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### Material Specification Overview

MATERIAL	Material Shortcut	Operating Temperature	Colour**	Flammability	Material Properties*	Material Specifications
<b>Polyacetal</b>	POM	-40 °C to +90 °C, (+110 °C, 500 h)	Natural (NA)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Flexible at low temperature</li> <li>Not moisture sensitive</li> <li>Robust on impacts</li> </ul>	<b>RoHS</b>
<b>Polyamide 12</b>	PA12	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> <li>UV-resistant</li> </ul>	<b>HF</b> <b>RoHS</b>
<b>Polyamide 4.6</b>	PA46	-40 °C to +150 °C (5000 h), +195 °C (500 h)	Natural (NA), Grey (GY)	UL94 V2	<ul style="list-style-type: none"> <li>Resistance to high temperatures</li> <li>Very moisture sensitive</li> <li>Low smoke sensitive</li> </ul>	<b>HF</b> <b>LFH</b> <b>RoHS</b>
<b>Polyamide 6</b>	PA6	-40 °C to +80 °C	Black (BK)	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> </ul>	<b>RoHS</b>
<b>Polyamide 6,</b> glass-fibre reinforced	PA6GF30	-40 °C to +100 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Good resistance to: lubricants, vehicle fuel and many solvents</li> </ul>	<b>HF</b> <b>RoHS</b>
<b>Polyamide 6,</b> high impact modified	PA6HIR	-40 °C to +80 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	<b>RoHS</b>
<b>Polyamide 6.6</b>	PA66	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK), Natural (NA)	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> </ul>	<b>HF</b> <b>RoHS</b>
<b>Polyamide 6.6,</b> glass-fibre reinforced	PA66GF13, PA66GF15	-40 °C to +105 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Good resistance to: lubricants, vehicle fuel, salt water and many solvents</li> </ul>	<b>HF</b> <b>RoHS</b>
<b>Polyamide 6.6,</b> heat and UV stabilised	PA66HSW	-40 °C to +105 °C	Black (BK)	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Modified elevated max. temperature</li> <li>UV-resistant</li> </ul>	<b>HF</b> <b>RoHS</b>
<b>Polyamide 6.6,</b> heat stabilised	PA66HS	-40 °C to +105 °C	Black (BK), Natural (NA)	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Modified elevated max. temperature</li> </ul>	<b>HF</b> <b>RoHS</b>
<b>Polyamide 6.6,</b> high impact modified	PA66HIR	-40 °C to +80 °C, (+105 °C, 500 h)	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	<b>RoHS</b>
<b>Polyamide 6.6,</b> high impact modified, heat and UV stabilised	PA66HIRHSW	-40 °C to +110 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> <li>Modified elevated max. temperature</li> <li>High yield strength, UV-resistant</li> </ul>	<b>HF</b> <b>RoHS</b>

Tefzel® is a registered trademark of DuPont. General linguistic usage for cable ties made from raw material E/TFE is Tefzel®-Tie. In addition to Tefzel® from DuPont HellermannTyton is also using equivalent E/TFE raw material from other suppliers.

\*\*More colours on request.

\*These details are only rough guide values. They should be regarded as a material specification and are no substitute for a suitability test. Please see our datasheets for further details.

 = **Minimum Loop Tensile Strength for Cable Ties (Newton)**

**HF = Halogenfree**

**LFH = Limited Fire Hazard**

**RoHS = Restriction of Hazardous Substances**

MATERIAL	Material Shortcut	Operating Temperature	Colour**	Flammability	Material Properties*	Material Specifications
<b>Polyamide 6.6</b> , high impact modified, heat stabilised	PA66HIRHS	-40 °C to +105 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> <li>Modified elevated max. temperature</li> </ul>	<b>RoHS</b>
<b>Polyamide 6.6</b> , high impact modified, scan black	PA66HIR(S)	-40 °C to +80 °C, (+105 °C, 500 h)	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	<b>HF</b> <b>RoHS</b>
<b>Polyamide 6.6</b> , UV-resistant	PA66W	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK)	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> <li>UV-resistant</li> </ul>	<b>HF</b> <b>RoHS</b>
<b>Polyamide 6.6 V0</b> , High Oxygen Index	PA66V0-HOI	-40 °C to +85 °C, (+105 °C, 500 h)	White (WH)	UL94 V0	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Low smoke emissions</li> </ul>	<b>HF</b> <b>LFH</b> <b>RoHS</b>
<b>Polyester</b>	SP	-50 °C to +150 °C	Black (BK)	Halogen free	<ul style="list-style-type: none"> <li>UV-resistant</li> <li>Good chemical resistance to: most acids, alkalis and oils</li> </ul>	<b>HF</b> <b>LFH</b> <b>RoHS</b>
<b>Polyetheretherketone</b>	PEEK	-55 °C to +240 °C	Beige (BGE)	UL94 V0	<ul style="list-style-type: none"> <li>Resistance to radioactivity</li> <li>Not moisture sensitive</li> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> </ul>	<b>HF</b> <b>LFH</b> <b>RoHS</b>
<b>Polyethylene</b>	PE	-40 °C to +50 °C	Black (BK), Grey (GY)	UL94 HB	<ul style="list-style-type: none"> <li>Low moisture absorption</li> <li>Good chemical resistance to: most acids, alcohol and oils</li> </ul>	<b>HF</b> <b>RoHS</b>
<b>Polyolefin</b>	PO	-40 °C to +90 °C	Black (BK)	UL94 V0	<ul style="list-style-type: none"> <li>Low smoke emissions</li> </ul>	<b>HF</b> <b>LFH</b> <b>RoHS</b>
<b>Polypropylene</b>	PP	-40 °C to +115 °C	Black (BK), Natural (NA)	UL94 HB	<ul style="list-style-type: none"> <li>Floats in water</li> <li>Moderate yield strength</li> <li>Good chemical resistance to: organic acids</li> </ul>	<b>HF</b> <b>RoHS</b>
<b>Stainless Steel</b>	SS304, SS316	-80 °C to +538 °C	Natural (NA)	Non burning	<ul style="list-style-type: none"> <li>Corrosion resistant</li> <li>Antimagnetic</li> <li>Weather resistant</li> <li>Outstanding chemical resistance</li> </ul>	<b>HF</b> <b>LFH</b> <b>RoHS</b>

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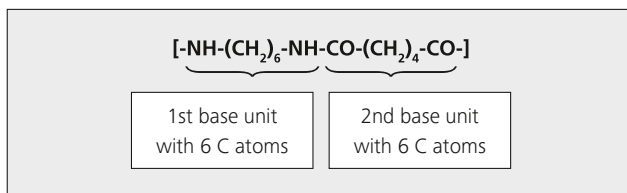


### Properties of Polyamide PA66

Polyamides are among the most important thermoplastic synthetic materials. Thermoplastics can be reshaped by heating as often as required without undergoing chemical decomposition or other negative changes. This makes polyamide ideal for processing via injection moulding into high quality products. About 90 % of cable ties and fixings from HellermannTyton are made from this material. Polyamide is also known under the brand name of Nylon®, which was introduced by the Dupont company.

The inner structure of polyamide displays a partial order of polymer chains, i.e. polyamides are partially crystalline. Due to the tighter packing of the individual molecular chains polyamide only has limited transparency to light. The plastic is therefore described as translucent.

#### The molecular chains of PA66 are made from two base units:



Each base unit contains 6 carbon atoms (C). Hence the name PA66.

The polyamide PA66 has many properties which are highly advantageous for HellermannTyton cable ties and fixings, such as:

- High strength, rigidity and hardness
- High dimensional stability, even under the effect of heat
- High abrasion resistance

Having a wide range of polyamides and additives allows for an optimum adaptation of the properties of the finished product to suit the respective requirements.

The following PA66 variants are used for HellermannTyton products:

- Polyamide 6.6 standard (PA66) for temperature conditions of up to +85 °C
- Polyamide 6.6 Heat Stabilised (PA66HS) for temperature conditions of up to +105 °C
- Polyamide 6.6 UV Stabilised (PA66W) for exterior use
- Polyamide 6.6 Heat Stabilised and UV Stabilised (PA66HSW) for exterior use up to +105 °C
- Polyamide 6.6 Impact Resistant (PA66HIR) for high elasticity requirements
- Polyamide 6.6 Impact Resistant and Heat Stabilised (PA66HIRHS) for high elasticity requirements and temperatures up to +105 °C
- Polyamide 6.6 V0 for high standards of fire protection

#### Water content in polyamide

Polyamide is a hygroscopic material - this means that it absorbs and releases water. The mechanical properties are significantly affected by the water content – especially flexibility and minimum tensile strength.

In a standard atmosphere of 23 °C and 50 % relative humidity, the degree of water saturation of polyamide is around 2.5 %. For optimal processing of cable ties it is therefore important that the polyamide has a water content of approximately 2.5 % in a state of equilibrium.

The quality and functionality of the products are thus affected by the water content, therefore the correct storage of our products is crucial. Please read our separate instructions on storage.

**Since humidity is so critical to the quality of the tie, the question arises: What happens if the tie is installed and the water content in the tie alters?**

The water content determines the flexibility and strength of a tie. At a water content of approximately 2.5 % the tie has the ideal flexibility for installation. When the strap is being threaded through the head of the tie, the pawl must be flexible enough to “see-saw” over the serration of the strap without breaking. On the other hand, there must also be adequate material rigidity for the serrations of the pawl to engage with the serrations of the strap during the tying process so that a 'positive locking' action is achieved. After achieving the positive locking action the tie is in a static condition. Changes in the mechanical properties of the tie as a function of water content are insignificant during this status.

## Properties of UV-stabilised Polyamide PA66W

The question constantly arises as to whether a black cable tie is suitable for use outside. This is dependant on the application of the tie, but in general the following statements can be made:

A black cable tie made of polyamide 6.6 standard (PA66) is only coloured black with a low proportion of carbon black. This is not sufficient to protect the material from damage caused by UV-radiation in the long term.

Products made from UV-stabilised polyamide PA66W are produced in accordance with ASTM standard D6779 with a higher carbon black percentage of approx. 2 %. So they resist UV-radiation in the European area for a considerably longer period than standard PA66.

This is clearly illustrated by the comparison of the two images:

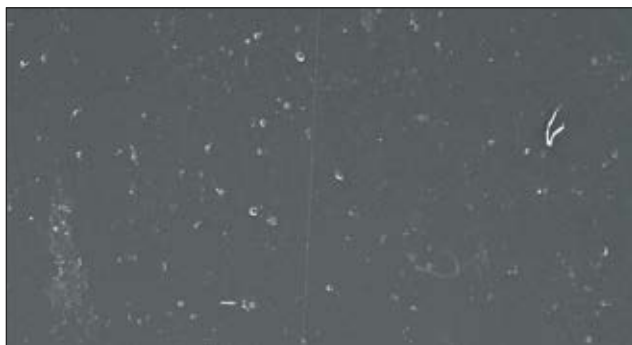
### After 500 hours of UV-radiation exposure

Polyamide 6.6 standard (PA66) dyed black:



*The joint has been damaged throughout by UV-radiation.*

Polyamide 6.6 UV-stabilised (PA66W) with approx. 2 % carbon black:



*The joint has only been altered at isolated points by the UV-radiation.*

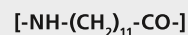
**For outdoor use, therefore, we recommend our range of products made from UV-stabilised polyamide (PA66W).**

### A simple practical test: "the hammer test"

You can quickly determine whether or not a cable tie is UV stabilised. Strike with a hammer the tail of the strap on the tie. Hold up this flattened end to the light. Cable ties with a carbon black content of about 2 % allow no light through and look black throughout. Standard black ties, however, are transparent on the flattened end.

## Properties of Polyamide PA12

Apart from PA66, there are polyamides which are less hygroscopic. These include PA12, which has a molecular chain made of a base unit with 12 carbon atoms:



### PA12 has the following advantages over PA66:

- Less hygroscopic - saturation at 23 °C and 50 % relative humidity is approximately 1 %
- Better impact performance
- Good weather resistance, even without a special additive

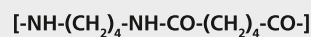
These three properties make PA12 ideal for use outdoors, in particular when requirements may include impact resistance.

The water absorption of PA12 is not only less than that of PA66 but also slower. This is the requirement where the mechanical properties need to remain relatively unaffected by changing environmental conditions.

## Properties of Polyamide PA46

Polyamide PA66, despite the use of additives, is not suitable for long-term use in temperatures of +105 °C. Due to considerably better heat resistance, polyamide PA46 is more suitable for temperatures of up to and exceeding 150 °C (depending on the length of time of operation).

The molecular chain of PA46 is composed of two base units:]



1st base unit  
with 4 C atoms

2nd base unit  
with 6 C atoms

### Advantages of PA46 over PA66:

- Greater rigidity, even at higher temperatures
- Higher operating temperature ranges of up to +150 °C (5,000 hours)
- Greater form stability at higher temperatures
- Excellent chemical resistance





### Properties of Polyetheretherketone PEEK

PEEK, a linear aromatic polymer, is semi-crystalline and is widely regarded as the highest performance thermoplastic material currently available. A summary of key physical properties is as follows:

#### High temperature performance

- Melting temperature of +343 °C (649 °F)
- Continuous use temperature of +240 °C (464 °F) (UL 746B)

#### Wear resistance

- Outstanding wear resistance over wide ranges of pressure, velocity, temperature and counter facial roughness

#### Chemical resistance

- Excellent resistance to a wide range of chemical environments, even at elevated temperatures
- The only common environment that dissolves it is concentrated sulfuric acid

#### Fire, smoke and toxicity

- Highly stable and requires no flame-retardant additives to achieve a V-0 rating at 1.45 mm thickness
- The composition and inherent purity of the material results in extremely low smoke and toxic gas emission in fire situations

#### Hydrolysis resistance

- PEEK is not attacked by water or pressurized steam
- Components that are constructed from these materials retain a high level of mechanical properties when continuously conditioned in water at elevated temperatures and pressures

#### Radiation resistance

- Excellent radiation resistance due to the energetically stable chemical structure of PEEK

#### Purity

- PEEK materials are inherently pure with exceptionally low levels of ionic extractables
- Excellent out gassing characteristics

This makes PEEK the right choice for any high performance application in any industry with a clearly outstanding continuous use temperature of +240 °C.

### Properties of Ethylene Tetrafluoroethylene (E/TFE) - Tefzel®

E/TFE can be best described as a rugged thermoplastic with an outstanding balance of properties.

Mechanically, it is tough, has medium stiffness, impact and abrasion resistance.

E/TFE can perform successfully in applications where other materials are lacking in mechanical toughness, broad thermal capability and the ability to meet severe environmental conditions.

Tefzel® is a registered trademark of DuPont.

#### Summary of key properties:

- No load continuous use temperature of +170 °C
- Weather resistant
- Inert to most solvents and chemicals
- Hydrolytically stable
- Substantially better resistance to radiation than other plastic materials



## Chemical resistance of various plastics

▲ = resistant  
 △ = partly resistant  
 ○ = not resistant

These values are only rough guides. They should be regarded as a material specification and are no substitute for a suitability test. Please see our technical datasheets for further details.

	Conc. (%)	Temp. (°C)	PA66	PA46	PA12	PA11	POM	PP	E/TFE (Tefzel®)	TPU	PEEK
Acetaldehyde, liquid	100	23 °C	▲	○		▲	▲	△	▲	○	▲
Acetowne	100	23 °C	▲	▲	▲	▲	▲	▲	▲	○	▲
Allyl chloride	100	23 °C				▲		▲		○	
Aniline	100	23 °C	▲	△	△	▲	△	▲	▲	○	▲
Aromatic compounds							▲	○	▲	△	▲
Benzaldehyde		23 °C	▲	△		▲	▲	▲	▲	○	▲
Benzine/Benzol mix		23 °C	▲	▲	▲	▲	▲	△	▲	△	▲
Benzol	100	23 °C	▲		▲	▲	△	△	▲	△	▲
Bromine		23 °C		○	○	○		○		○	
Carbon bisulphide	100	23 °C	▲	○	▲	○	▲	○	▲	○	▲
Carbon tetrachloride	100	23 °C	▲	▲	△	○	▲	△	▲	○	▲
CFC								△			
Chlorine, gaeous	100	23 °C	○			○		○	▲	△	
Chlorine, liquefied	100	23 °C	○	○		○		○			
Chlorobenzene	100	23 °C			○	△	△	▲			
Chloroform	100	23 °C		○	○	▲	○	△		○	
Chromic acid 10 %	20	23 °C	○	○		○	○	▲	▲	○	▲
Chromic acid 20 %	10	20 °C	△	○		○	△	▲	▲		▲
Chromic acid 50 %	50	20 °C	○	○		○	○	▲	▲	○	
Cyclohexane	100	23 °C	▲			▲	▲	▲	▲	▲	▲
Cyclohexanone	100	23 °C	▲			▲	▲	▲	▲		▲
Decahydronaphthlene	100	23 °C	▲			▲	▲	△	▲	▲	▲
Diethyl ether	100	23 °C	▲			▲	▲	△	▲		▲
Di-isopropyl ether	100	23 °C						△			
Dimethyl formamide	100	23 °C	▲	▲		▲	▲	▲	▲		▲
Diocetyl phthalate		23 °C	▲	▲		▲	▲	▲	▲	○	▲
Engine oil	100	23 °C			▲	▲	▲	▲	▲	▲	▲
Ethanonic acid 10 %	10	20 °C	○	△	△	▲	▲	▲	▲		
Ethanonic acid 100 %	100	23 °C	○	○		▲	△	▲	▲		
Ethanonic acid 25 %	25	20 °C	○			▲	△	▲	▲		
Ethanonic acid 50 %	50	20 °C	○			▲	△	▲	▲		
Ethyl acetate	100	23 °C		▲	▲	▲	△	△		△	▲
Formic acid	98	23 °C	○		○	▲	○	▲	▲	○	△
Freon		23 °C						▲			▲
Heptane	100	23 °C	▲	▲	▲	▲	▲	▲	▲	▲	▲
Hydrogen peroxide 10 %	10	20 °C	△			▲	▲	▲	▲	△	
Hydrogen peroxide 30 %	30	23 °C	○	○		▲	▲	▲	▲	△	
Ketone			▲	▲			▲	▲	▲		▲
Methyisobutylketone	100	23 °C	▲			▲	▲	▲	▲		▲
Methylethylketone	100	23 °C	▲	▲		▲	△	▲	▲	○	▲
Nitric acid 10 %	10	20 °C	○		○	○	○	▲	▲	○	▲
Nitric acid 50 %	50	23 °C	○		○	○	○	○	▲	○	○
Nitrobenzene	100	23 °C	▲	△		▲	▲	▲	▲	○	▲
Ordinary petrol		23 °C		▲		▲	▲	▲	▲		▲
Paraffin oil		23 °C	▲	▲	▲	▲	▲	▲	▲	▲	▲
Perchloroethylene		23 °C	▲		▲	△	▲	△	▲	○	▲
Petroleum		23 °C	▲	▲	▲	▲	▲	▲	▲	▲	▲
Phenol	65	23 °C	○	○	○	○	○	▲	▲	○	
Potass. Permanganate	6	23 °C	○	○	○	○	▲	▲	▲	△	▲
Salad oil		23 °C		△		▲		▲			▲
Silicon oil		23 °C	▲	▲	▲	▲	▲	▲	▲	▲	▲
Sulphuric acid 10 %	10	20 °C	○		△	▲	○	▲	▲	○	△
Sulphuric acid 50 %	50	20 °C	○				○	▲	▲	○	○
Sulphuric acid 96 %	96	23 °C	○	○			○	○	▲	○	○
Toluol	100	23 °C	▲		▲	▲	▲	△	▲	○	▲
Trichlorethylene	100	23 °C	▲	△	△	△	△	△	▲	○	▲
Water, cold			▲		▲	▲	▲			▲	▲
Water, hot						▲		▲		△	▲
Xylene	100	23 °C	▲	▲	▲	▲	▲	△	▲	○	▲

Tefzel® is a registered trademark of DuPont.

General linguistic usage for cable ties made from raw material E/TFE is Tefzel®-Tie. In addition to Tefzel® from DuPont HellermannTyton is also using equivalent E/TFE raw material from other suppliers.

### What does flammability UL94 mean?

UL is the shortcut for Underwriters Laboratories. This is an independent organisation in the United States to control and certificate product safety.

Beside a lot of product standards UL also specified the flammability test UL94 for plastic materials. UL94 is a material burning test done on a defined specimen of the raw material but not a test on final products.

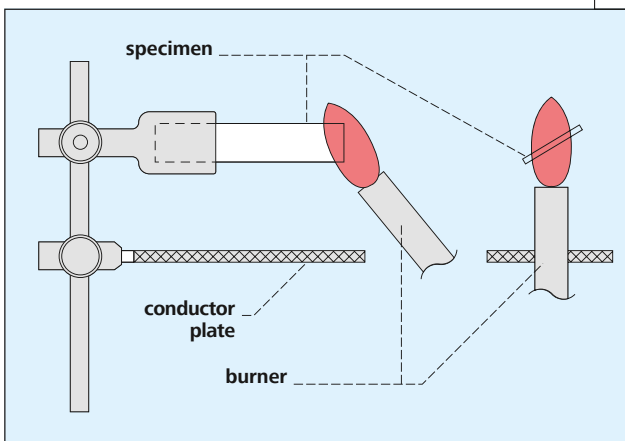
UL94 differs between a horizontal burning test UL94 HB (picture 1) and a vertical burning test UL94 V (picture 2). For the vertical test UL94 V there are three flame ratings defined: UL94 V0, UL94 V1 and UL94 V2.

In all these burning tests an open flame is applied for a certain time to the specimen. As the burning behaviour also depends on the thickness of the material it is important to classify the material not only according to HB, V0, V1 or V2 but also to mention the thickness of specimen.

#### UL94 HB:

Horizontal burning test

1



#### Test criteria:

- burning rate of specimen in mm/min.

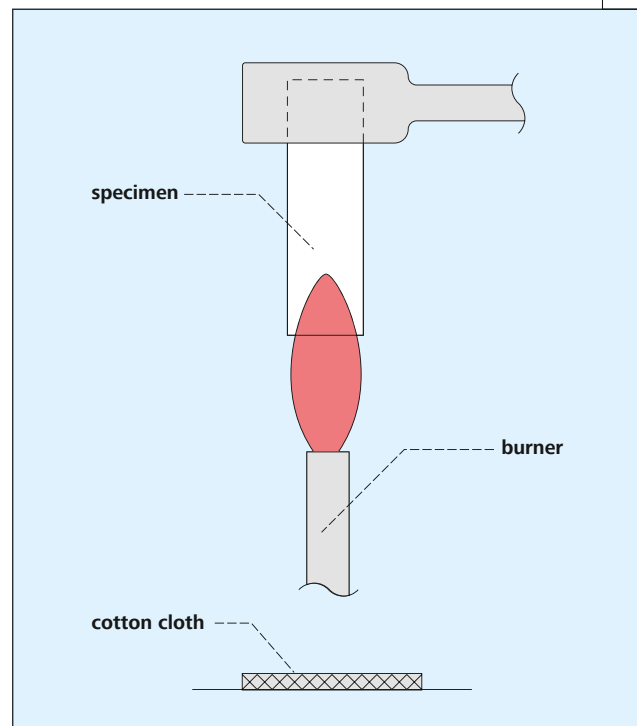
#### Classification:

- according to HB

#### UL94 V:

Vertical burning test

2



#### Test criteria:

- afterflame time of specimen
- drip of flaming particles

#### Classification:

- according to V0, V1 or V2



Following table is a summary of test procedures and requirements of the UL94 classification.

Classification	Horizontal Test UL94		Vertical Test UL94		
	HB		V0	V1	V2
Number of specimen	3	3	5	5	5
Thickness of specimen	< 3 mm	3 to 13 mm	up to max. 13 mm		
1st flame application	30 sec.	30 sec.	10 sec.	10 sec.	10 sec.
2nd flame application	-	-	10 sec.	10 sec.	10 sec.
Burning rate	max. 75 mm/min	max. 40 mm/min	-	-	-
Afterflame time after 1st flame application for each individual specimen	-	-	max. 10 sec.	max. 30 sec.	max. 30 sec.
Afterflame time after 2nd flame application for each individual specimen	-	-	max. 30 sec.	max. 60 sec.	max. 60 sec.
Total afterflame time for all 5 specimen after 1st and 2nd flame application	-	-	max. 50 sec.	max. 250 sec.	max. 250 sec.
Afterflame or afterglow of any specimen up to its end allowed	yes	yes	no	no	no
Cotton indicator ignited by flaming particles or drops allowed	-	-	no	no	yes

Flammability behaviour on the following product pages are always related to the raw material burning rate according to UL94. Most commonly used raw materials for cable ties and fixing elements are Polyamide 6.6 standard, Polyamide 6.6 weather resistant and Polyamide 6.6 heat stabilised. These materials normally fulfill UL94 V2 requirement.



### HellermannTyton cable ties conform to IEC 62275 standard

As a leading global manufacturer of quality, high performance cable management products for over 80 years, HellermannTyton's extensive fastening and fixings portfolio reflects our long-standing industry expertise.

Cable ties from the inside serrated (T-Series, Q-Series), the outside serrated (OS-Series) as well as our metal cable ties (MBT-Series and MST-Series) have been tested in accordance with the international cable tie standard IEC 62275 (Cable management systems - Cable ties for electrical installations). This standard supersedes EN 50146:2000 and all HellermannTyton products fully comply with the requirements. Cable ties manufactured from the standard material polyamide 6.6 (PA66), heat-stabilised polyamide 6.6 (PA66HS), UV-stabilised polyamide 6.6 (PA66W) and stainless steel grades SS304 and SS316 have been successfully tested and approved.

#### The IEC 62275 standard includes the following tests:

- Installation test on minimum and maximum specified bundle diameters
- Installation test at minimum specified installation temperature
- Impact test at minimum specified operating temperature
- Minimum tensile strength (in the standard this is described as the loop test)
- Loop tensile test after heat ageing at the specified operating temperature
- Loop tensile test after heat cycling at the minimum and maximum operating temperatures
- Loop tensile test after humidity and heat cycling at the minimum and maximum operating temperatures
- Contribution to the spread of fire on both the actual product and test substrate (tissue paper)
- Loop tensile and visual tests after exposure to ultraviolet light radiation for PA66W ties
- Resistance to corrosion (dependent on material)
- Loop tensile test after vibration test for metal cable ties

#### The following cable ties have been tested and certified:

- T-Series inside serrated in PA66-NA, PA66-BK, PA66HS-NA, PA66HS-BK, PA66W
- OS-Series outside serrated in PA66-NA, PA66-BK, PA66HS-NA, PA66HS-BK, PA66W
- Q-Series inside serrated in PA66-NA, PA66-BK, coloured PA66, PA66HS-NA, PA66HS-BK
- MBT-Series, uncoated in SS316 material grade
- MST-Series, uncoated in SS304 material grade



**Material specification please see page 16.**

In addition to the IEC 62275, we are proud to offer our customers products that have been certified by well-known and independent laboratories such as:



Profit from our knowledge and experience and the high-quality of HellermannTyton cable management solutions for your particular industry and market.



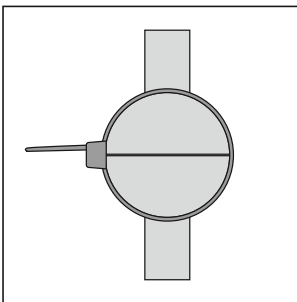


## Determination of minimum tensile strength

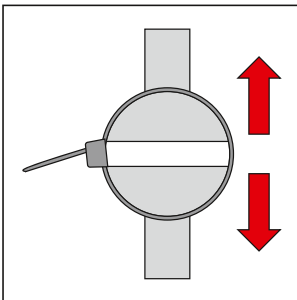
The minimum tensile strength is a critical selection criterion for cable ties. It expresses how much loading a cable tie can bear. This minimum tensile strength is determined in accordance with the Military Specification and Standards of the USA. Test conditions being laid down precisely in MIL-S-23190E:

### The test procedure to determine minimum tensile strength:

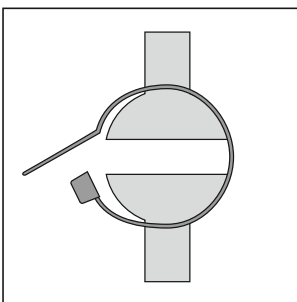
- Conditioning of the test pieces
- Construction of the test apparatus
- Application of the tie on a split test probe
- Test speed



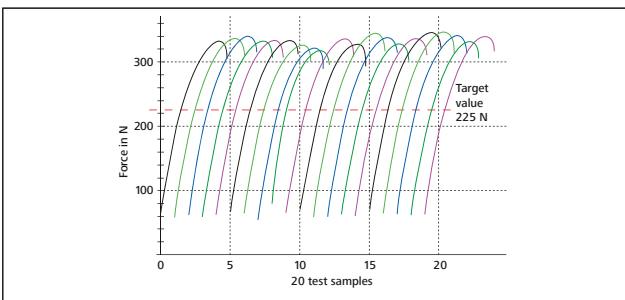
The cable tie is fixed onto a split mandrel test probe with the suitable cable tie application tool.



The mandrel is opened at a defined speed.



The loading at which the cable tie fails is determined. This value is stated in Newtons (N) and is recorded through a computer programme reading the tests. This programme produces graphs as outlined below.



Typical measurement protocol of a T50R made of PA66 with a minimum tensile strength of 225 N.

## Explanation of minimum tensile strengths

### What does a minimum tensile strength of 225 N (50LBS) mean?

To explain what this value means, the mass with which the tie can be loaded is calculated. The unit of measurement of the mass is stated in kg. To do so, the unit Newton (N) is shown in the following way:

$$[N] = [kg * m/s^2]$$

The formula for calculating the mass is:

$$\text{Mass} = \text{minimum tensile strength} / \text{acceleration due to gravity}$$

The acceleration due to gravity is 9.81 m/s<sup>2</sup>

$$\text{Mass} = \text{minimum tensile strength} / [kg * m/s^2] / 9.81 [m/s^2]$$

At a minimum tensile strength of 225 N (50LBS) the mass is:

$$\text{Mass} = 225 [kg * m/s^2] / 9.81 [m/s^2]$$

The units m/s<sup>2</sup> cancel each other out, leaving the unit [kg] for the mass. Thus:

$$\text{Mass} = 225 / 9.81 \text{ kg} = 22.9 \text{ kg}$$

Therefore, a T50R cable tie with a minimum tensile strength of 225 N (50LBS) can be loaded with 22.9 kg.

Conversely, with the required loading capacity the minimum tensile strength can be calculated by a mass:

$$\text{Min. tensile strength} = \text{mass} * 9.81 [m/s^2]$$

If the tie is to be loaded with, for example, 53 kg this produces:

$$\text{Minimum tensile strength} = [53 \text{ kg}] * 9.81 [m/s^2] = 520 \text{ N}$$

In order to withstand a load of 53 kg, the tie must therefore have a minimum tensile strength of 520 N. In this case, select our T120R with a minimum tensile strength of 535 N (120LBS).

$$\frac{N}{kg} \quad 225 \text{ N} / 9.81 = 22.9 \text{ kg}$$

$$\frac{kg}{N} \quad 53 \text{ kg} * 9.81 = 520 \text{ N}$$

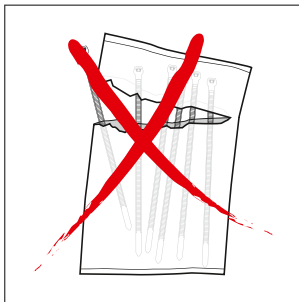
$$\frac{N}{N} = \text{Minimum Loop Tensile Strength for Cable Ties (Newton)}$$

### Optimum storage conditions for cable ties made of Polyamide (PA)

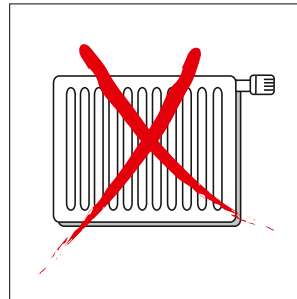
HellermannTyton cable ties, fastenings and fixings are manufactured from high-quality polyamide (PA). This industrial synthetic material is mainly processed using injection moulding, but can also be extruded.

Polyamide is a hygroscopic material. This means that the material absorbs and loses moisture. For optimum handling of cable ties it is important that the material is in a condition of equilibrium with a water content of approximately 2.5 %.

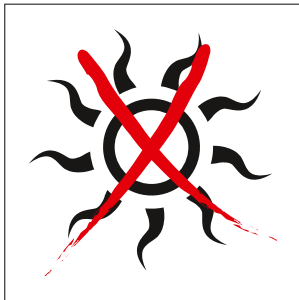
The packaging used by HellermannTyton ensures that the water content in the material remains constant. Therefore, it is important to store the products in their original packaging to preserve the quality of the ties.



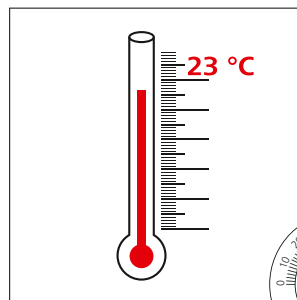
1. Once opened you should use the ties as quickly as possible.
2. Always store ties in the sealed plastic bag made of polyethylene.



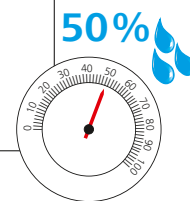
5. Store the product away from direct sources of heat.
6. Avoid contact with heat: for example, do not place on the radiators.



3. Do not expose the product to direct sunlight.
4. Do not store the product in sunlight; for example, on the windowsill.



7. The ideal storage conditions are those of the central European standard climate: 23 °C



50 % relative humidity

## Introduction to the main locking technologies used for cable ties

HellermannTyton offers a wide range of cable ties for use in different applications. By constantly refining our products and satisfying the ever-changing demands of the market, various locking technologies have been developed. Below you will find a brief overview of three most common locking technologies and their characteristics.

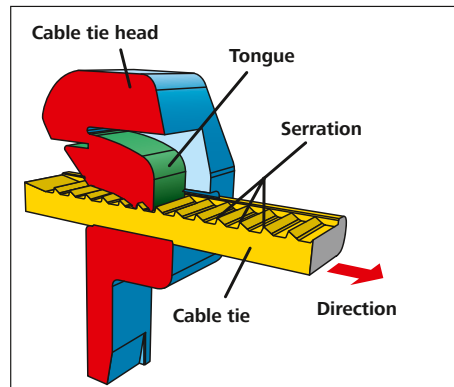
### Cable ties with plastic pawls

This technology is used in 90 % of all polyamide (PA) cable ties applied by HellermannTyton. In order to cover a variety of applications, there are different variants of this system, for example: releasable versions, in-line versions, open head versions.

These are one-piece cable ties, the pawl is moulded as an integral part of the cable tie, thereby building in inherent strengths.

#### Locking technology

Positive locking is achieved by engaging the pawl with the strap serrations. This allows the cable tie to perform to the published minimum tensile strength, that is the loading that the cable tie can hold under application.

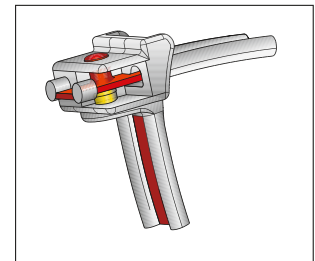
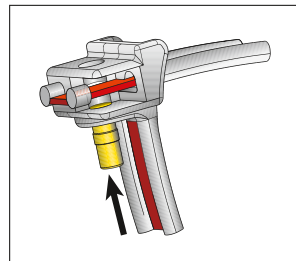


### KR series cable ties

This cable tie is distinguished by its smooth strap and unique locking mechanism. With the KR series the chamfered head achieves an especially firm fit around the bundled material.

#### Locking technology

This patented lock technology takes advantage of the excellent deformation properties of polyamide (PA). Here, the glass fibre-reinforced (GRP) locking pin (yellow) is forced into the strap by the use of an application tool - either the KR6/8 or KR8PNSE. The strap is deformed into the head of the tie by the application of the pin, thereby locking the cable tie in position and allowing for the bundling of heavy loads.



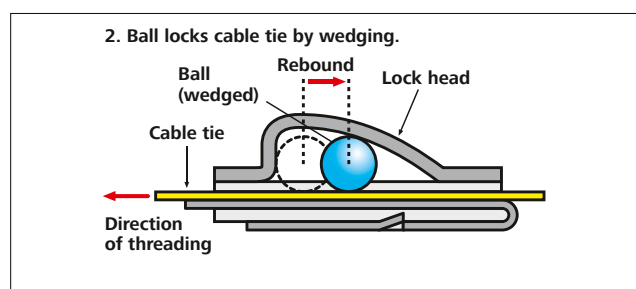
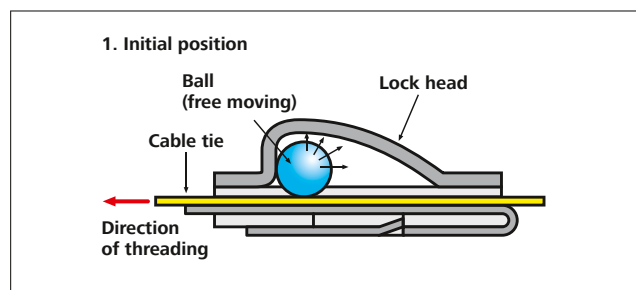
### MBT series of cable ties

Made of stainless steel grade 304 or 316, the MBT range of cable ties have no serrations on the strap and are threaded parallel through the head, gliding under a metal ball-bearing locking mechanism. By using the MK9SST application tool the cable tie is tensioned and the strap cut to a flush finish.

#### Locking technology

The strap is locked into the head by means of the small ball-bearing. The ball locks into the small end of the wedged shaped housing, forming a positive locking with the strap.

This cable tie is not suitable for rigid objects. Retraction of the ball-bearing (see drawing) is required into the small end of the wedged shaped housing to allow for a positive locking of the strap and also to make a flush cut of the end of the strap. Retraction, therefore, cannot take place with the bundling of inflexible materials. To bundle rigid objects LFPC channel should be laid as buffer between strap and bundled material to compensate for this retraction. This locking technology allows for minimum tensile strengths of up to 7,000 Newton.





# Cable Ties and Fixings

## Cable Ties Inside Serrated

### Cable Ties for temperatures up to +105 °C (heat stabilised)

#### T-Series in PA66HS natural and black

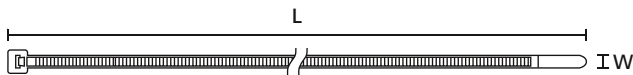
T-Series cable ties for bundling and securing cables, pipes and hoses. These cable ties can be used for almost any type of application.

#### Features and Benefits

- Heat stabilised cable tie available in a wide range of sizes
- Made from 100% high quality plastic, allows for good recycling
- Inside serration for a strong hold around bundles
- Easy application either manually or with a processing tool
- Simply to insert due to the ergonomically bent tail
- Higher temperature resistance up to +105 °C



T-Series.



T-Series



**Material specification please see page 16.**

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Material	Colour	Pack Cont.	Tools	Article-No.
T18R	2.5	100.0	22.0	80	PA66HS	Black (BK)	100 pcs.	2;4-6	111-01950
	2.5	100.0	22.0	80	PA66HS	Natural (NA)	100 pcs.	2;4-6	111-01959
T18I	2.5	145.0	35.0	80	PA66HS	Black (BK)	100 pcs.	2;4-6	111-02358
	2.5	145.0	35.0	80	PA66HS	Natural (NA)	1,000 pcs.	2;4-6	111-02359
T18L	2.5	205.0	55.0	80	PA66HS	Black (BK)	100 pcs.	2;4-6	111-02049
	2.5	205.0	55.0	80	PA66HS	Natural (NA)	100 pcs.	2;4-6	111-02159
T30R	3.5	150.0	35.0	135	PA66HS	Natural (NA)	100 pcs.	2;4-6	111-03259
	3.5	150.0	35.0	135	PA66HS	Black (BK)	100 pcs.	2;4-6	111-03050
T30L	3.5	198.0	50.0	135	PA66HS	Black (BK)	100 pcs.	2;4-6	111-03450
	3.5	198.0	50.0	135	PA66HS	Natural (NA)	100 pcs.	2;4-6	111-03459
T30LL	3.5	290.0	80.0	135	PA66HS	Black (BK)	1,000 pcs.	2;4-6	111-03660
	3.5	290.0	80.0	135	PA66HS	Natural (NA)	100 pcs.	2;4-6	111-03569
T40R	4.0	175.0	40.0	180	PA66HS	Black (BK)	100 pcs.	2;4-8	111-01623
	4.0	175.0	40.0	180	PA66HS	Natural (NA)	100 pcs.	2;4-8	111-01627
T50S	4.6	150.0	35.0	225	PA66HS	Natural (NA)	100 pcs.	2-10	111-05859
	4.6	150.0	35.0	225	PA66HS	Black (BK)	100 pcs.	2-10	111-05850
T50R	4.6	200.0	50.0	225	PA66HS	Black (BK)	100 pcs.	2-10	111-04950
	4.6	200.0	50.0	225	PA66HS	Natural (NA)	100 pcs.	2-10	111-04882
T50I	4.6	300.0	85.0	225	PA66HS	Black (BK)	100 pcs.	2-10	111-05250
	4.6	300.0	85.0	225	PA66HS	Natural (NA)	100 pcs.	2-10	111-05259
T50L	4.6	390.0	110.0	225	PA66HS	Black (BK)	100 pcs.	2-10	111-05450
	4.6	390.0	110.0	225	PA66HS	Natural (NA)	100 pcs.	2-10	111-05436
T80R	4.7	210.0	55.0	355	PA66HS	Black (BK)	1,000 pcs.	2-12	117-08070
	4.7	210.0	55.0	355	PA66HS	Natural (NA)	100 pcs.	2-12	111-05059

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Please note! Not all products listed on this page may have this approval.



### Cable Ties for temperatures up to +105 °C (heat stabilised)

#### T-Series in PA66HS natural and black

TYPE	Width (W)	Length (L)	Bundle Ø max.		Material	Colour	Pack Cont.	Tools	Article-No.
T80I	4.7	300.0	85.0	355	PA66HS	Black (BK)	100 pcs.	2-12	111-08250
	4.7	300.0	85.0	355	PA66HS	Natural (NA)	100 pcs.	2-12	111-08259
T80L	4.7	390.0	110.0	355	PA66HS	Black (BK)	100 pcs.	2-12	111-00388
	4.7	390.0	110.0	355	PA66HS	Natural (NA)	100 pcs.	2-12	111-05459
T120S	7.6	225.0	55.0	535	PA66HS	Black (BK)	50 pcs.	3;9-12	111-12850
	7.6	225.0	55.0	535	PA66HS	Natural (NA)	50 pcs.	3;9-12	111-12824
T120I	7.6	300.0	80.0	535	PA66HS	Natural (NA)	100 pcs.	3;9-12	111-12249
T150R(H)	7.6	365.0	100.0	670	PA66HS	Black (BK)	100 pcs.	3;9-12	111-15050
	7.6	365.0	100.0	670	PA66HS	Natural (NA)	100 pcs.	3;9-12	111-15069
T120R(E)	7.6	387.0	100.0	535	PA66HS	Black (BK)	100 pcs.	3;9-12	111-12050
	7.6	387.0	100.0	535	PA66HS	Natural (NA)	100 pcs.	3;9-12	111-12059
T120M	7.6	460.0	125.0	535	PA66HS	Black (BK)	100 pcs.	3;9-12	111-00153
T120XM	7.6	600.0	175.0	535	PA66HS	Black (BK)	50 pcs.	3;9-12	111-12700
	7.6	600.0	175.0	535	PA66HS	Natural (NA)	50 pcs.	3;9-12	111-12719
T120L	7.6	760.0	225.0	535	PA66HS	Black (BK)	50 pcs.	3;9-12	111-12440
	7.6	760.0	225.0	535	PA66HS	Natural (NA)	50 pcs.	3;9-12	111-12449
T150L	8.8	820.0	245.0	780	PA66HS	Black (BK)	25 pcs.	9-12	111-15410
T150M	8.9	530.0	150.0	780	PA66HS	Black (BK)	25 pcs.	9-12	111-15609
T150XL	8.9	1,095.0	330.0	780	PA66HS	Black (BK)	25 pcs.	9-12	111-15510

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

#### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PN5P2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Please note! Not all products listed on this page may have this approval.





# Cable Ties and Fixings

## Cable Ties Inside Serrated

### Cable Ties for outdoor use (UV-resistant)

#### T-Series in PA66W black

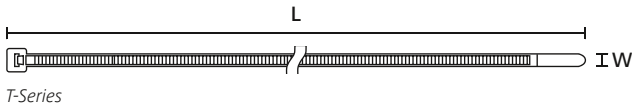
T-Series cable ties for bundling and securing cables, pipes and hoses. These cable ties can be used for almost any type of application.

#### Features and Benefits

- Weather-resistant black cable tie available in a wide range of sizes
- Made from 100% high quality plastic, allows for good recycling
- Inside serration for a strong hold around bundles
- Easy application either manually or with a processing tool
- Simply to insert due to the ergonomically bent tail
- UV-resistant



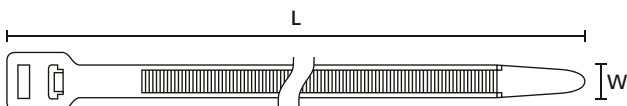
T-Series.



T-Series



Material specification please see page 16.



T250-series

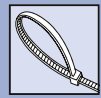
TYPE	Width (W)	Length (L)	Bundle Ø max.		Material	Colour	Pack Cont.	Tools	Article-No.
T18R	2.5	100.0	22.0	80	PA66W	Black (BK)	100 pcs.	2;4-6	111-01960
T18I	2.5	145.0	35.0	80	PA66W	Black (BK)	100 pcs.	2;4-6	111-02360
T18L	2.5	205.0	55.0	80	PA66W	Black (BK)	100 pcs.	2;4-6	111-02160
T25LL	2.8	330.0	95.0	110	PA66W	Black (BK)	100 pcs.	2;4-6	111-02660
T30R	3.5	150.0	35.0	135	PA66W	Black (BK)	100 pcs.	2;4-6	111-03260
T30L	3.5	198.0	50.0	135	PA66W	Black (BK)	100 pcs.	2;4-6	111-03460
T30LL	3.5	290.0	80.0	135	PA66W	Black (BK)	100 pcs.	2;4-6	111-03570
T40R	4.0	175.0	40.0	180	PA66W	Black (BK)	100 pcs.	2;4-8	111-01625
T50S	4.6	150.0	35.0	225	PA66W	Black (BK)	100 pcs.	2-10	111-05860
T50R	4.6	200.0	50.0	225	PA66W	Black (BK)	100 pcs.	2-10	111-04889
T50M	4.6	245.0	65.0	225	PA66W	Black (BK)	100 pcs.	2-10	111-06206
T50I	4.6	300.0	85.0	225	PA66W	Black (BK)	100 pcs.	2-10	111-05260
T50L	4.6	390.0	110.0	225	PA66W	Black (BK)	100 pcs.	2-10	111-05440
T50LL	4.6	445.0	130.0	225	PA66W	Black (BK)	100 pcs.	2-10	111-06000
T80R	4.7	210.0	55.0	355	PA66W	Black (BK)	100 pcs.	2-12	111-05060
T80I	4.7	300.0	85.0	355	PA66W	Black (BK)	100 pcs.	2-12	111-08290
T80L	4.7	390.0	110.0	355	PA66W	Black (BK)	100 pcs.	2-12	111-05460
T120S	7.6	225.0	55.0	535	PA66W	Black (BK)	50 pcs.	3;9-12	111-12830

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Please note! Not all products listed on this page may have this approval.



### Cable Ties for outdoor use (UV-resistant)

#### T-Series in PA66W black

TYPE	Width (W)	Length (L)	Bundle Ø max.		Material	Colour	Pack Cont.	Tools	Article-No.
T120I	7.6	300.0	80.0	535	PA66W	Black (BK)	100 pcs.	3;9-12	111-12230
T150R(H)	7.6	365.0	100.0	670	PA66W	Black (BK)	100 pcs.	3;9-12	111-14860
T120R(E)	7.6	387.0	100.0	535	PA66W	Black (BK)	100 pcs.	3;9-12	111-12060
T120M	7.6	460.0	125.0	535	PA66W	Black (BK)	100 pcs.	3;9-12	111-12660
T120L	7.6	760.0	225.0	535	PA66W	Black (BK)	50 pcs.	3;9-12	111-12430
T150L	8.8	820.0	245.0	780	PA66W	Black (BK)	25 pcs.	9-12	111-15460
T150M	8.9	530.0	150.0	780	PA66W	Black (BK)	25 pcs.	9-12	111-15660
T150XL	8.9	1,095.0	330.0	780	PA66W	Black (BK)	25 pcs.	9-12	111-15502
T150XLL	8.9	1,325.0	405.0	780	PA66W	Black (BK)	25 pcs.	9-12	111-15305
T250X	12.5	370.0	100.0	1,115	PA66W	Black (BK)	25 pcs.	11-12	111-25100
T250R	12.5	515.0	125.0	1,115	PA66HIRHSUV	Black (BK)	25 pcs.	11-12	111-24805

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

#### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Please note! Not all products listed on this page may have this approval.



# Cable Ties and Fixings

## Cable Ties Inside Serrated

### Cable Ties for higher impact resistant Polyamide 6.6 ScanBlack

#### T-Series in PA66HIR(S) black

T-Series cable ties for bundling and securing cables, pipes and hoses. These cable ties can be used for almost any type of application.

#### Features and Benefits

- Impact resistant black cable tie available in a wide range of sizes
- Made from 100% high quality plastic, allows for good recycling
- Inside serration for a strong hold around bundles
- Easy application either manually or with a processing tool
- Simple to insert due to the ergonomically bent tail
- Higher flexibility in cold environments



T-Series.



T-Series



Material specification please see page 16.

TYPE	Width (W)	Length (L)	Bundle Ø max.		Material	Colour	Pack Cont.	Tools	Article-No.
T50R	4.6	200.0	50.0	225	PA66HIR(S)	Black (BK)	100 pcs.	2-10	111-04890
T50I	4.6	300.0	85.0	225	PA66HIR(S)	Black (BK)	100 pcs.	2-10	111-00222
T50L	4.6	390.0	110.0	225	PA66HIR(S)	Black (BK)	100 pcs.	2-10	111-05441
T120I	7.6	300.0	80.0	535	PA66HIR(S)	Black (BK)	100 pcs.	3;9-12	111-12203
T120R(E)	7.6	387.0	100.0	535	PA66HIR(S)	Black (BK)	100 pcs.	3;9-12	111-12032
T120L	7.6	760.0	225.0	535	PA66HIR(S)	Black (BK)	50 pcs.	3;9-12	111-12402

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

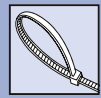
#### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Please note! Not all products listed on this page may have this approval.



### Cable Ties for temperatures up to +150 °C in Polyamide 4.6

#### T-Series in PA46 natural and grey

T-Series cable ties for bundling and securing cables, pipes and hoses. These cable ties can be used for almost any type of application.

#### Features and Benefits

- Higher temperature cable tie available in a wide range sizes
- Made from 100% high quality plastic, allows for good recycling
- Inside serration for a strong hold around bundles
- Easy application either manually or with a processing tool
- Simple to insert due to the ergonomically bent tail
- Higher temperature resistance up to +150 °C



T-Series.



T-Series

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Material	Colour	Pack Cont.	Tools	Article-No.
T18R	2.5	100.0	22.0	80	PA46	Natural (NA)	1,000 pcs.	2;4-6	114-01879
T30R	3.5	150.0	35.0	135	PA46	Grey (GY)	100 pcs.	2;4-6	111-00264
	3.5	150.0	35.0	135	PA46	Natural (NA)	100 pcs.	2;4-6	114-03079
T50R	4.6	200.0	50.0	225	PA46	Grey (GY)	100 pcs.	2-10	111-00824
	4.6	200.0	50.0	225	PA46	Natural (NA)	100 pcs.	2-10	111-00525
T50I	4.6	300.0	85.0	225	PA46	Natural (NA)	100 pcs.	2-10	111-05220
T50L	4.6	390.0	110.0	225	PA46	Natural (NA)	100 pcs.	2-10	111-00526
T120R(E)	7.6	387.0	100.0	535	PA46	Natural (NA)	100 pcs.	3;9-12	114-12179

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Recommended Tools										
2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Please note! Not all products listed on this page may have this approval.



# Cable Ties and Fixings

## Cable Ties Inside Serrated

### Cable Ties with streamlined design

#### X-Series

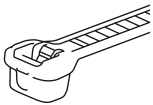
The X-series range of cable ties provides a new and improved design compared with standard cable ties, delivering a range of benefits and enhanced performance. With a new streamlined design and smaller head, the X-Series cable ties provide a superior fixing solution for tight applications, whilst also benefiting from a better grip around the bundle. This professional cable tie range is available in weather resistant and high impact / heat stabilised materials, ensuring these fixings consistently perform well at both high temperatures and in cold environments.

#### Features and Benefits

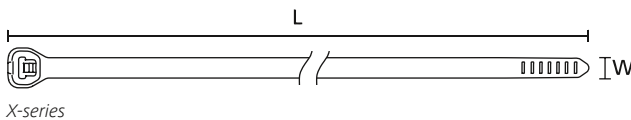
- Inside serrated cable tie
- High tensile strength around cable bundles
- Smooth, rounded head design
- Space saving solution
- Improved ergonomic design
- Provides a secure fastening with no lateral movement
- Complies with SAE Aviation specifications



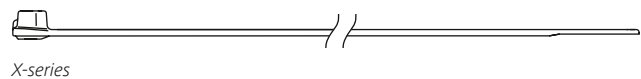
The X-series family.



The smooth rounded head of the X-series



X-series



X-series

TYPE	Width (W)	Length (L)	Bundle Ø max.		Material	Colour	Pack Cont.	Tools	Article-No.
X80S	4.7	150.0	35.0	355	PA66HIRHS	Black (BK)	100 pcs.	2-12	108-00001
X80R	4.7	200.0	50.0	355	PA66HIRHS	Black (BK)	100 pcs.	2-12	108-00004
X80I	4.7	300.0	84.0	355	PA66HIRHS	Black (BK)	100 pcs.	2-12	108-00018
X80L	4.7	385.0	110.0	355	PA66HIRHS	Black (BK)	100 pcs.	2-12	108-00028
X120R	7.7	369.0	100.0	535	PA66HIRHS	Black (BK)	100 pcs.	3;9-12	108-00040
X250R	13.0	535.0	150.0	1,115	PA66HIRHS	Black (BK)	50 pcs.	11-12	108-00050
X250I	13.0	715.0	205.0	1,115	PA66HIRHS	Black (BK)	50 pcs.	11-12	108-00045

All dimensions in mm. Subject to technical changes.

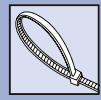
Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

#### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.





### Cable Ties for hose and gaiter

#### CTT-Series natural and black

Designed to secure pipes, hoses and gaiters where low pressures are being secured. These ties can be used in many industries, including automotive, white goods manufacturing, medical and construction.

#### Features and Benefits

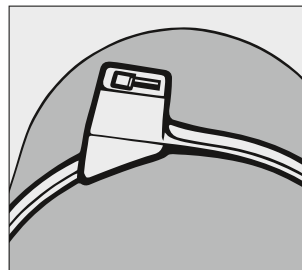
- Curved head design offers a good fit to the bundle
- Inside serration for a strong hold onto bundles
- Easy application either manually or with a processing tool



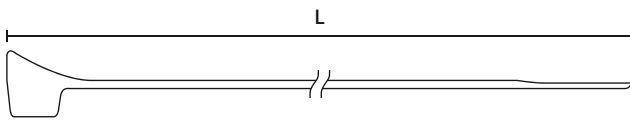
CTT ties installed on flexible gaiters.



**Material specification please see page 16.**



For secure fixing of round and solid shapes.



CTT Hose Ties

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Material	Colour	Pack Cont.	Tools	Article-No.
CTT20R	2.5	101.6	13.0	90	PA66	Natural (NA)	100 pcs.	2;4-6	112-51919
	2.5	101.6	13.0	90	PA66HS	Black (BK)	1,000 pcs.	2;4-6	112-51960
CTT60R	4.7	205.0	45.0	265	PA66HS	Black (BK)	100 pcs.	2-12	112-56060
	4.7	205.0	45.0	265	PA66	Black (BK)	100 pcs.	2-12	112-56019
HT120R	7.6	340.0	90.0	535	PA66HS	Black (BK)	100 pcs.	6-10	112-00100

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Recommended Tools										
2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Please note! Not all products listed on this page may have this approval.



# Cable Ties and Fixings

## Cable Ties Inside Serrated

### Cable Ties for parallel routing

#### DH-Series

Ideal for running two cables in parallel that need to be separated. These ties allow for installation of a second cable run without the need for additional cable ties.

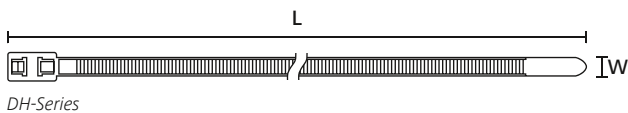
The DH ties are also widely used within the packaging industry - the first loop closes and secures the bag, whilst the second loop can be made into a carrying handle (subject to weight).

#### Features and Benefits

- Available in a wide range of materials
- Cable tie designed with two heads which creates an inside and outside serrated loop
- For parallel routing of two bundles with only one cable tie
- Bundles can be of different diameter
- Easy application either manually or with a processing tool



Parallel routing of two cable bundles using DH-Series. The double head creates an inside and an outside serrated loop.



Material specification please see page 16.

TYPE	Width (W)	Length (L)	Ø max. side loops	N	Min. Tensile Strength 2nd loop (N)	Material	Colour	Pack Cont.	Tools	Article-No.
T50RDH	4.7	210.0	19.0	225	180	PA46	Grey (GY)	100 pcs.	2;4-6;8	117-05168
	4.7	210.0	19.0	225	180	PA66	Black (BK)	100 pcs.	2;4-6;8	117-05000
	4.7	210.0	19.0	225	180	PA66	Natural (NA)	100 pcs.	2;4-6;8	117-05002
	4.7	210.0	19.0	225	180	PA66HS	Black (BK)	100 pcs.	2;4-6;8	117-05050
	4.7	210.0	19.0	225	180	PA66W	Black (BK)	500 pcs.	2;4-6;8	117-05060
T50IDH	4.7	305.0	38.1	225	180	PA66	Natural (NA)	1,000 pcs.	2;4-6;8	117-05303
	4.7	305.0	38.1	225	180	PA66HS	Black (BK)	1,000 pcs.	2;4-6;8	117-05350
	4.7	305.0	38.1	225	180	PA66W	Black (BK)	100 pcs.	2;4-6;8	117-05360
T50LDH	4.7	395.0	50.8	225	180	PA66	Natural (NA)	1,000 pcs.	2;4-6;8	117-05461
	4.7	395.0	50.8	225	180	PA66HS	Black (BK)	100 pcs.	2;4-6;8	117-00008

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

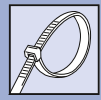
#### Recommended Tools

2	4	5	6	8
MK20	MK3SP	MK3PNSP2	EVO7	MK7P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Please note! Not all products listed on this page may have this approval.



### Cable Ties for thin-walled bundles

#### OS-Series

OS-Series cable ties are used in many areas where thin-walled or soft insulation wires and cables are being installed, e. g. automotive and aircraft industry. OS ties made from PA66V0 material are suitable for applications where safety regulations are required, e.g. reduction of smoke and dangerous gases.

#### Features and Benefits

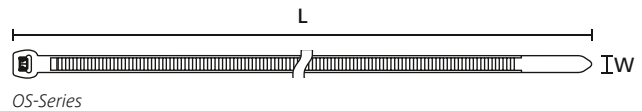
- Outside serrated cable tie with smooth surface to the bundle
- Tie follows the contours of the cable bundle perfectly
- Takes up less space due to curved head
- Easy insertion and high tensile strength
- For higher temperature or Limited Fire Hazard demand: Material PA46 or PA66V0
- Easy application either manually or with a processing tool



The contoured head needs less installation space, provides low insertion force and offers high strength.



The curved head design of the OS-Series



TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.		Material	Colour	Pack Cont.	Tools	Article-No.
T18ROS	2.5	100.0	1.6	20.0	80	PA66HS	Black (BK)	500 pcs.	2;4-6	118-04701
	2.5	100.0	1.6	20.0	80	PA66HS	Natural (NA)	1,000 pcs.	2;4-6	118-00035
	2.5	100.0	1.6	20.0	80	PA66V0-HOI	White (WH)	100 pcs.	2;4-6	118-00079
T30ROS	3.4	145.0	1.6	35.0	135	PA66HS	Natural (NA)	100 pcs.	2;4-6	118-00064
	3.4	145.0	1.6	35.0	135	PA66HS	Black (BK)	100 pcs.	2;4-6	118-04800
T30LOS	3.4	200.0	1.6	50.0	135	PA66HS	Natural (NA)	100 pcs.	2;4-6	118-00044
	3.4	200.0	1.6	50.0	135	PA66V0-HOI	White (WH)	100 pcs.	2;4-6	118-00080
	3.4	200.0	1.6	50.0	135	PA66HS	Black (BK)	100 pcs.	2;4-6	118-04900
T50SOS	4.6	150.0	1.6	35.0	225	PA66HS	Black (BK)	100 pcs.	2;4-8	118-05850
	4.6	150.0	1.6	35.0	225	PA66HS	Natural (NA)	100 pcs.	2;4-8	118-05859
T50ROS	4.6	200.0	1.6	50.0	225	PA46	Grey (GY)	500 pcs.	2;4-8	118-05078
	4.6	200.0	1.6	50.0	225	PA66HS	Black (BK)	500 pcs.	2;4-8	118-05040
	4.6	200.0	1.6	50.0	225	PA66HS	Natural (NA)	100 pcs.	2;4-8	118-05059
T50MOS	4.6	245.0	1.6	66.0	225	PA66HS	Black (BK)	100 pcs.	2;4-8	118-00018
	4.6	245.0	1.6	66.0	225	PA66HS	Natural (NA)	100 pcs.	2;4-8	118-00055
	4.6	245.0	1.6	66.0	225	PA66V0-HOI	White (WH)	100 pcs.	2;4-8	118-00081
T50LOS	4.6	384.0	1.6	110.0	225	PA66HS	Black (BK)	100 pcs.	2;4-8	118-05900
T120ROS	7.6	385.0	5.0	105.0	535	PA66HS	Black (BK)	100 pcs.	3;9-12	118-00066
	7.6	385.0	5.0	105.0	535	PA66HS	Natural (NA)	100 pcs.	3;9-12	118-00067
	7.6	385.0	5.0	105.0	535	PA66V0-HOI	White (WH)	100 pcs.	3;9-12	118-00082

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

#### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Please note! Not all products listed on this page may have this approval.



# Cable Ties and Fixings

## Cable Ties Outside Serrated

### Cable Ties for high temperature application up to +240 °C

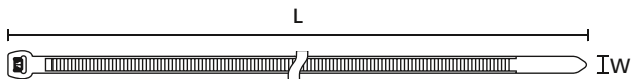
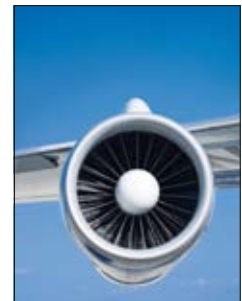
PEEK Ties have been designed for the use in hazardous environment. Their suitability for high temperature applications makes them ideal for use in the drilling industry, railway, offshore or automotive industry. The excellent chemical and radium ray resistance is predestined for applications in medical engineering, chemical industry and power stations. Within the aerospace industry, PEEK ties are suitable due to their good ratio weight to tensile strength. Because of this combination of different properties, PEEK ties can replace metal solutions.

#### Features and Benefits

- For high temperature applications from -55° C up to +240° C
- Outside serrated cable tie with smooth surface to the bundle
- Close fit to the cable bundle due to the deepening head shape
- Easy insertion combined with high tensile strength
- Takes up less space due to the curved head
- Combines the performance of a metal tie with the ease of use of a polyamide cable tie
- Easy application either manually or with a processing tool



The contoured head takes up less space, gives a low insertion force and offers high strength.



PEEK-Series



Material specification please see page 16.

#### PEEK Ties, outside serrated

TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.	N	Material	Colour	Pack Cont.	Tools	Article-No.
PT2A	3.4	145.0	4.0	35.0	230	PEEK	Beige (BGE)	100 pcs.	6-8	118-00032
PT3B	4.7	250.0	4.0	65.0	300	PEEK	Beige (BGE)	100 pcs.	6-8	118-00116

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

#### PEEK Ties, inside serrated

TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.	N	Material	Colour	Pack Cont.	Tools	Article-No.
PT220	4.7	220.0	8.0	56.0	380	PEEK	Beige (BGE)	100 pcs.	6-8	111-01235

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Recommended Tools		
6	7	8
EVO7	MK7HT	MK7P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



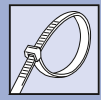
One Step to the Web!



Please find more PEEK products for your system solutions: see page 62, 65, 207.



Please note! Not all products listed on this page may have this approval.



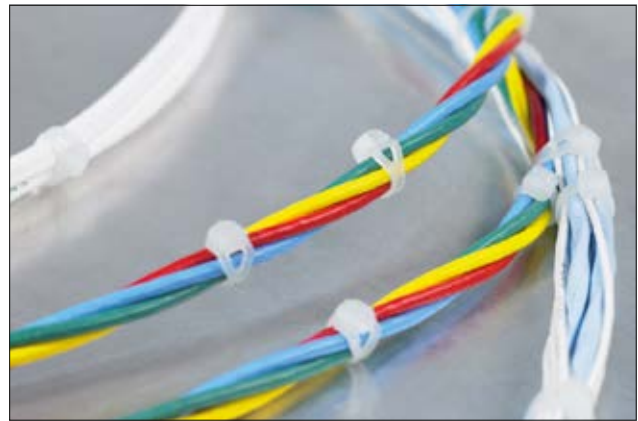
### Cable Ties with 90° angled head

#### V-Series

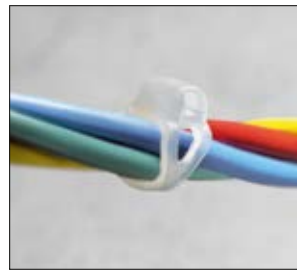
Due to its low profile head, V-Series outside serrated cable ties are perfectly suited for applications with restricted space, such as camera and alarm systems and automation systems (Remote I/O Systems). Where bundles are fed through a grommet or ductwork, V-Series provides a practical solution due to its unique rounded design.

#### Features and Benefits

- Outside serrated cable tie with smooth surface to the bundle
- Lentiform, 90° angled head
- Rounded head minimises the risk of damage to insulation, especially for parallel routed bundles
- Low profile head takes up less space above the bundle
- Close fit to the cable bundle
- Easy insertion and high tensile strength
- Easy application either manually or with a processing tool



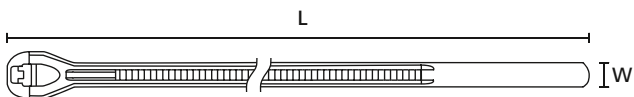
V-Series is perfect for parallel bundles.



V-Series - less height above the bundle.



Outside serration means no damage of insulation.



V-Series

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Material	Colour	Pack Cont.	Tools	Article-No.
V100R	2.5	102.5	20.0	100	PA46	Grey (GY)	1,000 pcs.	2;4-6	118-00109
	2.5	102.5	20.0	100	PA66HS	Natural (NA)	1,000 pcs.	2;4-6	118-00074
V150R	3.3	150.0	35.0	150	PA46	Grey (GY)	100 pcs.	2;4-6;8	118-00107
	3.3	150.0	35.0	150	PA66HS	Natural (NA)	100 pcs.	2;4-6;8	118-00089

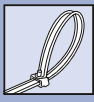
All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Recommended Tools				
2	4	5	6	8
MK20	MK3SP	MK3PNSP2	EVO7	MK7P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.





# Cable Ties and Fixings

## Cable Ties Without Serration

### Cable Tie locked by glass fibre pin

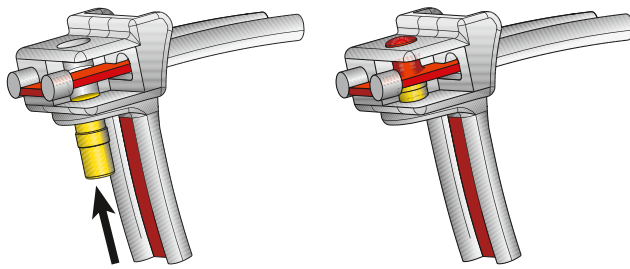
In addition to offering a secure method of bundling cables, the design of the KR-ties makes them ideal for use as a method of securing bellows on steering racks, water hoses and vacuum lines.

#### Features and Benefits

- Patented cable tie system
- Smooth strap which is locked into place with a glass-fibre reinforced pin
- For assembly a special KR-tool is needed
- Very secure and vibration resistant fixing
- KR-ties up to 426 mm are made as one piece fastening
- Available in various materials, including PA12 which is less hygroscopic



The KR-Series has been repeatedly proven in high vibration applications.



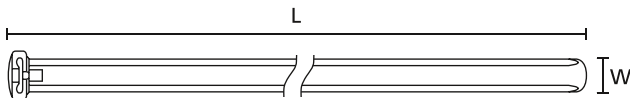
The unlocked head of a KR-tie.

The cable tie (red) is locked into place with the pin.



KR-Series is available in different sizes.

#### KR-Series, 1-Piece



Cable tie KR-Series

**i** Other dimensions are available on request.

Patented

TYPE	Width (W)	Length (L)	Bundle Ø max.		Material	Colour	Pack Cont.	Tools	Article-No.
KR6/35	6.1	360.0	93.0	490	PA66	Natural (NA)	50 pcs.	13	121-63519
	6.1	360.0	93.0	490	PA66HS	Natural (NA)	50 pcs.	13	121-63555
	6.1	360.0	93.0	490	PA66W	Black (BK)	50 pcs.	13	121-63560
KR8/21	8.0	210.0	47.0	785	PA66HS	Natural (NA)	50 pcs.	13-14	121-82155
	8.0	210.0	47.0	785	PA66	Natural (NA)	50 pcs.	13-14	121-82119
	8.0	210.0	47.0	785	PA66W	Black (BK)	50 pcs.	13-14	121-82160
KR8/33	8.0	337.0	86.0	390	PA12	Black (BK)	50 pcs.	13-14	121-83380
	8.0	337.0	86.0	785	PA66	Natural (NA)	50 pcs.	13-14	121-83319
	8.0	337.0	86.0	785	PA46	Grey (GY)	50 pcs.	13-14	121-83378
	8.0	337.0	86.0	785	PA66HS	Natural (NA)	50 pcs.	13-14	121-83355
	8.0	337.0	86.0	785	PA66W	Black (BK)	50 pcs.	13-14	121-83360

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



Please note! Not all products listed on this page may have this approval.



### Cable Tie locked by glass fibre pin

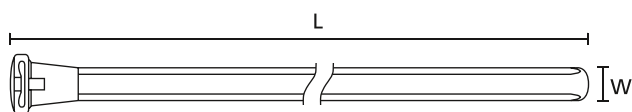
#### KR-Series, 1-Piece

TYPE	Width (W)	Length (L)	Bundle Ø max.		Material	Colour	Pack Cont.	Tools	Article-No.
KR8/43	8.0	426.0	105.0	785	PA66HS	Black (BK)	50 pcs.	13-14	121-74360
	8.0	426.0	105.0	785	PA66HS	Natural (NA)	50 pcs.	13-14	121-74359

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

#### KR-Series, ultrasonic welded



KR-Series, ultrasonic welded



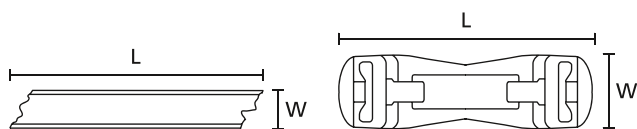
Material specification please see page 16.

TYPE	Width (W)	Length (L)	Bundle Ø max.		Material	Colour	Pack Cont.	Tools	Article-No.
KR8/50	8.0	500.0	152.0	720	PA66HS	Natural (NA)	50 pcs.	13-14	121-05051
	8.0	500.0	152.0	785	PA66	Natural (NA)	50 pcs.	13-14	121-05019
	8.0	500.0	152.0	785	PA66W	Black (BK)	50 pcs.	13-14	121-05060
KR8/60	8.0	600.0	184.0	785	PA66	Natural (NA)	50 pcs.	13-14	121-06019
	8.0	600.0	184.0	785	PA66W	Black (BK)	50 pcs.	13-14	121-06060
KR8/70	8.0	700.0	216.0	785	PA66	Natural (NA)	50 pcs.	13-14	121-07019
	8.0	700.0	216.0	785	PA66W	Black (BK)	50 pcs.	13-14	121-07060
KR8/80	8.0	800.0	248.0	785	PA66	Natural (NA)	50 pcs.	13-14	121-08019
	8.0	800.0	248.0	785	PA66W	Black (BK)	50 pcs.	13-14	121-08060
KR8/100	8.0	1,000.0	300.0	785	PA66	Natural (NA)	50 pcs.	13-14	121-10019
	8.0	1,000.0	300.0	785	PA66W	Black (BK)	50 pcs.	13-14	121-10060
KR8/110	8.0	1,100.0	344.0	720	PA66HS	Natural (NA)	50 pcs.	13-14	121-11051
	8.0	1,100.0	344.0	785	PA66W	Black (BK)	50 pcs.	13-14	121-11060
KR8/120	8.0	1,200.0	375.0	785	PA66	Natural (NA)	50 pcs.	13-14	121-12019
KR8/150	8.0	1,500.0	471.0	785	PA66	Natural (NA)	50 pcs.	13-14	121-15019

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

#### KR-Series, endless



Cable tie KR8S1

Double-head KR8C5

Recommended Tools	
13	14
KR6/8	KR8PNSE

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.

TYPE	Width (W)	Length (L)		Material	Colour	Pack Cont.	Tools	Article-No.
KR8/S1	8.0	50.0 m	785	PA66HS	Natural (NA)	50.0 m	13	121-98151
	8.0	50.0 m	785	PA66W	Black (BK)	50.0 m	13	121-98160
KR8/C5	11.7	38.0	-	PA66HS	Natural (NA)	200 pcs.	13	121-58551
	11.7	38.0	-	PA66W	Black (BK)	200 pcs.	13	121-58560

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

### Short Circuit Test (SCT)

#### The perfect alternative to cable cleats

HellermannTyton's single and double wrap Metal Ball (MBT) and Buckle Ties (AMT) fully withstand the maximum force of short circuits in trefoil formation according to the results of laboratory tests performed using the parameters outlined in the IEC 61914:2009 cable cleat standard.

The tests conducted by the NEFI High Power Laboratory in Norway – a member of the SATS Certification – demonstrated that our MBT and AMT stainless steel cable ties resist the huge forces unleashed by power cables in the event of a short circuit, even when they are installed in a 'worst case' trefoil formation (see drawing).

#### Construction of the HellermannTyton SCT

The MBT and AMT metal ties were insulated from the cable jackets with LFPC polyolefin protective channels as an added layer of protection. Two different cable sizes, Ø 36 mm (300 mm<sup>2</sup>) and Ø 13 mm (50 mm<sup>2</sup>), each with 3 cables 8 m in length in trefoil formation, were tested with short circuit times between 0.2 and 0.5 seconds at various current levels.

#### Results of the HellermannTyton SCT

- We validated the formula for calculating maximum force on conductors during short circuits outlined in IEC61914:2009
- We ensure that our single and double wrap Metal Ball (MBT) and Buckle Ties (AMT) withstand a short circuit application
- We provide a viable fixing solution for low and medium voltage cables
- We offer an inexpensive alternative to cable cleats

$$F_t = 0,17 \times i_p^2 / S$$

Formula for calculating maximum force on conductors according to IEC 61914:2009.

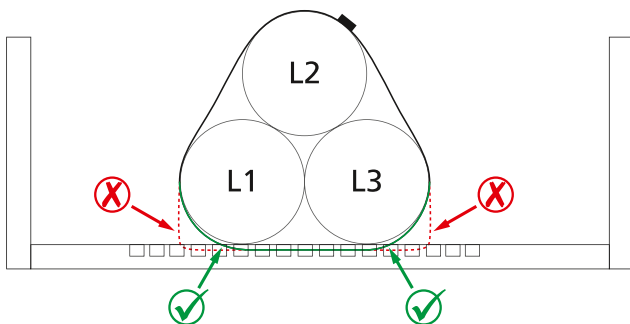
#### Advantages of using HellermannTyton stainless steel cable ties over cable cleats:

- They can be used for both inside and outside environments
- They offer very good heat and chemical resistance
- A range of strap lengths and widths make it is easy to choose a solution for every application
- Only one cable tie is required for many different cable diameters
- Lower installation costs
- Low inventory value

#### Conclusion

- With the SCT we have proven that our MBT and AMT cable ties are suitable for low and medium voltage cable and withstand a certain level of short circuits.
- By using the IEC specified formula we are able to offer customers the right cable tie for their applications.

#### Stainless steel cable ties from HellermannTyton are a perfect and inexpensive alternative to cable cleats.



Best practice for installation in trefoil formation. Ties should be bundled as closely as possible to the cables for a smooth loop and to avoid sharp edges.



### Cable Ties with Ball-Lock

#### MBT-Series, Stainless Steel 304

Metal ties are ideal for all applications that require high strength, reliability and fire resistance. The MBT range of stainless steel cable ties can be used in chemical industries and on oil platforms as well as in mass transit, shipbuilding and mining industries. MBT ties are also suitable for machine building, apparatus construction and in the outside area of radio technology. Additionally, MBT ties are ideal for securing lighting in theatres and exhibition halls.

#### Features and Benefits

- MBT cable ties made from stainless steel 304
- Patented non-releasable locking feature
- Corrosion resistant
- Weather resistant
- Outstanding chemical resistance
- High temperature resistance
- Non-burning



Stainless Steel Cable Ties, uncoated, MBT\_SS, MBT\_HS.



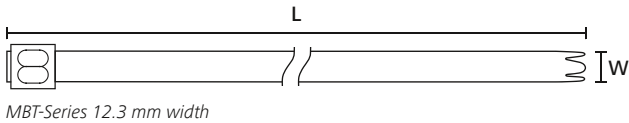
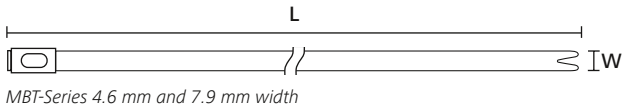
Stainless Steel Cable Ties, uncoated, MBT\_XHS.



Patented



Material specification please see page 16.



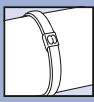
TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.		Material	Pack Cont.	Tools	Article-No.
MBT5SS	4.6	127.0	12.0	25.0	900	SS304	100 pcs.	15-18	111-93058
MBT8SS	4.6	201.0	17.0	50.0	900	SS304	100 pcs.	15-18	111-93088
MBT14SS	4.6	362.0	17.0	102.0	900	SS304	100 pcs.	15-18	111-93148
MBT20SS	4.6	521.0	17.0	152.0	900	SS304	100 pcs.	15-18	111-93208
MBT27SS	4.6	685.0	17.0	203.0	900	SS304	100 pcs.	15-18	111-93278
MBT33SS	4.6	838.0	17.0	254.0	900	SS304	100 pcs.	15-18	111-93338
MBT8HS	7.9	201.0	17.0	50.0	2,000	SS304	50 pcs.	15-18	111-94088
MBT14HS	7.9	362.0	17.0	102.0	2,000	SS304	50 pcs.	15-18	111-94148
MBT20HS	7.9	521.0	17.0	152.0	2,000	SS304	50 pcs.	15-18	111-94208
MBT27HS	7.9	685.0	17.0	203.0	2,000	SS304	50 pcs.	15-18	111-94278
MBT33HS	7.9	838.0	17.0	254.0	2,000	SS304	50 pcs.	15-18	111-94338
MBT14XHS	12.3	362.0	17.0	102.0	2,700	SS304	50 pcs.	15-18	111-95148
MBT20XHS	12.3	521.0	17.0	152.0	2,700	SS304	50 pcs.	15-18	111-95208
MBT27XHS	12.3	681.0	17.0	203.0	2,700	SS304	50 pcs.	15-18	111-95278
MBT33XHS	12.3	838.0	17.0	254.0	2,700	SS304	50 pcs.	15-18	111-95338

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Recommended Tools			
15	16	17	18
MK9SST	MK9PSST	HDT16	KST-STG200

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties, Stainless Steel

### Cable Ties with Ball-Lock

#### MBT-Series, Stainless Steel 316

Metal ties are ideal for all applications that require high strength, reliability and fire resistance. The MBT range of stainless steel cable ties can be used in chemical industries and on oil platforms as well as in mass transit, shipbuilding and mining industries. MBT ties are also suitable for machine building, apparatus construction and in the outside area of radio technology. Additionally, MBT ties are ideal for securing lighting in theatres and exhibition halls.

#### Features and Benefits

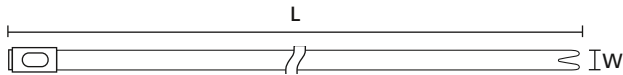
- MBT cable ties made from stainless steel 316
- Patented non-releasable locking feature
- Corrosion resistant
- Weather resistant
- Outstanding chemical resistance
- Antimagnetic
- High temperature resistance
- Non-burning




Stainless Steel Cable Ties, uncoated, MBT\_S, MBT\_H.



Patented



MBT-Series 4.6 mm and 7.9 mm width

TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.		Material	Pack Cont.	Tools	Article-No.
MBT5S	4.6	127.0	12.0	25.0	900	SS316	100 pcs.	15-18	111-93059
MBT8S	4.6	201.0	12.0	50.0	900	SS316	100 pcs.	15-18	111-93089
MBT14S	4.6	362.0	12.0	102.0	900	SS316	100 pcs.	15-18	111-93149
MBT20S	4.6	521.0	12.0	152.0	900	SS316	100 pcs.	15-18	111-93209
MBT27S	4.6	685.0	12.0	203.0	900	SS316	100 pcs.	15-18	111-93279
MBT33S	4.6	838.0	12.0	254.0	900	SS316	100 pcs.	15-18	111-93339
MBT8H	7.9	201.0	12.0	50.0	2,000	SS316	50 pcs.	15-18	111-94089
MBT14H	7.9	362.0	12.0	102.0	2,000	SS316	50 pcs.	15-18	111-94149
MBT20H	7.9	521.0	12.0	152.0	2,000	SS316	50 pcs.	15-18	111-94209
MBT27H	7.9	685.0	12.0	203.0	2,000	SS316	50 pcs.	15-18	111-94279
MBT33H	7.9	838.0	12.0	254.0	2,000	SS316	50 pcs.	15-18	111-94339

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

#### Recommended Tools

15	16	17	18
MK9SST	MK9PSST	HDT16	KST-STG200

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.

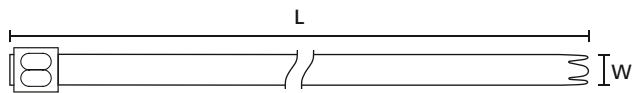


Please note! Not all products listed on this page may have this approval.



### Cable Ties with Ball-Lock

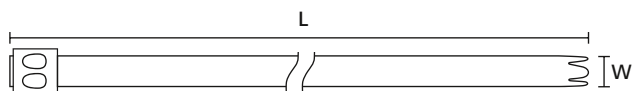
#### MBT-Series, Stainless Steel 316



MBT-Series 12.3 mm width



Material specification please see page 16.



MBT-Series 16.0 mm width

TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.		Material	Pack Cont.	Tools	Article-No.
MBT14XH	12.3	362.0	12.0	102.0	2,700	SS316	50 pcs.	15-18	111-95149
MBT20XH	12.3	521.0	12.0	152.0	2,700	SS316	50 pcs.	15-18	111-95209
MBT27XH	12.3	681.0	12.0	203.0	2,700	SS316	50 pcs.	15-18	111-95279
MBT33XH	12.3	838.0	12.0	254.0	2,700	SS316	50 pcs.	15-18	111-95339
MBT14UH	16.0	362.0	12.0	102.0	4,100	SS316	50 pcs.	15;17	111-01301
MBT20UH	16.0	521.0	12.0	152.0	4,100	SS316	50 pcs.	15;17	111-01302
MBT27UH	16.0	681.0	12.0	203.0	4,100	SS316	50 pcs.	15;17	111-01303
MBT33UH	16.0	838.0	12.0	254.0	4,100	SS316	50 pcs.	15;17	111-01304
MBT43UH	16.0	1,092.0	12.0	330.0	4,100	SS316	25 pcs.	15;17	111-01305
MBT49UH	16.0	1,245.0	12.0	380.0	4,100	SS316	25 pcs.	15;17	111-01306

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

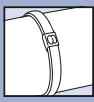
#### Recommended Tools

15	16	17	18
MK9SST	MK9PSST	HDT16	KST-STG200

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Please note! Not all products listed on this page may have this approval.



# Cable Ties and Fixings

Cable Ties, Stainless Steel

## Double Wrap Cable Ties with Ball-Lock

**MBTXHD- / MBTUHD-Series, Stainless Steel 316**

The double wrap ties of the MBT-series are used in applications where a fixing requires an extraordinary high tensile strength.

### Features and Benefits

- Stainless steel MBT ties with double wrap operation
- Wraps around the bundle and passes through the head twice
- Very high tensile strength to carry enormous applied loads
- Head with two locking balls
- Resistant to arduous conditions and environments



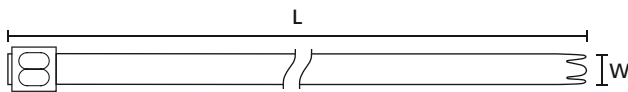
Double wrap Stainless Steel Cable Ties, uncoated, MBT\_UHD.



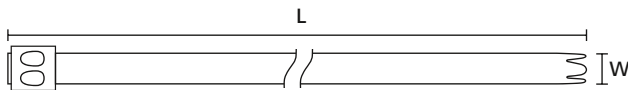
Patented



Material specification please see page 16.



MBT-Series 12.3 mm width



MBT-Series 16.0 mm width



Double wrap Stainless Steel Cable Ties, uncoated MBT\_UHD.

TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.		Material	Pack Cont.	Tools	Article-No.
MBT27XHD	12.3	681.0	17.0	100.0	5,000	SS316	50 pcs.	15-18	111-01307
MBT33XHD	12.3	838.0	17.0	120.0	5,000	SS316	50 pcs.	15-18	111-01308
MBT43XHD	12.3	1,092.0	17.0	160.0	5,000	SS316	25 pcs.	15-18	111-01309
MBT49XHD	12.3	1,245.0	17.0	180.0	5,000	SS316	25 pcs.	15-18	111-01310
MBT60XHD	12.3	1,524.0	17.0	230.0	5,000	SS316	25 pcs.	15-18	111-01311
MBT27UHD	16.0	681.0	25.0	100.0	7,000	SS316	50 pcs.	15;17	111-01312
MBT33UHD	16.0	838.0	25.0	120.0	7,000	SS316	50 pcs.	15;17	111-01313
MBT43UHD	16.0	1,092.0	25.0	160.0	7,000	SS316	25 pcs.	15;17	111-01314
MBT49UHD	16.0	1,245.0	25.0	180.0	7,000	SS316	25 pcs.	15;17	111-01315
MBT60UHD	16.0	1,524.0	25.0	230.0	7,000	SS316	25 pcs.	15;17	111-01316

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

### Recommended Tools

15	16	17	18
MK9SST	MK9PSST	HDT16	KST-STG200

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.





### Cable Ties with Ball-Lock and Coating

#### MBT-FC-Series, Stainless Steel 316

The MBT range of stainless steel cable ties can be used in the most arduous of conditions or where the additional security, strength and fire resistance of a metal fixing is required. Used in all areas from mass transit, ship building, oil rigs, mining and chemical industries to theatres and exhibition halls. In the event of a fire, cables will remain securely held in place and will not fall to block emergency exits.

#### Features and Benefits

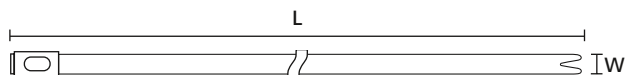
- Fully coated MBT, made from type 316 stainless steel with polyester coating
- Patented non-releasable locking feature
- Coated cable tie with smooth edges
- Comfortable handling and installation
- Eliminates contact corrosion between dissimilar materials during application



Stainless Steel Cable Ties, coated, MBT\_SFC, MBT\_HFC.



Stainless Steel Cable Ties, coated, MBT\_XHFC.



MBT-Series 4.6 mm and 7.9 mm width

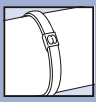
TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.	N	Material	Pack Cont.	Tools	Article-No.
MBT5SFC	4.6	127.0	15.0	25.0	540	SS316, SP	100 pcs.	15-18	111-00288
MBT8SFC	4.6	201.0	17.0	50.0	540	SS316, SP	100 pcs.	15-18	111-00289
MBT14SFC	4.6	362.0	17.0	102.0	540	SS316, SP	100 pcs.	15-18	111-00290
MBT20SFC	4.6	521.0	17.0	152.0	540	SS316, SP	100 pcs.	15-18	111-00291
MBT27SFC	4.6	681.0	17.0	203.0	540	SS316, SP	100 pcs.	15-18	111-00292
MBT33SFC	4.6	838.0	17.0	254.0	540	SS316, SP	100 pcs.	15-18	111-00293
MBT8HFC	7.9	201.0	17.0	50.0	1,020	SS316, SP	50 pcs.	15-18	111-00294
MBT14HFC	7.9	362.0	17.0	102.0	1,020	SS316, SP	50 pcs.	15-18	111-00295
MBT20HFC	7.9	521.0	17.0	152.0	1,020	SS316, SP	50 pcs.	15-18	111-00296
MBT27HFC	7.9	681.0	17.0	203.0	1,020	SS316, SP	50 pcs.	15-18	111-00297

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Recommended Tools			
15	16	17	18
MK9SST	MK9PSST	HDT16	KST-STG200

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.

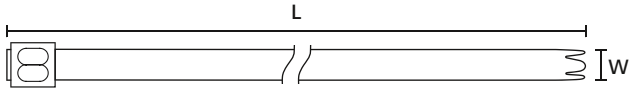


# Cable Ties and Fixings


Cable Ties, Stainless Steel

## Cable Ties with Ball-Lock and Coating

MBT-FC-Series, Stainless Steel 316



MBT-Series 12.3 mm width

TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.		Material	Pack Cont.	Tools	Article-No.
MBT33HFC	7.9	838.0	17.0	254.0	1,020	SS316, SP	50 pcs.	15-18	111-00298
MBT14XHFC	12.3	362.0	17.0	102.0	1,620	SS316, SP	50 pcs.	15-18	111-00299
MBT20XHFC	12.3	521.0	17.0	152.0	1,620	SS316, SP	50 pcs.	15-18	111-00300
MBT27XHFC	12.3	681.0	17.0	203.0	1,620	SS316, SP	50 pcs.	15-18	111-00301
MBT33XHFC	12.3	838.0	17.0	254.0	1,620	SS316, SP	50 pcs.	15-18	111-00302

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

### Recommended Tools

15	16	17	18
MK9SST	MK9PSST	HDT16	KST-STG200

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### Cable Ties with punch-locking mechanism

#### MST-Series, Stainless Steel 304

Stainless steel cable ties are designed for fixing loads and cables securely in hazardous industrial environments such as railway carriages, jet engines, inside power plants or on offshore drilling platforms, where exposure to extremes of weather, saltwater and temperature are common. The MST-Series tie with its new punch-locking mechanism is an excellent choice especially for environments which require high resistance to vibrations.

#### Features and Benefits

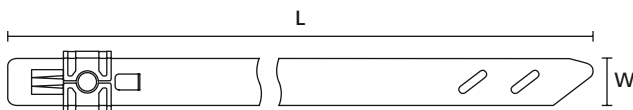
- MST-Series cable ties are made from stainless steel 304
- No loosening after bundling
- Corrosion and weather resistant
- Significantly improved vibration resistance
- Outstanding chemical resistance
- Space saving solution
- Safe cut-off (no sharp edges)
- High temperature resistant
- Non-burning



Stainless Steel Cable Ties MST-Series.




One Step to the Web!



MST tie



Material specification please see page 16.

TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.		Material	Pack Cont.	Tools	Article-No.
MST200S	5.9	207.0	5.0	50.0	900	SS304	100 pcs.	19	111-01549
MST360S	5.9	360.0	5.0	100.0	900	SS304	100 pcs.	19	111-01550
MST500S	5.9	500.0	5.0	145.0	900	SS304	100 pcs.	19	111-01551
MST700S	5.9	700.0	5.0	205.0	900	SS304	100 pcs.	19	111-01552
MST360M	8.9	369.0	8.0	100.0	1,500	SS304	50 pcs.	20	111-01631
MST500M	8.9	509.0	8.0	145.0	1,500	SS304	50 pcs.	20	111-01632
MST700M	8.9	700.0	8.0	205.0	1,500	SS304	50 pcs.	20	111-01633

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

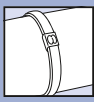
#### Recommended Tools

19	20
MST6	MST9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Please note! Not all products listed on this page may have this approval.



# Cable Ties and Fixings

## Cable Ties, Stainless Steel

### Cable Ties with Fold Locking

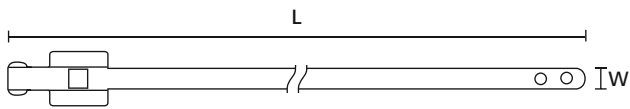
The MLT range of stainless steel cable ties can be used in the most arduous of conditions or where the additional security, strength and fire resistance of a metal fixing is required. Used in all areas from mass transit, ship building, oil rigs, mining and chemical industries to theatres and exhibition halls. In the event of a fire, cables will remain securely held in place and will not fall to block emergency exits.

#### Features and Benefits

- Releasable stainless steel buckle tie, MLT-series
- Heavy-duty type 316 stainless steel
- Can be re-opened and re-used
- Available also with polyester coating which prevents corrosion between dissimilar materials




MLT-Series. Releasable Stainless Steel buckle tie with and without coating.



MLT-Series


#### MLT-Series, Stainless Steel 316

TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.		Material	Pack Cont.	Tools	Article-No.
MLT8SS5	5.0	230.0	20.0	60.0	420	SS316	100 pcs.	17;21	111-94080
MLT12SS5	5.0	330.0	20.0	90.0	420	SS316	100 pcs.	17;21	111-94120
MLT16SS5	5.0	430.0	20.0	120.0	420	SS316	100 pcs.	17;21	111-94161
MLT24SS5	5.0	630.0	20.0	180.0	420	SS316	100 pcs.	17;21	111-91400
MLT8SS10	10.0	230.0	25.0	60.0	850	SS316	100 pcs.	17;21	111-95080
MLT12SS10	10.0	330.0	25.0	90.0	850	SS316	100 pcs.	17;21	111-95120
MLT16SS10	10.0	430.0	25.0	120.0	850	SS316	100 pcs.	17;21	111-91300
MLT24SS10	10.0	630.0	25.0	180.0	850	SS316	100 pcs.	17;21	111-95241

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

#### MLT-C-Series coated, Stainless Steel 316

TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.		Material	Pack Cont.	Tools	Article-No.
MLT8SSC5	5.3	230.0	20.0	60.0	420	SS316, SP	100 pcs.	17;21	111-91000
MLT12SSC5	5.3	330.0	20.0	90.0	420	SS316, SP	100 pcs.	17;21	111-91121
MLT16SSC5	5.3	430.0	20.0	120.0	420	SS316, SP	100 pcs.	17;21	111-91161
MLT24SSC5	5.3	630.0	20.0	180.0	420	SS316, SP	100 pcs.	17;21	111-91180
MLT8SSC10	10.3	230.0	25.0	60.0	850	SS316, SP	100 pcs.	17;21	111-91001
MLT12SSC10	10.3	330.0	25.0	90.0	850	SS316, SP	100 pcs.	17;21	111-91123
MLT16SSC10	10.3	430.0	25.0	120.0	850	SS316, SP	100 pcs.	17;21	111-91163
MLT24SSC10	10.3	630.0	25.0	180.0	850	SS316, SP	100 pcs.	17;21	111-91181

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Recommended Tools	
17 HDT16	21 MTT4

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Please note! Not all products listed on this page may have this approval.

Date of issue: 01/2016



### Protective Channel for Stainless Steel Ties

#### LFPC

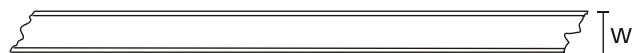
When used in conjunction with the MBT, MST and AMT range of stainless steel cable ties this channel gives the cable protection against chafing, vibration and shock. Ideal for use in arduous conditions such as those found on board ships, oil rigs or in nuclear power stations.

#### Features and Benefits

- LFPC channel, manufactured from Polyolefin
- Works with MBT-, MST- and AMT-Series
- Smooth surface protects bundle against chafing caused by vibrations and shocks
- Can be cut from roll (50 m) to any length
- Halogenfree
- Flame retardant



Cable tie MBTXH with LFPC Protective Channel.



LFPC



Material specification please see page 16.

TYPE	Width (W)	For Ties	Material	Pack Cont.	Article-No.
LFPC70	7.0	MBTS	PO	25 m	111-93000
LFPC83	8.3	MBTH	PO	25 m	111-00257
LFPC103	10.3	MBTH	PO	25 m	111-94000
LFPC129	12.9	MBTXH	PO	50 m	111-00253
LFPC132	13.2	MBTXH	PO	25 m	111-00254
LFPC150	15.0	MBTXH	PO	25 m	111-95000
LFPC163	16.3	AMT, MBTUH	PO	50 m	111-00255

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

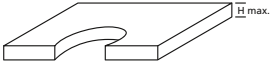
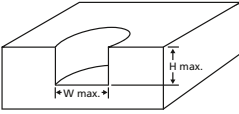
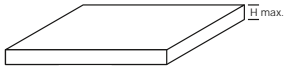
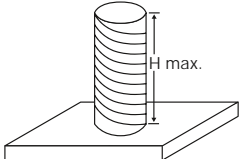


The fire protection properties of the material relate to the test performed on defined test samples. This is a test under laboratory conditions and not directly transferable to the product made from this material.



Please note! Not all products listed on this page may have this approval.

### User guide for fixing ties

Application	Arrowhead	Fir Tree Mount	Rivet Wall Plug	Screw Mount	EdgeClip	Weld Stud Mount
	●	●		●		
		●	●	●		
					●	
						●



#### Arrowhead

This fixing tie is based on an arrowhead offering high extraction forces. The arrowhead is securely in place when a click can be heard and felt by the user.



#### Arrowhead with disc

The disc minimises the ingress of dust, dirt and water. Furthermore a safe fixation inside the drill hole is assured that withstands pressure from various directions.



#### Arrowhead with supporting legs

Arrowhead fixings with supporting legs offer good and stable fixation in drilled holes. The supporting legs generate additional pressure to assure a firm and secure fixing while taking up any variation in panel thickness. These ties are also suitable in high vibration applications.



#### Arrowhead without supporting legs

The arrowhead design assures good fixation while utilising lowest possible space.



#### Fir Tree Mount

Fir Tree Mounts can be pushed into pre-punched holes easily in panels or threaded, blind holes based on the low insertion forces. The design is ideally suited for a wide range of sheet thicknesses. The disc on top of the fir tree covers the hole and minimises the ingress of dust, dirt and water.



### Weld Stud Mount

Many of the HellermannTyton weld stud mounts can easily be attached by hand ("soft push"). The design offers very low insertion forces that require no tools. The mounts can be removed by twisting to the left. SB9 and SB14 are based on "hard push" technology and require a hammer to be applied.



### Weld Stud Fixings with Lateral Adjustment

The special oval shape of these mounts provides a 5-6 mm lateral adjustment to cater for any misalignment of the stud or incorrect positioning of ties on the cables. The bundle can therefore be moved when mounted.



### EdgeClip

The EdgeClips are specifically designed to bundle and guide cable and wires on edges. Cost intensive drill holes for fixing are no longer required. EdgeClips are easily mounted by hand, the integrated metal clamp, securely keeping the clips on the edge.



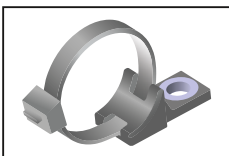
### EdgeClip Twistable

Ideally suited for fixations where bundles need to be flexibly guided. These EdgeClips are available with facilities for 90° or 360° rotation.



### Cable and Hose Attachment

Excellent solution for subsequent attachment of pipes and wires to installed tubes.



### Heavy Duty Application

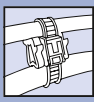
These sturdy fixing ties can withstand vibrations. They are easy to apply and give a secure alignment to the bundle. There will be high tightening torque through metal bushing.



### Two Piece Fixing Ties with Clip Coupler

The Coupler is an article to connect two cable ties for parallel bundling of tubes, harnesses or cables. Its design enables the cable ties to rotate up to 90° and allows flexible installations.





# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 1-Piece Fixing Tie with Arrowhead, with Disc

With a diverse range of fixing possibilities these ties are ideal for use in many different industries, including automotive, aerospace, white goods manufacture and panel building.

#### Features and Benefits

- Easy to install without the need for a tool
- Arrowhead simply locks into place
- Disc adjusts tie for pressures from various directions and minimises access of dust, dirt and water
- Cable tie head always situated in a defined position
- KSFT-types with specially rounded arrowhead minimise the assembly height

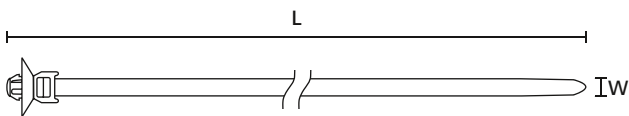


The flexible disc adjusts to take up variations in panel thickness - ensuring a firm fixing at all times.

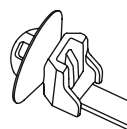


**Material specification please see page 16.**

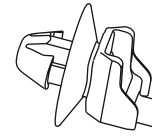
### 1-Piece Fixing Tie with Arrowhead, with Disc, for round holes



T50SOSKSFT5.4E



T50SOSKSFT6.5E



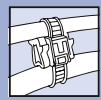
T50SOSSFT6.5E

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
PT2ASFT6.5 PT0.7-1.5-E	3.4	112.7	20.0	230	16.0	6.3 - 6.7	0.7 - 1.5	PEEK	Beige (BGE)	2;4-6	126-00183
T50SWPM7.0	4.6	140.0	27.0	225	15.0	6.8 - 7.2	0.7 - 3.0	PA66HS	Black (BK)	2-10	126-00168
T50SOSKSFT5.4E	4.6	156.0	35.0	180	16.0	5.2 - 5.6	0.7 - 1.3	PA66HS	Black (BK)	2-10	126-00075
T50SOSKSFT65E	4.6	156.0	35.0	180	16.0	6.3 - 6.7	0.7 - 1.3	PA66HS	Black (BK)	2-10	126-00081
T50SOSKSFT6.5S2-E	4.6	157.5	35.0	225	16.0	6.3 - 6.7	1.7 - 2.3	PA66HS	Black (BK)	2-10	126-00086
T50SOSSFT6.5E	4.6	158.8	30.0	200	16.0	6.3 - 6.7	1.9 - 2.5	PA66HS	Black (BK)	2-10	126-03102
T50SST5	4.6	170.0	31.0	225	16.2	6.1 - 6.5	0.7 - 1.5	PA66	Natural (NA)	2-10	126-02300
	4.6	170.0	31.0	225	16.2	6.1 - 6.5	0.7 - 1.5	PA66HS	Black (BK)	2-10	126-00017
	4.6	170.0	31.0	225	16.2	6.1 - 6.5	0.7 - 1.5	PA6HIRHS	Black (BK)	2-10	150-15395
T50SD6	5.0	160.0	31.0	225	18.0	6.3 - 7.5	0.6 - 1.8	PA66HS	Black (BK)	2-10	111-85350
T50MD7	5.0	225.0	59.0	225	16.0	6.8 - 7.2	0.8 - 2.0	PA66HS	Black (BK)	2-10	111-85850

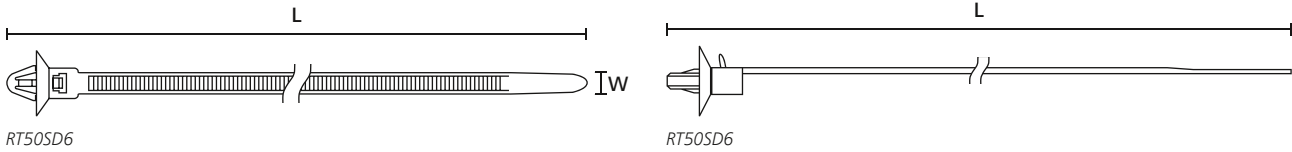
All dimensions in mm. Subject to technical changes.

Recommended Tools								
2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



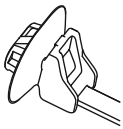
### 1-Piece Fixing Tie with Arrowhead, with Disc, releasable



TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
RT50SD6	5.0	160.0	31.0	180	18.0	6.3 - 7.5	0.6 - 1.8	PA66HS	Black (BK)	2-10	111-85480

All dimensions in mm. Subject to technical changes.

### 1-Piece Fixing Tie with Arrowhead, with Disc, for oval holes



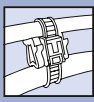
T50SOSKSFT62x122PT0.7-1.3

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T50SOSKSFT 62x122PT0.7-1.3	4.6	153.5	35.0	225	16.0 x 21.0	6.2 x 12.2	0.7 - 1.3	PA66HS	Black (BK)	2-10	126-00141
T50SOSKSFT 62x122PT0.7-1.3 90°	4.6	158.0	35.0	225	16.0 x 21.0	6.2 x 12.2	0.7 - 1.3	PA66HS	Black (BK)	2-10	126-00143
T50SOSKSFT 62x122PT1.7-2.3 90°	4.6	159.0	35.0	225	16.0 x 21.0	6.2 x 12.2	1.5 - 2.3	PA66HS	Black (BK)	2-10	126-00144
T50SOSKSFT 62x122PT1.7-2.3	4.6	159.0	35.0	225	16.0 x 21.0	6.2 x 12.2	1.7 - 2.3	PA66HS	Black (BK)	2-10	126-00142
T50SDOP	5.0	160.0	30.0	225	22.0	6.2 x 12.2	1.0 - 1.9	PA66HS	Black (BK)	2-10	126-00015
T60XSOSSFT 62X122-E	5.5	133.6	25.0	300	16.0 x 22.0	6.2 x 12.2	2.0 - 3.0	PA66HS	Black (BK)	3;8-12	126-00254

All dimensions in mm. Subject to technical changes.

Recommended Tools											
2	3	4	5	6	7	8	9	10	11	12	
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P	

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 1-Piece Fixing Ties with Arrowhead, with disc, sealed

The parts are mainly used in the automotive industry, e.g. for door harnesses.

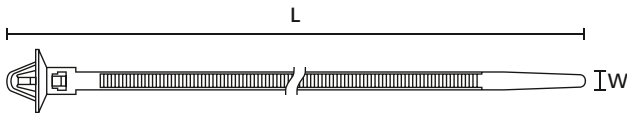
#### Features and Benefits

- One-piece fixing ties with cellular rubber disc
- Especially suitable for door and tailgate harnesses used for car body applications
- Made from PA66 heat-stabilised material
- Cellular rubber disc minimises access of dust, dirt and water

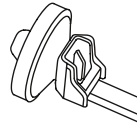


The additional seal protects against the ingress of moisture.

#### Fixing Ties, sealed, round holes



One piece fixing tie with arrowhead and disc, standard design



T50SOSSFT6.5E-MDL

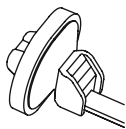


Material specification please see page 16.

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T50SOSSFT6.5E-MDL	4.6	158.8	30.0	200	16.0	6.3 - 6.7	0.6 - 1.8	PA66HS	Green (GN)	2-10	126-03100
	4.6	158.8	30.0	200	16.0	6.3 - 6.7	0.6 - 1.8	PA66HS	Black (BK)	2-10	156-00264
T50SOSSFT6.5E-MDL	4.6	158.8	30.0	200	16.0	6.3 - 6.7	0.6 - 1.8	PA66HS	Natural (NA)	2-10	156-00271
T50SOSSFT6.5E-MS-MD	4.6	163.0	35.0	180	16.0	6.25 - 6.75	0.7 - 1.6	PA66HS	Natural (NA)	2-10	126-00065
T50XROSSFT6.5-E-MDL	4.6	200.0	45.0	200	16.0	6.25 - 6.75	1.2 - 2.1	PA66HS	Black (BK)	2-10	156-00379
T50SOSSFT7-E-MD	4.7	165.0	30.0	225	16.5	6.8 - 7.2	0.7 - 1.8	PA66HS	Natural (NA)	2-10	126-00226

All dimensions in mm. Subject to technical changes.

#### Fixing Ties, sealed, oval holes



T60SOSSFT6.5x130E-MD

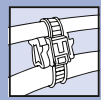
TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T60XOSSFT 62X122-E-MD	5.5	133.6	25.0	300	16.0 x 22.0	6.2 x 12.2	0.7 - 2.0	PA66HS	Black (BK)	2-12	126-00208
T60SOSSFT 62x122-E-MD	5.5	157.5	30.0	300	16.0 x 22.0	6.2 x 12.2	0.6 - 2.0	PA66HS	Black (BK)	2-12	126-00080
T60SOSSFT 70x120-E-MD	5.5	157.5	30.0	300	16.0 x 22.0	7.0 x 12.0	0.7 - 2.0	PA66HS	Black (BK)	2-12	126-00079
T60SOSSFT 65x130-E-MD	5.5	157.6	30.0	300	16.0 x 22.0	6.5 x 13.0	0.6 - 2.0	PA66HS	Natural (NA)	2-12	126-00076

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### 1-Piece Fixing Ties with Arrowhead, with Disc in the strap, for Round Holes

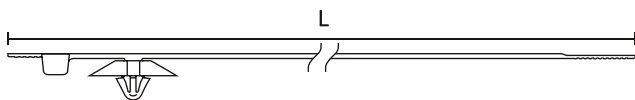
These fixing ties are ideal for use in many different industries, including automotive, aerospace, rail and panel building.

#### Features and Benefits

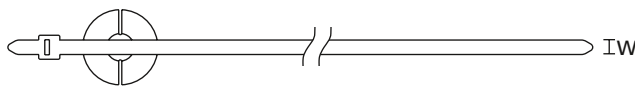
- Easy to assemble without the need for a tool
- Arrowhead simply locks into place
- Disc adjusts tie for pressures from various directions and minimises access of dust, dirt and water
- Cable tie head always situated in defined position
- Bundle runs directly across fixing point
- Simple assembly due to tab at the end of the head




The 'tab' on the head of the tie makes it easy to locate and lift the head for assembly.



T80RSFT



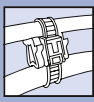
T80RSFT with flexible disc.

TYPE	Width (W)	Length (L)	Bundle Ø max.		Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T80RSFT	4.6	190.0	45.0	355	24.4	5.7 - 6.3	1.0 - 3.5	PA46	Grey (GY)	2;4-6;8	150-15498
	4.6	190.0	45.0	355	24.4	5.7 - 6.3	1.0 - 3.5	PA66HS	Black (BK)	2;4-6;8	150-15493

All dimensions in mm. Subject to technical changes.

Recommended Tools				
2	4	5	6	8
MK20	MK3SP	MK3PNSP2	EVO7	MK7P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 1-Piece Fixing Ties with Arrowhead, with wings

For bundling and fixing of cable harnesses, pipes and hoses in many different industries, including automotive, aerospace, white goods manufacturing and panel building.

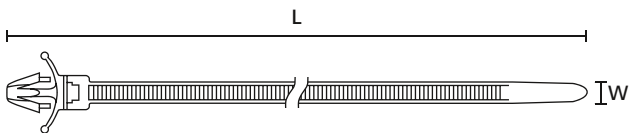
#### Features and Benefits

- Easy to assemble without the need for a tool
- Cable tie head always situated in defined position
- Arrowhead simply locks into place
- Supporting legs provide a secure and firm fixing in areas where space is limited



A wide range of arrowhead fixing ties which are suitable for different panel thicknesses and hole diameters.

### 1-Piece Fixing Ties with Arrowhead, with wings, for round holes



T50SSL5



Material specification please see page 16.

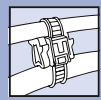
TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T18RSF		2.5	100.0	16.0	80	4.6 - 4.8	0.8 - 3.0	PA66HS	Natural (NA)	2;4-6	111-85519
		2.5	100.0	16.0	80	4.6 - 4.8	0.8 - 3.0	PA66W	Black (BK)	2;4-6	111-85560
T50SSL5		4.6	135.0	27.0	200	6.1 - 6.5	0.5 - 2.7	PA66HS	Black (BK)	2-10	126-02204
		4.6	135.0	27.0	225	6.1 - 6.5	0.5 - 2.7	PA46	Grey (GY)	2-10	111-85395
		4.6	135.0	27.0	225	6.1 - 6.5	0.5 - 2.7	PA66	Natural (NA)	2-10	111-85339
T50SL5		4.6	163.0	34.0	222	6.1 - 6.5	0.8 - 2.7	PA66HIRHS	Black (BK)	2-10	126-00005
		4.6	165.0	34.0	222	6.1 - 6.5	0.8 - 2.5	PA66	Natural (NA)	2-10	111-85369
T50SL6		4.6	165.0	34.0	225	6.3 - 7.5	0.5 - 2.5	PA66	Black (BK)	2-10	111-85460
T50SL7		4.6	165.0	34.0	225	6.9 - 7.1	0.8 - 2.5	PA66	Natural (NA)	2-10	111-85479
T50SL5		4.7	165.0	34.0	222	6.1 - 6.5	0.8 - 2.5	PA66HS	Black (BK)	2-10	126-00001

All dimensions in mm. Subject to technical changes.

Recommended Tools									
2	3	4	5	6	7	8	9	10	
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.





### 1-Piece Fixing Ties with Arrowhead, with wings, for round holes

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T50SSF		4.6	160.0	35.0	225	6.0 - 6.6	0.7 - 3.0	PA66	Natural (NA)	2-10	111-85739
		4.6	160.0	35.0	225	6.0 - 6.6	0.7 - 3.0	PA66HS	Black (BK)	2-10	126-00032
		4.6	160.0	35.0	225	6.0 - 6.6	0.7 - 3.0	PA66HS	Natural (NA)	2-10	126-01104
T50RSF		4.7	205.0	45.0	225	6.0 - 6.6	0.7 - 3.0	PA66	Natural (NA)	2-10	111-85729
T50SAH		4.6	160.0	25.0	225	6.0 - 6.6	0.7 - 3.0	PA66HS	Natural (NA)	2-10	155-41102
T50RWPM7.0		4.6	200.0	45.0	225	6.8 - 7.2	0.7 - 3.0	PA66HS	Black (BK)	2-10	126-00169
T50SWPM4.7		4.8	155.0	35.0	225	4.6 - 4.8	3.2 - 4.0	PA66	Natural (NA)	2-10	126-00214
		4.8	155.0	35.0	225	4.6 - 4.8	3.2 - 4.0	PA66	Black (BK)	2-10	126-00236

All dimensions in mm. Subject to technical changes.

### 1-Piece Fixing Ties with Arrowhead, with wings, releasable

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
RT50RSF		4.6	215.0	50.0	225	7.8 - 8.2	0.8 - 2.5	PA66	Black (BK)	2-10	115-07010
RT50SFK		5.0	225.0	50.0	225	6.4 - 7.0	0.8 - 3.0	PA66	Black (BK)	2-10	115-06960

All dimensions in mm. Subject to technical changes.

### 1-Piece Fixing Ties with Arrowhead, with wings, for oval holes

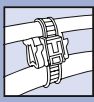
TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T80RFT6X12		4.6	228.0	45.0	222	6.3 x 12.3	0.6 - 3.0	PA46	Grey (GY)	2-12	150-48397
		4.6	228.0	45.0	222	6.3 x 12.3	0.6 - 3.0	PA66	Black (BK)	2-12	150-48396

All dimensions in mm. Subject to technical changes.

### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 1-Piece Fixing Ties with Arrowhead, with Wings in the strap

This range of fixing ties are ideal for use in many different industries, for example: automotive, aerospace, rail and panel building.

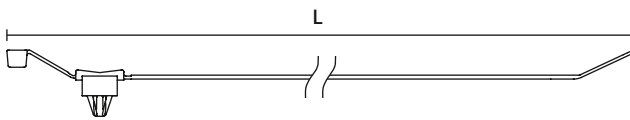
#### Features and Benefits

- Easy to assemble without the need for a tool
- Arrowhead simply locks into place
- Supporting legs provide a secure and firm fixing in areas where space is limited
- Bundle runs central across fixing point
- Cable tie head always situated in defined position
- For parallel routing of two bundles



Designed to secure battery cables the T80RSF6.5F offers a simple and secure fixing.

#### T80RSF6.5F



T80RSF6.5F

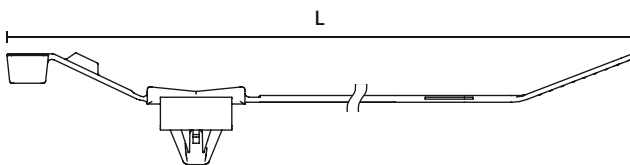


Material specification please see page 16.

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T80RSF6.5F	4.7	209.0	50.0	355	6.3 - 6.5	0.6 - 3.0	PA46	Grey (GY)	2;4-6;8	150-39395
	4.7	209.0	50.0	355	6.3 - 6.5	0.6 - 3.0	PA66HS	Black (BK)	2;4-6;8	126-02600

All dimensions in mm. Subject to technical changes.

#### T80RSF6.5FW with rib for convoluted tubes



T80RSF6.5FW

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T80RSF6.5FW	4.7	209.0	50.0	355	6.3 - 6.5	0.6 - 3.0	PA66HS	Black (BK)	2;4-6;8	150-39385

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

2	4	5	6	8
MK20	MK3SP	MK3PNSP2	EVO7	MK7P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.





### 1-Piece Fixing Ties with Arrowhead

#### 1-Piece Fixing Ties with Arrowhead, without Wings and Disc

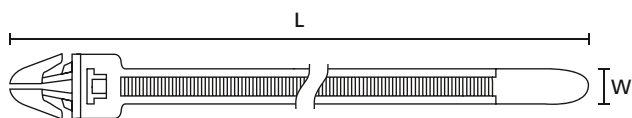
The arrowhead design allows these ties to be used in areas with limited space.

#### Features and Benefits

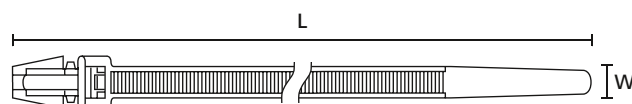
- Easy to assemble without the need for a tool
- Fixing tie with arrowhead without legs
- Arrowhead simply locks into place
- Cable tie head always situated in defined position



The arrowhead design allows these fixing ties to be used in areas with limited space.



T30RSF(U)



T50RSF(E)

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T30RSF	3.6	158.0	31.0	135	4.8 - 5.6	0.9 - 2.4	PA66	Natural (NA)	2;4-6	126-00213
	3.6	158.0	32.0	135	4.8 - 5.6	0.9 - 2.4	PA66HS	Black (BK)	2;4-6	126-00211
T50RSF(E)	4.6	210.0	50.0	225	6.2 - 6.4	2.9 - 3.0	PA66	Natural (NA)	2-10	111-85799
	4.6	210.0	50.0	225	6.2 - 6.4	2.9 - 3.0	PA66	Black (BK)	2-10	126-01001

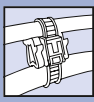
All dimensions in mm. Subject to technical changes.

Recommended Tools									
2	3	4	5	6	7	8	9	10	
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Please note! Not all products listed on this page may have this approval.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 1-Piece Fixing Tie with Arrowhead, with Disc

For temperatures up to +240 °C

With a diverse range of fixing possibilities these ties are ideal for use in many different industries, including automotive, aerospace, white goods manufacture and panel building.

#### Features and Benefits

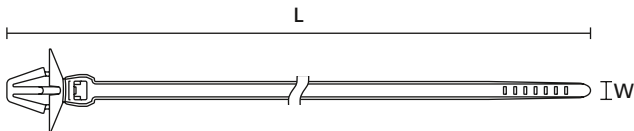
- Easy to install without the need for a tool
- Arrowhead simply locks into place
- Disc adjusts tie for pressures from various directions and minimises access of dust, dirt and water
- Cable tie head always situated in a defined position

#### Features Material PEEK

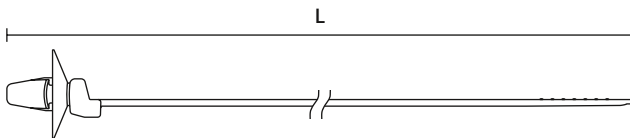
- -55 °C to +240 °C operating temperature
- Excellent resistance against chemicals and gamma radiation



One piece fixing tie with arrowhead, outside serrated.



PT2ASFT6.5PT0.7-1.5E



PT2ASFT6.5PT0.7-1.5E



Please find more PEEK products for your system solutions: see page 38, 65, 207.



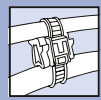
Material specification please see page 16.

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
PT2ASFT 6.5PT0.7-1.5-E	3.4	112.7	20.0	230	16.0	6.3 - 6.7	0.7 - 1.5	PEEK	Beige (BGE)	2;4-6	126-00183

All dimensions in mm. Subject to technical changes.

Recommended Tools			
2	4	5	6
MK20	MK3SP	MK3PNSP2	EVO7

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### 2-Piece Fixing Ties with Arrowhead, with Disc

Primarily designed for fixing cable harnesses in the automotive industry, their simplicity and ease of use has resulted in these parts being used in other industries, for example aviation, switch gear and white goods manufacturing.

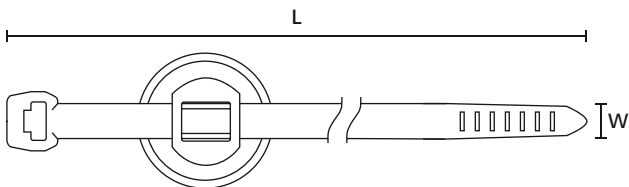
#### Features and Benefits

- Pre-assembled 2-piece fixing tie with arrowhead foot part
- Cable tie head can be moved after bundling
- Easy to assemble without the need for a tool
- Arrowhead simply locks into place
- Disc adjusts tie for pressure from various directions

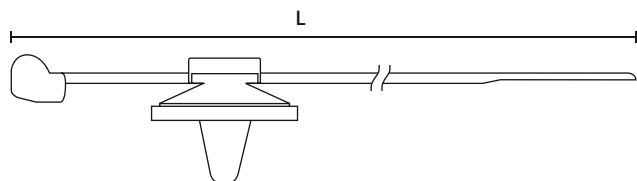


Being a two piece assembly allows the tie head to be located in the most convenient position.

### 2-Piece Fixing Ties with Arrowhead, with Disc, sealed



T50ROSSFT6.5-16-2MOD-MD

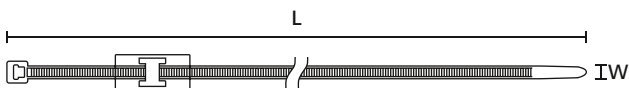


T50ROSSFT6.5-16-2MOD-MD

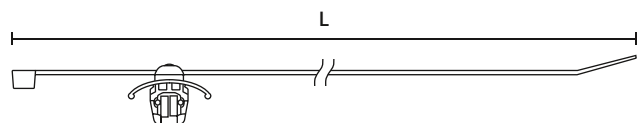
TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T50ROSSFT 6.5-D16-2 MD	4.6	200.0	45.0	222	22.4	6.3 - 6.7	0.7 - 1.8	PA66HS	PA66HIRHS	Black (BK)	2-10	150-93100
T50ROSSFT 6.5-16-2-MD	4.6	200.0	45.0	225	16.0	6.3 - 6.7	0.7 - 1.2	PA66HS	PA66HIRHS	Black (BK)	2-10	155-42002
T50ROSSFT 6.5 16-3MD	4.6	200.0	45.0	225	16.0	6.3 - 6.7	2.5 - 3.5	PA66HS	PA66HIRHS	Black (BK)	2-10	150-37799
T50RAHD6-MS-MD	4.6	202.0	50.0	225	18.0	6.5 - 7.0	0.7 - 1.2	PA66HS	PA66HS	Natural (NA)	2-10	156-01193

All dimensions in mm. Subject to technical changes.

### 2-Piece Fixing Ties with Arrowhead, for oval holes



T50RFT62x122



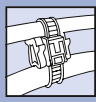
T50RFT62x122

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T30RSFT712	3.5	150.0	34.0	133	7.0 x 12.0	0.6 - 1.5	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-01460
T30RKSFT65x13	3.5	150.0	36.0	135	6.5 x 13.0	1.0 - 1.7	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-01235
T50RFT62x122HR	4.6	202.0	45.0	225	6.3 x 12.2	0.6 - 3.0	PA46	PA46	Grey (GY)	2-10	156-00446
T50RFT6OVAL	4.6	202.0	45.0	355	6.3 x 12.2	0.6 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2-10	150-37591
T80RFT62x122	4.7	205.0	45.0	355	6.3 x 12.2	0.6 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2-12	156-01521

All dimensions in mm. Subject to technical changes.

Recommended Tools											
2	3	4	5	6	7	8	9	10	11	12	
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P	

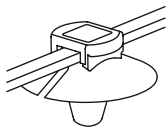
For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



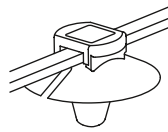
# Cable Ties and Fixings

## Cable Ties With Fixing Elements

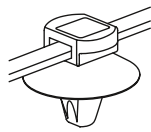
### 2-Piece Fixing Ties with Arrowhead, with Disc, for round holes



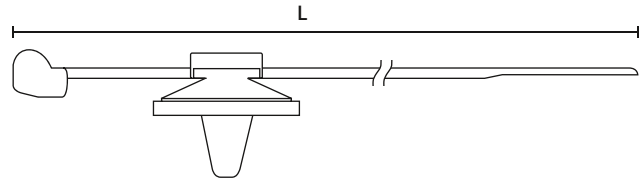
T50SSFT6.5



T50SSFT6.5



T50RSFT6.5D18



T50ROSSFT6.5-16-2MOD-MD

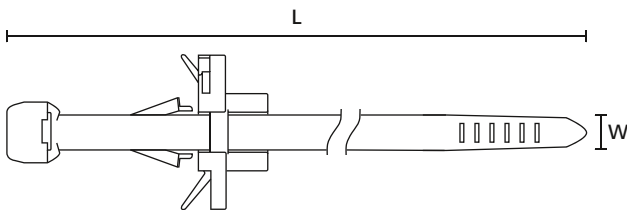
TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T30RSFT7H	3.5	150.0	36.0	135	16.0	6.8 - 7.2	0.8 - 1.5	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-01044
T50SOSSFT 651620D	4.6	150.0	35.0	225	16.0	6.3 - 6.7	1.5 - 2.2	PA66HS	PA66HIRHS	Black (BK)	2-10	150-93130
T50SSFT6.5	4.6	150.0	35.0	225	22.4	6.3 - 6.7	0.7 - 2.0	PA66HS	PA66HS	Black (BK)	2-10	150-13593
T50RSFT 6.5D18	4.6	200.0	45.0	200	18.0	6.5 - 6.8	0.4 - 1.6	PA66HS	PA66HIRHS	Black (BK)	2-10	150-37691
T50ROS-SFT 6.5 16-3	4.6	200.0	45.0	225	16.0	6.3 - 6.7	2.5 - 3.5	PA66HS	PA66HIRHS	Black (BK)	2-10	150-37791
T50RSFT6.5	4.6	200.0	45.0	225	22.4	6.3 - 6.7	0.7 - 2.0	PA66HS	PA66HS	Black (BK)	2-10	150-13591
T50RSFT 6.5 16-3	4.6	200.0	49.0	222	16.0	6.3 - 6.7	2.5 - 3.5	PA66HS	PA66HIRHS	Black (BK)	2-10	150-37792
T50ROS P1SFT6.5	4.6	200.0	45.0	225	16.0	6.3 - 6.7	0.7 - 1.3	PA46	PEEK	Grey (GY), Beige (BGE)	2;4-8	156-00455
T50ROS P2SFT6.5	4.6	200.0	45.0	225	16.0	6.3 - 6.7	1.7 - 2.3	PA46	PEEK	Grey (GY), Beige (BGE)	2;4-8	156-00456
T80ISFT6.5	4.6	300.0	81.0	355	22.4	6.3 - 6.7	0.7 - 2.0	PA66HS	PA66HS	Black (BK)	2-12	150-13596
T50RDHSFT6.5	4.7	210.0	38.0	178	22.4	6.4 - 6.8	0.7 - 2.0	PA66HS	PA66HS	Black (BK)	2-10	117-05160

All dimensions in mm. Subject to technical changes.

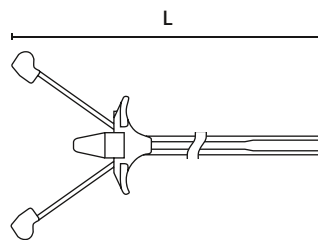
### 2-Piece Fixing Ties with Arrowhead, for parallel routing



Material specification please see page 16.



T50SOSDSFT6.5



T50SOSDSFT6.5

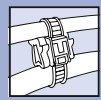
TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T50SOSDSFT6.5	4.6	150.0	35.0	225	6.3 - 6.7	0.7 - 1.5	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00133

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### 2-Piece Fixing Ties with Arrowhead, with Disc

For temperatures up to +240 °C

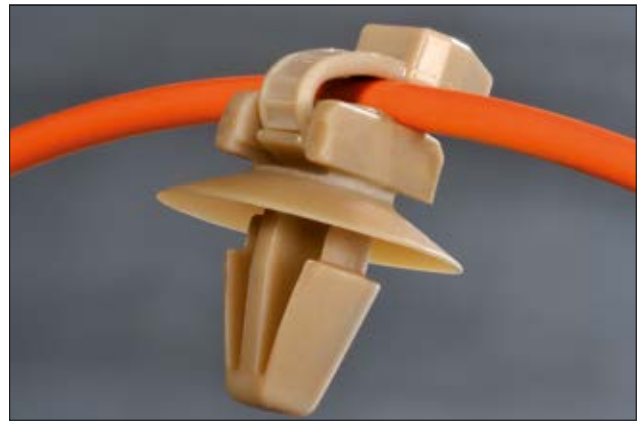
Primarily designed for fixing cable harnesses in the automotive industry, their simplicity and ease of use has resulted in these parts being used in other industries, for example aviation, switch gear and white goods manufacturing.

#### Features and Benefits

- Pre-assembled 2-piece fixing tie with arrowhead foot part
- Cable tie head can be moved after bundling
- Easy to assemble without the need for a tool
- Arrowhead simply locks into place
- Disc adjusts tie for pressure from various directions and minimises access of dust, dirt and water

#### Manufactured in PEEK material

- -55 °C to +240 °C operating temperature
- Excellent resistance against chemicals and gamma radiation



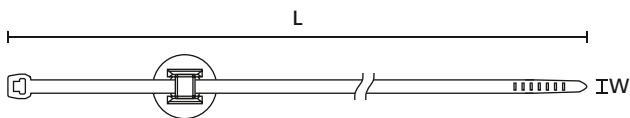
PEEK FixingTies can be used for small diameters from 1.0 mm.



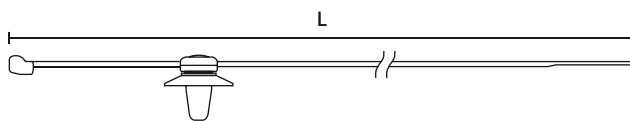
One Step to the Web!



Please find more PEEK products for your system solutions: see page 38, 62, 207.



PT2AP1SFT6.5



PT2AP1SFT6.5

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
PT2AP1SFT6.5	3.4	145.0	35.0	230	16.0	6.3 - 6.7	0.7 - 1.3	PEEK	Beige (BGE)	2;4-6	156-01090
PT2AP2SFT6.5	3.4	145.0	35.0	230	16.0	6.3 - 6.7	1.7 - 2.3	PEEK	Beige (BGE)	2;4-6	156-01091
PT2AP3SFT6.5	3.4	145.0	32.0	230	16.0	6.3 - 6.7	1.2 - 1.8	PEEK	Beige (BGE)	2;4-6	156-01146

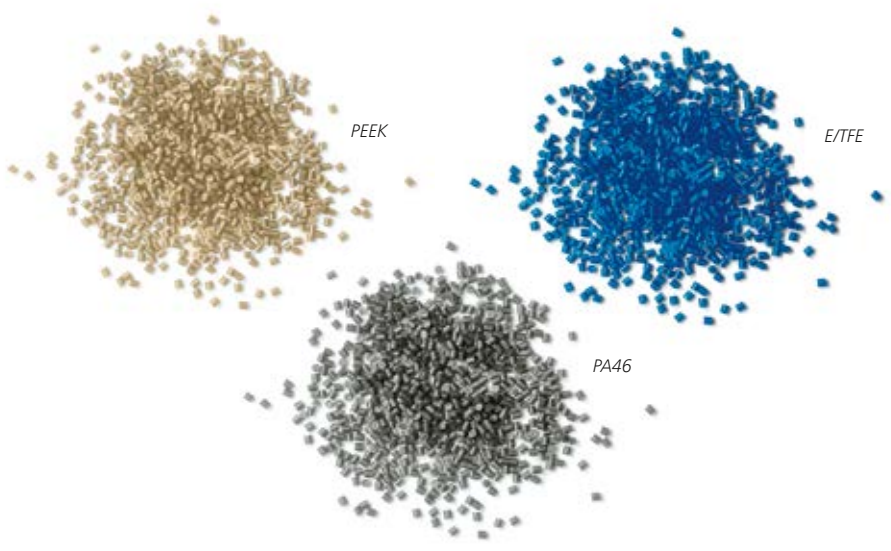
All dimensions in mm. Subject to technical changes.

Recommended Tools			
2	4	5	6
MK20	MK3SP	MK3PNSP2	EVO7

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



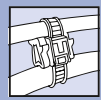
We replace metal solutions with plastic components – even for high temperatures.



Learn more about our fixing ties and elements for high temperature applications in our brochure.

**Order now!**





### 1-Piece Fixing Ties with Fir Tree, with Disc

Primarily designed for fixing cable harnesses in the automotive industry, their simplicity and ease of use has resulted in these parts being used in other industries, for example aviation, switch gear and white goods manufacturing.

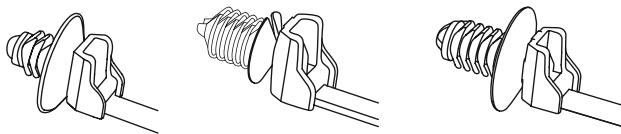
#### Features and Benefits

- Cable tie head always situated in defined position
- Easy to assemble without the need for a tool
- Disc adjusts tie for pressure from various directions and minimises access of dust, dirt and water
- Fir tree foot part can be used for a variety of panel thicknesses
- Suitable for use within threaded holes



Fir tree foot parts can be used for a variety of panel thicknesses.

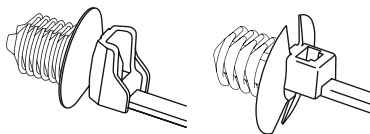
### 1-Piece Fixing Ties with Fir Tree, with Disc



T50SOSFT6-E2

T50SOSFT6D10E

T50SOSFT6LGE

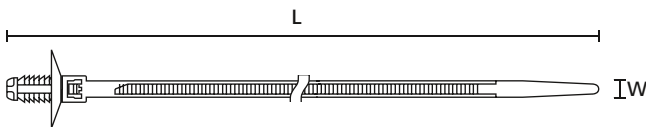


T50SOSFT8E

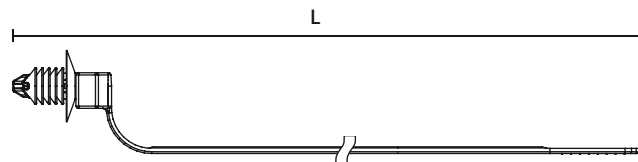
T18RDP5



**Material specification  
please see page 16.**



One piece fixing tie with fir tree mount, standard design

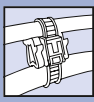


Special design without a gap between head and bundle; FT220DP7

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T18RDP5	2.5	110.0	20.0	80	13.0	4.9 - 5.1	3.0 - 4.0	PA66	Black (BK)	2;4-6	150-55610
T50SOSFT6-E2	4.6	160.0	35.0	180	16.0	6.3 - 7.0	0.6 - 4.2	PA66HS	Black (BK)	2-10	157-00085
T50SOSFT6D10E	4.6	163.0	32.0	180	9.8	5.8 - 6.2	0.8 - 5.5	PA46	Grey (GY)	2-10	157-00028
	4.6	163.0	32.0	225	9.8	5.8 - 6.2	0.8 - 5.5	PA66HS	Black (BK)	2-10	157-00045
T50SOSFT8E	4.6	163.0	35.0	225	16.0	8.0 - 8.5	0.6 - 6.0	PA46	Grey (GY)	2-10	157-00115
	4.6	163.0	35.0	225	16.0	8.0 - 8.5	0.6 - 6.0	PA66HS	Black (BK)	2-10	157-00072
T50SOSFT6LGE	4.6	165.0	35.0	180	16.0	6.3 - 7.0	0.7 - 7.0	PA66HS	Black (BK)	2-10	157-00228
T50SOSFT6LG-E2	4.6	167.0	35.0	180	16.0	6.1 - 6.9	0.6 - 8.3	PA66HIRHS	Black (BK)	2-10	157-00242
T50SOSFT6E1	4.7	161.4	35.0	150	16.0	6.3 - 7.0	0.7 - 3.0	PA66HIRHS	Black (BK)	2-10	157-00033
T50SOSFT7-E	4.7	165.0	30.0	225	16.5	6.8 - 7.2	0.6 - 6.0	PA66HS	Black (BK)	2-10	157-00185
FT220DP7	4.7	232.0	40.0	225	16.0	6.8 - 7.2	0.8 - 5.0	PA66	Black (BK)	2-12	150-01700
T50SOSFT6LG-E4	4.9	165.0	31.0	200	22.0	6.3 - 7.0	6.3 - 7.0	PA66HS	Black (BK)	2-10	157-00237
OS170FT7LH	5.3	170.0	30.0	147	16.0	6.8 - 7.2	0.7 - 4.5	PA66	Black (BK)	3;9-12	157-00019

All dimensions in mm. Subject to technical changes.





# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 1-Piece Fixing Ties with Fir Tree, with Disc

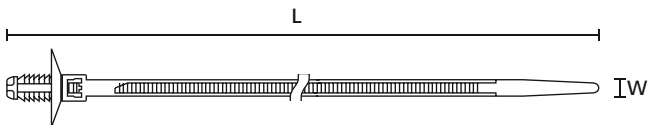
TYPE	Width (W)	Length (L)	Bundle Ø max.		Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
OS160FT6HEX	5.3	170.0	30.0	200	16.0	6.35	0.7 - 5.0	PA66	Black (BK)	3;9-12	157-00080
	5.3	170.0	30.0	200	16.0	6.35	0.7 - 5.0	PA66HS	Black (BK)	3;9-12	157-00081

All dimensions in mm. Subject to technical changes.


Recommended Tools										
2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.

### 1-Piece Fixing Ties with Fir Tree, with Disc, releasable



One piece fixing tie with fir tree mount, standard design

TYPE	Width (W)	Length (L)	Bundle Ø max.		Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
REL30SDP6	5.0	170.0	31.0	135	22.0	6.3 - 7.1	3.0 - 7.0	PA66	Black (BK)	2;4-6	150-55500

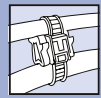
All dimensions in mm. Subject to technical changes.

Recommended Tools			
2	4	5	6
MK20	MK3SP	MK3PNSP2	EVO7

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



Material specification please see page 16.

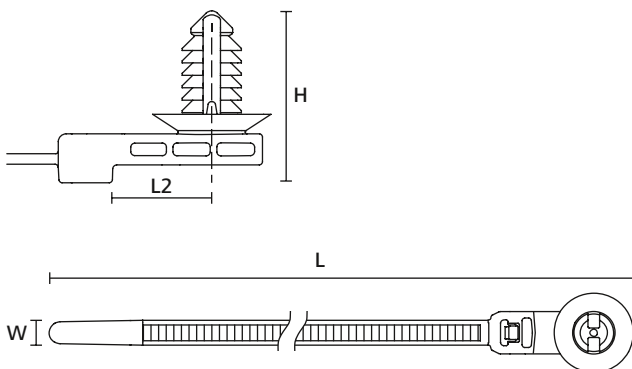


### 1-Piece Fixing Ties with Fir Tree and Disc, with Stand-off, for round holes

With offset 12.5 and 25.0 mm

#### Features and Benefits

- Bundling and fixing solution
- Ideal combination of materials and design
- Different positions of the fixing anchor are available to fit installation space
- 1-Piece Fixing Tie with defined offset 12.5 and 25.0 mm



T50ROSFT82550 and T50ROSFT812.550.



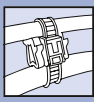
T50ROSFT65025A.

TYPE	Drawing	Width (W)	Length (L)	Length (L2)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T50ROSFT 612.550		5.1	234.2	12.5	50.0	222	6.1 - 6.9	0.6 - 6.0	PA66HIRHS	Black (BK)	2-10	157-00216
T50ROSFT 65012.5A		5.1	215.5	12.5	50.0	222	6.1 - 7.0	0.6 - 6.7	PA66HIRHS	Grey (GY)	2-10	157-00130
		5.1	215.5	12.5	50.0	222	6.1 - 7.0	0.6 - 6.7	PA66HIRHS	Black (BK)	2-10	157-00145
T50ROSFT M65012.5A		5.1	215.5	12.5	50.0	222	M6	0.6 - 5.5	PA46	Brown (BN)	2-10	157-00212
		5.1	215.5	12.5	50.0	222	M6	0.6 - 5.5	PA66HIRHS	Grey (GY)	2-10	157-00118
T50ROSFT 85025A		5.1	230.0	25.0	50.0	222	7.6 - 8.4	0.6 - 6.7	PA46	Brown (BN)	2-10	157-00168
		5.1	230.0	25.0	50.0	222	7.6 - 8.4	0.6 - 6.7	PA66HIRHS	Grey (GY)	2-10	157-00120
T50ROSFT 65025A		5.1	230.0	25.0	50.0	222	6.1 - 7.0	0.6 - 6.7	PA46	Brown (BN)	2-10	157-00158
		5.1	230.0	25.0	50.0	222	6.1 - 7.0	0.6 - 6.7	PA66HIRHS	Grey (GY)	2-10	157-00119
		5.1	230.0	25.0	50.0	222	6.1 - 7.0	0.6 - 6.7	PA66HIRHS	Black (BK)	2-10	157-00150
T50ROSFT 65012.5B		5.1	215.5	12.5	50.0	222	6.1 - 7.0	0.6 - 6.7	PA66HIRHS	Black (BK)	2-10	157-00171
T50ROSFT 65025B		5.1	230.0	25.0	50.0	222	6.1 - 7.0	0.6 - 6.7	PA46	Brown (BN)	2-10	157-00186
		5.1	230.0	25.0	50.0	222	6.1 - 7.0	0.6 - 6.7	PA66HIRHS	Black (BK)	2-10	157-00169
T50ROSFT 65012.5R		5.1	223.1	12.5	50.0	222	6.1 - 7.0	0.6 - 6.7	PA66HIRHS	Black (BK)	2-10	157-00165
T50ROSFT 65025R		5.1	237.7	25.0	50.0	222	6.1 - 7.0	0.6 - 6.7	PA66HIRHS	Black (BK)	2-10	157-00164

All dimensions in mm. Subject to technical changes.

Recommended Tools									
2	3	4	5	6	7	8	9	10	
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 1-Piece Fixing Ties with Fir Tree, with Disc, for Oval Holes

#### 1-Piece Fixing Ties with Fir Tree, with Disc, for Oval Holes

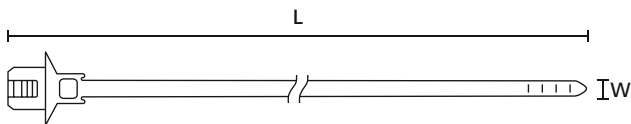
Primarily designed for fixing cable harnesses in the automotive industry their simplicity, and ease of use, has seen these parts used in everything from aircraft, to switch-gear, to washing machines.

#### Features and Benefits

- Cable tie head always situated in defined position
- Easy to assemble without the need for a tool
- Disc adjusts tie for pressure from various directions and minimises access of dust, dirt and water
- Fir tree foot part can be used for a variety of panel thicknesses
- Suitable for use within threaded holes
- Versions for oval holes feature anti-twist protection.



The DOP versions for oval holes feature anti-twist protection.



T50SOS2DOP



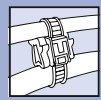
Material specification please see page 16.

TYPE	Width (W)	Length (L)	Bundle Ø max.		Hole Ø (FH)	Material	Colour	Tools	Article-No.
T50SOS2DOP	4.6	164.0	35.0	200	6.2 x 12.2	PA46	Grey (GY)	2-10	157-00069
	4.6	164.0	35.0	200	6.2 x 12.2	PA66HS	Black (BK)	2-10	157-00014
T50SOS2DOP7X12-E	4.6	164.0	35.0	225	7.0 x 12.0	PA66HS	Black (BK)	2-10	157-01105
T50SOS3DOP65130E	4.6	165.0	35.0	180	6.5 x 13.0	PA66HS	Black (BK)	2-10	157-00016
T50SOSFT7X12U	5.1	165.0	35.0	225	7.0 x 12.0	PA66HS	Black (BK)	2-10	157-00053
T50SOSFTOVALU	5.1	174.2	35.0	222	6.2 x 12.2	PA66HS	Black (BK)	2-10	157-00143
T50ROSFT7X12U	5.1	216.0	50.0	225	7.0 x 12.0	PA66HS	Black (BK)	2-10	157-00054
T50ROSFTOVALU	5.1	225.0	50.0	222	6.2 x 12.2	PA66HIRHS	Black (BK)	2-10	157-00142

All dimensions in mm. Subject to technical changes.

Recommended Tools								
2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### 2-Piece Fixing Ties with Fir Tree, with Disc, for Round Holes

Primarily designed for fixing cable harnesses in the automotive industry, their simplicity and ease of use has resulted in these parts being used in other industries, for example aviation, switch gear manufacturer, white goods manufacturer.

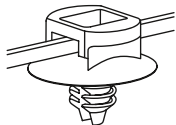
#### Features and Benefits

- Pre-assembled 2-piece fixing tie with fir tree foot part
- Cable tie head can be moved after bundling
- Easy to assemble without the need for a tool
- Disc adjusts tie for pressure from various directions and minimises access of dust, dirt and water
- Fir tree foot part can be used for a variety of panel thicknesses
- Suitable for use within threaded holes

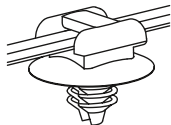


These Fir Tree fixings can also be used in threaded, blind holes.

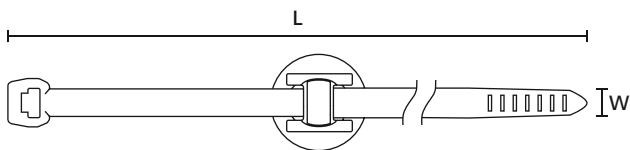
#### Fir Tree Parts FT5



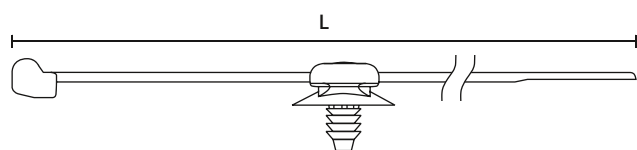
T30RFT5



T50SOSFT5SD



T50SOSFT5SD



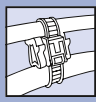
T50SOSFT5SD

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T18RFT5	2.5	100.0	20.0	80	16.0	4.5 - 5.0	0.7 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-01225
T18RFT5-MOD	2.5	100.0	22.0	80	11.0	4.5 - 5.0	0.7 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-01270
T30RFT5	3.5	150.0	34.0	135	16.0	4.5 - 5.0	0.7 - 3.0	PA46	PA46	Natural (NA), Grey (GY)	2;4-6	150-55948
	3.5	150.0	34.0	135	16.0	4.5 - 5.0	0.7 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2;4-6	150-55850
	3.5	150.0	34.0	135	16.0	4.5 - 5.0	0.7 - 3.0	PA46	PA46	Grey (GY)	2;4-6	156-01316
T30RFT5-MOD	3.5	150.0	36.0	133	11.0	4.5 - 5.0	0.7 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-01271
T50SOSFT5	4.6	150.0	31.0	225	16.0	4.5 - 5.0	0.7 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-06200
T50SOSFT 5SD	4.6	150.0	35.0	225	16.0	4.5 - 5.0	0.7 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00432
T50RFT5	4.6	200.0	45.0	225	16.0	4.5 - 5.0	0.7 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00025

All dimensions in mm. Subject to technical changes.

Recommended Tools									
2	3	4	5	6	7	8	9	10	
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	

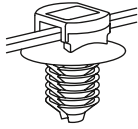
For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



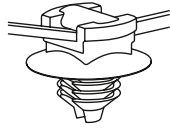
# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### Fir Tree Parts FT6

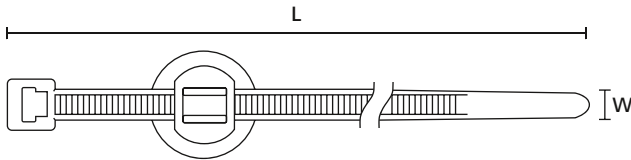


T30RFT6LG

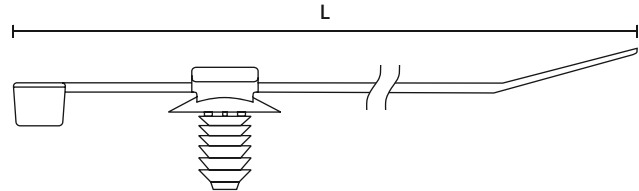


T50ROSFT6SD

**i** Other dimensions are available on request.



T50RFT6LG



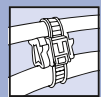
T50RFT6LG

TYPE	Width (W)	Length (L)	Bundle Ø max.		Disc Ø	Hole Ø (FH)	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T18RFT6	2.5	100.0	20.0	80	16.0	6.5 - 7.0	0.8 - 3.0	PA66	PA66	Black (BK)	2;4-6	150-09110
PT2AFT 6LG	3.4	145.0	35.0	230	16.0	6.4 - 7.1	0.8 - 6.0	PEEK	PA46	Beige (BGE), Grey (GY)	2;4-6	156-01336
T30RFT6	3.5	150.0	34.0	135	16.0	6.4 - 7.1	0.8 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2;4-6	150-77950
T30RFT 6LG	3.5	150.0	35.0	133	16.0	6.4 - 7.1	0.8 - 6.0	PA66HS	PA66HIRHS	Black (BK)	2;4-6	150-31090
T30RFT6SD	3.6	148.0	35.0	135	16.0	6.4 - 7.1	0.8 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2;4-6	150-52690
T50SFT 6LG1SD	4.6	160.0	30.0	225	16.0	6.5 - 7.0	0.6 - 6.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00154
T50ROSFT6	4.6	200.0	45.0	225	16.0	6.4 - 7.1	0.8 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00076
T50ROSFT 6SD	4.6	200.0	45.0	225	16.0	6.4 - 7.1	0.8 - 3.0	PA46	PA46	Grey (GY)	2-10	156-00085
	4.6	200.0	46.0	225	16.0	6.4 - 7.1	0.8 - 3.0	PA66HS	PA66HIR	Black (BK)	2-10	156-05902
T50RFT 6LGSD-HEX	4.6	202.0	45.0	225	16.0	6.25 - 6.75	0.7 - 5.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00399
T50RFT6	4.6	202.0	45.0	225	16.0	6.4 - 7.1	0.8 - 3.0	PA46	PA46	Grey (GY)	2-10	150-77938
	4.6	202.0	45.0	225	16.0	6.4 - 7.1	0.8 - 3.0	PA66HS	PA66	Black (BK)	2-10	150-77941
T50RFT6LG	4.6	202.0	44.0	225	16.0	6.4 - 7.1	0.8 - 6.0	PA66HS	PA66HIRHS	Black (BK)	2-10	150-31091
T80IFT6LG	4.6	300.0	81.0	356	16.0	6.4 - 7.1	0.8 - 6.0	PA66HS	PA66HIRHS	Black (BK)	2-12	150-31096
T50RDHFT6	4.7	210.0	19.0	180	16.0	6.4 - 7.1	0.8 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2-10	150-77936
T80LFT6	5.0	390.0	108.0	355	16.0	6.4 - 7.1	0.8 - 3.0	PA66HS	PA66HIRHS	Black (BK)	2-12	150-77934

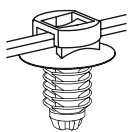
All dimensions in mm. Subject to technical changes.

Recommended Tools											
2	3	4	5	6	7	8	9	10	11	12	
MK20	MK21	MK3SP	MK3PNP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P	

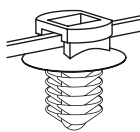
For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



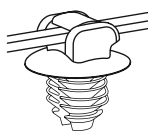
### Fir Tree Parts FT7 - FT10



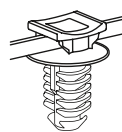
T50IFT7



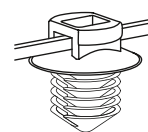
T50RFT8



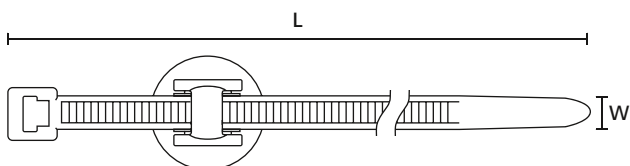
T50RFT8GSD



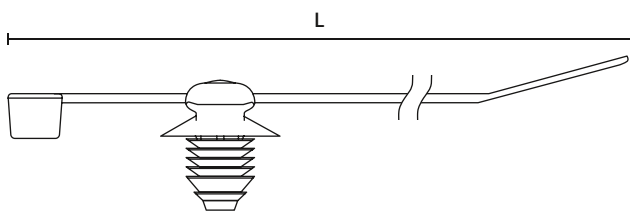
T120IFT9



T50RFT10



T50RFT8GSD



T50RFT8GSD



Material specification please see page 16.

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
V150RFT10	3.3	150.0	35.0	150	18.0	9.7 - 10.0	0.8 - 5.0	PA66	PA66HS	Black (BK)	2;4-6	156-01233
T40RFT8GSD	4.0	180.0	40.0	180	16.0	8.0 - 8.5	1.5 - 4.0	PA66HS	PA66HIRHS	Black (BK)	2;4-8	156-00104
T50RFT7	4.6	200.0	44.0	225	16.0	6.5 - 7.0	0.8 - 7.0	PA66HS	PA66HS	Black (BK)	2-10	111-85871
T50RFT10	4.6	200.0	45.0	225	18.0	9.7 - 10.0	0.8 - 5.0	PA66HS	PA66HS	Black (BK)	2-10	111-85810
T50ROSFT10	4.6	200.0	45.0	225	18.0	9.7 - 10.0	0.8 - 5.0	PA66HS	PA66HS	Black (BK)	2-10	156-00120
T50RFT8	4.6	200.0	49.0	225	16.0	7.7 - 8.0	0.8 - 6.0	PA66HS	PA66HS	Black (BK)	2-10	111-85880
T50RFT7HD	4.6	200.0	45.0	225	21.6	6.2 - 7.2	0.8 - 7.0	PA46	PA46	Brown (BN)	2-10	156-00457
T50RFT8GSD	4.6	202.0	45.0	225	16.0	8.0 - 8.5	1.5 - 4.0	PA66HS	PA66HIRHS	Black (BK)	2-10	133-00034
	4.6	202.0	45.0	225	16.0	8.0 - 8.5	1.5 - 4.0	PA46	PA46	Grey (GY)	2-10	156-00235
T50IFT7	4.6	300.0	81.0	225	16.0	6.5 - 7.0	0.8 - 7.0	PA66HS	PA66HS	Black (BK)	2-10	150-00700
T120IFT9	7.6	300.0	80.0	535	20.0	9.0 - 10.6	5.0 - 11.0	PA66HIR(S)	PA66HIR(S)	Black (BK)	3;9-12	156-00200

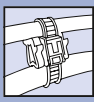
All dimensions in mm. Subject to technical changes.

### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PN5P2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.

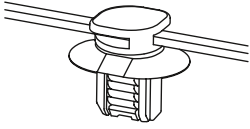





# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties with Fir Tree, with disc, for oval holes



T50ROS1DOP

TYPE	Width (W)	Length (L)	Bundle Ø max.		Disc Ø	Hole Ø (FH)	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
<b>T50ROS1 DOP62x122</b>	4.6	200.0	45.0	225	16.0 x 21.0	6.2 x 12.2	0.6 - 6.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-05908
<b>T50ROSFT OVAL-B</b>	4.6	200.0	50.0	225	17.6 x 23.6	6.2 x 12.2	0.6 - 6.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-01519
<b>T50RFT OVAL-A</b>	4.6	200.0	50.0	225	17.6 x 23.6	6.2 x 12.2	0.6 - 5.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-01464
	4.6	200.0	50.0	225	17.6 x 23.6	6.2 x 12.2	0.6 - 5.0	PA46	PA46	Natural (NA)	2-10	156-01465
<b>T50R6DOP</b>	4.6	200.0	50.0	225	16.0 x 21.0	6.2 x 12.2	0.6 - 6.0	PA46	PA66	Natural (NA)	2-10	156-01277
<b>LK2AFT 62x122A</b>	4.6	275.0	73.0	225	16.0 x 21.0	6.2 x 12.2	0.6 - 5.0	PA66HIRHS	PA66HIRHS	Black (BK)	2-10	156-01208
<b>LK2AFT 62x122B</b>	4.6	275.0	73.0	225	16.0 x 21.0	6.2 x 12.2	0.6 - 5.0	PA66HIRHS	PA66HIRHS	Black (BK)	2-10	156-01209

All dimensions in mm. Subject to technical changes.

Recommended Tools								
2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### 2-Pieces Fixing Ties with Deep Hole Anchor, with Disc, for Round Holes

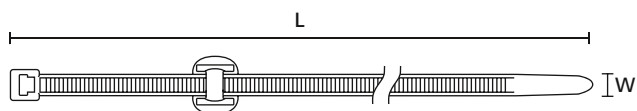
#### Deep Hole Anchor DHA5.5 - DHA8.4

#### Features and Benefits

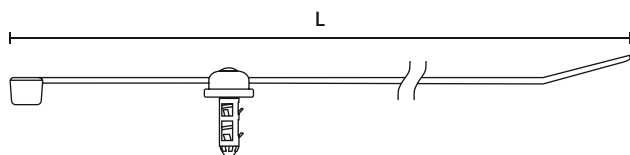
- Pre-assembled 2-piece fixing tie with deep hole anchor
- The high 'pull off' forces are due to the integrated metal clamp
- Cable tie head can be moved after bundling
- Easy to assemble without the need for a tool
- Disc adjusts tie for pressure from various directions and minimises access of dust, dirt and water
- Suitable for use within blind holes with or without thread



DHA5.5x15 and DHA8.4x20 for blind hole applications.



Fixing tie with deep hole anchor



Fixing tie with deep hole anchor



Material specification please see page 16.

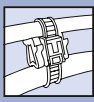
TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T50RDHA 5.5x15		4.6	202.0	45.0	225	5.4 - 5.6	15.0	PA46	Grey (GY)	2-10	156-01203
T50RDHA 8.4x20		4.6	202.0	45.0	225	8.3 - 8.5	20.0	PA46	Grey (GY)	2-10	156-01155

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 1-Piece Fixing Ties for Weld Studs

#### For cable routing above the stud

Primarily designed for use in the automotive industry, these parts can be used in a wide variety of applications where weld studs or ISO bolts are used and cables need to be bundled and secured (WS series, T120RSM, DCT9 & DCT 11 are for 1/4" bolts).

#### Features and Benefits

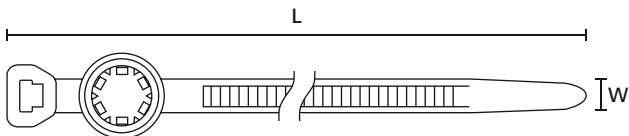
- Cable tie head always situated in defined position
- Easy to assemble without the need for a tool
- Bundle runs directly above weld stud with defined stand-off from the panel



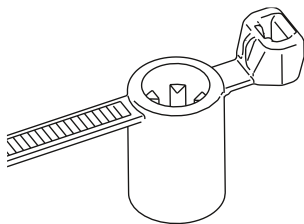
The T50SSBS50TE / T50SSBS60T-E allows very precise routing of cable bundles.



**Material specification please see page 16.**



T50SSBS60T-E



T50SSBS50TE

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Stud Ø	Material	Colour	Tools	Article-No.
T50SSBS50TE	4.6	160.0	35.0	200	5.0	PA66HS	Black (BK)	2-10	155-30602
T50SSBS60T-E	4.6	160.0	35.0	200	6.0	PA66HS	Black (BK)	2-10	157-00083
T50SOSSBH5E	4.6	166.4	35.0	225	5.0	PA66HS	Black (BK)	2-10	155-05701
T50SOSSBS6E	4.7	160.0	35.0	225	6.0	PA66HS	Black (BK)	2-10	157-00211

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### 1-Piece Fixing Ties for Weld Studs

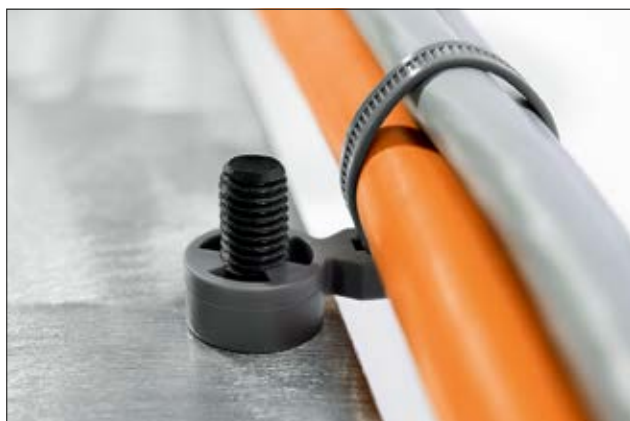
For cable routing alongside the stud

#### Features and Benefits

- Cable tie head always situated in defined position
- Easy to install without the need for a tool
- Bundles are routed very close to stud



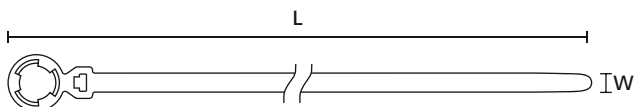
T50SOSSBD-M8/10.



T50SOSSBU-M8/10 for bundles which run below the stud.



This outside serrated cable tie with weld stud mounting keeps the cables close to the fixing stud.



T50SOSSBD-M8/M10

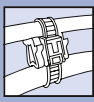
TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Stud Ø	Material	Colour	Tools	Article-No.
T50SOSSBD-M10		5.7	175.0	30.0	150	10.0	PA66HSW	Black (BK)	2-10	157-00040
T50SOSSBD-M8		5.7	175.0	30.0	150	8.0	PA66HSW	Black (BK)	2-10	157-00039
T50SOSSBU-M10		5.7	175.0	30.0	150	10.0	PA66HSW	Grey (GY)	2-10	157-00067
T50SOSSBU-M8		5.7	175.0	30.0	150	8.0	PA66HSW	Grey (GY)	2-10	157-00066
T50SOSSBS5E		4.7	160.0	35.0	225	5.0	PA66HS	Black (BK)	2-10	155-12300

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

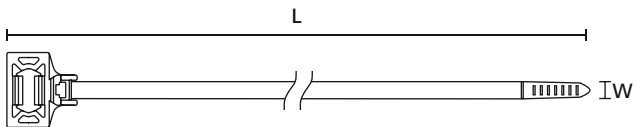
## Cable Ties With Fixing Elements

### 1-Piece Fixing Ties for Weld Studs, moveable

**T50SOSWSP5E-2 for 5 mm studs, retainer height 3.5 mm**

#### Features and Benefits

- Cable tie head always situated in defined position
- Easy to install without the need for a tool
- Provides 5 - 6 mm lateral adjustment
- Very low profile, stackable design
- For parallel routing of several bundles



T50SOSWSP5E-2



T50SOSWSP5E, parallel installation using two fixing ties.

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Stud Ø	Material	Colour	Tools	Article-No.
T50SOSWSP5E-2	4.6	162.6	35.0	225	5.0	PA66HS	Black (BK)	2-10	133-01553

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

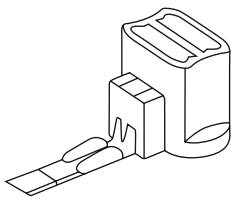
2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.

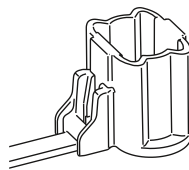
### T50SOSSB5-High-E-C-CC for 5 and 6 mm studs

#### Features and Benefits

- Cable tie head always situated in defined position
- Easy to install without the need for a tool
- Provides a 5 – 6 mm lateral adjustment possibility



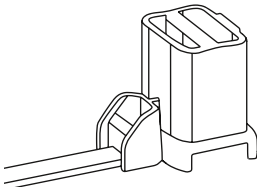
FixingTie\_T50SOSSB5-High-E-C-CC



T50SOSSB6HE



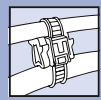
T50SOSSB5-High-E-C-CC.



T60ROSSB6HEC

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Stud Ø	Material	Colour	Tools	Article-No.
T50SOSSB6HE	4.7	160.0	35.0	170	6.0	PA66HS	Black (BK)	2-10	155-46302
T50SOSSB5-High-E-C-CC	5.0	167.0	35.0	225	5.0	PA66HS	Black (BK)	2-10	157-00227
T60ROSSB6HEC	5.5	227.4	55.0	300	6.0	PA66HS	Black (BK)	3;9-12	157-00101

All dimensions in mm. Subject to technical changes.

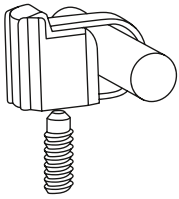


### 1-Piece Fixing Ties for Weld Studs

#### LFC-Series for routing close to the stud

#### Features and Benefits

- 1-piece fixing tie for 5 mm studs
- Cable tie head always situated in defined position
- Easy to install without the need for a tool
- Bundle runs very close next to stud
- Closed stud retainer protects the bundle against damage
- Contact surface allows secure bundling with tensioning tool




LFC165-2 can be put on by hand.



LFC165-2 for bundle diameters up to 35.0 mm



Material specification please see page 16.

TYPE	Width (W)	Length (L)	Bundle Ø max.		Stud Ø	Material	Colour	Tools	Article-No.
LFC165(PSA)	4.7	165.0	35.0	90	5.0	PA66HS	Black (BK)	2-10	155-34202
LFC165-2	4.7	165.0	35.0	150	5.0	PA66HS	Black (BK)	2-10	157-00047

All dimensions in mm. Subject to technical changes.

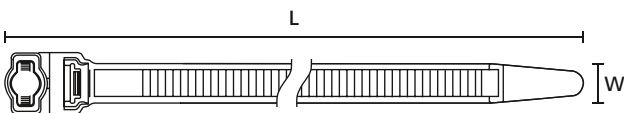
### 1-Piece Fixing Ties for Weld Studs, for Heavy Duty Applications

#### WS-Series for threaded studs

Wide strap stud-mounted cable ties are primarily designed for use in the automotive or truck industry.

#### Features and Benefits


- Very flexible strap provides minimum pinching of soft hoses and convoluted tubing
- Low profile head for compact bundling
- Clamping rails to increase grip on round bundles
- Flexible hinge



Wide Strap Heavy Duty Stud Mount Cable Ties



The wide strap stud mount cable tie minimizes pinching on soft bundles.

TYPE	Width (W)	Length (L)	Bundle Ø max.		Stud Ø	Material	Colour	Tools	Article-No.
WSS8MM	12.7	246.4	57.1	534	8.0	PA66HIRHSW	Black (BK)	11-12	157-00034
WSI8MM	12.7	322.6	82.5	534	8.0	PA66HIRHSW	Black (BK)	11-12	157-00035
WSR8MM	12.7	398.8	104.1	534	8.0	PA66HIRHSW	Black (BK)	11-12	157-00036

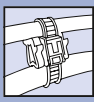
All dimensions in mm. Subject to technical changes.

#### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.





# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties for Weld Studs

Series SBH5 and SBH5SD are used mainly in the automotive industry. The SD variant is for the smallest bundle diameters from 1.0 mm. Series SB5 and SBS5 are suitable for bundling and fastening cable looms and pipes in switch cabinet construction and automotive and construction machine industry.

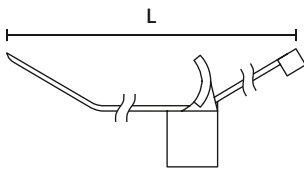
#### Features and Benefits

- Pre-assembled 2-piece fixing tie with stud retainer
- Cable tie head can be moved after bundling
- Easy to install without the need for a tool
- SB5-types for 5 mm studs or 5 mm ISO threaded studs
- Types with discs can retain insulation materials while fixing a cable bundle
- Oval shape can be adjusted in a lateral position
- GB58C for 8 mm retainer enables parallel routing



Cable ties illustrating the variety of application methods for weld stud fixing.

### 2-Piece Fixing Ties for Weld Studs, moveable



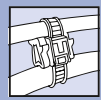
TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Stud Ø	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T30RSB5		3.5	150.0	32.0	135	5.0	PA66HS	POM	Black (BK)	2;4-6	150-10140
T50SSB5		4.6	150.0	32.0	225	5.0	PA6HS	PA66HS	Black (BK)	2-10	150-10144
T50SOSSB5		4.6	150.0	35.0	225	5.0	PA66HS	POM	Black (BK)	2-10	156-00080
T50RSB5		4.6	200.0	45.0	225	5.0	PA66HS	POM	Black (BK)	2-10	150-10141
T50ROSSB5		4.6	200.0	45.0	225	5.0	PA66HS	POM	Black (BK)	2-10	150-10149
T50RSB5		4.6	202.0	45.0	225	5.0, 6.0	PA46	PA46	Grey (GY)	2-10	156-00084
T50RSB5CSD		4.6	200.0	45.0	225	5.0	PA66HS	PA66HS	Black (BK)	2-10	156-00083
T50ROSSB5CSD		4.6	200.0	45.0	225	5.0	PA66HS	PA66HS	Black (BK)	2-10	156-05906

All dimensions in mm. Subject to technical changes.

Recommended Tools									
2	3	4	5	6	7	8	9	10	
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.





### 2-Piece Fixing Ties for Weld Studs

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Stud Ø	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T30RSBS5		3.5	150.0	35.0	135	5.0	PA66HS	PA66HS	Black (BK)	2;4-6	150-21290
T50SOSSBS5		4.6	150.0	31.0	225	5.0	PA66HS	PA66	Black (BK)	2-10	156-00079
T50SSBS5		4.6	150.0	35.0	225	5.0	PA66HS	PA66HS	Black (BK)	2-10	150-21293
T50RSBS5		4.6	200.0	45.0	225	5.0	PA66HS	PA66HS	Black (BK)	2-10	150-21291
T50ROSSBS5		4.6	200.0	45.0	225	5.0	PA66HS	PA66HS	Black (BK)	2-10	150-21299
T80ISBS5		4.7	305.0	80.0	355	5.0	PA66HS	PA66HS	Black (BK)	2-12	150-21297
T50ROSGBS8CA		4.6	200.0	45.0	225	8.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00251
T50ROSGBS8CB		4.6	200.0	45.0	225	8.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00252
T50ROSGBS8CC		4.6	200.0	45.0	225	8.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00116

All dimensions in mm. Subject to technical changes.



**Material specification please see page 16.**

### 2-Piece Fixing Ties for Weld Studs, with disc

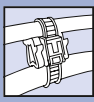
TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Stud Ø	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T50RSBH5		4.6	202.0	45.0	225	5.0	PA66HS	PA66HS	Black (BK)	2-10	150-16943
T80ISBH5		5.0	300.0	80.0	355	5.0	PA66HS	PA66HS	Black (BK)	2-12	150-16945
T50RSBH5-SD		4.6	200.0	45.0	222	5.0	PA66HS	PA66HS	Black (BK)	2-10	150-92904
T50ROSSBH5SD		4.6	200.0	45.0	225	5.0	PA66HS	PA66HS	Black (BK)	2-10	156-05905
T80ISBH5SD		4.6	300.0	78.0	356	5.0	PA66HS	PA66HS	Black (BK)	2-12	150-92905
T50R-SBH5SD-14		4.6	200.0	45.0	222	5.0	PA66HS	PA66HS	Black (BK)	2-10	150-77591
T50RSBH6SD		4.6	200.0	45.0	225	6.0	PA66HS	PA66HS	Black (BK)	2-10	156-00819

All dimensions in mm. Subject to technical changes.

### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties for Weld Studs, for parallel routing

**T50SDSBS5 for max. bundle diameter 35.0 mm**

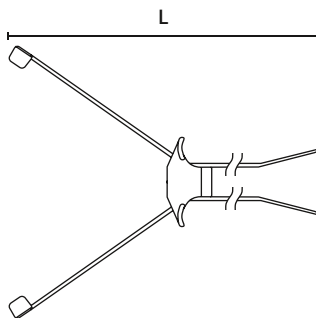
Many applications require cables to be run parallel to each other but separated to avoid abrasion. The double mounting base, when used with two cable ties, allow this to be achieved simply and quickly. Widely used for securing cables, pipes and hoses in the automotive and truck building industries, the mounting base is simply pushed onto a 5mm diameter weld stud or bolt.

#### Features and Benefits

- Pre-assembled 2-piece fixing tie with stud retainer
- For parallel routing of cables, hoses or harnesses
- Cable tie head can be moved after bundling
- Easy to install without the need for a tool
- For 5 mm studs or 5 mm ISO threaded studs




Parallel fixation of two cables.



DSBS5

**i** Other dimensions are available on request.

**📄** Material specification please see page 16.

TYPE	Width (W)	Length (L)	Bundle Ø max.	 N	Stud Ø	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
<b>T50SDSBS5</b>	4.6	150.0	35.0	225	5.0	PA66HS	PA66HIRHS	Black (BK)	2-10	150-56193
<b>T50ROSBS5</b>	4.6	200.0	45.0	222	5.0	PA66HS	PA66HIRHS	Black (BK)	2-10	150-56199

All dimensions in mm. Subject to technical changes.

Recommended Tools								
2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### Fixing Ties for Edges

#### EdgeClip-Family

These cable ties and EdgeClip assemblies are ideal for use where holes are not acceptable or where, due to temperature problems, adhesives will fail. Once the cable tie is fastened around the cables the EdgeClip is presented ready for attaching to the panel. Widely used within the automotive and panel building industries these cable ties and EdgeClips save time and money.

#### Features and Benefits

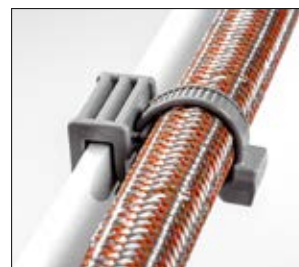
- Easy assembly by hand
- For edges of 1 – 3 mm or 3 – 6 mm
- Integrated metal clamp holds clip firmly in place
- Clamp consists of double tempered steel spring
- Ideal for applications where holes or adhesives are not suitable



*T50ROSEC10 fitted onto a plastic panel to hold a Ø 6 mm harness.*



*1-Piece-Fixing Tie T50SOSEC12 can be pushed easily on edges.*

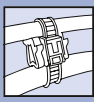


*Pre-assembled 2-Piece Fixing Tie with Edge Clip for edges of 1-3 mm.*

The silver-grey clamp, the heart of our EdgeClips, consists of double-tempered spring steel in accordance with DIN EN 10132-4 C75S. The spring steel gives the clamp both the necessary rigidity to provide high pull-off forces and also sufficient flexibility for various possible applications.

The double coating is applied initially with a zinc plate system followed by inorganic surface sealing. Naturally, no chromium (VI) is used in this process. The clamp therefore complies with the current

EU Directive 2000/53/EC on end of life vehicles and the prohibition on heavy metals. The refined spring-steel clamp also fulfils the requirements for resistance to salt spray stipulated in DIN EN ISO 9227 NSS (min. 840 h without corrosion of base metal) and DIN EN ISO 6270-Z-CH (min. 720 h without corrosion of base material). This solution has therefore been approved by many OEMs for exposed installation locations, e.g. in engine compartments and the running-gear area.



# Cable Ties and Fixings

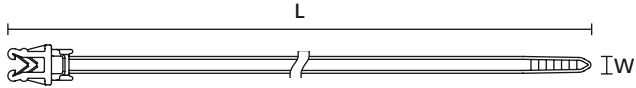
## Cable Ties With Fixing Elements

### Fixing Ties for Edges

EdgeClip-Family



EdgeClips are also available on request for panel thickness from 4 - 7 mm.



T50SOSEC12E

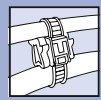
TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Panel Thickness	Material	Colour	Tools	Article-No.
T50SOSEC12E		4.6	160.0	35.0	180	1.0 - 3.0	PA66HS	Black (BK)	2-10	148-00200
T50SOSEC13E		4.6	160.0	35.0	180	1.0 - 3.0	PA66HS	Black (BK)	2-10	126-00000
T40XEC5SP-E		4.0	85.0	15.0	178	1.0 - 3.0	PA66HS	Black (BK)	2;4-8	133-00059
T50SOSEC34E		4.6	155.0	35.0	180	1.0 - 3.0	PA66HS	Black (BK)	2-10	126-00036
T50SOSEC20-E		4.6	161.0	35.0	180	3.0 - 6.0	PA66HS	Black (BK)	2-10	126-00235

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNPSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### 2-Piece Fixing Ties for Edges, 1.0 - 3.0 mm, Top Fixing

#### EdgeClip-Family

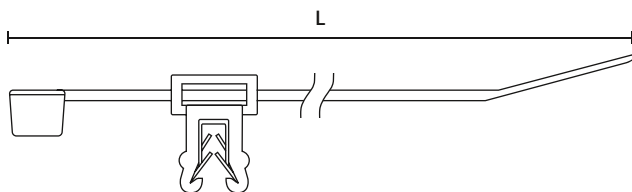
These cable ties and EdgeClip assemblies are ideal for use where holes are not acceptable or where due to temperature problems adhesives will fail. These assemblies are widely used for fixing and bundling cables, pipes and hoses within the automotive industry, harness making, panel building and electrical industry.

#### Features and Benefits

- Pre-assembled 2-piece fixing tie with EdgeClip
- Cable tie head can be moved after bundling
- EC9, EC10, EC21 and EC22 are for minimum bundle diameters of 1 mm
- For edges of 1 – 3 mm



T50ROSEC10 fitted onto a plastic panel to hold a Ø 6 mm harness.



Fixing Tie with EC4



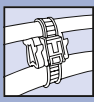
Material specification please see page 16.

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T30REC4A		3.6	148.0	33.0	135	PA66HS	PA66HIRHS	Black (BK)	2;4-6	150-76090
T50SOSEC4A		4.6	150.0	35.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	150-76093
T50ROSEC4A		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	150-76099
T50ROSEC4A-W		4.6	200.0	45.0	225	PA66W	PA66W	Black (BK)	2-10	156-00570
T50REC4A		4.6	202.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	150-76091
T30REC4B		3.6	148.0	35.0	135	PA66HS	PA66HIRHS	Black (BK)	2;4-6	150-76080
T50SOSEC4B		4.6	150.0	35.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00109
T50ROSEC4B		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	150-76079
T18REC10SD		2.5	100.0	22.0	80	PA66HS	PA66HIRHS	Black (BK)	2;4-6	155-38304
T50SOSEC10		4.6	150.0	31.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00015
T50ROSEC10		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-05904
T18REC9SD		2.5	100.0	22.0	80	PA66HS	PA66HIRHS	Black (BK)	2;4-6	155-37104
T50SOSEC9SD		4.6	150.0	31.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00019
T50ROSEC9		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-05903
T50REC9SD		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-01280

All dimensions in mm. Subject to technical changes.

Recommended Tools								
2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties for Edges, 1.0 - 3.0 mm, Side Fixing

#### EdgeClip-Family

These cable ties and EdgeClip assemblies are ideal for use where holes are not acceptable or where due to temperature problems adhesives will fail. These assemblies are widely used for fixing and bundling cables, pipes and hoses within the automotive industry, harness making, panel building and electrical industry.

#### Features and Benefits

- Pre-assembled 2-piece fixing tie with EdgeClip
- Cable tie head can be moved after bundling
- EC9, EC10, EC21 and EC22 are for minimum bundle diameters of 1 mm
- For edges of 1 – 3 mm



T50ROSEC23 - the cable bundle runs parallel with the edge.



**Material specification please see page 16.**

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T30REC5A		3.6	148.0	33.0	135	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-00003
T50SOSEC5A		4.6	150.0	31.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	150-40593
T50ROSEC5A		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	150-40591
T50SOSEC5B		4.6	150.0	31.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	150-40583
T50REC5B		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	150-40582
T50ROSEC5B		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	150-40581
T18REC21		2.5	100.0	18.0	80	PA66W	PA66HIRHS	Black (BK)	2;4-6	156-01231
T50SOSEC21		4.6	150.0	35.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00017
T50ROSEC21		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00010
T50ROSEC22		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00011
T50REC22		4.6	200.0	45.0	225	PA66W	PA66HIRHS	Black (BK)	2-10	156-00576

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### 2-Piece Fixing Ties for Edges, 3.0 - 6.0 mm, Top Fixing

#### EdgeClip-Family

#### Features and Benefits

- Pre-assembled 2-piece fixing tie with EdgeClip
- Cable tie head can be moved after bundling
- For minimum bundle diameters of 1 mm
- For edges of 3 – 6 mm



Other combinations between cable tie and foot part available on request.

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T18ROSEC19		2.5	100.0	20.0	80	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-04600
T50SOSEC19		4.6	150.0	35.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-04601
T50ROSEC19		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-04602
T50SOSEC20		4.6	150.0	35.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00016
T50ROSEC20		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00020

All dimensions in mm. Subject to technical changes.

### 2-Piece Fixing Ties for Edges, 3.0 - 6.0 mm, Side Fixing

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T50ROSEC23		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00006
T50ROSEC24		4.6	200.0	45.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00007

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.





# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties for Edges, 0.5 - 2.5 mm, Top Fixing

#### Edge Clip Family for flat and thin edges

These cable ties and EdgeClip assemblies are ideal for use where holes are not acceptable or where due to temperature problems adhesives will fail. These assemblies are widely used for fixing and bundling cables, pipes and hoses within the automotive industry, harness making, panel building and electrical industry. These EdgeClips are specially designed for applications where space is limited such as in mirrors and headlights.

#### Features and Benefits

- For flat edges
- For thin edges 0.5 - 2.5 mm
- Small housing for limited space
- Pre-assembled 2-piece fixing tie with EdgeClip
- Cable tie head can be moved after bundling



T30ROSEC0.5-2.5SPV for application on thin edges.



The capabilities of our popular Edge Clip family have been enhanced with the introduction of new, smaller clips. These smaller clips allow bundles to run more safely on thin or flat edges.

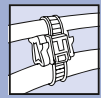
TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T30ROSEC0.5-2.5TP-SD		3.4	145.0	35.0	135	0.5 - 2.5	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-01543
T30ROSEC0.5-2.5TPVA		3.4	145.0	35.0	135	0.5 - 2.5	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-01542
T30ROSEC0.5-2.5TV-SD		3.4	145.0	35.0	135	0.5 - 2.5	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-01545

All dimensions in mm. Subject to technical changes.

### 2-Piece Fixing Ties for Edges, 0.5 - 2.5 mm, Side Fixing

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T30ROSEC0.5-2.5SP-SVB		3.4	145.0	35.0	135	0.5 - 2.5	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-01546
T30ROSEC0.5-2.5SPVA		3.4	145.0	35.0	135	0.5 - 2.5	PA66HS	PA66HIRHS	Black (BK)	2;4-6	156-01544

All dimensions in mm. Subject to technical changes.



### 2-Piece Fixing Ties for Edges, twistable

#### EdgeClip-Family

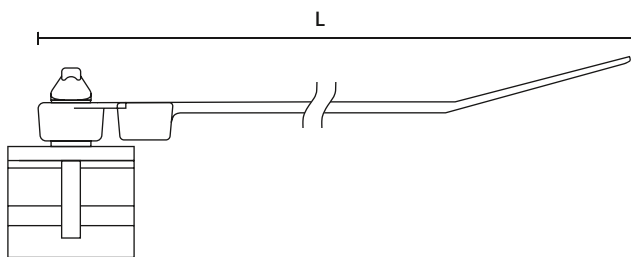
These cable ties and EdgeClip assemblies are ideal for use where holes are not acceptable or where due to temperature problems adhesives will fail. These assemblies are widely used for fixing and bundling cables, pipes and hoses within the automotive industry, harness making, panel building and electrical industry.

#### Features and Benefits

- Pre-assembled 2-piece fixing tie with EdgeClip
- Easy to assemble by hand
- Cable tie head can be moved after bundling
- For edges of 1 – 2.5 mm or 1 – 3 mm
- Can be rotated to the desired position during mounting



EdgeClip CBTO50R, rotatable 90°.



CBT30MR



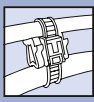
Material specification please see page 16.

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
CBT30MR		3.5	160.0	32.0	135	2.5	PA66HS	POM	Black (BK)	2;5-6	156-00049
CBTO50R		4.6	202.0	47.0	225	3.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-01601
CBTOS50R STUD5		4.6	200.0	47.0	225	3.0	PA66HS	PA66HIRHS	Black (BK)	2-10	156-00380

All dimensions in mm. Subject to technical changes.

Recommended Tools								
2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties for Edges, for Holes

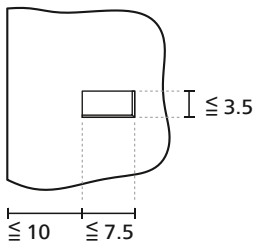
Due to the tie's reduced installation height it is ideal for use wherever space is at a premium.

#### Features and Benefits

- Pre-assembled 2-piece fixing tie with EdgeClip
- Easy to assemble by hand
- Cable tie head can be moved after bundling
- For edges of 1.0 - 3.0 mm
- Secure fixing of the EdgeClip into drill hole
- Ideal for use wherever space is at its premium



The holding tab increases the tensile strength additionally.



Position of the drill hole for the holding tab



**Material specification  
please see page 16.**

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T50REC2.5B		4.6	202.0	40.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	150-45292
T50ROSEC2.5A		4.6	200.0	50.0	225	PA66HS	PA66HIRHS	Black (BK)	2-10	150-45299

All dimensions in mm. Subject to technical changes.

Recommended Tools									
2	3	4	5	6	7	8	9	10	
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### 1-Piece Fixing Tie with Pipe Clip

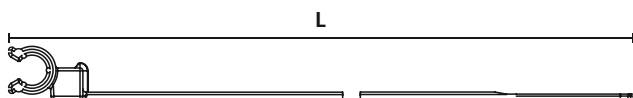
#### Bracket brake line

#### Features and Benefits

- Easily locks onto a cable, tube or hose (D = 4.8 – 5.4 mm)
- Cable tie head always in defined position
- Suitable for post-installation of bundles



Brake cable fixing suitable for post installation of bundles.



Brake cable fixing

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Attach to Ø	Material	Colour	Tools	Article-No.
Bracket brake line		3.6	150.0	35.0	133	4.8 - 5.4	PA46	Grey (GY)	2;4-6	148-00101
		3.6	150.0	35.0	133	4.8 - 5.4	PA66HS	Natural (NA)	2;4-6	148-00100

All dimensions in mm. Subject to technical changes.

### 1-Piece Fixing Ties with Wire Clip

#### Features and Benefits

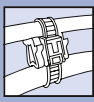
- Cable tie head always in defined position
- Easy to close by simply pressing the cover
- Firm fit around wires
- Suitable for post-installation of bundles
- Available in a range of sizes



T50SOSWA - The easy way for parallel guidance of cables next to a wire.

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Attach to Ø	Material	Colour	Tools	Article-No.
T50SOSWA1.8E		4.6	150.0	35.0	225	1.8	PA66HS	Black (BK)	2-10	148-00089
T50SOSWA2.0E		4.6	150.0	35.0	225	2.0	PA66HS	Black (BK)	2-10	148-00088
T50SOSWA3.4E		4.6	150.0	35.0	225	3.4	PA66HS	Black (BK)	2-10	148-00095
T50SOSWA4.3E		4.6	150.0	35.0	225	4.3	PA66HS	Black (BK)	2-10	148-00092
T50SOSWB1.8E		4.6	150.0	35.0	225	1.8	PA66HS	Black (BK)	2-10	148-00090
T50SOSWB2.0E		4.6	150.0	35.0	225	2.0	PA66HS	Black (BK)	2-10	148-00093
T50SOSWB3.4E		4.6	150.0	35.0	225	3.4	PA66HS	Black (BK)	2-10	148-00096
T50SOSWB4.3E		4.6	150.0	35.0	225	4.3	PA66HS	Black (BK)	2-10	148-00091

All dimensions in mm. Subject to technical changes.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties with Pipe Clip, twistable 360°

#### Features and Benefits

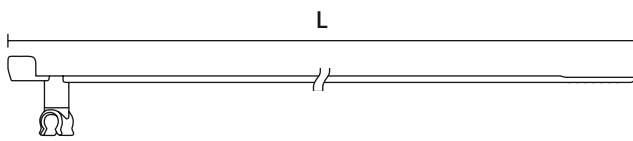
- Simply clip onto a wire or hose
- Fixing clip offers full 360° rotation
- Routed cable can move in any direction in relation to the fixing point
- Inside serrated cable tie
- Ideally used in the Automotive Industry



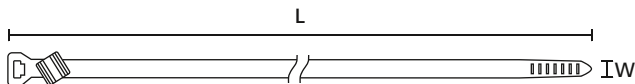
T50SVC5 rotates in any direction.



**Material specification please see page 16.**



T50SVC4S



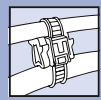
T50SVC4S

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	Attach to Ø	Material	Colour	Tools	Article-No.
T50SVC4		4.7	155.0	35.0	3.8 - 4.2	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01375
T50SVC5		4.7	155.0	35.0	4.5 - 5.2	PA66HS	Black (BK)	2-10	156-01366
T50SVC4S		4.7	155.0	35.0	3.8 - 4.2	PA66HS, PP	Black (BK), Natural (NA)	2-10	156-01374
T50SVC3.5		4.7	155.0	35.0	3.45 - 3.55	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01376
T50SVC6.5		4.7	155.0	35.0	6.5 - 8.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01371

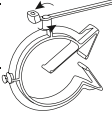
All dimensions in mm. Subject to technical changes.

Recommended Tools								
2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



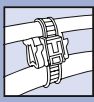
### 2-Piece Fixing Ties with Pipe Clip, twistable 360°

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	Attach to Ø	Material	Colour	Tools	Article-No.
T50SVCOC10-14		4.7	155.0	35.0	10.0 - 14.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01367
T50SVCOC15-18		4.7	155.0	35.0	15.0 - 18.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01368
T50SVCOC19-24.5		4.7	155.0	35.0	19.0 - 24.5	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01369
T50SVCOC25-31		4.7	155.0	35.0	25.0 - 31.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01372
T50SVCOC31-39		4.7	155.0	35.0	31.0 - 39.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01373
T50SVCOC39-45		4.7	155.0	35.0	39.0 - 45.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01370
T50SVCOC9-11A		4.7	155.0	35.0	9.0 - 11.0	PA66HIRHS, PA66HS	Black (BK)	2-10	156-01236
T50SVCOC9-11B		4.7	155.0	35.0	9.0 - 11.0	PA66HIRHS, PA66HS	Black (BK)	2-10	156-01237
T50SVCOC14		4.7	155.0	35.0	14.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01318
T50SVCOC18-20A		4.7	155.0	35.0	18.0 - 20.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01190
T50SVCOC18-20B		4.7	155.0	35.0	18.0 - 20.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01194
T50SVCOC28		4.7	155.0	35.0	28.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01239
T50SMVCOC28		4.7	210.0	50.0	28.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-01268
T50SMVCOC1014		4.7	210.0	50.0	10.0 - 14.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-00128
T50SMVCOC15-18		4.7	210.0	50.0	15.0 - 18.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-00129
T50SMVCOC19-24.5		4.7	210.0	50.0	19.0 - 24.5	PA66HS, PA66HIRHS	Black (BK)	2-10	156-00130
T50SMVCOC19-24.5		4.7	210.0	50.0	19.0 - 24.5	PA46	Grey (GY)	2-10	156-00577
T50SMVCOC25-31		4.7	210.0	50.0	25.0 - 31.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-00303
T50SMVCOC31-39		4.7	210.0	50.0	31.0 - 39.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-00304
T50SMVCOC39-45		4.7	210.0	50.0	39.0 - 45.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-00131

All dimensions in mm. Subject to technical changes.

Recommended Tools								
2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties with Automatic Harness Clip, connectable and twistable 360°

#### IAHC-Series

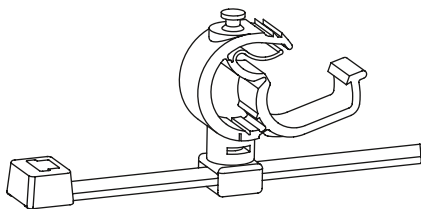
Offering a simple and secure method of attaching cables together. Originally designed for the automotive industry, these products are used in a wide range of applications.

#### Features and Benefits

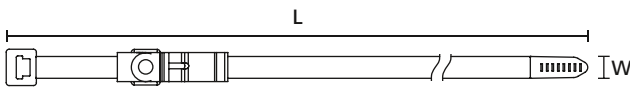
- Push and click closure
- 360 degrees rotatable
- Coupling elements of the IAHC variants allow parts to interconnect



T120R cable tie assembled with an IAHC.



T120RIAHC()TCR



T120RIAHC()TCR



Material specification please see page 16.

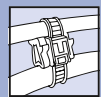
TYPE	Width (W)	Length (L)	Bundle Ø max.	Attach to Ø		Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T50RIAHC1TICR	4.6	200.0	50.0	3.0 - 13.0	225	PA66HIR(S)	PA66HIRHS	Black (BK)	2-10	156-05331
T50RIAHC2TICR	4.6	200.0	50.0	11.0 - 20.0	225	PA66HIR(S)	PA66HIRHS	Black (BK)	2-10	156-05330
T50RIAHC5TCR	4.6	200.0	50.0	35.0 - 45.0	225	PA66HIR(S)	PA66HIRHS	Black (BK)	2-10	156-01048
T120RIAHC4TCR	7.6	387.0	100.0	27.0 - 36.0	535	PA66HIR(S)	PA66HIRHS	Black (BK)	3;9-12	156-00176
T120RIAHC5TCR	7.6	387.0	100.0	35.0 - 45.0	535	PA66HIR(S)	PA66HIRHS	Black (BK)	3;9-12	156-01317
T120RIAHC3TCR	7.6	390.0	100.0	19.0 - 26.0	535	PA66HIR(S)	PA6HIRHS	Black (BK)	3;9-12	156-00175
T120RIAHC1TCR	7.6	390.0	108.0	3.0 - 13.0	535	PA66HIR(S)	PA66HIRHS	Black (BK)	3;9-12	156-00172
T120RIAHC2TCR	7.6	390.0	108.0	11.0 - 20.0	535	PA66HIR(S)	PA66HIRHS	Black (BK)	3;9-12	156-00108

All dimensions in mm. Subject to technical changes.

Recommended Tools											
2	3	4	5	6	7	8	9	10	11	12	
MK20	MK21	MK3SP	MK3PN5P2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P	

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.

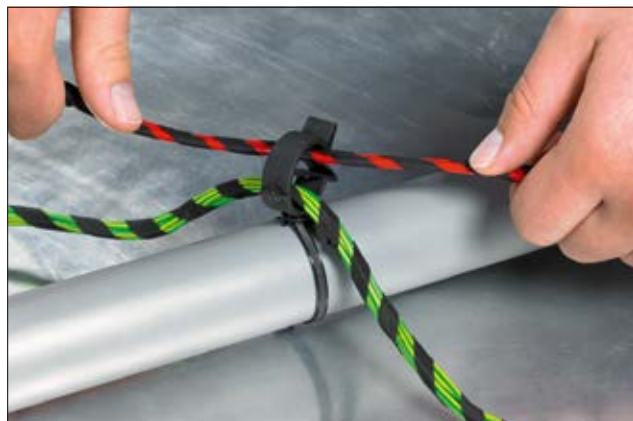




### 2-Piece Fixing Ties with Pipe Clip

#### Features and Benefits

- For post-installation of additional cables for pre-assembled cable looms
- Variety of twist angles and even different loop directions provide flexibility for cable routing
- For OC1 and 2A additional cable tie dimensions are available
- CBTO-series for cable ties up to 5 mm



EdgeClip CBTO50R, verdrehbar um 90°.

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	Attach to Ø	Material	Colour	Tools	Article-No.
T30ROC2A		3.6	148.0	31.0	6.5 - 7.5	PA46	Grey (GY)	2;4-6	156-00014
		3.6	148.0	31.0	6.5 - 7.5	PA66HS, PA66HIRHS	Black (BK)	2;4-6	156-00013
T30ROC1A		3.6	148.0	31.0	4.0 - 10.0	PA66HS, PA66HIRHS	Black (BK)	2;4-6	156-00012
T50ROC1A		4.6	202.0	45.0	4.0 - 10.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-00036
T30ROC1B		3.6	148.0	30.0	4.0 - 10.0	PA66HS, PA66HIRHS	Black (BK)	2;4-6	156-00505
T50ROC1B		4.6	202.0	45.0	4.0 - 10.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-00306
T30ROC2B		3.6	148.0	31.0	6.5 - 7.5	PA66HS, PA66HIRHS	Black (BK)	2;4-6	156-00470

All dimensions in mm. Subject to technical changes.

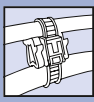
### 2-Piece Fixing Ties with Pipe Clip, twistable 90°

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	Attach to Ø	Material	Colour	Tools	Article-No.
T50ROC10-14CBTO-SD-SET		4.6	202.0	45.0	10.0 - 14.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-00416
T50ROC15-18CBTO-SD-SET		4.6	202.0	45.0	15.0 - 18.0	PA66HS, PA66HIRHS	Black (BK)	2-10	156-00419
T50ROC19-24.5CBTO-SD-SET		4.6	202.0	45.0	19.0 - 24.5	PA66HS, PA66HIRHS	Black (BK)	2-10	156-00422

All dimensions in mm. Subject to technical changes.

Recommended Tools								
2	3	4	5	6	7	8	9	10
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

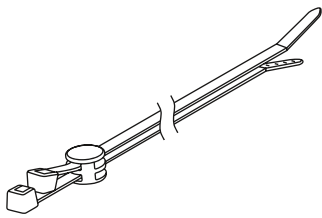
### 2-Piece Fixing Ties for parallel separation

#### Features and Benefits

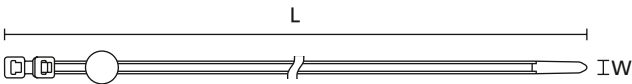
- Pre-assembled 2-piece fixing tie with coupler
- Cable tie head can be moved after bundling
- Easy addition of cables after assembly
- For parallel routing of bundles that can be twisted 90° even after installation



Fixing Element - Coupler



T120RCoupler



Two Cable Ties with Coupler



T120RCoupler can be used for parallel routing of two cable ties.



The second tie can be used for post-installations.



**Material specification please see page 16.**

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T50RCOUPLER	4.6	202.0	47.0	225	PA46	PA46	Grey (GY)	2-10	156-00382
	4.6	202.0	47.0	225	PA66HIR(S)	PA66HIRHS	Black (BK)	2-10	156-00276
T50RSINGLECOUPLER	4.6	202.0	47.0	225	PA66HIRHS	PA66HIRHS	Black (BK)	2-10	156-01134
T120RCOUPLER	7.6	390.0	105.0	535	PA66HIR(S)	PA66HIRHS	Black (BK)	3;9-12	156-00275
T120RSINGLECOUPLER	7.6	390.0	105.0	535	PA66HIR(S)	PA66HIRHS	Black (BK)	3;9-12	156-00550

All dimensions in mm. Subject to technical changes.

Recommended Tools										
2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.

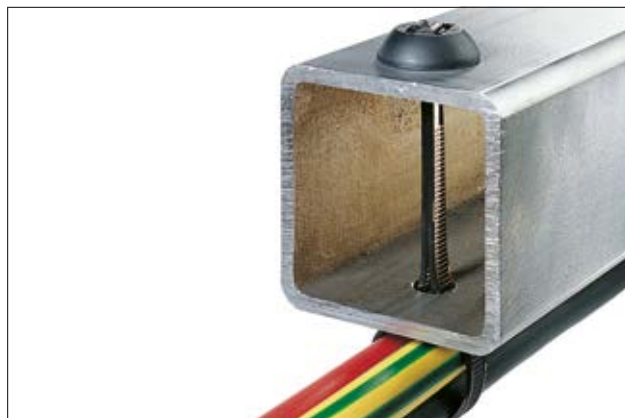


### Cable Ties for single hole application (Chassis Tie)

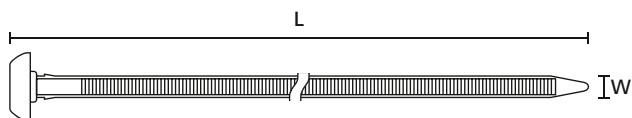
Using a single hole these 'chassis ties' are widely used in the automotive, truck and heavy equipment markets. Ideal for applications which have access to both sides of the hole - for example truck frames.

#### Features and Benefits

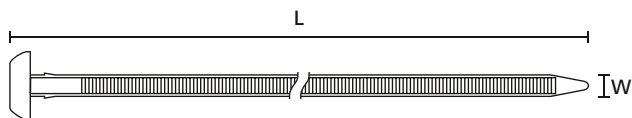
- Both sides of the cable tie serrated
- BHT-Series with round head for larger bearing area
- BHT375 for centred position
- CT- and DE-Series with small squared head for restricted space areas
- Tensioning with application tool



BHT375 - used for mounting cables via a single hole.



BHT375



BHT375M



CT375, DE863220



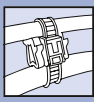
For your system solutions we offer suitable fixing elements: MSBT120, page 106.

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	N	Material	Colour	Tools	Article-No.
BHT375		7.6	375.0	100.0	700	PA66HS	Black (BK)	3;9-11	150-37595
BHT375M		7.6	375.0	100.0	700	PA66HS	Black (BK)	3;9-11	150-47595
DE863220		6.0	300.0	80.0	135	PA66HS	Black (BK)	3;9-11	132-00200
CT375		7.6	375.0	100.0	700	PA66HS	Black (BK)	3;9-11	132-37540

All dimensions in mm. Subject to technical changes.

Recommended Tools			
3	9	10	11
MK21	MK6	MK9	MK9HT

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



# Cable Ties and Fixings

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties for Heavy Duty Applications, for Screws

#### HDM-Series

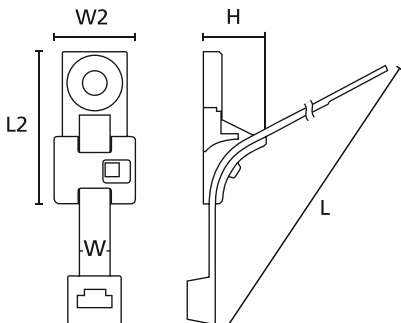
Used in the automotive and truck industry for harness fixing in the engine body, these parts offer solutions in many other industrial applications within difficult environments.

#### Features and Benefits

- Pre-assembled 2-piece fixing tie
- Cable tie head can be moved after bundling
- Secure alignment to the bundle due to H-design
- A suitable alternative for metal clamps
- Withstands vibrations and displacement forces
- High tightening torque through metal bushing



These HDM are suitable for assembling on screws.



HDM with cable tie (L = length of the tie "flat")



Material specification please see page 16.

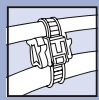
TYPE	Width (W)	Width (W2)	Length (L)	Length (L2)	Height (H)	Bundle Ø max.	Mounting Screw Type	Material	Colour	Tools	Article-No.
T50RHDM6	4.6	20.0	200.0	37.5	16.0	50.0	M6	PA66HIRHS	Black (BK)	2-10	156-00410
T50RHDM8	4.6	20.0	200.0	37.5	16.0	50.0	M8	PA66HIRHS	Black (BK)	2-10	156-00412
X80RHDM60	4.6	26.0	200.0	34.7	15.5	23.0	M6	PA66HS, PA66HIRHS	Black (BK)	2-12	156-01219
T120RHDM6	7.6	20.0	390.0	37.5	16.0	105.0	M6	PA46	Grey (GY)	3;9-12	156-00407
	7.6	20.0	390.0	37.5	16.0	105.0	M6	PA66HIRHS	Black (BK)	3;9-12	156-00406
T120RHDM8	7.6	20.0	390.0	37.5	16.0	105.0	M8	PA46	Grey (GY)	3;9-12	156-00409
	7.6	20.0	390.0	37.5	16.0	105.0	M8	PA66HIRHS	Black (BK)	3;9-12	156-00408
T120RDHDM6	7.6	25.4	387.0	59.4	15.5	100.0	M6	PA46	Grey (GY)	3;9-12	156-01098
T120RDHDM8	7.6	25.4	387.0	59.4	15.5	100.0	M8	PA46	Grey (GY)	3;9-12	156-01099
X120RHDM6	7.7	20.0	369.0	61.0	16.0	100.0	M6	PA66HIRHS, PA6GF15	Black (BK)	3;9-12	156-01105
X120RHDM8	7.7	20.0	369.0	61.0	16.0	100.0	M8	PA66HIRHS, PA6GF15	Black (BK)	3;9-12	156-01106
X120RDHDM6	7.7	25.4	369.0	59.4	15.5	100.0	M6	PA66HIRHS	Black (BK)	3;9-12	156-01096
X120RDHDM8	7.7	25.4	369.0	59.4	15.5	100.0	M8	PA66HIRHS	Black (BK)	3;9-12	156-01097
X120RHDM65x160	7.7	32.0	369.0	40.2	15.5	100.0	M6	PA66HIRHS	Black (BK)	3;9-12	156-01466

All dimensions in mm. Subject to technical changes.

#### Recommended Tools

2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9	MK9HT	MK9P

For detailed information on Application Tooling please refer to our Main Catalogue or the Internet.



### Heavy Duty Harness Clips

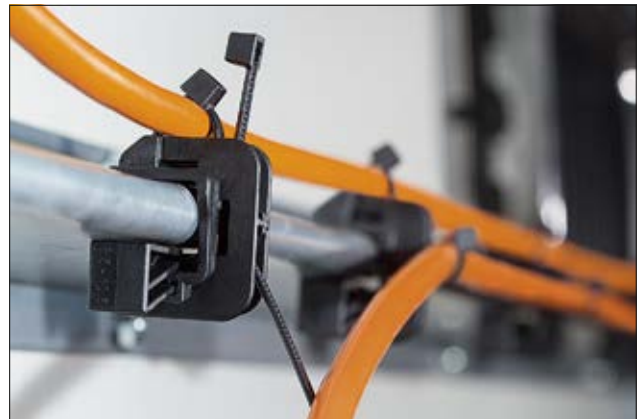
#### Beam Clamps

Primarily designed for use in the automotive/truck industry, these parts can be used in a wide variety of industries and applications where bundles need mounting.

These heavy duty harness clips help to fix and secure cables, lines and hydraulic lines in truck, agriculture and railway vehicle construction, as well as in the ship building industry and industrial buildings.

#### Features and Benefits

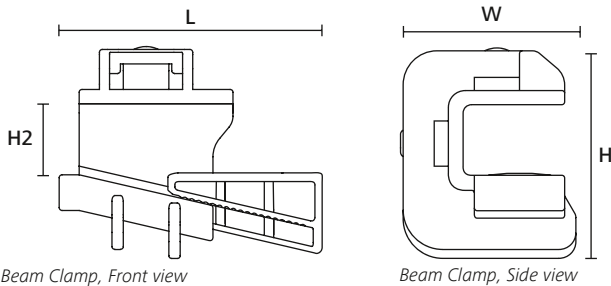
- Easy to install
- No damage to surfaces
- Easy maintenance of bundle by simply changing cable tie
- Cable tie head can be moved after bundling
- Applicable to a wide range of panel thicknesses



The Beam Clamp can be fixed onto a beam with a wedge. Up to two bundles can be routed on the top or rear side of the clamp.



Our two Beam Clamps with 3 different wedges for diverse sheet thicknesses.



TYPE	Drawing	Width (W)	Length (L)	Height (H)	Height (H2)	Panel Thickness	Material	Colour	Article-No.
Beam Clamp D		28.6	46.2	36.7	12.5	5.5 - 7.0	PA6GF30	Black (BK)	151-00886
Beam Clamp B		28.6	46.2	36.7	12.5	7.0 - 8.5	PA6GF30	Black (BK)	151-00822
Beam Clamp C		28.6	46.2	36.7	12.5	8.5 - 10.5	PA6GF30	Black (BK)	151-00823
Beam Clamp D with foam		28.6	46.2	36.7	12.5	5.5 - 7.0	PA6GF30	Black (BK)	151-01188
Beam Clamp B with foam		28.6	46.2	36.7	12.5	7.0 - 8.5	PA6GF30	Black (BK)	151-01186
Beam Clamp C with foam		28.6	46.2	36.7	12.5	8.5 - 10.5	PA6GF30	Black (BK)	151-01187

All dimensions in mm. Subject to technical changes.

### Information and installation instructions for self-adhesive mounting bases

HellermannTyton uses different types of adhesives for self-adhesive bases: acrylate and synthetic rubber. These differ in the operating temperature range and the 'pull off' force of the adhesive. Synthetic rubber has an excellent initial grip, allowing for almost immediate use. Acrylate adhesive has less initial grip, so there is a need to wait for a few hours before use, but has a higher 'pull off' force than synthetic rubber. This enables a permanent fixing lasting months or even years. To use these adhesives the surface must be dry, and free of dust, oil, oxides, parting agents and other impurities. For this the use of isopropanol / water (50/50) is recommended. After cleaning allow the surface to dry completely. Peel off the protective backing on the self-adhesive base, ensuring the adhesive is not touched. Apply the part to the surface and press down firmly for several seconds.

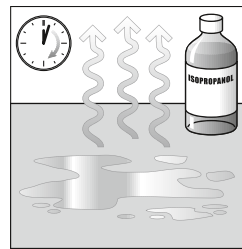
ADHESIVE		Adhesive Operating Temperature
Acrylate with base of acrylic foam	mod. Acrylate	-40 °C to +90 °C

**i** We will be happy to send you on request an up-to-date technical datasheet for whichever adhesive you are using.

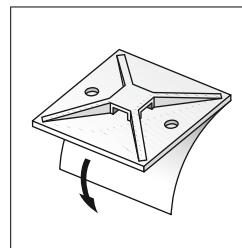
### Instructions for use



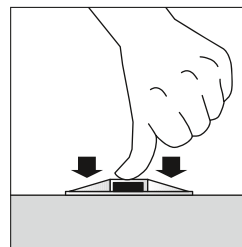
1. The surface must be dry, free from dust, oil, oxides, parting agents and other impurities. The surface to be glued should be cleaned using a clean cloth and isopropanol / water (50/50). When using other appropriate cleaning agents, ensure that they do not attack the surface nor leave any residues.



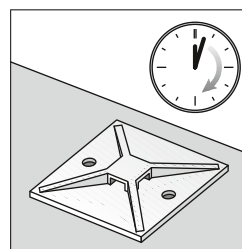
2. After cleaning allow the surface to air-dry completely.



3. Peel off protective backing and ensure the adhesive area is not touched.



4. Press down firmly on the base with the thumbs for several seconds.



5. Depending on the type of adhesive, wait for several minutes (synthetic rubber) or hours (acrylate) so that the adhesive can bond completely with the surface.





### Fixing Parts with Special Adhesive

#### SolidTack-Series MB

SolidTack mounts offer an innovative fixing solution especially for low energy surfaces like PP, PE or if drilling a hole is not possible. Suitable for a wide range of indoor and outdoor applications on varnished, plastic or metal surfaces in many areas e. g. electrical cabinet, railway, aerospace, automotive and agricultural machinery.

#### Features and Benefits

- MB mounts with homogeneous system of acrylic adhesive
- Very good initial adhesion, increases with time
- High cohesive strength combined with good weathering resistance
- Innovative fixing solution for low energy surfaces like PP, PE or painted / varnished surfaces
- Protection foil with finger lift for easy peel off



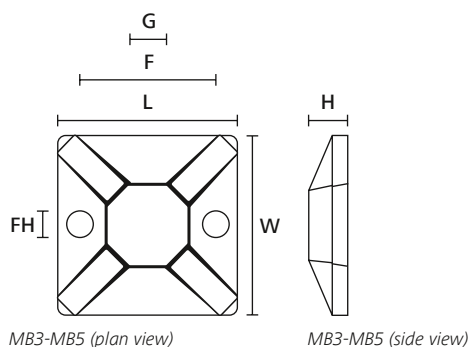
SolidTack products work on varnished and powder coated surfaces.



One Step to the Web!



Material specification please see page 16.

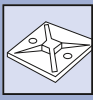


TYPE	Width (W)	Length (L)	Height (H)	Hole Ø (FH)	Fixing Hole Centres (F)	Strap Width max. (G)	Material	Colour	Adhesive	Pack Cont.	Article-No.
MB2APT	13.0	13.0	4.1	-	-	2.7	PA66	Black (BK)	mod. Acrylate	100 pcs.	151-00996
MB3APT	19.0	19.0	3.8	3.1	13.2	4.1	PA66	Black (BK)	mod. Acrylate	100 pcs.	151-00432
	19.0	19.0	3.8	3.1	13.2	4.4	PA66	Natural (NA)	mod. Acrylate	100 pcs.	151-00514
MB4APT	28.0	28.0	4.7	4.0	20.2	5.4	PA66	Black (BK)	mod. Acrylate	100 pcs.	151-00433
	28.0	28.0	4.7	4.0	20.2	5.6	PA66	Natural (NA)	mod. Acrylate	100 pcs.	151-00587
MB5APT	38.0	38.0	6.3	4.7	25.3	10.0	PA66	Black (BK)	mod. Acrylate	100 pcs.	151-00434

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.





### Paste Adhesive Mount

#### PMB5 mount for uneven surfaces

The PMB5 mount offers a fixing solution for applications where a screw fixing is not possible. Due to a larger diameter the mount can even be installed onto uneven surfaces. PMB5 mounts are used in the railway industry as well as in the renewable energy industry. Further applications can be seen in the ship building and electrical industries and the production of switching cabinets.

#### Features and Benefits

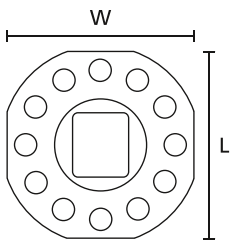
- PMB5 paste adhesive mount for fixings with paste / liquid adhesive
- Mount geometry offers a good form closure with cured adhesive
- Can even be installed onto uneven surfaces due to large diameter
- Can also be applied in combination with hot-melt adhesive, as mount is made of heat resistant PA66



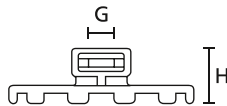
PMB5 mount with paste adhesive.



Material specification please see page 16.



PMB5 Mount (plan view)



PMB5 Mount (front view)

TYPE	Width (W)	Length (L)	Height (H)	Strap Width max. (G)	Material	Colour	Pack Cont.	Article-No.
PMB5	36.0	36.0	10.7	4.8	PA66HS	Black (BK)	100 pcs.	151-00498

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



### Harness Clip for Heavy Duty Applications, for Screws or threaded Bolts

Primarily designed for use in the automotive / truck industry, these parts can be used in a wide variety of industries and applications where bundles need mounting.

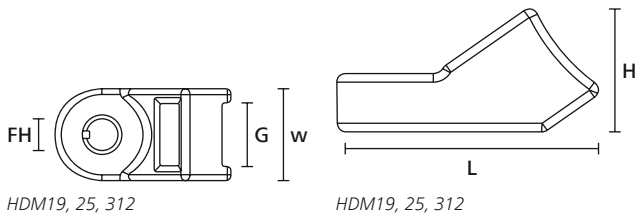
#### Features and Benefits

- Secure alignment to the bundle due to H-design
- Pre-fixing of clip with integrated nose (standard types)
- For cable ties up to 12.7 mm wide
- High tightening torque through metal bushing
- Easy maintenance of bundle by simply changing the cable tie



Heavy Duty Mounts HDM-Series, Patent Number US5820083.

#### Standard Torque Mounts



TYPE	Drawing	Width (W)	Length (L)	Height (H)	Hole Ø (FH)	Strap Width max. (G)	Material	Colour	Pack Cont.	Article-No.
HDM25		19.0	35.8	16.7	6.2	12.7	PA66HIRHSW	Black (BK)	100 pcs.	151-00437
HDM19		19.3	36.3	16.7	4.7	12.7	PA66HIRHSW	Black (BK)	100 pcs.	151-00134
HDM312		19.3	36.3	16.7	7.8	12.7	PA66HIRHSW	Black (BK)	100 pcs.	151-00439

All dimensions in mm. Subject to technical changes.

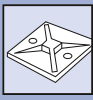
Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

#### Medium Torque Mounts

TYPE	Drawing	Width (W)	Length (L)	Height (H)	Hole Ø (FH)	Strap Width max. (G)	Material	Colour	Pack Cont.	Article-No.
HDM321		24.0	46.0	20.7	8,31	12.7	PA66HSW	Black (BK)	500 pcs.	151-07100
HDM401		24.0	46.0	20.7	9,5	12.7	PA66HIRHSW	Black (BK)	100 pcs.	151-00442
HDM501		24.0	46.0	20.7	12,7	12.7	PA66HIRHSW	Black (BK)	500 pcs.	151-07500

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



# Cable Ties and Fixings

## Cable Tie Mounts

### High Torque Mounts (metal bushing)

TYPE	Drawing	Width (W)	Length (L)	Height (H)	Hole Ø (FH)	Strap Width max. (G)	Material	Colour	Pack Cont.	Article-No.
HDM320		25.0	47.0	20.7	8,31	12.7	PA66HIRHSW	Black (BK)	500 pcs.	151-07000
HDM400		25.0	47.0	20.7	10,29	12.7	PA66HIRHSW	Black (BK)	500 pcs.	151-07200
HDM500		25.0	47.0	20.7	12,95	12.7	PA66HIRHSW	Black (BK)	500 pcs.	151-07400

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

### High Torque Double Mounts (metal bushing)

TYPE	Drawing	Width (W)	Length (L)	Height (H)	Hole Ø (FH)	Strap Width max. (G)	Material	Colour	Pack Cont.	Article-No.
HDM375BDM4W		34.5	89.0	25.2	9,5	12.7	PA66HIRHSW	Black (BK)	100 pcs.	151-00756

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

## Harness Clip for Heavy Duty Applications for Screws or threaded Bolts, for parallel separation

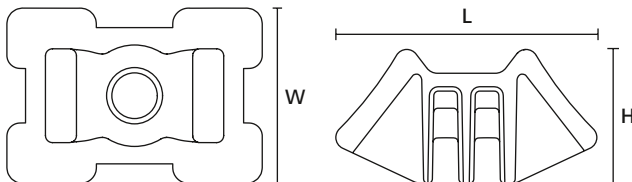
This heavy duty harness clip helps to fix and secure cables and wires in railway, truck and agricultural vehicle construction, and is also used in the ship building industry.

### Features and Benefits

- For parallel routing of bundles
- Secure alignment to the bundle due to H-design
- Cable tie head can be moved after bundling
- For cable ties up to 12.7 mm wide
- Easy maintenance of bundle by simply changing the cable tie



This saddle mount is installed between two bundles to separate them and prevent chafing and wear.



S2CM25

S2CM25

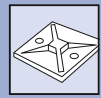


Material specification please see page 16.

TYPE	Width (W)	Length (L)	Height (H)	Hole Ø (FH)	Bundle Ø max.	Material	Colour	Pack Cont.	Article-No.
S2CM25	30.0	45.0	23.0	6.0	89.0	PA66HIRHS	Grey (GY)	500 pcs.	151-29400
S2HM25	30.0	45.0	23.0	6.0	89.0	PA66HIRHSW	Black (BK)	500 pcs.	151-29403

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

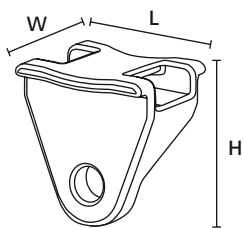


### Harness Clip for Heavy Duty Applications, for Screws or threaded Bolts for Edges

This heavy duty harness clip helps to fix and secure cables and wires in railway, truck and agricultural vehicle construction, and is also used in the ship building industry.

#### Features and Benefits

- Guides bundles securely above sharp edges
- For bolts or screws of D = 8 mm
- Cable tie head can be moved after bundling
- Secure alignment to the bundle due to H-design
- For cable ties up to 12.7 mm wide



SAM83



Axial oval mounts stand off bundles from frame rails and cross members to prevent them from rubbing and chafing.

TYPE	Width (W)	Length (L)	Height (H)	Hole Ø (FH)	Material	Colour	Pack Cont.	Article-No.
SAM83	26.0	34.0	35.0	8.0	PA66HIRHS	Grey (GY)	500 pcs.	151-29600
SAOM82	26.0	34.3	35.0	8.0	PA66HIRHSW	Black (BK)	500 pcs.	151-29701

All dimensions in mm. Subject to technical changes.

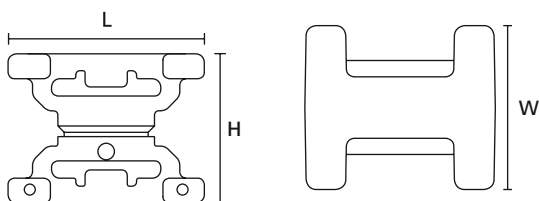
Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

### Fixing elements for Parallel Routing, twistable

These fixing element for parallel routing can be used where bundles need separation from each other combined with the necessary functionality to support moving harnesses.

#### Features and Benefits

- For parallel routing of bundles that can be twisted 360° even after setting
- Secure alignment to the bundle due to H-design
- Cable tie head can be moved after bundling
- For cable ties up to 12.7 mm wide
- For post-installation of bundles



DSWS4

DSWS4

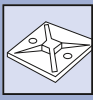


The spacers can be easily rotated by hand, allowing the bundles to be crossed and rotated at any angle.

TYPE	Width (W)	Length (L)	Height (H)	Bundle Ø min.	Bundle Ø max.	Material	Colour	Pack Cont.	Article-No.
DSWS4	20.3	23.6	18.0	6.0	76.0	PA66HS, POM	Black (BK)	2,200 pcs.	151-06500
DSWS5	25.4	40.6	23.6	16.0	152.0	PA66HS	Black (BK)	50 pcs.	151-06502

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



# Cable Ties and Fixings

## Cable Tie Mounts

### Fixing Elements with Fir Tree, for Distance Routing

#### Saddle Mount

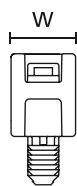
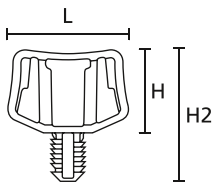
These heavy duty fixing offers excellent performance for ship building and the truck and construction vehicle industries.

#### Features and Benefits

- For parallel routing of four bundles
- Secure alignment to the bundle due to H-design
- For cable ties up to 12.7 mm wide
- Pre-fixing of tie with integrated nose



The mount can secure up to 4 separate bundles, providing parallel spacing between the frame rail and adjacent bundles.



Fir Tree Saddle Mounts



Material specification please see page 16.

TYPE	Width (W)	Length (L)	Height (H)	Height (H2)	Hole Ø (FH)	Panel Thickness	Bundle Ø max.	Material	Colour	Pack Cont.	Article-No.
S3STM50	22.0	50.0	35.0	55.0	12,7 - 13,7	1.9 - 13.0	127.0	PA66HIRHS	Black (BK)	100 pcs.	151-29500

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

### Fixing Elements for BHT-Ties for Distance Routing

#### MSBT120

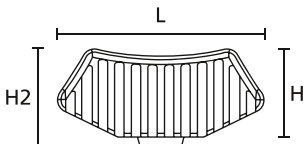
This heavy duty fixing offers excellent performance for ship building and the truck and construction vehicle industries.

#### Features and Benefits

- For parallel routing of three bundles
- Retainer is fixed in the hole with BHT-tie
- Socket centres retainer in the hole and can protect tie from sharp edges



Saddle Mount MSBT120.



MSBT120

TYPE	Width (W)	Length (L)	Height (H)	Height (H2)	Hole Ø (FH)	Panel Thickness	Material	Colour	Pack Cont.	Article-No.
MSBT120	16.5	48.3	20.6	22.2	12.2	2.7	PA66HIRHSW	Black (BK)	500 pcs.	151-29301

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.





### Heavy Duty Mounts for 3-way routing

Primarily designed for use in the automotive/truck industry, these parts can be used in a wide variety of industries and applications where bundles need mounting.

These heavy duty harness clips help to fix and secure cables, lines and hydraulic lines in truck, agriculture and railway vehicle construction, as well as in the ship building industry.

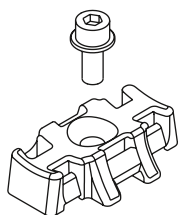
#### Features and Benefits

- For parallel routing of bundles
- Secure alignment to the bundle due to H-design
- Easy maintenance of bundle by simply changing cable tie
- Cable tie head can be moved after bundling

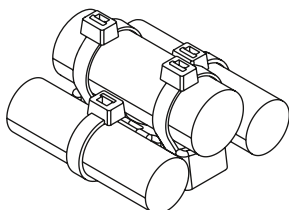


S3CBM8 in combination with our X-Series.

#### S3CBM8



Suitable for external cylindrical hexagonal bolts M8



Exemplary illustration of a possible 3-way transfer



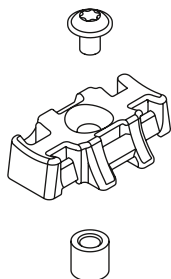
S3SB15CBM8 and S3CBM8.

TYPE	Width (W)	Length (L)	Height (H)	Bundle Ø max.	Strap Width max. (G)	Material	Colour	Pack Cont.	Article-No.
S3CBM8	46.0	70.0	18.6	100.0	9.0	PA6GF30	Black (BK)	500 pcs.	151-01040

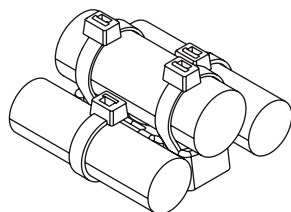
All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

#### S3SB15CBM8



Suitable for welding studs (M8 internal bore & outer diameter 15 mm)



Exemplary illustration of a possible 3-way transfer

TYPE	Width (W)	Length (L)	Height (H)	Bundle Ø max.	Strap Width max. (G)	Material	Colour	Pack Cont.	Article-No.
S3SB15CBM8	46.0	70.0	18.6	100.0	9.0	PA6GF30	Black (BK)	500 pcs.	151-01010

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



### Bundling Clips with Arrowhead

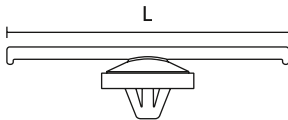
Originally designed for the Automotive industry, these clips offer simple and easy methods of securing cables, hoses or pipes. They have many applications within a wide range of industries.

#### Features and Benefits

- Especially for banding of cables and cable looms
- Fastened onto winding bar with binding twine, adhesive tape or cable ties
- Manually or automatic application with Autotool 2000, AT2000CPK or ATS3080
- Various base geometries for wide variety of metal gauges and bore diameters



BundlingClip with OmegaClip, BundlingClip with foam, BundlingClip LRJ1



BCSFT6.5 16-3MD



**Material specification  
please see page 16.**

TYPE	Drawing	Length (L)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
LRJ1		55.0	6.2 - 6.7	0.7 - 2.0	PA6	Black (BK)	151-08101
BCSFT6.5 16-3		55.0	6.3 - 6.7	2.3 - 3.5	PA66HIRHS	Black (BK)	151-00431
ATSBCSFT6.5		39.0	6.3 - 6.7	2.3 - 3.3	PA66HIRHS	Black (BK)	102-69066
ATSBCKSFT6.5		39.0	6.3 - 6.7	0.7 - 1.3	PA66HIRHS	Black (BK)	102-69067
ATSBC2KSFT6.5		39.0	6.3 - 6.7	1.7 - 2.3	PA66HIRHS	Black (BK)	102-69068
ATSBCOWSFT6.5		39.0	6.3 - 6.7	2.3 - 3.3	PA46	Grey (GY)	102-69070
ATSBCSFT 6.5PT2.3-3.3		39.0	6.3 - 6.7	2.3 - 3.3	PA46	Grey (GY)	102-69069
BC70SFT712-MD		70.0	7.0 x 12.0	0.7 - 1.8	PA66HIRHS	Black (BK)	151-01094
BC70SFT712		70.0	7.0 x 12.0	0.7 - 3.2	PA66HIRHS	Black (BK)	151-01036
BCHSFT712-MD		42.0	7.0 x 12.0	0.7 - 1.8	PA66HIRHS	Black (BK), Natural (NA)	151-01301
BCHSFT712		40.0	7.0 x 12.0	0.7 - 1.8	PA66HIRHS	Black (BK)	151-01037
BCLSFT712		64.5	7.0 x 12.0	0.8 - 2.0	PPT20	Black (BK)	151-01014

All dimensions in mm. Subject to technical changes.





### Bundling Clips with Arrowhead, sealed

TYPE	Drawing	Length (L)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
BCSFT6.5 16-3MD		55.0	6.3 - 6.7	1.5 - 3.0	PA66HIRHS	Black (BK)	155-11601
ATSBCSFT6.5-MD		39.0	6.3 - 6.7	2.0 - 3.0	PA66HIRHS	Black (BK)	102-69065

All dimensions in mm. Subject to technical changes.

### Bundling Clips with additional Harness Clip

TYPE	Drawing	Length (L)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
OCTC1		60.0	-	-	PA66HIRHS	Black (BK)	151-00447
Halter SFT6.5		60.0	6.3 - 6.7	0.6 - 1.5	PA66HIRHS	Black (BK)	133-00067

All dimensions in mm. Subject to technical changes.

### Bundling Clips, moveable

An easy means of routing and securing cable sets in various parts of cars.

#### Features and Benefits

- Easy to install without the need for a tool
- Horizontal length tolerance compensation
- Ideal if holes do not fit registration or bundles need to be routed around corners



The CHA2 with fir tree base and length tolerance compensation for precise cable routing even in difficult conditions.

### CHA1 with arrowhead

TYPE	Drawing	Width (W)	Length (L)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
CHA1		6.0	54.0	6.3 - 7.0	0.5 - 1.2	PA66HS	Black (BK)	150-08110

All dimensions in mm. Subject to technical changes.

### CHA2 with fir tree

TYPE	Drawing	Width (W)	Length (L)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
CHA2		6.0	54.0	6.5 - 7.0	0.8 - 2.0	PA66	Black (BK)	151-02901

All dimensions in mm. Subject to technical changes.

### TCSFT6.5CHAMD with arrowhead, sealed

TYPE	Drawing	Length (L)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
TCSFT6.5S-CHA-MD		54.0	6.5 - 6.7	0.6 - 1.8	PA66HS	Green (GN)	156-01238

All dimensions in mm. Subject to technical changes.



### Bundling Clips with Arrowhead for Distance Routing

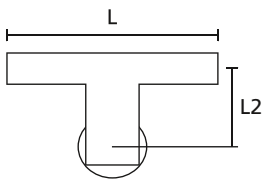
Originally designed for the Automotive industry, these clips offer simple and easy methods of securing cables, hoses or pipes. They have many applications within a wide range of industries.

#### Features and Benefits

- Easy to install without the need for a tool
- Arrowhead simply locks into place
- Disc adjusts tie for pressure from various directions and minimises access of dust, dirt and water
- Versions for oval holes feature anti-twist protection



StandOff Clips allow cable looms to be routed at a set distance from the punched holes.



Material specification please see page 16.

TYPE	Drawing	Length (L)	Length (L2)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
CH20D6		50.0	20.0	6.4 - 7.0	0.6 - 1.4	PA66HS	Black (BK)	151-00077
CH20D7		50.0	20.0	7.0	0.8 - 1.6	PA66	Black (BK)	151-02600
STAND-OFF-CLIP-2		40.0	25.0	6.5 - 6.8	0.4 - 1.6	PA66HIRHS	Black (BK)	155-01600
STAND OFF CLIP		40.0	31.0	6.5 - 6.8	0.4 - 1.6	PA46	Grey (GY)	150-45398
		40.0	31.0	6.5 - 6.8	0.4 - 1.6	PA66HIRHS	Black (BK)	150-45397
BC20KSFT6.5		50.0	19.2	6.25 - 6.75	0.7 - 1.3	PA66HIRHS	Black (BK)	151-01070
BC20SFT6.5-MD		50.0	24.0	6.25 - 6.75	0.7 - 1.6	PA66HIRHS, EPDM	Black (BK)	151-01067
SOC20SFT712-MD		50.0	20.0	7.0 x 12.0	0.6 - 2.0	PA66HIRHS, EPDM	Black (BK)	151-01255
SOC32SFT65X130-MD		50.0	32.0	6.5 x 13.0	0.6 - 2.0	PA66HIRHS	Black (BK)	151-01331

All dimensions in mm. Subject to technical changes.



### Bundling Clips with Fir Tree, for Round Holes

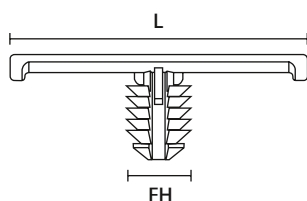
Widespread use in cable harness production; a quick and easy means of fixing cables and lines securely in various parts of cars.

#### Features and Benefits

- Easy to install without the need for a tool
- One fir tree foot part can be used for a variety of panel thicknesses
- Suitable for use within threaded holes
- Holding tabs prevent the tie slipping sideways
- Versions for oval holes feature anti-twist protection



BundlingClips with fir tree bases for a variety of applications with a wide range of metal thicknesses and drill holes.



TYPE	Drawing	Length (L)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
TC5FT6S		37.0	6.4 - 7.1	0.8 - 1.5	PA66HIRHS	Black (BK)	150-95500
TC3FT6S		37.0	6.5 - 7.0	0.8 - 1.5	PA66HIRHS	Black (BK)	151-00028
TC4FT6LG		37.0	6.3 - 7.0	0.6 - 5.1	PA66HIRHS	Black (BK)	151-00215
TC4FT6LG-A		37.0	6.3 - 7.0	0.6 - 5.1	PA66HIRHS	Natural (NA)	151-00467
TCDSFT6-HEX		40.0	6.3	0.8 - 4.5	PA66HIRHS	Black (BK)	155-39002
BCFT6XL56		56.0	6.3 - 7.0	0.7 - 9.0	PA66HIRHS	Black (BK)	151-00662
ATSBCFT6LG		39.0	6.3 - 7.0	0.6 - 5.1	PA66HIRHS	Black (BK)	102-67065
BCOWFT5		24.9	4,9 - 5,1	2.9 - 3.1	PA66HIRHS	Black (BK)	151-00904
BCOWFT6M		27.3	6,5 - 7,0	0.6 - 3.5	PA66HIRHS	Natural (NA)	151-00790
BC13FT6.35		40.0	6.25 - 6.75	1.1 - 5.0	PA66HIRHS	Black (BK)	151-01335
BC37FT7LG		37.0	6.3 - 6.7	0.5 - 2.8	PA66HIRHS	Black (BK)	151-01262
TC2FT6LG		55.0	6.3 - 7.0	0.6 - 5.1	PA66HIRHS	Black (BK)	155-30802
		55.0	6.3 - 7.0	0.6 - 5.1	PA66HIRHS	Natural (NA)	151-00020

All dimensions in mm. Subject to technical changes.



### Bundling Clips with Fir Tree, for Oval Holes

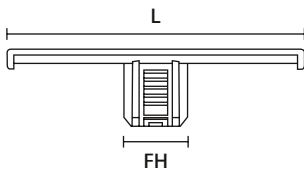
Originally designed for the Automotive industry, these clips offer simple and easy methods of securing cables, hoses or pipes. They have many applications within a wide range of industries.

#### Features and Benefits

- Especially for banding of cables and cable looms
- Fastened onto winding bar with binding twine, adhesive tape or cable ties
- Manually or automatic application with Autotool 2000, AT2000CPK or ATS3080
- Various base geometries for wide variety of metal gauges and bore diameters



BundlingClips with fir tree bases for a variety of applications with a wide range of metal thicknesses and drill holes.



Material specification please see page 16.

TYPE	Drawing	Length (L)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
TCOP62x122		55.0	6.2 x 12.2	0.6 - 6.0	PA66HIRHS	Black (BK)	151-00605
TCOP70x120		55.0	7.0 x 12.0	0.6 - 6.0	PA66HIRHS	Black (BK)	151-00029
WICKELCLIP-VDS		40.0	6.3 x 9.0	0.6 - 2.5	PA66HIRHS	Black (BK)	155-16301
BCFT63x100S		40.0	6.5 x 10.2	0.6 - 2.5	PA66HIRHS	Black (BK)	151-00759
BC70LFT712		81.3	7.0 x 12.0	0.9 - 5.5	PA66HIRHS	Black (BK)	151-01217

All dimensions in mm. Subject to technical changes.



### Bundling Clips with Fir Tree, for Distance Routing

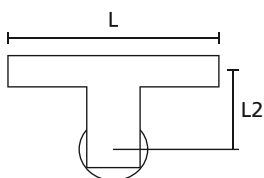
Originally designed for the Automotive industry, these clips offer simple and easy methods of securing cables or pipes and have many applications within a wide range of industries.

#### Features and Benefits

- Easy to install without the need for a tool
- One fir tree foot part can be used for a variety of panel thicknesses
- Suitable for use within threaded holes
- Disc covers the hole to prevent dirt and water gaining access
- Bundle runs in a set distance to the hole



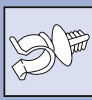
*COW Clip used as tape-on clip.*



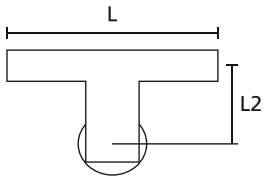
TYPE	Drawing	Length (L)	Length (L2)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
<b>COW20DP7</b>		42.0	20.0	6.3 - 7.0	0.8 - 4.5	PA66HS	Brown (BN)	151-03100
<b>COW30DP7</b>		42.0	30.0	6.3 - 7.0	0.8 - 4.5	PA66	Black (BK)	151-03200
<b>SOC4 M.FT6</b>		55.0	20.0	6.5 - 7.0	0.7 - 5.1	PA66HIRHS	Black (BK)	155-30902
<b>SOC5FT6LG</b>		55.0	13.0	6.5 - 7.0	0.7 - 5.1	PA66HIRHS	Black (BK)	151-00074
<b>SOC5FT6S</b>		55.0	13.0	6.5 - 7.0	0.8 - 2.5	PA66HIRHS	Black (BK)	151-01329
<b>SOC6</b>		55.0	22.0	6.3 - 7.0	0.8 - 3.5	PA66HIRHS	Black (BK)	151-00023
<b>SOC10405</b>		55.0	20.0	6.3 - 6.7	0.7 - 3.5	PA66HIRHS	Black (BK)	151-00282
<b>SOC3-FT6-LG.</b>		12.0	30.0	6.4 - 7.1	0.8 - 6.0	PA66HIRHS	Black (BK)	155-19001
<b>SOC7FT6</b>		56.0	42.5	6.35 - 7.0	0.7 - 5.7	PA66HIRHSW	Black (BK)	151-00629

All dimensions in mm. Subject to technical changes.





### Bundling Clips with Fir Tree, for Distance Routing



TYPE	Drawing	Length (L)	Length (L2)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
SOC8FT6LG		40.0	30.0	6.5 - 7.0	0.7 - 5.8	PA66HIRHS	Black (BK)	151-00665
CH20FT6		50.0	20.0	6.5 - 7.0	0.8 - 2.5	PA66HIRHS	Black (BK)	151-00830
SOC11FTOVAL		50.0	20.0	6.2 x 12.2	0.6 - 6.8	PA66HIRHS	Black (BK)	151-00992
		50.0	20.0	6.2 x 12.2	0.6 - 6.8	PA66HIRHS	Natural (NA)	151-00932
SOC13FTOVAL		50.0	20.0	6.5 x 12.5	0.6 - 4.0	PA66HIRHS	Black (BK)	151-01018
SOC20FT5		50.0	20.0	4.5 - 5.0	0.7 - 3.0	PA66HIRHS	Black (BK)	151-00970
SOC25FT63x100		42.0	18.0	6.3 x 10.0	0.6 - 2.5	PA66HIRHS	Black (BK)	133-00824
SOC25FT712		50.0	25.0	7.0 x 12.0	1.1 - 6.1	PA66HIRHS	Black (BK)	151-01213

All dimensions in mm. Subject to technical changes.



### Bundling Clips for Weld Studs, moveable

Originally designed for the Automotive industry, these clips offer simple and easy methods of securing cables, hoses or pipes. They have many applications within a wide range of industries.

#### Features and Benefits

- Easy assembly without the need for a tool
- Horizontal length tolerance compensation up to 4.0 mm
- BCUWS5-D5-25: for coarse thread studs
- If connector retainer is a request: TCSB5CYCC
- If post-installation of cables is needed: Bundling clip SB5
- For defined distance of bundles to surface: BCOS variants



TCSB5CYCC: Tapebar, Stud Retainer and ConnectorClip in just one article.



**Material specification  
please see page 16.**

### Bundling Clips for Weld Studs, moveable

TYPE	Drawing	Stud Ø	Length (L)	Material	Colour	Article-No.
WICKELCLIP-SB5		5.0	60.0	POM	Black (BK)	155-23701
TC-SB5C		5.0	55.0	PA66HS	Black (BK)	151-26101
TCSB5CYCC		5.0	55.0	PA66HIRHS	Black (BK)	151-00484
BCUWS5-D5-25		5.0	50.0	PA66HIRHS	Natural (NA)	151-00851

All dimensions in mm. Subject to technical changes.

### Bundling Clips for Weld Studs

TYPE	Drawing	Stud Ø	Length (L)	Material	Colour	Article-No.
BCOS5		5.0	59.0	PA66HIRHS	Black (BK)	151-00664
BCOS6		6.0	59.0	PA66HIRHS	Black (BK)	151-00281

All dimensions in mm. Subject to technical changes.





### Bundling Clips for Weld Studs, moveable

The BC series is proving very popular in the automotive industry as a means of installing cable sets easily in various areas of the vehicle.

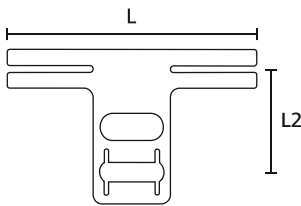
#### Features and Benefits

- Very flat bundling clip for 5.0 mm weld stud
- Horizontal length tolerance compensation
- Suitable for cables of reduced weight and diameter



The slim line BC series is particularly compact and flexible.

#### BC2212 for distance routing 12.0 and 22.0 mm



Material specification please see page 16.

TYPE	Drawing	Length (L)	Length (L2)	Stud Ø	Material	Colour	Article-No.
BC2212		55.0	22.0	5.0	PA66HIRHS	Black (BK)	151-00017

All dimensions in mm. Subject to technical changes.

#### BC30 for distance 30.0 mm

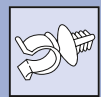
TYPE	Drawing	Length (L)	Length (L2)	Stud Ø	Material	Colour	Article-No.
BC30		55.0	30.0	5.0	PA66HIRHS	Black (BK)	151-00016

All dimensions in mm. Subject to technical changes.

#### BC-SCR6

TYPE	Drawing	Length (L)	Length (L2)	Hole Ø (FH)	Material	Colour	Article-No.
BC-SCR6		60.0	20.0	6.5	PA66GF60, PA66HIRHS	Black (BK)	156-00390

All dimensions in mm. Subject to technical changes.



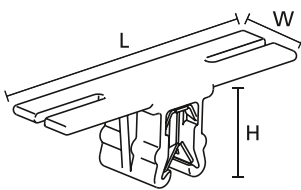
### Bundling Clips for Edges

#### EdgeClip-Family

EdgeClips are used in the automotive and electrical industries and are ideal when it is impossible to drill holes or no other fixing points are available.

#### Features and Benefits

- Easy assembly, just shuffle manually
- Designed for edges of 1 - 3 and 1.5 - 4 mm
- Integrated metal clamp holds clip firmly in place
- Clamp consists of double tempered steel spring
- ATS fixing elements can be tied automatically with tools ATS3080, AT2000 or AT2000CPK



EC15



Cables and leads can be fastened with a cable tie or adhesive tape to the bars of the mounting element.

TYPE	Drawing	Width (W)	Length (L)	Height (H)	Panel Thickness	Material	Colour	Article-No.
EC14		10.0	40.0	12.4	1.0 - 3.0	PA66HIRHS	Black (BK)	151-03404
EC15		10.0	40.0	12.4	1.0 - 3.0	PA66HIRHS	Black (BK)	151-03401
EC16		10.0	40.0	13.0	1.0 - 3.0	PA66HIRHS	Black (BK)	151-03402
EC17		10.0	46.5	13.0	1.0 - 3.0	PA46	Grey (GY)	151-00819
		10.0	46.5	13.0	1.0 - 3.0	PA66HIRHS	Black (BK)	151-03403
ATSBCEC35		9.0	39.0	13.2	1.5 - 4.0	PA66HIRHS	Black (BK)	102-68355
ATSBCEC36		9.0	39.0	16.0	1.5 - 4.0	PA66HIRHS	Black (BK)	102-68365
ATSBCEC37		9.0	39.0	14.2	1.5 - 4.0	PA66HIRHS	Black (BK)	102-68375
ATSBCEC38		2.5	39.0	14.2	1.5 - 4.0	PA66HSW	Black (BK)	102-68385

All dimensions in mm. Subject to technical changes.

#### Bundling Clips for Edges, 1.0 - 3.0 mm, for Distance Routing

TYPE	Drawing	Width (W)	Length (L)	Length (L2)	Height (H)	Panel Thickness	Material	Article-No.
EC30		9.0	50.0	65.0	13.5	1.0 - 3.0	PA66HIRHS	151-00022

All dimensions in mm. Subject to technical changes.



### Bundling Clips for Connectors

Originally designed for the Automotive industry, these clips offer simple and easy methods of securing cables, hoses or pipes. They have many applications within a wide range of industries.

#### Features and Benefits

- Bundles are guided above connector plug
- Secure fixing of connector
- For horizontal length tolerance compensation up to 5.0 mm:  
CONNECTOR CLIP



ConnectorClips designed for cables and cable sets used in the automotive industry.



**Material specification  
please see page 16.**

### Bundling Clips for Connectors

TYPE	Drawing	Length (L)	Material	Colour	Article-No.
YAZ-CONN-TAPE-CLIP		55.0	PA66HS	Black (BK)	155-31102

All dimensions in mm. Subject to technical changes.

### Bundling Clips for Connectors, moveable

TYPE	Drawing	Length (L)	Material	Colour	Article-No.
CONNECTOR CLIP		55.0	PA66HIRHS	Black (BK)	150-41397

All dimensions in mm. Subject to technical changes.



### Connector Clips for round holes

The connector clips used here have been designed for electronic cables and cable sets used in the automotive industry.

#### Features and Benefits

- Connector easily installed by simply pushing into place
- Connection can be released (non-destructive)
- One fir tree foot part can be used for a variety of panel thicknesses
- Arrowhead simply locks into place
- Disc covers the hole to prevent dirt and water gaining access
- For twist protection: Variants with additional stick or for oval holes



ConnectorClips are available for many different connector types and fixing varieties.

TYPE	Drawing	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
Big YCC TS		6.4 - 7.1	0.7 - 5.1	PA66HIRHS	Black (BK)	151-00235
FT6LG.JAE. CONNECT.TS		6.5 - 7.0	0.7 - 5.1	PA66HIRHS	Black (BK)	151-00459
FT6LG.M.St.Aufn.II		6.5 - 7.0	0.8 - 5.0	PA66HIRHS	Black (BK)	155-32602
FT6LG.M. STECKERAUFN.		6.4 - 7.1	0.8 - 6.0	PA66HIRHS	Black (BK)	155-18901
FT6LG.YAZ. Connect.TS		6.4 - 7.1	0.7 - 5.1	PA66HIRHS	Black (BK)	155-30702
FT6S-Y-CONN-TS		6.5 - 7.0	0.8 - 1.5	PA66HIRHS	Black (BK)	155-43702
STECKERHALTER SITZ		6.5 - 7.0	0.6 - 3.0	PA66HIRHS	Black (BK)	155-36002
YCC-FT6-S		6.5 - 7.0	0.8 - 1.5	PA66HIRHS	Black (BK)	155-38102
YCCFT6S-2		6.5 - 7.0	0.8 - 1.5	PA66HIRHS	Black (BK)	151-00606

All dimensions in mm. Subject to technical changes.





### Connector Clips for round holes

TYPE	Drawing	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
BIG CONNECTOR CLIP		6.3 - 6.7	0.7 - 2.7	PA66HIRHS	Black (BK)	150-54498
CCFT6LG		6.0 - 6.7	0.7 - 4.0	PA66HIRHS	Black (BK)	151-00785
CCSFT5		4.8 - 5.2	0.7 - 2.3	PA66HIRHS	Black (BK)	151-00980
CCSFT6.5		6.3 - 6.7	1.7 - 2.3	PA66HIRHS	Black (BK)	151-00775
CP6FT6		6.2 - 6.5	0.7 - 5.0	PA6HIR	Black (BK)	151-00162
CP2FT6		6.2 - 6.5	0.7 - 5.0	PA66HIRHS	Black (BK)	151-00216
CP3FT6		6.2 - 6.5	0.7 - 5.0	PA66HIRHS	Black (BK)	151-00163
YCKKSFT6.5		6.3 - 6.7	0.7 - 1.3	PA66HIRHS	Black (BK)	151-00675
CC-PAEKSFT6.5PT1.7-2.3		6.3 - 6.7	1.7 - 2.3	PA66HIRHS	Black (BK)	151-00840
YCKKSFT6.5-PT1.7-2.3		6.5	1.7 - 2.3	PA66HIRHS	Black (BK)	151-00792
CC1SFT7-MD		6.8 - 7.2	0.7 - 2.0	PA66HIRHS	Black (BK)	151-01336
CC2SFT7-MD		6.8 - 7.2	0.7 - 2.0	PA66HIRHS	Black (BK)	151-01337
CCFT6TSS11		6.3 - 7.0	0.6 - 4.0	PA46	Grey (GY)	151-01294
CCSFT6.5-MOD		6.5 - 7.0	1.7 - 2.3	PA66HIRHS	Black (BK)	151-01323
CCFT6LG-TS		6.4 - 7.1	0.7 - 5.1	PA66HIRHS	Black (BK)	151-01141

All dimensions in mm. Subject to technical changes.



### Connector Clips for oval holes

#### Features and Benefits

- Connector easily installed by simply pushing into place
- Connection can be released (non-destructive)
- Easy to assemble without the need for a tool
- Oval connectors offer twist protection



**Material specification please see page 16.**



For a secure fixing simply push the connector by hand (ConnectorClip YCCFT62x122).

TYPE	Drawing	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
CCSFT7x12		7.0 x 12.0	0.8 - 2.0	PA66HIRHS	Black (BK)	151-00194
		7.0 x 12.0	0.8 - 2.0	PA66HIRHS	Blue (BU)	151-00595
		7.0 x 12.0	0.8 - 2.0	PA66HIRHS	Grey (GY)	151-00222
YCCFT82x185		8.2 x 18.5	1.5 - 4.5	PA66HIRHS	Black (BK)	151-00704
YCCSFT62122		6.2 x 12.2	0.6 - 1.0	PA66HIRHS	Black (BK)	151-00513
YCCFT62x122		6.2 x 12.2	0.6 - 6.0	PA66HIRHS	Black (BK)	151-00180
YCCSFT6.5x13PT2.5-3.5		6.5 x 13.0	2.5 - 3.5	PA66HIRHS	Black (BK)	151-01356
CP21DOP		6.2 x 12.2	0.6 - 5.0	PA66HIRHS	Black (BK)	151-00465
CP31DOP		6.2 x 12.2	0.6 - 5.0	PA66HIRHS	Black (BK)	151-00214
CP61DOP		6.2 x 12.2	0.6 - 5.0	PA66HIRHS	Black (BK)	151-00466
CCIISFT6.5x13		6.5 x 13.0	0.7 - 3.0	PA66HIRHS	Black (BK)	151-00620
CCIVSFT6.5x130		6.5 x 13.0	0.7 - 3.0	PA66HIRHS	Black (BK)	133-00392
YCCKSFT 62x122PT0.7-1.3 90°		6.2 x 12.2	0.7 - 1.3	PA66HIRHS	Black (BK)	151-00833
YCCKSFT 62x122PT0.7-1.3		6.2 x 12.2	0.7 - 1.3	PA66HIRHS	Black (BK)	151-00835
YCCKSFT 62x122PT1.7-2.3 90°		6.2 x 12.2	1.7 - 2.3	PA66HIRHS	Black (BK)	151-00834

All dimensions in mm. Subject to technical changes.





### Connector Clips for oval holes

TYPE	Drawing	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
YCKSFT 62x122PT1.7-2.3		6.2 x 12.2	1.7 - 2.3	PA66HIRHS	Black (BK)	151-00836
CCFT8X15		8.0 x 15.0	0.7 - 6.4	PA66HIRHS	Black (BK)	151-01358
CCSFT6.5X12.5-MD		6.5 x 12.5	0.6 - 1.5	PA66HIRHS	Black (BK)	151-01312
CCSFT8.5X16		8.5 x 16.0	0.7 - 1.5	PA66HIRHS	Black (BK)	151-01004
TCCSFT6.2x12.2-MD		6.2 x 12.2	0.6 - 2.0	PA66HIRHS, EPDM	Black (BK)	151-01254
TCCSFT 6.5X13PT0.6-2.0-MD		6.5 x 13.0	0.6 - 2.0	PA66HIRHS, EPDM	Black (BK)	151-01272
YCCSFT 6.5X13PT0.6-2.0-MD		6.5 x 13.0	0.6 - 2.0	PA66HIRHS, EPDM	Black (BK)	151-01273

All dimensions in mm. Subject to technical changes.

### Connector Clips for Weld Studs

TYPE	Drawing	Stud Ø	Material	Colour	Article-No.
CCSB55		5.0	PA66HIRHS	Black (BK)	151-01196

All dimensions in mm. Subject to technical changes.





### Connector Clips for Edges

#### EdgeClip-Family

Edge Clips are used in the automotive and electrical industries for applications where it is impossible to drill holes or no other fixing points are available.

#### Features and Benefits

- Connectors are mounted simply by pushing them into retainer
- Connector can be removed without damage
- Fastened to an edge, the EdgeClip ensures a snug fit on almost all types of connector



**Material specification please see page 16.**



*EdgeClip EC6mod.*

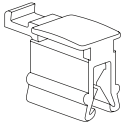
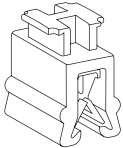
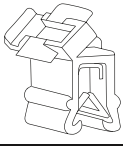
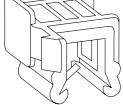
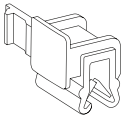
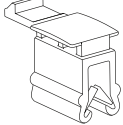
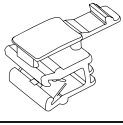
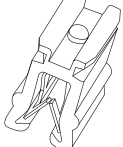
TYPE	Drawing	Panel Thickness	Material	Colour	Article-No.
Edge-Clip25		1.0 - 3.0	PA66HIRHS	Black (BK)	133-00075
EC28		1.0 - 3.0	PA66HIRHS	Black (BK)	151-00151
EC32		1.0 - 3.0	PA66HIRHS	Black (BK)	151-00173
EC33		1.0 - 3.0	PA66HIRHS	Black (BK)	151-00192
EC42		1.5 - 4.0	PA66HIRHS	Black (BK)	151-00429
EC43		1.5 - 4.0	PA66HIRHS	Black (BK)	151-00430
EC45		1.0 - 3.0	PA66HIRHS	Black (BK)	151-00460

All dimensions in mm. Subject to technical changes.





### Connector Clips for Edges

TYPE	Drawing	Panel Thickness	Material	Colour	Article-No.
EC6mod		1.0 - 3.0	PA66HIRHS	Black (BK)	151-00464
EC JAE CC		1.0 - 3.0	PA66HIRHS	Black (BK)	151-00472
CCEC3.0TP		1.0 - 3.0	PA66HIRHS	Black (BK)	151-00611
ECC1CPT		3.0 - 6.0	PA66HIRHS	Black (BK)	151-00499
EC11		1.0 - 3.0	PA66HIRHS	Black (BK)	155-40602
CONNECTOR-CLIP EC6		1.0 - 3.0	PA66HIRHS	Black (BK)	150-92600
CCEC3.0SV		1.0 - 3.0	PA66HIRHS	Black (BK)	151-01058
CCIIEC6mod		1.0 - 3.0	PA66HIRHS	Black (BK)	151-01124

All dimensions in mm. Subject to technical changes.



### Fixing Elements for Tubes and Harnesses

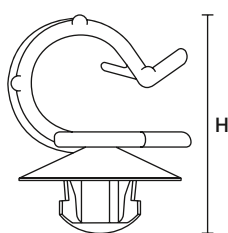
These fixing elements can be used in a wide range of applications where space saving work is necessary.

#### Features and Benefits

- Fixing part with rounded arrowhead to minimise assembly height
- Ideal for applications where space is limited
- Simply clip on a wire or hose
- Bundle diameter is defined
- Suitable for post-installation of bundles



The very low arrowhead is specially designed for narrow installation spaces.



KSFT6.5 OC 7-9



Material specification please see page 16.

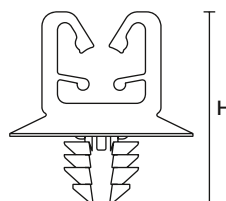
TYPE	Drawing	Height (H)	Attach to Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
KSFT6.5OC1-3		14.4	1.0 - 3.0	6.3 - 6.7	2.3 - 2.7	PA66HIRHS	Black (BK)	151-00673
KSFT6.5 OC 7-9		21.6	7.0 - 9.0	6.3 - 6.7	2.3 - 2.7	PA66HIRHS	Black (BK)	151-00674

All dimensions in mm. Subject to technical changes.

### Fixing Elements with Fir Tree

#### Features and Benefits

- Easy to install without the need for a tool
- Disc covers the hole to prevent dirt and water gaining access
- Bundle diameter is defined
- Clips to be attached into bore hole
- Suitable for post-installation of bundles



HC48FT6

TYPE	Drawing	Height (H)	Attach to Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
HC48FT6		20.8	4.3 - 5.2	6.5 - 7.0	0.7 - 2.8	PA66HIRHS	Black (BK)	151-00680

All dimensions in mm. Subject to technical changes.



### Fixing Elements for Tubes and Harnesses

#### PC-Series

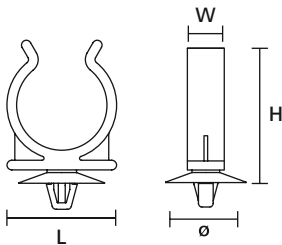
Pipe clips offering a simple and time saving fixing method for hoses and pipes even when a cable tie can't be used.

#### Features and Benefits

- Fixing elements with fir tree or arrow head
- Simply clip on a wire or hose
- Clips to be attached into bore hole
- Bundles can be released at any time



For quick and simple routing of tubes and harnesses.

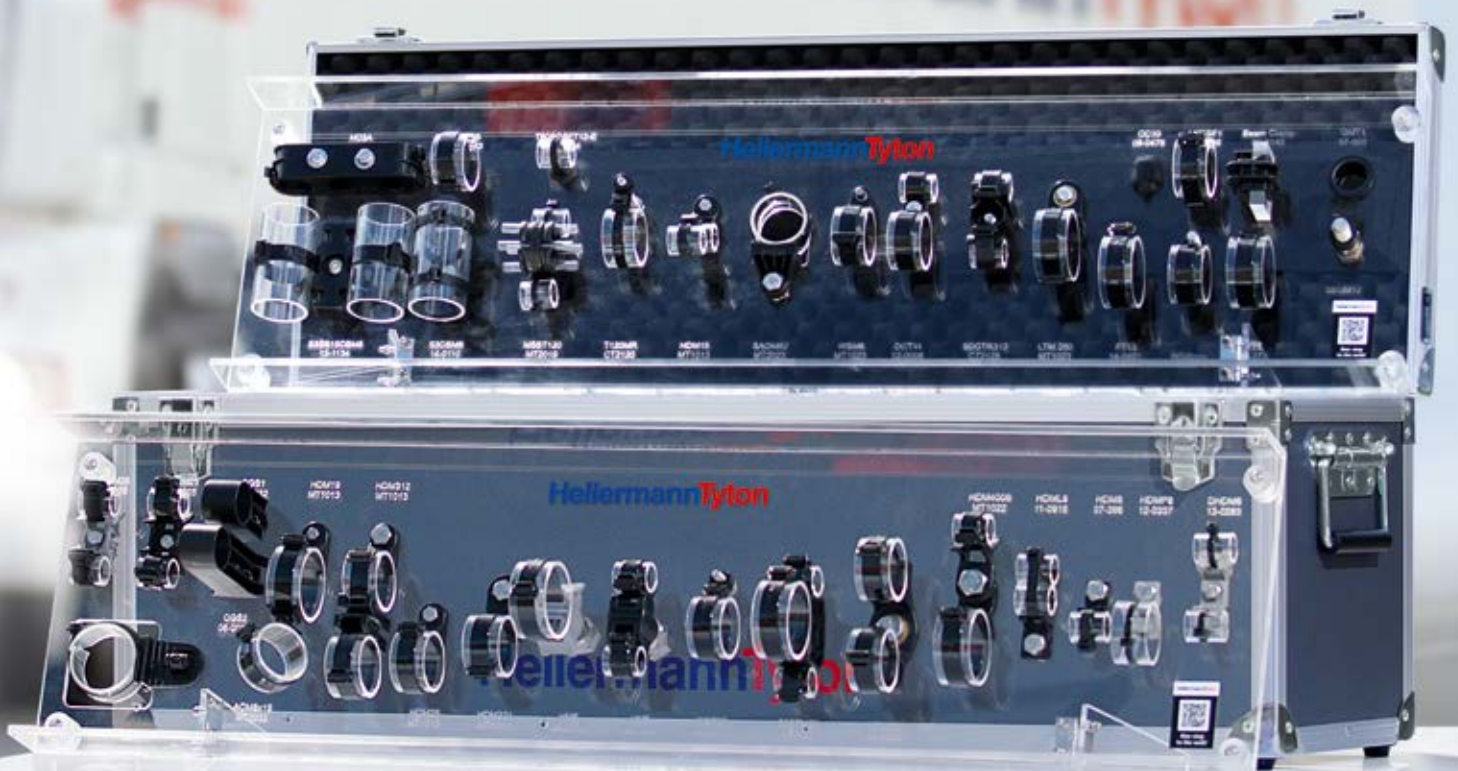


Material specification please see page 16.

TYPE	Drawing	Width (W)	Length (L)	Height (H)	Disc Ø	Attach to Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
PC23		10.0	22.0	36.0	22.0	22.0 - 24.0	6.3	0.6 - 1.6	PA66	Black (BK)	151-14300
PC35LAH		8.0	9.0	10.5	-	3.5	4.7	0.8 - 2.0	PA66	Black (BK)	151-14700
PC5DP7S		8.0	16.0	9.5	16.0	5.0	7.0	0.8 - 3.0	PA66	Black (BK)	151-00119
PC5DP7L		8.0	16.0	9.5	16.0	5.0	7.0	0.8 - 7.0	PA46	Black (BK)	151-14801

All dimensions in mm. Subject to technical changes.

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### Fixing Elements for Tubes and Harnesses, interconnectable

Originally designed for the automotive industry they are finding a wide and time saving variety of applications in all industries where the use of a cable tie is not suitable.

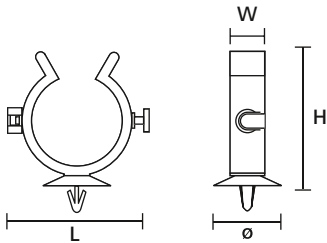
#### Features and Benefits

- Fixing elements with fir tree or arrow head
- Simply clip on a wire or hose
- Clips to be attached into bore hole
- Bundles can be released at any time



Simple and secure installation of pipes or hoses to panels.

#### IPC-Series with Arrowhead, connectable



IPC Clip



Material specification please see page 16.

TYPE	Width (W)	Length (L)	Height (H)	Disc Ø	Bundle Ø max.	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
IPC10AH	10.0	22.2	18.4	22.0	12.5	6.3	1.6	PA66HIR	Black (BK)	151-00096
IPC13AH	10.0	25.9	21.0	22.0	13.5	6.3	1.6	PA66	Black (BK)	151-14130
IPC15AH	10.0	27.2	23.0	22.0	14.7	6.3	1.6	PA66	Black (BK)	151-14500
IPC23AH	10.0	36.7	34.0	22.0	25.0	6.3	1.6	PA66	Black (BK)	151-14601

All dimensions in mm. Subject to technical changes.

#### IPC-Series, connectable

TYPE	Width (W)	Length (L)	Height (H)	Bundle Ø max.	Material	Colour	Article-No.
IPC5P	10.0	12.0	9.8	6.0	PA66	Black (BK)	151-00870
IPC10P	10.0	22.2	15.0	12.5	PA66HIR	Black (BK)	151-14400
IPC13P	10.0	25.9	17.4	13.5	PA66	Black (BK)	151-14132
IPC15P	10.0	27.2	19.5	14.7	PA66HIR	Black (BK)	151-14502
IPC23P	10.0	36.7	30.5	25.0	PA66	Black (BK)	151-14603

All dimensions in mm. Subject to technical changes.



### Fixing Elements for Tubes and Harnesses with Automatic Locking Feature

#### AHC-Series

Offering a simple and secure method of attaching cables to panels. Originally designed for the automotive industry, these products are used in a wide range of applications with sheet metal panels across various industries.

#### Features and Benefits

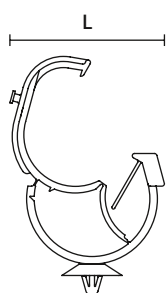
- Push and click closure for fixing of wires
- Clip is clicked into a specific hole
- AHC( )SS und AHC( )SB can be pushed onto a 5.0 mm stud



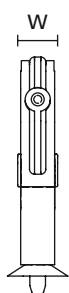
Automatic Harness Clip open.



Automatic Harness Clip closed.



AHC( )AH



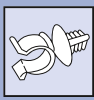
AHC( )AH

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	Hole Ø (FH)	Stud Ø	Panel Thickness	Material	Colour	Article-No.
AHC2SS		10.0	29.0	20.0	-	5.0	-	PA66HIRHS	Black (BK)	151-00368
AHC1AH		10.0	24.0	13.0	6.2 - 6.7	-	0.5 - 2.0	PA66HIRHS	Black (BK)	151-00366
AHC2AH		10.0	29.5	20.0	6.2 - 6.7	-	0.5 - 3.0	PA66HIRHS	Black (BK)	151-00367
AHC4AH		13.5	57.6	41.5	6.2 - 6.7	-	0.8 - 2.7	PA66HIRHS	Black (BK)	151-00374
AHC3SB		10.0	43.0	28.0	-	5.0	-	PA66HIRHS	Black (BK)	151-00373
AHC3DH		10.0	66.0	28.0	6.2 x 12.2	-	0.5 - 2.0	PA66HIRHS	Black (BK)	151-00181
AHC3EH2		11.0	44.2	28.0	6.2 x 12.2	-	1.8 - 4.8	PA66HIRHS	Black (BK)	151-00928

All dimensions in mm. Subject to technical changes.

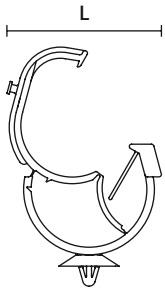




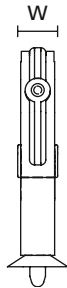


### Fixing Elements for Tubes and Harnesses with Automatic Locking Feature

#### AHC-Series



AHC()AH



AHC()AH



Material specification please see page 16.

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	Hole Ø (FH)	Stud Ø	Panel Thickness	Material	Colour	Article-No.
AHC3BH2		9.0	41.5	28.0	6.2 x 12.2	-	0.6 - 3.0	PA46	Grey (GY)	151-01195
AHC2BH		10.0	31.5	20.0	6.2 x 12.2	-	0.5 - 3.0	PA66HIRHS	Black (BK)	151-00208
AHC3BHR		10.0	40.0	28.0	6.2 x 12.2	-	0.7 - 3.0	PA66HIRHS	Black (BK)	151-00370
AHC25FT6LG		10.0	34.0	22.0	6.4 - 7.0	-	0.7 - 4.0	PA66HIRHS	Black (BK)	151-01198
AHC223FT6LG		10.0	35.0	23.0	6.4 - 7.0	-	0.7 - 4.0	PA66HIRHS	Black (BK)	151-01078
AHC3CHR		10.0	40.0	28.0	6.2 x 12.2	-	1.0 - 2.7	PA6HIR	Black (BK)	151-00371
AHC336FT6LG		14.0	50.0	37.0	6.4 - 7.0	-	0.7 - 4.0	PA66HIRHS	Black (BK)	151-01376
AHC3CH2		11.0	44.1	28.0	6.2 x 12.2	-	0.7 - 2.5	PA66HIRHS	Black (BK)	151-00937
AHC45BHG2		14.0	50.0	36.0	6.2 x 12.2	-	1.0 - 3.0	PA46	Grey (GY)	151-01377

All dimensions in mm. Subject to technical changes.



### Fixing Elements for Tubes and Harnesses with Automatic Locking Feature, interconnectable

#### IAHC-Series, Connectable

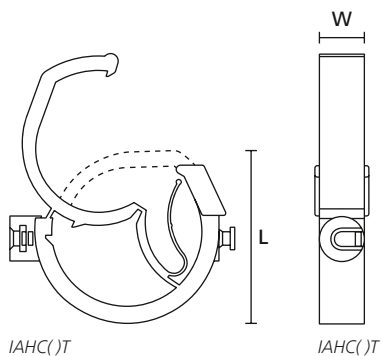
Offering a simple and secure method of attaching cables to panels. Originally designed for the automotive industry, these products are used in a wide range of applications with sheet metal panels across various industries.

#### Features and Benefits

- Push and click closure
- Coupling elements of the IAHC variants allow parts to interconnect
- Clip is clicked into a specific hole
- IAHC( )T can only be connected with another IAHC element



IAHC( )AH in combination with an IAHC( )T.



IAHC( )T

IAHC( )AH



IAHC elements can be connected.

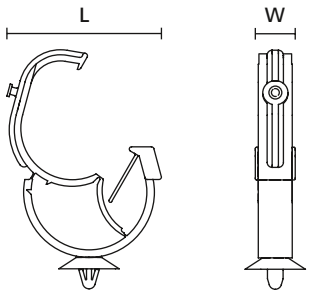
TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	Material	Colour	Article-No.
IAHC1T		10.0	23.0	13.0	PA66HIRHS	Black (BK)	151-00223
IAHC2T		10.0	30.0	20.0	PA66HIRHS	Black (BK)	151-00199
IAHC3T		10.0	40.0	28.0	PA66HIRHS	Black (BK)	151-00213
IAHC4T		13.5	47.0	36.0	PA66HIRHS	Black (BK)	151-00207
IAHC5T		13.5	57.0	45.0	PA66HIRHS	Black (BK)	151-00195

All dimensions in mm. Subject to technical changes.



### Fixing Elements for Tubes and Harnesses with Automatic Locking Feature, interconnectable

IAHC-Serie, Connectable, with Arrowhead



AHC(J)AH

AHC(J)AH



Material specification please see page 16.

TYPE	Drawing	Width (W)	Length (L)	Bundle Ø max.	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
IAHC3AH		13.5	40.0	28.0	6.2 - 6.7	0.7 - 2.7	PA66HIRHS	Black (BK)	151-00378
IAHC4AH		13.5	53.0	36.0	6.2 - 6.7	0.7 - 3.0	PA66HIRHS	Black (BK)	151-00382
IAHC5BH		13.5	57.0	45.0	6.2 x 12.2	0.7 - 3.0	PA66HIRHS	Black (BK)	151-00384
IAHC3CH		10.0	47.0	28.0	6.2 x 12.2	0.7 - 2.0	PA66HIRHS	Black (BK)	151-00381
IAHC4CH		13.5	53.0	36.0	6.2 x 12.2	0.7 - 2.0	PA6HIRHS	Black (BK)	151-00383
IAHC3EH		13.5	44.5	28.0	6.2 x 12.2	1.5 - 3.1	PA66HIRHS	Black (BK)	151-00489
IAHC5FH		13.5	61.5	45.0	6.2 x 12.2	1.5 - 3.0	PA66HIRHS	Black (BK)	151-00787

All dimensions in mm. Subject to technical changes.



### Fixing Elements for Tubes and Harnesses

#### DTC "Double Tube Clip" rotatable 360°

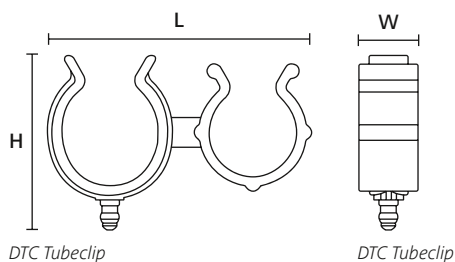
These Pipeclips interconnect two different bundles of goods, of various size and type. The mobility of the fixing tie provides even in difficult conditions, such as vibrations, a secure grip and protects the cables or bundles.

#### Features and Benefits

- Fixing clip offers full 360° rotation
- For routing of two different bundles
- Simply clip on a wire or hose
- Suitable for post-installation of bundles

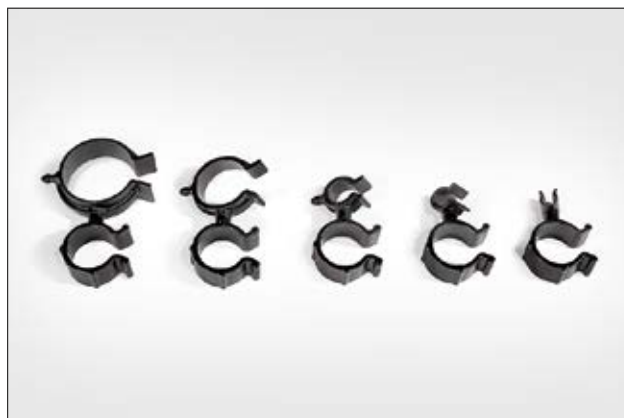


DTCs for easy assembly of rotatable routed tubes and harnesses.



DTC Tubeclip

DTC Tubeclip



An overview of the DTC18x( ) family.

TYPE	Width (W)	Length (L)	Height (H)	Ø D	Ø D2	Material	Colour	Article-No.
DTC18x5-S	12.0	37.1	26.0	18.0	5.0	PA66HIRHS	Black (BK)	156-01311
DTC18x6.5-S	12.0	38.1	26.0	18.0	6.5	PA66HIRHS	Black (BK)	156-01312
DTC18x9-11-S	12.0	43.0	26.0	18.0	11.0	PA66HIRHS	Black (BK)	156-01313
DTC18x18-20-S	12.0	54.0	35.6	18.0	20.0	PA66HIRHS	Black (BK)	156-01314
DTC18x28-S	12.0	63.0	45.0	18.0	28.0	PA66HIRHS	Black (BK)	156-01315

All dimensions in mm. Subject to technical changes.



### Fixing Elements for Corrugated Tubing, with Arrowhead

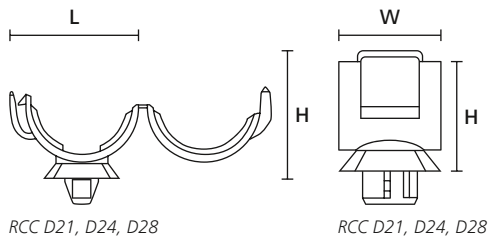
These holders are used in the automotive industry, in the production of cable harnesses and in the electrical industry. Their quick and easy mounting is the reason for their universal success wherever corrugated tubing and pipes have to be fixed quickly and securely.

#### Features and Benefits

- Clamps for corrugated tubing for a variety of nominal diameters
- Arrowhead simply locks into place
- Tube is guided accurately, clipping into place
- Movement is prevented by the inside profile of the clamp
- CTCLPROFILE clamp can also fastened to a metal edge



Simple and secure installation of pipes or hoses to panels.



Material specification please see page 16.

TYPE	Drawing	Width (W)	Length (L)	Height (H)	Nominal Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
RCC D21		22.0	31.0	30.0	21.0	6,2 x 12,2	0.7 - 2.5	PA66HIRHS	Black (BK)	150-92300
RCC D24		22.0	33.0	33.0	24.0	6,2 x 12,2	0.7 - 2.5	PA66HIRHS	Black (BK)	155-04000
RCC D28		22.0	37.0	37.0	28.0	6,75 x 13,25	0.7 - 3.0	PA66HIRHS	Black (BK)	151-00598
OCTCSFT6.5		20.0	64.0	24.5	21.0	6,3 - 6,6	1.0 - 2.0	PA66HIRHS	Black (BK)	151-00021
CTCLPROFILE		12.0	64.5	59.5	31.2	7,8 - 8,2	2.3 - 2.7	PA66HIRHS	Black (BK)	151-00026

All dimensions in mm. Subject to technical changes.



### Fixing Elements for Corrugated Tubing, with Fir Tree

#### CTC-Series

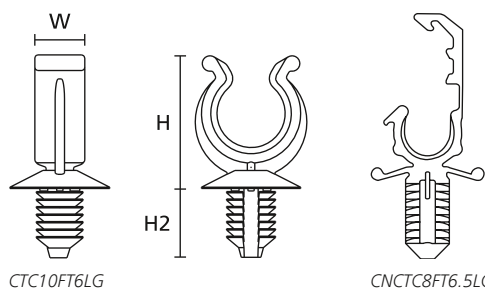
CTC clamps are used in the automotive, harness making and electrical industries and wherever corrugated tubing has to be quickly and firmly fixed.

#### Features and Benefits

- Available for a variety of nominal diameters
- Fir tree foot part can be used for a variety of panel thicknesses
- Suitable for use within threaded holes
- Tube is guided accurately, clipping into place
- Movement is prevented by the inside profile of the clamp



The tubing clips into the CTC clamp and is held firmly.



CTC10FT6LG

CNCTC8FT6.5LG



CNCTC8FT6.5LG Clamps

TYPE	Width (W)	Height (H)	Height (H2)	Nominal Ø	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
CTC4.5FT6LG	8.0	16.1	11.1	4.5	16.0	6.5 - 7.0	0.8 - 6.0	PA66HIRHS	Black (BK)	151-14314
CTC7.5FT6LG	8.0	18.6	11.1	7.5	16.0	6.5 - 7.0	0.8 - 6.0	PA66HIRHS	Black (BK)	151-14313
CTC7.5FT9	8.0	19.9	12.2	7.5	23.0	8.7 - 9.0	3.0 - 5.0	PA66HIRHS	Black (BK)	155-31602
CTC10FT6	8.0	21.4	7.5	10.0	16.0	6.5 - 7.0	0.8 - 3.0	PA66HIRHS	Black (BK)	151-14311
CTC10FT6LG	8.0	21.4	11.1	10.0	16.0	6.5 - 7.0	0.8 - 6.0	PA66HIRHS	Black (BK)	151-00018
CTC10FT9	8.0	22.7	12.2	10.0	23.0	8.7 - 9.0	3.0 - 5.0	PA66HIRHS	Black (BK)	155-17801
CTC13FT6	8.0	25.2	7.5	13.0	16.0	6.5 - 7.0	0.8 - 3.0	PA66HIRHS	Black (BK)	151-14312
CTC13FT6LG	8.0	25.2	11.1	13.0	16.0	6.5 - 7.0	0.8 - 6.0	PA66HIRHS	Black (BK)	151-00019
CTC22FT9	8.0	37.7	12.2	22.0	23.0	8.7 - 9.0	3.0 - 5.0	PA66HIRHS	Black (BK)	155-25201
CTCFT6	11.0	18.5	9.3	15.0	-	6.3 - 6.7	0.7 - 4.5	PA66HIRHS	Black (BK)	151-00783

All dimensions in mm. Subject to technical changes.

#### CNCTC-Series with cover

TYPE	Width (W)	Height (H)	Height (H2)	Nominal Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
CNCTC8FT6.5LG	10.0	11.0	11.4	7.0	6.5 - 6.7	1.0 - 6.0	PA66HIRHS	Black (BK)	151-01038
	10.0	11.0	11.4	7.0	6.5 - 6.7	1.0 - 6.0	PA66HIRHS	Blue (BU)	151-01177

All dimensions in mm. Subject to technical changes.



### Fixing Elements for Tubes and Harnesses, for Edges

#### EdgeClip-Family

Edge Clips are used in the automotive and electrical industries for applications where it is impossible to drill holes or no other fixing points are available.

#### Features and Benefits

- Releasable fixing elements with EdgeClip
- Low-vibration routing of larger bundle diameters
- Can be easily pushed onto an edge by hand
- Can also be snapped together with one hand
- Bundles can be released at any time
- EC27: fixing element enables use of smaller bundle diameters
- EC41: for parallel guidance of two bundles



EdgeClip cable and tube clips are suitable for the low-vibration routing of cables and tubes with larger bundle diameters.



Material specification please see page 16.

TYPE	Drawing	Panel Thickness	Attach to Ø	Material	Colour	Article-No.
EC27		1.0 - 3.0	15.0 - 22.0	PA66HIRHS	Black (BK)	151-00161
EC39		1.0 - 3.0	15.3 - 15.9	PA6HIR	Black (BK)	151-00174
EC41		3.0 - 6.0	2 x 8.0	PA66HIR	Black (BK)	151-00234
HCEC3.0SP-C		1.0 - 3.0	12.0 - 15.0	PA66HIRHS	Black (BK)	151-00610
HCEC3.0TPS		1.0 - 3.0	4.5 - 5.0	PA66HIRHS	Black (BK)	151-00645

All dimensions in mm. Subject to technical changes.





### Fixing Elements for Corrugated Tubing, for Weld Studs

#### CTC-Series for Weld Studs

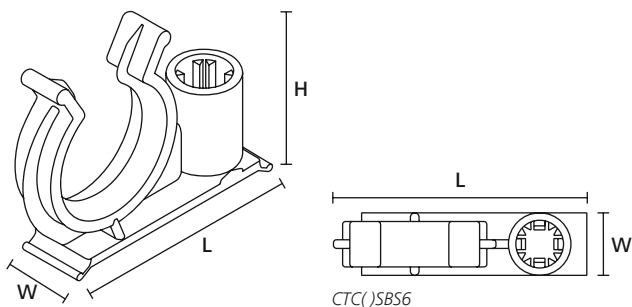
These holders are used in the automotive industry, in the production of cable harnesses and in the electrical industry. Their quick and easy mounting is the reason for their universal success wherever corrugated tubing and pipes have to be fixed quickly and securely.

#### Features and Benefits

- Fixing elements for corrugated tubing for nominal diameters from 4.5 - 17.0 mm
- For M6 weld studs
- Soft-Push mechanic for simple assembly without the need for a tool
- Tube is guided accurately, clipping into place
- Movement is prevented by the inside profile of the clamp
- Clamp can be unscrewed and removed from the weld stud



The tubing clips into the CTC clamp and is held firmly.



TYPE	Drawing	Width (W)	Length (L)	Height (H)	Nominal Ø	Stud Ø	Material	Colour	Article-No.
CTC4.5SBS6		11.0	28.6	18.7	4.5	6.0	PA66HIRHS	Black (BK)	151-00700
CTC7.5SBS6		11.0	31.8	19.4	7.5	6.0	PA66HIRHS	Black (BK)	151-00701
CTC10SBS6		11.0	35.3	22.2	10.0	6.0	PA66HIRHS	Black (BK)	151-00702
CTC13SBS6		11.0	37.0	26.5	13.0	6.0	PA66HIRHS	Black (BK)	151-00703
CTC17SBS6		11.0	44.6	33.2	17.0	6.0	PA66HIRHS	Black (BK)	151-00010

All dimensions in mm. Subject to technical changes.



### Fixing Elements for Weld Studs

Many industries (but specifically the automotive market) use 'weld studs' as the standard method of attaching components. Simply hammered onto the stud, these parts provide ideal fixing bases for attaching cables, pipes or hoses. The use of weld studs avoids the problems associated with 'holes' (ingress of moisture, corrosion etc).

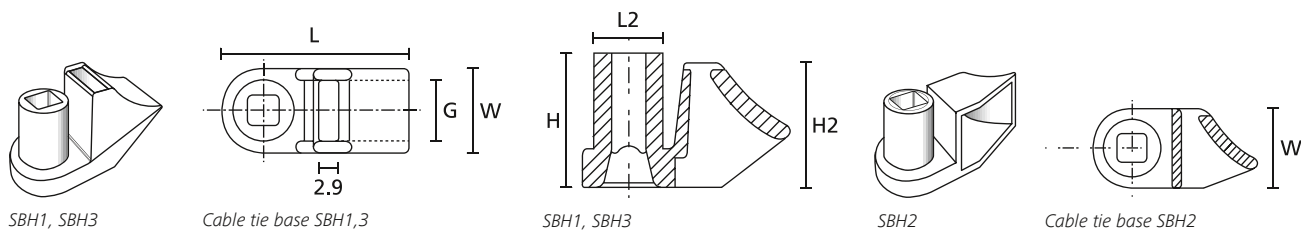
#### Features and Benefits

- Simple and quick method of fixing
- SBH types simply hammered onto the stud
- SBH1 and SBH3 allow cables to run across the panel
- SBH2 allow cables to run at 90° to the panel



SBH2 allow cables to run at 90° to the panel.

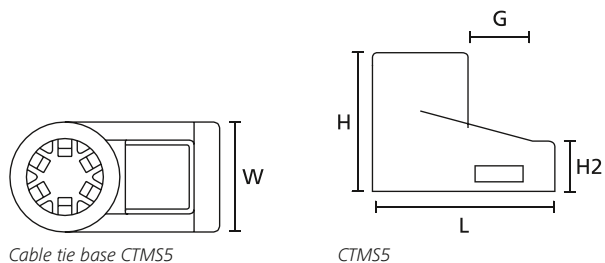
#### SB-Series



TYPE	Width (W)	Length (L)	Length (L2)	Height (H)	Height (H2)	Stud Ø	Strap Width max. (G)	Material	Colour	Article-No.
SBH1	12.5	26.8	9.0	13.9	15.9	5.0	8.5	PA66	Black (BK)	151-26150
SBH2	12.5	26.8	9.0	14.0	12.5	5.0	8.5	PA66	Black (BK)	151-26250
SBH3	12.5	26.8	9.0	18.0	15.9	5.0	8.5	PA66	Black (BK)	150-18900

All dimensions in mm. Subject to technical changes.

#### CT-Series



TYPE	Width (W)	Length (L)	Height (H)	Height (H2)	Stud Ø	Strap Width max. (G)	Material	Colour	Article-No.
CTM55	10.0	19.0	14.5	5.3	5.0	5.0	PA66	Black (BK)	151-03301

All dimensions in mm. Subject to technical changes.



### Fixing Elements for Weld Studs

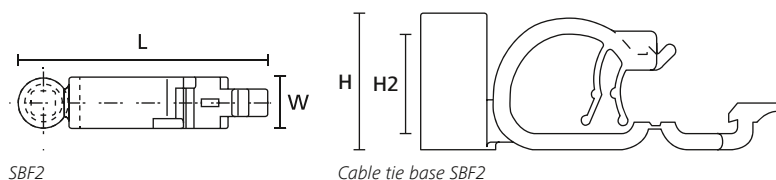
#### SBF-Clips

Many industries (but specifically the automotive market) are using 'weld studs' as the standard method of attaching components. Simply hammered onto the stud these parts provide ideal fixing bases for attaching cables, pipes or hose.

The use of weld studs avoids the problems with 'holes' (ingress of moisture, corrosion etc).

#### Features and Benefits

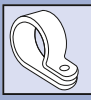
- One-piece fixing and retainer
- For bundles of up to 13.5 mm



Material specification please see page 16.

TYPE	Width (W)	Length (L)	Height (H)	Height (H2)	Stud Ø	Bundle Ø max.	Material	Colour	Article-No.
SBF2	10.0	47.7	18.2	13.5	5.0	13.5	PA66	Black (BK)	150-47700

All dimensions in mm. Subject to technical changes.



### Snapper Hose Clips for Tubes and Harnesses

#### SNP-Series

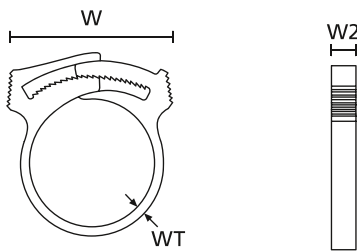
SNP range may replace metal hose clamps. Snapper hose clips can be used in markets as diverse as automotive, agriculture, white goods, venting systems, pumps and hydraulic systems to medical engineering.

#### Features and Benefits

- Releasable and reusable plastic hose clamps
- Self-locking
- Releasable by giving a lateral movement to the 'head'
- Installation by hand possible
- Installation with processing tool for secure tensing
- For higher operating temperatures: Glass Filled PA66



SNP - Snapper Hose Clips range.



SNP - Snapper Hose Clip (front view)

SNP Clip (side view)



**Material specification please see page 16.**



**SNP Snapper are also available on request in material PA66HS and PA46.**

TYPE	Bundle Ø min.	Bundle Ø max.	Width (W) min.	Width (W) max.	Width (W2)	Wall (WT)	Material	Colour	Article-No.
SNP1	6.0	6.5	8.33	11.73	3.8	1.00	POM	White (WH)	190-00022
	6.0	6.8	8.56	11.79	3.8	1.00	PA66GF13	Black (BK)	192-10010
SNP1.25	7.1	7.7	10.57	12.62	3.8	1.10	PA66GF13	Black (BK)	190-00029
SNP1.5	7.8	9.2	13.00	17.00	3.7	1.40	PA66GF15	Black (BK)	193-00150
SNP2(E)	8.7	10.0	17.00	21.00	6.0	1.50	POM	Natural (NA)	191-10029
SNP2	9.3	10.5	12.22	17.48	5.9	1.70	PA66GF13	Black (BK)	192-10020
SNP3(E)	10.0	11.4	19.00	25.00	6.0	1.80	POM	Natural (NA)	191-10039
SNP4	10.4	11.7	13.39	19.15	5.9	1.70	PA66GF13	Black (BK)	192-10040
SNP4(E)	10.8	12.3	19.00	23.00	6.0	1.80	POM	Natural (NA)	191-10049
SNP7	11.4	13.7	18.62	28.73	5.9	1.70	PA66GF13	Black (BK)	192-10070
SNP6	11.7	13.3	14.71	21.54	5.9	1.70	PA66GF13	Black (BK)	192-10060
SNP6(E)	12.0	13.7	19.00	24.00	6.0	1.80	POM	Natural (NA)	191-10069
SNP8	13.1	15.0	16.69	24.89	5.7	1.70	PA66GF13	Black (BK)	192-10080
SNP8(E)	13.7	15.3	19.00	24.00	6.0	1.80	POM	Natural (NA)	191-10089
SNP10	14.5	16.6	17.60	26.90	5.9	1.80	PA66GF13	Black (BK)	192-10100
SNP10(E)	15.0	16.8	19.00	24.00	6.0	1.80	POM	Natural (NA)	191-10109
SNP12A	15.9	18.2	20.96	29.90	5.9	1.80	PA66GF13	Black (BK)	190-00254
SNP12(E)	16.8	18.4	19.00	24.00	6.0	1.80	POM	Natural (NA)	191-10129
SNP14(E)	18.1	19.9	19.00	24.00	6.0	1.80	POM	Natural (NA)	191-10149
SNP14A	18.5	21.0	20.90	30.10	5.9	1.80	PA66GF13	Black (BK)	190-00300
SNP16	19.1	21.7	19.89	30.81	5.8	1.50	PA66GF13	Black (BK)	192-10160
SNP16(E)	19.9	21.7	19.00	24.00	6.0	1.90	POM	Natural (NA)	191-10169

All dimensions in mm. Subject to technical changes.





## Snapper Hose Clips for Tubes and Harnesses

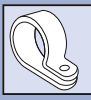
### SNP-Series

TYPE	Bundle Ø min.	Bundle Ø max.	Width (W) min.	Width (W) max.	Width (W2)	Wall (WT)	Material	Colour	Article-No.
SNP18A	20.0	23.1	24.03	35.51	5.9	1.80	PA66GF13	Black (BK)	190-00258
SNP18(E)	21.4	23.0	16.00	22.00	6.0	1.90	POM	Natural (NA)	191-10189
SNP19	22.3	25.3	22.30	36.09	5.9	1.80	PA66GF13	Black (BK)	190-00090
SNP20(E)	22.7	24.7	20.00	26.00	6.0	1.80	POM	Natural (NA)	191-10209
SNP22	23.7	27.4	23.90	37.69	6.0	1.80	PA66GF13	Black (BK)	192-10220
SNP22(E)	25.3	27.3	20.00	26.00	6.0	1.60	POM	Natural (NA)	191-10229
SNP24	25.8	29.2	26.49	39.40	7.4	1.70	PA66GF13	Black (BK)	192-10240
SNP24(E)	26.5	28.6	26.50	39.40	7.4	2.50	POM	Natural (NA)	191-10249
SNP28	29.1	33.6	25.91	41.81	7.3	1.70	PA66GF13	Black (BK)	190-00127
SNP32(E)	30.3	33.1	27.00	34.00	7.5	2.00	POM	Natural (NA)	191-10329
SNP32	31.2	35.8	27.33	44.40	7.3	1.80	PA66GF13	Black (BK)	192-10320
SNP34(E)	32.5	35.1	27.00	34.00	7.5	2.00	POM	Natural (NA)	191-10349
SNP36(E)	34.8	37.1	27.00	34.00	7.5	2.00	POM	Natural (NA)	191-10369
SNP38(E)	36.7	38.9	27.00	34.00	7.5	2.00	POM	Natural (NA)	191-10389
SNP36	37.8	44.0	32.41	43.99	7.3	1.70	PA66GF13	Black (BK)	192-10360
SNP42(E)	41.0	44.2	32.00	45.00	7.5	2.00	POM	Natural (NA)	191-10429
SNP38	41.0	48.1	35.61	57.51	7.3	1.80	PA66GF13	Black (BK)	192-10380
SNP42N	44.5	52.2	35.10	58.93	7.3	1.70	PA66GF13	Black (BK)	191-00005
SNP46(E)	44.6	47.6	32.00	45.00	7.5	2.00	POM	Natural (NA)	191-10469
SNP50(E)	48.8	52.0	32.00	45.00	7.5	2.00	POM	Natural (NA)	191-10509
SNP50	52.2	58.6	36.50	60.40	7.5	1.70	PA66GF13	Black (BK)	192-10500
SNP54(E)	52.3	55.7	32.00	45.00	7.5	2.00	POM	Natural (NA)	191-10549
SNP58(E)	56.7	59.2	31.00	39.00	7.5	2.00	POM	Natural (NA)	191-10589
SNP62(E)	61.1	63.5	31.00	39.00	7.5	2.00	POM	Natural (NA)	191-10629

All dimensions in mm. Subject to technical changes.



Snapper tools please  
see page 241.



# Cable Ties and Fixings

Clips, Clamps and Plugs

## Blind Plugs

These products were developed especially for the automotive industry for application in trunks, doors, wheel housing and dash panels. Parts are even used for optical applications.

### Features and Benefits

- Easy assembly without the need of a tool
- Disc of the part covers the hole and minimises ingress of dust, dirt and water
- Standard geometry, e.g. fir tree or arrowhead



Blindplugs are available in different dimensions and materials.



**Material specification please see page 16.**

TYPE	Drawing	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
TRIM PLUG 5		5.0	4.0	PA66HIR	Natural (NA)	151-00333
PLUG11		11.0	4.0 - 6.0	PA66HIRHS	Natural (NA)	151-00485
		11.0	6.0 - 8.0	POM	Black (BK)	151-00360
PLUG5.5		5.0 - 5.5	2.5 - 26.0	PA6HIR	Black (BK)	151-00399
		5.0 - 5.5	2.5 - 26.0	PA6HIR	Grey (GY)	151-00401
PLUG SQ8x8		7.6 - 8.0	1.0 - 3.0	PA66HIR	Black (BK)	151-00415
PLUG5 WITH OPENING		5.05 - 5.25	4.8 - 5.2	PA66HIRHS	Black (BK)	151-00419
PLUG10		10.2	2.0 - 12.0	PE	Black (BK)	151-00426
		10.2	2.0 - 12.0	PE	Grey (GY)	151-00488
PLUGFT6XL		6.5 - 7.0	0.7 - 18.0	PA46	Brown (BN)	151-00428
		6.5 - 7.0	0.7 - 18.0	PA66HIR	Black (BK)	241-00002
		6.5 - 7.0	0.7 - 18.0	PA66HIR	Grey (GY)	241-00001
PLUGFT7		7.05 - 7.25	2.5 - 8.0	PA6HIR	Black (BK)	151-00414
PLUGSFT8.4		8.3 - 8.5	0.7 - 0.9	POM	Natural (NA)	151-01114

All dimensions in mm. Subject to technical changes.



### Cover Plugs and Open Plugs

These products were developed especially for the automotive industry for application in trunks, doors, wheel housing and dash panels, particularly where holes have to be covered and tubes must be guided securely. Parts are even used for optical applications.

#### Features and Benefits

- Easy assembly without the need for a tool
- Protection of ingress of dust, dirt and water are offered by cover plugs
- Open plugs cover and secure the edges of drilled holes



Cover Plugs protect and secure boreholes.

#### Cover Plugs

TYPE	Drawing	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
Cover Plug 20x50		20.0 x 50.0	2.5	PP, EPDM	Black (BK)	151-00342
Cover Plug 20		19.5	3.0	PP, EPDM	Black (BK)	151-00343
Cover Plug 32		32.0	2.5	EPDM	Black (BK)	151-00424

All dimensions in mm. Subject to technical changes.

#### Open Plugs

TYPE	Drawing	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
Open Plug 55x70		55.0 x 70.0	5.0 - 8.0	PP	Black (BK)	151-00392
Open Plug 42x84		42.0 x 84.0	5.0 - 8.0	PA6HIR	Black (BK)	151-00391
OPEN PLUG 34.6x112		34.6 x 112.0	5.0 - 8.0	PA66HIR	Black (BK)	151-00394

All dimensions in mm. Subject to technical changes.