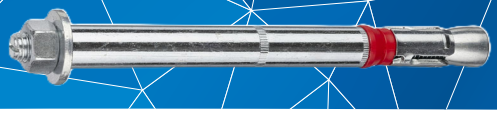
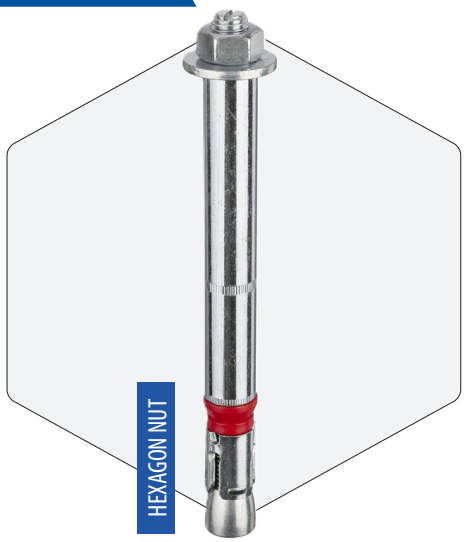
Heavy Duty Anchor
Hexagon Nut Zinc Plated





INFORMATION

The torque controlled Heavy Duty Anchor Hexagon Nut is a zinc plated high performance anchor for use in cracked/non-cracked concrete and structural applications such as:

- Columns
- Guard rails
- Façades
- Staircases
- Silo installation
- Machines
- Cantilever beams

The variety of sizes and different embedment depths provide flexibility in selecting the appropriate anchor based on the fixture thickness.

Anchor Calculator Software can be used for detailed verifications based on EN 1992-4 or EOTA guidelines.

BASE MATERIAL

- Concrete C20/25 to C50/60
- Cracked Concrete
- Non-Cracked Concrete

FEATURES

- High Performance
- C1, C2 Seismic Performance
- Wide Range Of Sizes
- Fast And Secure Installation
- Through Fixing
- Three way Expansion Sleeve
- Zinc Plated Min. 5µm
- Close Spacing And Edge Distance
- Performance Data for different embedment depth
- Reaction To Fire Class A1
- Fire Resistant Loading

APPROVALS

European Technical Assessment

ETA-07/0331
Option 1 Structural Applications

C1, C2
Seismic Performance Categories

SOFTWARE

Click here to download the software

RELATED PRODUCTS



SDS+ Drill Bits



Hole Cleaning Pump

BOP1



Heavy Duty
Hexagon Bolt
BZP



Heavy Duty
Countersunk
BZP



Heavy Duty
Hexagon Bolt
A4 Stainless Steel



Heavy Duty
Stud and Nut
A4 Stainless Steel



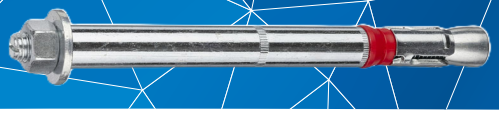
Heavy Duty
Countersunk
A4 Stainless Steel

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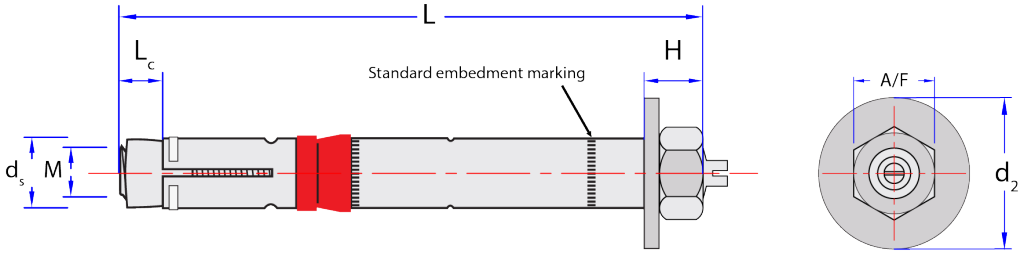
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Fax:+44 (0)20 8943 1140

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RANGE DATA



RANGE DATA							
Part Number	Size of Thread	Sleeve Diameter	Total Length	Cone Length	Head Height	Width Across Flats	Washer Outer diameter
	M	(d_s)	(L)	(L_c)	(H)	(A/F)	(d_2)
	mm	mm	mm	mm	mm	mm	mm
NHD0810	M8	12	90	11	8.8	13	20
NHD0830			110				
NHD0850			130				
NHD1015	M10	15	111	14	10.9	17	25
NHD1025			121				
NHD1045			141				
NHD1210	M12	18	122	16	13.8	19	30
NHD1220			132				
NHD1240			152				
NHD1270			182				
NHD1620	M16	24	157	22	18.8	24	40
NHD1650			187				

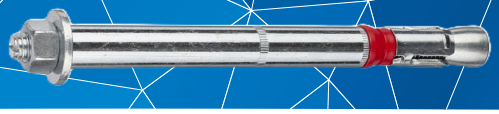
Technical Data Sheet

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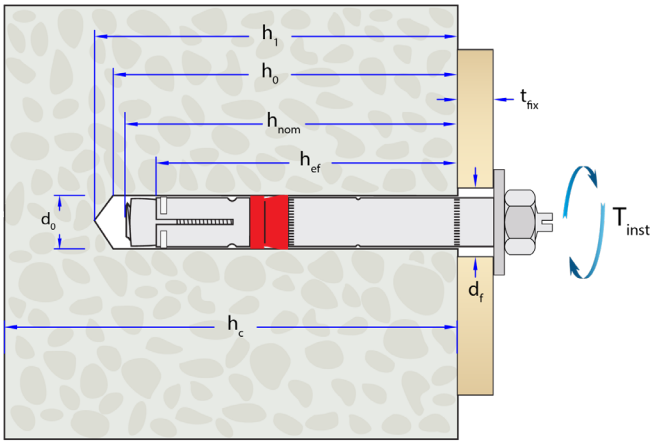
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Installation Into Concrete



Installation Parameters

Part Number	Drill Hole Diameter	Standard Embedment				Deep Embedment				Fixture Clearance Hole	Tightening Torque
		Min Hole Depth	Embedment Depth	Anchorage depth	Max Fixture Thickness	Min Hole Depth	Embedment Depth	Anchorage depth	Max Fixture Thickness		
	(d_0)	(h_1)	(h_{nom})	(h_{ef})	(t_{fix})	(h_1)	(h_{nom})	(h_{ef})	(t_{fix})	(d_f)	(T_{inst})
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm
NHD0810	12	80	70	60	10	N/A				14	30
NHD0830					30						
NHD0850					50	120	110	100	10		
NHD1015	15	95	85	71	15	N/A				17	50
NHD1025					25						
NHD1045					45	130	120	106	10		
NHD1210	18	105	95	80	10	N/A				20	80
NHD1220					20						
NHD1240					40	130	120	105	15		
NHD1270					70				45		
NHD1620	24	130	120	100	20	140	130	110	10	26	160
NHD1650					50				40		

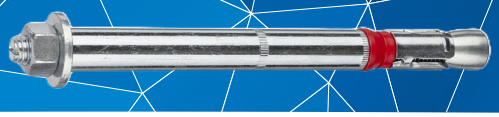
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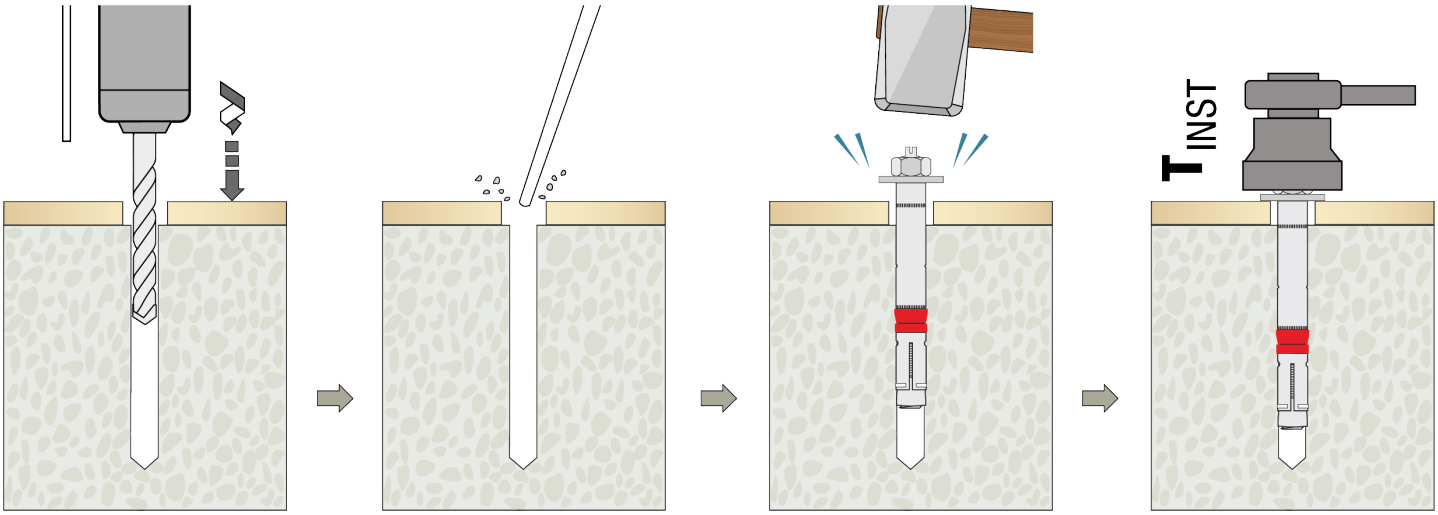
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INSTALLATION INSTRUCTIONS

Click on the QR code or scan it to watch the video



-Position fixture and drill correct diameter hole to corresponding depth

-Clean hole by blowing to remove drilling debris and dust

-Insert anchor through fixture into concrete and lightly hammer into concrete

-Tighten with torque wrench to recommended torque

PERFORMANCE DATA FOR STRUCTURAL APPLICATIONS (NON-CRACKED CONCRETE)

Performance Data (C20/25 non-cracked concrete) Standard Embedment								
Size Of Thread	Embedment Depth	Minimum Concrete Thickness	Characteristic Resistance		Design Resistance		Recommended Resistance	
	h_{nom}	h_{min}	Tensile (N_{Rk})	Shear (V_{Rk})	Tensile (N_{Rd})	Shear (V_{Rd})	Tensile(N_{Rrec})	Shear (V_{Rrec})
-	mm	mm	kN	kN	kN	kN	kN	kN
M8	70	120	20	25	13.3	20	9.5	14.2
M10	85	140	29.4	36	19.6	28.8	14	20.5
M12	95	160	35.2	70.4	23.4	46.9	16.7	33.5
M16	120	200	49.1	98.3	32.8	65.5	23.4	46.8

Performance Data (C20/25 non-cracked concrete) Deep Embedment								
Size Of Thread	Embedment Depth	Minimum Concrete Thickness	Characteristic Resistance		Design Resistance		Recommended Resistance	
	h_{nom}	h_{min}	Tensile (N_{Rk})	Shear (V_{Rk})	Tensile (N_{Rd})	Shear (V_{Rd})	Tensile(N_{Rrec})	Shear (V_{Rrec})
-	mm	mm	kN	kN	kN	kN	kN	kN
M8	110	160	20	25	13.3	20	9.52	14.2
M10	120	175	30	36	20	28.8	14.2	20.5
M12	120	185	36	63	24	50.4	17.1	36
M16	130	210	50	91	33.3	72.8	23.8	52

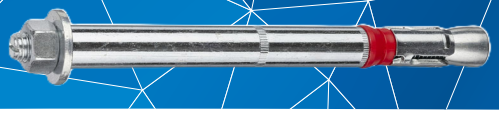
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Tel: +44 (0)20 8943 1800
Fax:+44 (0)20 8943 1140

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PERFORMANCE DATA FOR STRUCTURAL APPLICATIONS (CRACKED CONCRETE)

Performance Data* (C20/25 cracked concrete) Standard Embedment								
Size Of Thread	Embedment Depth	Minimum Concrete Thickness	Characteristic Resistance		Design Resistance		Recommended Resistance	
	h_{nom}	h_{min}	Tensile (N_{Rk})	Shear (V_{Rk})	Tensile (N_{Rd})	Shear (V_{Rd})	Tensile(N_{Rrec})	Shear (V_{Rrec})
-	mm	mm	kN	kN	kN	kN	kN	kN
M8	70	120	12	25	8	20	5.7	14.2
M10	85	140	16	41.2	10.6	27.4	7.6	19.6
M12	95	160	24.6	49.2	16.4	32.8	11.7	23.4
M16	120	200	34.4	68.8	22.9	45.9	16.4	32.7

Performance Data* (C20/25 cracked concrete) Deep Embedment								
Size Of Thread	Embedment Depth	Minimum Concrete Thickness	Characteristic Resistance		Design Resistance		Recommended Resistance	
	h_{nom}	h_{min}	Tensile (N_{Rk})	Shear (V_{Rk})	Tensile (N_{Rd})	Shear (V_{Rd})	Tensile(N_{Rrec})	Shear (V_{Rrec})
-	mm	mm	kN	kN	kN	kN	kN	kN
M8	110	160	12	25	8	20	5.7	14.2
M10	120	175	16	36	10.6	28.8	7.6	20.5
M12	120	185	25	74.1	16.6	49.4	11.9	35.2
M16	130	210	36	79.4	24	52.9	17.1	37.8

* Important notes:

- Fasteners subject to static and quasi-static loads. Please refer to ETA approval or the JCP Anchor Calculation Program for the seismic loads.
- Performance data stated for a single anchor, without the effect of spacing and edge distances. The influence of these parameters must be verified where applicable.
- Minimum concrete thickness, hole diameter, and embedment depth shall correspond to the dimensions stated in this document.
- Concrete strength class C20/25 is assumed.
- Drill holes produced using rotary hammer drilling, unless otherwise noted.
- Installation carried out strictly in accordance with the product's Installation Instructions and performed by a trained operator.
- Characteristic and design resistances derived from ETA approval.
- Design resistances are calculated from characteristic values using the appropriate partial safety factors corresponding to the decisive failure mode.
- The Recommended Resistance is calculated using an additional safety factor (γ_{Add}) equal to 1.4.
- Performance data is valid for shear loading without a lever arm; installations involving a lever arm require additional verifications.
- Performance data is not valid for combined tensile and shear loading; where combined loading occurs, further checks shall be performed.
- When concrete-related strength factors are applied, ensure that the resulting resistance value does not exceed the steel design resistance.
- For project-specific assessments or conditions not explicitly covered, download the JCP Anchor Calculation Program.

JCP PRO Suite
Click here to download the software

For variations in structure thickness, reduced spacing and edge calculations download the free **A**nchor **C**alculation **P**rogram from www.jcpfixings.co.uk

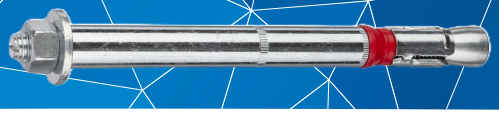
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FIRE RESISTANCE DATA

Fire Resistance Data (C20/25 to C50/60 cracked or non-cracked concrete) Standard Embedment*																		
Size Of Thread	Embedment Depth h_{nom}	Minimum Concrete Thickness (h_{min})	Design Resistance								Recommended Resistance							
			30min (R30)		60min (R60)		90min (R90)		120min (R120)		30min (R30)		60min (R60)		90min (R90)		120min (R120)	
			Tensile ($N_{Rd,fi}$)	Shear ($V_{Rd,fi}$)	Tensile ($N_{Rd,fi}$)	Shear ($V_{Rd,fi}$)	Tensile ($N_{Rd,fi}$)	Shear ($V_{Rd,fi}$)	Tensile ($N_{Rd,fi}$)	Shear ($V_{Rd,fi}$)	Tensile ($N_{Rrec,fi}$)	Shear ($V_{Rrec,fi}$)	Tensile ($N_{Rrec,fi}$)	Shear ($V_{Rrec,fi}$)	Tensile ($N_{Rrec,fi}$)	Shear ($V_{Rrec,fi}$)	Tensile ($N_{Rrec,fi}$)	Shear ($V_{Rrec,fi}$)
	mm	mm	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)
M8	70	120	1.9	1.9	1.5	1.5	1	1	0.8	0.8	1.3	1.3	1.0	1	0.7	0.7	0.5	0.5
M10	85	140	4	4.3	3.2	3.2	2.1	2.1	1.5	1.5	2.8	3	2.2	2.2	1.5	1.5	1	1
M12	95	160	6.2	6.3	4.6	4.6	3	3	2	2	4.4	4.5	3.2	3.2	2.1	2.1	1.4	1.4
M16	120	200	9	11.6	8.6	8.6	5	5	3.1	3.1	6.4	8.2	6.1	6.1	3.5	3.5	2.2	2.2

Fire Resistance Data (C20/25 to C50/60 cracked or non-cracked concrete) Deep Embedment*																		
Size Of Thread	Embedment Depth h_{nom}	Minimum Concrete Thickness (h_{min})	Design Resistance								Recommended Resistance							
			30min (R30)		60min (R60)		90min (R90)		120min (R120)		30min (R30)		60min (R60)		90min (R90)		120min (R120)	
			Tensile ($N_{Rd,fi}$)	Shear ($V_{Rd,fi}$)	Tensile ($N_{Rd,fi}$)	Shear ($V_{Rd,fi}$)	Tensile ($N_{Rd,fi}$)	Shear ($V_{Rd,fi}$)	Tensile ($N_{Rd,fi}$)	Shear ($V_{Rd,fi}$)	Tensile ($N_{Rrec,fi}$)	Shear ($V_{Rrec,fi}$)	Tensile ($N_{Rrec,fi}$)	Shear ($V_{Rrec,fi}$)	Tensile ($N_{Rrec,fi}$)	Shear ($V_{Rrec,fi}$)	Tensile ($N_{Rrec,fi}$)	Shear ($V_{Rrec,fi}$)
	mm	mm	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)
M8	110	160	1.9	1.9	1.5	1.5	1	1	0.8	0.8	1.3	1.3	1	1	0.7	0.7	0.5	0.5
M10	120	175	4	4.3	3.2	3.2	2.1	2.1	1.5	1.5	2.8	3	2.2	2.2	1.5	1.5	1	1
M12	120	185	6.25	6.3	4.6	4.6	3	3	2	2	4.4	4.5	3.2	3.2	2.1	2.1	1.4	1.4
M16	130	210	9	11.6	8.6	8.6	5	5	3.1	3.1	6.4	8.2	6.1	6.1	3.5	3.5	2.2	2.2

* The determination covers anchors with a fire attack from one side only. If the fire attack is from more than one side, the design method may be taken only, if the edge distance of the anchor is $c \geq 300$ mm and $\geq 2\ h_{ef}$.

**For combined loads, use Anchor Calculation Program.

SUPPLEMENTARY DATA

Influence Of Concrete Strength (Cracked/Non-cracked Concrete)					
Concrete strength		C20/25	C30/37	C40/50	C50/60
Cylinder	N/mm^2	20	30	40	50
Cube	N/mm^2	25	37	50	60
Factor	-	1.0	1.22	1.41	1.55

Important Note:
When using concrete factors ensure that loads do not exceed Steel Design Resistance.

Steel Failure						
Size Of Thread	Tensile Resistance			Shear Resistance		
	Characteristic Resistance ($N_{Rk,s}$)	Design Resistance ($N_{Rd,s}$)	Recommended Resistance ($N_{Rrec,s}$)	Characteristic Resistance ($V_{Rk,s}$)	Design Resistance ($V_{Rd,s}$)	Recommended Resistance ($V_{Rrec,s}$)
-	kN	kN	kN	kN	kN	kN
M8	29	19.3	13.8	25	20	14.2
M10	46	30.6	21.9	36	28.8	20.5
M12	67	44.6	31.9	63	50.4	36
M16	126	84	60	91	72.8	52

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