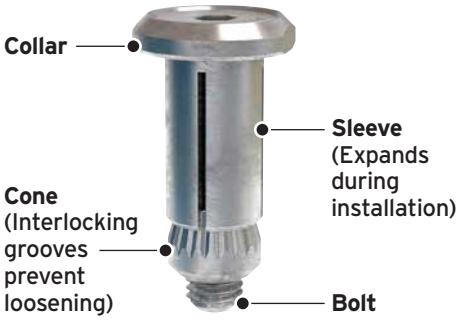
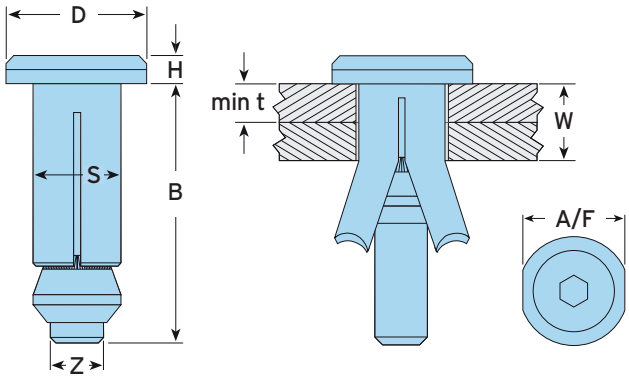
Hollo-Bolt™ Countersunk Head Safe Working Loads

Countersunk Head Data

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





Material: Carbon steel or stainless steel (see page 41 for corrosion protection options).

COUNTERSUNK 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 Ø D mm	Collar A/F mm	Tightening Torque Nm	Safe Working Loads (Factor of Safety 5:1) Tensile kN	Single Shear kN
	HBCSK08-1	M8	5	45	3 - 22	-	13.75	22	19	23	4.0	5.0
	HBCSK08-2	M8	5	65	22 - 41	-	13.75	22	19	23	4.0	5.0
	HBCSK08-3	M8	5	85	41 - 60	-	13.75	22	19	23	4.0	5.0
	HBCSK10-1	M10	6	44	3 - 22	-	17.75	29	24	45	8.5	10.0
	HBCSK10-2	M10	6	64	22 - 41	-	17.75	29	24	45	8.5	10.0
	HBCSK10-3	M10	6	84	41 - 60	-	17.75	29	24	45	8.5	10.0
	HBCSK12-1	M12	7	48	3 - 25	-	19.75	32	30	80	10.5	15.0
	HBCSK12-2	M12	7	73	25 - 47	-	19.75	32	30	80	10.5	15.0
	HBCSK12-3	M12	7	93	47 - 69	-	19.75	32	30	80	10.5	15.0
HCF	HBCSK16-1	M16	8	62	12 - 29	8	25.75	38	36	190	21.0	30.0
HCF	HBCSK16-2	M16	8	92	29 - 50	8	25.75	38	36	190	21.0	30.0
HCF	HBCSK16-3	M16	8	112	50 - 71	8	25.75	38	36	190	21.0	30.0

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.

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™ Countersunk 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.

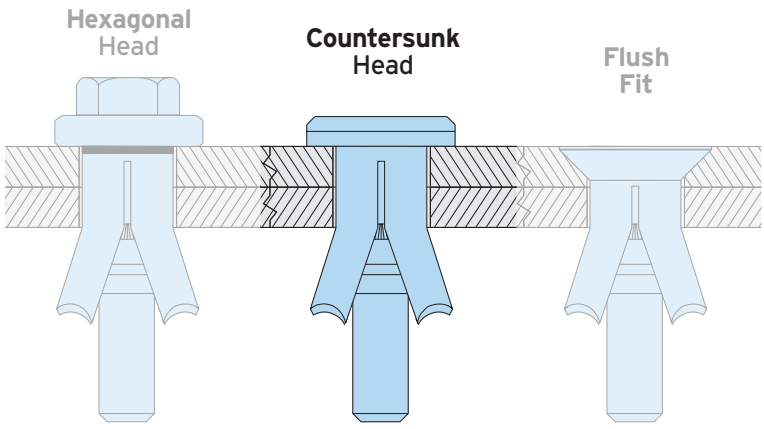
Please refer to CE Declaration of Performance No.001 or UKCA Declaration of Conformity No.101 on Lindapter's website. Alternatively, request a DoP or DoC brochure.

	COUNTERSUNK HEAD Data for Zinc + JS500 and Sheraplex				
	Product Code	Nominal Size	Tensile $F_{t,Rk}$ kN	Shear $F_{v,Rk}$ kN	Sleeve Material Strength N/mm²
	HBCSK08	M8	23.1	32.9	430
	HBCSK10	M10	39.6	54.2	430
	HBCSK12	M12	45.8	71.0	430
HCF	HBCSK16	M16	84.3	139.0	430

	COUNTERSUNK HEAD Data for Stainless Steel				
	Product Code	Nominal Size	Tensile $F_{t,Rk}$ kN	Shear $F_{v,Rk}$ kN	Sleeve Material Strength N/mm²
	HBSTCSK08	M8	26.8	30.7	500
	HBSTCSK10	M10	46.0	51.0	500
	HBSTCSK12	M12	53.3	65.0	500
HCF	HBSTCSK16	M16	98.0	128.0	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 γM2. The partial factor is a nationally determined parameter (eg: γM2 = 1.25 in UK).**
- **For Hollo-Bolt Countersunk 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.**

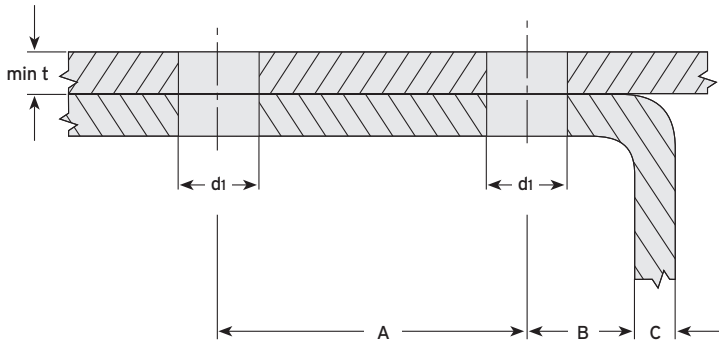
The SCI Greenbook publication 'Joints in Steel Construction: Simple Joints to Eurocode 3' contains a number of checks on the section. The characteristic values are only valid when the Hollo-Bolts are installed as per Lindapter's installation instructions. For more information please contact The Steel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



Hollo-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 Hollo-Bolt Hexagonal and Countersunk



Type		Outer Ply	Clearance Hole Ø*	Hole Distances**		Edge Distances**
Hexagonal	Countersunk	min t mm	d1 mm	min A mm	min B mm	B + C 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 Hollo-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 Hollo-Bolt Hexagonal

Hollo-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 Hollo-Bolt Countersunk

Hollo-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

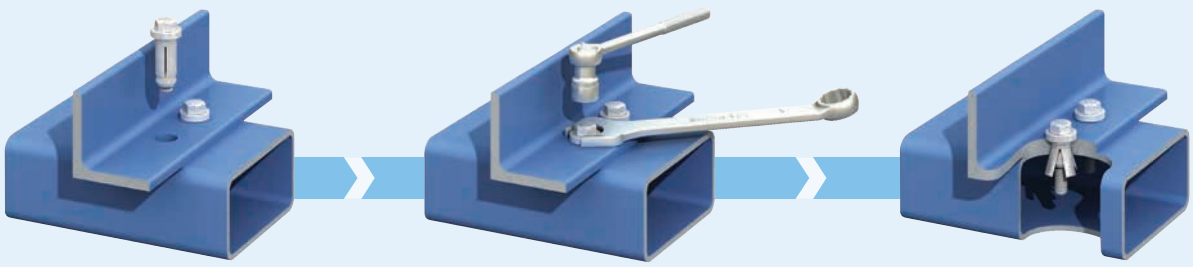
How to install...

Watch the Hollo-Bolt installation video at www.Lindapter.com

1) Align pre-drilled fixture and section then insert the Hollo-Bolt [a].

2) Grip Hollo-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 Hollo-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 Hollo-Bolt.

Ref: LindUKApr24