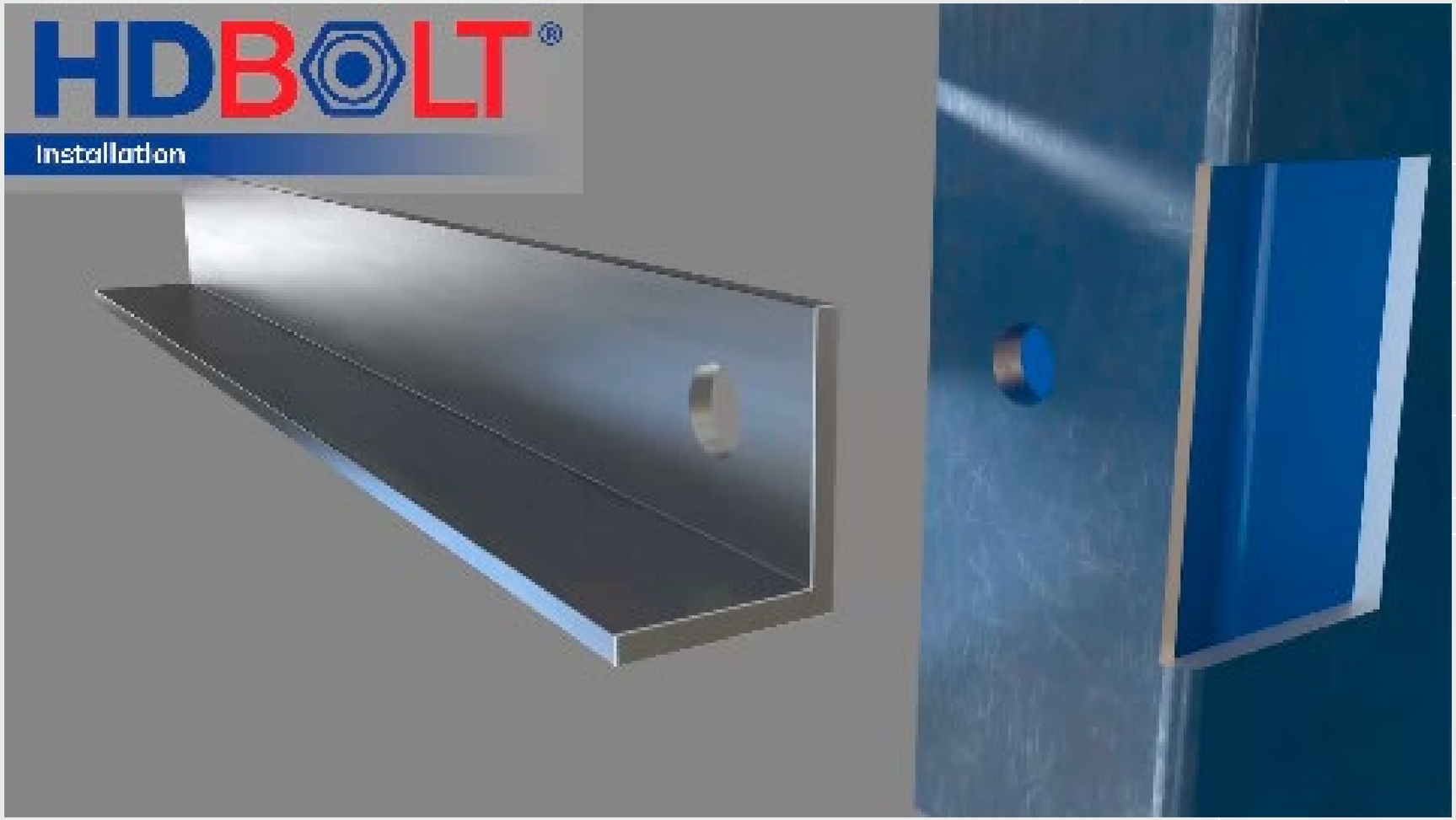

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The Thin Wall Blind Bolt
Introduction

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Thin Wall Bolts or TW Bolts were developed to address the need for a blind fixing to be used into lightweight steel sheet or cladding material.

After installation, a neat, low-profile head is left with no stud. The Thin Wall bolt has a high shear capacity. It is quick and easy to install.

- No over-sized hole required.
- Available in Zinc Nickel Electroplate or 316 stainless steel for high corrosion areas.
- Increased assembly efficiency.

The Thin Wall Bolt **Technical Data**

BLINDBOLT®

Thin Wall Bolt Product Specification **Zinc Nickel**

Product Code	Hole Diameter, mm	Depth Clearance, mm	Clamping Range, min, mm	Clamping Range, max, mm
TW5ZF-10	8	35	2	10
TW5ZF-16	8	40	8	16
TW5ZF-10	10	35	2	10
TW6ZF-16	10	40	8	16
TW8ZF-10	13	45	2	10
TW8ZF-16	13	50	8	16

TW type Blind Bolts
Design resistance to the principles of NZS 3404# - Zinc Nickel

TW Bolt Size	Set Screw Diameter, mm	Collar Outside Diameter, mm	Hole Diameter, mm	Tension Capacity ϕN_{tf} (kN)	Shear Capacity ϕV_f (kN)
TW5	5	7.8	8	4.8	15.9
TW6	6	9.5	10	10.1	23.4
TW8	8	12.6	13	18.4	41.4

NZS 3403 does not cover the design of TW bolts. The values on this table have been determined in accordance with EN 1993-1-8, which is compatible with NZS 3404.

These are design values and should be compared directly with the design shear force V_f^* and design tension force N_{tf}^*.

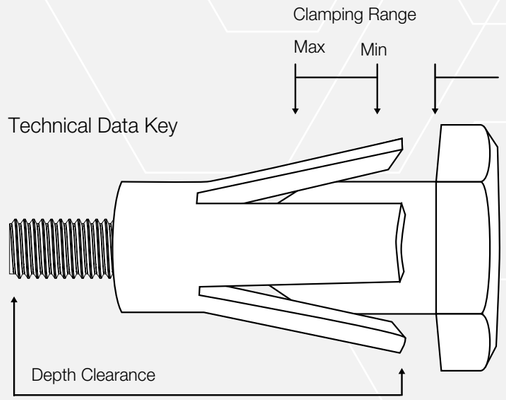
Bolt bearing capacity should be calculated in accordance with NZS 3404 clause 9.3.2.4.1, using the collar outside diameter.

Combined shear and tension should satisfy the following equation:

$$\left(\frac{V_f^*}{\phi V_f}\right)^2 + \left(\frac{N_{tf}^*}{\phi N_{tf}}\right)^2 \leq 1.0$$

using the values of ϕV_f and ϕN_{tf} from the adjacent table.

The design tension resistances make no allowance for the deformation of the connected parts, which is likely to be the critical check when connecting thin material.



The Thin Wall Bolt **Technical Data**

BLINDBOLT®

Thin Wall Bolt Product Specification **Stainless Steel A2-70**

Product Code	Hole Diameter, mm	Depth Clearance, mm	Clamping Range, min, mm	Clamping Range, max, mm
TW5SS-10	8	35	2	10
TW5SS-16	8	40	8	16
TW6SS-10	10	35	2	10
TW6SS-16	10	40	8	16
TW8SS-10	13	45	2	10
TW8SS-16	13	50	8	16

TW type Blind Bolts
Design resistance to the principles of NZS 3404[#] – Stainless Steel A2-70

TW Bolt Size	Set Screw Diameter, mm	Collar Outside Diameter, mm	Hole Diameter, mm	Tension Capacity ϕN_{tf} (kN)	Shear Capacity ϕV_f (kN)
TW5	5	7.8	8	5.0	14.0
TW6	6	9.5	10	7.1	20.8
TW8	8	12.6	13	12.9	36.4

[#] NZS 3403 does not cover the design of TW bolts. The values on this table have been determined in accordance with EN 1993-1-8, which is compatible with NZS 3404.

These are design values and should be compared directly with the design shear force V_f^* and design tension force N_{tf}^*.

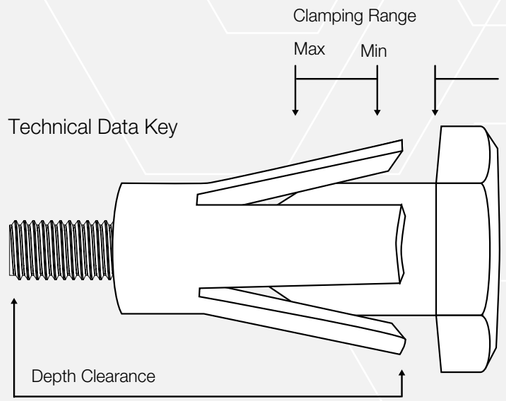
Bolt bearing capacity should be calculated in accordance with NZS 3404 clause 9.3.2.4.1, using the collar outside diameter.

Combined shear and tension should satisfy the following equation:

$$\left(\frac{V_f^*}{\phi V_f}\right)^2 + \left(\frac{N_{tf}^*}{\phi N_{tf}}\right)^2 \leq 1.0$$

using the values of ϕV_f and ϕN_{tf} from the adjacent table.

The design tension resistances make no allowance for the deformation of the connected parts, which is likely to be the critical check when connecting thin material.



Thin Wall Bolt **Installation**

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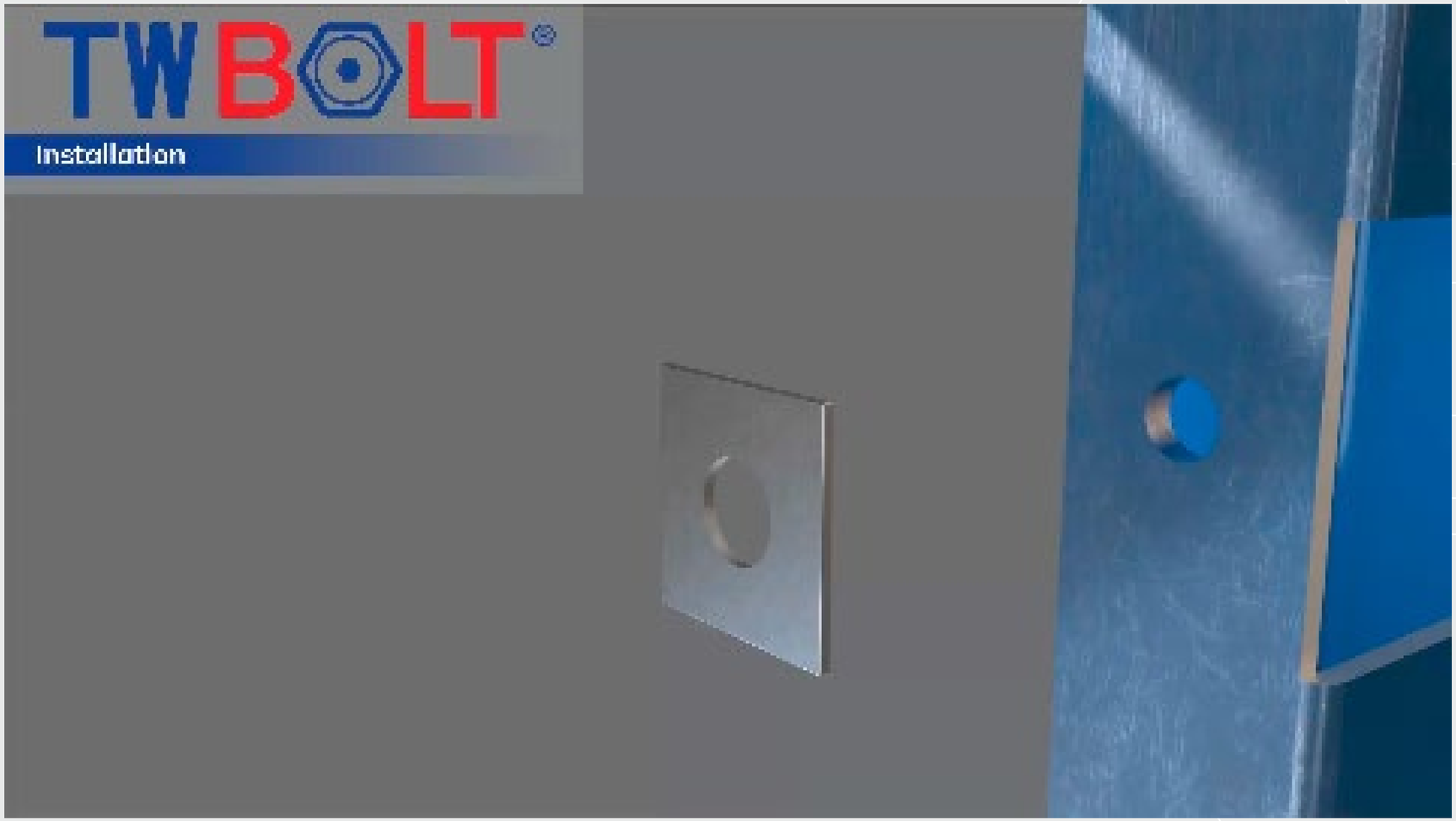
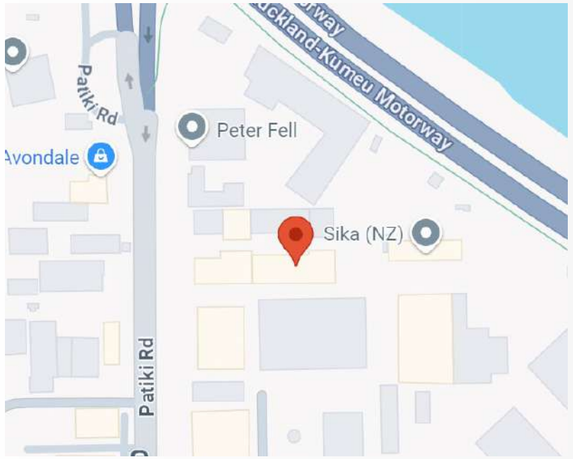
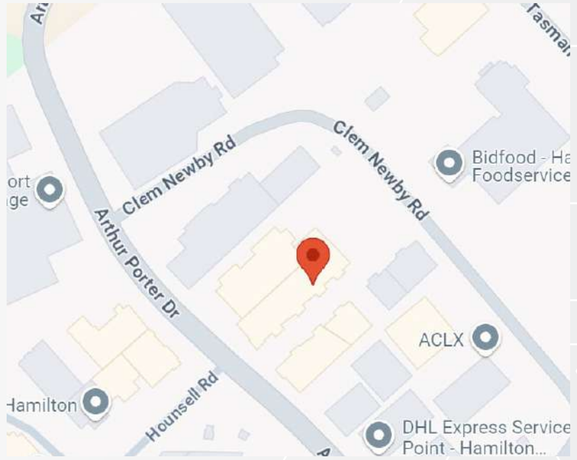
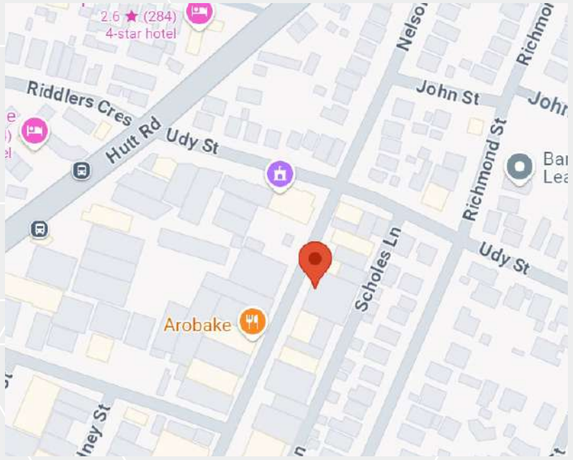


Or please access
the video
via this **link**

Milsons Company Branches







Palmerston North

20 Kaimanawa Street,
Palmerston North 4414

Call us on
0800 507 444

Auckland

71C Patiki Road,
Avondale, Auckland, 1026

Call us on
09 280 4609

Hamilton

740 Arthur Porter Drive,
Te Rapa, Hamilton, 3200

Call us on
07 282 0490

Wellington

126 Nelson Street,
Petone, Lower Hutt, 5012

Call us on
04 282 1298

Our **Contact Details**

milsons®

Delivering New Zealand's
Leading Fastening Experience

New Zealand HQ:

20 Kaimanawa Street
Palmerston North, 4414

Call us on
0800 507 444

Email us
sales@milsons.co.nz

View our range at
milsons.co.nz