

Technical data sheet

Title	Self-threading screws
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DIN 7981



AUROS



DIN 7982



DIN 7983

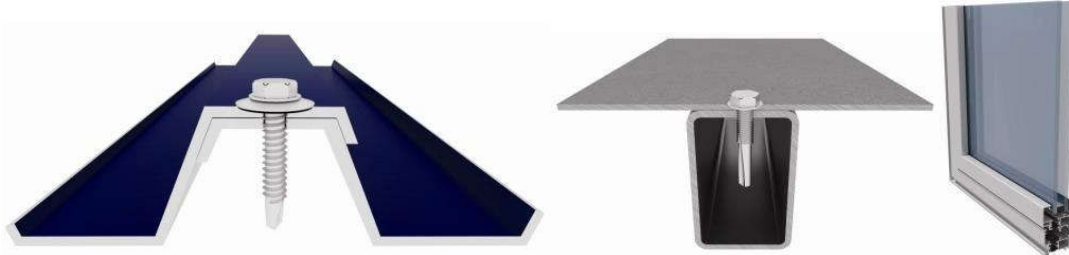
1.- Characteristics.

- 1.- ISO 1478 self-tapping thread.
- 2.- Previous drilling required.
- 3.- Type F point.
- 4.- High variety of types of heads, diameters and lengths for different applications: flexibility in assembly.
- 5.- Zinc-plated or black zinc-plated coatings.
- 6.- Versions in stainless steel.
- 7.- Versions in RAL colours.
- 8.- Coloured caps available for hex heads.

2- Applications.

- 1.- For joining metal components to each other, or plastic, wood and other materials on metal materials.
- 2.- Version with galvanised steel-EPDM or stainless steel-EPDM washer for tight fastenings in façades and roofs.

3- Base materials.



Characteristic	T81, T82, T83, AUE, TCP, TFI	TA281, TA281C, TA282, TA282C, TCPA2
Material	Special steel for thermal treatment SAE J403 1022	A2 stainless steel
Surface hardness	> 500 HV	---
Core hardness	240 - 450 HV	---
Hardness depth	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	---

4- Selection table.

Code	Standard	Head	Mortise	Ø EPDM washer (1)	Material/Coating (2)	Material to be drilled
DIN 7981	DIN 7981	Pan	Phillips	---	Steel / Zinc plating	Steel
DIN 7981	DIN 7981	Pan	Phillips	---	A2 stainless steel (AISI304)	Aluminium
DIN 7982	DIN 7982	Countersunk	Phillips	---	Steel / Zinc plating	Steel
DIN 7982	DIN 7982	Countersunk	Phillips	---	Stainless A2 (AISI 304)	Aluminium
DIN 7983	DIN 7983	Cheese head	Phillips	---	Steel / Zinc plating	Steel
AUROS	DIN 6928	Hexagonal with flange	---	16, 18, 25	Steel / Zinc plating	Steel

(1) Characteristics of EPDM washer according to ARVUL data sheet.

(2) Coatings:
zinc plating $\geq 3\mu\text{m}$ according to ISO 4042 A1J
black zinc plating $\geq 3\mu\text{m}$ according to ISO 4042 A1N

5.- Previous drilling.

For correct installation of the self-threading screws, previous drilling will be as per the following table, depending on the base material and the thickness to be fastened (UNE 17020):

Thread	Steel or brass sheet thickness [mm]				Aluminium sheet thickness [mm]				
	0.4 - 0.6	0.6 - 1.5	1.5 - 2.5	2.5 - 4.0	0.4 - 0.6	0.6 - 1.0	1.0 - 1.5	1.5 - 2.5	2.5 - 4.0
ST 2.9	2.25	2.40	2.50	---	2.20	2.20	2.25	2.40	---
ST 3.5	2.70	2.80	2.90	3.00	2.70	2.70	2.80	2.80	---
ST 3.9	---	3.10	3.20	3.30	---	3.00	3.00	3.10	3.10
ST 4.2	---	3.30	3.40	3.50	---	3.20	3.20	3.30	3.30
ST 4.8	---	3.80	3.90	4.00	---	3.70	3.70	3.80	3.80
ST 5.5	---	4.40	4.50	4.60	---	4.30	4.30	4.40	4.40
ST 6.3	---	5.10	5.20	5.30	---	5.00	5.00	5.10	5.10

Previous drilling that is too large may lead to the base material not fitting the thread or to the fastening being loose. Previous drilling that is too small may lead to it being impossible to thread the screw, it breaking or the material to be fastened becoming deformed.

6- Characteristic resistance of the screw.

Measurement	Traction [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

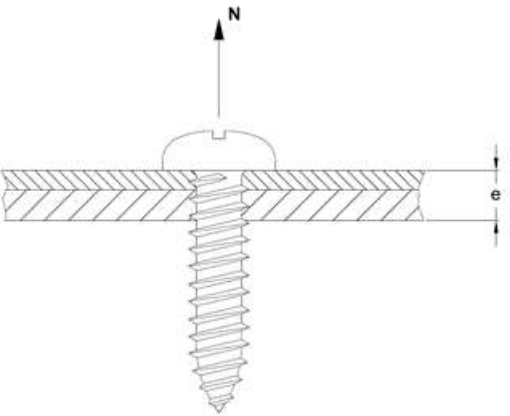
In tensile loads, the resistance of the sheets to be joined should be considered, which will be generally lower than the resistance of the screw itself, as the screw will probably tear the sheets.

7- Recommended load on extraction in steel sheet

Measurement	Recommended load					
	e [mm]	N [kN]	e [mm]	N [kN]	e [mm]	N [kN]
ST 3.5	0.8	0.47	1.5	0.93	2.0	1.64
ST 3.9	0.8	0.67	1.5	1.17	2.0	1.83
ST 4.2	2.0	1.8	2.5	1.48	3.0	3.37
ST 4.8	2.0	1.91	3.0	3.14	4.0	5.31
ST 5.5	2.0	1.96	3.5	3.34	5.0	3.42
ST 6.3	2.5	3.9	4.0	4.99	5.0	4.15

8- Recommended load on extraction in aluminium sheet

Measurement	Recommended load					
	e [mm]	N [kN]	e [mm]	N [kN]	e [mm]	N [kN]
ST 3.5	---	---	---	---	2.0	0.91
ST 4.2	2.0	0.84	---	---	3.0	2.21
ST 4.8	2.0	1.11	3.0	1.99	4.0	2.16
ST 5.5	2.0	1.02	4.0	3.59	5.0	3.63



1. DIN-7981

Phillips screws



Materials



Steel



Possibility of stainless steel



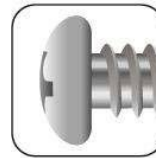
Available in a variety of colours

Coatings

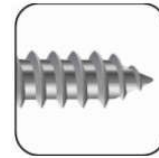
Properties



Phillips



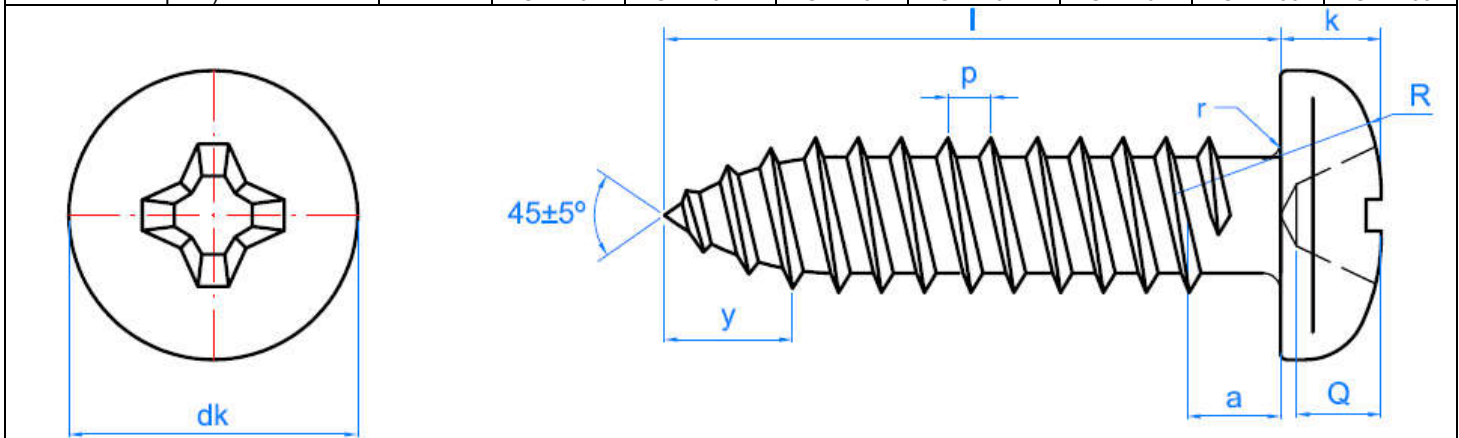
Pan head



Self-threading
C point

1.1. Data

Code		ST 2.9	ST 3.5	ST 3.9	ST 4.2	ST 4.8	ST 5.5	ST 6.3
d_k : head diameter	[mm]	5.45	6.7	7.3	8.0	9.4	10.6	12.3
k: head thickness	[mm]	2.2	2.6	2.8	3.05	3.55	3.95	4.55
Phillips mortise no.		1	2	2	2	2	3	3
R: head radius	[mm]	4.4	5.4	5.8	6.2	7.2	8.2	9.5
D: thread outer diameter	[mm]	2.90	3.53	3.90	4.22	4.80	5.46	6.25
d: thread inner diameter	[mm]	2.18	2.64	2.92	3.10	3.58	4.17	4.88
p: thread pitch	[mm]	1.1	1.3	1.3	1.4	1.6	1.8	1.8
y: point length \leq	[mm]	2.6	3.2	3.5	3.7	4.3	5	6
l: lengths	[mm]	6.5 - 25	6.5 - 32	9.5 - 50	9.5 - 90	9.5 - 120	13 - 120	16 - 120
l_G : maximum thread length	[mm]	-	-	-	-	90	90	90
Installation point code (Phillips point)		PUPHC01 PUPHL01	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC03 PUPHL03	PUPHC03 PUPHL03



- Finishes in zinc plating (code T81), A2 stainless steel (code TA281), white zinc plating (T81___BLE) and black zinc plating (code TZN81).
- Measurements in white zinc plating: 3.5 x 9.5, 4.2 x 13 and 4.2 x 25.
- Measurements in black zinc plating: 2.9 x 9.5, 3.5 x 13-25, 4.2 x 16-38 and 4.8 x 16-70.
- Measurements in stainless steel: 2.9 x 9.5-25, 3.5 x 6.5-32, 3.9 x 9.5-25, 4.2 x 9.5-50, 4.8 x 16-70 and 5.5 x 13-70.
- General use in sheet-sheet joints. In aluminium joints use stainless steel screws (code TA281).

2. DIN-7982 HP

Sheet metal screws with Phillips countersunk head



Materials



Steel



Possibility of stainless steel



Zinc-plated coating

Coatings

Properties



Phillips



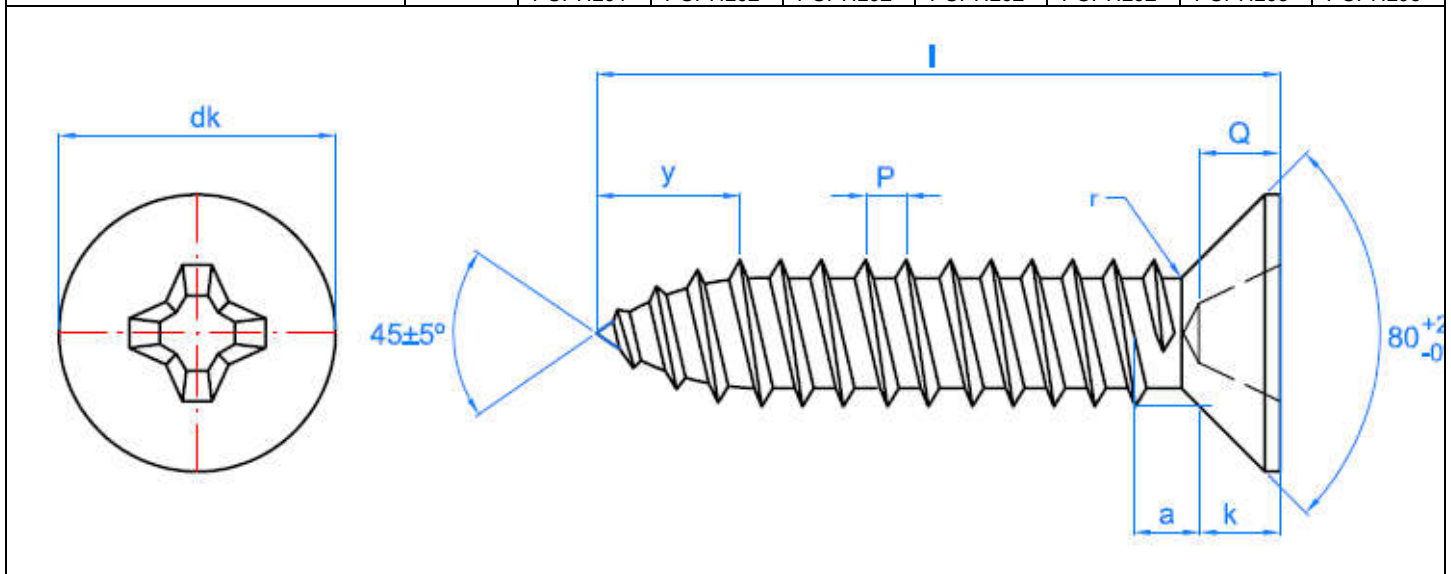
Countersunk head



Self-threading C point

2.1. Data

Code T82		ST 2.9	ST 3.5	ST 3.9	ST 4.2	ST 4.8	ST 5.5	ST 6.3
d_k : head diameter	[mm]	5.6	6.9	7.5	8.1	9.1	10.8	12.4
k: head thickness	[mm]	1.7	2.1	2.3	2.5	3	3.4	3.8
Phillips mortise no.		1	2	2	2	2	3	3
Head angle	°	80	80	80	80	80	80	80
D: thread outer diameter	[mm]	2.90	3.53	3.90	4.22	4.80	5.46	6.25
d: thread inner diameter	[mm]	2.18	2.64	2.92	3.10	3.58	4.17	4.88
p: thread pitch	[mm]	1.1	1.3	1.3	1.4	1.6	1.8	1.8
y: point length ≤	[mm]	2.6	3.2	3.5	3.7	4.3	5	6
l: lengths	[mm]	6.5 - 25	9.5 - 38	9.5 - 50	13 - 70	13 - 70	13 - 70	13 - 70
Installation point code (Phillips point)		PUPHC01 PUPHL01	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC03 PUPHL03	PUPHC03 PUPHL03



- Finishes in zinc plating (code T82), A2 stainless steel (code TA282), white zinc plating (T82___BLE) and black zinc plating (code TZN82).
- Measurements in white zinc plating: 4.2 x 19.

- Measurements in black zinc plating: 4.2 x 19 and 4.2 x 25.
- Measurements in stainless steel: 2.9 x 16, 3.5 x 9.5, 3.9 x 9.5-16, 4.2 x 16-50, 4.8 x 13-45 and 5.5 x 13-25.
- General use in sheet-sheet joints where the screw needs to be flush with the material to be fastened.

3. DIN-7983 HP

Sheet metal screws with 80° cheese head



Materials



Steel

Coatings



Zinc-plated coating

Properties



Phillips




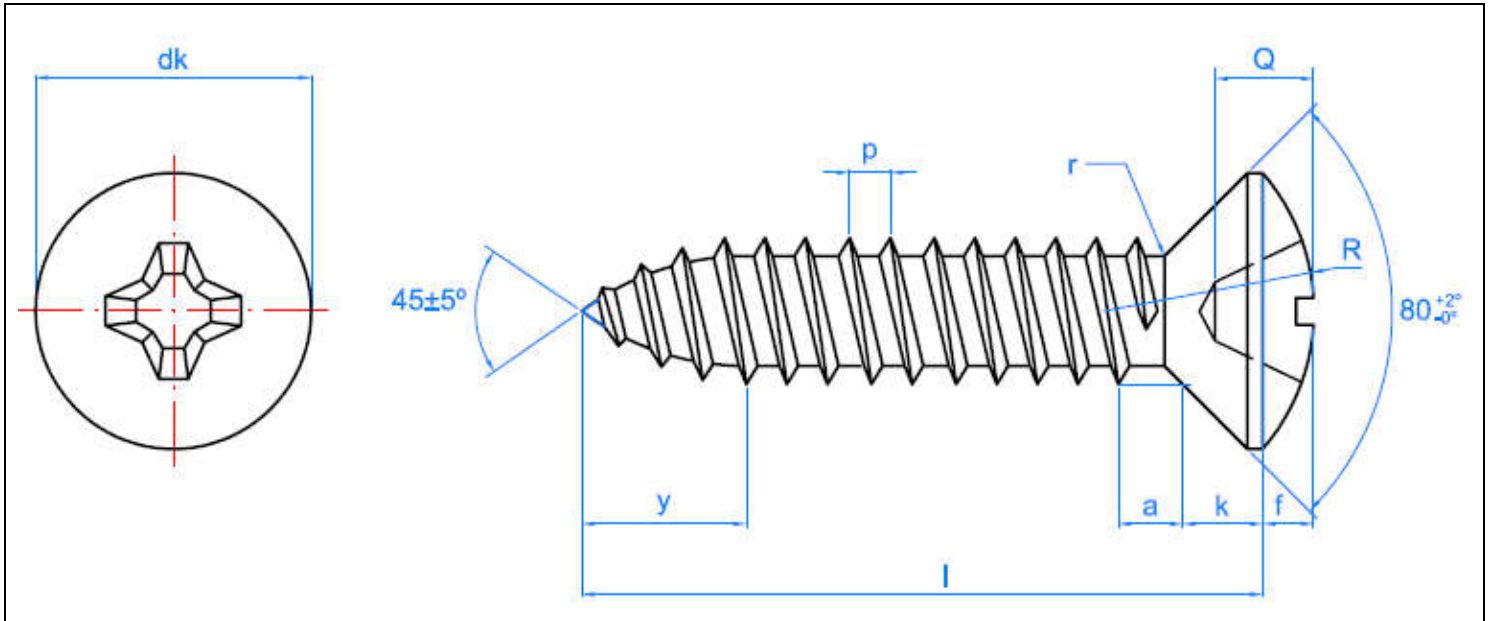
80° cheese head



Self-threading
C point

3.1. Data

Code T82		ST 2.9	ST 3.5	ST 3.9	ST 4.2	ST 4.8	ST 5.5	ST 6.3
dk: head diameter	[mm]	5.5	6.8	7.5	8.1	9.5	10.8	12.4
k: head thickness	[mm]	1.7	2.1	2.3	2.5	3	3.4	3.8
Phillips mortise no.		1	2	2	2	2	3	3
Head angle	°	80	80	80	80	80	80	80
D: thread outer diameter	[mm]	2.90	3.53	3.90	4.22	4.80	5.46	6.25
d: thread inner diameter	[mm]	2.18	2.64	2.92	3.10	3.58	4.17	4.88
p: thread pitch	[mm]	1.1	1.3	1.3	1.4	1.6	1.8	1.8
y: point length ≤	[mm]	2.6	3.2	3.5	3.7	4.3	5	6
l: lengths	[mm]	9.5 - 25	13 - 38	9.5 - 50	9.5 - 70	13 - 70	13 - 70	13 - 70
Installation point code (Phillips point)		PUPHC01 PUPHL01	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC02 PUPHL02	PUPHC03 PUPHL03	PUPHC03 PUPHL03



•General use in sheet-sheet joints where the screw needs to be flush with the material to be fastened, but greater resistance is required in the mortise (better transmission of the tightening torque).

4. AUROS

Sheet metal screws with hexagonal head and embossed washer



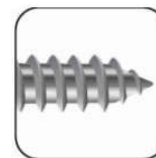
Materials



Coatings

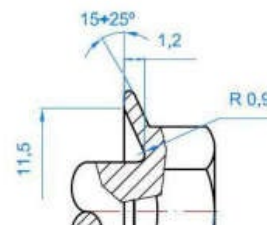



Properties

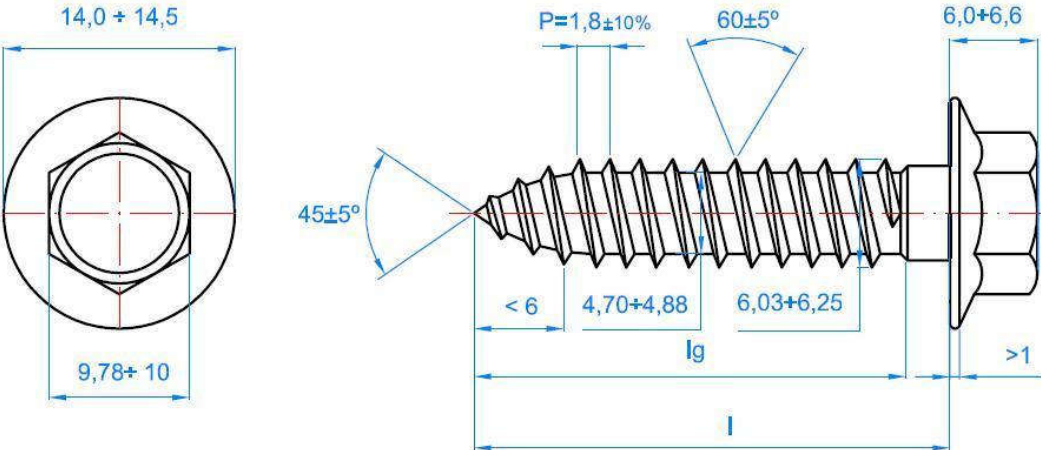


4.1.Data

Code		M 5.5
dk: head washer diameter	[mm]	14
k: head thickness	[mm]	6
Open end wrench		10
D: thread outer diameter	[mm]	6.25
d: thread inner diameter	[mm]	4.88
p: thread pitch	[mm]	1.8
l: lengths	[mm]	19 – 150



l _G : maximum thread length	[mm]	80
Installation point code (magnetic hex bit)		BOCA010



- Zinc-plated finish (AUROS code).
- Geometry similar to DIN 6928, with reinforced embossed washer:
 - Better torque transmission.
 - Better distribution of compression stress on material to be fastened.
 - More difficult for thread not to fit
 - Suitable for fastening soft materials, with large holes or where a high tightening torque is required.
- General use in sheet-sheet joints where the application of a lot of force is required.
- Versions with ø16 galvanised-EPDM washer assembled for tight closure in façades and roofs (see Technical data sheet AREPDM)