

## SELF-DRILLING SCREW FIXINGS

### 9. ABP, NBP

#### Self-drilling screw – countersunk head – Ph socket



##### Properties



Steel



Zinc-plated coating



Black zinc-plated

##### Base material



Plate assembly



Metal profile

##### Properties



Ph



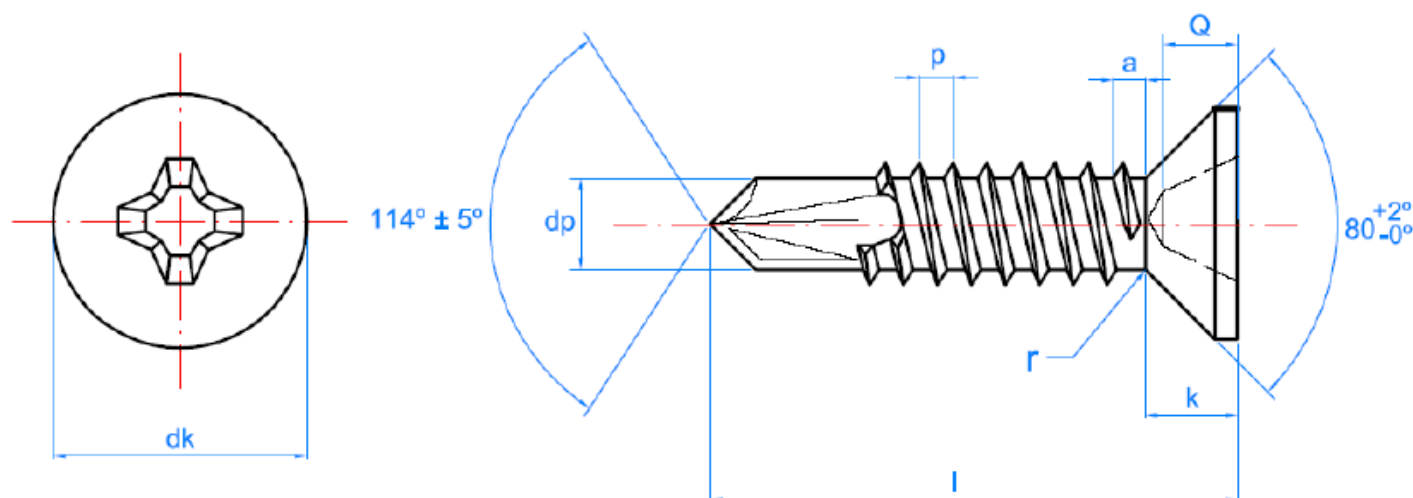
Countersunk head



Screw point

#### 8.1. Details

Code		ST 3.5	ST 3.9	ST 4.2	ST 4.8	ST 5.5
$d_k$ : head diameter $\leq$	[mm]	6.8	7.5	8.1	9.5	10.8
k: head thickness	[mm]	2.1	2.3	2.5	3.0	3.4
Ph bit		nº 2	nº 2	nº 2	nº 2	nº 3
Head countersink angle	°	80	80	80	80	80
D: exterior thread diameter	[mm]	3.53	3.91	4.22	4.80	5.46
d: interior thread diameter	[mm]	2.64	2.92	3.10	3.58	4.17
p: thread	[mm]	1.3	1.3	1.4	1.6	1.8
L: lengths	[mm]	9.5 - 25	13 - 38	13 - 38	13 - 50	19 - 50
Installation bit code (Ph)		PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC03 PUPHL03
Drill capacity	[mm]	0.70 - 2.25	0.70 - 2.40	1.75 - 3.00	1.75 - 4.40	1.75 - 5.25



- Zinc-plated (code ABP) or black-zinc-plated (code NBP) finish.
- For metal-metal fixings where the screw is required to be level with the material to be fixed. Requires pre-countersinking.

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#### 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.

#### 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 ≈ 1 Kg

10 Nm ≈ 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.

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

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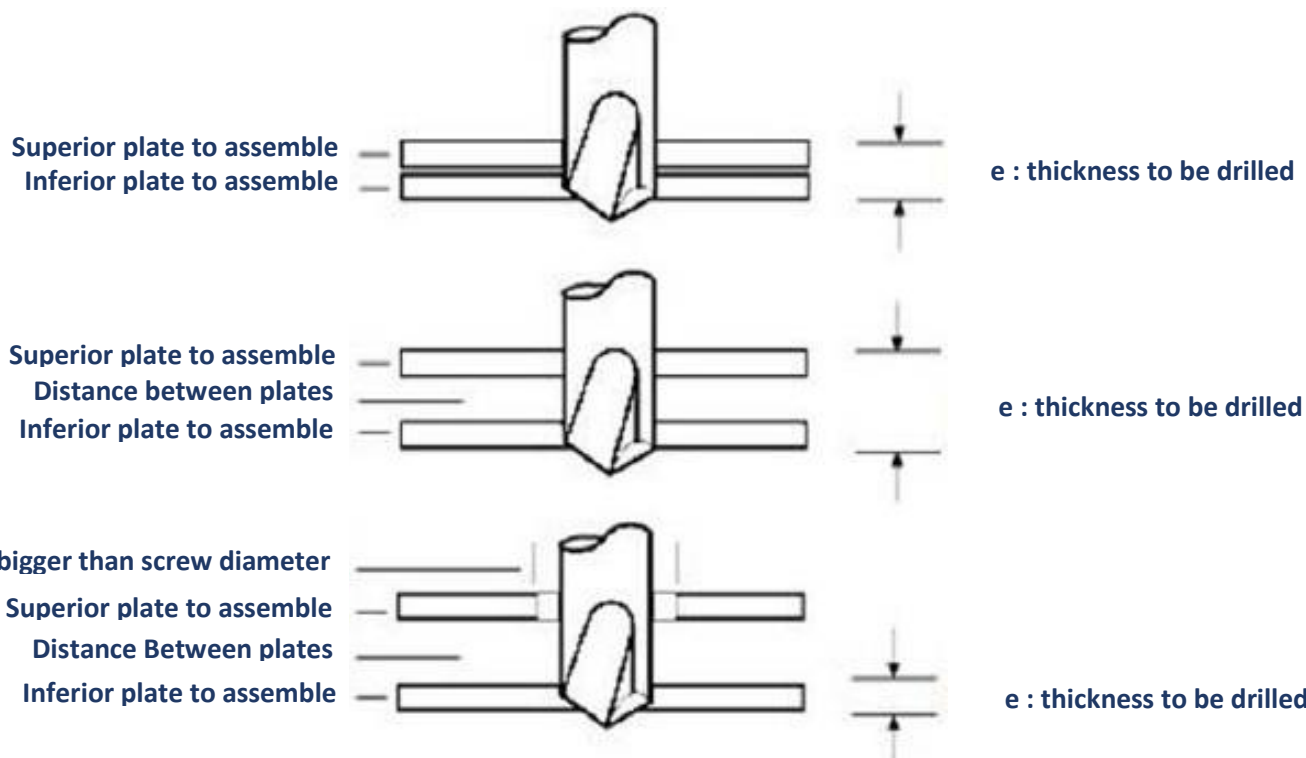
Black zinc-plated

### MATERIALS

Characteristic	ABE, ARE, AUTO, ABR, ABRBL, NBR, ABRC, ABA, FS, ABP, NBP, ABPC, TAEZ, TAEN, BCPZ, BCPN, BCPB, RS	ABRA2, ABRC2, ABPCA2, 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.





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CODE	DIMENSIONS			EAN	PRICE
ABP3509	3,5 x 9,5	1000 pcs.	24000 pcs.	8423533129406	1,229
ABP3511	3,5 x 11	1000 pcs.	24000 pcs.	8423533129505	1,272
ABP3513	3,5 x 13	1000 pcs.	24000 pcs.	8423533129604	1,286
ABP3516	3,5 x 16	1000 pcs.	24000 pcs.	8423533129703	1,421
ABP3519	3,5 x 19	1000 pcs.	12000 pcs.	8423533129802	1,687
ABP3522	3,5 x 22	1000 pcs.	12000 pcs.	8423533129901	1,919
ABP3525	3,5 x 25	500 pcs.	12000 pcs.	8423533130068	1,916
ABP3913	3,9 x 13	1000 pcs.	24000 pcs.	8423533130105	1,481
ABP3916	3,9 x 16	1000 pcs.	12000 pcs.	8423533130204	1,643
ABP3919	3,9 x 19	1000 pcs.	12000 pcs.	8423533130303	1,862
ABP3922	3,9 x 22	500 pcs.	12000 pcs.	8423533128171	2,094
ABP3925	3,9 x 25	500 pcs.	12000 pcs.	8423533130242	2,101
ABP3932	3,9 x 32	500 pcs.	6000 pcs.	8423533127563	2,525
ABP3938	3,9 x 38	500 pcs.	6000 pcs.	8423533129468	2,956
ABP4213	4,2 x 13	1000 pcs.	12000 pcs.	8423533130808	1,659
ABP4216	4,2 x 16	1000 pcs.	12000 pcs.	8423533130907	1,862
ABP4219	4,2 x 19	1000 pcs.	12000 pcs.	8423533131003	2,020
ABP4222	4,2 x 22	500 pcs.	12000 pcs.	8423533127273	2,232
ABP4225	4,2 x 25	500 pcs.	6000 pcs.	8423533190659	2,525
ABP4232	4,2 x 32	500 pcs.	6000 pcs.	8423533191557	2,917
ABP4238	4,2 x 38	500 pcs.	6000 pcs.	8423533128089	3,471
ABP4813	4,8 x 13	1000 pcs.	12000 pcs.	8423533131508	2,288
ABP4816	4,8 x 16	1000 pcs.	12000 pcs.	8423533131607	2,478
ABP4819	4,8 x 19	1000 pcs.	8000 pcs.	8423533131706	2,616
ABP4825	4,8 x 25	500 pcs.	6000 pcs.	8423533189950	2,976
ABP4832	4,8 x 32	500 pcs.	6000 pcs.	8423533190758	3,927
ABP4838	4,8 x 38	500 pcs.	3000 pcs.	8423533128843	4,538
ABP4850	4,8 x 50	500 pcs.	3000 pcs.	8423533128072	5,689
ABP5519	5,5 x 19	500 pcs.	6000 pcs.	8423533128942	3,784
ABP5525	5,5 x 25	500 pcs.	6000 pcs.	8423533129642	4,247
ABP5532	5,5 x 32	500 pcs.	3000 pcs.	8423533129567	5,353
ABP5538	5,5 x 38	500 pcs.	3000 pcs.	8423533126542	6,047
ABP5550	5,5 x 50	500 pcs.	3000 pcs.	8423533127969	7,774