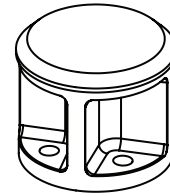


CASTCONNEX[®]

Diablo Bolted Splice™ (DBS)(EN) For Use with Eurocodes

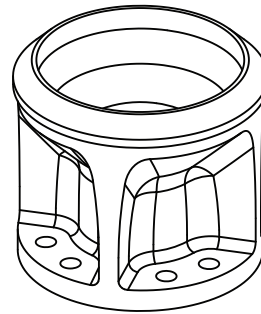
4-Bolt Configuration

Including DBS(EN)-140, DBS(EN)-168, and DBS(EN)-219. Dimensions and strengths are presented on **Page 2**.



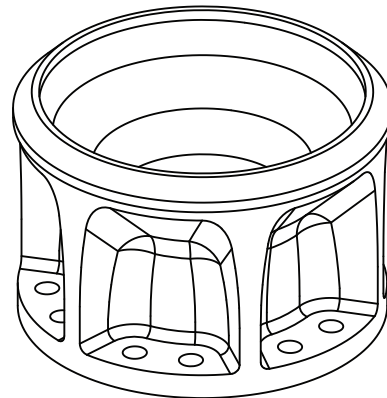
8-Bolt Configuration

Including DBS(EN)-273, and DBS(EN)-324. Dimensions and strengths are presented on **Page 3**.

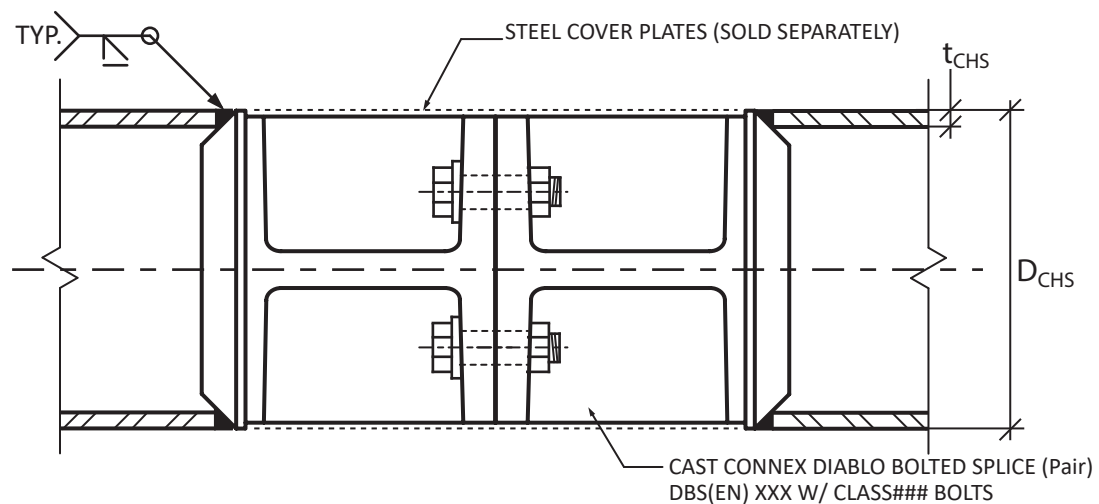


12-Bolt Configuration

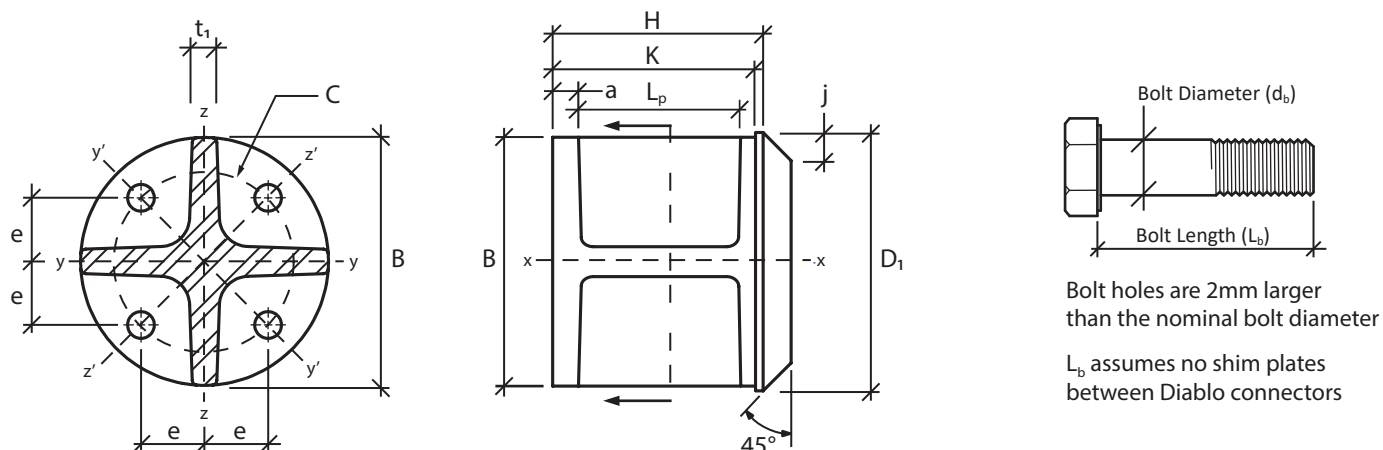
Including DBS(EN)-406. Dimensions and strengths are presented on **Page 4**.



Typical Assembly



Nominal Connector Dimensions (4 Bolts)



Connector	D_1 [mm]	B [mm]	a [mm]	t_1 [mm]	H [mm]	K [mm]	j [mm]	L_p [mm]	C [mm]	e [mm]	d_b [mm]	L_b [mm]	Unit Weight* [Kg]
DBS(EN)-140	140	130	13	13	123	118	15	90	86	30	16	60	7.7
DBS(EN)-168	168	158	18	15	144	138	15	103	104	37	20	70	13
DBS(EN)-219	219	209	20	20	163	153	20	115	146	52	24	80	27

*Unit weight of single cast connector. Unit weight does not include fasteners and cover plates

Design Resistance of Connector (4 Bolts)

Design Resistance	Bolt Group Strength ¹								Connector Strength ¹		
	Class 8.8				Class 10.9						
Connector	$N_{t,Rd}$ [kN]	$M_{j,Rd(A)}$ [kN.m]	$M_{j,Rd(B)}$ [kN.m]	V_{Rd}^2 [kN]	$N_{t,Rd}$ [kN]	$M_{j,Rd(A)}$ [kN.m]	$M_{j,Rd(B)}$ [kN.m]	V_{Rd}^2 [kN]	N_{Rd} [kN]	M_{Rd} [kN.m]	$V_{c,Rd}$ [kN]
DBS(EN)-140	362	13.93	9.15	241	452	16.67	11.44	251	1340	26.5	338
DBS(EN)-168	564	25.9	17.11	376	706	30.8	21.4	392	1894	45.6	480
DBS(EN)-219	813	52.3	33.9	542	1017	63.2	42.4	565	3250	104.0	808

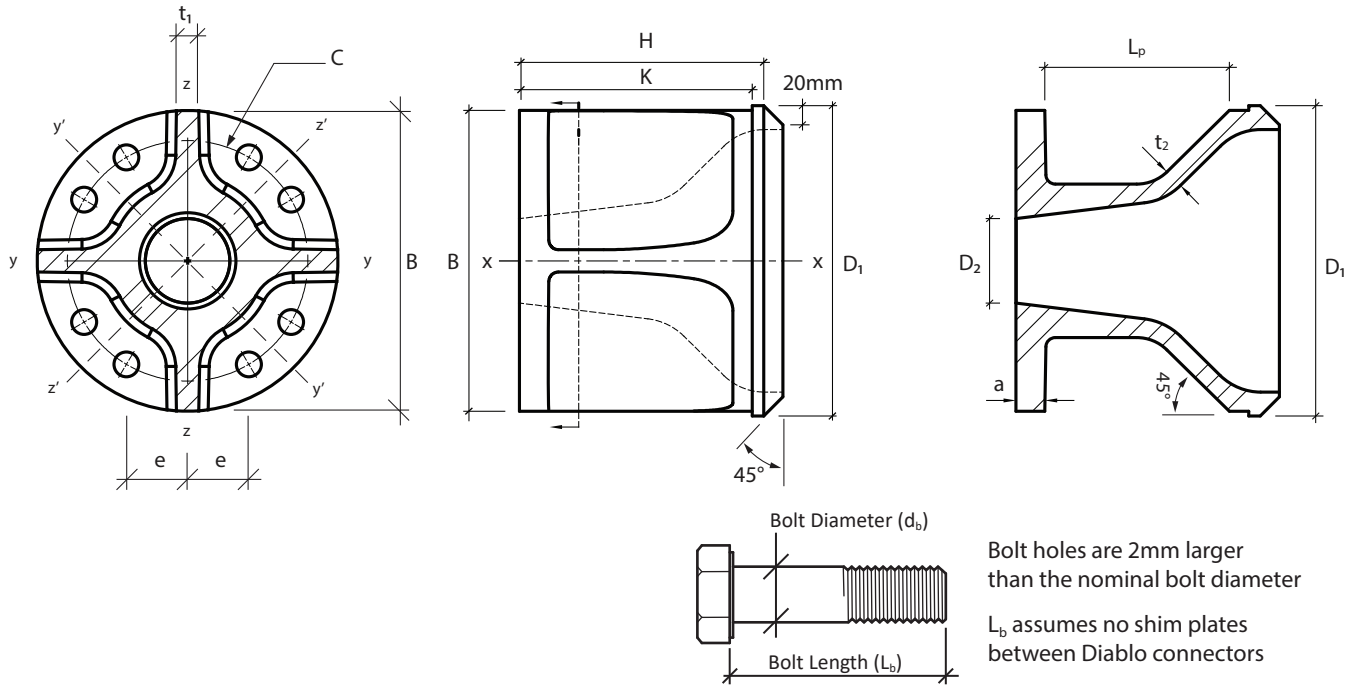
- Strengths reported are for single-action loading conditions (i.e. pure axial force, single-direction pure flexure, or pure shear). Strength values are given with respect to the axes shown above. Engineer shall confirm adequacy of joint under combined axial forces, shear forces and moments. Refer to **DBS User Guide for Combined Loading - Eurocode 3 for additional information.**
- Shear strength assumes shear plane passes through the bolt threaded portion.

Design Resistances have been determined using Eurocode 3 (with $\gamma_{M0}=1.0$, $\gamma_{M1}=1.0$ and $\gamma_{M2}=1.25$)

$N_{t,Rd}$: design tension resistance of the bolt group (x-axis).
 $M_{j,Rd(A)}$: design moment resistance of the bolt group (y or z axis).
 $M_{j,Rd(B)}$: design moment resistance of the bolt group (y' or z' axis).
 V_{Rd} : design shear resistance of the bolt group

N_{Rd} : design tension or compression resistance of the cross-section (x-axis).
 M_{Rd} : design moment resistance of the cross-section (y or z axis).
 $V_{c,Rd}$: design shear resistance of the cross-section (y or z axis).

Nominal Connector Dimensions (8 Bolts)



Connector	D_1 [mm]	B [mm]	D_2 [mm]	a [mm]	t_1 [mm]	t_2 [mm]	H [mm]	K [mm]	L_p [mm]	C [mm]	e [mm]	d_b [mm]	L_b [mm]	Unit Weight* [Kg]
DBS(EN)-273	273	263	76	25	22	15	215	205	162	210	53	20	85	33
DBS(EN)-324	324	314	88	30	23	20	255	243	192	251	64	24	100	55

*Unit weight of single cast connector. Unit weight does not include fasteners and cover plates

Design Resistance of Connector (8 Bolts)

Design Resistance	Bolt Group Strength ¹								Connector Strength ¹		
	Class 8.8				Class 10.9				N_{Rd}	M_{Rd}	$V_{c,Rd}$
Connector	$N_{t,Rd}$ [kN]	$M_{j,Rd(A)}$ [kN.m]	$M_{j,Rd(B)}$ [kN.m]	V_{Rd}^2 [kN]	$N_{t,Rd}$ [kN]	$M_{j,Rd(A)}$ [kN.m]	$M_{j,Rd(B)}$ [kN.m]	V_{Rd}^2 [kN]	[kN]	[kN.m]	[kN]
DBS(EN)-273	1129	81.4	63.1	753	1411	101.0	78.8	784	4910	223	877
DBS(EN)-324	1627	138.0	107.0	1084	2030	170.0	134.0	1130	7050	371	1364

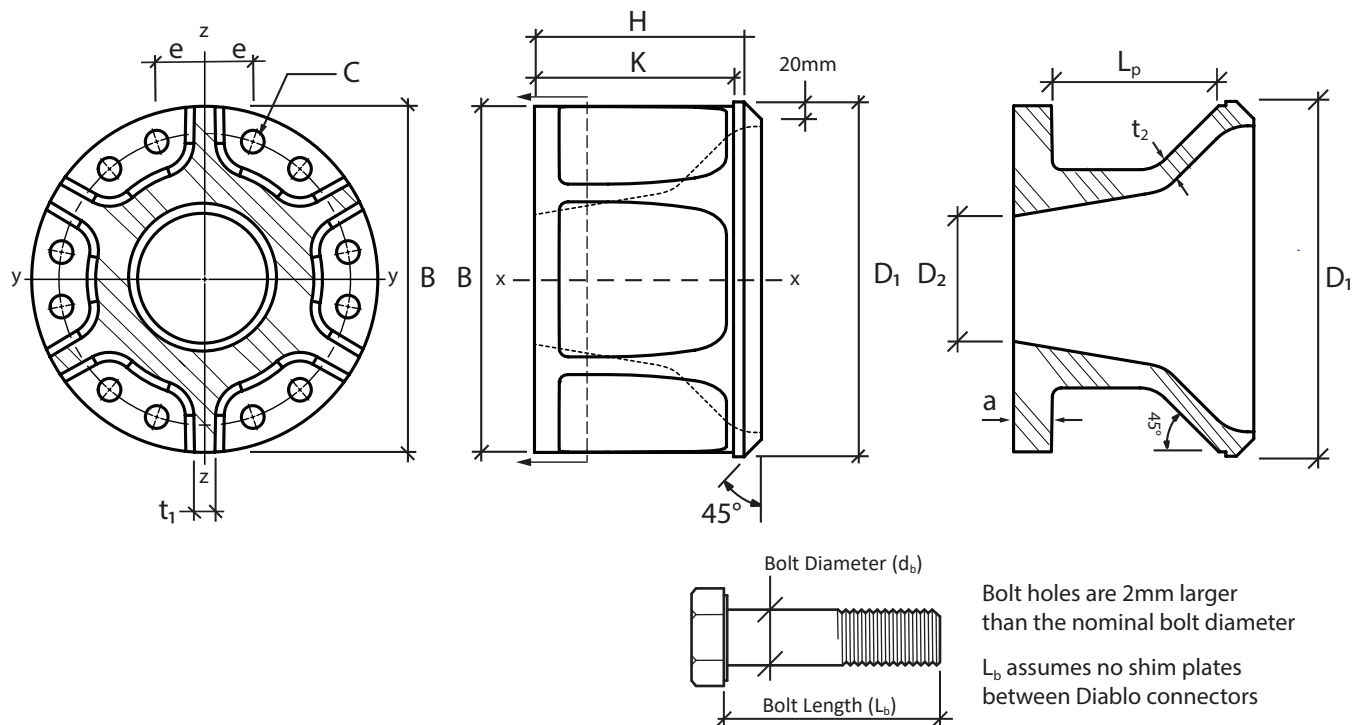
- Strengths reported are for single-action loading conditions (i.e. pure axial force, single-direction pure flexure, or pure shear). Strength values are given with respect to the axes shown above. Engineer shall confirm adequacy of joint under combined axial forces, shear forces and moments. Refer to **DBS User Guide for Combined Loading - Eurocode 3** for additional information.
- Shear strength assumes shear plane passes through the bolt threaded portion.

Design Resistances have been determined using Eurocode 3 (with $\gamma_{M0}=1.0$, $\gamma_{M1}=1.0$ and $\gamma_{M2}=1.25$)

$N_{t,Rd}$: design tension resistance of the bolt group (x-axis).
 $M_{j,Rd(A)}$: design moment resistance of the bolt group (y or z axis).
 $M_{j,Rd(B)}$: design moment resistance of the bolt group (y' or z' axis).
 V_{Rd} : design shear resistance of the bolt group

N_{Rd} : design tension or compression resistance of the cross-section (x-axis).
 M_{Rd} : design moment resistance of the cross-section (y or z axis).
 $V_{c,Rd}$: design shear resistance of the cross-section (y or z axis).

Nominal Connector Dimensions (12 Bolts)



Connector	D_1 [mm]	B [mm]	D_2 [mm]	a [mm]	t_1 [mm]	t_2 [mm]	H [mm]	K [mm]	L_p [mm]	C [mm]	e [mm]	d_b [mm]	L_b [mm]	Unit Weight* [Kg]
DBS(EN)-406	406	396	167	28	23	25	245	233	191	334	55	24	100	84

*Unit weight of single cast connector. Unit weight does not include fasteners and cover plates

Design Resistance of Connector (12 Bolts)

Design Resistance	Bolt Group Strength ¹								Connector Strength ¹		
	Class 8.8				Class 10.9						
Connector	N _{t,Rd} [kN]	M _{j,Rd(A)} [kN.m]	M _{j,Rd(B)} [kN.m]	V _{Rd} ² [kN]	N _{t,Rd} [kN]	M _{j,Rd(A)} [kN.m]	M _{j,Rd(B)} [kN.m]	V _{Rd} ² [kN]	N _{Rd} [kN]	M _{Rd} [kN.m]	V _{c,Rd} [kN]
DBS(EN)-406	2440	241	235	1627	3050	301	294	1694	11030	989	2420

- Strengths reported are for single-action loading conditions (i.e. pure axial force, single-direction pure flexure, or pure shear). Strength values are given with respect to the axes shown above. Engineer shall confirm adequacy of joint under combined axial forces, shear forces and moments. Refer to **DBS User Guide for Combined Loading - Eurocode 3** for additional information.
- Shear strength assumes shear plane passes through the bolt threaded portion.

Design Resistances have been determined using Eurocode 3 (with $\gamma_{M0}=1.0$, $\gamma_{M1}=1.0$ and $\gamma_{M2}=1.25$)

$N_{t,Rd}$: design tension resistance of the bolt group (x-axis).
 $M_{j,Rd(A)}$: design moment resistance of the bolt group (y or z axis).
 $M_{j,Rd(B)}$: design moment resistance of the bolt group (y' or z' axis).
 V_{Rd} : design shear resistance of the bolt group

N_{Rd} : design tension or compression resistance of the cross-section (x-axis).
 M_{Rd} : design moment resistance of the cross-section (y or z axis).
 $V_{c,Rd}$: design shear resistance of the cross-section (y or z axis).