

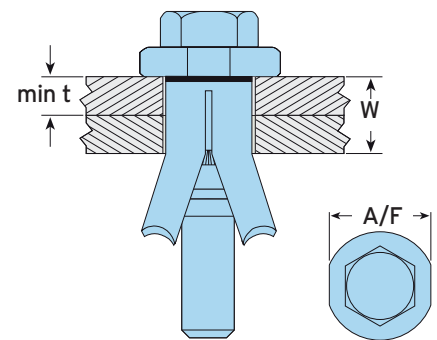
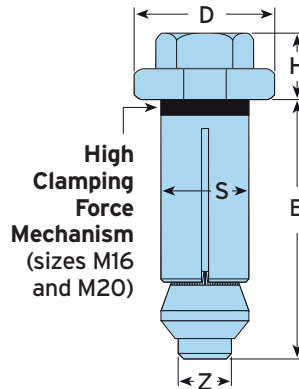
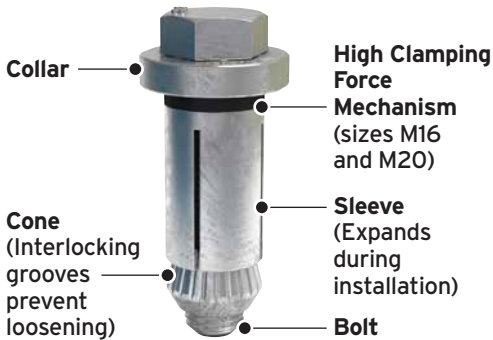
Hollo-Bolt™ Hexagonal Head

Safe Working Loads



Hexagonal Head Data

(Available in sizes M8, M10, M12, M16 & M20)



Material: Carbon steel or stainless steel (see page 43 for corrosion protection options).

HEXAGONAL HEAD DATA

	Product Code	Bolt Ø Z	Height H mm	Length B (max) mm	Clamping Thickness W mm	Outer Ply min t mm	Sleeve Outer Ø S mm	Collar		Tightening Torque Nm	Safe Working Loads (Factor of Safety 5:1)	
								Ø D mm	A/F mm		Tensile kN	Single Shear kN
Hollo-Bolt HCF	HB08-1	M8	10.5	45	3 - 22	-	13.75	22	19	23	4.0	5.0
	HB08-2	M8	10.5	65	22 - 41	-	13.75	22	19	23	4.0	5.0
	HB08-3	M8	10.5	85	41 - 60	-	13.75	22	19	23	4.0	5.0
	HB10-1	M10	12.5	49	3 - 22	-	17.75	29	24	45	8.5	10.0
	HB10-2	M10	12.5	64	22 - 41	-	17.75	29	24	45	8.5	10.0
	HB10-3	M10	12.5	84	41 - 60	-	17.75	29	24	45	8.5	10.0
	HB12-1	M12	14.5	53	3 - 25	-	19.75	32	30	80	10.5	15.0
	HB12-2	M12	14.5	73	25 - 47	-	19.75	32	30	80	10.5	15.0
	HB12-3	M12	14.5	93	47 - 69	-	19.75	32	30	80	10.5	15.0
	HB16-1	M16	18	67	12 - 29	8	25.75	38	36	190	21.0	30.0
	HB16-2	M16	18	92	29 - 50	8	25.75	38	36	190	21.0	30.0
	HB16-3	M16	18	112	50 - 71	8	25.75	38	36	190	21.0	30.0
HB20-1	M20	22.5	80	12 - 34	8	32.75	51	46	300	35.0	40.0	
HB20-2	M20	22.5	110	34 - 60	8	32.75	51	46	300	35.0	40.0	
HB20-3	M20	22.5	140	60 - 86	8	32.75	51	46	300	35.0	40.0	

- Hollo-Bolts can be used on a wide variety of steel hollow shape sections. Safe working loads shown are applicable to the Hollo-Bolt only in both tension and shear. Failure of the section could occur at a lower figure and its strength should be checked by a qualified Structural Engineer.
- Dynamic load testing has been performed for Hollo-Bolt Hexagonal in accordance with EN 1993-1-9. Please contact our Technical Support team for more information and design data.

Published by the SCI/BCSA Connections Group, 'Joints in Steel Construction - Simple Connections' provides design guidance for using Hollo-Bolt and structural steelwork connections in buildings designed using the 'Simple Method' i.e. braced frames where connections carry mainly shear and axial loads only. For more information please contact The Steel Construction Institute on +44 (0) 1344 636525 or visit www.steel-sci.com



Hollo-Bolt™ Hexagonal Head Characteristic Resistances

Characteristic Resistances

The values listed in the tables below are to be used when designing bolted connection to Eurocode 3 only, they are not standard safe working loads.

Please refer to CE Declaration of Performance No.001 or UKCA Declaration of Conformity No.101 on Lindapter's website. Alternatively, request a DoP or DoC brochure.

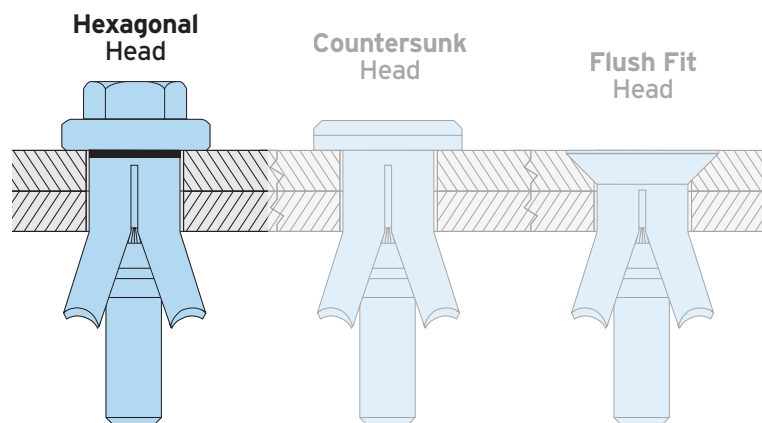


HEXAGONAL HEAD Data for Zinc + JS500, HDG and Sheraplex				
Product Code	Nominal Size	Tensile Ft,Rk kN	Shear Fv,Rk kN	Sleeve Material Strength N/mm ²
HB08	M8	23.1	32.9	430
HB10	M10	39.6	54.2	430
HB12	M12	45.8	71.0	430
HCF HB16	M16	84.3	139.0	430
HCF HB20	M20	124.0	211.0	390

HEXAGONAL HEAD Data for Stainless Steel				
Product Code	Nominal Size	Tensile Ft,Rk kN	Shear Fv,Rk kN	Sleeve Material Strength N/mm ²
HBST08	M8	26.8	30.7	500
HBST10	M10	46.0	51.0	500
HBST12	M12	53.3	65.0	500
HCF HBST16	M16	98.0	128.0	500
HCF HBST20	M20	154.0	205.0	500

- Hollo-Bolt lengths 1, 2 and 3 are covered by ETA 10/0416. The characteristic values are used to determine the design resistance of the Hollo-Bolt. The design resistance is calculated by dividing the characteristic value by a partial factor γ_{M2} . The partial factor is a nationally determined parameter (eg: $\gamma_{M2} = 1.25$ in UK).
- For Hollo-Bolt Hexagonal Head safe working loads with a Factor of Safety of 5:1 please refer to the table on page 46 of this catalogue. The characteristic values are valid for the assembly itself, in any connection detail the design resistance of the connection may be limited to a lesser value. For example, when the thickness of the connected component is small, pull out failure may occur before failure of the Hollo-Bolt. Design checks should be carried out to determine the static design resistance.

The SCI Greenbook publication 'Joints in Steel Construction: Simple Joints to Eurocode 3' contains a number of checks on the section. The characteristic values are only valid when the Hollo-Bolts are installed as per Lindapter's installation instructions. For more information please contact The Steel Construction Institute on +44 (0) 1344 636525 or visit www.steel-sci.com

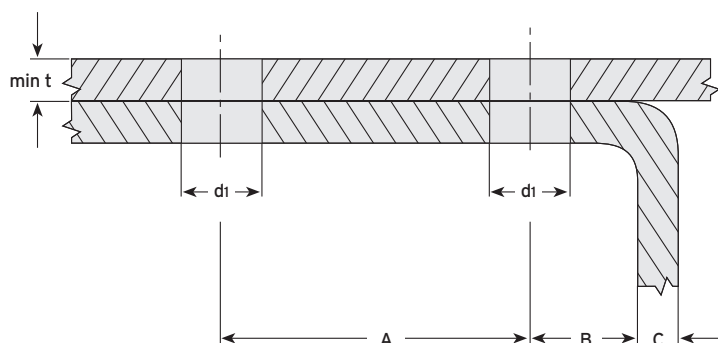


Holo-Bolt Hexagonal and Countersunk - Drilling and Installation

Please ensure that the holes are drilled into both the fixture and the section according to the drilling guidance below. Please note that the holes are slightly larger than standard bolt clearance holes to accommodate the sleeve and cone.



Preparation for installing Holo-Bolt Hexagonal and Countersunk



Type		Outer Ply min t mm	Clearance Hole Ø* d1 mm	Hole Distances**		Edge Distances** B + C mm
Hexagonal	Countersunk			min A mm	min B mm	
HB08	HBCSK08	-	14 (+1.0/-0.2)	35	13	≥ 17.5
HB10	HBCSK10	-	18 (+1.0/-0.2)	40	15	≥ 22.5
HB12	HBCSK12	-	20 (+1.0/-0.2)	50	18	≥ 25.0
HB16	HBCSK16	8	26 (+2.0/-0.2)	55	20	≥ 32.5
HB20	-	8	33 (+2.0/-0.2)	70	25	≥ 33.0

* For Holo-Bolts with Hot Dip Galvanised Finish, drilling the clearance hole to the top tolerance is recommended.
** Ensure holes do not cut through the outer radius.

➤ Sizes M16 and M20 require outer ply thickness (min t) to be at least 8mm.



Tool sizes for installing Holo-Bolt Hexagonal

Holo-Bolt Hexagonal			
Product Code	Spanner mm	Socket mm	Tightening Torque Nm
HB08	19	13	23
HB10	24	17	45
HB12	30	19	80
HB16	36	24	190
HB20	46	30	300



Tool sizes for installing Holo-Bolt Countersunk

Holo-Bolt Countersunk			
Product Code	Spanner mm	Hexagon Key mm	Tightening Torque Nm
HBCSK08	19	5	23
HBCSK10	24	6	45
HBCSK12	30	8	80
HBCSK16	36	10	190



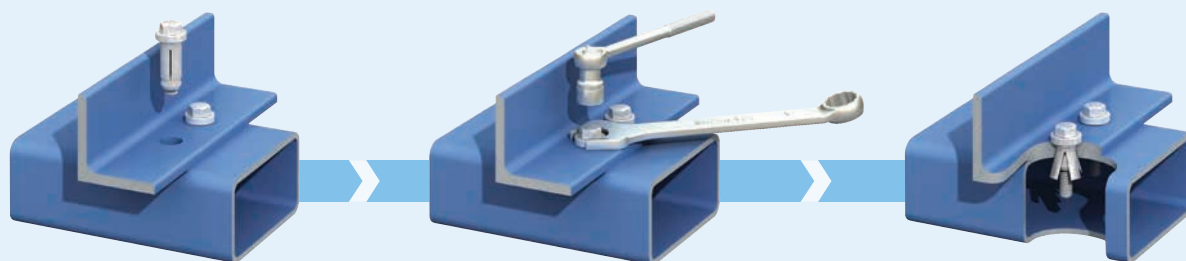
How to install...

▶ Watch the Holo-Bolt installation video at www.Lindapter.com

1) Align pre-drilled fixture and section then insert the Holo-Bolt^{a)}.

2) Grip Holo-Bolt collar with an open ended spanner.

3) Using a calibrated torque wrench, tighten the central bolt to the recommended torque^{b)}.



Notes:

a) Before tightening, ensure that the materials that are to be connected together are touching.

b) Rotate the torque wrench only. See table above for tightening torque.

c) Power tools, such as an impact wrench, may be used to speed up the tightening of the Holo-Bolt. However, when using power tools, always complete the tightening process with a calibrated torque wrench to ensure the correct torque is applied to the Holo-Bolt.