



Cable Management Solutions for High Temperature Applications



Tailor-made plastic components for high temperature applications – developed for your individual needs.



## Experienced partner at your side

HellermannTyton is your experienced partner for high quality, cost-effective cable management solutions. We are a leading provider of cable management systems, cable protection, identification solutions and data network technology, and have worked closely with customers in a range of industries over many years. How do our customers profit from this? We are always close to you, talking to you to create solutions tailored precisely to your individual needs. Decision-making paths are shortened, and your knowledge is bundled with ours to achieve the very best results for each project.

## Our expertise

'Resident engineering' is the most profitable form of knowledge transfer. For large-scale or special projects, we can locate our experts directly in your business. But not only are our visionary developers and highly experienced technical experts at your side wherever you are in the world. Local distributors in our comprehensive global network are always nearby to assist whenever you need us. At HellermannTyton, excellence in development competence goes hand in hand with expertise in sales and logistics. Integrate the advantages we offer into your own development projects. Tell us where you want to take your industry, and we will deliver the solution to help you get there.



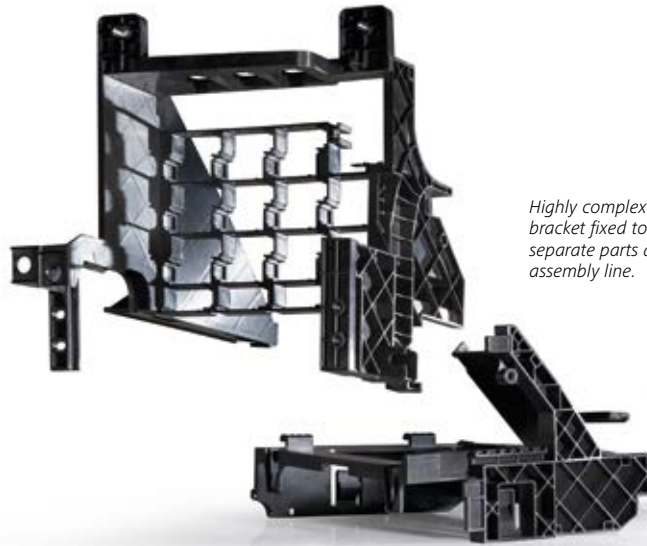
You continuously look for ways to optimise your products. We are developing the solutions to do it.



## Our tailor-made plastic components for high temperature applications – developed for your individual needs

High temperature is a key issue from the automotive industry to aerospace, rail and shipping, engineers face challenges posed by high temperature scenarios time and again. For over 80 years we have been applying our experience and innovative drive for the benefit of our customers in markets throughout the world.

We develop products tailored to your specifications. To do this we rely on state-of-the-art CAD and rapid prototyping systems. Through the use of advanced development tools, our experienced designers guarantee a high level of quality in all our products. The result: innovative solutions and the chance for you to profit from these advantages.



*Highly complex plastic parts: Body Control Module bracket fixed to vehicle cockpit wall. Moulded as two separate parts and combined as a single unit on the assembly line.*

### **Save development time**

Our product developers work simultaneously with your engineers while we develop the solution. This shortens the development phase, even for parts whose dimensions have not yet been fully finalised.

### **Reduce component diversity**

Using our targeted cable-set analyses, we are able to offer you cost-effective alternatives, demonstrate the application of preferred parts and show you how components can be optimised.

### **Reduce weight**

Replace metal by plastic without compromising on quality and performance. HellermannTyton injection-moulded parts offer complete freedom in geometric design, allowing easier integration of other functional elements. They are also corrosion-resistant.

### **Choose the right material**

Our many years' experience in product development will help you in choosing the right materials. If a suitable material for your application does not already exist, we will work closely with you and our raw materials suppliers to develop one. We are your reliable partner throughout the entire development process – from initial contact to serial production. Would you like to know more about how we can support you in product development? Contact us to find out or visit us on <http://www.HellermannTyton.de/3D>.

## Cable management solutions made of high temperature resistant plastics

### We develop customised products made from plastics to meet your individual demands:

We can replace metal with plastics such as PA46, PEEK and E/TFE (Tefzel®) – even in applications involving a high operating temperature and without compromising on quality and performance. Our customers profit from the many advantages offered by plastics, such as chemical resistance, reduced weight, greater flexibility, and processing ease.

Our core competence includes production and manufacture of plastic injection moulded parts, both in the single as well as in the two-component technology. HellermannTyton's long-standing expertise in the production of high-quality plastic components for cable management solutions is bundled in our Technology Centre.

### Would you like to discuss the demands and solutions of high-temperature applications?

Your suggestions might be our inspiration for a new product to meet the demands of your application. Here we would like to focus on HellermannTyton's expertise in injection-moulded cable management solutions made from high-performance, high-end thermoplastic such as PEEK, PA46 and E/TFE – products designed to withstand high or fluctuating temperature conditions.

Polyetheretherketone (PEEK) is a semi-crystalline, high-performance polymer. It is considered to be the highest-performing thermoplastic currently on the market. PEEK products are suitable for applications up to +240 °C.



Polyamide 4.6 (PA46) is a temperature-resistant, semi-crystalline polyamid. Due to its comparatively good heat resistance, it is suitable for applications up to +150 °C.

Ethylene Tetrafluoroethylene (E/TFE) is a fluorinated Copolymer that is also known as Tefzel®. This highly resistant thermoplastic material is ideal for use in aggressive chemical environments up to +170 °C (continuous operating temperature).



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.



## Material Properties Overview

MATERIAL	Material Shortcut	Operating Temperature	Colour**	Flammability	Material Properties*	Material Specifications
<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>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>Ethylene Tetrafluoroethylene</b>	E/TFE	-80 °C to +170 °C	Blue (BU)	UL94 V0	<ul style="list-style-type: none"> <li>Resistance to radioactivity</li> <li>UV- resistant, not moisture sensitive</li> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> </ul>	<b>RoHS</b>

\*These details are only rough guide values. They should not be regarded as a material specification and are no substitute for a suitability test. Please see our datasheets for further details.

\*\*More colours on request.

 = Minimum Loop Tensile Strength for Cable Ties (Newton)



PEEK  
**Page 9**



PA46  
**Page 17**



E/TFE  
**Page 44**



## Cable management products made of PEEK for high temperature applications up to +240 °C

PEEK is considered to be one of the highest-performing thermoplastics on the market. HellermannTyton's products manufactured from PEEK have been designed for use in hazardous environments and are suitable for applications where temperatures can reach +240 °C (continuous operating temperature).

As well as having excellent radiation resistance properties, it is highly resistant to chemicals. PEEK products are suitable for use in various applications and industrial sectors. We replace metal components with solutions made of plastic. Due to its combined properties, PEEK can be used instead of metal components to offer unique weight advantages in your applications.

### Advantages of PEEK material:

- For high temperature applications from -55 °C to +240 °C
- Weight advantages compared to metal
- Excellent radiation and chemical resistance
- Outstanding wear resistance over wide ranges of pressure, velocity, temperature and counter facial roughness

HellermannTyton's injection moulding expertise with PEEK material has culminated in the unique PT3B cable tie. With a length of 250 mm this PEEK cable tie is currently the longest on the market. Due to its suitability for high-temperature applications and its combination of physical strength and light weight, this high-strength plastic cable tie is often used as a viable alternative to metal cable ties, for example in aircraft design, such as the Airbus Eurofighter, or for bundling and fixing cables and pipes near the exhaust tracts of vehicles.

The range of PEEK products offered by HellermannTyton includes identification and labeling solutions as well as screw fixing mounts, one- and two-piece arrowhead and disc fixing ties. Solutions can also be customised to meet customers' individual demands. As part of its continuing development of engineering plastics, HellermannTyton is currently developing even longer cable ties, again based on our depth of experience working with PEEK material.



*PEEK fixing solution containing of CTAM and PT2A for temperatures up to 240 °C.*



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





# Polyetheretherketone (PEEK)

## Cable Ties Inside Serrated

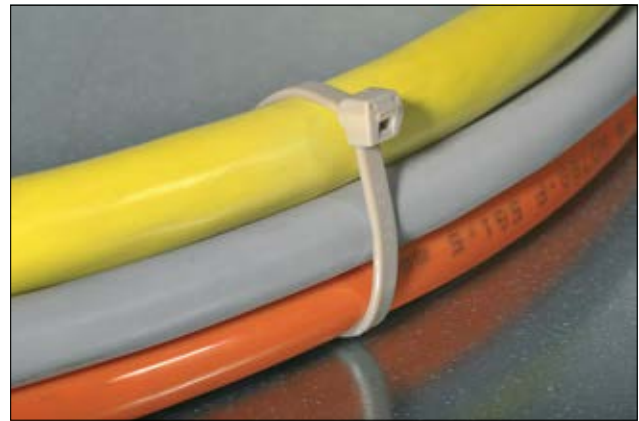
### Cable Ties for high temperature application up to +240 °C

#### PEEK Ties, inside serrated

PEEK Ties have been designed for the use in hazardous environment. Its suitability for high temperature applications makes it useful for the drilling industry, railway, offshore or automotive industry. The excellent chemical and radiation 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
- Close-fitting to the cable bundle due to the deepening head shape
- Easy insertion combined with high tensile strength
- Takes up less space due to curved head
- Conjunction performance of a metal tie with the ease of use of a polyamide cable tie
- Easy application either manually or with a processing tool



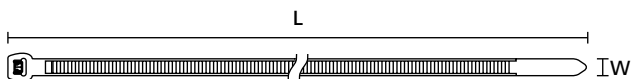
The PEEK cable tie PT220 for high temperature applications.



**More variants and dimensions are available on request. Please contact us for more information.**



**Material specification please see page 7.**



PEEK-Series

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

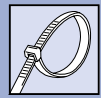
All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Recommended Tools		
6	7	8
EVO7	MK7HT	MK7P

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



Please note! Not all products listed on this page may have this approval. Please check our website for latest approvals.



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

#### PEEK Ties, outside serrated

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 radiation 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

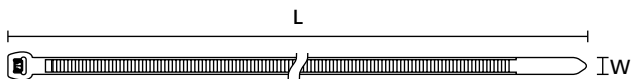
- For high temperature applications from -55° C up to +240° C
- Outside serrated cable tie with smooth surface to the bundle
- Close fit to the cable bundle due to the deepening head shape
- Easy insertion combined with high tensile strength
- Takes up less space due to the curved head
- Combines the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



PEEK cable tie PT2A.



One Step to the Web!



PEEK-Series

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

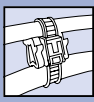
Recommended Tools		
6	7	8
EVO7	MK7HT	MK7P

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

Further product variants are available in our automotive catalogue.



Please note! Not all products listed on this page may have this approval. Please check our website for latest approvals.



# Polyetheretherketone (PEEK)

## 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

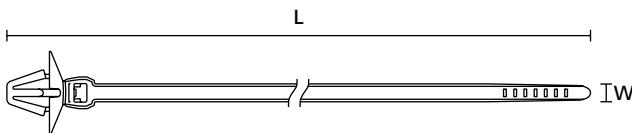
- -55 °C to +240 °C operating temperature
- Excellent resistance against chemicals and gamma radiation



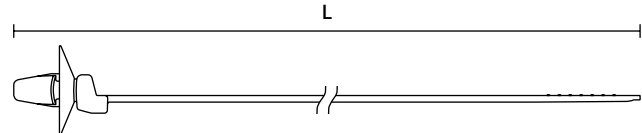
One piece fixing tie with arrowhead, outside serrated.




More variants and dimensions are available on request. Please contact us for more information.



PT2ASFT6.5PT0.7-1.5E



PT2ASFT6.5PT0.7-1.5E

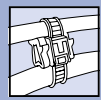
TYPE	Width (W)	Length (L)	Bundle Ø max.	 N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
PT2ASFT6.5PT0.7-1.5-E	3.4	112.7	20.0	230	16.0	6.3 - 6.7	0.7 - 1.5	PEEK	Beige (BGE)	2;4-6	126-00183

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.



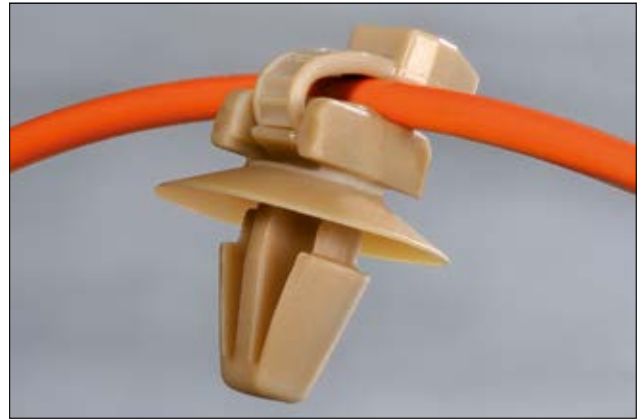
### 2-Piece Fixing Ties with Arrowhead, with Disc

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



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

#### Features Material PEEK

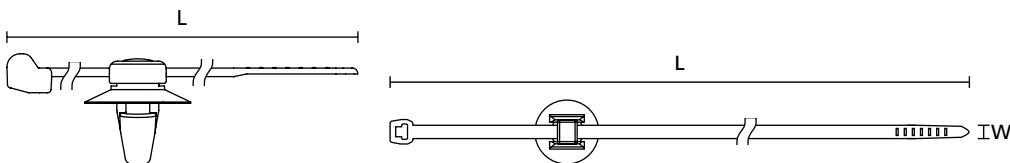
- -55 °C to +240 °C operating temperature
- Excellent resistance against chemicals and gamma radiation



One Step to the Web!



Material specification please see page 7.



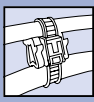
Two piece fixing tie with moveable arrowhead PT2AP1SFT6.5

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.
PT2AP1SFT6.5	3.4	145.0	35.0	230	16.0	6.3 - 6.7	0.7 - 1.3	PEEK	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	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	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.



# Polyetheretherketone (PEEK)

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties with Arrowhead, with Disc, for high temperature applications

**T50ROSP1SFT6.5 for panel thickness 0.7 - 1.3 mm**

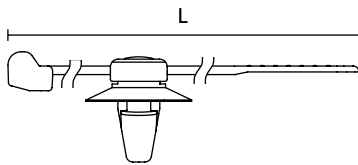
The ties with fixing element P1SFT6,5 or P2SFT6,5 are ideal when the requirement for temperature or chemical resistance is very high. They are used for cable harnesses in the automotive industry.

#### 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



The fixing tie T50ROSP1SFT6.5 for high temperature applications.




Two piece fixing tie with moveable arrowhead



**More variants and dimensions are available on request. Please contact us for more information.**



**Material specification please see page 7.**

TYPE	Width (W)	Length (L)	Bundle Ø max.		Hole Ø (FH)	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T50ROSP1SFT6.5	4.6	200.0	45.0	225	6.3 - 6.7	0.7 - 1.3	PA46	PEEK	Grey (GY), Beige (BGE)	2;4-8	156-00455
T50ROSP2SFT6.5	4.6	200.0	45.0	225	6.3 - 6.7	1.7 - 2.3	PA46	PEEK	Grey (GY), Beige (BGE)	2;4-8	156-00456

All dimensions in mm. Subject to technical changes.

Recommended Tools					
2	4	5	6	7	8
MK20	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P

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



### Screw Fixing Mounts

#### CTAM-Series for applications where space is limited

Each of these products offer particular benefits, but all are designed for simple, yet robust, installation in a wide variety of applications. Particularly used in telecoms equipment, switchgear and control cabinets.

#### Features and Benefits

- Suitable for applications with minimal space
- Mounted before cable installation and in line with cable
- CTAM has 4-way entry design for use in line or at 90° angle to cable run
- CTAM mounts are available in different sizes and materials



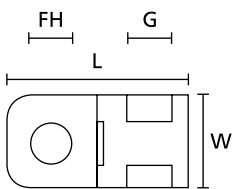
PEEK fixing solution containing of CTAM and PT2A for temperatures up to 240 °C.



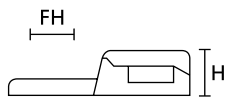
One Step to the Web!



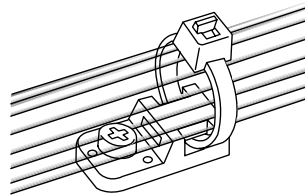
The CTAM mounts made of PEEK are the ideal complement for the PEEK tie on page 10 and 11.



CTAM-Series (plan view)



CTAM-Series (side view)

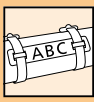


CTAM-Series in application

TYPE	Width (W)	Length (L)	Height (H)	Hole Ø (FH)	Strap Width max. (G)	Material	Colour	Pack Cont.	Article-No.
CTAM1	10.2	20.5	5.5	4.3	5.0	PEEK	Light Beige (LTBGE)	100 pcs.	151-00757
CTAM2	10.2	20.5	5.5	5.2	5.0	PEEK	Light Beige (LTBGE)	100 pcs.	151-00758

All dimensions in mm. Subject to technical changes.

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



### Identification plates for marking cable bundles

#### HFTP PEEK

PEEK tags have been specifically designed for use in high temperature environments. The HFTP tags are applied to cables and harness assemblies with cable ties, and are also suitable for retrofit purposes. The material has been conditioned for printing with a laser beam and gives both excellent print definition and print durability.

#### Features and Benefits

- HFTP is an aerospace standard Tiptag
- Laser beam printable
- Available in beige
- Fixed with PEEK cable ties



*A clearly better way of identifying cables and pipes.*



**Material specification please see page 7.**



**More variants and dimensions are available on request. Please contact us for more information.**



HFTP48

TYPE	Length (L)	Width (W)	Strap Width max. (G)	Pack Cont.	Colour	Material	Article-No.
HFTP48	48.0	9.5	3.4	2,500 pcs.	Beige (BGE)	PEEK	151-00911

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 management products made of Polyamide 4.6 for high temperature applications up to +150 °C

Polyamide 4.6 is suitable for temperature applications up to +150 °C. Besides its resistance to high temperatures, PA46 is also highly rigid. PA46 products also offer very good fire safety properties at higher temperatures and excellent resistance to chemicals.

### Advantages of PA46 material:

- For temperatures ranging from -40 °C to +150 °C
- High-quality plastic that can be recycled easily
- High rigidity, even at higher temperatures
- High operating temperature range up to +150 °C (5,000 hours)
- High dimensional stability, even under the heat effect
- Very good fire safety properties
- Excellent resistance to chemicals



*T50RFT62X122-HR - Being a two-piece assembly allows the tie head to be located in the most convenient position.*



*Application of PA46 cable ties at a truck exhaust unit.*





# Polyamide 4.6 (PA46)

Cable Ties Inside Serrated

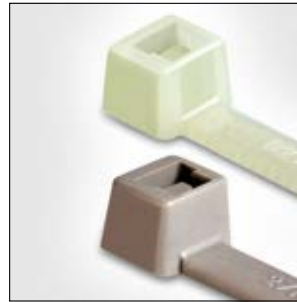
## Cable Ties for temperatures up to +150 °C in Polyamide 4.6

### T-Series in PA46 natural and grey

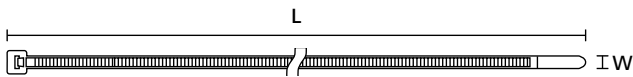
T-Series cable ties for bundling and securing cables, pipes and hoses. These cable ties can be used for almost any type of application.

#### 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



The Allrounder: T-Series cable ties can be used for almost any type of application.



T-Series

**i** More variants and dimensions are available on request. Please contact us for more information.

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	111-00968
	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

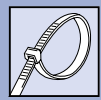
All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Recommended Tools										
2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9/ EVO9	MK9HT/ EVO9HT	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. Please check our website for latest approvals.



### Cable Ties for thin-walled bundles

#### OS-Series

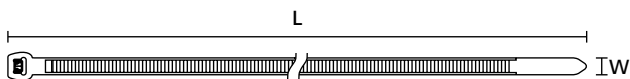
OS-Series are well-proven in many areas where thin-walled or soft insulation wires and cables are being installed, e. g. automotive and aircraft industry. OS ties made from material PA66V0 are suitable for applications where safety regulations, e. g. reduction of smoke and dangerous gases, are required.

#### 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.



OS-Series



**Material specification please see page**

TYPE	Width (W)	Length (L)	Bundle Ø min.	Bundle Ø max.	N	Material	Colour	Pack Cont.	Tools	Article-No.
T50ROS	4.6	200.0	1.6	50.0	225	PA46	Grey (GY)	500 pcs.	2;4-8	118-05078

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	7	8
MK20	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P

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

Further product variants are available in our automotive catalogue.





# Polyamide 4.6 (PA46)

## Cable Ties Outside Serrated

### Cable Ties with 90° angled head

#### V-Series

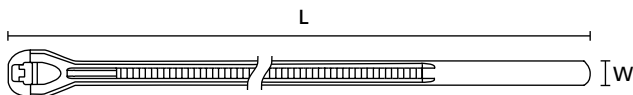
Due to its low profile head, V-Series outside serrated cable ties are perfectly suited for applications with restricted space, such as camera and alarm systems and automation systems (Remote I/O Systems). Where bundles are fed through a grommet or ductwork, V-Series provides a practical solution due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

#### Features and Benefits

- Outside serrated cable tie with smooth surface to the bundle
- Lentiform, 90° angled head
- Rounded head design 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



The outside serrated V-Series with less height above the bundle.



V-Series



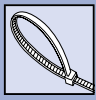
**More variants and dimensions are available on request. Please contact us for more information.**

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
V150R	3.3	150.0	35.0	150	PA46	Grey (GY)	100 pcs.	2;4-6;8	118-00107

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 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

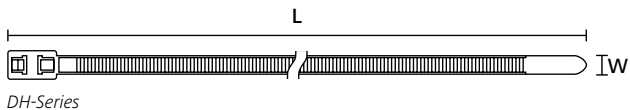
- Available in a wide range of materials
- Cable tie designed with two heads which creates an inside and outside serrated loop
- For parallel routing of two bundles with only one cable tie
- Bundles can be of different diameter
- Easy application either manually or with a processing tool



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 7.**



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 N	PA46	Grey (GY)	100 pcs.	2;4-6;8	117-05168

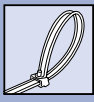
All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

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. Please check our website for latest approvals.



# Polyamide 4.6 (PA46)

## Cable Ties Without Serration

### Cable Ties locked by glass fibre pin

#### KR-Series, 1-Piece

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



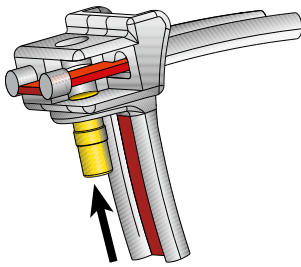
The KR8/33 has been repeatedly proven in High Vibration applications.



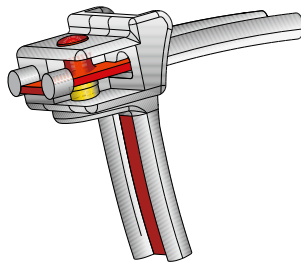
Patented



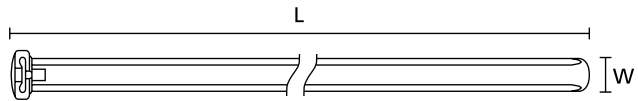
More variants and dimensions are available on request. Please contact us for more information.




The unlocked head of a KR-tie.



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



Cable tie KR-Series

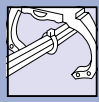
TYPE	Width (W)	Length (L)	Bundle Ø max.		Material	Colour	Pack Cont.	Tools	Article-No.
KR8/33	8.0	337.0	86.0	785	PA46	Grey (GY)	50 pcs.	13-14	121-83378

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

13	14
KR6/8	KR8PNSE

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



### Automatic bundling up to Ø 20 mm

#### Cable ties for Autotool 2000 Series

For bundling and securing cables, pipes and hoses, especially in applications that require high volumes of cable ties, e.g. in cable assembly, automotive, industrial equipment and the packaging sector.

#### Features and Benefits

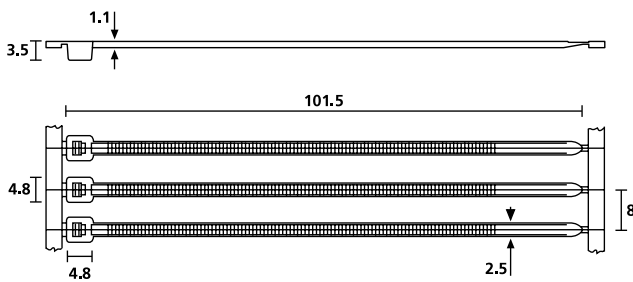
- Made from 100% high quality plastic, can be easily recycled
- Provides a secure hold around bundles
- Available in natural and black
- Other colours available on request
- Bandoleers of 50 cable ties or reels of 3,500 available



More information on our automatic cable tying system Autotool 2000 CPK can be found in our main catalogue and at [www.HellermannTyton.com/tools](http://www.HellermannTyton.com/tools).



Packaging application with the bench mount kit., Cable ties for Autotool 2000 Series., Overhead Suspension, reel with ties and Autotool 2000.



Bandoleer T18RA

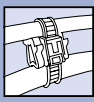


Material specification please see page 7.

TYPE	Bundle Ø max.		Colour	Material	Pack Cont.	Article-No.
T18RA3500	20.0	80	Natural (NA)	PA46	3,500 pcs.	120-46009

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content. More colours on request. Please contact us!

Halogen-free according to the interdictions of the GADSL list and compulsory registration of the SVHC list.



# Polyamide 4.6 (PA46)

## Cable Ties With Fixing Elements

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

#### T80RSF6.5F

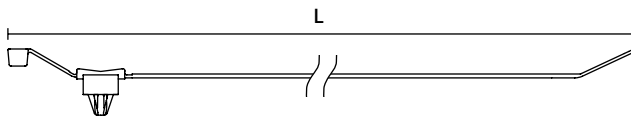
This range of fixing ties are ideal for use in many different industries, for example: automotive, aerospace, rail and panel building.

#### 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 cables with parallel bundling the T80RSF6.5F offers a simple and secure fixing.*



T80RSF6.5F



**More variants and dimensions are available on request. Please contact us for more information.**

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

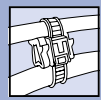
All dimensions in mm. Subject to technical changes.

#### 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, with Wings

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

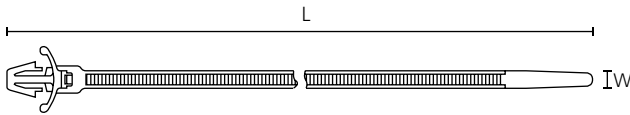
For bundling and fixing of cable harnesses, pipes and hoses in many different industries, including automotive, aerospace, white goods manufacturing and panel building.

#### 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.



T50SSL5



Material specification please see page 7.

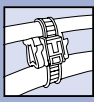
TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T50SSL5	4.6	135.0	27.0	225	6.1 - 6.5	0.5 - 2.7	PA46	Grey (GY)	2-10	111-85395

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/EVO9

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



# Polyamide 4.6 (PA46)

Cable Ties With Fixing Elements

## 1-Piece Fixing Ties with Arrowhead, with Wings, for Oval Holes

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

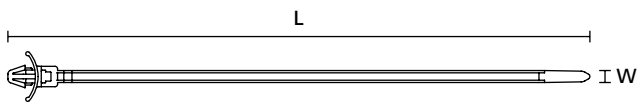
With a diverse range of fixing possibilities ideal for use in many different industries, including automotive, aerospace, white goods manufacture and panel building.

#### 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
- Versions for oval holes feature anti-twist protection




The fixing tie T80RFT6X12 provides a secure fixing in areas where space is limited.



T80RFT6X12



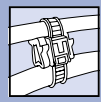
More variants and dimensions are available on request. Please contact us for more information.

TYPE	Width (W)	Length (L)	Bundle Ø max.		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

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/ EVO9	MK9HT/ EVO9HT	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

**T80RSFT for Panel thickness 1.0 - 3.5 mm**

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

#### Features and Benefits

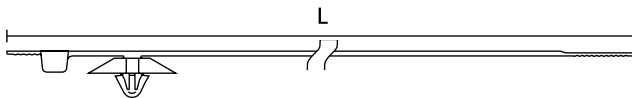
- Easy to assemble without the need for a tool
- Arrowhead simply locks into place
- Disc adjusts tie for pressures from various directions and minimises access of dust, dirt and water
- Cable tie head always situated in defined position
- Bundle runs directly across fixing point
- Simple assembly due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



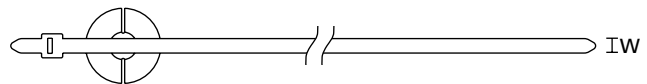
T80RSFT - The 'tab' on the head of the tie makes it easy to locate and lift the head for assembly.



**Material specification please see page 7.**



T80RSFT



T80RSFT with flexible disc.

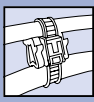
TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T80RSFT	4.6	190.0	45.0	355	24.4	5.7 - 6.3	1.0 - 3.5	PA46	Grey (GY)	2;4-6;8	150-15498

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.



# Polyamide 4.6 (PA46)

## Cable Ties With Fixing Elements

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

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

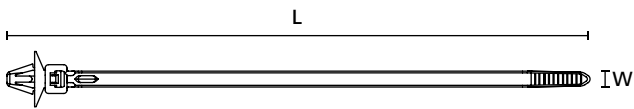
With a diverse range of fixing possibilities this range of fixing ties are ideal for use in many different industries, like automotive, aerospace, white goods manufacture and panel building.

#### Features and Benefits

- Arrowhead simply locks into place
- Disc covering hole for reduced ingress of dust, dirt and water
- Adjustable anchor for differing panel thickness to ensure secure fixing
- RT versions are releasable and reusable, ideal for removal or later addition of cables
- T50SST type with small tab for additional protection against axial forces
- Useful to assist retention on convoluted tubing




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



T50SST5

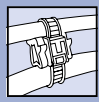
**i** More variants and dimensions are available on request. Please contact us for more information.

TYPE	Width (W)	Length (L)	Bundle Ø max.		Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T50SST5	4.6	170.0	31.0	225	16.2	6.1 - 6.5	0.7 - 1.5	PA46	Natural (NA)	2-10	126-00031

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/EVO9	

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



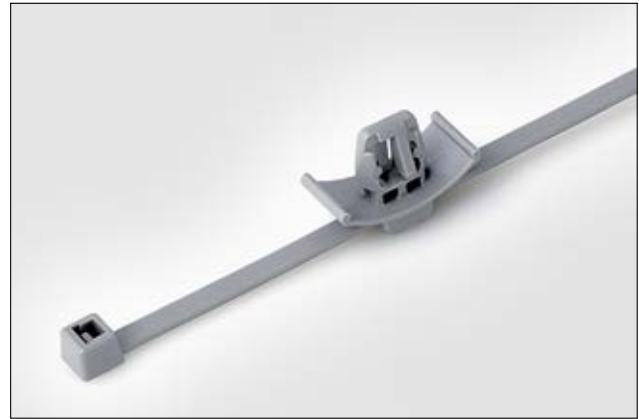
### 2-Piece Fixing Ties with Arrowhead, for Oval Holes

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

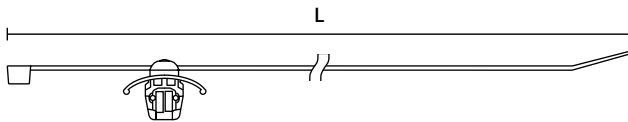
- Pre-assembled 2-piece fixing tie with arrowhead foot part
- Cable tie head can be moved after bundling
- Easy to assemble without the need for a tool
- Arrowhead simply locks into place
- Versions for oval holes feature anti-twist protection



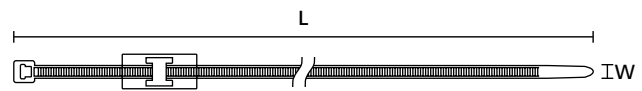
T50RFT62X122-HR - Being a two-piece assembly allows the tie head to be located in the most convenient position.




**Material specification please see page 7.**



T50RFT62x122



T50RFT62x122

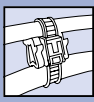
TYPE	Width (W)	Length (L)	Bundle Ø max.		Hole Ø (FH)	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T50RFT62x122HR	4.6	202.0	45.0	225	6.3 x 12.2	0.6 - 3.0	PA46	PA46	Grey (GY)	2-10	156-00446

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/EVO9

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



# Polyamide 4.6 (PA46)

## Cable Ties With Fixing Elements

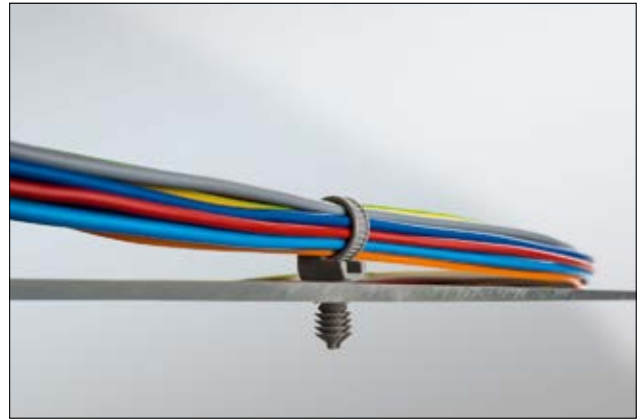
### 1-Piece Fixing Ties with Fir Tree, with Disc

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

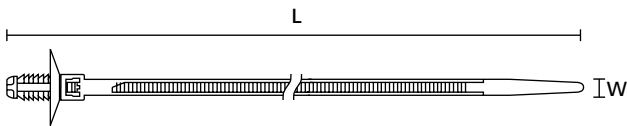
Primarily designed for fixing cable harnesses in the automotive industry, their simplicity and ease of use has resulted in these parts being used in other industries, for example aviation, switch gear and white goods manufacturing.

#### 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



T50SOSFT6D10E - One piece fixing tie with fir tree foot part.



One piece fixing tie with fir tree mount, standard design



Material specification please see page 7.

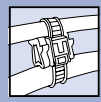
TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material	Colour	Tools	Article-No.
T50SOSFT6D10E	4.6	163.0	32.0	180	9.8	5.8 - 6.2	0.8 - 5.5	PA46	Grey (GY)	2-10	157-00028
T50SOSFT8E	4.6	163.0	35.0	225	16.0	8.0 - 8.5	0.6 - 6.0	PA46	Grey (GY)	2-10	157-00115
T50SOSFT6E	4.7	160.0	35.0	150	16.0	6.5 - 7.0	0.8 - 3.0	PA46	Grey (GY)	2-10	126-00100
T50SOSFT6E1	4.7	161.4	35.0	225	16.0	6.3 - 7.0	0.7 - 3.0	PA46	Grey (GY)	2-10	157-00059

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/EVO9

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



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

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

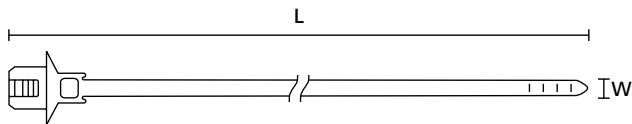
Primarily designed for fixing cable harnesses in the automotive industry their simplicity, and ease of use, has seen these parts used in everything from aircraft, to switch-gear, to washing machines.

#### 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




T50SOS2DOP with fir tree and disc for oval holes.



T50SOS2DOP

TYPE	Width (W)	Length (L)	Bundle Ø max.		Panel Thickness	Hole Ø (FH)	Material	Colour	Tools	Article-No.
T50SOS2DOP62X122-E	4.6	164.0	35.0	200	0.6 - 6.0	6.2 x 12.2	PA46	Grey (GY)	2-10	157-00069

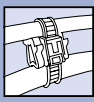
All dimensions in mm. Subject to technical changes.

TYPE	Width (W)	Length (L)	Bundle Ø max.		Panel Thickness	Hole Ø (FH)	Material	Colour	Tools	Article-No.
T50ROSFTOVALU	5.1	225.0	50.0	222	0.6 - 6.0	6.2 x 12.2	PA46	Brown (BN)	2-10	157-00157

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/EVO9	

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



# Polyamide 4.6 (PA46)

## Cable Ties With Fixing Elements

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

#### Fir Tree Parts FT5

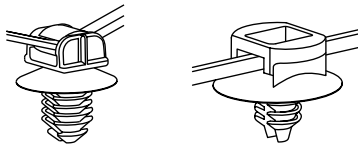
Primarily designed for fixing cable harnesses in the automotive industry their simplicity and ease of use has seen these parts used in everything from aircraft, to switch-gear, to washing machines.

#### Features and Benefits

- 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

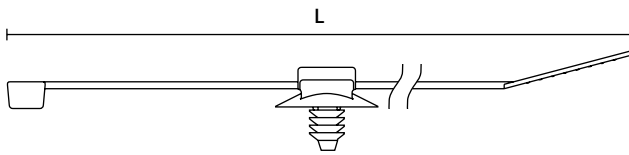


T30RFT5 - Being a two-piece assembly allows the tie head to be located in the most convenient position.

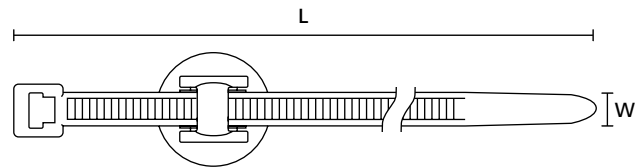


T50RFT6LGSD-HEX

T30RFT5



T50SOSFT5SD



T50RFT8GSD

**i** More variants and dimensions are available on request. Please contact us for more information.

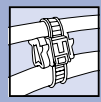
TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Disc Ø	Hole Ø (FH)	Panel Thickness	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T30RFT5	3.5	150.0	34.0	135	16.0	4.5 - 5.0	0.7 - 3.0	PA46	PA46	Natural (NA), Grey (GY)	2;4-6	150-55948
T50ROSFT6SD	4.6	200.0	45.0	225	16.0	6.4 - 7.1	0.8 - 3.0	PA46	PA46	Grey (GY)	2-10	156-00085
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
T50RFT8GSD	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

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/EVO9	

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





### 1-Piece Fixing Ties for Weld Studs (Hardpush), releasable

#### SBR-Serie Hardpush

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

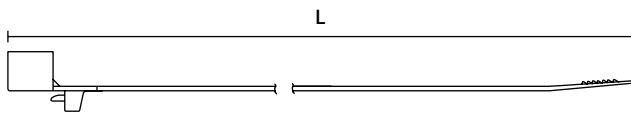
- One-piece fixing ties
- High specification materials
- Superior design
- Suitable for complex applications



SBR85 for M8 threaded studs.




**Material specification please see page 7.**



SBR85



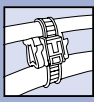
SBR85

TYPE	Width (W)	Length (L)	Bundle Ø max.		Stud Ø	Material	Colour	Article-No.
SBR85	6.0	216.5	40.0	300	8.0	PA46	Grey (GY)	131-60058

All dimensions in mm. Subject to technical changes.

Further product variants are available in our automotive catalogue.





# Polyamide 4.6 (PA46)

## Cable Ties With Fixing Elements

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

#### WSP-Serie

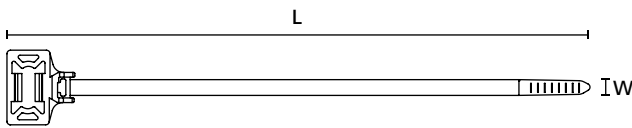
Primarily designed for use in the automotive industry, these parts can be used in a wide variety of applications where weld studs or ISO bolts are used and cables need to be bundled and secured (WS series, T120RSM, DCT9 & DCT 11 are for 1/4" bolts).

#### Features and Benefits

- Cable tie head always situated in defined position
- Easy to install without the need for a tool
- Provides a 5–6 mm lateral adjustment possibility
- Very low profile, stackable design
- For bundles which need to be routed in different directions




T50SOSWSP5E - for parallel installation using two fixing ties.



T50SOSWSP5E



Material specification please see page 7.

TYPE	Width (W)	Length (L)	Bundle Ø max.		Stud Ø	Material	Colour	Tools	Article-No.
T50SOSWSP5E	4.6	163.0	35.0	200	5.0	PA46	Grey (GY)	2-10	157-00230

All dimensions in mm. Subject to technical changes.

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

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

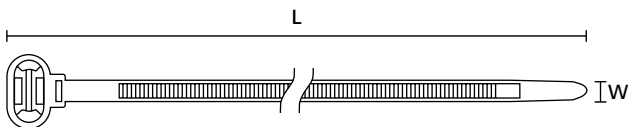
Primarily designed for use in the automotive industry, these parts can be used in a wide variety of applications where weld studs or ISO bolts are used and cables need to be bundled and secured (WS series, T120RSM, DCT9 & DCT 11 are for 1/4" bolts).

#### Features and Benefits


- One-piece fixing ties
- High specification materials
- Superior design
- Suitable for complex applications



T50SOSSB5-High-E-C-CC.



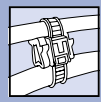
T50SOSSB5-High-E-C-CC

TYPE	Width (W)	Length (L)	Bundle Ø max.		Stud Ø	Material	Colour	Tools	Article-No.
T50SOSSB5-High-E-C-CC	5.0	167.0	35.0	225	5.0	PA46	Grey (GY)	2-10	157-00229

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/EVO9	

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



### 2-Piece Fixing Ties for Weld Studs

#### T50RSB5HR

Primarily designed for use in the automotive industry, these parts can be used in a wide variety of applications where 5mm weld studs or 5mm ISO bolts are used and cables need to be bundled and secured.

#### Features and Benefits

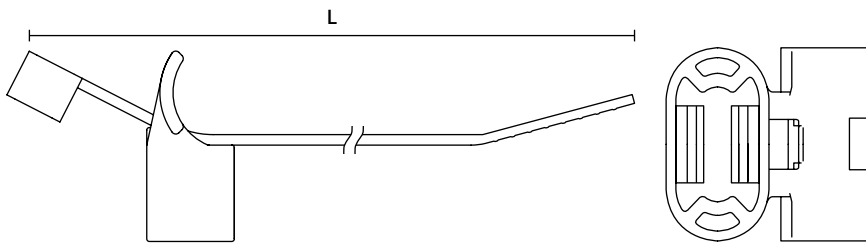
- Pre-assembled with cable tie and weld stud mounting base
- Quick and easy installation
- Head rotates into perfect position for installation
- ‚Soft-push‘ design for tool-free installation
- Mushroom-shaped SBH handles insulation or a sound-deadening blanket
- SBS ideal for installation prior to attaching cable (i.e. no lateral tolerances required)
- SB5 allow lateral tolerance for fixing point



Pre-assembled 2-piece fixing tie with stud retainer.



**More variants and dimensions are available on request. Please contact us for more information.**



T50RSB5HR

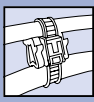
SB5

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Stud Ø	Material Cable Tie	Material Foot Part	Colour	Tools	Article-No.
T50RSB5	4.6	202.0	45.0	225	5.0, 6.0	PA46	PA46	Grey (GY)	2-10	156-00084

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/EVO9

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



# Polyamide 4.6 (PA46)

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties for parallel separation

**T50RCoupler for max. bundle diameter 2 x 47.0 mm**

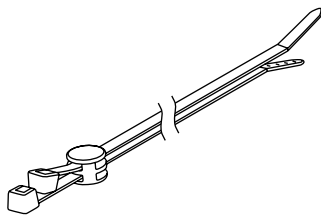
The Coupler is the simple way to connect two cable ties for a parallel routing of two bundles. His special design allows the ties 90 degrees of rotation. This is ideal for all applications where the cable, pipe or hose should move flexible in relation to the fixing point. The Coupler can be used with one or two cable ties. This allows easily subsequent installation or replacements of further cables, pipes or hose.

#### 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



T50RCOUPLER for parallel routing.



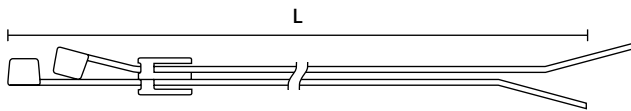
T120RCoupler



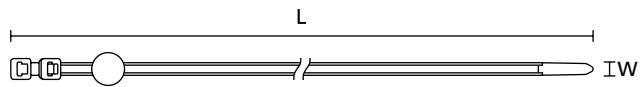
Fixing Element - Coupler




**Material specification please see page 7.**



T50RCoupler with two ties



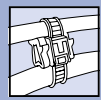
Two Cable Ties with Coupler

TYPE	Width (W)	Length (L)	Bundle Ø max.		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

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/EVO9

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

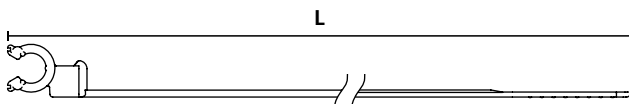
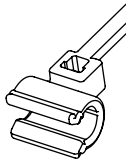


### 1-Piece Fixing Ties with Pipe Clip

#### 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



Brake cable fixing suitable for post installation of bundles.

**i** More variants and dimensions are available on request. Please contact us for more information.

TYPE	Width (W)	Length (L)	Bundle Ø max.		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

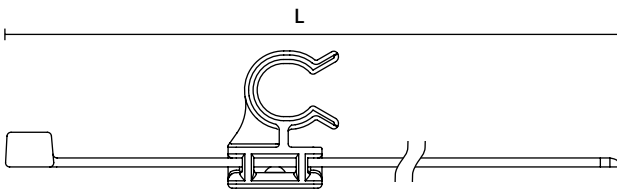
All dimensions in mm. Subject to technical changes.

### 2-Piece Fixing Ties with Pipe Clip

#### T30ROC2A for Pipediameter 6.5 - 7.5 mm

#### Features and Benefits

- For post-installation of additional cables for preassembled cable looms
- Variety of twist angles and even different loop directions provide flexibility for cable routing
- Additional cable tie dimensions are available



T30ROC2A



Pipe Clip T30ROC2A for post-installation of additional cables for preassembled cable looms.

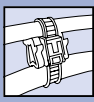
TYPE	Width (W)	Length (L)	Bundle Ø max.	Attach to Ø	Material		Colour	Tools	Article-No.
T30ROC2A	3.6	148.0	31.0	6.5 - 7.5	PA46	135	Grey (GY)	2;4-6	156-00014

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.



# Polyamide 4.6 (PA46)

## Cable Ties With Fixing Elements

### 2-Piece Fixing Ties with Pipe Clip

**T50SMVCOC19-24,5 for Pipediameter 19.0 - 24.5 mm**

#### Features and Benefits

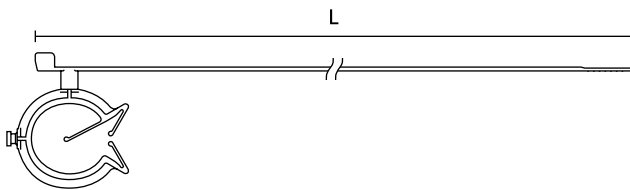
- Simply clip on a wire or hose
- Fixing clip offers full 360° rotation
- Routed cable can move in any direction in relation to the fixing point
- Inside serrated cable tie
- Ideally used in the automotive industry



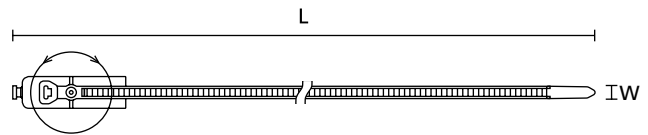
**More variants and dimensions are available on request. Please contact us for more information.**



T50SMVCOC19-24.5 rotates in any direction.



T50S(M)VCOC19-24.5



T50S(M)VCOC19-24.5

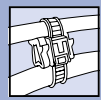
TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Attach to Ø	Colour	Material	Tools	Article-No.
T50SMVCOC19-24,5	4.7	210.0	50.0	222	19.0 - 24.5	Grey (GY)	PA46	2-10	156-00577

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/EVO9

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



### Cable Set Clip

**Cable Clip for Cable diameter 5 and 6 mm**

#### Features and Benefits

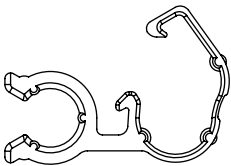
- Easy to install without the need for a tool
- 6 mm entry opens and closes by clicking into the required position
- Suitable for post-installation of bundles



**Material specification please see page 7.**

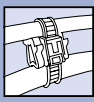


*Bracket KBLs for parallel cable routing.*



TYPE	Width (W)	Length (L)	Attach to Ø	Bundle Ø max.	Material	Colour	Article-No.
Cable Clip	12.0	18.9	5.1	6.0	PA46	Grey (GY)	151-14202

All dimensions in mm. Subject to technical changes.



# Polyamide 4.6 (PA46)

Cable Ties With Fixing Elements

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

### EdgeClip-Family

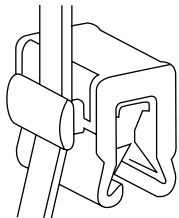
These cable ties and EdgeClip assemblies are ideal for use where holes are not acceptable or where due to temperature problems adhesives will fail. These assemblies are widely used for fixing and bundling cables, pipes and hoses within the automotive industry, harness making, panel building and electrical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



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



EC21

**i** More variants and dimensions are available on request. Please contact us for more information.

TYPE	Width (W)	Length (L)	Bundle Ø max.	Panel Thickness	N	Material	Colour	Tools	Article-No.
T50ROSEC21	4.6	200.0	45.0	1.0 - 3.0	225	PA46	Grey (GY)	2-10	156-00659

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/EVO9

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





### Bundling Clips with Arrowhead for Distance Routing

#### SOC for distance routing 31.0 mm

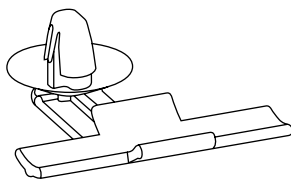
Originally designed for the automotive industry, these clips offer a simple and easy to use method of securing cables and pipes within a wide range of industries and applications.

#### Features and Benefits

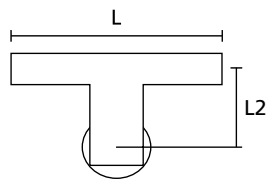
- Easy to install without the need for a tool
- Arrowhead simply locks into place
- Disc adjusts tie for pressure from various directions and minimises access of dust, dirt and water
- Versions for oval holes feature anti-twist protection



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



Stand Off Clip SOC



Stand Off Clip SOC



Material specification please see page 7.

TYPE	Length (L)	Length (L2)	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
STAND OFF CLIP	40.0	31.0	6.5 - 6.8	0.4 - 1.6	PA46	Grey (GY)	150-45398

All dimensions in mm. Subject to technical changes.

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

#### EdgeClip-Family

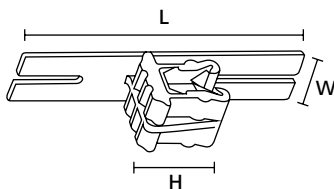
Edge Clips are used in the automotive industries and electrical industries and when it is impossible to drill holes or no other fixing points are available.

#### Features and Benefits

- Edge Clips are incredibly easy to fit
- Simply push onto a plastic or metal edge
- Edge Clips 14 to 17 have integrated bar to fasten cable bundle using cable tie or adhesive tape
- Slotted and flexible bars are ideal for bundle



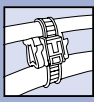
EC17 - Cables and leads can be fastened with adhesive tape to the bar of the mounting element.



EC17

TYPE	Width (W)	Length (L)	Height (H)	Panel Thickness	Material	Colour	Article-No.
EC17	10.0	46.5	13.0	1.0 - 3.0	PA46	Grey (GY)	151-00819

All dimensions in mm. Subject to technical changes.



# Polyamide 4.6 (PA46)

## Cable Ties With Fixing Elements

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

#### HDM-Series

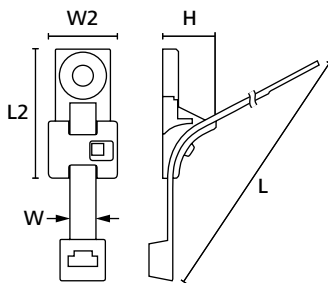
Used in the automotive and truck industry for harness fixing in the engine body, these parts offer solutions in many other industrial applications within difficult environments.

#### 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")



More variants and dimensions are available on request. Please contact us for more information.

TYPE	Width (W)	Width (W2)	Length (L)	Length (L2)	Height (H)	Bundle Ø max.	Mounting Screw Type	Material	Colour	Tools	Article-No.
T120RHDM6	7.6	20.0	390.0	37.5	16.0	105.0	M6	PA46	Grey (GY)	3;9-12	156-00407
T120RHDM8	7.6	20.0	390.0	37.5	16.0	105.0	M8	PA46	Grey (GY)	3;9-12	156-00409
T120RHDM6P	7.6	20.0	390.0	37.5	16.0	105.0	M6	PA46	Grey (GY)	3;9-12	156-00821
T120RHDM8P	7.6	20.0	390.0	37.5	16.0	105.0	M8	PA46	Grey (GY)	3;9-12	156-00823

All dimensions in mm. Subject to technical changes.

Recommended Tools				
3	9	10	11	12
MK21	MK6	MK9/EVO9	MK9HT/ EVO9HT	MK9P

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



### Blind Plugs

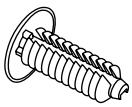
Products were developed especially for the automotive industry. Application in trunks, doors, wheel housing and dash panels particularly where holes have to be covered and tubes must be guided securely. Parts are even used for optical reasons.

#### 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 for example fir tree or arrowhead



Blindplugs are available in different dimensions and materials.



Plug FT6XL for borehole covering



**Material specification  
please see page 7.**

TYPE	Hole Ø (FH)	Panel Thickness	Material	Colour	Article-No.
PLUGFT6XL	6.5 - 7.0	18.0	PA46	Brown (BN)	151-00428

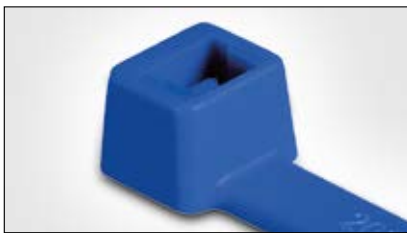
All dimensions in mm. Subject to technical changes.

## Cable management products made of Ethylene Tetrafluoroethylene (E/TFE) for higher chemical resistance and for temperatures up to +170 °C

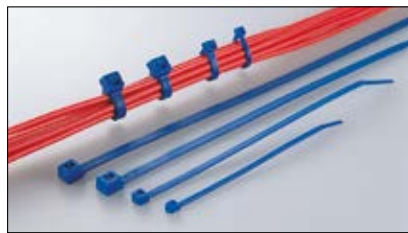
E/TFE products are ideal for use in aggressive chemical environments at temperatures up to +170 °C. This highly resistant thermoplastic meets UL94-VO fire protection requirements and generates very little smoke density.

### Advantages of E/TFE material:

- For temperatures ranging from -80 °C to +170 °C
- Continuous use at +170 °C
- Very good resistance to acids, bases and oxidizing agents
- Not hygroscopic, i.e. no water absorption
- UV-stable
- Very good resistance to chemicals
- Very good resistance to weathering
- Good resistance to radiation
- Good impact strength



*E/TFE cable ties (T-series) for high temperature applications.*



*T-Series E/TFE cable ties for use in aggressive chemical environments at temperatures up to +170 °C.*





### Cable Ties for higher chemical resistance and for temperatures up to +170 °C in Ethylene Tetrafluoroethylene

T-Series in E/TFE (Tefzel®) blue



More variants and dimensions are available on request. Please contact us for more information.



E/TFE cable ties (T-series) for high temperature applications.



T-Series



Material specification please see page 7.

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Material	Colour	Pack Cont.	Tools	Article-No.
T18R	2.5	100.0	22.0	80	E/TFE	Blue (BU)	100 pcs.	2;4-6	111-00659
T30R	3.5	150.0	36.0	133	E/TFE	Blue (BU)	100 pcs.	2;4-6	111-00698
T50R	4.7	201.0	50.0	222	E/TFE	Blue (BU)	100 pcs.	2-10	111-00732
T50L	4.7	382.0	105.0	222	E/TFE	Blue (BU)	100 pcs.	2-10	111-00718
T120R	7.4	387.0	105.0	535	E/TFE	Blue (BU)	50 pcs.	3;9-12	111-01125

All dimensions in mm. Subject to technical changes.

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

Recommended Tools										
2	3	4	5	6	7	8	9	10	11	12
MK20	MK21	MK3SP	MK3PNSP2	EVO7	MK7HT	MK7P	MK6	MK9/ EVO9	MK9HT/ EVO9HT	MK9P

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

Also available: Our sample box for the high temperature solutions product family.



## Cable management solutions for high temperature plastics from one source.

In addition to the products made of PEEK, PA 46 and E/TFE we offer you system solutions made of various materials, which are also suitable for high temperature applications.

**We have compiled the most suitable products from the range in this brochure:**

- Heat shrinkable tubing with and without adhesive liner
- Flexible PTFE protective tubing
- PTFE protective tubing and spiral binding
- PTFE Edge protection grommets
- NOMEX expandable braided and open woven sleeves
- PVDFX Identification tags for cable bundle for thermal transfer printing
- PVDFX Heat shrinkable wire identification for thermal transfer printing
- As well as automatic cable tying systems and application tooling for cable ties

## The ideal components for your application requirements.

These products are made of various materials, which have to fulfill the requirements of high temperature applications. We are even able to produce protective sleeves and identification solutions made of these special materials, which have the same excellent properties and perform just as well in high temperatures as our standard products. For example, our PVDFX identification tags can be printed with a common thermal transfer printer.





Insulation  
**Page 48**



Cable Protection Systems  
**Page 53**



Identification Systems  
**Page 58**



Application Tooling  
**Page 63**



# Elastomer, cross-linked (POA)

## Heat Shrinkable Tubing

### Heat Shrinkable Tubing 2:1 - Elastomer

#### SE28

SE28 is used for long-term protection of cables and wire harnesses in military equipment, motor sports, and aviation.

#### Features and Benefits

- Flexible, high performance elastomeric heat shrink tubing
- Used in aerospace, defence, railway and automotive applications
- Resistant to diesel fuel, aviation and hydraulic fluids
- Provides a reliable protection against abrasion and mechanical damage
- Very suitable for protecting cables and wire harnesses



SE28 tubing.

<b>MATERIAL</b>	Elastomer, cross-linked (POA)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-75 °C to +150 °C
<b>Minimum Shrink Temperature</b>	+170 °C
<b>Longitudinal change after shrinkage</b>	-10 % max.
<b>Dielectric Strength</b>	20 kV/mm
<b>Flammability</b>	VG 95343



SE28 is mainly used in high performance applications.

**RoHS** ✓



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Tools	Article-No.
SE28 3,2/1,6	3.2	1.6	0.70	150 m	Black (BK)	VG 95343 T05 D 001 A	30-33	342-20000
SE28 4,8/2,4	4.8	2.4	0.80	60 m	Black (BK)	VG 95343 T05 D 002 A	30-33	342-20010
SE28 6,4/3,2	6.4	3.2	0.90	60 m	Black (BK)	VG 95343 T05 D 003 A	30-33	342-20020
SE28 9,5/4,8	9.5	4.8	1.00	60 m	Black (BK)	VG 95343 T05 D 004 A	30-33	342-20030
SE28 12,7/6,4	12.7	6.4	1.20	60 m	Black (BK)	VG 95343 T05 D 005 A	30-33	342-20040
SE28 19,0/9,5	19.0	9.5	1.40	30 m	Black (BK)	VG 95343 T05 D 006 A	30-32	342-20050
SE28 25,4/12,7	25.4	12.7	1.80	30 m	Black (BK)	VG 95343 T05 D 007 A	30-32	342-20060
SE28 38,0/19,0	38.0	19.0	2.40	30 m	Black (BK)	VG 95343 T05 D 008 A	30-32	342-20070
SE28 51,0/25,4	51.0	25.4	2.80	30 m	Black (BK)	VG 95343 T05 D 009 A	30-32	342-20080
SE28 76,0/38,0	76.0	38.0	3.20	15 m	Black (BK)	VG 95343 T05 D 010 A	-	342-20090
SE28 101,2/51,0	102.0	51.0	3.50	10 m	Black (BK)	VG 95343 T05 D 011 A	-	342-20100

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content.

Recommended Tools			
30	31	32	33
H5002	H5004	E4500	ShrinkPad 110

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. Please check our website for latest approvals.





### Heat Shrinkable Tubing 2:1 - PVDF

#### TK20

Typical applications of this translucent tubing are where high-temperature performance is required. Also very suitable for applications that ask for visual inspection of covered components, or if a low friction surface is needed. TK20 is also used as oil stop for energy cables.

This thin walled, translucent heat shrink tubing is often used for chemical applications.

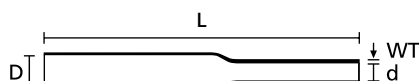
#### Features and Benefits

- Semi-rigid heat shrinkable tubing made of PVDF
- Thin walled and tough
- For higher temperature applications
- Very good mechanical strength, abrasion resistance and chemical resistance
- Meets various industrial standards
- Self extinguishing, UL 224 VW1 listed



*This thin walled, translucent heat shrink tubing is often used for chemical applications.*

<b>MATERIAL</b>	Polyvinylidene Fluoride (PVDF)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +175 °C
<b>Minimum Shrink Temperature</b>	+175 °C
<b>Longitudinal change after shrinkage</b>	+/-10 % max
<b>Dielectric Strength</b>	≥ 30 kV/mm min. according to ASTM D2171
<b>Flammability</b>	UL224 VW-1



Heat Shrinkable Tubing 2:1

RoHS

TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Designation as per VG-Norm	Tools	Article-No.
TK20-1.2/0.6	1.2	3/64 "	0.6	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 001 M	30-33	331-00129
TK20-1.6/0.8	1.6	1/16 "	0.8	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 002 M	30-33	311-00169
TK20-2.4/1.2	2.4	3/32 "	1.2	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 003 M	30-33	311-00249
TK20-3.2/1.6	3.2	1/8 "	1.6	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 004 M	30-33	311-00329
TK20-4.8/2.4	4.8	3/16 "	2.4	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 005 M	30-33	311-00489
TK20-6.4/3.2	6.4	1/4 "	3.2	0.30	1.2 m	Transparent (CL)	VG 95343 T05 F 006 M	30-33	311-00649
TK20-9.5/4.8	9.5	3/8 "	4.8	0.30	1.2 m	Transparent (CL)	VG 95343 T05 F 007 M	30-33	311-00959
TK20-12.7/6.4	12.7	1/2 "	6.4	0.30	1.2 m	Transparent (CL)	VG 95343 T05 F 008 M	30-33	311-01279
TK20-19.1/9.5	19.1	3/4 "	9.5	0.43	1.2 m	Transparent (CL)	VG 95343 T05 F 009 M	30-32	311-01909
TK20-25.4/12.7	25.4	1 "	12.7	0.48	1.2 m	Transparent (CL)	VG 95343 T05 F 010 M	30-32	311-02549
TK20-38.1/19.1	38.1	1-1/2 "	19.1	0.51	1.2 m	Transparent (CL)	-	30-32	311-03819
TK20-50.8/25.4	50.8	2 "	25.4	0.51	1.2 m	Transparent (CL)	-	30-32	311-05089

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content.

Recommended Tools			
30	31	32	33
H5002	H5004	E4500	ShrinkPad 110

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. Please check our website for latest approvals.



# Fluoropolymer cross-linked (FPMX) Heat Shrinkable Tubing

## Heat Shrinkable Tubing 2:1 - Fluoroelastomer

### Viton®-E

Viton®-E is used for reliable protection against aggressive chemicals in high temperature environments like engine compartments and turbines. It is also used when protective tubings are required to remain flexible at low temperatures.

#### Features and Benefits

- High temperature resistant fluoroelastomeric heat shrink tubing
- Very good electrical, chemical and mechanical features
- Resistant to many fuels, oils and lubricants
- Flexible even at very low temperatures



Viton®-E for flexibility and protection against aggressive chemicals.

<b>MATERIAL</b>	Fluoropolymer cross-linked (FPMX)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +220 °C
<b>Minimum Shrink Temperature</b>	+175 °C
<b>Longitudinal change after shrinkage</b>	-10 % max.
<b>Dielectric Strength</b>	15 kV/mm
<b>Flammability</b>	VG 95343
<b>Insulation Class</b>	C (VDE 0530)



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Tools	Article-No.
VITON®-E-3.2/1.6	3.2	1.6	0.70	50 m	Black (BK)	VG 95343 T05 E 001 A	30-33	330-00320
VITON®-E-4.8/2.4	4.8	2.4	0.80	50 m	Black (BK)	VG 95343 T05 E 002 A	30-33	330-00480
VITON®-E-6.4/3.2	6.4	3.2	0.90	50 m	Black (BK)	VG 95343 T05 E 003 A	30-33	330-00640
VITON®-E-9.5/4.8	9.5	4.8	1.00	25 m	Black (BK)	VG 95343 T05 E 004 A	30-33	330-00950
VITON®-E-12.7/6.4	12.7	6.4	1.20	25 m	Black (BK)	VG 95343 T05 E 005 A	30-33	330-01270
VITON®-E-19.0/9.5	19.0	9.5	1.40	25 m	Black (BK)	VG 95343 T05 E 006 A	30-32	330-01900
VITON®-E-25.4/12.7	25.4	12.7	1.80	25 m	Black (BK)	VG 95343 T05 E 007 A	30-32	330-02540
VITON®-E-38.0/19.0	38.0	19.0	2.40	15 m	Black (BK)	VG 95343 T05 E 008 A	30-32	330-03810
VITON®-E-50.8/25.4	50.8	25.4	2.80	15 m	Black (BK)	VG 95343 T05 E 009 A	30-33	330-05080

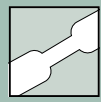
All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.

Recommended Tools			
30	31	32	33
H5002	H5004	E4500	ShrinkPad 110

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. Please check our website for latest approvals.



### Heat Shrinkable Tubing - PTFE

TFE is ideal for high temperature applications, when resistance to aggressive fluids is required or a very thin walled tubing is needed, for example in pH-measuring instruments. TFE tubing is also used to reduce movement due to friction, covering cylinders for example.

#### Features and Benefits

- PTFE heat shrink tubing
- Very high temperature resistance
- Extra thin wall translucent tubing
- High abrasion resistance and good resistance against aggressive chemicals
- Available in either 2:1 (TFE2) or 4:1 (TFE4) shrink ratios



TFE is available in either 2:1 or 4:1 shrink ratios.



**Cut lengths available on request. Please contact us!**

#### TFE2 2:1



Heat Shrinkable Tubing 2:1

<b>MATERIAL</b>	Polytetrafluoroethylene (PTFE)
<b>Operating Temperature</b>	-70 °C to +260 °C
<b>Minimum Shrink Temperature</b>	+350 °C
<b>Longitudinal change after shrinkage</b>	-20 % max.
<b>Dielectric Strength</b>	40 kV/mm according to DIN 53481
<b>Flammability</b>	Non burning

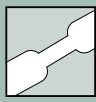


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wire Size (AWG)	Wall (WT)	Length (L)	Colour	Shrink Ratio	Tools	Article-No.
TFE2-30	0.86	0.38	30	0.23	1.2 m	Transparent (CL)	2:1	30-33	336-00079
TFE2-28	0.96	0.46	28	0.23	1.2 m	Transparent (CL)	2:1	30-33	336-00099
TFE2-26	1.17	0.56	26	0.23	1.2 m	Transparent (CL)	2:1	30-33	336-00109
TFE2-24	1.27	0.69	24	0.25	1.2 m	Transparent (CL)	2:1	30-33	336-00139
TFE2-22	1.39	0.82	22	0.25	1.2 m	Transparent (CL)	2:1	30-33	336-00149
TFE2-20	1.52	0.99	20	0.30	1.2 m	Transparent (CL)	2:1	30-33	336-00159
TFE2-18	1.93	1.25	18	0.30	1.2 m	Transparent (CL)	2:1	30-33	336-00199
TFE2-16	2.36	1.55	16	0.30	1.2 m	Transparent (CL)	2:1	30-33	336-00249
TFE2-14	3.05	1.83	14	0.30	1.2 m	Transparent (CL)	2:1	30-33	336-00319
TFE2-12	3.81	2.26	12	0.30	1.2 m	Transparent (CL)	2:1	30-33	336-00399
TFE2-10	4.85	2.85	10	0.30	1.2 m	Transparent (CL)	2:1	30-33	336-00489
TFE2-8	6.10	3.58	8	0.38	1.2 m	Transparent (CL)	2:1	30-33	336-00619
TFE2-6	7.67	4.52	6	0.38	1.2 m	Transparent (CL)	2:1	30-33	336-00779
TFE2-4	9.40	5.69	4	0.38	1.2 m	Transparent (CL)	2:1	30-33	336-00949
TFE2-2	10.92	7.06	2	0.38	1.2 m	Transparent (CL)	2:1	30-33	336-01109
TFE2-0	11.94	8.81	0	0.38	1.2 m	Transparent (CL)	2:1	30-33	336-01209

All dimensions in mm. Subject to technical changes.  
AWG: American Wire Gauge Minimum Order Quantity (MOQ) may differ from package content.

Recommended Tools			
30	31	32	33
H5002	H5004	E4500	ShrinkPad 110

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

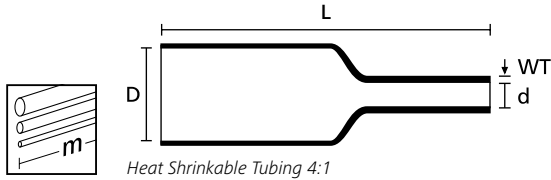


# Polytetrafluoroethylene (PTFE)

## Heat Shrinkable Tubing

### Heat Shrinkable Tubing - PTFE

TFE4 4:1



**i** Cut lengths available on request. Please contact us!

TYPE	Supplied Ø D min.	Recov. Ø d max.	Size (imperial)	Wall (WT)	Length (L)	Colour	Shrink Ratio	Tools	Article-No.
TFE4-5/64	1.98	0.64	5/64 "	0.22	1.2 m	Transparent (CL)	4:1	30-33	339-00209
TFE4-1/8	3.17	0.94	1/8 "	0.25	1.2 m	Transparent (CL)	4:1	30-32	339-00329
TFE4-3/16	4.75	1.27	3/16 "	0.30	1.2 m	Transparent (CL)	4:1	30-32	339-00340
TFE4-1/4	6.35	1.60	1/4 "	0.30	1.2 m	Transparent (CL)	4:1	30-32	339-00649
TFE4-3/8	9.52	2.44	3/8 "	0.30	1.2 m	Transparent (CL)	4:1	30-33	339-00959
TFE4-1/2	12.7	3.66	1/2 "	0.38	1.2 m	Transparent (CL)	4:1	30-33	339-01279
TFE4-5/8	15.87	4.52	5/8 "	0.38	1.2 m	Transparent (CL)	4:1	30-32	339-01599
TFE4-3/4	19.05	5.69	3/4 "	0.38	1.2 m	Transparent (CL)	4:1	30-32	339-01909
TFE4-1	25.4	7.06	1 "	0.38	1.2 m	Transparent (CL)	4:1	30-32	339-02549
TFE4-1 1/4	31.75	8.82	1-1/4 "	0.38	1.2 m	Transparent (CL)	4:1	30-32	339-03189

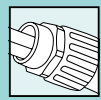
All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.

Recommended Tools			
30	31	32	33
H5002	H5004	E4500	ShrinkPad 110

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. Please check our website for latest approvals.



### Non-Metallic Conduits

#### CTT PTFE Conduits

CTT conduits are used in many industries with very demanding environments, including aviation, aerospace, chemical, pharmaceutical, ship building, food processing and electrical industry.

#### Features and Benefits

- Excellent resistance to almost all chemicals
- Resistant to low and high temperatures
- Very good tensile strength
- Very good fatigue life
- Superior dielectric strength and anti-adhesive properties
- Protects cables from extreme temperatures, fire, moisture
- Protects cables from corrosion, vibration and abrasion



The CTT conduits made of PTFE protect cables from extreme temperatures, fire, moisture, corrosion, vibration and abrasion.

<b>MATERIAL</b>	Polytetrafluoroethylene (PTFE)
<b>Operating Temperature</b>	-65 °C to +260 °C
<b>Flammability</b>	FAR 25



TYPE	Nominal Ø	Outside Ø (OD)	Inside Ø (ID)	Weight	Reel Length	Article-No.
CTT-04 NSA935805-04	4	5.50	3.0	15 g/m	50 m	169-23004
CTT-06 NSA935805-06	6	8.10	4.6	30 g/m	50 m	169-23006
CTT-09 NSA935805-09	9	10.60	7.0	44 g/m	50 m	169-23009
CTT-10 NSA935805-10	10	11.40	7.6	46 g/m	50 m	169-23010
CTT-12 NSA935805-12	12	13.00	9.2	54 g/m	50 m	169-23012
CTT-14 NSA935805-14	14	14.60	10.8	66 g/m	50 m	169-23014
CTT-16 NSA935805-16	16	16.20	12.3	78 g/m	25 m	169-23016
CTT-20 NSA935805-20	20	19.50	15.6	115 g/m	25 m	169-23020
CTT-24 NSA935805-24	24	23.50	19.0	145 g/m	25 m	169-23024
CTT-32 NSA935805-32	32	31.25	24.5	225 g/m	20 m	169-23032

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval. Please check our website for latest approvals.



# Polytetrafluoroethylene (PTFE)

## Protective Tubing and Spiral Binding

### PTFE Spiral Binding for superior protection

#### SBPTFE

Wherever superior protection against chemical and extreme temperatures are important, the use of SBPTFE is recommended.

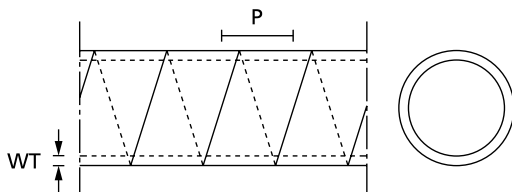
#### Features and Benefits

- Organises and protects cables and hoses
- Excellent fire protection
- Self-extinguishing according to UL94 V0
- Suitable for retro-fitting
- Cables branch out at any point
- Wide range of diameters and colours



Spiral binding SBTFE - ideal for extreme conditions.

<b>MATERIAL</b>	Polytetrafluoroethylene (PTFE)
<b>Operating Temperature</b>	-60 °C to +260 °C, intermittent +350 °C
<b>Flammability</b>	UL94 V0



Spiral binding



TYPE	Nominal Ø	Wall (WT)	Pitch (P)	Bundle Ø min.	Bundle Ø max.	Colour	Reel Length	Article-No.
SBPTFE1.5	1.5	0.50	6.0	1.6	8.0	Natural (NA)	5 m	161-45000
SBPTFE4	4	0.70	7.8	5.0	20.0	Natural (NA)	5 m	161-45100
SBPTFE9	9	1.00	12.5	10.0	100.0	Natural (NA)	5 m	161-45200

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



### Edge protection for cut-out sections

Flexiform grommet strips are used to protect cables and wires routed through sharp-edged cutout sections.

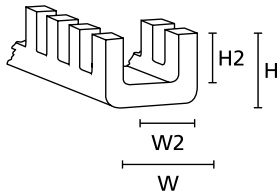
#### Features and Benefits

- Very flexible
- Easily and securely applied without adhesives
- Close-fitting rail for effective, orderly-looking protection
- Excellent resistance to high temperatures and most chemicals



Optimal protection of cables and wires at panel edges.

#### Flexiform G51T PTFE grommet strip



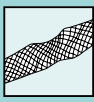
Flexiform edge protection

<b>MATERIAL</b>	Polytetrafluoroethylene (PTFE)
<b>Operating Temperature</b>	-60 °C to +260 °C, intermittent +350 °C
<b>Flammability</b>	UL94 V0



TYPE	Panel Thickness	Width (W)	Width (W2)	Height (H)	Height (H2)	Material	Colour	Pack Cont.	Article-No.
G51TA	0.4 - 1.3	3.9	1.5	4.3	2.7	PTFE	Natural (NA)	3 m	251-30109
G51TB	1.3 - 2.1	4.6	2.4	4.3	2.7	PTFE	Natural (NA)	3 m	251-30209
G51TC	2.1 - 3.3	5.7	3.5	4.3	2.7	PTFE	Natural (NA)	3 m	251-30309
G51TD	3.3 - 4.8	8.4	5.1	6.2	4.3	PTFE	Natural (NA)	3 m	251-30409
G51TE	4.8 - 6.5	9.9	6.7	6.4	4.5	PTFE	Natural (NA)	3 m	251-30509
G51TF	6.5 - 8.1	11.4	8.3	6.8	4.8	PTFE	Natural (NA)	3 m	251-30609
G51TG	8.1 - 9.7	13.2	10.1	6.8	4.8	PTFE	Natural (NA)	3 m	251-30709
G51TH	9.7 - 12.9	16.4	13.2	6.8	4.8	PTFE	Natural (NA)	3 m	251-30809

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content. Flexiform grommet strips are not self-adhesive and therefore not suitable for outer edges.



## Meta-aramid braided sleeving

### Helagaine HEGMAN

Helagaine HEGMAN provides excellent mechanical protection for applications involving high temperatures and fire-protection, particularly in the aerospace, military, railway and ship-building industries.

#### Features and Benefits

- Made of non-flammable meta-aramid
- Extremely flexible
- High expansion for easy installation over long lengths
- Optimal mechanical protection for harnesses
- Able to withstand the most severe environments
- Superior protection against abrasion, flames and high temperatures
- Highly resistant to radiation and fluids



Helagaine HEGMAN and HEGMANWO are available in various sizes.



One Step to the Web!

<b>MATERIAL</b>	Polyaramid Polymetaphenylene Isophthalamide (NOMEX)
<b>Operating Temperature</b>	+240 °C
<b>Melting Point</b>	Does not melt / Carbonisation above +370 °C
<b>Flammability</b>	UL94 V0 (Raw material), UL224 VW-1



TYPE	Bundle Ø min.	Bundle Ø max.	Colour	Reel Length	Article-No.
HEGMAN-02	1.0	2.0	Green (GN)	100 m	170-02100
HEGMAN-04	2.0	4.0	Green (GN)	100 m	170-02101
HEGMAN-06	4.0	8.0	Green (GN)	100 m	170-02102
HEGMAN-08	6.0	12.0	Green (GN)	50 m	170-02103
HEGMAN-10	8.0	16.0	Green (GN)	50 m	170-02104
HEGMAN-15	10.0	20.0	Green (GN)	50 m	170-02105
HEGMAN-20	12.0	24.0	Green (GN)	50 m	170-02106
HEGMAN-25	15.0	30.0	Green (GN)	50 m	170-02107
HEGMAN-30	20.0	40.0	Green (GN)	50 m	170-02108

All dimensions in mm. Subject to technical changes.  
Cuts in any lengths. NOMEX® is a registered trademark of DuPont. Minimum Order Quantity (MOQ) may differ from package content.



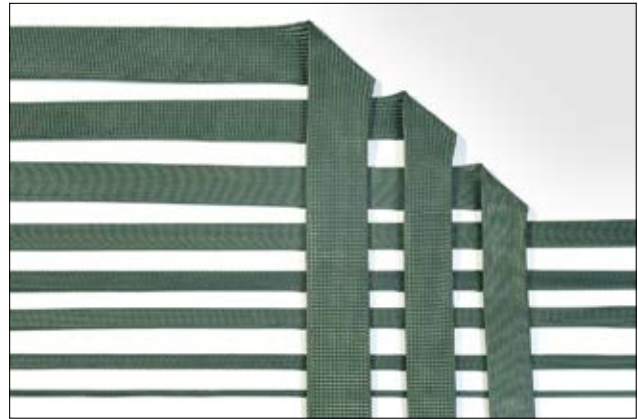
## Water and oil repellent meta-aramid braided sleeving

### Helagain HEGMANWO

Helagain HEGMANWO is especially resistant to water and oil and is designed for applications requiring mechanical protection at high temperatures, particularly in the aerospace, military, railway and ship-building industries.

#### Features and Benefits

- Made of non-flammable meta-aramid
- Water and oil-repellent
- Extremely flexible
- High expansion for easy installation over long lengths
- Optimal mechanical protection for harnesses
- Able to withstand the most severe environments
- Superior protection against abrasion, flames and high temperatures
- Highly resistant to radiation and fluids



Helagain HEGMAN and HEGMANWO are available in various sizes.

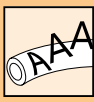
<b>MATERIAL</b>	Polyaramid Polymetaphenylene Isophthalamide (NOMEX)
<b>Operating Temperature</b>	-60 °C to +240 °C
<b>Melting Point</b>	Does not melt / Carbonisation above +370 °C
<b>Flammability</b>	UL94 V0 (Raw material), UL224 VW-1



TYPE	Bundle Ø min.	Bundle Ø max.	Colour	Reel Length	Article-No.
HEGMANWO-02	1.0	2.0	Green (GN)	100 m	170-02000
HEGMANWO-04	2.0	4.0	Green (GN)	100 m	170-02001
HEGMANWO-06	4.0	8.0	Green (GN)	100 m	170-02002
HEGMANWO-08	6.0	12.0	Green (GN)	50 m	170-02003
HEGMANWO-10	8.0	16.0	Green (GN)	50 m	170-02004
HEGMANWO-15	10.0	20.0	Green (GN)	50 m	170-02005
HEGMANWO-20	12.0	24.0	Green (GN)	50 m	170-02006
HEGMANWO-25	15.0	30.0	Green (GN)	50 m	170-02007
HEGMANWO-30	20.0	40.0	Green (GN)	50 m	170-02008

All dimensions in mm. Subject to technical changes.

Cuts in any lengths. NOMEX® is a registered trademark of DuPont. Minimum Order Quantity (MOQ) may differ from package content.



### Identification tags for cable bundle "Ladder Style", thermal transfer

#### TAGHT - High Temperature Tiptags "Ladder Style"

TAGHT is a high temperature, flame retardant, cross linked polyvinylidene fluoride (PVDFX) Tiptag used to identify cables and wire harnesses. The labels are applied to cables and harness assemblies with cable ties, and are also suitable for retrofit purposes. The material has been conditioned for printing on both thermal transfer and laser beam printers. The Tiptags are formatted onto a convenient "ladder" system. Simply print and press out the required Tiptag and apply with cable ties. Print with HellermannTyton's premium range of thermal printers and ribbons or a laser beam marking device.

Printers: TT4000+ and TT430

Ribbon: TTRHT

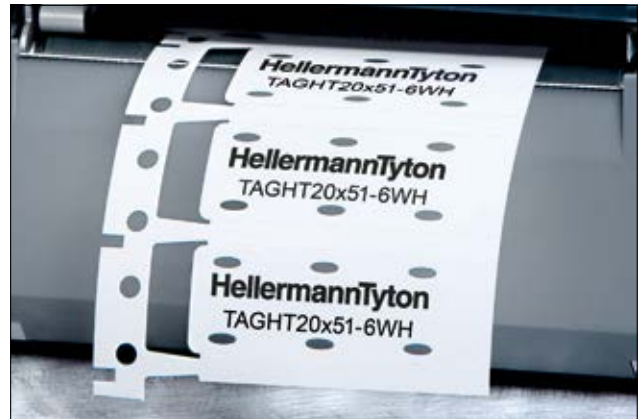
Accessories for TT4000+: Cutter (S4000)

Accessories for TT430: Cutter (S430)

Software: TagPrint Pro

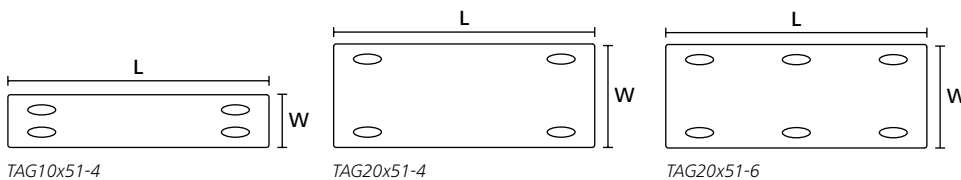
#### Features and Benefits

- TAGHT is a high temperature Tiptag
- Thermal transfer or laser beam printable
- Available in white
- Meets SAE AS-81531 and MIL-STD 202G Method 215 mark permanence tests
- Mark permanence tests of SAE AS-81531 4.6.2 and MIL-STD 202G Method 215; Laser beam YAG (unaffected), thermal transfer ribbon TTRHT (legible)
- Fulfils UL224 VW-1 and CSA requirements
- Good mechanical strength and highly flexible
- Delivery in convenient storage boxes
- Easy label design with TagPrint Pro



TAGHT - High temperature tag to identify cables and wire harnesses.

<b>MATERIAL</b>	Polyvinylidene Fluoride cross-linked (PVDFX)
<b>Operating Temperature</b>	-55 °C to +225 °C
<b>Flammability</b>	UL224 VW-1
<b>Recommended Ribbon Type</b>	TTRHT



TYPE	Length (L)	Width (W)	Pack Cont.	Colour	Article-No.
TAGHT10X51-4WH	51.0	10.0	2,000 pcs.	White (WH)	556-80000
TAGHT20X51-4WH	51.0	20.0	1,000 pcs.	White (WH)	556-80004
TAGHT20X51-6WH	51.0	20.0	1,000 pcs.	White (WH)	556-80002

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval. Please check our website for latest approvals.



## Shrinkable markers "Ladder Style", thermal transfer

### THTT DS - 2:1 Aerospace High Temperature

THTT DS is a 2:1 high temperature, flame retardant, polyvinylidene fluoride (PVDFX) heatshrink printable marker system supplied in a ladder format. The material has been conditioned for printing on both thermal transfer and laser beam printers.

The printed marker is ideal for use in applications where high temperature and exposure to aggressive solutions are found. The markers are supplied pre-cut onto a convenient "ladder" system that allows printing on both sides of the marker. The user can easily choose and pick the required marker. Print with HellermannTyton's premium range of thermal transfer printers and ribbons or a laser beam marking device. A standard heat gun with reflector is used to shrink the sleeves onto the wire or cable to achieve a permanent mark.

Printers: TrakMark DS, TT4000+ and TT430

Ribbon: TTRHT

Accessories for TrakMark DS and TT4000+: Cutter (S4000)

Accessories for TT430: Cutter (S430)

Software: TagPrint Pro

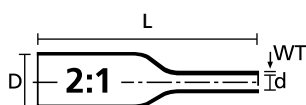
### Features and Benefits

- Shrink ratio 2:1 PVDFX high temperature marker
- Thermal transfer or laser beam printable
- 50 mm and 25 mm pre-cut marker options as standard, other lengths available on request
- Available in white as standard and black on request
- Meets SAE AS-81531 and MIL-STD 202G Method 215 mark permanence tests
- Mark permanence tests of SAE AS-81531 4.6.2 and MIL-STD 202G Method 215K; Laser beam YAG (unaffected), Thermal Transfer ribbon TTRHT (legible)
- Fulfils UL224 VW-1 and CSA requirements
- Good mechanical strength and highly flexible
- Delivery in convenient storage boxes
- Easy label design with TagPrint Pro



THTT DS - High temperature heatshrink printable marker.

<b>MATERIAL</b>	Polyvinylidene Fluoride cross-linked (PVDFX)
<b>Operating Temperature</b>	-55 °C to +225 °C
<b>Minimum Shrink Temperature</b>	+120 °C
<b>Shrink Ratio</b>	2:1
<b>Recommended Ribbon Type</b>	TTRHT

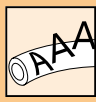


TYPE	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Pack Cont.	Colour	Article-No.
THTT24DS-2x25BK	2.4	1.2	25.0	41.00	2,000 pcs.	Black (BK)	553-72037
THTT24DS-2x25WH	2.4	1.2	25.0	41.00	2,000 pcs.	White (WH)	553-72001
THTT24DS-1x50BK	2.4	1.2	50.0	41.00	1,000 pcs.	Black (BK)	553-72036
THTT24DS-1x50WH	2.4	1.2	50.0	41.00	1,000 pcs.	White (WH)	553-72000
THTT32DS-2x25BK	3.2	1.6	25.0	27.00	2,000 pcs.	Black (BK)	553-72041

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.

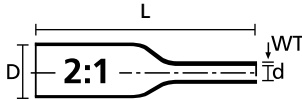


Please note! Not all products listed on this page may have this approval. Please check our website for latest approvals.



### Shrinkable markers "Ladder Style", thermal transfer

#### THTT DS - 2:1 Aerospace High Temperature



TYPE	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Pack Cont.	Colour	Article-No.
THTT32DS-2x25WH	3.2	1.6	25.0	27.00	2,000 pcs.	White (WH)	553-72005
THTT32DS-1x50BK	3.2	1.6	50.0	27.00	1,000 pcs.	Black (BK)	553-72040
THTT32DS-1x50WH	3.2	1.6	50.0	27.00	1,000 pcs.	White (WH)	553-72004
THTT48DS-2x25BK	4.8	2.4	25.0	27.00	2,000 pcs.	Black (BK)	553-72045
THTT48DS-2x25WH	4.8	2.4	25.0	27.00	2,000 pcs.	White (WH)	553-72009
THTT48DS-1x50BK	4.8	2.4	50.0	27.00	1,000 pcs.	Black (BK)	553-72044
THTT48DS-1x50WH	4.8	2.4	50.0	27.00	1,000 pcs.	White (WH)	553-72008
THTT64DS-2x25BK	6.4	3.2	25.0	33.00	2,000 pcs.	Black (BK)	553-72049
THTT64DS-2x25WH	6.4	3.2	25.0	33.00	2,000 pcs.	White (WH)	553-72013
THTT64DS-1x50BK	6.4	3.2	50.0	33.00	1,000 pcs.	Black (BK)	553-72048
THTT64DS-1x50WH	6.4	3.2	50.0	33.00	1,000 pcs.	White (WH)	553-72012
THTT95DS-2x25BK	9.5	4.8	25.0	33.00	1,000 pcs.	Black (BK)	553-72053
THTT95DS-2x25WH	9.5	4.8	25.0	33.00	1,000 pcs.	White (WH)	553-72017
THTT95DS-1x50BK	9.5	4.8	50.0	33.00	500 pcs.	Black (BK)	553-72052
THTT95DS-1x50WH	9.5	4.8	50.0	33.00	500 pcs.	White (WH)	553-72016
THTT127DS-2x25BK	12.7	6.4	25.0	33.00	1,000 pcs.	Black (BK)	553-72057
THTT127DS-2x25WH	12.7	6.4	25.0	33.00	1,000 pcs.	White (WH)	553-72021
THTT127DS-1x50BK	12.7	6.4	50.0	33.00	500 pcs.	Black (BK)	553-72056
THTT127DS-1x50WH	12.7	6.4	50.0	33.00	500 pcs.	White (WH)	553-72020
THTT190DS-2x25BK	19.1	9.5	25.0	43.00	1,000 pcs.	Black (BK)	553-72061
THTT190DS-2x25WH	19.1	9.5	25.0	43.00	1,000 pcs.	White (WH)	553-72025
THTT190DS-1x50BK	19.1	9.5	50.0	43.00	500 pcs.	Black (BK)	553-72060
THTT190DS-1x50WH	19.1	9.5	50.0	43.00	500 pcs.	White (WH)	553-72024
THTT254DS-2x25BK	25.4	12.7	25.0	48.00	600 pcs.	Black (BK)	553-72065
THTT254DS-2x25WH	25.4	12.7	25.0	48.00	600 pcs.	White (WH)	553-72029
THTT254DS-1x50BK	25.4	12.7	50.0	48.00	300 pcs.	Black (BK)	553-72064
THTT254DS-1x50WH	25.4	12.7	50.0	48.00	300 pcs.	White (WH)	553-72028
THTT381DS-2x25BK	38.1	19.1	25.0	50.00	200 pcs.	Black (BK)	553-72069
THTT381DS-2x25WH	38.1	19.1	25.0	50.00	200 pcs.	White (WH)	553-72033
THTT381DS-1x50BK	38.1	19.1	50.0	50.00	100 pcs.	Black (BK)	553-72068
THTT381DS-1x50WH	38.1	19.1	50.0	50.00	100 pcs.	White (WH)	553-72032

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval. Please check our website for latest approvals.



## Shrinkable markers "Continuous Tube", thermal transfer

### THTT - 2:1 Aerospace High Temperature

THTT is a 2:1 high temperature, flame retardant, polyvinylidene fluoride (PVDFX) continuous tube supplied on convenient reels that allows printing on both sides if required. The material has been conditioned for printing on both thermal transfer and laser beam printers. The printed marker is ideal for use in applications where high temperature and exposure to aggressive solutions are found. Print with HellermannTyton's premium range of thermal transfer printers and ribbons or a laser beam marking device. A standard heat gun with reflector is used to shrink the sleeves onto the wire or cable to achieve a permanent mark.

Printers: TrakMark DS, TT4000+ and TT430

Ribbons: TTRHT

Accessories for TrakMark DS and TT4000+: Perforator (P4000), Cutter (S4000)

Accessories for TT430: Cutter (S430), Perforator (P430)

Software: TagPrint Pro 3.0

### Features and Benefits

- Shrink ratio 2:1 PVDFX high temperature tube
- Thermal transfer or laser beam printable
- Available in black and white
- Meets SAE AS-81531 and MIL-STD 202G Method 215 mark permanence tests
- Mark permanence tests of SAE AS-81531 4.6.2 and MIL-STD 202G Method 215; Laser beam YAG (unaffected), Thermal Transfer ribbon TTRHT (legible)
- Fulfils UL224 VW-1 and CSA requirements
- Good mechanical strength and highly flexible
- Delivery in convenient storage boxes
- Easy label design with TagPrint Pro 3.0



THTT - High temperature tube in black and white.

<b>MATERIAL</b>	Polyvinylidene Fluoride cross-linked (PVDFX)
<b>Operating Temperature</b>	-55 °C to +225 °C
<b>Minimum Shrink Temperature</b>	+120 °C
<b>Shrink Ratio</b>	2:1
<b>Recommended Ribbon Type</b>	TTRHT

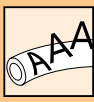


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Pack Cont.	Colour	Article-No.
THTT24BK	2.4	1.2	0.41	110 m	Black (BK)	551-41009
THTT24WH	2.4	1.2	0.41	110 m	White (WH)	551-41000
THTT32BK	3.2	1.6	0.27	110 m	Black (BK)	551-41010
THTT32WH	3.2	1.6	0.27	110 m	White (WH)	551-41001
THTT48BK	4.8	2.4	0.27	110 m	Black (BK)	551-41011
THTT48WH	4.8	2.4	0.27	110 m	White (WH)	551-41002
THTT64BK	6.4	3.2	0.33	110 m	Black (BK)	551-41012
THTT64WH	6.4	3.2	0.33	110 m	White (WH)	551-41003
THTT95BK	9.5	4.8	0.33	72 m	Black (BK)	551-41013

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



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### Shrinkable markers "Continuous Tube", thermal transfer

**THTT - 2:1 Aerospace High Temperature**



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Pack Cont.	Colour	Article-No.
THTT95WH	9.5	4.8	0.33	72 m	White (WH)	551-41004
THTT127BK	12.7	6.4	0.33	54 m	Black (BK)	551-41014
THTT127WH	12.7	6.4	0.33	54 m	White (WH)	551-41005
THTT190BK	19.0	9.5	0.43	26 m	Black (BK)	551-41015
THTT190WH	19.0	9.5	0.43	26 m	White (WH)	551-41006
THTT254BK	25.4	12.7	0.48	26 m	Black (BK)	551-41016
THTT254WH	25.4	12.7	0.48	26 m	White (WH)	551-41007
THTT381BK	38.1	19.1	0.50	10 m	Black (BK)	551-41017
THTT381WH	38.1	19.1	0.50	10 m	White (WH)	551-41008

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.

Further product variants are available  
in our automotive catalogue.



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### The rEVolution of perfect processing with TLC technology (Tension / Lock / Cut).

#### Perfect cutting made easy with the EVO family:

From precise preliminary settings to the perfect cut, the EVO family allows for an even lighter, gentler and easier cable tie application than ever before.

The patent-pending TLC technology makes all the difference!



#### 1. Tension

Tension the cable tie as usual. Use the tension adjustment knob to select the desired tension setting.



#### 2. Lock

The patent-pending locking mechanism detects when the desired tension is reached, locking the tie in place prior to cutting. No manual pressure is required to hold the cable tie in place.



#### 3. Cut

For the final cut, very little effort is needed. By simply pulling the trigger enough to cut the tie, a precise finish can be achieved without excessive strain on the user.





### Manual Tensioning Tool with Plastic Housing

#### EVO7 up to 4.8 mm strap width

HellermannTyton's EVO7 mechanical hand tool was ergonomically designed to reduce the risks of repetitive stress injuries to operators while concurrently increasing productivity. The EVO7 Tension/Lock/Cut Technology delivers performance, safety and comfort for the operators. Available in a standard grip span (EVO7) or short grip span (EVO7SP), for smaller hands. Additional accessories are available.

#### Features and Benefits

- Ergonomic, slip-proof handle for a comfortable and secure grip
- Extremely low maintenance
- Fast and precise application with minimum effort (TLC mechanism)
- Convenient and simple tension adjustment
- Extended, slim nose for use in narrow spaces
- Housing made of resilient and lightweight glass fibre-reinforced polyester
- Standard grip span (90 mm) and short grip span (80 mm) available



The EVO7: Maximum performance with minimum effort.

TYPE	Description	Strap Width max.	Strap Thickness max.	Weight	Article-No.
EVO7	EVO7	4.8	1.5	0.28 kg	110-70129
EVO7SP	EVO7SP	4.8	1.5	0.28 kg	110-70130
BLADEKIT	Blade-Kit	-	-	-	110-70106

All dimensions in mm. Subject to technical changes.



Please note! Not all products listed on this page may have this approval. Please check our website for latest approvals.

### Manual Tensioning Tool Plastic Housing

#### EVO9 up to 13 mm strap width

The EVO9 is available in a standard grip span 90 mm (EVO9) or short grip span 80 mm (EVO9SP), for smaller hands. Both tools perform between 53N and 307N. The EVO9HT is the "high tension" version of the EVO9 family. Developed for maximum tensile strength this tool performs between 120N and more than 516N. The EVO9 family was designed to apply HellermannTyton cable ties with a maximum width of 13 mm.

#### Features and Benefits

- Standard grip span (90 mm) and short grip span (80 mm) available
- Ergonomic, slip-proof handle for a comfortable and secure grip
- Extremely low maintenance
- Fast and precise application with minimum effort (TLC mechanism)
- Convenient and simple tension adjustment
- Integrated 3 position quick adjustment override
- Housing made of resilient and lightweight glass fibre-reinforced polyester



The EVO9 with TLC-Technology.

TYPE	Description	Strap Width max.	Strap Thickness max.	Weight	Article-No.
EVO9	EVO9	13.0	2.0	0.36 kg	110-80002
EVO9SP	EVO9SP	13.0	2.0	0.36 kg	110-80003
EVO9HT	EVO9HT	13.0	2.0	0.36 kg	110-80017
Replacement Blade	EVO9 Blade	13.0	2.0	-	110-80037

All dimensions in mm. Subject to technical changes.





### Manual Tensioning Tool for KR-Series

#### KR6/8

Application tool KR6/8 crimps the glass-fibre-reinforced locking pin of the KR seal and leads to plastic deformation of the tie ends. This produces a very permanent connection.

#### Features and Benefits

- Tough metal tool
- For applying KR-cable ties only
- For tensioning, fixing and cutting KR-cable ties
- Simply change the front plate to apply two different strap widths: 6 mm and 8 mm



KR6/8.

TYPE	Description	For Ties	Strap Width max.	Weight	Article-No.
KR6/8	KR6/8	KR6, KR8	8.0	0.52 kg	121-00680
SP KR6/8 replacement blade	-	KR6, KR8	-	0.01 kg	122-68019

All dimensions in mm. Subject to technical changes.

### Pneumatic Tensioning Tool for KR-Series

#### KR8PNSE

Application tool KR8PNSE crimps the glass-fibre-reinforced locking pin of the KR seal and leads to plastic deformation of the tie ends. This produces a very permanent connection.

#### Features and Benefits

- Tough metal tool
- Pneumatic
- For applying KR-cable ties only
- For tensioning, fixing and automatically cutting KR-cable ties
- Tensioning force can be adapted with the air pressure
- Holding ring for a balancer



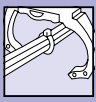
KR8PNSE.

TYPE	Description	For Ties	Strap Width max.	Weight	Article-No.
KR8PNSE	KR8PNSE	KR8	8.0	1.56 kg	121-00889
SP KR8PNSE replacement blade	ET KR8PN-SERIE 061-21077	KR8	-	0.01 kg	122-80032

All dimensions in mm. Subject to technical changes.



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### Automatic bundling up to Ø 20 mm

#### Autotool 2000 CPK

The reliability, ergonomics, simple handling and flexibility makes the Autotool 2000 CPK ideal for a variety of high volume applications, e.g. in cable assemblies for automotive, brown and white goods industry, electronics, TV and domestic appliances, sealing of bags and the bundling of parts. Overall the Autotool 2000 CPK gives full, flexible and cost effective utilization of labour and maximises efficiency.

With the Bench Mount Kit CPK or the Overhead Suspension CPK the Autotool 2000 CPK can be used stationary or mobile, depending on the customer's application.

Another option is to integrate the AT2000 CPK into a fully automated production line by using the Power Pack with integrated Control Box, which is the interface between the AT2000 CPK and your production line.

#### Features and Benefits

- Evolutionary model combining long-term customer experience and requirements
- Electronically operated automatic bundling system
- Speeds up the bundling process
- Consistency and quality in the process of threading, tensioning and cutting
- Bundling with flush cut off / optional with excess tail
- Several languages available
- Service Software - Extensive data analysis with included PC software possible, Production Data Acquisition (PDA)
- Tensioning drive completely controlled and monitored electronically
- High reproducibility of the bundling results
- Adjustable cycle time settings between 0.8–1.4 sec.
- Removable handle for full automation
- Troubleshooting via menu navigation



One Step to the Web!

<b>Power Supply</b>	Electronically, with Power Pack CPK
<b>Cycle Time</b>	adjustable 0.8 sec to 1.4 sec.
<b>Weight</b>	1.8 kg
<b>Tension Force</b>	adjustable



TYPE	Article-No.
<b>Autotool 2000 CPK</b>	106-00000

Subject to technical changes.



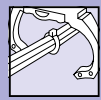
Autotool 2000 CPK.



Autotool 2000 CPK Service Software.



Power Pack CPK for Autotool 2000 CPK.



### Automatic bundling up to Ø 20 mm

#### Accessories for Autotool 2000 CPK

#### Features and Benefits

- Can be used stationary or mobile with bench mount kit or overhead suspender
- Integration into a fully automated production line
- Switching Power Pack - Input: 100-230 VAC, 50/60 Hz; Output: 24.5 VDC, max. 150 W
- Switching Power Pack with Control Box - needed for fully automated applications
- Bench Mount Kit - tool and tie reel stand including foot pedal
- Overhead Suspender and tie reel stand including balancer
- Stand-off HH20 - used as a spacer for optimal bundling, max. bundle diameter 20 mm, bundle height 25-45 mm



Bench Mount Kit CPK included Foot Pedal, Autotool 2000 CPK, Power Pack CPK and T18RA3500.



Application with the Bench Mount Kit CPK.



Overhead Suspension CPK, Autotool 2000 CPK, Power Pack CPK and T18RA3500.

TYPE	Description	Article-No.
<b>Bench Mount Kit CPK</b>	Bench Mount Kit CPK	106-00040
<b>Overhead Suspension CPK</b>	Overhead Suspension CPK	106-00050
<b>Power Pack CPK</b>	Power Pack CPK	106-00100
<b>Power Pack CPK with Control Box</b>	Power Pack CPK with Control Box	106-00110
<b>HH20</b>	Stand Off HH20	120-00080

Subject to technical changes.



### Pneumatic Tensioning Tool with Metal Housing

#### MK3PNSP2 up to 4.8 mm strap width

#### Features and Benefits

- Pneumatic tensioning tool
- Tough metal housing
- For cable ties up to 4.8 mm width
- For consistent tensioning and automatically flush cutting
- Infinitely adjustable tension force
- High application speed
- Reliable and low maintenance



MK3PNSP2.

<b>Air Supply</b>	Non oiled / oiled
<b>Air Pressure (min.)</b>	3 Bar
<b>Air Pressure (max.)</b>	6 Bar
<b>Hose Internal Diameter</b>	4.0 mm
<b>L x H x W</b>	approx. 225 x 140 x 40mm



TYPE	Description	Strap Width max.	Strap Thickness max.	Weight	Article-No.
MK3PNSP2	MK3PNSP2	4.8	1.5	0.56 kg	110-03400
SP compressed air hose	Air hose, complete	-	-	0.35 kg	110-30002
SP MK3PNSP2 cutting blade	-	-	-	0.01 kg	110-30101

All dimensions in mm. Subject to technical changes.



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### Pneumatic Tensioning Tool with Plastic Housing

#### MK7P up to 4.8 mm strap width

The MK7P pneumatic bundling tool sets a new benchmark for the rational application of ties in the industrial production process. Improved compressed air supply moves the tensioning piston faster than in comparable tools.

#### Features and Benefits

- Pneumatic tensioning tool
- Light glass-fibre-reinforced housing
- For cable ties up to 4.8 mm width
- For consistent tensioning and automatically flush cutting
- Infinitely adjustable tension force
- High application speed



MK7P.



The easy to use quick-set-knob.

<b>Air Supply</b>	Non oiled / oiled
<b>Air Pressure (min.)</b>	3 Bar
<b>Air Pressure (max.)</b>	6 Bar
<b>Hose Internal Diameter</b>	4.0 mm
<b>L x H x W</b>	approx. 220 x 170 x 40 mm



TYPE	Description	Strap Width max.	Strap Thickness max.	Weight	Article-No.
MK7P	MK7P	4.8	1.5	0.43 kg	110-07100
SP compressed air hose	Air hose, complete	-	-	0.35 kg	110-30002
SP MK7P replacement blade	Replacement Blade	-	-	0.01 kg	110-07111
SP lock cap tensioning knob	Lock cap tensioning knob	-	-	0.01 kg	110-07200

All dimensions in mm. Subject to technical changes.



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### Pneumatic Tensioning Tool with Plastic Housing

#### MK9P up to 13.5 mm strap width

The MK9P is constructed with heavy duty parts to ensure optimum performance. It is ideally designed to apply heavy-duty ties that are used in vehicle construction such as trucks, busses and railways.

#### Features and Benefits

- Pneumatic tensioning tool
- Glass-fibre-reinforced housing
- For cable ties up to 13.5 mm width
- For consistent tensioning and automatically flush cutting
- Infinitely adjustable tension force
- High application speed
- Holding ring for a balancer
- Option of lower or upper air attachment



MK9P.



MK9P is also available with upper air attachment.

<b>Air Supply</b>	Non oiled / oiled
<b>Air Pressure (min.)</b>	3 Bar
<b>Air Pressure (max.)</b>	6 Bar
<b>Hose Internal Diameter</b>	4.0 mm
<b>L x H x W</b>	approx. 280 x 200 x 55mm



TYPE	Description	Strap Width max.	Strap Thickness max.	Weight	Air att. Position	Article-No.
MK9P	MK9P	13.5	2.5	0.91 kg	Lower air connection	110-09100
	MK9P	13.5	2.5	0.91 kg	Top air connection	110-09110
SP compressed air hose	Air hose, complete	-	-	0.35 kg	-	110-30002
SP lock cap tensioning knob	Lock cap tensioning knob	-	-	0.01 kg	-	110-07200
SP MK9P replacement blade	-	-	-	0.01 kg	-	110-09111

All dimensions in mm. Subject to technical changes.



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