

SELF-DRILLING SCREW FIXINGS

Denomination: **SELF-DRILLING SCREW FIXINGS**

Codes: ABE, ARE, ABR, ABRBLE, NBR, ABRC, ABRC2, ABRA2, ABA, FS, ABP, NBP, ABPC, ABPCA2, TAEZ, TAEN, BCPZ, BZPZBL, BCPN, BCPB, BCPA2, BIE, AUTO, BAUTO, RS.

Reference: **FT BRO-es**

Date: **19/10/15**

Revision: 9

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12. BCPZ, BCPN, BCPB, BCPZ_BL, BCPA2

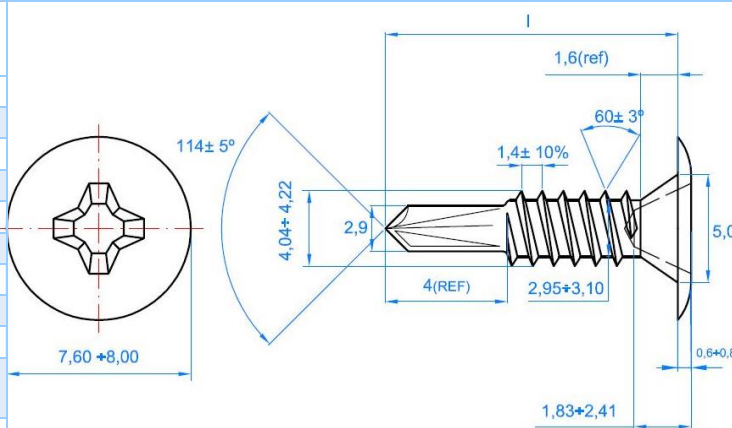
Self-drilling screw – extra-flat head – Ph socket

Properties				Base material	
					
Steel	Available in stainless	Metal plate assembly	Plate profile		

Coatings				Properties		
						
Zinc-plated coating	Black zinc-plated	White zinc-plated	White head only BCPZ_BL	Ph	Extra-flat head	Screw point

11.1. Details

Code		ST 4.2
d _k : head diameter	[mm]	8.0
k: head thickness	[mm]	0.7
Ph bit		nº 2
Point length	[mm]	4
D: exterior thread diameter	[mm]	4.22
d: interior thread diameter	[mm]	3.10
p: thread	[mm]	1.4
l: lengths	[mm]	14 - 23
Head countersink angle	°	65
Installation bit code (Ph bit)		PUPHC02 PUPHL02
Drill capacity	[mm]	0.7 - 2.0



- Zinc-plated (code BCPZ), black zinc-plated (code BCPN) or completely white painted RAL 9010 (code BCPB) finishes.
- Bevelled head to prevent snagging on sliding parts.
- For joints on metal which require a low head (sliding doors and windows, inlaid locks, etc.).
- May be used as a substitute for rivets in many applications, with the advantage of being removable.
- Reduced cone under head to improve finish on flat surfaces.
- A2 Stainless steel version (code BCPA2) for use exclusively with aluminium (does not produce corrosion by galvanic coupling). Do not use screw in stainless steel to drill steel, as point will burn out due to lack of hardness.

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Reference: **FT BRO-en**Date: **08/01/18**Revision: **10**Page: **6 of 23**

MAXIMUM THICKNESS TO BE FIXED						
Length	ST 3,5	ST 3,9	ST 4,2	ST 4,8	ST 5,5	ST 6,3
9,5	2,85					
11	4,2					
13	6,2	5,8	4,3	3,7		
16	9,2	8,8	7,3	5,5		
19	12,1	11,7	10,3	8,7	8,7	7
22	15,1	14,7	13,3	11,7	11,7	10
25	18,1	17,7	16,3	14,7	14,7	13
32	25,1	24,5	23	21,5	21,5	20
38		30,5	29	27,5	27,5	26
45			36	34,5	34,5	33
50			41	39,5	39,5	38
60				49,5	49,5	48
63				52,5	52,5	51
73				62,5	62,5	61
75				64,5	64,5	63
80				69,5		68
90				79,5		78
100				89,5		88
110						98
120						108
130						118
140						128

SCREW RESISTANCE CHARACTERISTICS*

SIZE	TENSION [kN]	SHEAR [kN]
ST 2.9	2.62	1.31
ST 3.5	3.81	1.91
ST 3.9	4.64	2.32
ST 4.2	5.26	2.63
ST 4.8	7.11	3.56
ST 5.5	9.63	4.82
ST 6.3	13.36	6.68

1 kN ≈ 100 Kg

For tension loads, the inherent resistance of plates to be fixed must be taken into account, which is usually less than the resistance of the screw itself, as the screw will probably tear the plates.

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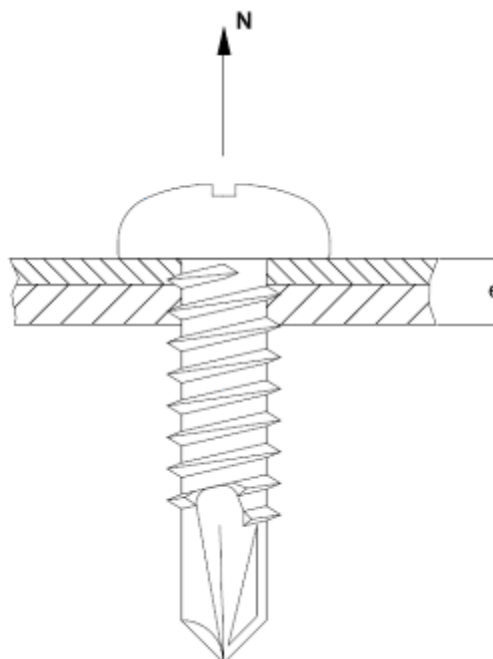
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RECOMMENDED TENSION LOAD IN STEEL PLATE

SIZE	RECOMMENDED LOAD					
	e[mm]	N[kN]	e[mm]	N[kN]	e[mm]	N[kN]
ST 3.5	0.8	0.55	1.5	0.89	2.0	1.13
ST 3.9	0.8	0.54	1.5	0.97	2.0	1.50
ST 4.2	2.0	1.63	2.5	1.51	3.0	2.62
ST 4.8	2.0	1.87	3.0	2.77	4.0	3.71
ST 5.5	2.0	1.77	3.5	2.86	5.0	3.43
ST 6.3	2.5	1.44	4.0	3.19	5.0	4.83

RECOMMENDED TENSION LOAD IN ALUMINIUM PLATE

SIZE	RECOMMENDED LOAD					
	e[mm]	N[kN]	e[mm]	N[kN]	e[mm]	N[kN]
ST 4.8	2.0	0.95	3.0	1.52	4.0	2.10



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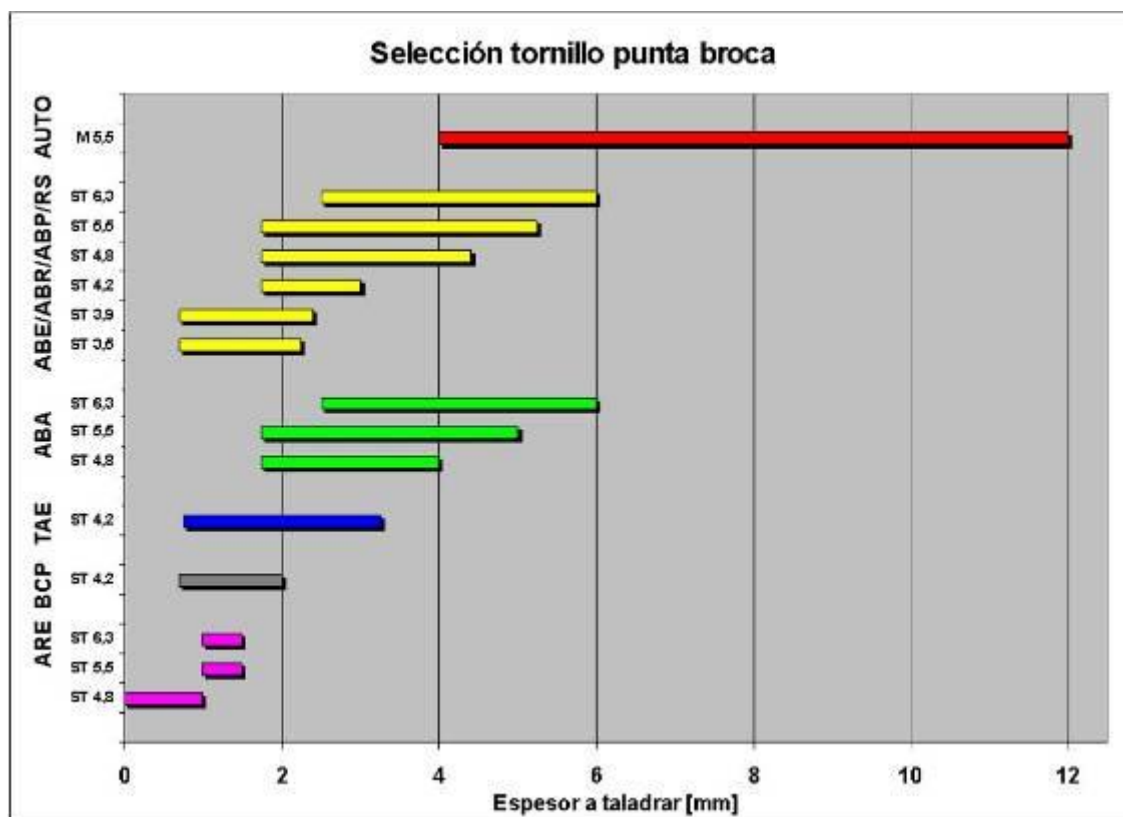
INSTALLATION PARAMETERS

Parameter			ST 3.5	ST 3.9	ST 4.2	ST 4.8	ST 5.5 M 5.5	ST 6.3
Maximum installation strength		[N]	150	200	250	250	350	350
Drill Speed	Steel	[rpm]	1800 - 2500				1000 - 1800	
	Stainless Steel	[rpm]	1000 - 1500				600 - 1000	
Maximum time		[sg]	4	4.5	5	7	11	13
Maximum torque		[Nm]	2.8	3.8	4.7	6.9	10.4	16.9

10 N $\approx$ 1 Kg

10 Nm $\approx$ 1Kg m

With high drilling times or excessive drilling speed there is a risk of burning the drill bit and therefore not drilling the material.



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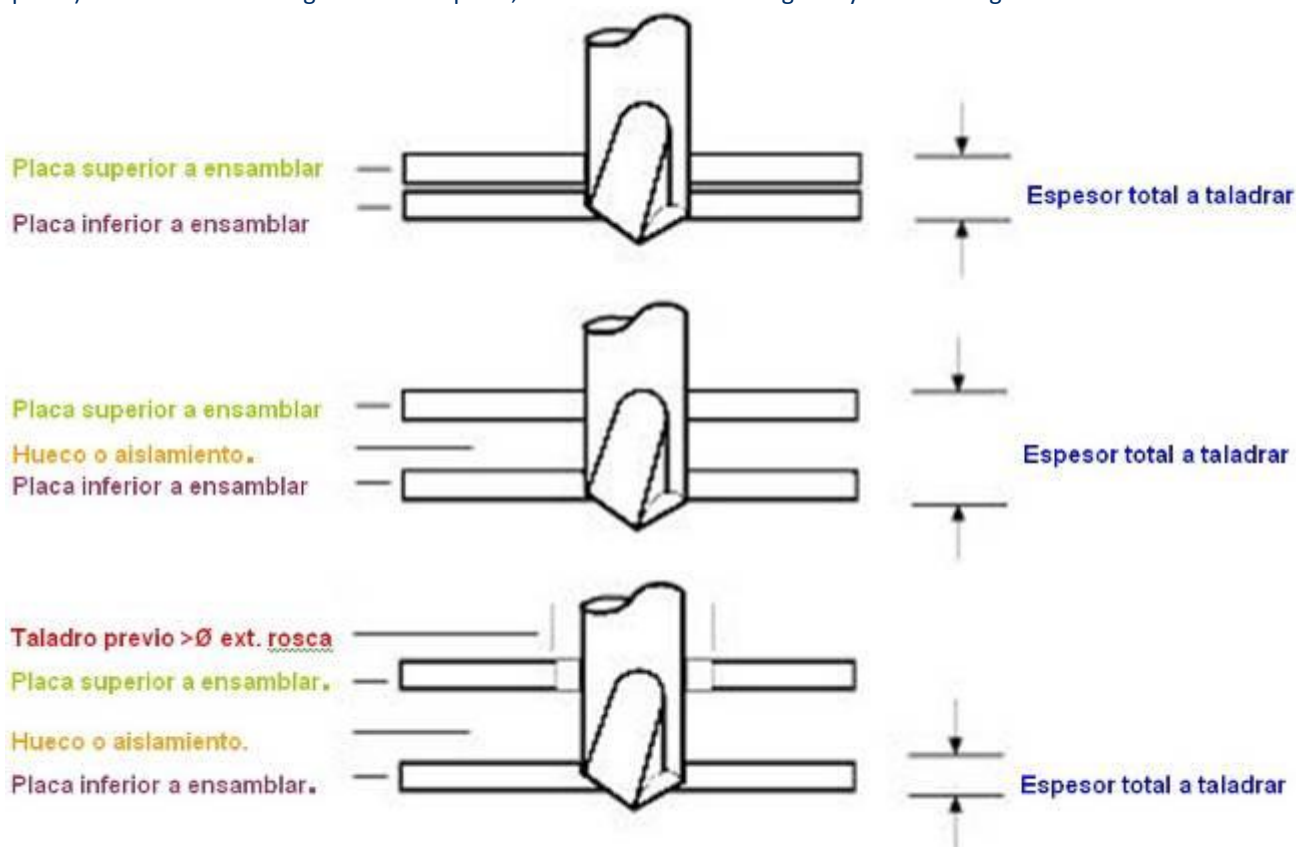
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MATERIALS

Characteristic	ABE, ARE, AUTO, ABR, ABRBL, NBR, ABRC, ABA, FS, ABP, NBP, ABPC, TAEZ, TAEN, BCPZ, BCPN, BCPB, RS	ABRA2, ABRC2, ABPC2, BCPA2	BIE, BAUTO (silver ruspert coating)
Material	Special steel for SAE J403 1022 thermal treatment	A2 Stainless Steel	A2 Stainless Steel head and shaft. Special steel point for SAE J403 1022 thermal treatment
Surface hardness	> 500 HV	---	Head and shaft --- Point > 500 HV
Core hardness	240 - 450 HV	---	Head and shaft --- Point 240 - 450 HV
Depth hardness	ST 2.5 - 3.5: 0.05 - 0.18 mm. ST 3.9 - 5.5: 0.10 - 0.23 mm. ST 6.3: 0.15 - 0.28 mm.	---	Head and shaft --- Point: ST 4.8 - 5.5: 0.10 - 0.23 mm. ST 6.3: 0.15 - 0.28 mm.

POINT SELECTION

The choice of screw point must be such that the total thickness of materials to be joined (including any intermediate spaces) is lower than the edge of the drill point; otherwise screw breakage may occur during installation.





Self-drilling extra low head screw, Phillip recess



BCP Z Zinc-plated. Ph recess.

Material for use:

METAL



Aluminium
frames



Metal
sheet -
heavy
profiles

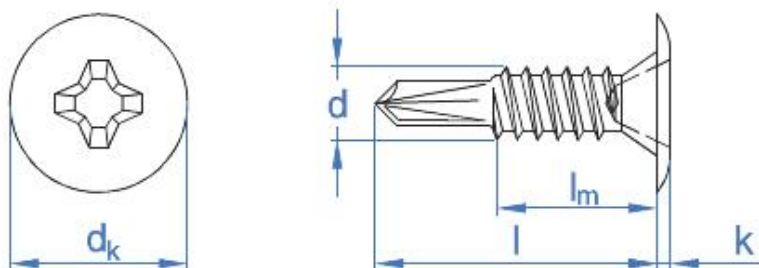
Product Material / Covering:

Zinc-plated

PROFESSIONAL BOX

CODE	DIMENSIONS	EAN		
BCPZ4214	4,2 x 14	8423533199935	500	12000
BCPZ4223	4,2 x 23	8423533194770	500	12000

TECHNICAL INFORMATION



CODE	DIMENSIONS	tam_huella	Length	Head Ø	Head thickness	Drill capacity	Metric
BCPZ4214	4,2 x 14	PH2	14	8	,7	0,70-2,00	4,2
BCPZ4223	4,2 x 23	PH2	23	8	,7	0,70-2,00	4,2

CARACTERÍSTICAS



Zinc-plated



Ph



Flat

RECOMMENDED FOR



Shelving anchor



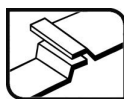
Fire extinguisher anchor



Shopping mall sign



Refrigerator



Sheet profiles



Signs



Decking screws

TECHNICAL DOCUMENTATION



DATA SHEET

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Self-drilling extra low head screw, Phillip recess



BCP A2

A2 Stainless steel. Ph recess.

Material for use:

STAINLESS STEEL



Aluminium
frames



Metal
sheet -
heavy
profiles

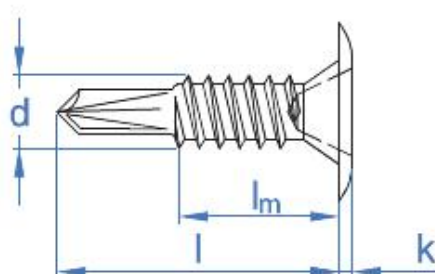
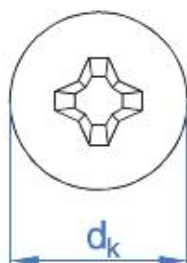
Product Material / Covering:

Stainless steel A2

PROFESSIONAL BOX

CODE	DIMENSIONS	EAN		
BCPA24214	4,2 x 14	8423533585998	500	22500

TECHNICAL INFORMATION



CODE	DIMENSIONS	tam_huella	Length	Head Ø	Head thickness	Drill capacity	Metric
BCPA24214	4,2 x 14	PH2	14	8	,7	0,70-2,00	4,2

CARACTERÍSTICAS



Stainless steel A2



Ph



Flat

RECOMMENDED FOR



Shelving anchor



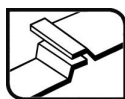
Fire extinguisher anchor



Shopping mall sign



Refrigerator



Sheet profiles



Signs



Decking screws

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Self-drilling extra low head screw, Phillip recess



BCP B White.Ph recess.

Material for use:

METAL



Aluminium frames



Metal sheet - heavy profiles



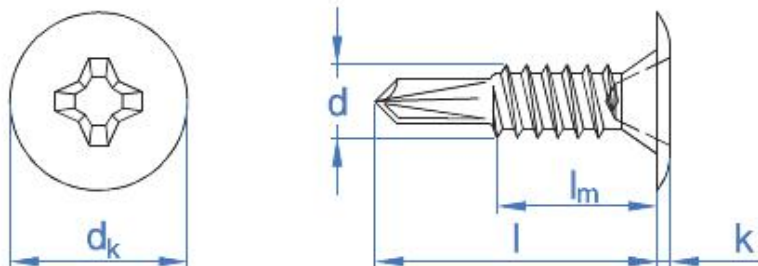
Product Material / Covering:

White zinc-plated

PROFESSIONAL BOX

CODE	DIMENSIONS	EAN		
BCPB4214	4,2 x 14	8423533193216	500	12000
BCPB4223	4,2 x 23	8423533139078	500	12000

TECHNICAL INFORMATION



CODE	DIMENSIONS	tam_huella	Length	Head Ø	Head thickness	Drill capacity	Metric
BCPB4214	4,2 x 14	PH2	14	8	,7	0,70-2,00	4,2
BCPB4223	4,2 x 23	PH2	23	8	,7	0,70-2,00	4,2

CARACTERÍSTICAS



White zinc-plated



Ph



Flat

RECOMMENDED FOR



Shelving anchor



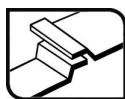
Fire extinguisher anchor



Shopping mall sign



Refrigerator



Sheet profiles



Signs



Decking screws

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Self-drilling extra low head screw, Phillip recess



BCP CB White head. Ph recess.

Material for use:

METAL



Aluminium frames



Metal sheet - heavy profiles

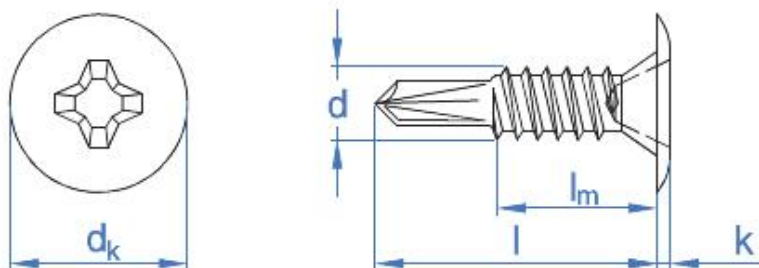
Product Material / Covering:

White zinc-plated

PROFESSIONAL BOX

CODE	DIMENSIONS	EAN		
BCPZ4214BL	4,2 x 14	8423533735652	500	22500
BCPZ4223BL	4,2 x 23	8423533735669	500	12000

TECHNICAL INFORMATION



CODE	DIMENSIONS	tam_huella	Length	Head Ø	Head thickness	Drill capacity	Metric
BCPZ4214BL	4,2 x 14	PH2	14	8	,7	0,70-2,00	4,2
BCPZ4223BL	4,2 x 23	PH2	23	8	,7	0,70-2,00	4,2

CARACTERÍSTICAS



White zinc-plated



Ph



Flat

RECOMMENDED FOR



Shelving anchor



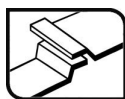
Fire extinguisher anchor



Shopping mall sign



Refrigerator



Sheet profiles



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Self-drilling extra low head screw, Phillip recess



BCP N Black. Ph recess.

Material for use:

METAL



Aluminium
frames



Metal
sheet -
heavy
profiles

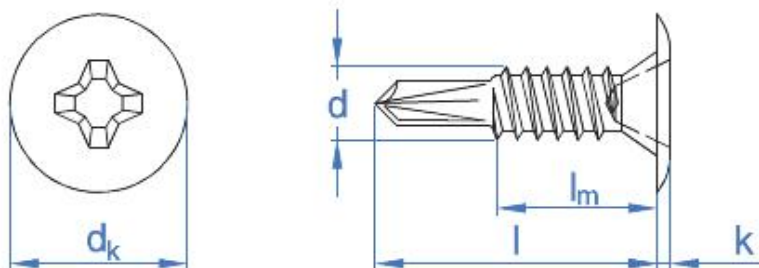
Product Material / Covering:

Black zinc-plated

PROFESSIONAL BOX

CODE	DIMENSIONS	EAN		
BCPN4214	4,2 x 14	8423533138910	500	12000
BCPN4223	4,2 x 23	8423533138071	500	12000

TECHNICAL INFORMATION



CODE	DIMENSIONS	tam_huella	Length	Head Ø	Head thickness	Drill capacity	Metric
BCPN4214	4,2 x 14	PH2	14	8	,7	0,70-2,00	4,2
BCPN4223	4,2 x 23	PH2	23	8	,7	0,70-2,00	4,2

CARACTERÍSTICAS



Black zinc-plated



Ph



Flat

RECOMMENDED FOR



Shelving anchor



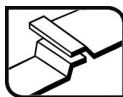
Fire extinguisher anchor



Shopping mall sign



Refrigerator



Sheet profiles



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