

Installation materials

Thorsman

Cabling and fixing for
demanding professionals



Get it right,
right away



Make a green choice

Thorsman = Schneider Electric



Now it becomes easier to find what you want in the shop shelves. Whether you look for boxes, mini-trunking, screws, plugs or clips, all you have to do is keep a look-out for the green colour to get top quality. The products used to be sold under the Thorsman brand. Now everything is available in the green packing of Schneider Electric.

But green is not only a colour to us in Schneider Electric. It is also a matter of responsibility. Many of our products are therefore also green while considering people and environment. Our production is both resource-effective and halogen-free, read more about this on pages 6–7.

Moreover, our whole offer, from the smallest screw to fire classified boxes, is in every detail developed to make your job easy. You will get the same nice result, just as quickly, every time. In short: Stick to the green and you needn't redo, get it right, right away!

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P124730



New!

Cable Wing

Cable fixing for fast fixing of cables and conduits.

New!

Multi Monti

Concrete screw MMS. Holds without plug.

The right thing yesterday and tomorrow

The company Thorsman has become integrated with Schneider Electric. And you may know of Thorsman, but what is Schneider Electric? It is the global energy specialist with around 100 000 employees in more than 100 countries and enormous resources. We go in for inventing or further developing the best products in the world, having the same aim as Thorsman: To facilitate your everyday life.

The right thing for the future

We concentrate much time and effort in studying what happens out there in your everyday life. This, in turn, results in innovations that simplify and improve modern installations. Like for instance, we have taken all alarming reports about carcinogenic and dangerous halogens quite seriously. So all our products are now halogen-free.

Get it right, right away!

Having the right products makes your installations correct at the first go. If your reality should change, our products must also keep up with this development. So, among the product news of the year you will for instance find a new concrete screw that allows you to work without wall plugs. The smart cable fixing Cable Wing that keeps your cables in order without reducing the flexibility and the through bolt TEX with high quality for the professional installer. As said before, with the right product you will get the right result, so make the right choice directly!

New!

Grepi

Grepi super plug with acid-proof screw for porous building blocks etc.

The new green Thorsman

The whole Thorsman range will be transferred to green Schneider Electric packages during the course of the year.

New!

Push-in terminals

For tool-less connection, 3 or 5 pole. Can take up to 2.5 mm² per pole.



Many want to be halogen-free

Thorsman fixing is!

Why all this sudden talk about halogens? What are they exactly? And why did Schneider Electric as early as in 2004 stop using flame retardants containing halogens?

We would like to tell you more about this. Read more on the next page!



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What are halogens?

Halogens are formed when certain elements are being mixed. They are fluorine, chlorine, bromine and iodine. One by one, in small quantities and in their natural spots, these salts and minerals do no harm. On the contrary, they are essential for various chemical processes in the earth crust and in the oceans. But ever since halogens came into use as flame retardants in electrical products, their injurious effects have become obvious. Much like lead, halogens are absorbed and stored by all living organisms, and they are decomposed just as slowly and are extremely toxic.

Why is it dangerous?

Experiments on animals show that bromated flame retardants may have an effect on sex hormones and thyroxine. As a result, metabolic disturbance, learning difficulties, deteriorated memory functions and injuries to the liver, the skin and the central nervous system may arise. Before 1960 halogens were not in use, and studies have shown that people had no PBDE (halogens) in their blood at that time. But today the PBDE content is doubled every 5 years in both human beings and wild animals.

For us 100% halogen-free material applies!

We take you, your health and our environment just as seriously as we do the products that we produce and sell. Therefore, Schneider Electric decided as early as in 2004 to stop using halogen-containing flame retardants with immediate effect. Other companies have chosen to phase out their use.





Favourites in new packages in several places

Don't feel troubled if you won't recognize our packages on the shelves. Your old favourites are still in the range, but in new package designs. The reason for the change is that many selling shops have complained about broken boxes and packages. To avoid this problem, the new design will clearly show what is inside each box. And what's more, additional selling shops will increase availability. Thus, in all imaginable ways it will be easier for you to get it right, right away.

Select Thorsman news

We constantly make supplementary additions to our range of products that facilitate today's installations. So, here are three innovations that will most certainly delight you! First, the smart cable fixing Cable Wing, to be used for flexible installations where you want to keep extra cable lengths in order. The next new products is Grepì, a plug for light concrete, being a frequent material today. And last but not least, we have produced a new and very smart concrete screw for the same reason.



The functioning of Cable Wing

Just screw the "wing" to the ceiling or to a piece of furniture and fix or wind the cable around it, until you need the extra length.

P124737



P124707

Through bolt Thorsman TEX

High quality through bolts for the professional installer. Documented quality SP/SITAC.

P124778



P124736



P124734

Grepì, plug for light concrete

Unlike an ordinary plug, Grepì gets a firm hold in light concrete without it crumbling around the drill hole when the screw is tightened home.

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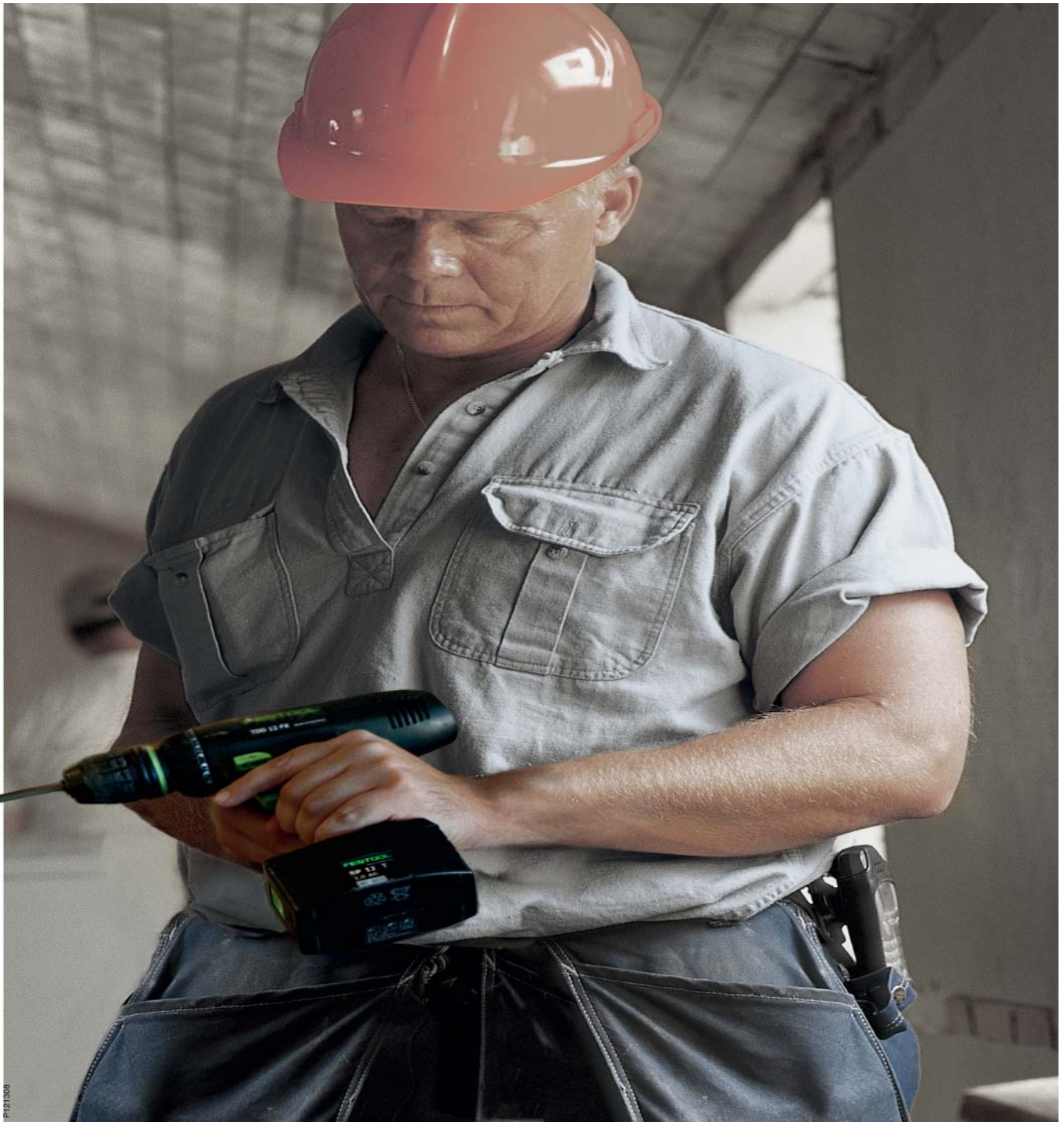


Concrete screw, for "plug-free" jobs!

Finally you won't need to drill as much when working in concrete. Our new concrete screw only requires a hole and no plug.

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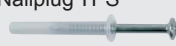
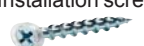
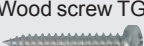


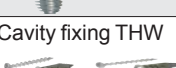





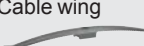
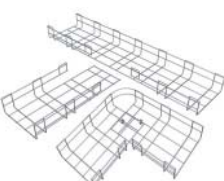





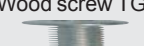
Thorsman



In 1957 a man named Oswald Thorsman gets an idea of a better fixing of lamps and the like. He moulds the first sample of the now well-known plastic plug in his own kitchen oven. This innovation results in the foundation of the company Thorsman, and soon also junction boxes, trunking and everything else an electrician could need are in the range. The Thorsman company has today become integrated in Schneider Electric but as a homage to the innovation capacity and the quality, the fixing materials still bear Oswald's family name.

Thorsman Installation materials

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Application	Product	Concrete, stone/rock	Low density materials	Solid bricks and blocks	Hollow bricks and blocks	Plasterboard	Wooden board	Sheet metal	Wood
Installation boxes (recessed and surface mounted) 	Wall plug TP 	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	■	■
	Nailplug TPS 	●	●	●	●	●	●	■	■
	Installation screw TFT 	●	● ²⁾	●	● ²⁾	●	●	■	●
	Wood screw TGS 	● ²⁾	● ²⁾	● ²⁾	● ²⁾	● ²⁾	●	■	●
	Self-tapping screw TGE 	■	■	■	■	■	■	●	■
	Installation screw TSC 	● ²⁾	● ²⁾	● ²⁾	● ²⁾	● ²⁾	●	●	●
	Cavity fixing THW 	■	■	■	■	●	■	■	■
Cables and conduits 	Nail clip TC 	● ³⁾	● ³⁾	● ³⁾	● ³⁾	● ³⁾	●	■	●
	Screw clip TCS 	●	● ²⁾	●	● ²⁾	●	●	●	●
	Plastic clamp TK 	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾
	Stainless steel clamp TKS 	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾
	Metal clamp FASTIS TFK 	■	●	■	■	●	●	■	●
	Metal clamp KLEMMI TKK/ APK 	● ³⁾	● ³⁾	● ³⁾	● ³⁾	● ³⁾	●	■	●
	Cable wing 	● ¹⁾⁵⁾	● ¹⁾	● ¹⁾⁵⁾	● ¹⁾⁵⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾
	Cable ladders, Cable trays and Mesh trays 	Wall plug TP 	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	■
Concrete screw 		● ⁴⁾	■	●	■	■	■	■	■
Wedge steel anchor 		● ¹⁾	■	● ¹⁾	■	■	■	■	■
Through bolt TEX 		●	■	●	■	■	■	■	■
Service boxes, Poles and Posts 	Wall plug TP 	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	■	■
	Wood screw TGS 	● ²⁾	● ²⁾	● ²⁾	● ²⁾	● ²⁾	●	■	●

● = Suitable
■ = Not suitable

¹⁾ Together with screws and/or plugs etc.
























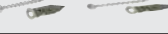


²⁾ Together with plug

³⁾ Together with clip plug TCP

⁴⁾ Not natural stone

⁵⁾ Together with TPS nail plug

Installation material

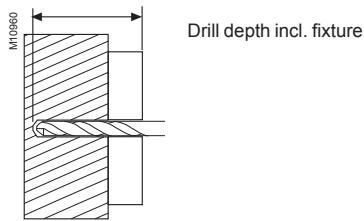
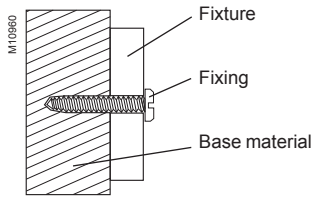
Application	Product	Concrete, stone/rock	Low density materials	Solid bricks and blocks	Hollow bricks and blocks	Plasterboard	Wooden board	Sheet metal	Wood
Mini trunking 	Wall plug TP 	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	■	■
	Nailplug TPS 	●	●	●	●	●	●	■	■
	Installation screw TFT 	●	● ²⁾	●	● ²⁾	●	●	■	●
	Installation screw TSC 	● ²⁾	● ²⁾	● ²⁾	● ²⁾	● ²⁾	●	●	●
Installation trunking and Cable distribution trunking 	Wall plug TP 	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	■	■
	Nailplug TPS 	●	●	●	●	●	●	■	■
	Cavity fixing TMX 	■	■	■	■	●	●	●	■
	Installation screw TSC 	● ²⁾	● ²⁾	● ²⁾	● ²⁾	● ²⁾	●	●	●
	Concrete screw 	● ⁴⁾	■	●	■	■	■	■	■
Skirting trunking 	Wall plug TP 	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	■	■
	Nailplug TPS 	●	●	●	●	●	●	■	■
	Cavity fixing TPD 	■	■	■	■	●	■	■	■
	Cavity fixing THW 	■	■	■	■	●	■	■	■
	Installation screw TFT 	●	● ²⁾	●	● ²⁾	●	●	■	●
	Installation screw TSC 	● ²⁾	● ²⁾	● ²⁾	● ²⁾	● ²⁾	●	●	●
	Concrete screw 	● ⁴⁾	■	●	■	■	■	■	■
Outlets and switches (surface mounted) 	Wall plug TP 	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾	■	■
	Nailplug TPS 	●	●	●	●	●	●	■	■
	Cavity fixing TPD 	■	■	■	■	●	■	■	■
	Cavity fixing THW 	■	■	■	■	●	■	■	■
	Installation screw TFT 	●	● ²⁾	●	● ²⁾	●	●	■	●
	Wood screw TGS 	● ²⁾	● ²⁾	● ²⁾	● ²⁾	● ²⁾	●	■	●

● = Suitable
 ■ = Not suitable

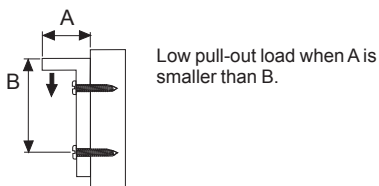
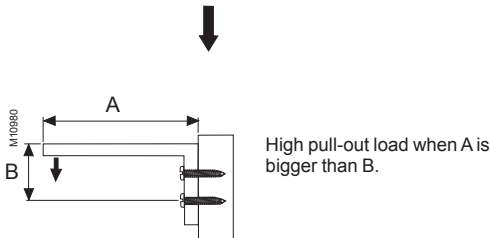
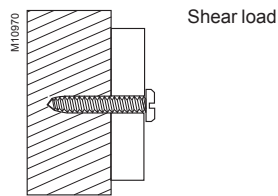
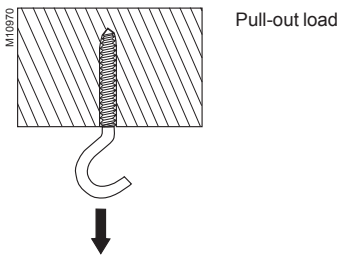
¹⁾ Together with screws and/or plugs etc.
²⁾ Together with plug
³⁾ Together with clip plug TCP

⁴⁾ Not natural stone
⁵⁾ Together with TPS nail plug

Terminology



Types of load



Metric units

Metric Units have been used throughout this handbook and all fixings are made to Metric Standard.

Strictly speaking, the recommended loads for the fixings should be listed in Newtons or Kilo Newtons (N or kN), as they are forces. But fixing calculations generally start from the weight of the fixture. For the sake of simplicity, we have chosen to give all loads in N or kN and suggest that the appropriate conversion of 1 kN = approximately 100 kg should be used.

Recommended load

Methods of testing fixings vary between different manufacturers, which makes it difficult to compare test results.

Our tests are performed together with internationally recognized testing institutes.

The test results presented in this catalogue include a safety factor. This implies that all recommended loads stated by us can safely be used.

Calculate the load

If you only have pull-out load or shear load you can easily determine the load per fixing point. But make allowance for any load which might be added later and for any uneven distribution of the load over the fixing points.

Often pull-out load appears together with shear load. Wall-mounted shelves are one example. The pull-out load increases with the distance from the wall. In most cases it is sufficient to add an extra margin, but be aware of the substantial pull-out load created in bracket fixings with high loads placed far out from the wall.

Choose the fixing to suit the base material

Study the load recommendations given for the base material which best agrees with your particular one.

Concrete

In-situ concrete normally has a strength of 25 N/mm² (called C25) or better. Precast structural components have considerably higher strength (C40–60).

Stone and rock

The same recommendations as for concrete can be used, but check for cracks.

Hollow bricks and building blocks

Hollow building blocks are normally of a low compressive strength (5 N/mm² or higher).

Due to the relatively low strength of these building materials, there is a limit for the size of the expansion fixings that can be used without cracking the brick or block. That is why load recommendations for some fixings are only given for the smaller sizes.

Solid bricks and blocks

Fixing in brick or block walls is one of the most frequent fixing situations. The strength of the wall depends on several factors that have to be considered.

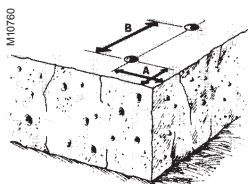
- Individual strength of the blocks or bricks
- Strength of mortar joints
- Workmanship in brick or block laying
- Support of the wall

Fixing of light fittings to a brick or block wall presents few problems. Try to avoid mortar joints.

With increasing weight and larger fixtures you should avoid mortar joints and make sure that the bricks or blocks are not cracking. As a general rule a larger quantity of smaller fixings is safer than some few larger fixings.

Fixing of heavy fixtures to a brick or block wall is not recommended unless the wall has been designed for that purpose.

Technical information



A = 5 to 10 times the hole diameter.
(Example: Hole diameter = 10 mm. A = 50 to 100 mm)
B = 10 to 20 times the hole diameter.

Board materials

The cavity fixings are specialized fixings for plasterboard/gypsum board, plywood, particle board, chipboard, sheet metal and other board types where only one side of the material is accessible. Board materials vary in quality between countries and it is therefore difficult to compare test results. All cavity fixings are tested in well-defined Scandinavian plasterboard (13 and 2x13 mm) as being the most common board material.

We recommend only loads up to 80 kg to be fixed directly in board materials. Heavier loads must be fixed in the structural elements.

Through fixing

Nail plugs and Anchors are examples of through fixings. They can be inserted through the hole in the fixture and into the base material while the fixture is still in position.

Minimum edge distance and internal spacing

The distance between the fixing points and the nearest edge of the base material should exceed 5–10 times the hole diameter. The internal spacing between the fixing points should exceed 10–20 times the hole diameter.

These are general recommendations, the specific information is given in the technical data for the fixing.

Excessive heat

Fixings made of plastic material are not suitable in environments with temperatures above 60 °C (140 °F). For exact figures, see the technical data for each specific fixing element.

Fireproof fixings

Always consider the consequences of a fire. Do not use fixings made of plastic for fixtures in ceilings and on walls near emergency exits.



Corrosion

All steel fixings must have a protection against corrosion in order to stay safe over a long time.

Electroplated steel (Fzb) is suitable for indoor and protected outdoor use, called C2 in our catalogue.

Hot dip galvanized steel (Fzv) is suitable for outdoor applications, called C3 or C4 in our catalogue, depending on the thickness of the zinc layer.

Acid proof stainless steel is suitable for aggressive indoor and outdoor environments, called C5M in our catalogue.

Atmospheric corrosivity categories and examples of typical environments

Corrosivity category	Examples of typical environments in a temperate climate (informative only)	
	Outdoors	Indoors
C1 very low	–	Heated buildings with clean atmospheres, e.g. offices, shops, schools, hotels.
C2 low	Atmospheres with low level of pollution. Mostly rural areas.	Unheated buildings where condensation may occur, e.g. depots, sports halls, multi-storey car parks.
C3 medium	Urban and industrial atmospheres, moderate sulphur dioxide pollution. Coastal areas with low salinity.	Production rooms with high humidity and some air pollution, e.g. food-processing plants, laundries, breweries, dairies.
C4 high	Industrial areas and coastal areas with moderate salinity.	Chemical plants, swimming-baths, coastal ship- and boat yards, car-washes.
C5-I very high (industrial)	Industrial areas with high humidity and aggressive atmosphere.	Buildings in areas with almost permanent condensation and with high pollution.
C5-M very high (marine)	Coastal and offshore areas with high salinity.	Buildings in areas with almost permanent condensation and with high pollution.

Unit conversions

Weight	
Kg	lb
6	13
7	15
8	18
9	20
10	22
12	26
14	31
16	35
18	40
20	44
25	55
30	66
35	77
40	88
45	99
50	110
60	132
70	154
80	176
90	198
100	220
110	243
120	265
130	287
140	306
150	330
200	440
250	550
300	660
350	770
400	880
450	990
500	1100
600	1325
700	1545
800	1765
900	1985
1000	2205
1100	2425
1200	2645

Drill diameters	
Approximate conversion	
mm	inch
4	5/32
5	3/16
5.5	7/32
6	1/4
8	5/16
10	3/8
11	7/16
12	15/32
13	1/2
14	9/16
15	19/32
16	5/8
20	3/4
22	7/8
25	1
28	1 1/8
32	1 1/4
35	1 3/4
38	1 1/2

Torque	
Nm	lb&inch
8.5	74
10	85
20	175
25	215
30	260
40	350
50	430
65	560
150	1325
250	2200

Length

mm to inch: $\text{mm} \times 0.0349$

inch to mm: $\text{inch} \times 25.40$





Wall plugs

TP
 Plug Ø 5.5-20 mm
 Colour Code System

x



High performance plugs

Grepi
 Plug Ø 10 mm

x



Nail plugs

TPS
 Plug Ø 4-8 mm

x



Clip plugs

TCP
 Plug Ø 5.5 mm

x

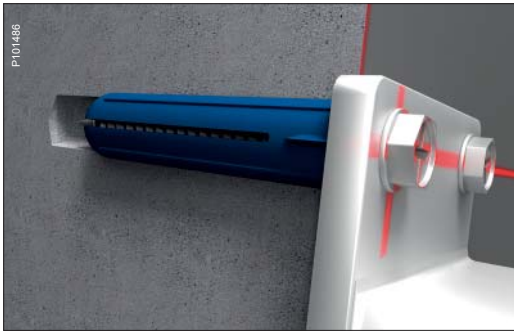


Universal plugs

QUICKI, TPN
 Plug Ø 6-8 mm

x

Wall plugs Thorsman TP™



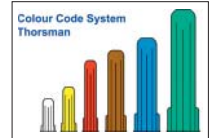
Description

TP is a wall plug of polythene for light-weight installations in most building materials. The plug is especially suitable for installations where shear loads are dominating. For mounting where pull-out loads dominate, or by high temperatures, metal fixings are recommended.

TP has a smooth surface to get high friction against the wall of the hole. Four slits spread the radial expansion in all dimensions.

The wall plug has a collar and wings to prevent the plug from rotating and disappearing into the hole.

TP has a unique Colour Code™ to identify each plug size. This Colour Code has been registered as a trade mark in all EU countries and in Norway. The Colour Code is printed on the cartons.

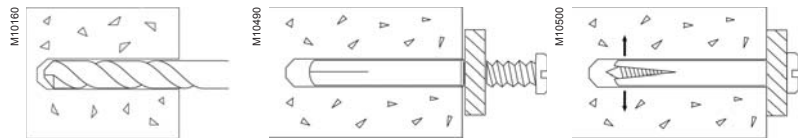


Material data

Material	HDPE (polyethylene HD).
Colours	White, yellow, red, brown, blue, green, grey, orange.

Operative data

Temperature range	-50°C to +80°C
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Drill the hole in accordance with the table and install the plug. In plasterboard – make a hole using a drill or an awl. The hole should be a press fit for the plug. Use TP1 yellow for a single sheet and TP2 red for double sheets.

Fix with a screw long enough to penetrate through the whole length of the plug and fixture.

The installation is ready and the screw has expanded the plug in a correct way.

Technical data

TP type	Drill diameter		Min. drill depth	Wood screw	Practical loading cap. with biggest screw		
	Concrete	Low-density ²⁾ concrete			Shear load/Pull-out load ¹⁾		
	mm	mm			Concrete C25	Solid brick	Low-density ²⁾ concrete 500 and expanded clay
	mm	mm	Ø mm	kN ³⁾	kN ³⁾	kN ³⁾	
TP0	5.5	—	20	3.5–5	0.4/0.15	0.3/0.15	—
TP1	5.5	5	25	3.5–5	0.5/0.25	0.4/0.2	0.1/0.04
TP2	5.5	5	40	3.5–5	0.6/0.4	0.5/0.3	0.15/0.04
TP2B	8	7	45	5–6	1.2/0.8	0.7/0.4	0.25/0.1
TP3	10	9	50	5–7	1.4/1.0	—	0.3/0.15
TP4	12	10	65	8–10	3.0/2.0	—	0.5/0.25
TP 14	14	—	78	10-12	4.0/2.5	—	—
TP 16	16	—	88	12	5.0/3.0	—	—
TP 6x30	6	6	35	3.5–5	0.6/0.4	0.5/0.3	0.2/0.08

¹⁾ Safety factor 4.5 for shear and 6 for pull-out load.

²⁾ Low-density concrete might also be called lightweight or aerated concrete.

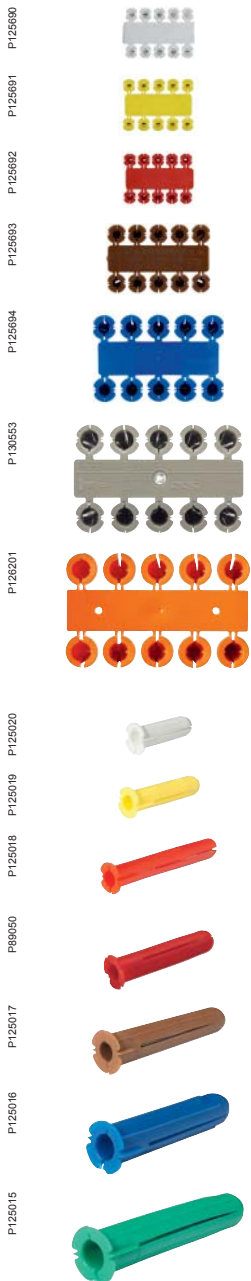
³⁾ 1 kN ≈ 100 kg.

Range

Type	Colour	Dimensions Ø/L (mm)	Qty per package	EAN code	Ref. No.
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Double-expanding, easy-to-install wall plug, colour coded for easy size identification. To be used in applications where shear loads dominate. Suitable for concrete, stone, low-density concrete, expanded clay, hollow bricks and blocks, solid bricks and plasterboard.
Material: Polyethylene (HD).

Plugs on sprue of ten



TP0	White	5.5/16.5	100	7315881000005	1000009
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TP1	Yellow	5.5/22	100	7315881001002	1001007
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TP2	Red	5.5/35	100	7315881003006	1003003
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TP2B	Brown	8/40	100	7315881005000	1005008
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TP3	Blue	10/45	10	3606480621539	IMT48002
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TP14	Grey	14/70	10	3606480335037	IMT38063
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TP16	Orange	16/80	10	3606480335044	IMT38064
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TP16	Orange	16/80	10	3606480335044	IMT38064
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TP16	Orange	16/80	10	3606480335044	IMT38064
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Single plugs

TP0	White	5.5/16.5	500	7315881000012	1000017
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TP1	Yellow	5.5/22	500 100	7315881001026 7315880100003	1001023 1001025
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TP2	Red	5.5/35	250	7315881003013	1003011
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TP 6x30	Red	6/30	100 250	7315881003020 7315880100010	1003020 1003029
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TP2B	Brown	8/40	100	7315881005017	1005016
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TP3	Blue	10/45	100	3606480619489	IMT48000
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TP4	Green	12/60	50	3606480619496	IMT48001
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Range, bulk

Type	Colour	Dimensions Ø/L (mm)	Qty per package	EAN code	Ref. No.
Double-expanding, easy-to-install wall plug, colour coded for easy size identification. To be used in applications where shear loads dominate. Suitable for concrete, stone, low-density concrete, expanded clay, hollow bricks and blocks, solid bricks and plasterboard. In bulk package. Material: Polyethylene (HD).					
Bulk/carton					
TP0	White	5.5/16.5	20000	7315881000708	1000708
TP1	Yellow	5.5/22	20000	7315881001705	1001700
TP2	Red	5.5/35	14000	7315881003709	1003706
Bulk/bag					
TP1	Yellow	5.5/22	50000	7315881001804	1001809
TP2	Red	5.5/35	20000	7315881003808	1003805
TP 6x30	Red	6/30	20000	7315881003815	1003815
TP2B	Brown	8/40	16000	7315881005802	1005800
TP3	Blue	10/45	5000	7315881006809	1006808
TP4	Green	12/60	2500	7315881007806	1007806

P125020

P125019

P125018

P125019

P125018

P88050

P125017

P125016

P125015



Description

The TPH GrepI plug range includes high-performance wall plugs for demanding installations.

The nylon plug has a soft outer skin made of thermoplastic rubber. This outer skin acts as a shock absorber and also greatly improves the performance of the plugs in low-density concrete and softer brick materials.

The range consists of two different plug lengths, both with a diameter of Ø10 mm. The long plug with a length of 110 mm is suitable for through installation, whereas the short plug with a length of 67 mm is suitable for regular plug installation.

Both plugs are provided with a specially designed acid-proof C5M screw, 72 or 115 mm long. The short plug is also available without screw. All screws have a Torx T30 recess.

The plugs are suitable for concrete, stone, low-density concrete, expanded clay (Leca), hollow blocks, hollow bricks and solid bricks.

Benefits

- High load values
- Easy to install
- Self-centering design of the screw
- Varying temperature range
- Shock-absorbing design
- Soft outer thermoplastic skin prevents rotation
- Acid proof C5M stainless steel screw with Torx T30 recess

Material data

Material outer	PA6 (Polyamide 6) with TPR (Thermoplastic rubber) skin
Temperature range	From -20 to +60°C.

Installation

We recommend the use of a hammer drill bit in concrete, but in low-density concrete a regular drill bit should be used. Clean the hole before inserting the plug. TPH GrepI plugs can be used both as a regular plug (see Fig. 1) and for through installation (see Fig. 2). The screw installs manually or with a cordless screw-driver using a T30 bit.

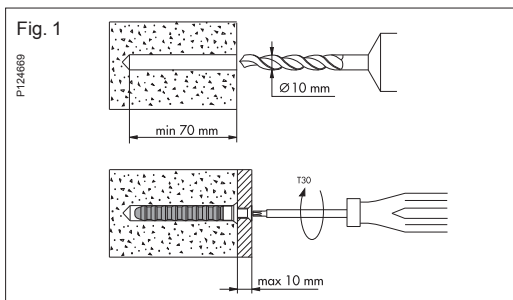


Fig. 1:

- Minimum drill depth 70 mm when using the short 72 mm screw and an object of maximum 10 mm thickness. Adjust the drill depth accordingly if the object is thinner than 10 mm.
- Minimum drill depth 70 mm when using the long 115 mm screw and an object of maximum 45 mm thickness. Adjust the drill depth accordingly if the object is thinner than 45 mm.

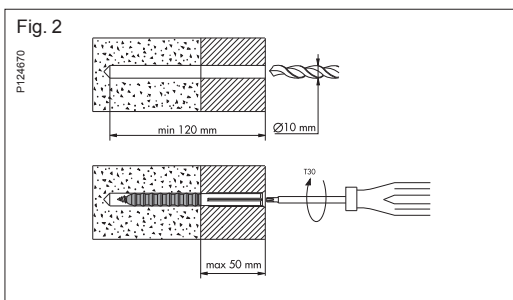





Fig. 2:

Through installation: The drill depth plus the thickness of the object must be minimum 120 mm.

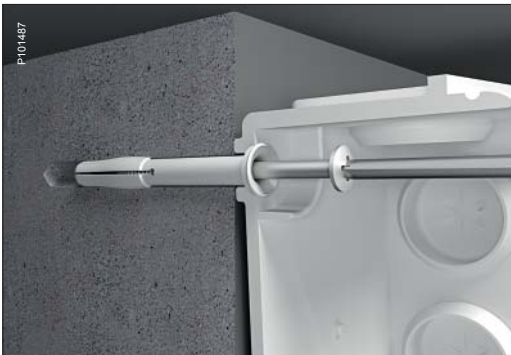
Technical data						Recommended load ¹⁾			
Type	Plug Ø x plug length mm	Drill Ø mm	Min. drill depth mm	Min. drill depth incl. fixture mm	Max. thickness of fixture mm	Concrete C25 kN		Low-density ²⁾ concrete (500 grade) and expanded clay kN	
						Pull-out	Shear	Pull-out	Shear
IMT39081	TPH-10x67WS	10	70		10	0.8	1.0	0.6	0.7
IMT39082	TPH-10x67WS	10	70		10	0.8	1.0	0.6	0.7
IMT39083	TPH-10x67WLS	10	70		45	0.8	0.3	0.6	0.3
IMT39084	TPH-10x67	10	70		-	-	-	-	-
IMT39085	TPH-10x110WS	10		120	50	0.8	0.3	0.6	0.3
IMT39086	TPH-10x110WS	10		120	50	0.8	0.3	0.6	0.3

¹⁾ Safety factor for pull-out load 3 and shear load 2.5.
²⁾ Low-density concrete might also be called lightweight or aerated concrete.

Range

Type	Screw length (mm)	Colour	Dimensions Ø/length (mm)	Qty per package	EAN code	Ref. No.	
Plug with screw							
High-performance plug with specially designed acid-proof C5M screw. Suitable for regular plug installations. Material: PA/TPR.							
P11749 	TPH-10x67WS	72	Green/black	Ø10/67	4	3606480302145	IMT39081
	TPH-10x67WS	72	Green/black	Ø10/67	20	3606480302152	IMT39082
	TPH-10x67WLS	115	Green/black	Ø10/67	20	3606480302169	IMT39083
High-performance plug with specially designed acid-proof C5M screw. Suitable for through-installations. Material: PA/TPR.							
P11750 	TPH-10x110WS	115	Green/black	Ø10/110	4	3606480302183	IMT39085
	TPH-10x110WS	115	Green/black	Ø10/110	20	3606480302190	IMT39086
Plug without screw							
High-performance plug without screw. Suitable for regular plug installations. Material: PA/TPR.							
P11748 	TPH-10x67	—	Green/black	Ø10/67	20	3606480302176	IMT39084

Nail plugs Thorsman TPS



Description

Thorsman TPS is a range of nail plugs for all types of through installation.

Applications

All types of through installation, such as electrical trunking, switches, battens and cable clamps.

Suitable for concrete, stone, low-density concrete, expanded clay, hollow blocks and bricks, solid bricks and plasterboard.

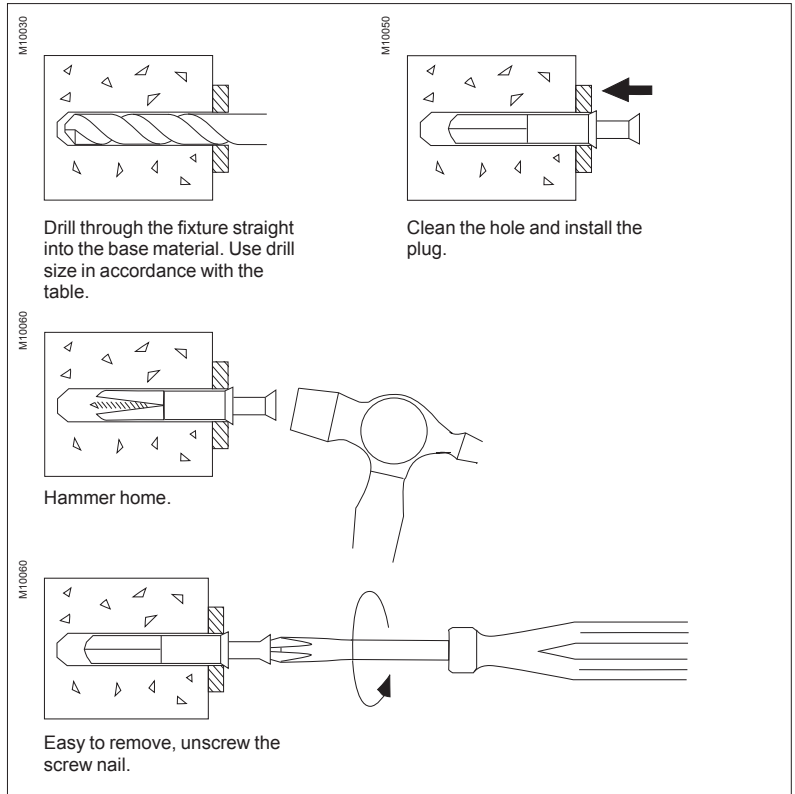
Benefits

- Removable hammer-in fixing
- Fast installation
- Powerful expansion – high load values
- Complete range for electrical installations
- Through fixing

Material and operative data

Plug	PA (polyamide)
Screw nail	Steel, electroplated
Temperature range	From -40° to +80°C

Installation



Technical data (1 kN approx. 100 kg)

Type Drill Ø/max. fixture thickness x plug length mm	Plug Ø mm	Screw nail Ø mm	Min. drill depth including fixture mm	Max. thickness of fixture mm	Recommended load Shear/pull-out ¹⁾		
					Concrete C25 kN	Solid brick kN	Low-density ²⁾ concrete (500 grade) and expanded clay, kN
TPS-4/5x25	4	2.5	30	5	0.15/0.05	0.15/0.05	—
TPS-4/15x35	4	2.5	40	15	0.15/0.05	0.15/0.05	—
TPS-5/5x35	5	3	42	5	0.3/0.1	0.3/0.1	—
TPS-5/20x50	5	3	57	20	0.3/0.1	0.3/0.1	—
TPS-6/5x35	6	3.5	42	5	0.4/0.2	0.4/0.2	0.1/0.07
TPS-6/20x50	6	3.5	57	20	0.4/0.2	0.4/0.2	0.1/0.07

¹⁾ Safety factor 4.5 for shear and 6 for pull-out load.

²⁾ Low-density concrete might also be called lightweight or aerated concrete.

Nail plugs

Thorsman TPS

Range

Type	Colour	Dimensions Ø/Length (mm)	Qty per package	EAN code	Ref. No.
Nail plug for all types of through installation, such as electrical trunking, switches, batten, cable clamps, door and window frames. Suitable for concrete, stone, low-density concrete, expanded clay, hollow blocks and bricks, solid bricks and plaster-board.					
Material: PA (polyamide).					
TPS-4/5x25	Clear	Ø7/45	100	7315881149308	IMT1149301
TPS-4/15x35	Clear	Ø7/55	100	7315881149353	1149350
TPS-5/5x35	Clear	Ø10/60	100	7315881149605	1149608
TPS-5/20x50	Clear	Ø10/75	100	7315881149704	1149707
TPS-6/5x35	Clear	Ø10/60	100	7315881150007	1150002
TPS-6/20x50	Clear	Ø10/75	100	7315880100027	1150051

P 125701
P 125704



Clip plugs Thorsman TCP



Description

Thorsman TCP is a range of clip plugs for the installation of cable clips and nails.

Applications

Installations of TC clips, TKK/APK clamps and nails.

Suitable for concrete, stone, low-density concrete, expanded clay, solid bricks and plasterboard.

Benefits

- Permits nailing of clips and clamps in masonry materials

Material and operative data

Material	PS (polystyrene, impact-resistant)
Temperature range	From -40° to +70°C

Installation

In light-weight concrete, simply hammer in the clip plug. If the surface is plastered, filled or painted – make the start of a hole first.

In concrete, brick and other hard materials, drill first.

In single plasterboard sheets, make a hole with an awl. In double plasterboard sheets, it is sufficient to start a hole.

Range

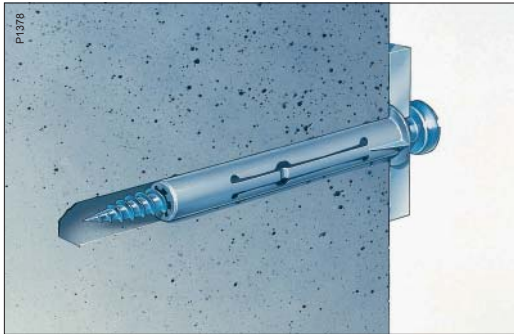
Type	Drill Ø	Colour	Dimensions Ø/Length (mm)	Qty per package	EAN code	Ref. No.
Clip plug for the installation of cable clips and nails. Suitable for concrete, stone, low-density concrete, expanded clay, solid bricks and plasterboard. Material: PS (polystyrene).						
TCP-0	5.5	White	7.5/18	100	7315881140008	1140003
TCP-1	5.5	Yellow	7.5/25	100	7315881141005	1141001

P125428
P60845



Universal plugs

Thorsman QUICKI™ TPN



Description

Thorsman QUICKI TPN is a range of universal wall plugs with fully threaded screws for all types of building material.

Applications

TPN can be used in most situations where shear loads are dominating. Suitable for concrete, natural stone, low-density concrete 500 (not in porous low-density concrete 400-450), expanded clay, hollow blocks and bricks, solid bricks and plasterboard.

Benefits

- Universal fixing providing great expansion and secure fixing in all building materials
- Both fixing and screw included in the package
- Fully threaded screw – even thin objects can be fixed
- Two sizes cover all situations

Material and operative data

Material	Fixing: Modified PA (polyamide)
	Screw: Steel, hardened and bright galvanized
Temperature range	From -20° to +80°C

Range

P77786



Type	Colour	Dimensions Ø/Length (mm)	Qty per package	EAN code	Ref. No.
Universal wall plug including fully threaded screw, for all types of building material. Suitable for concrete, natural stone, low-density concrete 500 (not in porous low-density concrete 400-450), expanded clay, hollow blocks and bricks, solid bricks and plasterboard. Material: PA (polyamide) and steel.					
TPN-6x35	Grey	6/35	25	7315881051007	1051007
TPN-8x50	Grey	8/50	25	7315881052004	1052004

Technical data (1 kN approx. 100 kg)

Type Ø x length mm	Screw size Ø x L mm	Drill Ø mm	Min. drill depth mm	Max. thickness of fixture mm	Min. board thickness mm	Recommended load: Shear/pull-out ¹⁾			
						Concrete C25 N	Low-density ²⁾ con-crete 500 and ex-panded clay, N	Plasterboard 13 mm N	Plasterboard 2x13=26 mm N
TPN-6x35	4x50	6	50	16	9	500/100	200/60	180/60	260/80
TPN-8x50	5x60	8	60	12	3	600/150	250/80	200/60	350/140

¹⁾ Safety factor 4.5 for shear and 6 for pull-out load.

²⁾ Low-density concrete might also be called lightweight or aerated concrete.

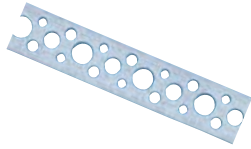
Plugs





Cable ties
Cintura
Natural/black

x



Fixing bands
TUB, TGB, TPG
Bands 8 - 30 mm
Steel

x

Cable ties

Thorsman Cintura



Description

Cable ties are used to bundle up and fix cables, conduits and tubing.

There are two types of Thorsman Cintura cable ties available;

1. Made of clear polyamide, only for indoor use.
2. Made of UV-stabilized black polyamide, for outdoor use.

Benefits

- The cable ties are self-locking. They cannot be opened and re-sealed.
- The cable ties have smooth rounded edges for easier handling and safer installation.
- The bent rounded tip allows easier insertion through the head of the cable tie.
- Documented quality.
- Halogen-free.

Material & operative data

Material	PA (Polyamide) 6.6, halogen-free
Colour	Clear
Material	PA (Polyamide) 6.6 UV-stabilized, halogen-free
Colour	Black
Product standard	IEC 62275
Melting point	250°C
Hot wire test (NF C 20-455)	650°C / 30 s
Flammability properties	Self-extinguishing acc. to UL 94 class V-2
Temperature range	-40°C – +85°C
Resistance to chemical agents	Totally resistant to: Motor oils, greases, oil products
chlorinated	Good resistance to: Organic bases/acids, solvents
	Limited resistance to: Acids
	No resistance to: Phenol

Range Cable ties




Type	Colour	Dimensions w/l (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Cable ties						
Cable tie for safe and fast clamping of cables, conduits and tubing. Delivered in a sealed packaging to ensure performance, irrespective of storage conditions. Material: PA 6.6.						
Cable tie width 2.5						
Max. clamping Ø 18 mm	Clear	2.5/100	1000	3606480199554	20062123	ENN46902
	Black			3606480199561	20062124	ENN46952
Max. clamping Ø 30 mm	Clear	2.5/100	100	7315882400026	10001136	2400 026
	Black			7315882400033	10001137	2400 033
Max. clamping Ø 50 mm	Clear	2.5/120	1000	3606480199578	20062125	ENN46904
	Black			3606480199585	20062126	ENN46954
Max. clamping Ø 50 mm	Clear	2.5/200	1000	3606480199615	20062129	ENN46906
	Black			3606480199622	20062130	ENN46956
Cable tie width 3.6						
Max. clamping Ø 33 mm	Clear	3.6/140	1000	3606480199653	20062133	ENN46908
	Black			3606480199660	20062134	ENN46958
Max. clamping Ø 35 mm	Clear	3.6/150	100	7315882400064	10001138	2400 064
	Black			7315882400071	10001139	2400 071
Max. clamping Ø 50 mm	Clear	3.6/200	1000	3606480199691	20062137	ENN46939
	Clear	3.6/200	100	7315882400149	10001146	2400 149
Max. clamping Ø 76 mm	Clear	3.6/295	100	7315882400156	10001147	2400 156
	Black			3606480199707	20062138	ENN46910
Max. clamping Ø 102 mm	Clear	3.6/370	100	3606480199714	20062139	ENN46960
	Black			3606480199721	20062140	ENN46942
Cable tie width 4.6						
Max. clamping Ø 50 mm	Clear	4.6/200	100	7315882400101	10001142	2400 101
	Black			7315882400118	10001143	2400 118
Cable tie width 4.8						
Max. clamping Ø 43 mm	Clear	4.8/188	1000	3606480199752	20062143	ENN46914
	Black			3606480199769	20062144	ENN46964
Max. clamping Ø 50 mm	Clear	4.8/200	1000	3606480199790	20062147	ENN46916
	Black			3606480199806	20062148	ENN46966
Max. clamping Ø 60 mm	Clear	4.8/250	100	3606480199813	20062149	ENN46918
	Black			3606480199820	20062150	ENN46968
Max. clamping Ø 76 mm	Clear	4.8/250	100	7332418021135	20064089	2400 123
	Black			7332418021142	20064090	2400 124
Max. clamping Ø 76 mm	Clear	4.8/300	100	3606480199851	20062153	ENN46919
	Black			3606480199868	20062154	ENN46969
Max. clamping Ø 102 mm	Clear	4.8/300	100	7315882400187	10001150	2400 187
	Black			7315882400194	10001151	2400 194
Max. clamping Ø 102 mm	Clear	4.8/368	100	3606480199875	20062155	ENN46920
	Black			3606480199882	20062156	ENN46970
Max. clamping Ø 102 mm	Clear	4.8/370	100	7315882400248	10001152	2400 248
	Black			7315882400255	10001153	2400 255
Cable tie width 7.6						
Max. clamping Ø 76 mm	Black	7.6/297	100	3606480199943	20062162	ENN46974
Max. clamping Ø 102 mm	Clear	7.6/368	100	3606480199950	20062163	ENN46925
	Black			3606480199967	20062164	ENN46975
Max. clamping Ø 105 mm	Clear	7.6/380	100	7315882400286	10001154	2400 286
	Black			7315882400293	10001155	2400 293
Cable tie width 9.0						
Max. clamping Ø 120 mm	Black	9/430	100	3606480199981	20062166	ENN46976
Max. clamping Ø 140 mm	Clear	9/530	100	3606480199998	20062167	ENN46927
	Black			3606480200007	20062168	ENN46977
Max. clamping Ø 228 mm	Black	9/775	100	3606480200014	20062169	ENN46978







P140800

P140801

Range Cable ties

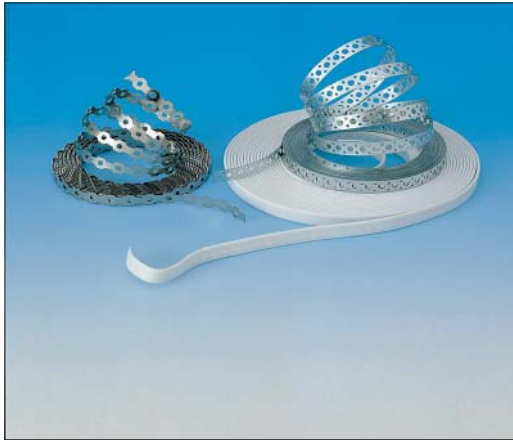
Type	Colour	Dimensions w/l (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Identification ties						
Identification tie with marker for safe and fast clamping of cables, conduits and tubing. Delivered in a sealed packaging to ensure performance, irrespective of storage conditions. Material: PA 6.6.						
 P121326	Max. clamping Ø 18 mm, marker size 20x9	Clear	2.5/110	100	3295150462205	20064017 ENN46220
 P121329	Max. clamping Ø 18 mm, marker size 25x8	Clear	2.5/100	100	3295150462229	20064018 ENN46222
 P121328	Max. clamping Ø 43 mm, marker size 23x13	Clear	4.8/220	100	3295150462250	20064019 ENN46225

Range Accessories

Self-adhesive bases						
Self-adhesive base for the fixing of cable ties. The base for max. tie width 4.8 mm is both self-adhesive and has an additional screw-fix option. Material: PA 6.6.						
 P121327	For max. tie width 3.6 mm	Clear	19/19/6	100	3295150461048	20064015 ENN46104
 P121325	For max. tie width 4.8 mm	Clear	26.5/26.5/8	100	3295150461055	20064016 ENN46105
Cradle						
Cradle for the fixing of cable ties. Fixed with screw or rivet. Material: PA 6.6.						
 P121330	For max. tie width 7.8 mm	Clear	22.2/15.9/9.7	100	3295150461093	20064020 ENN46109
Cable tie pincers						
Pincers intended to facilitate tightening and cutting of 6 and 9 mm installation ties. Material: Steel.						
 P125431	Pincers	—	—	1	3295150461505	20064021 ENN46150

Fixing bands

Thorsman TUB™, TPG, TUB



Description

Fixing band for pendulum suspension, clamping, bracing, etc. in electrical, building and heating/water/sanitation installations.

The range includes three different types of band.

TGB Galvanized band

Cold-rolled and galvanized steel band with closely punched holes for easy installation.

TPG Galvanized plastic coated band

Cold-rolled and galvanized steel band, coated with white PVC plastic. Closely punched holes for easy installation.

TUB Plastic-enclosed universal band

Cold-rolled and galvanized steel band, enclosed with UV-stabilized PELD, polyethylene. The plastic encloses the whole band and also fills out the punched holes. This means that no humidity can come through at the screw passages, which makes the band very resistant to corrosion.

Benefits

- Wide range
- Can support anything from lightweight to heavy installations
- Can handle most installation situations in all types of environment
- Corrosion-resistant
- Easy to cut and shape
- Fire-resistant

Material and operative data

TGB	Material	Cold-rolled, galvanized steel
	Temp. area	-40°C to +100°C
	Not suitable for outdoor use	
TPG	Material	Cold-rolled, galvanized steel PVC plastic coating, white
	Temp. area	-40°C to +60°C
	Not suitable for outdoor use	
TUB	Material	Cold-rolled, galvanized steel UV-stabilized, self-extinguishing PELD (polyethylene)
	Temp. area	-40°C to +60°C
	Suitable for outdoor use	

Technical data

Type	Surface coating ¹⁾	Hole dim, mm	Practical loading capacity kN ²⁾
TGB-12x0.7	Zn 20	Ø 2.5/5	1.2
TGB-20x0.7	Zn 20	Ø 3.5/4.5/6.5/8.5	1.8
TGB-20x1	Zn 20	Ø 3.5/7	2.5
TGB-25x2	Zn 20	Ø 4/8	7.0
TPG-12	Zn 20 + PVC	Ø 2.5/5	1.0
TPG-20	Zn 20 + PVC	Ø 3.5/7	2.8
TUB-8	Zn 20 + PELD	□ 5.5x5.5	0.4
TUB-12	Zn 20 + PELD	□ 6x6	1.0

¹⁾ Surface coating explanations:

- Zn 20 = 20 µm zinc per side
- PELD = Polyethylene, low density, UV-stabilized and self-extinguishing
- PVC = Polyvinyl chloride plastic, 100 µm per side

²⁾ Safety factor 1.8 for breaking load.

Range

Type	Colour	Dimensions w/t mm	Length m/roll	Qty per package	EAN code	Internal ID-No.	Ref. No.
TGB							
Cold-rolled and galvanized steel band with closely punched holes, for easy installation. Material: Galvanized steel band, mild steel SS 1151-10 (TGB-25x1.2 steel SS 2122-10).							
TGB-12x0.7	—	12.7/0.7	10	1	7315882705114	10001219	2705 110
TGB-20x0.7	—	20/0.7	25	1	7315882705312	10001220	2705 310
TGB-20x1	—	20/1	10	1	7315882705329	10001221	2705 320
TGB-25x2	—	25/2	10	1	7315882705428	10001223	2705 420
TPG							
Cold-rolled and galvanized steel band, coated with white PVC plastic. Closely punched holes for easy installation. Material: Plastic coated, galvanized steel band, steel SS 1151-10.							
TPG-12	White	12.7/0.6	10	1	7315882740016	10001226	2740 017
TPG-20	White	20/1	10	1	7315882741013	10001227	2741 015
TUB							
Cold-rolled and galvanized steel band, encased with UV-stabilized PELD, polyethylene. The plastic encases the whole band and also fills out the punched holes. Very resistant to corrosion. Material: Plastic encased, galvanized steel band, mild steel SS 1151-10.							
TUB-8	White	9/2.5	10	1	7315882703011	10001206	2703 015
TUB-12	White Grey	14/2.5	10	1	7315882704018 7315882704025	10001209 10001210	2704 013 2704 021

P126077



P130435



P126067







Nail Clips

TC, TC-C5M, TCD
Impact resistant classified
Fits cables 2-26 mm
White/grey/black

x



Screw Clips

TCS-C3/X-C3, TCS-C5M
Impact resistant classified
Fits cables 7-26 mm
White/grey/black

x



Metal clamps and mounting tools

KLEMMI, TKK/APK
Fits cables 4-20 mm

x



Metal clamps

Fastis, TFK
Fits cables and conduits 8-20 mm

x

Not released!



Plastic clamps

TK
Fits cables 3-26 mm
White/grey

x



Adjustable plastic clamps

TSK, PFSK
Fits cables 7-20 mm

x



Cable Wings

Single and double
With or without nail-plug
Max Ø 12 mm
Max capacity 6 cables per side
Dark grey

x



Stainless steel clamps

TKS
Fits cables 6-50 mm
Stainless steel

x

Nail clips

Thorsman TC™



Description

The Thorsman TC clip range includes a wide range of clips in various designs and dimensions, colours, nails and packages, intended for the installation of round and flat cables. The packages of the clips are provided with colour pictures of the correct product.

Clips in corrosivity category TC-C5M have a nail of acid-resistant stainless steel and can be used in extra tough environments.

The TCD type is intended for the installation of two flat cables side by side. The clips are made of impact-resistant, UV-stabilized polypropylene.

Cable capacity

Cable dimensions according to each type name respectively. A minus (-) in the name states clips for round cables, (x) states clips for flat cables.

Material data

Material	Clip: impact resistant, UV-stabilized PP (polypropylene), halogen-free.	
	Nails:	
	plated steel, zinc coating (5 µm). steel acc. to AISI 316, corrosivity	<ul style="list-style-type: none"> • Hardened and electro- • Acid-proof stainless category C5M.
Colours	Colour	NCS-No.
	White	0500
	Grey	5402-Y
	Light grey	2502-Y
	Black	9500
	Brown	9005-Y20R
	Red	1090-Y90R

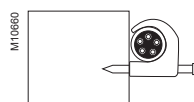
Operative data

Temperature range	-40°C to +80°C.	
Temperature range	Installation:	-20°C / +50°C
	In operation:	-40°C / +80°C

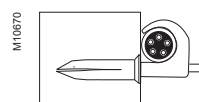
Standards and certificates

Standards and regulations Building and Planning (BBR)	<ul style="list-style-type: none"> • Building regulations issued by National Board of Housing,
	<ul style="list-style-type: none"> • Nail of acid-proof stainless steel: AISI 316

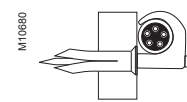
Mounting instruction



Wood and compressed board:
Nail in.
Thick nails in brick joints.

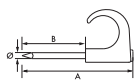


Concrete, low-density materials, brick, etc. Use TCP clip plugs. Hammer the clip plug into low-density concrete without predrilling. Not for thick nails.



Plasterboard: Use TCP clip plugs. Make a hole in single plasterboard sheets with an awl. The start of a hole is sufficient in double plasterboard sheets.

Range Round clips



Type	Colour	Dimensions Nail Ø/A/B (mm)	Qty per package	EAN code	Ref. No.
Plastic clip including nail, for installations of round cables, mainly for indoor use. Material: Clip of PP, nail of hardened and electroplated steel.					
TC 2-3					
TC 2-3	Clear	1.4/15/11	100	7315882001001	2001 008
TC 3-5					
TC 3-5	Clear White Grey Black	1.2/20/15	100	7315882011000 7315882011017 7315882011024 7315882011031	2011 005 2011 017 2011 021 2011 030
TC 4-6					
TC 4-6	Clear White Grey	1.4/20/14	100	7315882015107 7315882015114 7315882015121	2015 105 2015 110 2015 121
TC 5-7					
TC 5-7	Clear White Grey Black Light grey	1.2/20/12	100	7315882021009 7315882021016 7315882021023 7315882021047 7332418021227	2021 004 2021 012 2021 020 2021 046 2021 995
TC 5-7	Clear White Black Grey Light grey	2.0/25/17	100	7315880032267 7315882022013 7315880030577 7315882022037 3606480376023	2022 009 2022 010 2022 029 2022 030 IMT49000
TC 7-10					
TC 7-10	White Grey Light grey Black Brown	1.6/25/16	100	7315882032012 7315882032029 7315882032036 7315882032043 7315882032104	2032 019 2032 027 2032 035 2032 043 2032 100
TC 7-10	White Light grey	1.6/30/21	100	7315882033019 7315882033033	2033 017 2033 033
TC 7-10	White Black Red Brown Light grey	2.0/25/16	100	7315880029014 7315880029113 7315880029137 7315882032098 3606480376030	2032 011 2032 041 2032 061 2032 091 IMT49001
TC 8-12					
TC 8-12	White Light grey Black Grey Brown	2.0/30/19	100	7315882041205 7315882041212 7315882041243 7315882041250 7315882041267	2041 200 2041 218 2041 240 2041 259 2041 267
TC 8-12	Light grey	2.0/35/24	100	7315882041274	2041 274
TC 8-12	White	2.0/45/34	100	7315882041281	2041 283
TC 10-14					
TC 10-14	White Grey Light grey Black	2.0/30/17	100	7315882042011 7315882042028 7315882042035 7315882042042	2042 018 2042 026 2042 034 2042 042
TC 10-14	White Light grey	2.0/35/22	100	7315882043018 7315882043032	2043 016 2043 032
TC 10-14	White	2.0/45/32	100	7315882045012	2045 012
TC 10-14	White Grey Black	2.5/30/17	100	7315880029021 7315880029151 7315880029168	2042 011 2042 021 2042 041
TC 14-20					
TC 14-20	White Grey Light grey	2.0/35/18	100	7315882052010 7315882052027 7315882052034	2052 017 2052 025 2052 033
TC 14-20	Black White Light grey	2.0/45/28	100	7315882052058 7315882053017 7315882053031	2052 058 2053 015 2053 031
TC 14-20	White Black Light grey	2.5/35/18	100	7315880029038 7315880029212 3606480376047	2052 011 2052 051 IMT49002
TC 18-22					
TC 18-22	White Light grey Black	2.5/45/25	50	7315882060008 7315882060022 7315882060138	2060 002 2060 028 2060 135
TC 18-22	Black	2.5/55/35	50	7315882060145	2060 143

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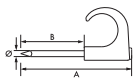
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Range Round clips



Type	Colour	Dimensions Nail Ø/A/B (mm)	Qty per package	EAN code	Ref. No.
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Plastic clip including nail, for installations of round cables, mainly for indoor use.
Material: Clip of PP, nail of hardened and electroplated steel.

TC 22-26

TC 22-26	White	2.5/45/21	50	7315882070007	2070 001
	Light grey			7315882070021	2070 027
	Black			7315882070137	2070 134
TC 22-26	Black	2.5/55/31	50	7315882070144	2070 142
	White			7315882070205	2070 209
	Light grey			7315882070212	2070 217

Round clips in corrosivity category C5M

Plastic clip including nail, for installations of round cables, for indoor or outdoor use. Corrosivity category C5M. Especially suited for tough environments.

Material: Clip of PP, nail of acid-proof stainless steel.

TC-C5M 5-7	Black	1.2/20/12	100	7315882240035	2240 030
TC-C5M 7-10	White	1.6/25/16	100	7315882240042	2240 04
	Black			7315882240059	2240 050
TC-C5M 8-12	White	2.0/30/19	100	7315882240066	2240 065
TC-C5M 10-14	White	2.0/30/17	100	7315882240080	2240 085
	Black			7315882240097	2240 090
TC-C5M 14-20	White	2.0/35/18	100	7315882240103	2240 105
	Black			7315882240110	2240 115
TC-C5M 14-20	Light grey	2.0/45/28	100	7332418016643	2240 120
TC-C5M 18-22	Grey	2.5/45/25	50	7315882240158	2240 150
TC-C5M 22-26	Grey	2.5/45/21	50	7315882240189	2240 180

Range Flat clips

Plastic clip including nail, for installations of flat cables, mainly for indoor use.

Material: Clip of PP and nail of hardened and electroplated steel.

TC 2x4

TC 2x4	Clear	1.4/15/11	100	7315882101008	2101 004
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TC 3x5

TC 3x5	Clear	1.2/20/15	100	7315882106003	2106 003
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TC 4x6

TC 4x6	Clear	1.4/20/14	100	7315882111007	2111 003
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TC 5x8

TC 5x8	White	2.0/25/18	100	7315882116026	2116 010
	Grey			7315882116019	2116 028

TC 6x10

TC 6x10	White	2.0/25/17	100	7315882126018	2126 019
	Grey			7315882126025	2126 027

TC 7x14

TC 7x14	White	2.0/25/16	100	7315880042075	2131 010
TC 7x14	White	2.5/25/16	100	7315882131012	2131 019
	Grey			7315882131029	2131 027
	Light grey			7315882131036	2131 036

TC 9x18

TC 9x18	White	2.0/30/18	100	7315880042082	2136 010
TC 9x18	White	2.5/30/18	100	7315882136017	2136 018
	Grey			7315882136024	2136 026

TC 11x22

TC 11x22	White	2.5/35/20	50	7315882137014	2137 014
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Flat clips in corrosivity category C5M

Plastic clip including nail, for installations of flat cables, for indoor or outdoor use. Corrosivity category C5M. Especially suited for tough environments.

Material: Clip of PP, nail of hardened and Fe/Zn electroplated steel.

TC-C5M 6x9	White	1.6/25/17	100	7332418016650	2230 972
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Flat clips for two cables

Plastic clip including nail. For installations of two flat cables, mainly for indoor use.

Material: Clip of PP and nail of hardened and electroplated steel.

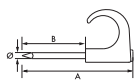
TCD 5x8

TCD 5x8	Grey	2.5/25/18	100	7315882141028	2141 026
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TCD 6x10

TCD 6x10	Grey	2.5/25/18	100	7315882146603	2146 025
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Range Round clips, bulk



Type	Colour	Dimensions Nail Ø/A/B (mm)	Qty per package	EAN code	Ref. No.
Plastic clip including nail, for installation of round cables in indoor use. In bulk package. Material: Clip of PP, nail of hardened and electroplated steel.					
TC 3-5					
TC 3-5	White	1.2/20/15	2000	7315882201098	2201 090
	Clear		5000	7315882011208	2011 208
TC 5-7					
TC 5-7	White	1.2/20/12	2500	7315882021085	2021 087
	Clear		2500	7315882021702	2021 706
	Black		2500	7332418021159	2021 710
TC 7-10					
TC 7-10	White	1.6/25/16	2500	7315882032715	2032 712
	Black		2500	7332418021234	2032 740
TC 7-10	White	1.6/30/21	2000	7332418021166	2203 080
TC 8-12					
TC 8-12	White	2.0/30/19	1000	7315882041700	2041 700
TC 10-14					
TC 10-14	Light grey	2.0/30/17	1250	7315882042080	2042 083
	White		1000	7315882042714	2042 711
TC 10-14	White	2.0/35/22	1000	7332418021180	2205 080
TC 10-14	White	2.0/45/32	1000	7332418021173	2205 070
TC 14-20					
TC 14-20	Light grey	2.0/35/18	400	7315882052065	2052 066
TC 14-20	White	2.0/35/18	500	7315882206093	2206 090
TC 14-20	White	2.0/45/28	500	7332418021197	2206 080

Range Flat clips, bulk

Plastic clip including nail, for installation of flat cables in indoor use. In bulk package.
Material: Clip of PP and nail of hardened and electroplated steel.

TC 2x4					
TC 2x4	Clear	1.4/15/11	5000	7315882101015	2101 015
TC 3x5					
TC 3x5	Clear	1.2/20/15	5000	7315882106706	2106 706
TC 3x5	Bronze	1.2/20/15	5000	7315882106720	2106 720
TC 3x5	Black	1.2/20/15	5000	7332418021241	2106 994
TC 3x5	White	1.2/20/15	5000	7332418021258	2106 995
TC 4x6					
TC 4x6	Clear	1.4/20/14	25000	7315882111014	2111 011
TC 5x8					
TC 5x8	White	2.0/25/18	30000	7315882116194	2116 192
TC 6x10					
TC 6x10	White	2.0/25/17	2000	7315882126711	2126 711

Plastic clip including nail, for installation of flat cables in indoor or outdoor use. Especially suited for tough environments. In bulk package.
Material: Clip of PP and nail of acid-proof stainless steel.

TC 6x9					
TC-C5M 6x9	White	1.6/25/17	2000	7332418018364	2121 204



Description

The screw fixing clips TCS-C3 and TCS-C5M can be used both for indoor and outdoor applications. TCS-C5M is the obvious choice in harsh environments.

Both TCS-C3 and TCS-C5M consist of a clip in impact-resistant polypropylene with high UV-resistance. C3 is provided with an electroplated steel screw, whereas C5M is provided with an acid-proof stainless steel screw.

The screw has a high pitch for quick installation and a sharp point, and the head is cross-slotted of either type Phillips 2 or of type T20. It penetrates directly into most materials. In concrete and bricks it only needs a 4 mm hole.

The C3 T20 screw is specially suited for high torque applications like hard wood and concrete.

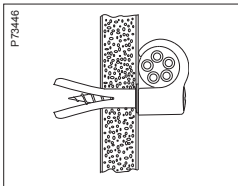
Applications

The clip can be fitted without drilling in double and single plasterboard, wood, board materials and low-density concrete with high density. It is also suitable for hard materials like concrete or bricks.

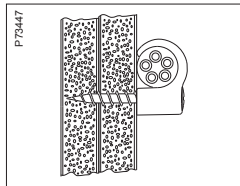
Benefits

- Type-approved
- Corrosion-classified screws
- High UV-resistance
- Can withstand high impact together with extremes of heat, cold and acids. C5M suitable for extra harsh environments.
- Documented quality
- Pre-mounted screw with high pitch and Phillips PH2 or T20 head for quick and secure installation with with cordless driver
- Direct fixing in suitable materials without the use of wall plugs.
- Excellent function when installing cables or conduits on plasterboard with an underlying sheet steel frame
- Excellent function when installing rigid cables bent at small bending radii, for example around external corners.
- The screw length of TCS 14-18, 18-22 and 22-26 is adapted so as not to pass through a double 13 mm plasterboard (not C5M)
- Wide range of clips in several colours
- Flexible design – one size fits multiple cable dimensions
- Durable and recyclable packaging

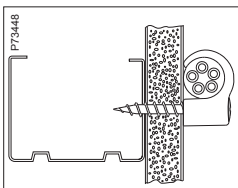
Application examples



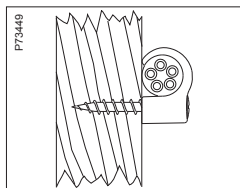
Mounting in single 13 mm plasterboard. Use plastic plug TP1 yellow.



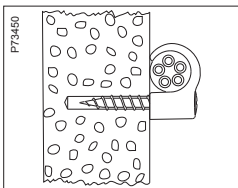
Mounting in double 13 mm plasterboard. The length of the screw of TCS-C3 14-18, 18-22 and 22-26 is adjusted so as not to pass through both boards, in order to facilitate the mounting of conduits from the inside of the wall.



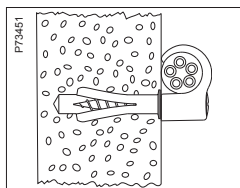
Mounting in a single 13 mm plasterboard with a metal bar behind, metal thickness 0.56 mm.



Mounting in wood, wood board materials, plywood.



Mounting in concrete and bricks. Drill a Ø 4 mm hole, approx. 30 mm deep. Drive the screw direct in the drilled hole.



Mounting in low-density concrete. Use plastic plug TP1 yellow. In low-density concrete of higher density than 600, no pre-drilling or plugs are needed.

Material data

Clip	Material: Impact resistant, UV-stabilized PP (polypropylene)
	Colours: White NCS S 0500-N Black NCS S 9000-N Grey NCS S 4502-Y Light grey NCS S 2502-Y
Screw corro-	Material: TCS-C3 Electroplated steel (Fe/Zn), sivity category C3 TCS-C5M Acid-proof sivity category C5M
stainless steel, corro-	

Operative data

Temperature range	Installation: -20°C / +50°C In operation: -40°C / +80°C
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Range



Type	Colour	Dimensions A/B/Ø (mm)	Qty per package	EAN code	Ref. No.
Screw C3 with PH head					
Plastic clip with screw, intended for indoor or outdoor installations in walls and ceilings, with or without wall plug. Screw with surface treatment acc. to corrosivity class C3 and cross-slotted head type Phillips 2. For round cables. Material: PP/Steel.					
TCS-C3 7-10 For 7-10 mm cables	White	32/23/5	100	7315880109945	2190 001
	Light grey			7315880109938	2190 003
	Grey			7315882190002	2190 004
TCS-C3 8-12 For 8-12 mm cables	White	32/21/5	100	7332418015875	2190 013
	Black			7332418015929	2190 015
	Light grey			7332418015851	2190 009
	Grey			7332418015868	2190 011
TCS-C3 10-14 For 10-14 mm cables	White	38/26/5	100	7315880109839	2190 021
	Black			7315882190026	2190 022
	Light grey			7315880109822	2190 023
	Grey			7315880109815	2190 024
TCS-C3 14-18 For 14-18 mm cables	White	38/23/5	100	7315880109860	2190 031
	Black			7315882190033	2190 032
	Light grey			7315880109853	2190 033
	Grey			7315880109846	2190 034
TCS-C3 18-22 For 18-22 mm cables	White	41/23/5	50	7315880109891	2190 041
	Black			7315882190040	2190 042
	Light grey			7315880109884	2190 043
	Grey			7315880109877	2190 044
TCS-C3 22-26 For 22-26 mm cables	White	45/23/5	50	7315880109921	2190 051
	Black			7315882190057	2190 052
	Light grey			7315880109914	2190 053
	Grey			7315880109907	2190 054
Screw C3 with T20 head					
Plastic clip with screw, intended for indoor or outdoor installations in walls and ceilings, with or without wall plug. Screw with surface treatment acc. to corrosivity class C3 and cross-slotted head type T20. For round cables. Material: PP/Steel.					
TCS-X-C3 7-10 For 7-10 mm cables	White	32/23/5	100	7332418019507	2191 000
	Light grey			7332418019491	2191 005
TCS-X-C3 8-12 For 8-12 mm cables	White	32/21/5	100	7332418019538	2191 010
	Black			7332418019514	2191 015
	Light grey			7332418019521	2191 020
TCS-X-C3 10-14 For 10-14 mm cables	White	38/26/5	100	7332418019392	2191 025
	Black			7332418019378	2191 030
	Light grey			7332418019385	2191 035
TCS-X-C3 14-18 For 14-18 mm cables	White	38/23/5	100	7332418019422	2191 040
	Black			7332418019408	2191 045
	Light grey			7332418019415	2191 050
TCS-X-C3 18-22 For 18-22 mm cables	White	41/23/5	50	7332418019453	2191 055
	Black			7332418019439	2191 060
	Light grey			7332418019446	2191 065
TCS-X-C3 22-26 For 22-26 mm cables	White	45/23/5	50	7332418019484	2191 070
	Black			7332418019460	2191 075
	Light grey			7332418019477	2191 080
Screw C5M with PH head					
Plastic clip with screw, intended for indoor or outdoor installations in walls and ceilings, with or without wall plug. Acid-proof stainless steel screw acc. to corrosivity class C5M and cross-slotted head type Phillips 2. For round cables. Material: PP/Steel (acid-proof, stainless).					
TCS-C5M 7-10 For 7-10 mm cables	White	32/24/5	100	7332418020732	2191 509
	Light grey				
TCS-C5M 8-12 For 8-12 mm cables	Light grey	32/21/5	100	7332418020688	2191 504
	White			7332418020749	2191 510
TCS-C5M 10-14 For 10-14 mm cables	Black	32/21/5	100	7332418020640	2191 500
	Light grey			7332418020695	2191 505
	White			7332418020756	2191 511
TCS-C5M 14-18 For 14-18 mm cables	Black	41/26/5	100	7332418020657	2191 501
	Light grey			7332418020701	2191 506
	White			7332418020763	2191 512
TCS-C5M 18-22 For 18-22 mm cables	Black	41/23/5	50	7332418020664	2191 502
	Light grey			7332418020718	2191 507
	White			7332418020770	2191 513
TCS-C5M 22-26 For 22-26 mm cables	Black	41/20/5	50	7332418020671	2191 503
	Light grey			7332418020725	2191 508
	White			7332418020787	2191 514



Description clamps

TKK/APK powder-coated metal clamps are intended for surface mounted installations of round and flat electric cables.

The powder coating provides very good resistance to corrosion and mechanical influence, and good resistance to heat and sunlight.

For some cable dimensions the clamp is available with various lengths of nail and with a thicker screw-nail.

The clamps are packed in cartons provided with a clear colour coding system.

Plugs of type TCP can be used together with the clamps.

Benefits

- Excellent outdoor durability thanks to very good resistance to heat and sunlight
- Good resistance to corrosion and mechanical influence
- Flexible, thin material, powder coated in the colour of the cable, giving a very neat installation without projecting parts

Material data

Strap	Steel SIS 1151 Z200, electroplated (Fe/Zn 10)
Surface	Powder coated with polyester varnish, layer thickness 120–160 µm
Colour	White NCS 0502-Y
Nail, screw	Steel SIS 1151 Z275, electroplated (Fe/Zn 7)
Plug	PEHD (polythene)

Operative data

Temperature range	From -40° to +250°C
Suitable outdoors	Yes. Excellent outdoor durability thanks to very good resistance to heat and sunlight.

Description tools

Mounting tools for Klemmi clamps TKK/APK.

Handles with exchangeable heads

- TKK-MD, ergonomic handle with optional adjustment of the angle of the head to the handle. Supplied with three exchangeable heads.
- TKK-N, simple straight handle providing easy accessibility where space is limited. Supplied with three exchangeable heads.

For both handles there are four easily exchangeable heads covering our whole range of TKK/APK clamps.

The head gives a very good control of the clamp. On the side of the head there is a clear marking to show which clamp size the head is intended for.

Handle for round clamps

TKK-S, the same handle as TKK-N but in black colour. Supplied with one mounting head for round cables.

Nailing tools

- TKK-E is a simple tool for the nailing of clamp sizes 6x9, 7–10 and 10–14. The narrow end of the tool is suitable for 6x9 and 7–10 and the thicker end for 10–14.
- TKK-Y has a clamp holder with spring action, shaped as pincers, and an adjustable mandrel. TKK-Y can handle all dimensions in the TKK/APK range.

Material data

TKK-Y	Handle	Black PA6 (polyamide) with 30% glass-fibre
	Pincers	Black acetaldehyde resin (POM)
	Impact mandrel	Hardened steel
	Nut	Electroplated brass
TKK-E	Material	PA6 (polyamide)
	Colour	Red NCS 2080 R
TKK-N, -MD, -NT and -S	Handle	PA, glass-fibre reinforced
	Head	Die-cast zinc
	Mandrels, springs and sleeves	Steel
	Colour	• Blue NCS 6040-R80B (TKK-N, -MD, -NT) • Black (TKK-S)

Installation

ME8510

Install by hand with nailing tool TKK-Y or-E or with mounting tools TKK-S, -N, -MD or -NT.


























M13490

Concrete, low-density concrete, brick, etc.: use TCP clip plug. In low density concrete, drive the TCP plug in without pilot drilling.





M13500

Plasterboard: use TCP clip plug. In single board, make a hole with an awl. In double board sheets it is sufficient to start a hole.








Range Clamps

Type	Nail ØxL	Dimensions A/B (mm)	Qty per package	EAN code	Ref. No.	
Clamps for indoor and outdoor installations of round and flat electric cables. Material: Powder coated, electroplated sheet steel. Colour: White.						
Clamps for round cables						
	TKK/APK 4-6 18	1.6x18	6/7	100	7315882366100	2366 102
	TKK/APK 5-7 18	1.6x18	7.5/7	100	7315882366209	2366 209
	TKK/APK 5-7 25	1.6x25	7.5/7	100	7315882366230	2366 230
	TKK/APK 7-10 18	2.1x18	10/8	100	7315882367015	2367 019
	TKK/APK 7-10 18 bulk	2.1x18	10/8	5000	7315880061588	2367 020
	TKK/APK 7-10 25	2.1x25	10/8	100	7315882369019	2369 015
	TKK/APK 7-10 25 bulk	2.1x25	10/8	5000	7315882369002	2369 000
	TKK/APK 7-10 screw 25	2.7x25	10/8	100	7315882375010	2375 012
	TKK/APK 7-10 40	2.1x40	10/8	100	7315882369026	2369 020
	TKK/APK 8-12 18	2.1x18	11/9	100	7315882369200	2369 200
	TKK/APK 8-12 25	2.1x25	11/9	100	7315882369231	2369 231
	TKK/APK 8-12 40	2.1x40	11/9	100	7315882369262	2369 262
	TKK/APK 8-12 screw 25	2.7x25	11/9	100	7315882369316	2369 310
	TKK/APK 10-14 25	2.1x25	13/10	100	7315882371012	2371 011
	TKK/APK 10-14 screw 25	2.7x25	13/10	100	7315882377014	2377 018
	TKK/APK 10-14 40	2.1x40	13/10	50	7315880101574	2371 013
	TKK/APK 14-20 25	2.1x25	17/12	50	7315882373016	2373 017
	TKK/APK 14-20 screw 25	2.7x25	17/12	50	7315882379018	2379 014
	TKK/APK 14-20 40	2.1x40	17/12	50	7315882373023	2373 020
Clamps for flat cables						
	TKK/APK 6x9 18	2.1x18	9/8	100	7315882380007	2380 004
	TKK/APK 6x9 18 bulk	2.1x18	9/8	5000	7315882380014	2380 010
	TKK/APK 6x9 25	2.1x25	9/8	100	7315882380052	2380 053
	TKK/APK 6x9 25 bulk	2.1x25	9/8	5000	7315882380069	2380 060
	TKK/APK 6x9 screw 25	2.7x25	9/8	100	7315882380113	2380 110
	TKK/APK 6x12 25	2.1x25	10/10	100	7315882380151	2380 152

Range Tools

Type	Colour	Dimensions A/B/C (mm)	Qty per package	EAN code	Ref. No.	
Mounting tools						
Mounting tool kit including handle and exchangeable heads. TKK-N and TKK-MD include three exchangeable heads, whereas TKK-S includes one head for the clamp dimensions 7-10, 8-12, 10-14 and 14-20. The head of TKK-MD can be angled to the handle. TKK-NT is supplied without mounting heads. Material: PA, die-cast zinc, steel.						
	TKK-N	Blue	30/27/135	1	7315882360030	2360 030
	TKK-S	Black	30/27/135	1	7315880084808	2360 018
	TKK-MD	Blue	68/30/165	1	7315880052555	2360 035
	TKK-NT	Blue	28/28/135	1	7315882360023	2360 025

Range Tools

Type	Colour	Dimensions A/B/C (mm)		Qty per package	EAN code	Internal ID-No.	Ref. No.
Exchangeable heads							
Exchangeable head for TKK mounting tools, suitable for TKK-N, TKK-MD and various sizes of clamps, see below. Material: Die-cast zinc, steel.							
P80846		TKK-SH1 For TKK/APK 4-6	—	14/10/50	1	7315880052562	10001062 2360 040
P80854		TKK-SH2 For TKK/APK 7-10, 6x9	—	16/13/52	1	7315880052579	10001063 2360 041
P80853		TKK-SH3 For TKK/APK 10-14, 6x12	—	18/15/52	1	7315880052586	10001064 2360 042
P80862		TKK-SH4 For TKK/APK 5-7, 8-12, 14-20	—	20/16/52	1	7315880052593	10001065 2360 043
Nailing tools							
Tool with spring-action clamp holder and adjustable mandrel. Suitable for all dimensions in the TKK/APK range. Material: PA6, POM, steel, brass.							
P80849		TKK-Y	Black	Ø28/—/140	1	7315882360009	10001057 2360 009
Simple tool for nailing of TKK/APK clamps. Suitable for TKK/APK 7-10, 10-14 and 6x9. Material: PA6.							
P80847		TKK--E	Red	12/13/66	1000	7315880036203	10001058 2360 020

Metal clamps

Thorsman FASTIS™ TFK



Description

The metal clamp range FASTIS TFK is intended for use when fixing cables and conduits.

The clamp has a bent part to hold the cable/conduit and one or two integrated nails to fix it.

TFK clamps are available with white plastic-coating or in electroplated steel, in the latter case only in the bigger sizes Ø16 and Ø20 mm. The plastic-coated clamps are in corrosivity category C4, whereas the electroplated steel clamps are in category C2.

The one-nailed clamps need specially adapted mounting tools to hold the clamp and the cable in position when driving the clamp in, the two-nailed clamps only need a hammer.

Applications

The clamps are suitable for stationary installations of cables and conduits in wood or wood-based materials, indoors as well as outdoors. Typical are visible installations in houses and flats. The long-nailed clamps are used when nailing through board materials and thin panels into the underlying wooden framework.

The one-nail clamps are mainly to be used in corners and transitions between floor and wall, wall and ceiling, wall and wall, and on skirting-boards. The clamps with two nails are used on walls and ceilings without support from a corner. In solid wood material, only clamps with short nails should be used.

The clamps are mainly intended for cables of EKRK type for the Swedish market, and of PR type for the Norwegian market. The two-nail clamp sizes 16 and 20 mm are specially suited for flexible or rigid conduits, often in concealed installations.

Benefits

- Neat and slim installations.
- Impact-resistant polyamide (Rilsan®) plastic-coating.
- White plastic-coating well suited to the colour of the cable.
- Plastic-coated clamps in corrosivity category C4.
- Electroplated steel clamps in corrosivity category C2.

Standards and regulations

- Corrosivity category C2 in accordance with ISO 4042.
- Corrosivity category C4 in accordance with SS-EN ISO 12944-2.

Certificates

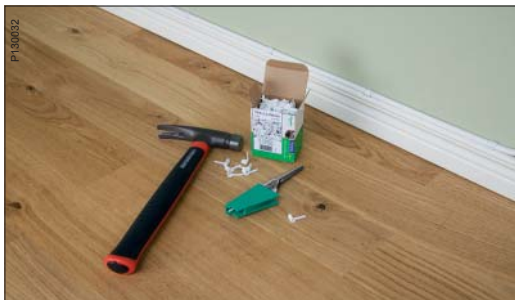
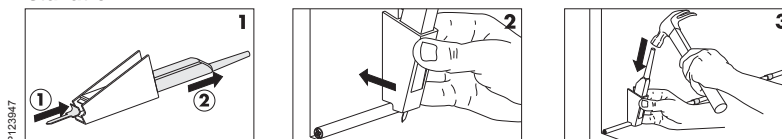
C4 classified clamps SITAC¹⁾ Technical Approval of corrosion protection, No. 0035/04

¹⁾ Swedish Institute for Technical Approval in Construction

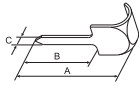
Material and Operative data

Clamp	Material	Hardened steel
	Surface treatment:	Plastic-coating MaxiCoat Rilsan® PA11
	Colour	White
Clamp Ø16 and 20 steel	Material	Hardened and electroplated
Mounting tool	Material	PP and electroplated steel
Temperature range	From -40°C to +150°C	

Installation



Range Clamps, plastic-coated



P125909
P125900



Type	Colour	Dimensions A/B/C (mm)	Qty per package	EAN code	Ref. No.
Clamp with one nail for round cables					
Clamp with one nail, intended for use in stationary installations of round cables. Mounted with mounting tool TFK-F1 (TFK-C4 8-9) or TFK-F2 (TFK-C4 10-11) and a hammer. The steel clamp is plastic-coated for corrosion resistance and impact protection. In solid wood, use only clamps with 16 mm nail. Corrosivity category C4. Material: Hardened steel, plastic-coated.					
TFK-C4 8-9 16 mm nail	White	25/16/3	100	7332418016834	2150 010
TFK-C4 8-9 25 mm nail	White	34/25/3.5	100	7332418016841	2150 015
TFK-C4 10-11 16 mm nail	White	27/16/3	100	7332418016728	2150 020
TFK-C4 10-11 25 mm nail	White	36/25/3.5	100	7332418016735	2150 025

P125903



Clamp with two nails for round cables					
Clamp with two nails, intended for use in stationary installations of round cables. Mounted with a hammer. The steel clamp is plastic-coated for corrosion resistance and impact protection. Corrosivity category C4. Material: Hardened steel, plastic-coated.					
TFK-C4 8-9 16 mm nail	White	26/16/3	100	7332418016827	2150 030
TFK-C4 10-11 16 mm nail	White	27/16/3	100	7332418016711	2150 035

P125909
P125910



Clamp with one nail for flat cables					
Clamp with one nail, intended for use in stationary installations of flat cables. Mounted with mounting tool TFK-F3 and a hammer. The steel clamp is plastic-coated for corrosion resistance and impact protection. In solid wood, use only the clamp with 16 mm nail. Corrosivity category C4. Material: Hardened steel, plastic-coated.					
TFK-C4 6x9/10 16 mm nail	White	23/16/3	100	7332418016803	2150 085
TFK-C4 6x9/10 25 mm nail	White	32/25/3.5	100	7332418016810	2150 090

P125911



Clamp with two nails for flat cables					
Clamp with two nails, intended for use in stationary installations of flat cables. Mounted with a hammer. The steel clamp is plastic-coated for corrosion resistance and impact protection. Corrosivity category C4. Material: Hardened steel, plastic-coated.					
TFK-C4 6x9 16 mm nail	White	23/16/3	100	7332418016797	2150 095
TFK-C4 6x10 16 mm nail	White	23/16/3	100	7332418016780	2150 110

P99906



Mounting tool					
Mounting tool marked with one groove, for TFK-C4 8-9 clamps with one nail for round cables. A strong magnet holds the clamp in a steady position. To be used together with a hammer. Material: PP/Electroplated steel.					
TFK-F1	Green/black	120/18/36	1	7332418021203	2150 126

P124810



Mounting tool marked with two grooves, for TFK-C4 10-11 clamps with one nail for round cables. A strong magnet holds the clamp in a steady position. To be used together with a hammer. Material: PP/Electroplated steel.					
TFK-F2	Green/bright	120/18/36	1	7332418021210	2150 127

P126999



Mounting tool marked with three grooves, for TFK-C4 6x9/10 clamps with one nail for flat cables. A strong magnet holds the clamp in a steady position. To be used together with a hammer. Material: PP/Electroplated steel.					
TFK-F3	Green/black	120/18/36	1	7332418021579	2150 128

Range Clamps, electroplated

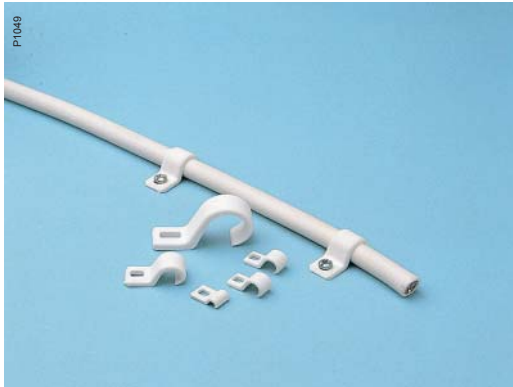
P126907
P126908



Clamp with two nails for round cables or conduits					
Clamp with two nails, intended for use in stationary installations of round cables or conduits. Mounted with a hammer. The steel clamp is electroplated. In solid wood, use only the clamps with 16 mm and 20 mm nails. Corrosivity category C2. Material: Hardened steel, electroplated.					
TFK 16 16 mm nail	—	33/16/3	50	7332418016865	2150 060
TFK 16 25 mm nail	—	42/25/3	50	7332418016872	2150 065
TFK 20 20 mm nail	—	41/20/3	50	7332418016889	2150 070
TFK 20 28 mm nail	—	49/28/3	50	7332418016896	2150 075

Plastic clamps

Thorsman TK



Description

Plastic clamps for round and flat cables/conduits.

Applications

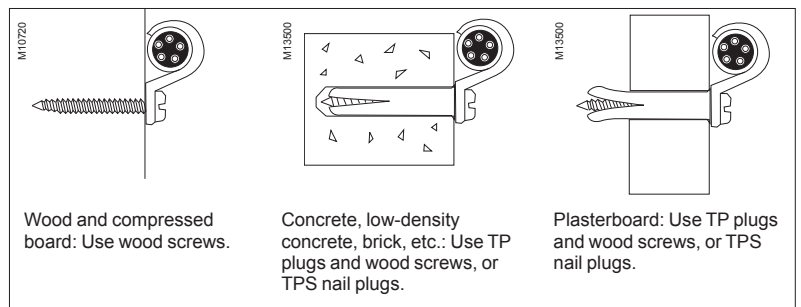
Installations in wood is done by using wood screw. For installations in concrete, brick, plasterboard, etc., use TP plugs and wood screws, or TPS nail plugs.

Benefits

- Flexible – each size can be used for several cable/conduit sizes
- Can withstand high impact, together with extremes of heat, cold and acid
- Broad range

Material data

Material	Impact resistant polypropylene (PP)
Temperature range	From -40° to +80°C



Technical data

Type	Required screw No.	Suitable plug Plug	Nail plug
TK 3-5	6	TP0, TP1, TP2	TPS-4
TK 5-7	6	TP0, TP1, TP2	TPS-4
TK 7-10	6	TP0, TP1, TP2	TPS-4
TK 10-14	6-8	TP0, TP1, TP2	TPS-4
TK 14-20	8-10	TP0, TP1, TP2	TPS-5
TK 20-26	8-10	TP0, TP1, TP2	TPS-5
TK 6x9	6	TP0, TP1, TP2	TPS-4

Range

P60821



Type	Colour	Dimensions A/B/C (mm)	Qty per package	EAN code	Ref. No.
Plastic clamp for round and flat cables or conduits. Installation in wood is done by using wood screws. For installations in concrete, brick, plasterboard, etc., use TP plugs and wood screws, or TPS nail plugs. Material: PP (polypropylene).					
TK 3-5	White	6/15/9	100	7315882300012	2300 010
TK 5-7	White	8/18/9	100	7315882301019	2301 018
TK 7-10	White	11/20/9	100	7315882302016	2302 016
	Grey			7315882302023	2302 024
TK 10-14	White	14/27/13	100	7315882303013	2303 014
	Grey			7315882303020	2303 022
TK 14-20	White	19/35/14	100	7315882304010	2304 012
	Grey			7315882304027	2304 020
TK 20-26	White	25/47/15	50	7315882305017	2305 019
TK 6x9	White	19.5/9/7	100	7315882310103	2310 100

Adjustable plastic clamps

Thorsman TSK and PFSK



Description

Adjustable plastic clamps for banks of electric cables.

Applications

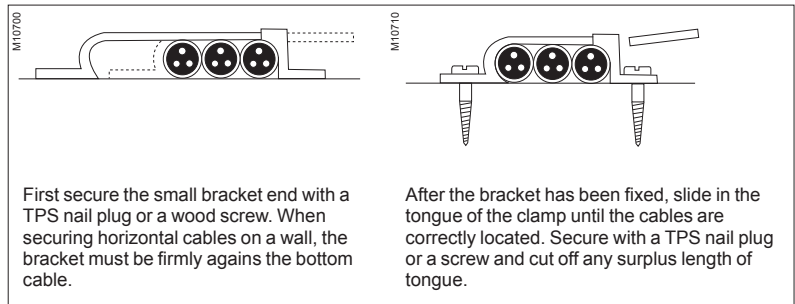
Intended to secure banks of electric cables. Installations in wood is done by using wood screws. For installations in concrete, brick, plasterboard, etc., use TP plugs and wood screws, or TPS nail plugs.

Benefits

- Flexible – each size can be used for several cables of the same size
- One clamp can take 2-5 parallel cables
- Quick and easy to install
- Can withstand high impact, together with extremes of heat, cold and acid

Material data

Material	TSK: PFSK: Nail:	Polypropylene (PP) Polyamide (PA) Hardened zinc plated steel
Temperature range	From -40° to +80°C	



Technical data

Type	No. of cables	Required screw No.	Suitable plug Plug	Nail plug
TSK 7-10	2-5	6	TP0, TP1, TP2	TPS-4
TSK 10-14	2-5	6-8	TP0, TP1, TP2	TPS-5
TSK 14-20	2-5	8-10	TP0, TP1, TP2	TPS-5
PFSK 10-14	2-5	—	TCP0	—

Range

P60831



P60832



Type	Colour	Dimensions A/B/C (mm)	Qty per package	EAN code	Ref. No.
Clamp for screw installation					
Adjustable plastic clamp intended to secure banks of electric cables. For screw mounting. Material: PP(polypropylene).					
TSK 7-10	White	10/11/65	100	7315882330019	2330 017
TSK 10-14	White	14/16/85	50	7315882332013	2332 013
TSK 14-20	White	17/20/120	50	7315882334017	2334 019
Clamp for nail installation					
Adjustable plastic clamp intended to secure banks of electric cables. For nail mounting, including nail. Material: PA(polyamide), steel.					
PFSK 10-14	White	16/31/72	50	7315882333430	2333 433

Cable wings

Thorsman Cable wing

P124737



Description

The Cable Wing fixing clip can be used both for indoor and outdoor applications.

The Cable Wing is available both as a single clip for cable installation on one side only and as a double clip for cable/conduit installation on both sides.

Both types are made of polyamide with high UV-resistance and durability. The Cable Wing is either provided with a nail-plug for quick installation in concrete/brick or is supplied without plug if for example a screw installation is preferred.

Benefits

- Fast installation with a hammer when using the nail plug
- Installs directly in suitable materials. In concrete and brick it is recommended to use a nail-plug.
- Nail plug installation means that the Cable Wing can be adjusted or even removed and re-used
- High UV-resistance
- Halogen-free
- Can withstand high impact together with extremes of heat and cold
- Documented quality
- Can be installed before adding cables, i.e. cables can easily be fixed or removed after installation of the clip
- Flexible design – one size fits multiple cable/conduit dimensions
- Recyclable packaging



Technical and Material data

Material	Cable wing, nail plug: PA (polyamide)
face	Screw nail: Steel with electro-plated zinc sur-treatment
Cable capacity	Maximum diameter 12 mm. Maximum capacity 6 cables per side.
Colour	Dark grey
Temperature range	From -20 to + 60°C
Recommended load	30 N

Range

P118530



P118531



P119753



P119752



Type	Colour	Dimensions A/B/C (mm)	Qty per package	EAN code	Ref. No.
Cable wing, double					
Cable wing, double. Intended for cable/conduit installation on both sides. Available with or without nail-plug. Material: PA.					
With nail-plug	Dark grey	23/20/230	25	3606480217227	IMT39080
Without nail-plug	Dark grey	23/20/230	10	3606480217210	IMT39079
Cable wing, single					
Cable wing, single. Intended for cable installation on one side. Available with or without nail plug. Material: PA.					
With nail-plug	Dark grey	20/20/130	25	3606480217203	IMT39078
Without nail-plug	Dark grey	20/20/130	10	3606480217197	IMT39077

Stainless steel clamps

Thorsman TKS



P103470

Description

The TKS range includes screw clamps intended for use in installations of cables and pipes/conduits. The range is available either in stainless steel in corrosivity category C4, or in acid-proof stainless steel in category C5M (a selected range). The products in the C5M range are marked TKS.

The screw clamp is available in four different designs:

- TKS-ER with two fixing holes, for mounting of one pipe or cable, both C4 and C5M.
- TKS-DR with two fixing holes, for mounting of two parallel cables or pipes of the same diameter, both C4 and C5M.
- TKS-KR with one fixing hole, for mounting of one pipe or cable, both C4 and C5M.
- TKS-MR with one fixing hole, for mounting of one pipe or cable, only C4. Made of extra thick material.

Benefits

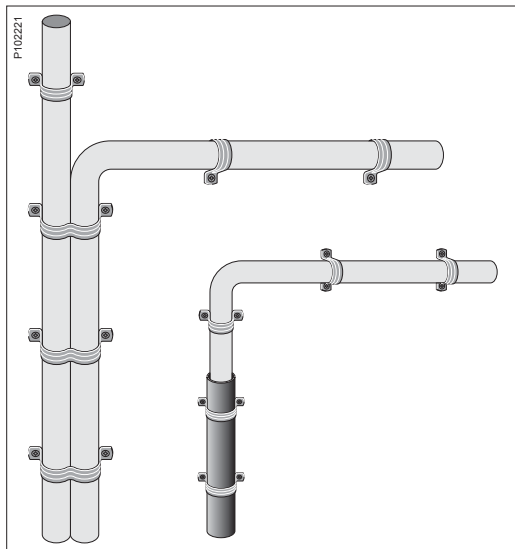
- Long lasting installations
- Broad range
- Not influenced by UV light
- Clamps with two mounting holes for heavy installations
- C5M range for harsh environments
- Type approval for C5M range

Material and Operative data

Material data (C4) and AISI 316 (C5M)	Material:	Stainless steel AISI 304
Operative data	Temperature range:	From -40°C to +250°C
	Suitable outdoors:	Yes
Approval	Swedish Technical Approval 0007/03 for C5M range	



P104546




P102221

Range, category C4

Type	Dimensions A/B/C (mm)	Qty per package	EAN code	Ref. No.
Screw clamps for one cable, two fixing holes				
Steel clamp, single, for installation of one pipe or cable. With two oval 8x5 mm fixing holes. Corrosivity category C4. Material: Stainless steel.				
TKS-ER 16	16/47/15	100	7315882390402	2390 400
TKS-ER 20	20/58/15	100	7315880108092	2390 405
TKS-ER 22	22/58/15	100	7315882390419	2390 410
TKS-ER 25	25/64/15	100	7315880107941	2390 415
TKS-ER 30	30/69/15	100	7315882390426	2390 420
TKS-ER 32	32/73/15	50	7315880107958	2390 425
TKS-ER 40	40/76/15	50	7315882390433	2390 430
TKS-ER 50	50/85/15	50	7315880107965	2390 435
Screw clamps for one cable, one fixing hole				
Steel clamp, single, for installation of one pipe or cable. With one 8x5 mm oval fixing hole. Corrosivity category C4. Material: Stainless steel.				
TKS-KR 8	8/25/12	100	7315882390501	2390 500
TKS-KR 9	9/26/12	100	7315880107989	2390 505
TKS-KR 10	10/26/15	100	7315882390518	2390 510
TKS-KR 11	11/28/15	100	7315880107996	2390 515
TKS-KR 12	12/30/15	100	7315882390525	2390 520
TKS-KR 14	14/31/15	100	7315880108009	2390 525
TKS-KR 16	16/34/15	100	7315882390532	2390 530
TKS-KR 18	18/36/15	100	7315880108016	2390 535
TKS-KR 20	20/39/15	100	7315882390549	2390 540
TKS-KR 6x9	6/26/15	100	7315880108023	2390 545
TKS-KR 6x10	6/22/15	100	7315882390556	2390 550
Steel clamp, single, for installation of one pipe or cable. With one Ø 7 mm fixing hole. Made of extra thick material, suitable for heavy-duty installations. Corrosivity category C4. Material: Stainless steel.				
TKS-MR 6	6/23/15	100	7315882390594	2390 595
TKS-MR 7	7/23/15	100	7315882390600	2390 600
TKS-MR 8	8/25/12	100	7315880108030	2390 605
TKS-MR 9	9/25/12	100	7315882390617	2390 610
TKS-MR 10	10/27/15	100	7315880108047	2390 615
TKS-MR 11	11/28/15	100	7315882390624	2390 620
TKS-MR 12	12/29/15	100	7315880108054	2390 625
TKS-MR 13	13/30/15	100	7315882390631	2390 630
TKS-MR 14	14/31/15	100	7315880108061	2390 635
TKS-MR 16	16/33/15	100	7315882390648	2390 640
TKS-MR 18	18/36/15	100	7315880108078	2390 645
TKS-MR 20	20/38/15	100	7315882390655	2390 650
TKS-MR 22	22/39/15	100	7315880108085	2390 655
TKS-MR 24	24/44/20	100	7315882390662	2390 660
Screw clamps for two cables				
Steel clamp, double, for installation of two parallel pipes or cables of the same diameter. With two oval 8x5 mm fixing holes. Corrosivity category C4. Material: Stainless steel.				
TKS-DR 10	10/51/15	100	7315882390471	2390 475
TKS-DR 12	12/53/15	100	7315882390488	2390 480
TKS-DR 16	16/64/15	100	7315880107972	2390 485
TKS-DR 20	20/71/15	100	7315882390495	2390 490

Range, category C5M

Type	Dimensions A/B/C (mm)		Qty per package	EAN code	Ref. No.
Screw clamps for one cable, two fixing holes					
Steel clamp, single, for installation of one pipe or cable. With two oval 8x5 mm fixing holes. Suitable for marine applications. Corrosivity category C5M. Material: Stainless steel, acid-proof.					
TKS-ER-C5M 16	16/47/15		100	7332418018944	2390 401
TKS-ER-C5M 20	20/58/15		100	7332418018951	2390 406
TKS-ER-C5M 25	25/64/15		50	7332418018968	2390 416
TKS-ER-C5M 32	32/73/15		50	7332418018975	2390 426
Screw clamps for one cable, one fixing hole					
Steel clamp, single, for installation of one pipe or cable. With one 8x5 mm oval fixing hole. Suitable for marine applications. Corrosivity category C5M. Material: Stainless steel, acid-proof.					
TKS-KR-C5M 9	9/26/12		100	7332418019026	2390 570
TKS-KR-C5M 10	10/26/15		100	7332418018982	2390 511
TKS-KR-C5M 12	12/30/15		100	7332418018999	2390 521
TKS-KR-C5M 16	16/34/15		100	7332418019002	2390 531
TKS-KR-C5M 20	20/39/15		100	7332418019019	2390 541
Screw clamps for two cables					
Steel clamp, double, for installation of two parallel pipes or cables of the same diameter. With two oval 8x5 mm fixing holes. Suitable for marine applications. Corrosivity category C5M. Material: Stainless steel, acid-proof.					
TKS-DR-C5M 10	10/51/15		100	7332418018913	2390 476
TKS-DR-C5M 12	12/53/15		100	7332418018920	2390 481
TKS-DR-C5M 16	16/64/15		100	7332418018937	2390 486
Installation screw					
Screw with large thin head and Phillips cross recess. Sharp point, twin steep-pitch thread. Fully threaded. Works in most materials — metal studwork, cabinets, wood, plugs. Fastened with Phillips screw-driver or power driver. Suitable for marine applications. Corrosivity category C5M. Material: Stainless steel, acid-proof.					
TSC-C5M	4.2x25		100	7315883782268	3782 260
	4.2x32		100	7315880115137	3782 265

P102712



P101913



P102713



P91316







Cavity fixing, metal
 PLATTI, TPP
 M4 - M5
 Screw and hook

x



Cavity fixing, plastic
 DUO-MAX, TSP
 M3 - M5
 Screw and hook

x



Cavity fixing, plastic
 MONO-MAX, TMM
 Ø 8 mm
 Screw

x



Cavity fixing, metal
 TMX
 M4 - M6
 Screw

x



Cavity fixing, metal/plastic
 TPD
 4.5 x 35 mm
 Screw

x

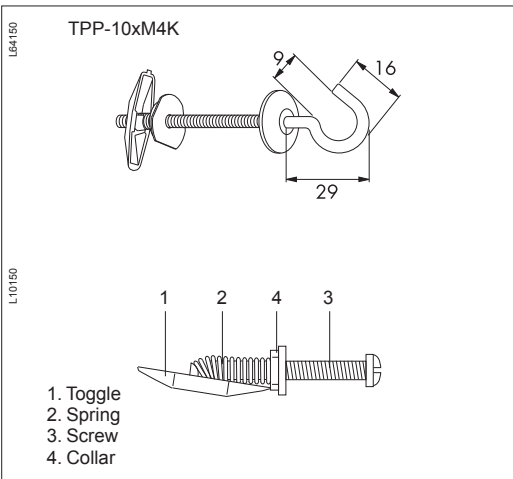


Cavity fixing, metal
 THW
 4.2 x 35 mm
 Screw

x

Cavity fixing

Thorsman PLATTI™ TPP



Description

PLATTI TPP is a cavity fixing consisting of a toggle and a collar, united by a spring and a screw or hook.

Application

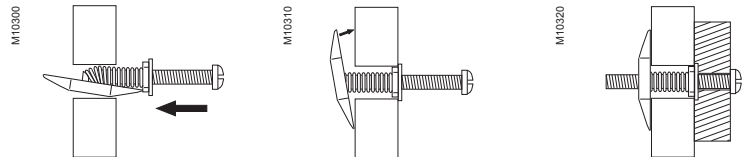
For installations in board materials ranging from a thickness of 10 to 35 mm. Also suitable for ceiling installations.

Benefits

- Captive fixing
- No special tool needed for the installation
- Large metal toggle – withstands humidity, heat and heavy loads
- Suitable for ceiling installations
- High load values
- Fire-resistant
- Easy to remove – cut off the spring

Material data

Material	Toggle, collar	Zinc
	Screw, hook	Electroplated steel
	Spring	Steel



Drill a hole in accordance with the table below. Fix the toggle in the collar and push the cavity fixing in with the aid of the screw.





Push the screw until the spring-loaded bar flips over.

Remove the screw and mount the fixture.

Technical data

Type	Screw size	Drill Ø mm	Board thickness mm	Max. fixture thickness for board thickness		Practical loading capacity, shear/pull-out load, N*	
				13 mm	2x13 mm	13 mm	2x13 mm
TPP-10xM4S	M4x55	10	10-30	37 mm	24 mm	400/160	600/220
TPP-10xM4K	M4x50	10	10-26	—	—	— /160	— /220
TPP-13xM5S	M5x65	13	10-35	47 mm	34 mm	500/170	800/340

* Safety factor 2.5 for shear and 3 for pull-out load.

Range						
Type	Screw size	Qty per package	EAN code	Ref. No.		
Cavity fixing with screw						
Metal cavity fixing with screw. Large captive toggle. Suitable for mounting in walls and ceilings made of board material. Can be used in 10-26 mm board thickness. Material: Toggle and collar of zinc, screw and spring of steel.						
P40837		TPP-10xM4S	Screw M4 x 55	25	7315881200009	1200 005
		TPP-13xM5S	Screw M5 x 60	25	7315881200405	1200 401
Cavity fixing with hook						
Metal cavity fixing with hook. Large captive toggle. Suitable for mounting in walls and ceilings made of board material. Can be used in 10-26 mm board thickness. Material: Toggle and collar of zinc, hook and spring of steel.						
P40837		TPP-10xM4K	Hook M4 x 50	25	7315881200207	1200 203
Cavity fixing with screw, bulk						
Like the above with screw but in bulk package.						
P40837		TPP-10xM4S	Screw M4 x 55	1500	7315881200023	1200 023
		TPP-13xM5S	Screw M5 x 60	1000	7315881200412	1200 412
Cavity fixing with hook, bulk						
Like the above with hook but in bulk package.						
P40837		TPP-10xM4K	Hook M4 x 50	1000	7315881200221	1200 221
Cavity fixing, bulk						
Like the above but without screw or hook and in bulk package.						
		TPP-13xM5	—	1000	7315881200443	1200 443

P124786



Description

DUO-MAX TSP is a plastic cavity fixing for high load values. TSP is provided with a pre-assembled screw or hook.

Application

For installations in board materials ranging from a thickness of 3 to 35 mm. TSP of type M has a nickel-plated brass screw for installations in for instance wet rooms.

Benefits

- Captive fixing
- No special tool needed for the installation
- Pre-assembled screw or hook
- Ready-to-mount – very fast installation
- High load values
- Corrosion resistant
- Easy to remove – cut off the spring

Material data

Material	Collar, spring, expanding part: PA (polyamide).		
	Hook:	Electroplated steel.	
	Screw:	Electroplated steel.	
	Screw type M:	Nickel-plated brass.	

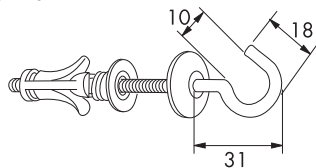
Operative data

Temperature range	-40°C to +80°C.
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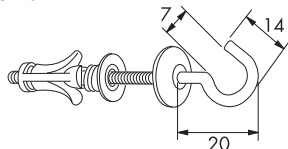
L10050

TSP-10K

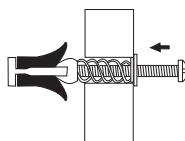


L10100

TSP-6K

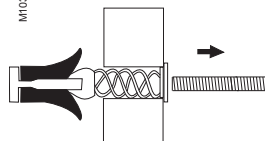


M10330



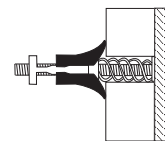
Drill a hole in accordance with the table below. Push in DUO-MAX with the aid of the screw.

M10340



Remove the screw.

M10350








Mount the fixture.

Technical data

Type	Screw size	Drill Ø mm	Board thickness mm	Max. fixture thickness in board thickness		Practical loading capacity, N* 13 mm sheet			
				13 mm	2x13 mm	2x13 mm sheet		2x13 mm sheet	
						Shear	Pull-out	Shear	Pull-out
TSP-6/50	M3x50	6	3-26	20 mm	7 mm	180	70	240	90
TSP-6K	M3x40	6	3-20	—	—	180	70	—	—
TSP-10/50	M5x50	10	3-20	12 mm	—	250	75	—	—
TSP-10/65	M5x65	10	3-35	25 mm	12 mm	250	75	400	150
TSP-10/75	M5x75	10	3-40	37 mm	24 mm	250	75	400	150
TSP-10/75M	M5x75	10	3-38	34 mm	21 mm	250	75	400	150
TSP-10K	M5x60	10	3-28	—	—	250	75	400	150

* Safety factor 4.5 for shear and 6 for pull-out load.

Range

Type	Colour	Dimensions A/B (mm)		Qty per package	EAN code	Ref. No.
Cavity fixing with screw						
Cavity fixing in two different sizes, with screw. Installed without special tools. To be used for installations in one or several layers of plasterboard and in other board materials. Type M in stainless material (nickel-plated brass) for instance for wet rooms. Material: PA (polyamide). Screw of electroplated steel. Type M with screw of nickel-plated brass.						
 <small>P80035 P80018</small>	TSP-6/50	Red/white	52/11	25	7315881240005	1240 001
	TSP-10/50	Blue/white	54/20	25	7315881244003	1244 003
	TSP-10/65	Blue/white	68/20	25	7315881248001	1248 004
	TSP-10/75	Blue/white	77/20	25	7315881249008	1249 002
	TSP-10/75M				7315881250004	1250 000
Cavity fixing with hook						
Cavity fixing in two different sizes, with hook. Installed without special tools. To be used for installations in one or several layers of plasterboard and in other board materials. Material: PA (polyamide). Hook of electroplated steel.						
 <small>P80036</small>	TSP-6K	Red/white	60/11	25	7315881241002	1241 009
	TSP-10K	Blue/white	93/20	25	7315881253005	1253 004
Cavity fixing with screw, bulk						
Like the above but in bulk package.						
 <small>P80035 P80018</small>	TSP-6/50	Red/white	52/11	6000	7315881240708	1240 704
	TSP-10/50	Blue/white	54/20	2500	7315881244706	1244 706
	TSP-10/75	Blue/white	77/20	1500	7315881249503	1249 507
Cavity fixing with hook, bulk						
Like the above but in bulk package.						
 <small>P80036</small>	TSP-10K	Blue/white	93/20	1000	7315881253500	1253 509



Description

MONO-MAX TMM is a plastic cavity fixing for lightweight installations in plasterboard. Supplied without screw.

Application

For installations in board materials ranging from 3 to 26 mm thickness.

Benefits

- Captive without screw
- No special tool needed for the installation
- Requires only 15 mm of cavity space behind the board
- Small drill hole – 8 mm
- Easy to remove – cut off the spring

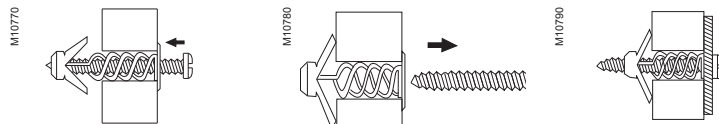
Material data

Material PA (polyamide)

Operative data

Temperature range –40°C to +80°C.

Mounting instruction



Drill a hole, Ø 8 mm. Push the cavity fixing in with the aid of the screw.

When the wings are gripping, remove the screw.

Mount the fixture.

Technical data

Type	Rec. wood screw	Drill Ø mm	Board thickness, mm	Max. fixture thickness	Practical loading capacity, shear/pull-out load, N*
TMM-8x26	No. 8	8	3-26	Determined by screw length	200/60

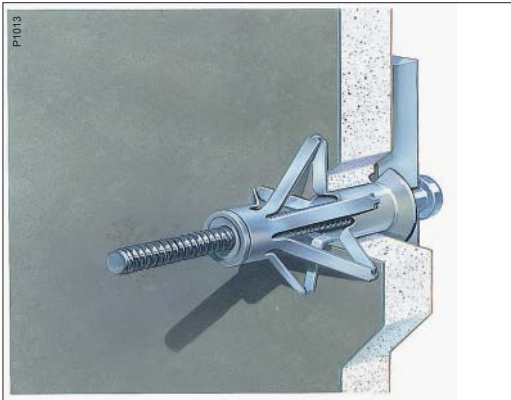
* Safety factor 4.5 for shear and 6 for pull-out load.

Range

P125429



Type	Colour	Dim. mm	Qty per package	EAN code	Ref. No.
Cavity fixing without screw					
Cavity fixing without screw for lightweight installations in board materials. Material: PA (polyamide).					
TMM-8x26	White	26/13/16	100	7315881206025	1206 028



Description

TMX steel cavity fixing is intended for heavy loads. It is expanded with the aid of the installation tool or simply by tightening the screw with a screw-driver.

Application

For installations in various types of board up to a thickness of 44 mm, like plaster, plywood and particle boards, but also for board materials like plastic, sheet metal and laminate.

Benefits

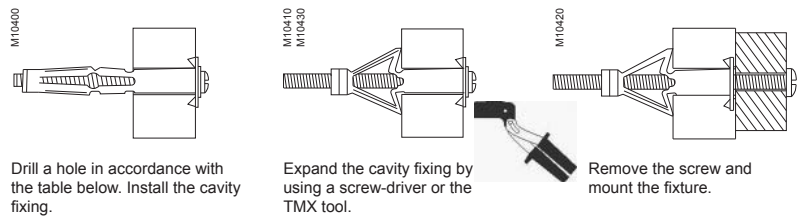
- Captive fixing – stays fixed even when the screw is not tightened
- Anti-rotation design
- Pre-assembled screw
- High load values
- Fire-resistant

Material data

Material cavity fixing	Expanding part:	Electroplated sheet metal
	Screw:	Electroplated steel
Material mounting tool	Steel and plastic.	

Operative data

Temperature range	-40°C to +80°C.
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Drill a hole in accordance with the table below. Install the cavity fixing.

Expand the cavity fixing by using a screw-driver or the TMX tool.

Remove the screw and mount the fixture.

Technical data

Type	Screw	Screw length mm	Drill Ø mm	Board thickness Min-max mm	Max fixture thickness mm	Practical loading capacity, N*	
						Shear load	Pull-out load
TMX-4E	M4	40	8	5-15	18	200	140
TMX-4D	M4	50	8	16-26	18	400	160
TMX-5E	M5	57	10	6-13	24	400	160
TMX-5D	M5	70	10	12-32	20	600	200
TMX-6E	M6	57	12	3-16	25	450	180
TMX-6D	M6	70	12	12-32	20	700	280

* Safety factor 2.5 for shear and 3 for pull-out load.

Range TMX

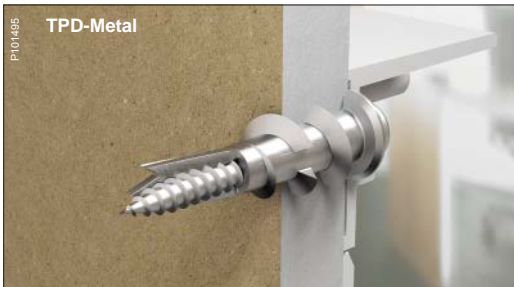
P125723
P125726
P125729
P80638



Type	Screw	Dimensions Ø/L (mm)	Qty per package	EAN code	Ref. No.
Cavity fixing with screw					
Cavity fixing including fully threaded screw with combi-head and Phillips cross-slot. Material: Electroplated steel.					
TMX-4E	M4	14/47	100	7315881260027	1260 025
TMX-4D	M4	14/62	50	7315881260065	1260 066
TMX-5E	M5	16/62	50	7315881260102	1260 108
TMX-5D	M5	16/74	50	7315881260126	1260 124
TMX-6E	M6	18/62	50	7315881260140	1260 140
TMX-6D	M6	18/74	50	7315881260164	1260 165
Installation tool					
Installation tool for cavity fixing TMX. Material: Steel, plastic.					
TMX-T	—	100/250/32	1	7315881265046	1265 040

Cavity fixing

Thorsman TPD



Description

TPD self-drilling cavity fixing is intended for lightweight installations in plasterboard.

Application

For installations in plasterboard from a thickness of 9 mm, independent of the insulation behind. Not suitable for ceiling installations.

Benefits

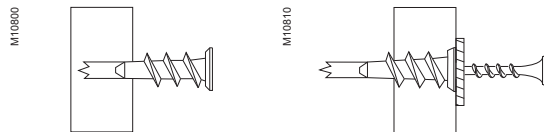
- Self-drilling – preferably installed with a cordless screwdriver Pozidriv (PZ) 2 without pre-drilling
- Wood screw 4.5x35 with 8 mm head and cross-slot Pozidriv 2 (TPD-Metal)
- For plasterboards from a thickness of 9 mm, including multiple sheet thicknesses (TPD-Metal)
- Fire resistant (TPD-Metal)
- Screw with high pitch, easy and fast (TPD-Metal)

Material data

Material	TPD-Metal Zinc
	TPD-Nylon PA (polyamide), glass fibre reinforced
Screw	Electroplated steel (TPD-Metal)

Operative data

Temperature range	-40°C to +80°C.
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Screw the TPD into the plasterboard.

Mount the fixture by screwing the screw into the TPD.

Technical data

Type	Screw size mm	Board thickness mm	Max. fixture thickness mm	Practical loading capacity, shear/pull-out load in 13 mm board, N*
TPD-Metal	4.5x35	min. 9	26	270/80
TPD-Nylon	4.5x35	min. 9	12	190/50

* Safety factor 2.5 for shear and 3 for pull-out load (TPD-Metal).
Safety factor 4.5 for shear and 6 for pull-out load (TPD-Nylon).

Range



Type	Screw size	Colour	Dim. Ø/L mm	Qty per package	EAN code	Ref. No.
Cavity fixing, zinc						
Cavity fixing for lightweight installations in plasterboard, including wood screw with cross-slot Pozidriv 2. Material: Zinc. Electroplated steel screw.						
TPD-Metal	4.5x35	—	13/37	100 25	7315880114291 7315881220120	1220 104 1220 120
Cavity fixing, PA						
Cavity fixing for lightweight installations in plasterboard, including screw with cross-slot. Material: PA (polyamide), glass fibre reinforced. Electroplated steel screw.						
TPD-Nylon	—	White	13/37	100	7315881220014	1220 010



Description THW

THW metal cavity fixing including screw is excellent for installations in plasterboard materials. The shape of THW prevents it from rotating. No pre-drilling needed, just hammer in.

Application

For lightweight installations in board materials ranging from 6 to 13 mm thickness, excellent for porous and thin materials.

Benefits

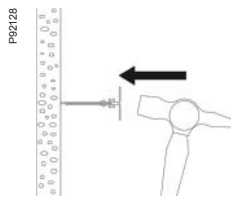
- No pre-drilling needed
- Screw with sharp point, Phillips PH2
- Fire-resistant
- Easy to remove
- Leaves a very small hole in plasterboard when removed

Material data

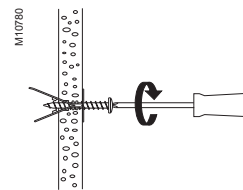
Material	Cavity fixing	Yellow-chromated steel
	Screw	Electroplated steel

Operative data

Temperature range	-40°C to +80°C.
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Hammer the cavity fixing in place. No pre-drilling needed.



Mount the fixture with the included Phillips PH2 screw (cross-recessed).

Technical data

Type	Screw	Board thickness mm	Max. fixture thickness mm	Practical loading capacity, shear/pull-out, N*
THW 4.2x38	4.2x38	6-13	16	100/100

* Safety factor 2.5 for shear and 3 for pull-out load.

Range

P91678



Type	Screw size	Colour	Dim. mm	Qty per package	EAN code	Ref. No.
Cavity fixing including screw						
Cavity fixing including screw. The shape of THW prevents it from rotating. No pre-drilling needed, just hammer in. Material: Steel, yellow-chromated (THW), electroplated (screw).						
THW 4.2x38	4.2x38	—	10/30/12	50	7315881260171	1260 170



Concrete screws

MULTI-MONTI MMS

Ø 5 - 10 mm

x



Universal screws, Ph

TEL electroplated steel

TEL-C5M Stainless acid-proof

x



Universal screws, Ph

TGS electroplated steel

x



Self tapping screws, Ph

TGE electroplated steel

x



Self-tapping screws, Ph

TSE electroplated steel












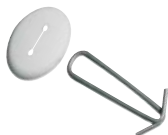
x



Self-tapping screws, Ph

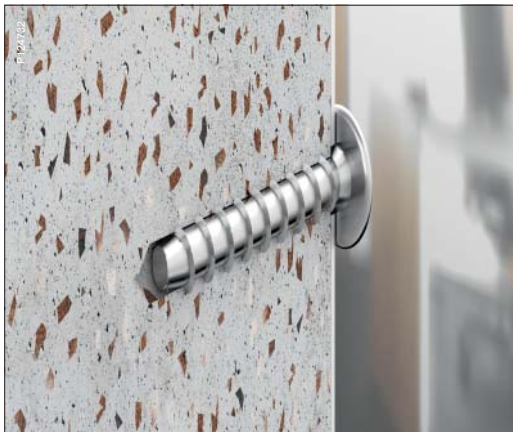
TSS electroplated steel

x

	Self-tapping collar screws, Hex/Ph TSB electroplated steel	x
	Collar screws, Hex/Ph TST electroplated steel	x
	Installation screws, Ph TSC electroplated steel TSC-C5M Stainless acid-proof	x
	Installation screws, Ph TSF electroplated steel	x
	Installation screws, Ph TSI electroplated steel	x
	Installation screws, Ph TMP-C3 electroplated steel	x
	Installation screws with cup washer, Ph TFT-IS electroplated steel	x
	Metric screws, Ph MRX electroplated steel	x
	Through bolts TEX M6 - M12	x
	Wedge brass anchors TMA M6 - M10	x
	Wedge steel anchors TSA M6 - M12	x
	Universal anchors SEVENHOOK, SVH Ø 8 mm drill	x

Concrete screws

Thorsman MULTI-MONTI MMS



Description

The Thorsman range of concrete screws includes hardened steel screws for direct installation in hammer drilled holes in solid, hard materials like concrete and solid bricks. The concrete screws can be used in indoor or outdoor applications.

For outdoor applications, electroplated Protect 4 screws (C4) are specially suitable. Acid-proof stainless steel screws (C5M) are available for extreme environments.

The range also includes a mounting tool for the eye screw, magnetic socket drivers for hexagon head screws and a screw bit T30.

Application

Suitable for assembly of wall trunking and cable ladder brackets in concrete and solid bricks. Used directly without plastic plug.

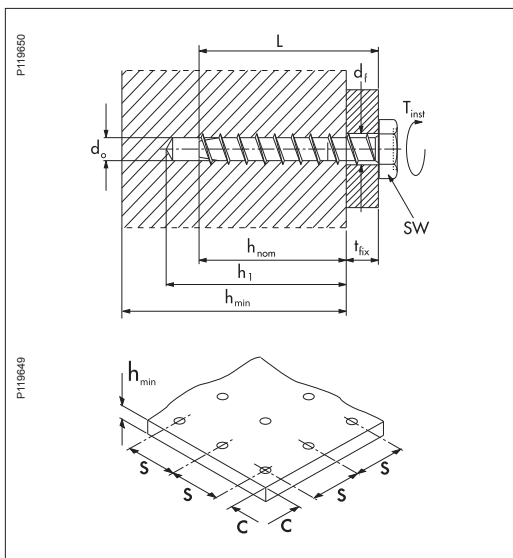
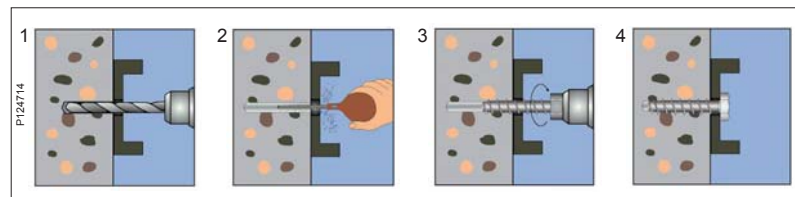
Benefits

- Low stress induction allows installation close to concrete or brick edge.
- Captive fixing.
- Corrosion resistant.
- Fast installation.
- Removable.
- Different head types for different applications.

Technical and material data

Material	Hardened steel, electroplated. Also available in Protect 4 C4 and acid-proof stainless steel C5M.
Standards	ETA 05/0010, ETA 05/0011, DIBt no. Z-21.1-1503.

Installation



Technical information










		L	t _{fix}	SW	d _i	h ₁	Ø d ₀	h _{nom}	T _{inst}
		mm	mm	mm	mm	mm	mm	mm	Nm
MMS-P 5x30	⊙	30	1	T25	6	35	4	30	8
MMS-P 5x50		50	15	T25	6	40	4	35	8
MMS-P 6x30		30	1	T30	7	35	5	30	12
MMS-P 7.5x45 ¹⁾		45	1	13	9	55	6	45	20
MMS-MS 7.5x45 ²⁾	⊙	45	1	13	9	55	6	45	20
MMS-S 6x40		40	5	10	7	45	5	35	12
MMS-S 6x50 ¹⁾		50	5	10	7	55	5	45	12
MMS-S 6x60 ¹⁾		60	15	10	7	55	5	45	12
MMS-S 7.5x35		35	1	13	9	40	6	35	20
MMS-S 7.5x40		40	5	13	9	45	6	35	20
MMS-S 7.5x50 ¹⁾		50	5	13	9	55	6	45	20
MMS-S 10x60 ¹⁾		60	5	16	12	65	8	55	50
MMS-S 7.5x50/65 ³⁾		50	5	13	9	70	6	45	20
MMS-S 10x70/85 ³⁾		70	5	16	12	75	8	65	50
MMS-MF 6x40	⊙	40	5	10	7	45	5	35	12
MMS-MF 6x50 ¹⁾		50	5	10	7	55	5	45	12
MMS-MF 6x60 ¹⁾		60	15	10	7	55	5	45	12
MMS-MF 7.5x50 ¹⁾		50	5	13	9	55	6	45	20
MMS-MF 7.5x70 ²⁾		70	5	13	9	75	6	65	20
MMS-R 6x40	⊙	40	5	-	7	50	5	40	12
MMS-I 7.5x60 ²⁾	⊙	60	5	13	9	65	6	55	20

¹⁾ DIBt Zulassung Nr. Z-21.1-1503

²⁾ ETA 05/0010

³⁾ Acid-proof stainless steel A4

Range Screws

Type	Dimensions Øxlength (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.		
With pan head							
Concrete screw with pan head. Recess T-20, T-30 or T-40. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Material: Steel, electroplated.							
P11752		MMS-P Recess T-20	5x30	200	3606480214509	20062416	IMT38040
		MMS-P Recess T-20	5x50	200	3606480214516	20062417	IMT38041
		MMS-P Recess T-30	6x30	100	3606480214431	20062409	IMT38033
		MMS-P Recess T-40	7.5x45	100	3606480214448	20062410	IMT38034
With flange head							
Concrete screw with flange head 17 mm. Recess T-30. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Material: Steel, electroplated.							
P11754		MMS-MS	7.5x45	50	3606480214479	20062413	IMT38037
With hexagon head							
Concrete screw with hexagon head. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Material: Steel, electroplated.							
P11757		MMS-S Wrench width 13 mm	7.5x35	100	3606480214370	20062403	IMT38027
		MMS-S Wrench width 16 mm	10x60	50	3606480214400	20062406	IMT38030
With hexagon head, washer enclosed							
Concrete screw with hexagon head. Washer 7x16x1.5 enclosed. Wrench width 10 mm. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Material: Steel, electroplated.							
P11757		MMS-S	6x40	100	3606480214523	20062418	IMT38042
		MMS-S	6x50	100	3606480214486	20062414	IMT38038
		MMS-S	6x60	100	3606480214493	20062415	IMT38039
With hexagon head, washer enclosed							
Concrete screw with hexagon head. Washer 8x19x1.5 enclosed. Wrench width 13 mm. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Material: Steel, electroplated.							
P11757		MMS-S	7.5x40	100	3606480214387	20062404	IMT38028
		MMS-S	7.5x50	50	3606480214394	20062405	IMT38029
With hexagon head, C4							
Concrete screw with hexagon head. Wrench width 16 mm. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Corrosivity class C4. Material: Steel, electroplated Protect 4.							
P11757		MMS-S	10x60	50	3606480214530	20062419	IMT38043
With hexagon head, C5M							
Concrete screw with hexagon head. Wrench width 16 mm. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Corrosivity class C5M. Material: Stainless steel AISI316, phosphated steel (function tip).							
P11755		MMS-S	10x70/85	25	3606480214424	20062408	IMT38032
With hexagon head, washer enclosed, C5M							
Concrete screw with hexagon head. Washer 8.5x24x2 enclosed. Wrench width 13 mm. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Corrosivity class C5M. Material: Stainless steel AISI316, phosphated steel (function tip).							
P11755		MMS-S	7.5x50/65	50	3606480214417	20062407	IMT38031
With hexagon head and combined washer							
Concrete screw with hexagon head and combined washer. Wrench width 8 mm. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Material: Steel, electroplated.							
P11751		MMS-MF	6x40	100	3606480214578	20062423	IMT38047
		MMS-MF	6x50	100	3606480214585	20062424	IMT38048
		MMS-MF	6x60	50	3606480214592	20062425	IMT38049

Range screws

Type	Dimensions Øxlength (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
With hexagon head and combined washer					
Concrete screw with hexagon head and combined washer. Wrench width 10 mm. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Material: Steel, electroplated.					
MMS-MF	7.5x50	50	3606480214608	20062426	IMT38050
MMS-MF	7.5x70	50	3606480214615	20062427	IMT38051
With hexagon head and combined washer, C4					
Concrete screw with hexagon head and combined washer. Wrench width 8 mm. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Corrosivity class C4. Material: Steel, electroplated Protect 4.					
MMS-MF	6x40	100	3606480214547	20062420	IMT38044
MMS-MF	6x60	50	3606480214554	20062421	IMT38045
Eye screw					
Concrete eye screw. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Material: Steel, electroplated.					
MMS-R	6x40	100	3606480214462	20062412	IMT38036
With hexagon head					
Concrete screw with hexagon head and internal metric thread. Combined internal thread M8/M10. Wrench width 13 mm. Suitable for concrete and solid brick materials. Mounting with cordless screwdriver or wrench. Material: Steel, electroplated.					
MMS-I	7.5x60	25	3606480214455	20062411	IMT38035

Range tool, sockets and bits

Mounting tool					
Mounting tool for concrete eye screw MMS-R. Material: Steel, electroplated.					
Mounting tool	16x40	1	3606480214622	20062428	IMT38052
Magnetic socket drivers					
Mounting tool with magnet for hexagon head screws. Material: Steel.					
10x45 for 10 mm screws	10x45	1	3606480214639	20062429	IMT38053
13x55 for 13 mm screws	13x45	1	3606480214646	20062430	IMT38054
Screw bit					
Screw bit T30, for use with an extension socket. Material: Steel.					
T30 Bits x25	6.25x25	2	3606480214653	20062431	IMT38055

Max. recommended loads for MULTI-MONTI Screw-In-Anchors in concrete and masonry

Anchor size	MMS-5			MMS-6			MMS-7.5			MMS-10		
Max. recommended tension load of a single anchor without edge influence												
Cracked concrete C 20/25	kN	no	1.8	no	1.7	2.7	no	2.6	3.8	3.6	4.9	
Non-cracked concrete C 20/25	kN	1.9	2.6	1.9	2.4	3.8	2.2	3.7	5.3	5.0	6.8	
Max. recommended shear load of a single anchor without edge influence												
Cracked concrete C 20/25	kN	no	2.0	no	1.5	3.1	no	2.4	3.4	4.5	7.9	
Non-cracked concrete C 20/25	kN	no	2.0	no	2.1	3.1	1.9	3.4	3.4	6.3	7.9	
Max. recommended bending load of a single anchor												
	Nm	no	no	no	5.1	5.1	9.4	9.4	9.4	18.7	18.7	
Dimensions of the concrete member and installation data												
Embedment	$h_{nom} \geq$	mm	30	35	30	35	45	35	45	55	55	65/75
Min. spacing	$s_{min} =$	mm	35	35	40	40	40	40	40	40	50	50
Min. edge distance	$c_{min} =$	mm	35	35	40	40	40	40	40	40	50	50
Thickness of the concrete	$h_{min} =$	mm	-	-	-	100	100	100				120



Description

Universal screw (electrician's screw) with panhead and Phillips PH2 recess. Available both in hardened, electroplated steel in corrosivity class C2 and in acid-proof stainless steel in corrosivity class C5M.

Applications

Suitable for wood, wood fibreboard and plasterboard, and together with plugs. Not for use in load bearing timber structures.

Benefits, general

- Documented quality
- High pitch – much faster than conventional wood screws
- Extra sharp point – no hole notch necessary in soft materials
- Fully threaded – works well in thin materials
- Specially designed for electricians' needs
- Durable packaging

Benefits TEL-C5M

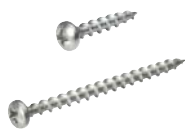
- Type-approved in category C5M
- Corrosion-classified in category C5M for installations in harsh environments

Technical data

Material TEL	Hardened, electroplated steel
Material TEL-C5M	Acid-proof stainless steel AISI 316
Standards and regulations ISO	<ul style="list-style-type: none"> • Corrosivity category C5M in accordance with SS-EN 12944-2 • Construction Regulations issued by the National Board of Housing, Building and Planning (BKR)

Range

Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Universal screw TEL					
Universal screw with panhead, Phillips PH2 recess. Single thread, sharp point. Fully threaded. Specially designed for electricians' needs. Suitable for wood, wood fibreboard, plasterboard, and together with plugs. Not for use in load bearing timber structures. Material: Hardened, electroplated steel.					
TEL	4.4x21	100	3606480330377	20064000	IMT38056
	4.4x25	100	3606480330384	20064001	IMT38057
	4.4x35	100	3606480330391	20064002	IMT38058
	4.4x45	100	3606480330407	20064003	IMT38059
	4.4x58	100	3606480330414	20064004	IMT38060
	4.4x69	100	3606480330421	20063999	IMT38061
Universal screw TEL-C5M					
Universal screw with panhead, Phillips PH2 recess. Single thread, sharp point. Fully threaded. Specially designed for electricians' needs. Suitable for wood, wood fibreboard, plasterboard, and together with plugs. Not for use in load bearing timber structures. Corrosivity class C5M. Material: Acid-proof stainless steel.					
TEL-C5M	4.4x21	100	7315883760150	20051469	3760150
	4.4x25	100	7315880115144	20051470	3760155
	4.4x35	100	7315883760167	20051471	3760160

P128134
P128131

P128128





Description

Universal screw with panhead and Phillips PH2 recess.

Applications

Suitable for wood, wood fibreboard and plasterboard, and together with plugs. Not for use in load bearing timber structures.

Benefits

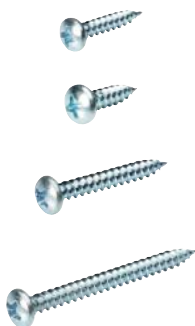
- Documented quality
- Twin thread – fast and easy installation
- High pitch – much faster than conventional wood screws
- Extra sharp point – no hole notch necessary in soft materials
- Fully threaded – works well in thin materials
- Durable packaging

Technical data

Material	Hardened, electroplated steel
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Range

P126116
P126119
P126123
P126125



Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Universal screw TGS					
Universal screw with panhead, Phillips PH2 recess. Twin thread, sharp point. Fully threaded. Suitable for wood and wood fibreboard and together with plugs. Not for use in load bearing timber structures. TGS-4,2x25 also in big-pack. Material: Hardened, electroplated steel.					
TGS-3,5x19	3.5x19	100	7315883709814	20033269	3709810
TGS-3,5x32	3.5x32	100	7315880054825	20033273	3709815
TGS-4,2x13	4.2x13	100	7315883709838	20033274	3709830
TGS-4,2x16	4.2x16	100	7315880055235	20033275	3709835
TGS-4,2x19	4.2x19	100	7315883709845	20033276	3709840
TGS-4,2x25	4.2x25	100 1000	7315880054832 7332418020077	20033277 20060181	3709845 3709846
TGS-4,2x31	4.2x31	100	7315883709852	20033278	3709850
TGS-4,2x38	4.2x38	100	7315880054849	20033279	3709855
TGS-4,2x45	4.2x45	100	7315883709869	20033280	3709860
TGS-4,2x65	4.2x65	100	7315880054856	20033281	3709865

Self-tapping screws

Thorsman TGE and TSE

Self-tapping screws



Description TGE

Self-tapping screw with panhead and Phillips PH2 recess.

Applications

Suitable for installations of sheet metal without pilot drilling, maximum 2x1.5 mm.

Benefits

- Documented quality
- Penetrates 2x1.5 mm sheet metal without pilot drilling
- Single thread – for optimum drilling capacity
- Fully threaded – works well in thin materials
- Durable packaging

Technical data

Material	Hardened, electroplated steel
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Range

P126111
P126114



Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Self-tapping screw TGE					
Screw with panhead, Phillips PH2 recess. Drill point. Single thread. Fully threaded. Suitable for mounting in sheet metal without pilot drilling, maximum 2x1.5 mm. Material: Hardened, electroplated steel.					
TGE 3,5x11	3.5x11	100	7315883709715	20034538	3709710
TGE 4,2x16	4.2x16	100	7315883709722	20034539	3709720
TGE 4,2x19	4.2x19	100	7315883709739	20034540	3709730
TGE 4,2x25	4.2x25	100	7315883709746	20034541	3709740
TGE 4,2x32	4.2x32	100	7315883709753	20034542	3709750
TGE 4,8x50	4.8x50	100	7315883709760	20034543	3709760



Description TSE

Self-tapping screw with large thin head and Phillips PH2 recess.

Applications

Suitable for the fixing of sheet metal to sheet metal, maximum 2x1.5 mm.

Benefits

- Documented quality
- Drill point and self-tapping thread for installation in steel or sheet metal
- Penetrates 2x1.5 mm sheet metal without pilot drilling
- Extra broad head, 11.2 mm – good function in thin and soft materials
- Fully threaded – works well in thin materials
- Durable packaging

Technical data

Material	Hardened, electroplated steel
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Range

P126173
P126175



Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Self-tapping screw TSE					
Screw with large thin head, Phillips PH2 recess. Drill point. Single thread. Fully threaded. Suitable for the fixing of sheet metal to sheet metal, maximum 2x1.5 mm. TSE-4,2x13 also in big-pack. Material: Hardened, electroplated steel.					
TSE-4,2x13	4.2x13	100	7315883782619	20034504	3782610
		1000	7332418020176	20060188	3782611
TSE-4,2x31	4.2x31	100	7315883782626	20034505	3782620



Description TSS

Self-tapping screw with panhead and Phillips PH1 recess.

Applications

Suitable for the fixing of sheet metal to sheet metal, maximum 2x1.5 mm.

Benefits

- Documented quality
- Drill point and self-tapping thread for installation in steel or sheet metal
- Penetrates 2x1.5 mm sheet metal without pilot drilling
- Extra broad head, 11.2 mm – good function in thin and soft materials
- Fully threaded – works well in thin materials
- Durable packaging

Technical data

Material	Hardened, electroplated steel
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Range

P81320



Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Self-tapping screw TSS					
Screw with panhead, Phillips PH1 recess. Drill point. Single thread. Fully threaded. Suitable for the fixing of sheet metal to sheet metal, maximum 2x1.5 mm. Material: Hardened, electroplated steel.					
TSS	2.9x9.5	500	3606480330438	20064005	IMT38062



Description TSB

Self-tapping collar screw with 1/4" hexagon head and Phillips PH2 recess.

Applications

Suitable for sheet steel, maximum 2x1.5 mm.

Benefits

- Documented quality
- Self-tapping screw with drill point to penetrate steel or metal
- Collar Ø 8.3 mm – with the function of a small washer
- Penetrates 2x1.5 mm sheet metal without pilot drilling
- Fully threaded – works well in thin materials
- Works well together with magnetic sockets TST-V 9x100 and TST-V 10x45, and long Phillips bits PH 2x110, in confined spaces
- Durable packaging

Technical data

Material	Hardened, electroplated steel
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Range

P126150

P126154

P126157



Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Self-tapping collar screw TSB					
Collar screw with 1/4" hexagon head, Phillips PH2 recess. Drill point. Single thread. Fully threaded. Suitable for sheet steel, maximum 2x1.5 mm. TSB-4,2x19 also in big-pack. Material: Hardened, electroplated steel.					
TSB-3,5x13	3.5x13	100	7315883780615	10002002	3780610
TSB-3,5x19	3.5x19	100	7315880047421	10002003	3780615
TSB-3,5x25	3.5x25	100	7315883780622	10002004	3780620
TSB-4,2x13	4.2x13	100	7315883780714	10002007	3780710
TSB-4,2x19	4.2x19	100	7315880047445	10002008	3780715
		1000	7332418020121	20060184	3780716
TSB-4,2x25	4.2x25	100	7315883780721	10002009	3780720
TSB-4,2x32	4.2x32	100	7315880047452	10002010	3780725
TSB-4,2x38	4.2x38	100	7315883780738	10002011	3780730



Description

Collar screw with 1/4" hexagon head and Phillips PH2 recess.

Applications

Suitable for wood and wood fibreboard, sheet steel, and together with plugs.

Benefits

- Documented quality
- Extra sharp-pointed, self-tapping screw
- Twin steep-pitch thread – fast and easy running
- Collar Ø 8.3-10,1 mm – with the function of a small washer
- Penetrates 2x0,9 mm sheet metal without pilot drilling
- Fully threaded – works well in thin materials
- Works well together with magnetic sockets TST-V 9x100 and TST-V 10x45, and long Phillips bits PH 2x110, in confined spaces
- Durable packaging

Technical data

Material	Hardened, electroplated steel
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Range

P126142
P126144
P126148



Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Collar screw TST					
Collar screw with 1/4" hexagon head, Phillips PH2 recess. Twin thread. Fully threaded. Suitable for wood and wood fibreboard, sheet steel, and together with plugs. TST-4,2x19 and TST-4,2x25 also in big-pack. Material: Hardened, electroplated steel.					
TST-4,2x13	4.2x13	100	7315880044406	10001990	3780210
TST-4,2x19	4.2x19	100 1000	7315880044413 7332418020091	10001991 20060192	3780215 3780216
TST-4,2x25	4.2x25	100 1000	7315880044420 7332418020107	10001992 20060193	3780220 3780221
TST-4,2x32	4.2x32	100	7315880044437	10001993	3780225
TST-4,2x38	4.2x38	100	7315880044444	10001994	3780230
TST-4,2x51	4.2x51	100	7315880044451	10001995	3780235



Description

Collar screw with large thin head and Phillips PH2 recess.

Applications

Works in most materials – metal studwork, cabinets, wood, plugs.

Benefits, general

- Documented quality
- Extra sharp-pointed screw with self-tapping thread
- Twin steep-pitch thread – fast and easy running
- Penetrates 2x0.9 mm sheet metal without pilot drilling (not TSC-C5M)
- Extra broad head, 11.2 mm – good function in thin and soft materials
- Works in most materials – sheet metal studwork, cabinets, wood, plugs
- Durable packaging

Benefits, TSC-C5M

- Type-approved in category C5M
- Corrosion-classified in category C5M for installations in harsh environments

Technical data

Material TSC	Hardened, electroplated steel
Material TSC-C5M	Acid-proof stainless steel AISI 316
Standards and regulations	• Corrosivity category C5M in accordance with SS-EN 12944-2 • Construction Regulations issued by the National Board of Housing, Building and Planning (BKR)

Range

P126169
P126161

P126165

P126169

P126168

Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Installation screw TSC					
Screw with large thin head, Phillips PH2 recess. Twin thread. TSC-4,2x13, 4,2x25, 4x2x31 fully threaded, TSC-4,2x45, 4,2x65, 4,2x85 part-threaded. Suitable when jointing two metal sheets together, maximum thickness 2x0.9 mm. Works in most materials – metal studwork, cabinets, wood, plugs. TSC-4,2x13 and TSC-4,2x25 also in big-pack. Material: Hardened, electroplated steel.					
TSC-4,2x13 Fully threaded	4.2x13	100 1000	7315883782015 7332418020138	20034493 20060185	3782010 3782011
TSC-4,2x25 Fully threaded	4.2x25	100 1000	7315883782022 7332418020145	20034494 20060186	3782020 3782021
TSC-4,2x31 Fully threaded	4.2x31	100	7315883782039	20034495	3782030
TSC-4,2x45 Part-threaded	4.2x45	100	7315883782046	20034497	3782040
TSC-4,2x65 Part-threaded	4.2x65	100	7315883782053	20034498	3782050
TSC-4,2x85 Part-threaded	4.2x85	50	7315883782060	20034499	3782060
Screw with thin head, Phillips PH2 recess. Single thread, fully threaded, sharp point. Suitable when jointing two metal sheets together, maximum thickness 2x0.9 mm. Works in most materials – metal studwork, cabinets, wood. Material: Hardened, phosphate-coated steel.					
TSC-FB 4,2x14	4.2x14	100	3606480507403	20076702	IMT37331
Installation screw TSC-C5M					
Screw with large thin head, Phillips PH2 recess. Sharp point, twin thread. Fully threaded. Suitable when jointing two metal sheets together, maximum thickness 2x0.9 mm. Works in most materials – metal studwork, cabinets, wood, plugs. Corrosivity category C5M. Material: Acid-proof stainless steel.					
TSC-C5M-4,2x25	4.2x25	100	7315883782268	20051467	3782260
TSC-C5M-4,2x32	4.2x32	100	7315880115137	20051468	3782265

**Description TSF**

Installation screw with raised countersunk head and Phillips PH2 recess.

Applications

Suitable for mounting directly into plasterboard.

Benefits

- Documented quality
- Extra sharp-pointed screw with wood screw thread
- Installs directly into plasterboard
- Fully threaded – works well in thin materials
- Durable packaging

Technical data

Material	Hardened, electroplated steel
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RangeP128169
P128172

Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Installation screw TSF					
Installation screw with raised countersunk head, Phillips PH2 recess. Fully threaded. Suitable for mounting directly into plasterboard. TSF-4,8x25 also in big-pack. Material: Hardened, electroplated steel.					
TSF-4,8x25	4.8x25	100 1000	7315883782428 7332418020169	20033449 20060189	3782420 3782421
TSF-4,8x35	4.8x35	100	7315883782435	20033450	3782430
TSF-4,8x45	4.8x45	100	7315883782442	20033451	3782440

**Description TSI**

Installation screw with countersunk head and Phillips PH2 recess.

Applications

Suitable for mounting of plasterboard panels to steel and timber studwork.

Benefits

- Documented quality
- Extra sharp-pointed screw with steep-pitch thread – for fast mounting
- Penetrates 0.7 mm sheet metal without pilot drilling
- Countersunk head – easy to conceal in the plasterboard
- Fully threaded – works well in thin materials
- Durable packaging

Technical data

Material	Hardened, electroplated steel
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RangeP128176
P128178

Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Installation screw TSI					
Screw with countersunk head, Phillips PH2 recess. Suitable for mounting of plasterboard panels to steel and timber studwork. Also in big-pack. Material: Hardened, electroplated steel.					
TSI-3,9x32	3.9x32	100 1000	7315883782817 7332418020183	20033454 20060190	3782810 3782811
TSI-3,9x41	3.9x41	100 1000	7315883782824 7332418020190	20033455 20060191	3782820 3782821



Description TMP-C3

Installation screw with raised countersunk head and Phillips PH2 recess. Corrosivity category C3.

Applications

Suitable for direct use in plasterboard and for 4 mm drilled holes in concrete and bricks.

Benefits

- Documented quality
- Type-approved
- Corrosion classified in category C3
- Raised countersunk head
- Fully threaded – works well in thin materials
- Durable packaging

Technical data

Material	Hardened, electroplated steel
Standards and regulations	Corrosivity category C3 in Accordance with SS-EN ISO 12944-2

Range

Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Installation screw TMP-C3					
Installation screw with raised countersunk head and Phillips PH2 recess. Sharp point, fully threaded. Suitable for direct use in plasterboard and for 4 mm drilled holes in concrete and bricks. Corrosivity category C3. Material: Hardened, electroplated steel.					
TMP-C3-5,0x25	5.0x25	100	7315883764011	20051496	3764010
TMP-C3-5,0x32	5.0x32	100	7315880115113	20051497	3764015
TMP-C3-5,0x38	5.0x38	100	7315883764028	20051498	3764020
TMP-C3-5,0x41	5.0x41	100	7315880115120	20051499	3764025
TMP-C3-5,0x45	5.0x45	100	7315883764035	20051500	3764030

P126136
P126139



Description TFT-IS

Installation screw with insulated cup washer and cross-slotted head with Phillips PH2 recess.

Applications

Provided with an insulating cup washer for screw-head protection when installing single-insulated wires in for instance trunking.

Benefits

- Documented quality
- Works in many different materials, such as wood, plasterboard, concrete, bricks (pre-drill a Ø 4 mm hole), sheet metal studwork
- Fully threaded – works well in thin materials
- Allows for single-insulated wires to be installed in e.g. trunking
- Durable packaging

Technical data

Material	Screw: Hardened, electroplated steel Cup washer: PP, transparent
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Range

Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Installation screw TFT-IS with cup washer					
Installation screw with cross-slotted head type PH2. Sharp point, fully threaded. High pitch for quick mounting. Provided with a transparent cup washer for screw-head protection. To be used when installing single-insulated wire in for instance trunking. Material: Hardened steel, electroplated, and PP.					
TFT-IS 5x32	5x32	100	7332418018203	20057379	4020210

P89119





Description

Screw with metric thread and panhead with Phillips PH2 recess. Hexagon nut with metric thread, round washer.

Applications

Suitable for assembly and mounting of components.

Benefits

- Documented quality
- Range M3–M8 with screw, nut and washer
- Metric screw with panhead and Phillips PH2 recess
- Durable packaging

Technical data

Material	Screw:	Electroplated steel 4.8
	Nut:	Electroplated steel 6.8
	Washer:	Electroplated steel
Standards	Screw:	ISO 7045
	Nut:	ISO 4032
	Washer:	DIN 125A

Range

Type	Dimension Ø x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Metric screw MRX					
Screw with metric thread and panhead, Phillips PH2 recess. Suitable for assembly and mounting of components. Mounting with cross-point screwdriver or power screwdriver. Material: Electroplated steel 4.8.					
MRX-M3x25	3x25	100	7315883702013	20039868	3702010
MRX-M3x45	3x45	100	7315883702020	20039869	3702020
MRX-M4x25	4x25	100	7315883702044	20039870	3702040
MRX-M4x50	4x50	100	7315883702051	20039871	3702050
MRX-M5x25	5x25	100	7315883702075	20039872	3702070
MRX-M5x50	5x50	100	7315883702082	20039873	3702080
MRX-M6x25	6x25	100	7315883702105	20039874	3702100
MRX-M6x50	6x50	100	7315883702112	20039875	3702110
MRX-M8x25	8x25	100	7315883702136	20039876	3702130
MRX-M8x50	8x50	50	7315883702143	20039877	3702140
Dimension (mm)					
Nut M6M					
Hexagon nut with metric thread, suitable for screw MRX. Material: Electroplated steel 6.8.					
M6M-M3	M3	100	7315883702266	20039878	3702260
M6M-M4	M4	100	7315880054870	20039879	3702265
M6M-M5	M5	100	7315883702273	20039880	3702270
M6M-M6	M6	100	7315880054887	20039881	3702275
M6M-M8	M8	100	7315883702280	20039882	3702280
Dimension Inner Ø/Outer Ø/t (mm)					
Washer RB					
Round washer, suitable for screw MRX. Material: Electroplated steel.					
RB3,2	3.2/7/0.5	100	7315883702211	20039883	3702210
RB4,3	4.3/9/0.8	100	7315880054894	20039884	3702215
RB5,3	5.3/10/1.0	100	7315883702228	20039885	3702220
RB6,4	6.4/12/1.6	100	7315880054900	20039886	3702225
RB8,4	8.4/16/1.6	100	7315883702235	20039887	3702230

P126085

P126090

P126093

P126100

P126103

P126095

P126097

Through bolts

Thorsman TEX



Description

The Thorsman range of TEX through bolts includes bolts for indoor as well as outdoor applications. They are intended for installations in both concrete and natural rock materials.

The steel bolts with electroplated zinc are suitable mainly for indoor applications, the hot-dipped zinc and acid-proof stainless steel bolts are to be used in outdoor or extreme environments.

Benefits

- Fast installation with hammer and wrench
- Installs directly in concrete and natural rock materials
- No need for a clean drilled hole
- Documented quality
- High-quality anchor
- Fast-grip design, a few turns on the nut sets the anchor

Material data

Material steel bolt	Steel
Surface treatments	<ul style="list-style-type: none"> • Electroplated zinc 5 µm, C2 • Hot-dipped zinc size M6 25 µm, C3 • Hot-dipped zinc other sizes 45 µm, C3
Material stainless bolt and clips	Acid-proof stainless steel AISI 316, C5M
Temperature range	From -20°C to +60°C

Approval

SP SITAC No. SC0268-10

Technical information

Safety classes: source BKR (Swedish institute "Boverkets Konstruktionsregler"), section 2:115, first-second paragraphs.

Concrete strength

Installation information, table 1

Dim. TEX	L (mm)	Ø D (mm)	A (mm)	T max. (mm)	B (mm)	M (Nm)	Edge distance (mm)
M6 x	40	6	37	3	28*	8	60
M6 x	70	6	67	26	35*	8	60
M8 x	50	8	48	5	35*	23	80
M8 x	95	8	93	30	55	23	80
M10 x	80	10	57	7	40	35	100
M10 x	105	10	102	22	70	35	100
M12 x	85	12	82	10	60	55	120
M12 x	125	12	122	30	80	55	120

* Installation depth smaller than 40 mm only allowed in safety class 1.

The minimum allowed concrete strength for table values is C20/25.

Edge distance and c/c installation distance between through bolts

The recommended edge distance is stated in table 1 for the various dimensions. Close to a corner the minimum edge distance needs to be multiplied by 3 (C in the second picture). The distance between two through bolts installed in formation should be the stated edge distance multiplied by 2 (S in the second picture).

Smallest thickness of the concrete construction

The thickness of the concrete construction must be at least the stated installation depth multiplied by 1.5 and must not be less than 100 mm.

Drilling

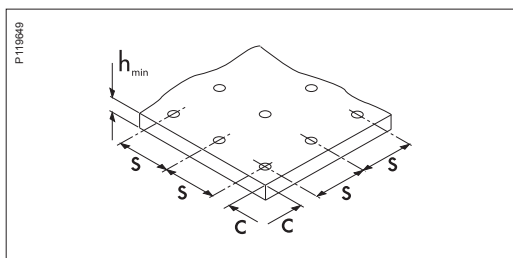
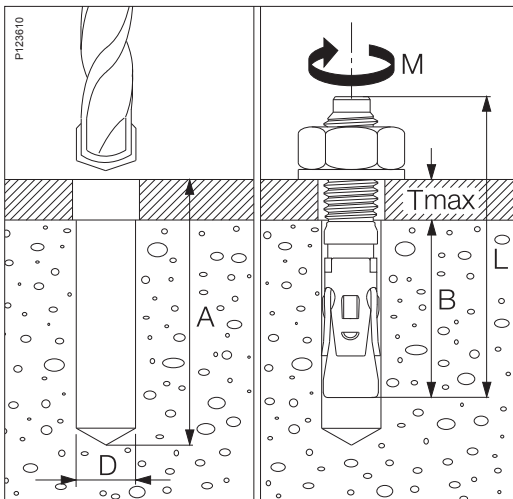
Drill the hole with a hammer drill of the same diameter as the through bolt being installed.

Installation depth

For minimum installation depth, see table 1.

Installation

The through bolt should be installed with a torque wrench according to values in table 1. The through bolt needs to be clean and it should not be greased or oiled prior to installation.



Corrosion

All steel fixings must have a protection against corrosion in order to stay safe over a long time.

Electroplated steel is suitable for indoor and protected outdoor use, called C2 in this Technical leaflet.

Hot-dip galvanized steel is suitable for outdoor applications, called C3 or C4 in this Technical leaflet, depending on the thickness of the zinc layer.

Acid proof stainless steel is suitable for aggressive indoor and outdoor environments, called C5M in this Technical leaflet.

Atmospheric corrosivity categories and examples of typical environments

Corrosivity category	Examples of typical environments in a temperate climate (informative only)	
	Outdoors	Indoors
C1 very low	–	Heated buildings with clean atmospheres, e.g. offices, shops, schools, hotels.
C2 low	Atmospheres with low level of pollution. Mostly rural areas.	Unheated buildings where condensation may occur, e.g. depots, sports halls, multi-storey car parks.
C3 medium	Urban and industrial atmospheres, moderate sulphur dioxide pollution. Coastal areas with low salinity.	Production rooms with high humidity and some air pollution, e.g. food-processing plants, laundries, breweries, dairies.
C4 high	Industrial areas and coastal areas with moderate salinity.	Chemical plants, swimming-baths, coastal ship- and boat yards, car-washes.
C5-I very high (industrial)	Industrial areas with high humidity and aggressive atmosphere.	Buildings in areas with almost permanent condensation and with high pollution.
C5-M very high (marine)	Coastal and offshore areas with high salinity.	Buildings in areas with almost permanent condensation and with high pollution.

Choice of product per corrosivity/safety classification, table 2

Corrosivity classification	Safety classification	
	1	2
C1	Electroplated	Electroplated
C2	Hot-dip galvanized	Hot-dip galvanized
C3	Hot-dip galvanized*	Hot-dip galvanized*
C4	Stainless steel A4	Stainless steel A4
C5-I	Stainless steel A4	Stainless steel A4
C5-M	Stainless steel A4	Stainless steel A4

* Not applicable for size M6 (25 µm hot-dip galv.). Choose size M8, M10 or M12 (45 µm hot-dip galv.).

Pull-out load, table 3

Design resistance and practical loading capacity. Concrete strength C20/25

Dim.	Installation depth	Serviceability limit state	Ultimate limit state		Practical loading capacity	Accidental actions
			Safety cl 1	Safety cl 2		
	(mm)	(kN)	(kN)	(kN)	(kN)	(kN)
M6	28	4.5	2.8	2.5	2.1	5.6
M8	35	8.7	4.5	4.1	3.4	9.0
	55	9.0	5.9	5.3	4.4	11.7
M10	40	9.9	5.2	4.7	3.9	10.3
	70	16.2	10.6	9.6	8.0	21.1
M12	60	20.4	10.7	9.7	8.1	21.4
M12	80	20.7	15.0	13.6	11.4	30.0

Shear load, table 4

Design resistance and practical loading capacity. Concrete strength C20/25.

Dimension	Installation depth	Ultimate limit state		Practical loading capacity	Accidental actions
		Safety cl 1	Safety cl 2		
	(mm)	(kN)	(kN)	(kN)	(kN)
M6	28	2.9	2.6	2.2	5.7
M8	35	6.4	5.8	4.8	12.7
M10	40	9.8	8.9	7.4	19.5
M12	60	14.3	13.0	10.8	28.6

Range

Type	Dimensions Ø x length (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Corrosivity class C2					
Through bolt including nut and washer. Intended mainly for indoor installations in concrete or natural rock material. Fast-grip design, the bolt is set with a few turns of the nut. Material: Steel, electroplated zinc.					
TEX-C2 M6x40	M6x40	100	3606480214660	20062374	IMT38005
TEX-C2 M6x70	M6x70	100	3606480214677	20062375	IMT38006
TEX-C2 M8x50	M8x50	100	3606480214684	20062376	IMT38007
TEX-C2 M8x95	M8x95	50	3606480214691	20062377	IMT38008
TEX-C2 M10x60	M10x60	50	3606480214707	20062378	IMT38009
TEX-C2 M10x105	M10x105	25	3606480214714	20062379	IMT38010
TEX-C2 M12x85	M12x85	25	3606480214721	20062380	IMT38011
TEX-C2 M12x125	M12x125	25	3606480214738	20062381	IMT38012
Corrosivity class C3					
Through bolt including nut and washer. Suitable in installations in concrete or natural rock material, outdoors as well as in extreme indoor environments. Fast-grip design, the bolt is set with a few turns of the nut. Material: Steel, hot-dipped zinc.					
TEX-C3 M6x40	M6x40	100	3606480214745	20062382	IMT38013
TEX-C3 M6x70	M6x70	100	3606480214752	20062383	IMT38014
TEX-C3 M8x50	M8x50	100	3606480214769	20062384	IMT38015
TEX-C3 M8x95	M8x95	50	3606480214776	20062385	IMT38016
TEX-C3 M10x60	M10x60	50	3606480214783	20062386	IMT38017
TEX-C3 M10x105	M10x105	25	3606480214790	20062387	IMT38018
TEX-C3 M12x85	M12x85	25	3606480214806	20062388	IMT38019
TEX-C3 M12x125	M12x125	25	3606480214813	20062389	IMT38020
Corrosivity class C5M					
Through bolt including nut and washer. Suitable in installations in concrete or natural rock material, outdoors as well as in extreme indoor environments. Fast-grip design, the bolt is set with a few turns of the nut. Material: Stainless steel, acid-proof.					
TEX-C5M M6x40	M6x40	100	3606480214820	20062390	IMT38021
TEX-C5M M6x70	M6x70	100	3606480214837	20062391	IMT38022
TEX-C5M M8x50	M8x50	100	3606480214844	20062392	IMT38023
TEX-C5M M8x95	M8x95	50	3606480214851	20062393	IMT38024
TEX-C5M M10x60	M10x60	50	3606480214868	20062394	IMT38025
TEX-C5M M10x105	M10x105	25	3606480214875	20062395	IMT38026

P117745

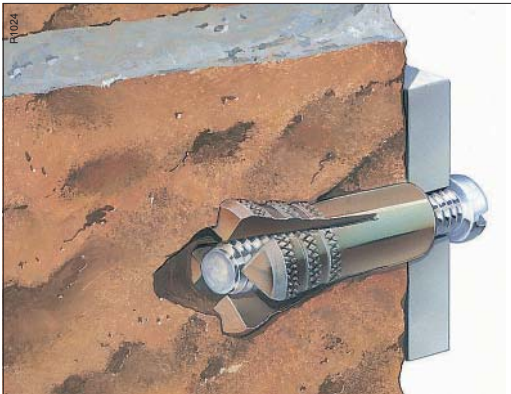


P117744



P117746





Description

Brass anchor with metric fixing point.

Applications

Wherever a fixing point flush with the surface is needed, in either ceiling, wall or floor surfaces. Suitable for concrete, stone, solid bricks and other solid materials.

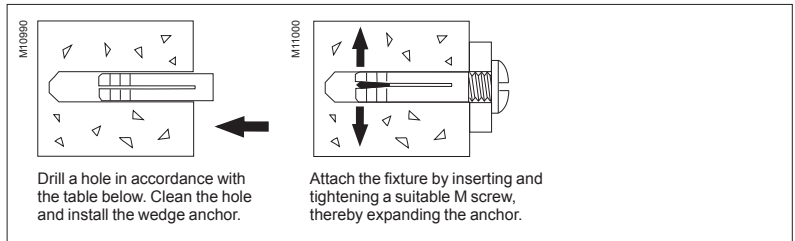
Benefits

- Captive fixing
- No projecting parts
- Shallow installation depth
- No special tools required
- Corrosion-resistant

Material data

Material Brass

Installation



Technical data (1 kN approx. 100 kg)

Type Inside thread x L mm	Drill Ø mm	Min. hole depth mm	Min. screw penetration depth ¹⁾ mm	Recommended load ²⁾ Shear/Pull-out in concrete 25 N/mm ² kN
TMA-M6x24	8	27	24	1.5/0.65
TMA-M8x30	10	34	30	2.0/1.1
TMA-M10x34	12	38	34	2.5/1.6

¹⁾ For full expansion.

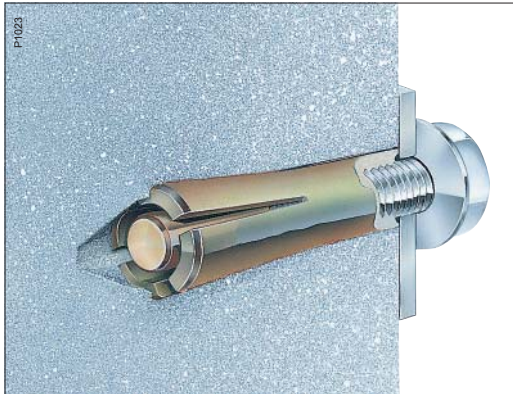
²⁾ Safety factor 2.5 for shear and 3 for pull-out load.

Range

PT1024



Type	Dimensions Ø x length (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Wedge brass anchor with metric fixing point. Intended for use wherever a fixing point flush with the surface is needed. Suitable for concrete, stone, solid bricks and other solid materials. Material: Brass.					
TMA-M6x24	M6x24	100	7315882820107	10001250	2820108
TMA-M8x30	M8x30	100	7315882820121	10001251	2820124
TMA-M10x34	M10x34	50	7315882820145	10001252	2820140



Description

Steel anchor with metric fixing point.

Applications

Wherever a fixing point flush with the surface is needed, in either ceiling, wall or floor surfaces. Suitable for concrete, stone, solid bricks and blocks.

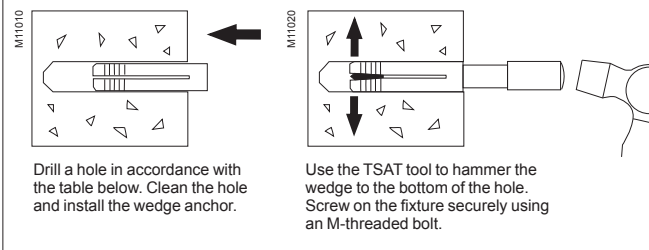
Benefits

- Captive fixing
- No projecting parts
- Shallow installation depth
- Withstands aggressive environments
- High load values
- Fireproof

Material data

Material Electroplated steel, yellow chromated

Installation



Technical data (1 kN approx. 100 kg)

Type Inside thread x L mm	Ø/min. hole depth mm	Thread diameter mm	Inside thread length mm	Min. distance to edge mm	Min. c/c distance mm	Max. recommended load ¹⁾ kN
TSA-M6x25	8/25	M6	11	70	70	1.7
TSA-M8x30	10/30	M8	15	90	90	2.8
TSA-M10x40	12/40	M10	18	120	120	4.2
TSA-M12x50	15/50	M12	21	150	150	7.4

¹⁾ Pull-out in 30 N/mm² concrete. Safety factor 5 included.

Range

Type	Dimensions Ø x length (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Anchor					
Wedge steel anchor with metric fixing point. High load values, fireproof. Intended for use wherever a fixing point flush with the surface is needed. Suitable for concrete, stone, solid bricks and blocks. Material: Electroplated steel, yellow chromated.					
TSA-M6x25	M6x25	100	7315882810108	10001236	2810109
TSA-M8x30	M8x30	100	7315882810122	10001237	2810125
TSA-M10x40	M10x40	50	7315882810146	10001238	2810141
TSA-M12x50	M12x50	50	7315882810160	10001239	2810166
Hammer tool					
Hammer tool for the above wedge steel anchors. Material: Steel.					
TSAT-M6	10/140	1	7315882810900	10001242	2810901
TSAT-M8	15/215	1	7315882810924	10001243	2810927
TSAT-M10	16/230	1	7315882810948	10001244	2810943

P79623



P80863



Universal anchors

Thorsman SEVENHOOK™ SVH

Universal anchors



Description

Stainless steel universal anchor.

Applications

For fittings close to the ceiling (with locking tab) and to suspend false ceiling fittings, pipework and ventilation equipment. Suitable for concrete, natural stone, solid bricks and sheet metal.

Benefits

- No material fatigue
- Fire-classified and vibration resistant
- Corrosion-resistant
- Simple, secure fitting – grips immediately after driving in
- Minimal drilling depth – 30 mm

Material data

Material	Anchor: Acid-proof stainless steel wire, AISI 316
	Setting tool: Steel, pre-galvanized
	Locking tab: Stainless steel AISI 304

Installation

Technical data (1 kN approx. 100 kg)

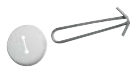
Type	Drill size	Opening for wire, tie, hanger Ø mm	Smallest drilling and insertion depth mm	Practical loading capacity ¹⁾	
	Ø mm			Concrete C25 kN	Solid brick kN
SVH-E1	8	6.5	30	1.0	0.5
SVH-E2	8	6.5	30	1.0	0.5

¹⁾ Safety factor 3 for pull-out load.

Range

Type	Dimensions W x L (mm)	Qty per package	EAN code	Internal ID-No.	Ref. No.
Universal anchor					
Stainless steel universal anchor. Intended for fittings close to the ceiling and to suspend false ceiling fittings, pipework and ventilation equipment. SVH-E1 includes 100 white caps to blank the drilled hole and one setting tool. SVH-E2 includes one setting tool. Suitable for concrete, natural stone, solid bricks and sheet metal. Material: Stainless steel AISI 316.					
SVH-E1	14/50	100	7321677818709	20066613	781870
SVH-E2	14/50	500	7321677818716	20066622	781871
Locking tab					
Locking tab for installing fittings close to the ceiling (max. 4 kg per fixing for good contact with the ceiling). For heavier fittings, the locking tab can be turned horizontally to counter downward bending (clearance). Material: Stainless steel AISI 304.					
SVH-L	11/30	25	7321677818723	20066092	781872
Setting tool					
Setting tool for a correct installation depth of the universal anchor. Material: Steel, pre-galvanized.					
SVH-T	13/80	10	7321677818730	20066019	781873

P77799



P81301



P81302







Hammer drill bits

THB

Ø 4 - 25 mm

Rotary drill with SDS taper

x



Bits & Magnetic sockets

PH, TST-V

Phillips and T20

x

Hammer drill bits

Thorsman THB



Description

Hammer drill bits for electro-pneumatic rotary-hammer drilling machines with SDS taper. Suitable for use in concrete, brick, stone and rock.

Benefits

- Special quality chrome vanadium steel
- SDS shank fits a wide range of hammer drilling machines
- Wide range including long drill bits

Standards

In accordance with DIN 50049-3.1 A.

Material data

High quality tungsten carbide tip with chrome vanadium steel shaft.

Range

P88049



Type ØxL mm	Drilling depth mm	Qty per package	EAN code	Ref. No.
Hammer drill bits intended for use in electro-pneumatic, rotary hammer-drilling machines with SDS taper. Suitable for concrete, brick, stone and rock.				
Material: Tungsten carbide tip, chrome vanadium steel shaft.				
THB 4x110	50	1	5018934947693	1788868A
THB 5x110	50	1	5018934947716	1788926A
THB 5x160	100	1	5018934947723	1788934A
THB 5.5x110	50	1	5018934947747	1788975A
THB 5.5x160	100	1	5018934947754	1788989A
THB 6x110	50	1	5018934947778	1789023A
THB 6x160	100	1	5018934947761	1789016A
THB 6.5x110	50	1	5018934947785	1789028A
THB 6.5x160	100	1	5018934947792	1789030A
THB 7x110	50	1	5018934947808	1789052A
THB 7x160	100	1	5018934947815	1789054A
THB 8x110	50	1	5018934947822	1789080A
THB 8x160	100	1	5018934947839	1789108A
THB 8x210	150	1	5018934947846	1789116A
THB 8x260	200	1	5018934947853	1789120A
THB 10x160	100	1	5018934947860	1789153A
THB 10x210	150	1	5018934947877	1789165A
THB 10x450	400	1	5018934947884	1789195A
THB 12x160	100	1	5018934947907	1789252A
THB 12x210	150	1	5018934947914	1789272A
THB 12x250	200	1	5018934947921	1789304A
THB 12x450	400	1	5018934947945	1789319A
THB 12x600	550	1	5018934947952	1789323A
THB 14x150	100	1	5018934947969	1789350A
THB 14x200	150	1	5018934947976	1789352A
THB 14x450	400	1	5018934947990	1789410A
THB 14x600	550	1	5018934948003	1789414A
THB 16x150	100	1	5018934948010	1789440A
THB 16x200	150	1	5018934948027	1789450A
THB 16x300	250	1	5018934948034	1789455A
THB 16x450	400	1	5018934948041	1789470A
THB 16x600	550	1	5018934948058	1789481A
THB 18x450	400	1	5018934948065	1789485A
THB 20x450	400	1	5018934948072	1789500A
THB 20x600	550	1	5018934948089	1789510A
THB 22x450	400	1	5018934948096	1789520A
THB 25x450	400	1	5018934948102	1789570A



Description

Bits

The Thorsman range of screw bits is adapted to the screw range with either Phillips cross recess or Torx. All bits are hexagonal with 1/4" drive end. Three lengths are available: 25 mm, 50 mm and 110 mm. The long bits are well suited for access in tight spaces. Hardened steel provides good strength durability and fit.

Benefits

- Bit range adapted to the Thorsman screw range
- Standard 1/4" hexagon drive end
- Phillips cross recess or Torx
- Long bit for access in tight spaces
- Hardened steel for good strength durability and fit

Magnetic sockets

Two 1/4" sockets suit all Thorsman 1/4" hexagon-head collar screws. The long holder is extra thin to facilitate access in tight spaces. Hardened steel provides good strength durability and fit.

Benefits

- Suit all Thorsman 1/4" hexagon-head collar screws
- Standard 1/4" hexagon drive end
- Thin and long magnetic socket for access in tight spaces
- Hardened steel for good strength durability and fit

Standards

ISO 1173-1975

DIN 3126

Material data

Hardened steel (special hardening process).

Range Screw bits

Type	Dimensions Hexagon x L	Qty per package	EAN code	Ref. No.
Phillips, for use with an extension socket				
1/4" hexagon drive end, length 25 mm. Suitable for Phillips cross recessed screws. To be used together with an extension socket. Material: Hardened steel.				
PH 2x25	1/4"x25	2	7315881772056	1772 054
PH 2x25 reduced	1/4"x25	2	7315880056294	1772 052
Phillips, for use with a screw-driver				
1/4" hexagon drive end, lengths 50 and 110 mm respectively. Suitable for Phillips cross recessed screws. To be used together with a screw-driver. Material: Hardened steel.				
PH 2x50 50 mm	1/4"x50	2	7315880055273	1772 056
PH 2x110 110 mm for tight spaces	1/4"x110	2	7315880055297	1772 058
Torx, for use with an extension socket				
1/4" hexagon drive end, length 25 mm. Suitable for Torx T10 or T20 screws. To be used together with an extension socket. Material: Hardened steel.				
T20x25 For T20 screws	1/4"x25	2	7315880115175	1720 036
Torx, for use with a screw-driver				
1/4" hexagon drive end, lengths 50 or 110 mm. Suitable for Torx T10 or T20 screws. To be used together with a screw-driver. Material: Hardened steel.				
T20x50 For T20 screws	1/4"x50	2	7315880115182	1720 038
T20x110 For T20 screws	1/4"x110	2	7315881720040	1720 040

Range Magnetic sockets

Type	Internal hexagon	Dimensions Ø x L	Qty per package	EAN code	Ref. No.
1/4" hexagon drive end, lengths 45 and 100 mm respectively. Internal hexagon with magnet. Suitable for collar screws with a 1/4" hexagon head. To be used together with a screw-driver. Material: Hardened steel.					
TST-V 10x45 45 mm	1/4"	10x45	1	7315880055259	1772 125
TST-V 9x100 100 mm for tight spaces	1/4"	9x100	1	7315881772124	1772 120

PH1677







Cable grommet

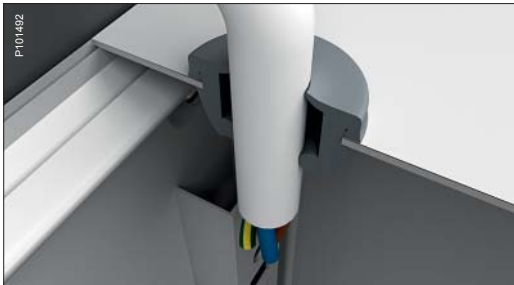
TET

Material: EPDM and CR

X

Cable grommet

Thorsman TET™



Description

TET grommets are available in two different materials, Ethylene/propylene (EPDM) rubber and Chloroprene (CR) rubber. They are intended for completely dust and watertight sealing of cables, conduits and pipes, for example in cars, aeroplanes, ships, electrical and hydraulic equipment, enclosed apparatus and light fittings. Both materials are weather and temperature resistant and can be used both indoors and outdoors.

Advantages

- Fast installation — seals without tightening of the grommet
- Permits vibration in cables, conduits and pipes without detracting from the seal
- The sealing diaphragm is punctured only when the cable is drawn through – acts as a blind plug and is ready for installation
- Approved for installation in ships
- Each size has a very wide sealing range.
- High degree of protection – IP67

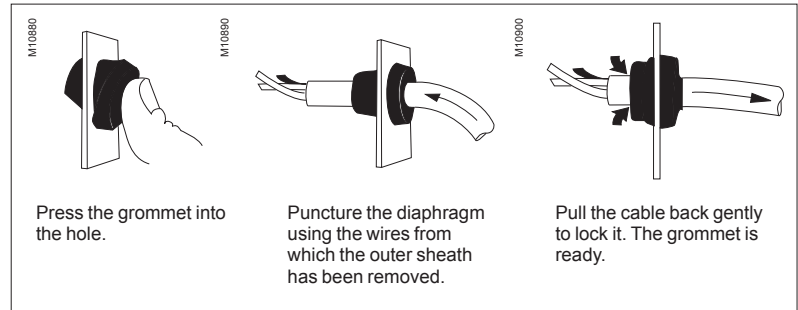
Approvals

Approved by Lloyds Register of Shipping, Det Norske Veritas for marine and offshore use, and the Swedish, Norwegian, Danish and Finnish national approval boards for watertight penetration.


Degree of protection

IP67 in accordance with IEC.

Installation



Range

Type	Colour	Dimensions Ø/B mm		Hole ¹⁾ Ø mm	Qty per package	EAN code	Ref. No.
Grommets, EPDM							
Grommet suitable for untapped holes in material with a thickness from 1 to 4 mm, TET 3-5 for 0.5 to 3 mm. For completely dust and watertight cable and pipe inlets. Material: EPDM rubber.							
TET 3-5	Grey	20/13		12.5 ²⁾	50	3606480163784	IMT36179
TET 5-7	Grey	21/18		16	50	3606480163791	IMT36180
TET 7-10	Grey	24/20		19	50	3606480398834	IMT37303
TET 10-14	Grey	28/22		23	50	3606480398872	IMT37307
TET 14-20	Grey	35/25		29	50	3606480398919	IMT37311
TET 20-26	Grey	46/30		38	25	3606480398940	IMT37314
TET 26-35	Grey	58/35		48	25	3606480398971	IMT37317
Metric grommets, EPDM							
Grommet suitable for holes with metric thread in material with a thickness from 1 to 4 mm. For completely dust and watertight cable and pipe inlets. Material: EPDM rubber.							
TET M7-10	Grey	25/20		M20	50	3606480163807	IMT36181
TET M10-14	Grey	29/22		M25	50	3606480163814	IMT36182
TET M14-20	Grey	37.5/25		M32	50	3606480163821	IMT36183
TET M20-26	Grey	48/30		M40	25	3606480163838	IMT36184
TET M26-35	Grey	60/35		M50	25	3606480163845	IMT36185
Grommets, CR							
Grommet suitable for untapped holes in material with a thickness from 1 to 4 mm, TET 3-5 for 0.5 to 3 mm. For completely dust and watertight cable and pipe inlets. Material: Chloroprene (CR).							
TET 3-5C	Black	20/13		12.5 ²⁾	50	3606480398803	IMT37300
TET 5-7C	Black	21/18		16	50	3606480399008	IMT37320
TET 7-10C	Black	24/20		19	50	3606480398841	IMT37304
TET 10-14C	Black	28/22		23	50	3606480398889	IMT37308
TET 14-20C	Black	35/25		29	50	3606480398926	IMT37312
TET 20-26C	Black	46/30		38	25	3606480398957	IMT37315
TET 26-35C	Black	58/35		48	25	3606480398988	IMT37318
Metric grommets, CR							
Grommet suitable for holes with metric thread in material with a thickness from 1 to 4 mm. For completely dust and watertight cable and pipe inlets. Material: Chloroprene (CR).							
TET M7-10C	Black	25/20		M20	50	3606480163739	IMT36174
TET M10-14C	Black	29/22		M25	50	3606480163777	IMT36178
TET M14-20C	Black	37.5/25		M32	50	3606480163760	IMT36177
TET M20-26C	Black	48/30		M40	25	3606480163753	IMT36176
TET M26-35C	Black	60/35		M50	25	3606480163746	IMT36175

Range, bulk

P60848



Grommets, EPDM

Grommet suitable for untapped holes in material with a thickness from 1 to 4 mm, TET 3-5 for 0.5 to 3 mm. For completely dust and watertight cable and pipe inlets.
Material: EPDM rubber.

TET 3-5	Grey	20/13	12.5 ²⁾	5000	3606480398810	IMT37301
TET 5-7	Grey	21/18	16	4000	3606480399015	IMT37321
TET 7-10	Grey	24/20	19	2500	3606480398858	IMT37305
TET 10-14	Grey	28/22	23	1700	3606480398896	IMT37309
TET 14-20	Grey	35/25	29	1000	3606480398933	IMT37313
TET 20-26	Grey	46/30	38	425	3606480398964	IMT37316
TET 26-35	Grey	58/35	48	250	3606480398995	IMT37319

P60849



Grommets, CR

Grommet suitable for untapped holes in material with a thickness from 1 to 4 mm, TET 3-5 for 0.5 to 3 mm. For completely dust and watertight cable and pipe inlets.
Material: Chloroprene (CR).

TET 3-5C	Black	20/13	12.5 ²⁾	5000	3606480398827	IMT37302
TET 5-7C	Black	21/18	16	4000	3606480399022	IMT37322
TET 7-10C	Black	24/20	19	2500	3606480398865	IMT37306
TET 10-14C	Black	28/22	23	1700	3606480398902	IMT37310

¹⁾ Tolerance if material thickness is more than 2 mm = +1/-0 mm

Tolerance if material thickness is less than 2 mm = ±1 mm

²⁾ Tolerance ±0.5 mm

Material data

Material	EPDM Ethylene/propylene rubber	CR Chloroprene rubber
Colour	Grey	Black
Halogen-free	Yes	No
Density	1.35 g/cm ³	1.38 g/cm ³
Hardness	60–65° shore A	60–62° shore A
Weather resistance	Weather and temperature resistant. Can be used both indoors and outdoors.	Weather and temperature resistant. Can be used both indoors and outdoors.
Temperature resistance	For continuous use between –40°C and +100°C (cf. natural rubber +70°C). Slightly higher temperature for short periods (+130°C for about one hour).	For continuous use between –25°C and +95°C. Slightly higher temperature for short periods.
Thermal aging	After 72 hours at +100°C. Change in properties: Hardness +5° SH (+11%) Breaking point –18% Elongation at break –26%	After 72 hours at +100°C. Change in properties: Hardness +6° SH (+10%) Breaking point –8% Elongation at break –16% After 72 hours at +125°C. Change in properties: Hardness +13° SH (+13%) Breaking point –12% Elongation at break –35%
Fire properties	Non self-extinguishing. Combustion rate 2 cm/min approx.	Self-extinguishing. Tested to IEC standard. Approved for installation in ships in accordance with IEC Publ. No. 92-1 (1964). Electrical installations in ships, Part 1 General requirements.
Chemical resistance at –20°C	<i>Normally resistant to:</i> <ul style="list-style-type: none"> • Detergents • Strongly oxidizing chemicals such as: <ul style="list-style-type: none"> • Ammonia • Dilute phosphoric acid • Dilute chromic acid • Dilute nitric acid • Dilute hydrochloric acid • Dilute sulphuric acid • Others, e.g.: <ul style="list-style-type: none"> • Developer • Glycol • Cooling fluid (emulsion) <i>Slightly affected by:</i> <ul style="list-style-type: none"> • Concentrated acids at room temperature 	<i>Normally resistant to:</i> <ul style="list-style-type: none"> • Aliphatic hydrocarbons • Alkalis • Alcohols • Dilute acids <i>Slightly affected by:</i> <ul style="list-style-type: none"> • Acetone • Ammonia • Freon • Glycol • Sodium hydroxide
Oil resistance	Not resistant to mineral oils, but withstands minor splashing such as that occurring in engine compartments of vehicles, etc.	Good resistance to mineral oils. The effect of other petroleum products, such as solvents, lubricating grease and wax, is insignificant. Should not be used in direct contact with petrol (gasoline).

Being based on laboratory tests, all information should be regarded for guidance only. Temperature, duration of exposure, concentrations, etc., severely affect the properties.





Twist wire connectors

Torix, T6, conductor area 0.5 – 6 mm²

Torix, T16, conductor area 1.5 – 16 mm²

X



Push-in terminal

Conductor area 0.5 – 2.5 mm²

Three or five clamping points

X

Twist wire connectors

Thorsman TORIX™, T6/T16



Description

TORIX T6 twist-on wire connector is intended for connection of all kinds and combinations of wire.

The connector is provided with a test hole at the top, making it easy to quickly test the connection with ordinary testing instruments.

Applications

TORIX T6 is approved for connection of all kinds of wire from 0.5 mm² to 12.5 mm².

Benefits

- Test hole on top for quick and easy voltage testing
- Hexagon spanner flats for power screwdriver with 1/4" fitting
- Ergonomically shaped wings
- No need to twist the stripped wires
- Can be screwed off and re-used on the same or a larger wire area
- One product for all connections

Technical data

Material	PA (polyamide)
Approvals	For 440 V acc. to IEC standard 685-2-4
Nor-Boards for Testing and	SEMKO, NEMKO, DEMKO, FIMKO (the Swedish,wegian, Danish and Finnish Electrical Approval of Electrical Equipment and Certification)

Installation

The wires are stripped about 15 mm and lined up. There is no need to twist them.

Capacity

Type	Total area	Conductor area mm ²	No. of conductors
TORIX T6	12.5	0.5 ¹⁾	2–10
		0.75	2–10
		1.0	2–10
		1.5	2–8
		2.5	2–5
		4.0	2–3
		6.0	2

¹⁾Not for 2x0.5 mm² RK.

Range

P4404



Type	Colour	Dimensions A/B/C (mm)	Qty per package	EAN code	Ref. No.
Twist-on connector					
Twist-on connector for the connection of all kinds and combinations of wire, area 0.5–12.5 mm ² . A test hole at the top of the connector ensures quick and easy testing of the connection with ordinary testing instruments. Material: PA.					
TORIX T6	Red	20/14/28	100	7315883000218	3000 210
Twist-on connector, bulk					
Same as the above but in bulk package.					
TORIX T6	Red	20/14/28	6000	7315883000225	3000 225



Description

The Thorsman push-in terminals are intended for use as floating termination in most applications. They are very well adapted to high temperature ranges.

The terminals are certified for use with both European and American cable types. They have a large clamping range, 0.5–2.5 mm² for solid and 1.5–2.5 mm² for rigid stranded conductors. These sizes can also be used in the same terminal.

Applications

Clamping range	0.5 mm ² – 2.5 mm ²	solid wires
	1.5 mm ² – 2.5 mm ²	rigid stranded wires
	AWG 20 – 14	
Wire stripping length	8 – 9 mm	
Clamping points	3 clamping points	IMT36344
	5 clamping points	IMT36345
Voltage measurement	Hole for test equipment	

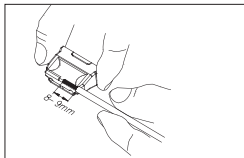
Benefits

- Fast installation
- High working temperature, approved for 90°C in Europe and 105°C in the US
- Approvals for both European and American standards
- With a test hole for easy voltage checking
- Large clamping range
- Easy to plug in – high pull-out force
- Highly transparent viewing window for visual inspection of the clamping points means greater safety and reliability during installation
- Mounting instruction printed on the package (three languages)

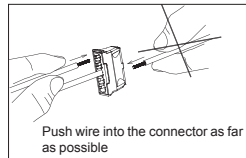
Technical and Material data

Material	Housing	PC (polycarbonate)
	Cover	PA (polyamide)
	Insert	Copper
	Spring	Stainless steel
Colour spec.	Green	RAL 6024-HR
Nominal voltage	Europe	450 V
	USA	600 V
Nominal current	Europe	24 A
	USA	33 A
Max. ambient temperature	Europe	+90°C
	USA	+105°C
Degree of protection	IP20	
Approvals	VDE, UL, ENEC, ÖVE	

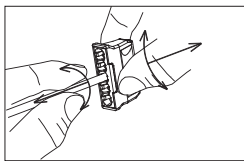
Wire stripping length



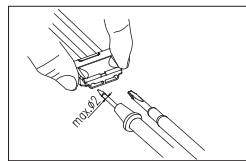
Connection



Disconnection



Test



Range

P119521
P119522



Type	Colour	Dimensions A/B/C (mm)	Qty per package	EAN code	Ref. No.
Push-in terminal with three or five entries, approved for an ambient temperature of 90°C in Europe and 105°C in the US. The product is UL-approved. Material: PC, PA, copper, stainless steel.					
With three entries	Green	8.9/15.7/17.2	100	3606480199479	IMT36344
With five entries	Green	8.9/15.7/26	100	3606480199486	IMT36345

Reference number overview

1200 005	61	2042 041	41	2190 043	45	2369 015	47	2704 021	36
1200 023	61	2042 042	41	2190 044	45	2369 020	47	2705 110	36
1200 203	61	2042 083	43	2190 051	45	2369 200	47	2705 310	36
1200 221	61	2042 711	43	2190 052	45	2369 231	47	2705 320	36
1200 401	61	2043 016	41	2190 053	45	2369 262	47	2705 420	36
1200 412	61	2043 032	41	2190 054	45	2369 310	47	2740 017	36
1200 443	61	2045 012	41	2191 000	45	2371 011	47	2741 015	36
1206 028	64	2052 011	41	2191 005	45	2371 013	47	3000 210	102
1220 010	66	2052 017	41	2191 010	45	2373 017	47	3000 225	102
1220 104	66	2052 025	41	2191 015	45	2373 020	47	3782 260	56
1220 120	66	2052 033	41	2191 020	45	2375 012	47	3782 265	56
1240 001	63	2052 051	41	2191 025	45	2377 018	47	781870	87
1240 704	63	2052 058	41	2191 030	45	2379 014	47	781871	87
1241 009	63	2052 066	43	2191 035	45	2380 004	47	781872	87
1244 003	63	2053 015	41	2191 040	45	2380 010	47	781873	87
1244 706	63	2053 031	41	2191 045	45	2380 053	47	1000009	21
1248 004	63	2060 002	41	2191 050	45	2380 060	47	1000017	21
1249 002	63	2060 028	41	2191 055	45	2380 110	47	1000708	22
1249 507	63	2060 135	41	2191 060	45	2380 152	47	1001007	21
1250 000	63	2060 143	41	2191 065	45	2390 400	55	1001023	21
1253 004	63	2070 001	42	2191 070	45	2390 401	56	1001025	21
1253 509	63	2070 027	42	2191 075	45	2390 405	55	1001700	22
1260 025	65	2070 134	42	2191 080	45	2390 406	56	1001809	22
1260 066	65	2070 142	42	2191 500	45	2390 410	55	1003003	21
1260 108	65	2070 209	42	2191 501	45	2390 415	55	1003011	21
1260 124	65	2070 217	42	2191 502	45	2390 416	56	1003020	21
1260 140	65	2101 004	42	2191 503	45	2390 420	55	1003029	21
1260 165	65	2101 015	43	2191 504	45	2390 425	55	1003706	22
1260 170	67	2106 003	42	2191 505	45	2390 426	56	1003805	22
1265 040	65	2106 706	43	2191 506	45	2390 430	55	1003815	22
1720 036	91	2106 720	43	2191 507	45	2390 435	55	1005008	21
1720 038	91	2106 994	43	2191 508	45	2390 475	55	1005016	21
1720 040	91	2106 995	43	2191 509	45	2390 476	56	1005800	22
1772 052	91	2111 003	42	2191 510	45	2390 480	55	1006808	22
1772 054	91	2111 011	43	2191 511	45	2390 481	56	1007806	22
1772 056	91	2116 010	42	2191 512	45	2390 485	55	1051007	28
1772 058	91	2116 028	42	2191 513	45	2390 486	56	1052004	28
1772 120	92	2116 192	43	2191 514	45	2390 490	55	1140003	27
1772 125	92	2121 204	43	2201 090	43	2390 500	55	1141001	27
2001 008	41	2126 019	42	2203 080	43	2390 505	55	1149350	26
2011 005	41	2126 027	42	2205 070	43	2390 510	55	1149608	26
2011 017	41	2126 711	43	2205 080	43	2390 511	56	1149707	26
2011 021	41	2131 010	42	2206 080	43	2390 515	55	1150002	26
2011 030	41	2131 019	42	2206 090	43	2390 520	55	1150051	26
2011 208	43	2131 027	42	2230 972	42	2390 521	56	1788868A	90
2015 105	41	2131 036	42	2240 04	42	2390 525	55	1788926A	90
2015 110	41	2136 010	42	2240 030	42	2390 530	55	1788934A	90
2015 121	41	2136 018	42	2240 050	42	2390 531	56	1788975A	90
2021 004	41	2136 026	42	2240 065	42	2390 535	55	1788989A	90
2021 012	41	2137 014	42	2240 085	42	2390 540	55	1789016A	90
2021 020	41	2141 026	42	2240 090	42	2390 541	56	1789023A	90
2021 046	41	2146 025	42	2240 105	42	2390 545	55	1789028A	90
2021 087	43	2150 010	50	2240 115	42	2390 550	55	1789030A	90
2021 706	43	2150 015	50	2240 120	42	2390 570	56	1789052A	90
2021 710	43	2150 020	50	2240 150	42	2390 595	55	1789054A	90
2021 995	41	2150 025	50	2240 180	42	2390 600	55	1789080A	90
2022 009	41	2150 030	50	2300 010	51	2390 605	55	1789108A	90
2022 010	41	2150 035	50	2301 018	51	2390 610	55	1789116A	90
2022 029	41	2150 060	50	2302 016	51	2390 615	55	1789120A	90
2022 030	41	2150 065	50	2302 024	51	2390 620	55	1789153A	90
2032 011	41	2150 070	50	2303 014	51	2390 625	55	1789165A	90
2032 019	41	2150 075	50	2303 022	51	2390 630	55	1789195A	90
2032 027	41	2150 085	50	2304 012	51	2390 635	55	1789252A	90
2032 035	41	2150 090	50	2304 020	51	2390 640	55	1789272A	90
2032 041	41	2150 095	50	2305 019	51	2390 645	55	1789304A	90
2032 043	41	2150 110	50	2310 100	51	2390 650	55	1789319A	90
2032 061	41	2150 126	50	2330 017	52	2390 655	55	1789323A	90
2032 091	41	2150 127	50	2332 013	52	2390 660	55	1789350A	90
2032 100	41	2150 128	50	2333 433	52	2400 026	33	1789352A	90
2032 712	43	2190 001	45	2334 019	52	2400 033	33	1789410A	90
2032 740	43	2190 003	45	2360 009	48	2400 064	33	1789414A	90
2033 017	41	2190 004	45	2360 018	47	2400 071	33	1789440A	90
2033 033	41	2190 009	45	2360 020	48	2400 101	33	1789450A	90
2041 200	41	2190 011	45	2360 025	47	2400 118	33	1789455A	90
2041 218	41	2190 013	45	2360 030	47	2400 123	33	1789470A	90
2041 240	41	2190 015	45	2360 035	47	2400 124	33	1789481A	90
2041 259	41	2190 021	45	2360 040	48	2400 149	33	1789485A	90
2041 267	41	2190 022	45	2360 041	48	2400 156	33	1789500A	90
2041 274	41	2190 023	45	2360 042	48	2400 187	33	1789510A	90
2041 283	41	2190 024	45	2360 043	48	2400 194	33	1789520A	90
2041 700	43	2190 031	45	2366 102	47	2400 248	33	1789570A	90
2042 011	41	2190 032	45	2366 209	47	2400 255	33	2810109	86
2042 018	41	2190 033	45	2366 230	47	2400 286	33	2810125	86
2042 021	41	2190 034	45	2367 019	47	2400 293	33	2810141	86
2042 026	41	2190 041	45	2367 020	47	2703 015	36	2810166	86
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2820140	85	ENN46225	34	IMT38023	84
3702010	81	ENN46902	33	IMT38024	84
3702020	81	ENN46904	33	IMT38025	84
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3709830	74	ENN46978	33	IMT38052	72
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3760150	73	IMT36182	97	IMT38061	73
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