



ABR
DIN-7504-N HP Z



ABR_BLE
DIN-7504-N HP B



NBR
DIN-7504-N HP N



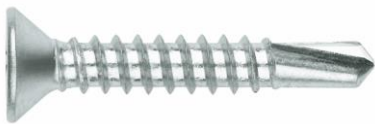
ABRA2
DIN-7504-N HP A2



ABRC
DIN-7504-N HC



ABRT
DIN-7504-N HT



ABP
DIN-7504-P HP Z



NBP
DIN-7504-P HP N



ABPT
DIN-7504-P HT

CHARACTERISTICS

- Drill point: drill material directly – no need for pre-drilled hole.
- Self-tapping thread.
- Wide variety of head types, diameters and lengths for different applications: flexibility in installation.
- Available in zinc plated, black zinc-plated and white zinc-plated.
- Versions in standard commercial lacquered plate colours (RAL colour scheme).
- Coloured caps available for hexagonal heads.

APPLICATIONS

- For joining metallic and plastic elements as well as other materials on metallic materials.










BASE MATERIALS



APPLICATION EXAMPLES



1. RANGE

ITEM	DENOMINACION	PHOTO	REGULATIO N	HEAD	SOCKET	ØEPDM WASHER (1)	MATERIAL/ COATING (2) (3)	MATERIAL TO BE FIXED
1	ABR DIN-7504-N HP Z		DIN 7504N	Round head	Ph	---	Steel / Zinc-plated	Steel
2	NBR DIN-7504-N HP N		DIN 7504N	Round head	Ph	---	Steel / Black Zinc-plated	Steel
3	ABR_BLE DIN-7504-N HP B		DIN 7504N	Round head	Ph	---	Steel / Zinc-plated + paint	Steel
4	ABRA2 DIN-7504-N HPA2		DIN 7504N	Round head	Ph	---	Stainless Steel	Aluminium
5	ABRC DIN-7504-N HC		DIN 7504N	Round head	Square	---	Steel / Zinc-plated	Steel
6	ABRT DIN-7504-N HT		DIN 7504N	Round head	Tx	---	Steel / Zinc-plated	Steel
7	ABP DIN-7504-P HP Z		DIN 7504P	Countersunk	Ph	---	Steel / Zinc-plated	Steel
8	NBP DIN-7504-P HP P		DIN 7504P	Countersunk	Ph	---	Steel / Black Zinc-plated	Steel
9	ABPT DIN-7504-P HT		DIN 7504P	Countersunk	Tx	---	Steel / Zinc-plated	Steel

(1) EPMD washer characteristics according to ARVUL Data Sheet

(2) Coatings: Zinc-plated $\geq 3 \mu\text{m}$ according to ISO 4042 A1J
Black zinc-plated $\geq 3 \mu\text{m}$ according to ISO 4042 A1N

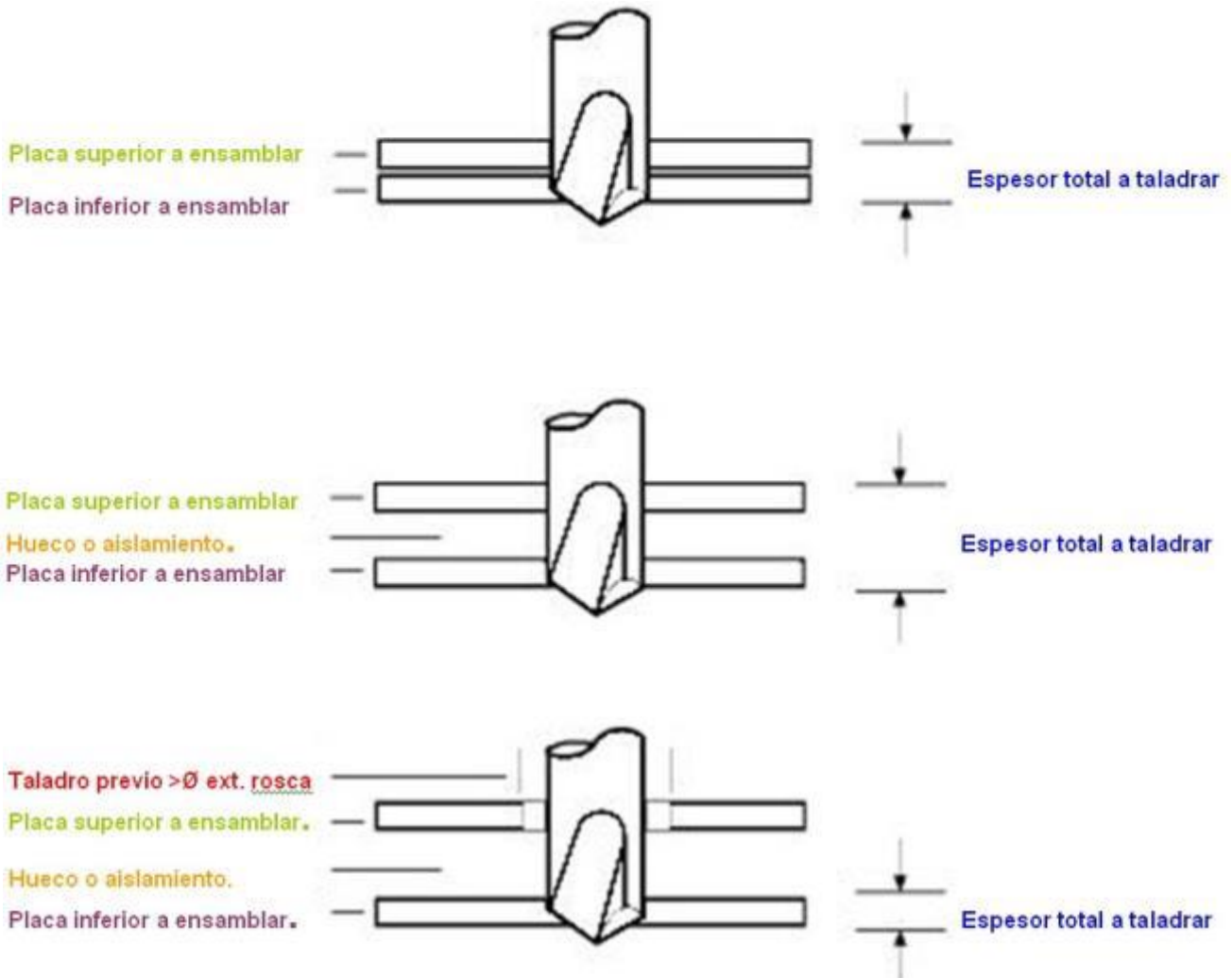
(3) Available in various coatings and colors upon request.

MATERIALES

Characteristic	ABR, ABRBL, NBR, ABRC, ABA, ABRT, NBP, ABRC	ABRA2
Material	Special steel for SAE J403 1022 thermal treatment	A2 Stainless Steel
Surface hardness	> 500 HV	---
Core hardness	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.	---

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.



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	1800 - 2500				1000 - 1800	
	Stainless Steel	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.

SCREW	ØTHREAD	THICKNESS TO BE FIXED IN STEEL [mm]
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ABR ABRT ABP ABPT	6.3		2,5		6,0	
	5.5		1,75		5,25	
	4.8		1,75		4,4	
	4.2		1,75	3,0		
	3.9		0,7	2,4		
	3.5		0,7	2,25		

0,00 0,25 0,50 0,75 1,00 1,25 1,50 1,75 2,00 2,25 2,50 2,75 3,00 3,25 3,50 3,75 4,00 4,25 4,50 4,75 5,00 5,25 5,50 5,75 6,00 6,5 7,0 7,5 8,0 8,5 9,0 9,5 10,0 10,5 11,0 11,5 12,0

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

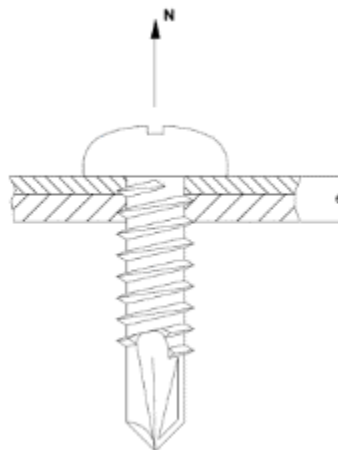
For tension loads, the inherent resistance of plates to be fixed must be taken into account, which is usually less than the resistance of the screw itself, as the screw will probably tear the plates.

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



2. INSTALLATION DATA

2.1 ABR, NBR, ABR_BLE, ABRA2 DIN-7504-N HP Z/A2/N/B.

Self-drilling screw - Dome head - Ph socket



Properties		Base material	
Steel	Available in stainless	Plate assembly	Plate profile

Recubrimientos

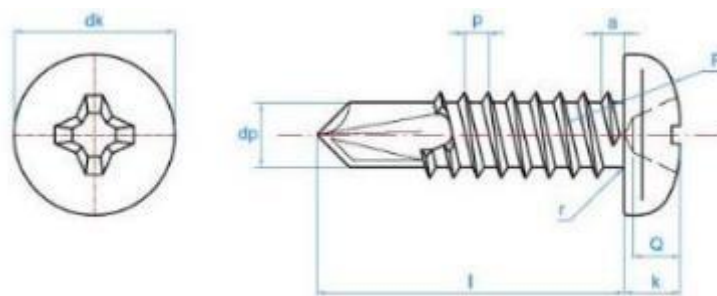
Properties

Zinc-plated coating	Black zinc-plated	White zinc-plated	Available in different colours	Ph	Dome head	Screw point

Installation data

CODE		ST 3.5	ST 3.9	ST 4.2	ST 4.8	ST 5.5
d_k : head diameter	[mm]	6.9	7.5	8.2	9.5	10.8
k : head thickness	[mm]	2.60	2.80	3.05	3.55	3.95
Ph bit	[mm]	nº 2	nº 2	nº 2	nº 2	nº 3
R: head radius	[mm]	5.4	5.8	6.2	7.2	8.2
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 - 32	13 - 32	13 - 50	13 - 120	19 - 73
Installation bit code (Ph bit)		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

DRAWING



- Zinc-plated (code ABR), white zinc-plated (code ABR_BLE) and black zinc-plated (code NBR) finishes.

2.2 ABRC DIN-7504-N HC

Self-drilling screw – Dome head – square socket



Properties



Steel



Zinc-plated coating

Base material

Properties



Plate assembly



Plate profile



Aluminium



Square socket



Dome head

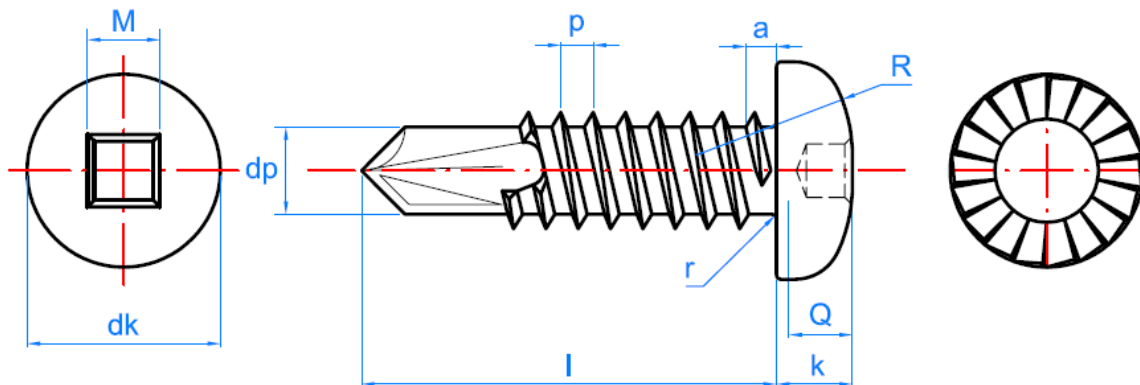


Screw point

Installation data

CODE		ST 3.5	ST 3.9	ST 4.2	ST 4.8	ST 5.5
dk: head diameter	[mm]	6.9	7.5	8.2	9.5	10.8
k: head thickness	[mm]	2.60	2.80	3.05	3.55	3.95
Squarebit		nº 1	nº 1	nº 2	nº 2	nº 3
R: head radius	[mm]	5.4	5.8	6.2	7.2	8.2
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 - 32	13 - 38	13 - 50	13 - 100	19- 73
Installation bit code (square bit)		PUCUC01 PUCUL01	PUCUC01 PUCUL01	PUCUC02 PUCUL02	PUCUC02 PUCUL02	PUCUC03 PUCUL03
Drill capacity	[mm]	0.70 - 2.25	0.70 – 2.40	1.75 – 3.00	1.75 – 4.40	1.75 - 5.25

DRAWING



- Zinc-plated finish (code ABRC).
- Grooves in the lower part of head which guard against rotation.

**2.3 ABRT
DIN-7504-N HT**

Self-drilling screw – Dome head – Tx socket



Properties



Steel



Zinc-plated coating

Base material

Properties



Plate assembly



Plate profile



Aluminium



Tx Socket



Dome head

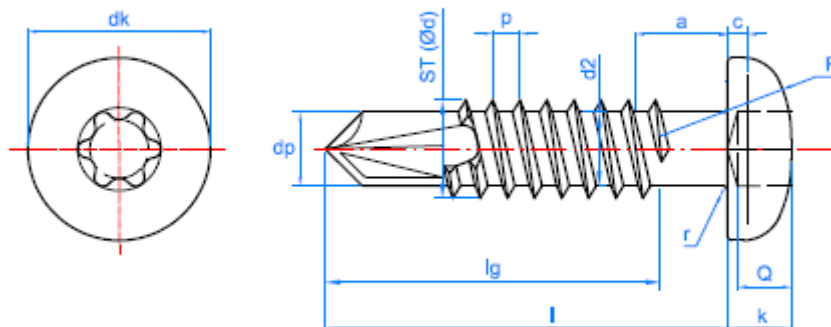


Screw point

Installation data

CODE		ST 3.5	ST 3.9	ST 4.2	ST 4.8	ST 5.5
dk: head diameter	[mm]	6.9	7.5	8.2	9.5	10.8
k: head thickness	[mm]	2.60	2.80	3.05	3.55	3.95
Tx bit		Tx15	Tx15	Tx20	Tx25	Tx25
R: head radius	[mm]	5.4	5.8	6.2	7.2	8.2
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 - 32	13 - 38	13 - 50	13 - 100	19- 73
Installation bit code (OXBIT bit)		PUOXBITC15	PUOXBITC15	PUOXBITC20	PUOXBITC25	PUOXBITC25
Drill capacity	[mm]	0.70 - 2.25	0.70 - 2.40	1.75 - 3.00	1.75 - 4.40	1.75 - 5.25

DRAWING



**2.4 ABP,NBP
DIN-7504-P HP Z/N**

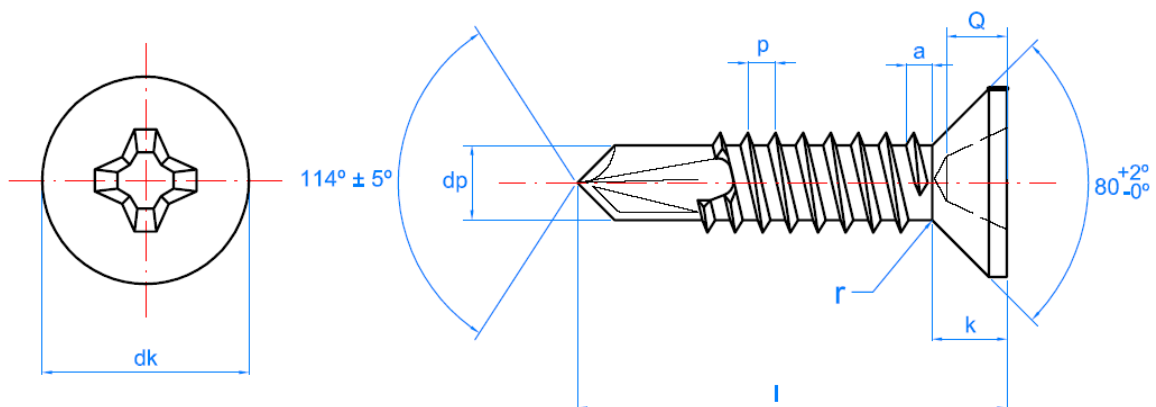
Self-drilling screw – countersunk head – Ph socket

	Properties		
	<p>Steel</p>	<p>Zinc-plated coating</p>	<p>Black zinc-plated</p>

Base material		Properties		
<p>Plate assembly</p>	<p>Metal profile</p>	<p>Ph</p>	<p>Countersunk head</p>	<p>Screw point</p>

Installation data						
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	[mm]	nº 2	nº 2	nº 2	nº 2	nº 3
Head countersink angle	[mm]	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	PUPHC02	PUPHC02	PUPHC02	PUPHC03
		PUPHL02	PUPHL02	PUPHL02	PUPHL02	PUPHL03
Drill capacity	[mm]	0.70 - 2.25	0.70 - 2.40	1.75 - 3.00	1.75 - 4.40	1.75 - 5.25

DRAWING



- 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 prior countersinking.

**2.5 ABPT
DIN-7504-P HT**

Self-drilling screw – countersunk head – Tx socket



Properties



Steel



Zinc-plated coating

Base material

Properties



Plate assembly



Plate profile



Tx socket



Countersunk head



Screw point

Installation data

CODE		ST 3.5	ST 3.9	ST 4.2	ST 4.8
d_k : head diameter \leq	[mm]	6.8	7.5	8.1	9.5
k: head thickness	[mm]	2.1	2.3	2.5	3.0
Tx bit	[mm]	Tx15	Tx15	Tx20	Tx25
Head countersink angle	[°]	80	80	80	80
D: exterior thread diameter	[mm]	3.53	3.91	4.22	4.80
d: interior thread diameter	[mm]	2.64	2.92	3.10	3.58
p: thread	[mm]	1.3	1.3	1.4	1.6
L: lengths	[mm]	13 - 25	19 - 38	16 - 38	13 - 50
Installation bit code (OXBIT drill)		PUOXBITC15	PUOXBITC15	PUOXBITC20	PUOXBITC25
Drill capacity	[mm]	0.70 - 2.25	0.70 - 2.40	1.75 - 3.00	1.75 - 4.40

DRAWING

