Throughbolt
Hot Dipped Galvanised





INFORMATION

The torque controlled ZYP Throughbolt is a hot dipped galvanised, torque controlled through fixing which is suitable for use in non-cracked concrete for different types of application such as:

- Barriers
- Guard rails
- Fences
- Hand rails
- Signs and posts

BASE MATERIAL

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

FEATURES

- Medium To High Performance
- Wide Range Of Sizes
- Fast And Secure Installation
- Through Fixing
- Three way Expansion Sleeve
- Hot Dipped Galvanized
- Reaction To Fire Class A1

SOFTWARE

Click here to download the software

RELATED PRODUCTS



SDS+ Drill Bits



Hole Cleaning Pump

BOP1



ETA Option 7
Throughbolt HDG



ETA Option 7
Throughbolt BZP



ETA Option 7
Throughbolt
A4 Stainless Steel



ETA Option 1
Throughbolt BZP



ETA Option 1
Throughbolt
A4 Stainless Steel

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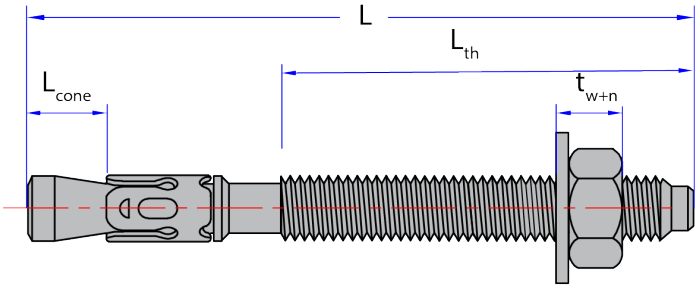
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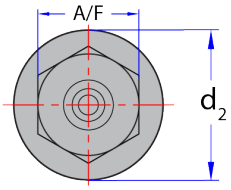
Technical Data Sheet

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RANGE DATA





RANGE DATA							
Part Number	Size of Thread	Total Length	Thread Length	Cone Length	Washer and Nut Thickness	Width Across Flats	Washer Outer diameter
	mm	(L)	(L_{th})	(L_{cone})	(t_{w+n})	(A/F)	(d_2)
		mm	mm	mm	mm	mm	mm
TG08050	M8	50	15	7	10	13	16
TG08075		75	40				
TG08095		95	50				
TG08120		120	85				
TG10060	M10	60	20	8	13	17	20
TG10070		70	30				
TG10080		80	40				
TG10100		100	55				
TG10125		125	80				
TG12085	M12	85	40	10	16	19	24
TG12100		100	55				
TG12115		115	60				
TG12145		145	95				
TG12180		180	110				
TG16110	M16	110	50	12	19	24	30
TG16125		130	65				
TG16150		150	90				
TG16200		200	115				
TG20170	M20	170	100	14	22	30	37
TG20220		220	125				
TG20280		280	150				

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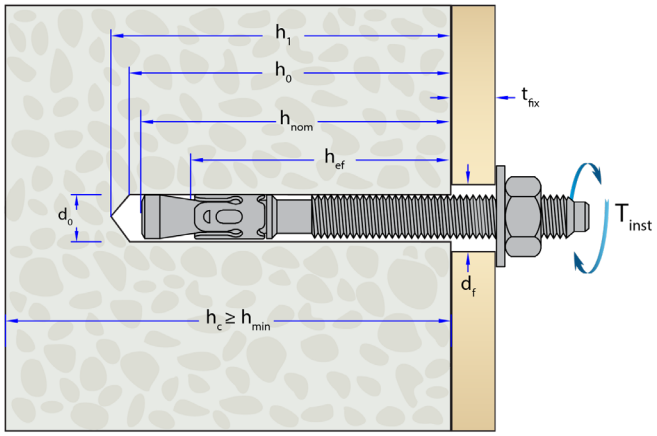
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Installation Into Concrete



Installation Parameters

Part Number	Drill Hole Diameter	Reduced Embedment						Standard Embedment						Fixture Clearance Hole	Tightening Torque
		Min Hole Depth	Embedment Depth	Anchorage depth	Max Fixture Thickness	Minimum spacing	Minimum Edge distance	Min Hole Depth	Embedment Depth	Anchorage depth	Max Fixture Thickness	Minimum spacing	Minimum Edge distance		
	(d_0)	(h_1)	(h_{nom})	(h_{ef})	(t_{fix})	(s_{min})	(c_{min})	(h_1)	(h_{nom})	(h_{ef})	(t_{fix})	(s_{min})	(c_{min})	(d_f)	(T_{inst})
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm
TG08050	8	45	36	28	5	45	45	65	55	48	N/A	75	75	9	15
TG08075					30						10				
TG08095					50						30				
TG08120					75						55				
TG10060	10	50	40	32	10	50	50	70	60	52	N/A	80	80	12	30
TG10070					20						N/A				
TG10080					30						10				
TG10100					50						30				
TG10125					75						50				
TG12085	12	70	60	50	10	75	75	90	80	70	N/A	105	105	14	50
TG12100					25						5				
TG12115					40						20				
TG12145					70						50				
TG12180					105						85				
TG16110	16	85	75	63	15	95	95	110	100	88	N/A	135	135	18	100
TG16125					35						10				
TG16150					55						30				
TG16200					105						80				
TG20170	20	N/A						130	120	106	25	160	160	22	200
TG20220											75				
TG20280											135				

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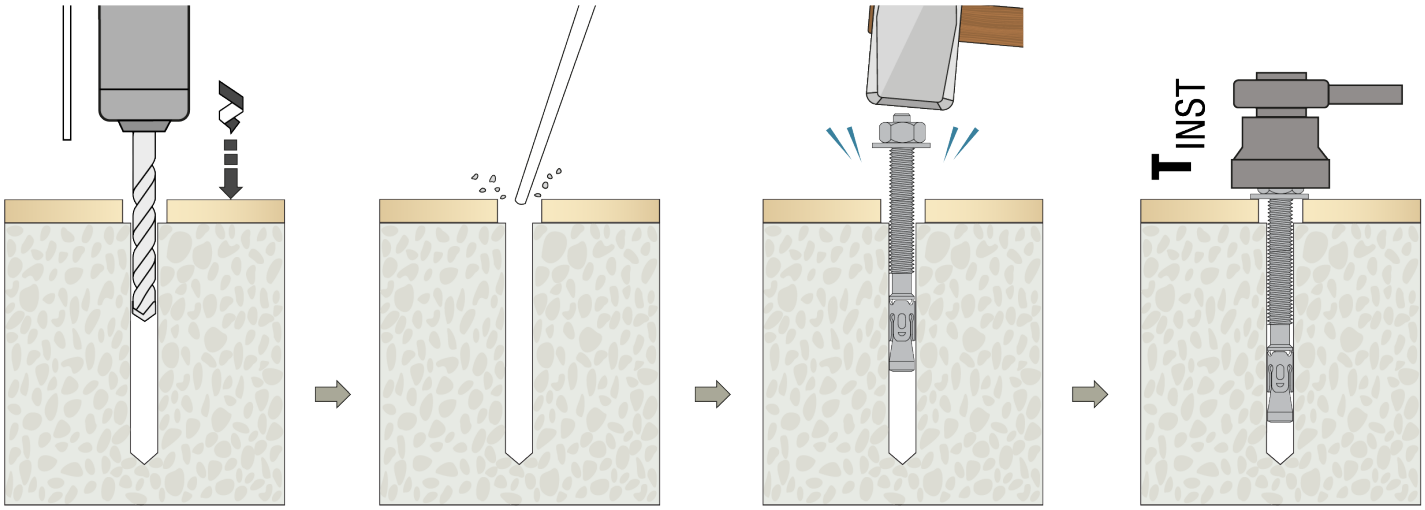
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INSTALLATION INSTRUCTIONS

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

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PERFORMANCE DATA (NON-CRACKED CONCRETE)

Performance Data (C20/25 Non-Cracked Concrete) Reduced Embedment								
Size Of Thread	Embedment Depth (h_{nom})	Minimum Concrete Thickness (h_{min})	Characteristic Resistance		Design Resistance		Recommended Resistance	
			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	36	100	7.4	5.8	4.1	3.5	2.9	2.5
M10	40	100	9.1	9.1	5	5.6	3.6	4
M12	60	100	17.8	13.3	9.9	8.2	7	5.8
M16	75	130	25.2	24.7	14	15.2	10	10.8

Performance Data (C20/25 Non-Cracked Concrete) Standard Embedment								
Size Of Thread	Embedment Depth (h_{nom})	Minimum Concrete Thickness (h_{min})	Characteristic Resistance		Design Resistance		Recommended Resistance	
			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	55	100	10.5	5.8	5.4	3.5	3.8	2.5
M10	60	110	16.6	9.1	8.5	5.6	6.1	4
M12	80	140	24.2	13.3	12.4	8.21	8.9	5.8
M16	100	180	41.6	24.7	23.1	15.2	16.5	10.8
M20	120	215	55.11	38.6	30.6	22.7	21.8	16.2

* Important notes:

- Fasteners subject to static and quasi-static 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 JCP internal technical data.
- 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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SUPPLEMENTARY DATA

Influence Of Concrete Strength (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	1.08	1.15	1.19

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	10.5	5.4	3.8	5.8	3.5	2.5
M10	16.6	8.5	6.1	9.1	5.6	4
M12	24.2	12.4	8.9	13.3	8.2	5.8
M16	45.8	23.6	16.8	24.7	15.2	10.8
M20	70.7	34.6	24.7	38.6	22.7	16.2

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