



In 1898 Thomas & Betts was founded in New York. The corporate head quarters now reside in Memphis, Tennessee with the company being listed on the New York stock exchange. Thomas & Betts has now over 100 years of experience of successfully supplying quality products to the market by using innovative design and manufacturing techniques. Thomas & Betts is a global player having presence in Europe, North & Central America, Australia and the Far- & Middle East. Worldwide the 12,000 employees are dedicated to ensuring that Thomas & Betts is fast, flexible and customer focused.

The basis of Thomas & Betts product superiority has always been innovative engineering. No other company can match our record of "firsts" in product development that increases performance whilst reducing installation time and human error. To name three:

The first Solderless Lug, a boost to safety in complex electrical installations.

Color-Keyed® system of compression connectors designed to ensure that proper installation procedures were used, quickly became the industry standard.

The original Ty-Rap® cable ties were introduced to manage complex wire harnesses used in aircraft manufacturing. The Ty-Rap® cable ties are designed to make the task of fastening, bundling, clamping and

managing wires easier and quicker for professional applications as well as home improvement specialists and do-it-yourself enthusiasts and can be used in the most adverse conditions: heat, humidity, cold... When reliability and performance are required, knowledgeable professionals turn to the original Ty-Rap® cable tie.

The first Ty-Rap® cable ties were used in 1958, which means that in 2008 we celebrate the 50th anniversary of Ty-Rap®.

The European Headquarters are located at Rhode-St-Genèse near Brussels. From a logistics point of view we have a Centralised European Distribution Centre in La Louvière, Belgium, supplying to our customers throughout Europe. Our manufacturing sites throughout Europe include Germany, France, Hungary, UK and The Netherlands.

Whilst one of our main business remains in the Electrical Products, Thomas & Betts also has leading brands along with significant market share in Emergency Lighting, Safety Systems, Steel Structures, Communications, Electronic Systems Protection, Earthing and Lightning protection.

Maintaining the technical excellence of existing products along with new product innovation is part of our core competence as we continue to provide competitive solutions to our customers across the world.





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## ITALY

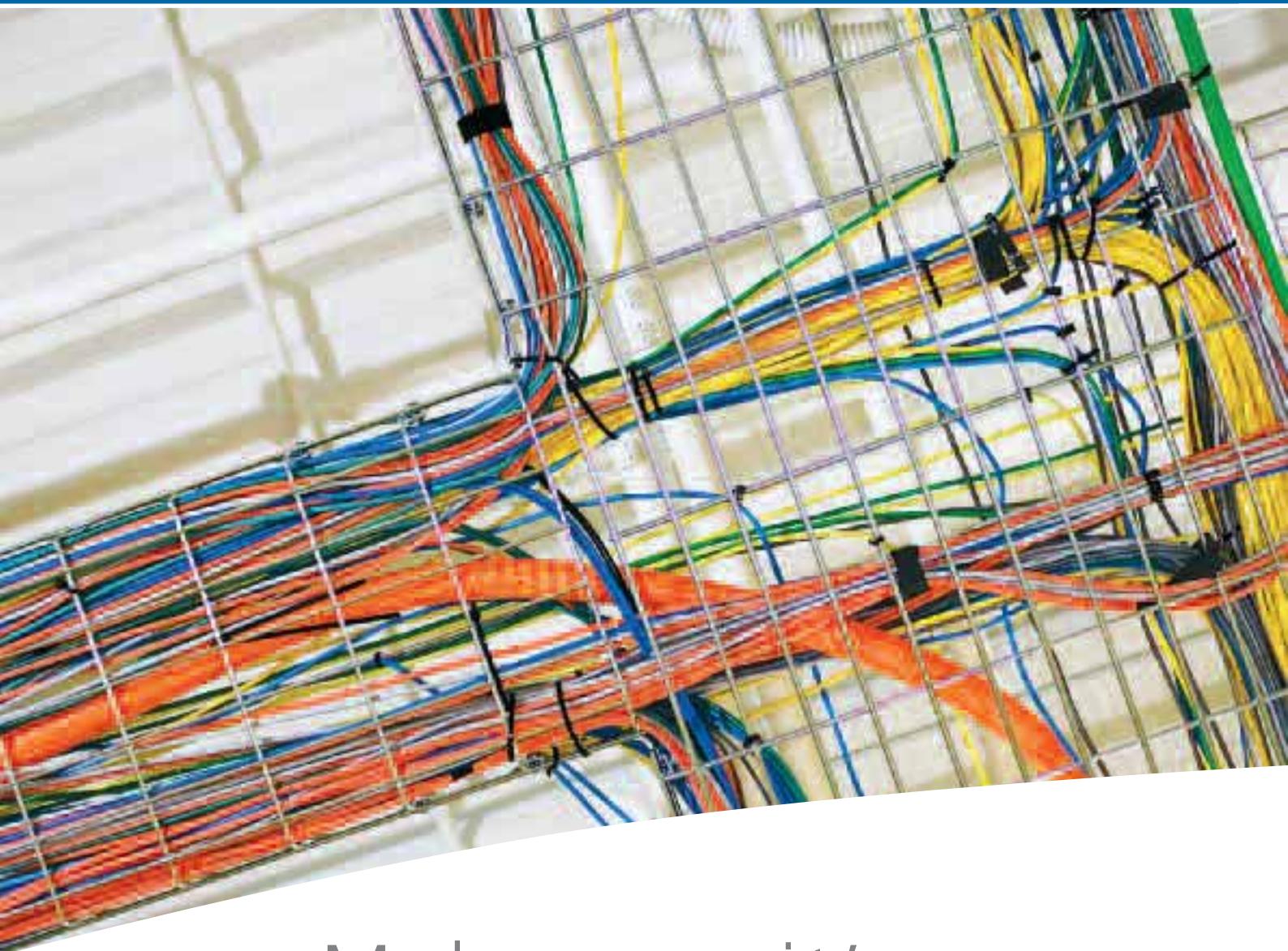
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spring steel fasteners****146****Heat shrink systems****224****Conduit & fittings****260****Termination systems****338****Index****446**



Make sure it's secure  
with Ty-Rap® cable ties

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# Make sure it's secure with Ty-Rap® cable ties

**Thomas & Betts invented the Ty-Rap® cable tie to solve the problem of harnessing the hundreds of wires used in manufacturing aircraft and revolutionised the world of fastening. Today, the Ty-Rap® brand remains the benchmark for excellence and innovation in wire management.**

Thomas & Betts' broad offering of cable ties is designed to make the task of fastening, bundling, clamping and managing wires easier and quicker for industrial applications, construction, communications, utility and OEM professionals as well as home improvement specialists and do-it-yourself enthusiasts.



*Ty-Rap® Premium Cable Ties with  
Steel Locking Barb to bundle,  
secure and manage your cables*

When strength, aesthetics, reliability and performance are required, knowledgeable professionals turn to the original and the best source for cable ties and accessories.

The corrosion-proof, non-magnetic stainless steel locking device inside the tie head guarantees the strongest and most durable locking you will ever find on the market. Ty-Rap® can be used in the most adverse conditions: humidity, heat, cold,...

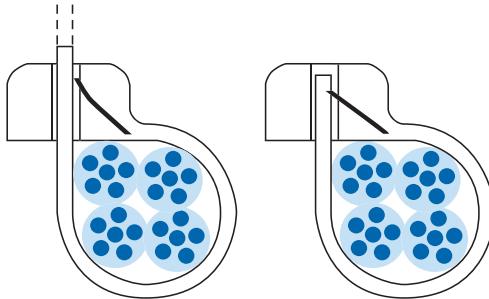
Engineered for labour savings and high performance, Ty-Rap® cable ties are commonly used in a variety of applications.

When you choose a Ty-Rap® cable tie from Thomas & Betts, you can count on quality, performance and innovation to make your work easier.

## Features & Benefits

Premium cable ties with steel locking barb

**1** "The Grip of Steel" Non-Magnetic Stainless Steel Locking Barb – marine grade type 316 - that firmly anchors inside the tie head, ensures a strong, reliable and long lasting fastening under adverse conditions.



**2** Rounded Edges, on the head and the strap, provide a comfortable handling of the ties and prevent sharp edges from damaging the cables. This gradual transition from the strap to the head protects the material against breaking at this most critical point. The edges of the head are also rounded off to offer maximum protection from injury.

**3** Smooth, Notchless Body, reduces stress concentration points, making the Ty-Rap® ties stronger and thinner than conventional ties with notched bodies. The low-profile design of the head allows secure tying in tight spaces. No serration, means infinite adjustment (tensioned right every time).

1

**4** Ribbed and Stippled Surface, to prevent the tie from slipping around and along the bundle under vibration conditions and external shock.

**5** Angled Tail (turned up) for fast and easy insertion into the locking head and ideally suited to being picked up from a flat work area.

**6** Non-Slip Tail, for an easy grip and pulling through the head during tensioning.

**7** Extensive Range of Approvals: Germanischer Lloyd, Lloyd's Register of Shipping, Bureau Veritas, UL, VG and MIL.

3

**8** Most Extensive Choice of Special Materials: in addition to Polyamide 6.6 (standard, UV-resistant, heat stabilised, flame retardant, heat stabilised / UV-resistant), Polyamide 4.6 (extra high temperature) and Polyamide 12, the Ty-Rap® ties are available in Polypropylene, Fluoropolymer (ECTFE), Fluoropolymer (ETFE) and the recently introduced Detectable Polyamide 6.6 and Detectable Polypropylene. UL 94 V-0, UL 94 V-2 and UL 94 HB.



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5



### Wide Range of Size Combinations:

several lengths up to 1143 mm, in 6 typical widths with a tensile strength up to 780N, to fasten cable bundles with a diameter up to 330mm.

9

### Wide Choice of Colours:

10 standard colours are available, along with a range of special colours and the capability to supply customised pre-printed ties on demand, in any one of the 10 standard colours.

10

### Dedicated Tooling,

to ensure that the excess end of the Ty-Rap® tie is automatically cut off and the slight over cut retracts into the head, eliminating the risk of injury from protruding sharp edges.

11

2

### Different Types of Packaging,

including the unique "workbench boxes" for fast working without problems or losses. Recyclable packaging for a better contribution to the environment.

12

4

### Outstanding Range of Special Ties,

all with the famous stainless steel locking device: ties with mounting hole or integrated peg/nail, panel mounting ties, identification ties with integrated label,...

13

### Broad Range of Mounting Bases and Accessories.

14



UV-resistant



Flame retardant



Heat resistant



Weather-proof



Low temperature flexibility



Radiation resistant



Chemically resistant



Low smoke



Detectable

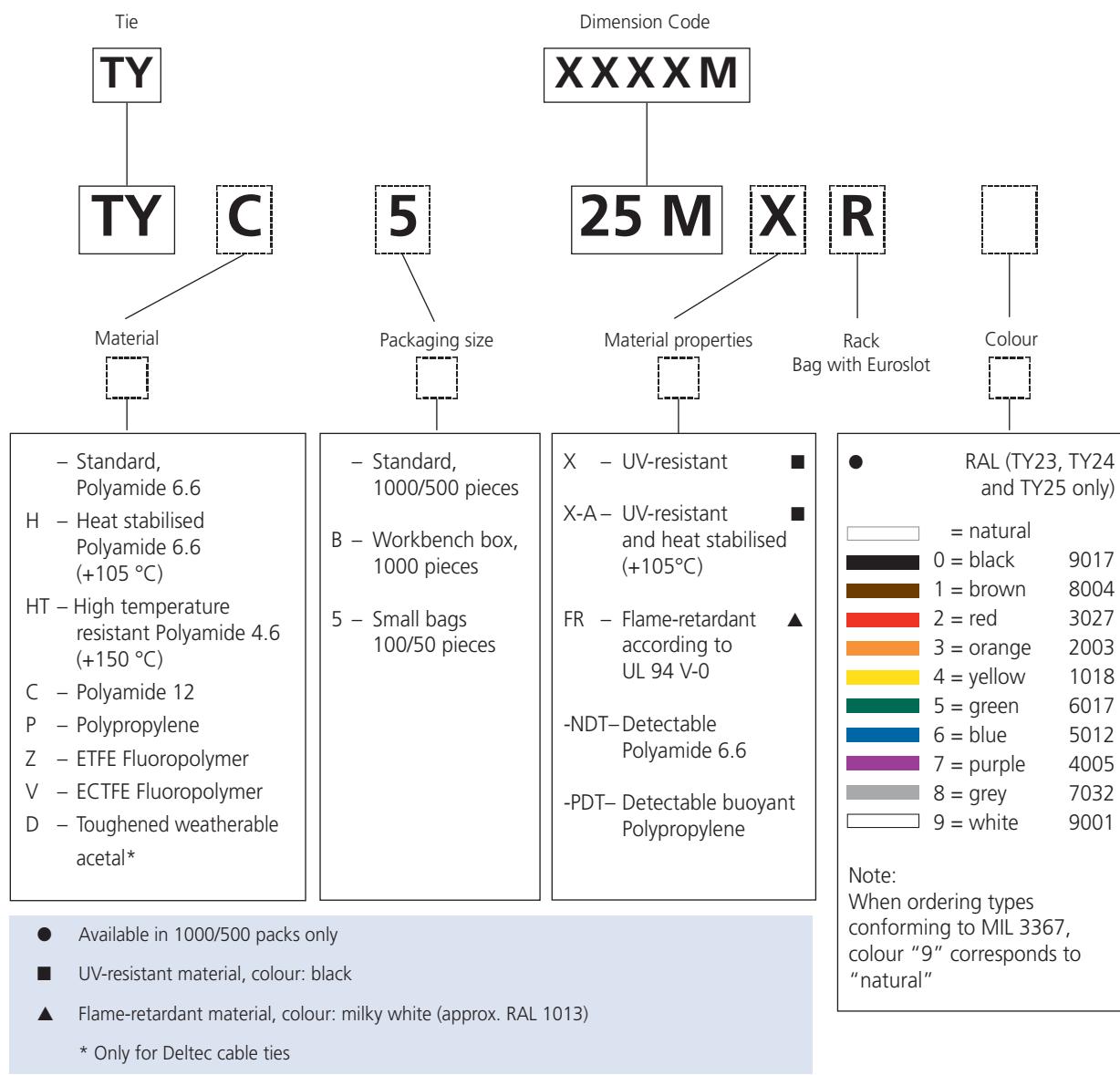
## Product reference structure

*Premium cable ties with steel locking barb*



To the standard Product Reference, you can add special order codes for: material, packaging size, material properties and colours.

Example:



Note: Nylon (Polyamide) is inherently susceptible to environmental conditions. Ty-Rap® cable ties are moisturised to optimum performance levels at machine-side and should be stored in cool dry areas out of direct sunlight. Cable ties are packaged in plastic bags to contain moisture and should remain sealed until ready for use.

## Polyamide 6.6 cable ties - Natural

Premium cable ties with steel locking barb

The main characteristics of the Ty-Rap® cable ties are shown on pages 8 and 9.

- Standard version (Polyamide 6.6), to cover most indoor applications
- Several lengths and 6 typical widths with a tensile strength up to 780N, to cover the most demanding applications
- Wide range of colours
- Packaging: OEM bulk quantities in recyclable polythene bags
- Also available in small bags with Euroslot (see page 13) and in workbench boxes (see page 15)

### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Natural (other colours see page 16)
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



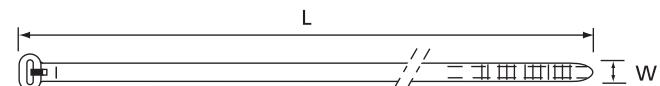
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TYPE APPROVED



BUREAU VERITAS



Product Ref.	MIL Spec.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TY23M	MS-3367-4	92	2.4	1.0	2 - 16	80	1000	
TY232M	-	203	2.4	1.0	2 - 50	80	1000	
TY234M	-	356	2.4	1.0	2 - 102	80	1000	
TY24M	MS-3367-5	140	3.6	1.1	2 - 29	180	1000	
TY242M	-	204	3.6	1.1	2 - 50	180	1000	
TY26M	-	284	3.6	1.1	2 - 76	130	1000	
TY244M	-	368	3.6	1.1	2 - 103	130	1000	
TY25M	MS-3367-1	186	4.8	1.3	3.5 - 45	220	1000	ERG50
TY253M	MS-3367-7	295	4.8	1.3	3.5 - 78	220	1000	ERG120
TY28M	MS-3367-2	361	4.8	1.4	3.5 - 102	220	1000	WT193A
TY271M	-	150	7.6	1.5	6 - 31	540	500	
TY272M	-	223	6.9	1.6	6 - 50	540	500	
TY27M	MS-3367-3	340	6.9	1.6	6 - 90	540	500	ERG120
TY275M	-	457	6.9	1.6	6 - 127	540	500	L-500-EU
TY277M	-	617	6.9	1.6	6 - 177	540	500	
TY29M	MS-3367-6	771	6.9	1.5	6 - 229	540	500	
TY53510M	-	889	8.2	1.7	to 254	780	50	WT3D
TY54513M	-	1143	8.2	1.7	to 330	780	50	L-500-EU

Description of product reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

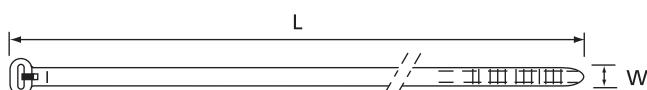
\* Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations

## Polyamide 6.6 cable ties - UV-resistant black

Premium cable ties with steel locking barb



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The main characteristics of the Ty-Rap® cable ties are shown on pages 8 and 9.

- UV-resistant version, especially recommended for outdoor applications
- Also available in heat stabilised + UV-resistant version, for outdoor applications that also require a resistance to high temperature (+105 °C). See page 20 (TY...MX-A series)
- Several lengths and 6 typical widths with a tensile strength up to 780N, to cover the most demanding applications
- Packaging: OEM bulk quantities in recyclable polythene bags
- Also available in small bags with Euroslot (see page 14) and in workbench boxes (see page 15)

### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Black
Flammability rating	UL 94 V-2
Other properties	UV-resistant, Halogen free, Silicone free

Product Ref.	MIL Spec.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TY23MX	MS-3367-4	92	2.4	1.0	2 - 16	80	1000	
TY232MX	-	203	2.4	1.0	2 - 50	80	1000	
TY234MX	-	356	2.4	1.0	2 - 102	80	1000	ERG50 WT193A
TY24MX	MS-3367-5	140	3.6	1.1	2 - 29	180	1000	
TY242MX	-	204	3.6	1.1	2 - 50	180	1000	
TY26MX	-	284	3.6	1.1	2 - 76	130	1000	
TY244MX	-	368	3.6	1.1	2 - 103	130	1000	
TY25MX	MS-3367-1	186	4.8	1.3	3.5 - 45	220	1000	ERG50
TY253MX	MS-3367-7	295	4.8	1.3	3.5 - 78	220	1000	ERG120
TY28MX	MS-3367-2	361	4.8	1.4	3.5 - 102	220	1000	WT193A
TY271MX	-	150	7.6	1.5	6 - 31	540	500	
TY272MX	-	223	6.9	1.6	6 - 50	540	500	
TY27MX	MS-3367-3	340	6.9	1.6	6 - 90	540	500	ERG120 L-500-EU
TY275MX	-	457	6.9	1.6	6 - 127	540	500	
TY277MX	-	617	6.9	1.6	6 - 177	540	500	
TY29MX	MS-3367-6	771	6.9	1.5	6 - 229	540	500	
TY53510MX	-	889	8.2	1.7	to 254	780	50	WT3D
TY54513MX	-	1143	8.2	1.7	to 330	780	50	L-500-EU

Description of product reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

\* Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations

# Polyamide 6.6 cable ties - Natural - Euroslot packaging

Premium cable ties with steel locking barb

The main characteristics of the Ty-Rap® cable ties are shown on pages 8 and 9.

- Standard version (Polyamide 6.6), to cover most indoor applications
- Packaging in small polythene bags with Euroslot, ideal for display and point-of-sales promotion (rack)
- Several lengths and 6 typical widths with a tensile strength up to 780N, to cover the most demanding applications
- Very convenient for small series production: 100 pieces (for cable ties from 2.4 mm to 4.8 mm width) or 50 pieces (for cable ties 7.0 mm width and above)

## Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Natural**
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



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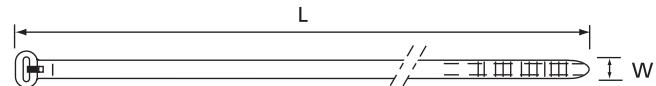
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TYPE APPROVED



BUREAU VERITAS



Product Ref.	MIL Spec.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TY523MR	MS-3367-4	92	2.4	1.0	2 - 16	80	100	
TY5232MR	-	203	2.4	1.0	2 - 50	80	100	
TY5234M*	-	356	2.4	1.0	2 - 102	80	100	
TY524MR	MS-3367-5	140	3.6	1.1	2 - 29	180	100	
TY5242MR	-	204	3.6	1.1	2 - 50	180	100	
TY526MR	-	284	3.6	1.1	2 - 76	130	100	
TY5244MR	-	368	3.6	1.1	2 - 103	130	100	
TY525MR	MS-3367-1	186	4.8	1.3	3.5 - 45	220	100	ERG50
TY5253MR	MS-3367-7	295	4.8	1.3	3.5 - 78	220	100	ERG120
TY528MR	MS-3367-2	361	4.8	1.4	3.5 - 102	220	100	WT193A
TY5271MR	-	150	7.6	1.5	6 - 31	540	50	
TY5272MR	-	223	6.9	1.6	6 - 50	540	50	
TY527MR	MS-3367-3	340	6.9	1.6	6 - 90	540	50	ERG120
TY5275M*	-	457	6.9	1.6	6 - 127	540	50	L-500-EU
TY5277M*	-	617	6.9	1.6	6 - 177	540	50	
TY529M*	MS-3367-6	771	6.9	1.5	6 - 229	540	50	

\* Product References TY5234M, TY5275M, TY5277M and TY529M have no Euroslot

\*\* For other colours, please contact your Sales Office

\*\*\* Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

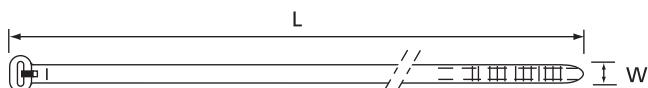
For tooling specifications: see pages 122 to 133

## Polyamide 6.6 cable ties - UV-resistant black - Euroslot packaging

Premium cable ties with steel locking barb



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The main characteristics of the Ty-Rap® cable ties are shown on pages 8 and 9.

- UV-resistant version, especially recommended for outdoor applications
- Packaging in small polythene bags with Euroslot, ideal for display and point-of-sales promotion (rack)
- Several lengths and 6 typical widths with a tensile strength up to 780N, to cover the most demanding applications
- Very convenient for small series production: 100 pieces (for cable ties from 2.4 mm to 4.8 mm width) or 50 pieces (for cable ties 7.0 mm width and above)

### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Black
Flammability rating	UL 94 V-2
Other properties	UV-resistant, Halogen free, Silicone free

Product Ref.	MIL Spec.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TY523MXR	MS-3367-4	92	2.4	1.0	2 - 16	80	100	
TY5232MXR	-	203	2.4	1.0	2 - 50	80	100	
TY5234MX*	-	356	2.4	1.0	2 - 102	80	100	
TY524MXR	MS-3367-5	140	3.6	1.1	2 - 29	180	100	
TY5242MXR	-	204	3.6	1.1	2 - 50	180	100	
TY526MXR	-	284	3.6	1.1	2 - 76	130	100	
TY5244MXR	-	368	3.6	1.1	2 - 103	130	100	
TY525MXR	MS-3367-1	186	4.8	1.3	3.5 - 45	220	100	
TY5253MXR	MS-3367-7	295	4.8	1.3	3.5 - 78	220	100	
TY528MXR	MS-3367-2	361	4.8	1.4	3.5 - 102	220	100	
TY5271MXR	-	150	7.6	1.5	6 - 31	540	50	
TY5272MXR	-	223	6.9	1.6	6 - 50	540	50	
TY527MXR	MS-3367-3	340	6.9	1.6	6 - 90	540	50	
TY5275MX*	-	457	6.9	1.6	6 - 127	540	50	
TY5277MX*	-	617	6.9	1.6	6 - 177	540	50	
TY529MX*	MS-3367-6	771	6.9	1.6	6 - 229	540	50	

\* Product References TY5234MX, TY5275MX, TY5277MX and TY529MX have no Euroslot

\*\* Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Polyamide 6.6 cable ties - Workbench boxes

Premium cable ties with steel locking barb

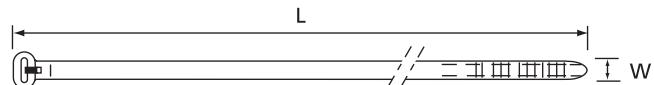
- An attractive packaging option for high volume manual assembly: 1000 pieces in a workbench box - easy to reach, hence timesaving
- This user-friendly packaging allows fast working without problems or losses

### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Natural or UV-resistant black**
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free, UV-resistant (black)



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Product Ref.	MIL Spec.	Colour	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TYB23M	MS-3367-4	natural	92	2.4	1.0	2 - 16	80	1000	
TYB23MX	MS-3367-4	UV-resistant black	92	2.4	1.0	2 - 16	80	1000	
TYB232M	-	natural	203	2.4	1.0	2 - 50	80	1000	
TYB232MX	-	UV-resistant black	203	2.4	1.0	2 - 50	80	1000	ERG50 WT193A
TYB24M	MS-3367-5	natural	140	3.6	1.1	2 - 29	180	1000	
TYB24MX	MS-3367-5	UV-resistant black	140	3.6	1.1	2 - 29	180	1000	
TYB25M	MS-3367-1	natural	186	4.8	1.3	3.5 - 45	220	1000	ERG50, ERG120
TYB25MX	MS-3367-1	UV-resistant black	186	4.8	1.3	3.5 - 45	220	1000	WT193A

\* Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations

\*\* For other colours, please contact your Sales Office.

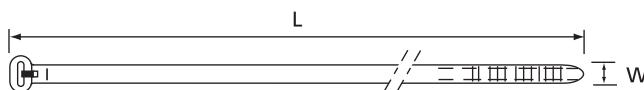
Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Polyamide 6.6 cable ties - Coloured

Premium cable ties with steel locking barb



- Wide choice of colours: 10 standard colours are available, along with a range of special colours and the capability to supply customised pre-printed ties on demand, in any one of the 10 standard colours.
- Several lengths and 6 typical widths with a tensile strength up to 780N, to cover the most demanding applications

### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	See table
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free

Product Ref.	MIL Spec.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TY23M-*	MS-3367-4	92	2.4	1.0	2 - 16	80	1000	
TY232M-*	-	203	2.4	1.0	2 - 50	80	1000	
TY234M-*	-	356	2.4	1.0	2 - 102	80	1000	ERG50
TY24M-*	MS-3367-5	140	3.6	1.1	2 - 29	180	1000	WT193A
TY242M-*	-	204	3.6	1.1	2 - 50	180	1000	
TY26M-*	-	284	3.6	1.1	2 - 76	130	1000	
TY244M-*	-	368	3.6	1.1	2 - 103	130	1000	
TY25M-*	MS-3367-1	186	4.8	1.3	3.5 - 45	220	1000	ERG50
TY253M-*	MS-3367-7	295	4.8	1.3	3.5 - 78	220	1000	ERG120
TY28M-*	MS-3367-2	361	4.8	1.4	3.5 - 102	220	1000	WT193A
TY271M-*	-	150	7.6	1.5	6 - 31	540	500	
TY272M-*	-	223	6.9	1.6	6 - 50	540	500	
TY27M-*	MS-3367-3	340	6.9	1.6	6 - 90	540	500	ERG120
TY275M-*	-	457	6.9	1.6	6 - 127	540	500	L-500-EU
TY277M-*	-	617	6.9	1.6	6 - 177	540	500	
TY29M-*	MS-3367-6	771	6.9	1.5	6 - 229	540	500	
TY53510M-*	-	889	8.2	1.7	to 254	780	50	WT3D
TY54513M-*	-	1143	8.2	1.7	to 330	780	50	L-500-EU

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

For cable ties in a specific colour, replace \* in the Product Reference by the colour code:

0 = black, 1 = brown, 2 = red, 3 = orange, 4 = yellow, 5 = green, 6 = blue, 7 = purple, 8 = grey and 9 = white



For example: TY23M-1 defines a brown TY23M cable tie. Contact your Sales Office for product availability.

\*\* Some approvals may not be applicable to all the Product References. Contact your Sales office for approvals limitations

## Polyamide 6.6 cable ties - Multi-coloured

Premium cable ties with steel locking barb

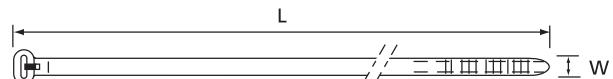
- Multi-coloured TY25M cable ties in a single, convenient package
- Supplied in bags of 100 ties containing ten ties of each of the ten standard colours (TY25M-0 to TY25M-9)

### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to + 85°C
Colour	Black, brown, red, orange, yellow, green, blue, purple, grey, white (10 ties of each colour)
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



E49405



Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TY525M-CLRS	186	4.8	1.3	3.5 - 45	220	100	ERG50, ERG120, WT193A

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Printed cable ties

Premium cable ties with steel locking barb

Thomas & Betts extends its highly respected existing capabilities in cable tie manufacture with its in-house printing equipment in order to respond flexibly to customer requirements and to allow rapid delivery. This service is offered for ties having a width of minimum 4.6 mm (batches of minimum 5,000 ties approximately)

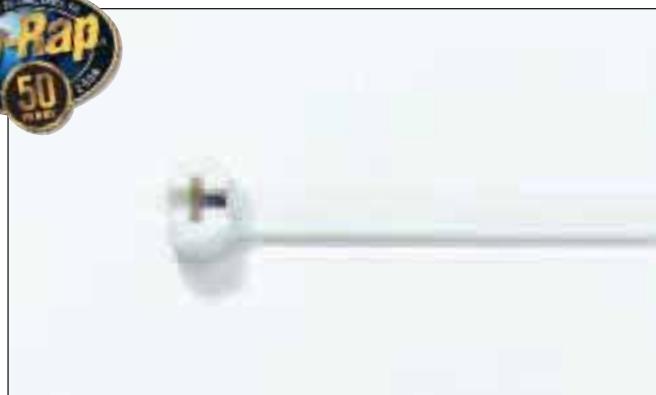
- The cable tie is printed using a Hot foil transfer process
- The print is highly durable
- The basic character set is in accordance with DIN1451- (3 mm character height)
- Text colours: Red, Orange, Yellow, Bright-Yellow, Green, Blue, Brown, Dark-Brown, Black, White

Please contact your Sales Office for other character sets and special stamping designs.



## Polyamide 6.6 cable ties - Flame retardant

Premium cable ties with steel locking barb



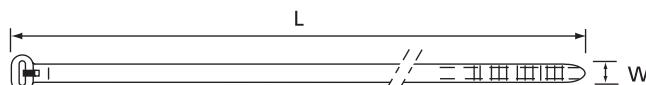
- Flame retardant version. Ideal for use when low flammability and low smoke are necessary such as public transport, tunnels, etc.

## Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	White
Flammability rating	UL 94 V-0
Other properties	Halogen free, Silicone free



E49405



Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TY23MFR	92	2.4	1.0	2 - 16	80	1000	ERG50
TY232MFR	203	2.4	1.0	2 - 50	80	1000	WT193A
TY24MFR	140	3.6	1.1	2 - 29	180	1000	
TY25MFR	186	4.8	1.1	3.5 - 45	220	1000	ERG50, ERG120
TY28MFR	360	4.8	1.1	3.5 - 102	220	1000	WT193A
TY27MFR	340	7.0	1.6	6 - 90	540	500	ERG120, L-500-EU

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Polyamide 6.6 cable ties - Heat stabilised

Premium cable ties with steel locking barb

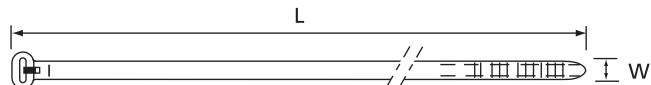
- Heat stabilised version, for applications up to 105°C.

### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +105°C
Colour	Natural (may have a greenish tint)
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



E49405



Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TYH23M / TYHB23M	92	2.4	1.0	2 - 16	80	1000	
TYH232M	203	2.4	1.0	2 - 50	80	1000	
TYH24M	140	3.6	1.1	2 - 29	130	1000	
TYH242M*	208	3.6	1.1	2 - 50	130	1000	WT193A
TYH26M	284	3.6	1.1	2 - 76	130	1000	
TYH25M	186	4.8	1.1	3.5 - 45	220	1000	ERG50
TYH253M*	290	4.8	1.1	3.5 - 78	220	1000	ERG120
TYH28M	360	4.8	1.1	3.5 - 102	220	1000	WT193A
TYH272M*	222	7.6	1.6	6 - 50	540	500	ERG120
TYH27M	340	7.0	1.6	6 - 90	540	500	
TYH29M*	771	6.9	1.5	6 - 229	530	500	L-500-EU

\* Not UL recognised

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

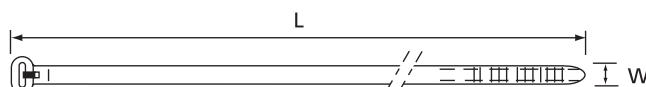
For tooling specifications: see pages 122 to 133

## Polyamide 6.6 cable ties - Heat stabilised + UV-resistant

Premium cable ties with steel locking barb



E49405



- Heat stabilised + UV-resistant version, for outdoor applications that also require a resistance to high temperature (+105°C)
- For OEM and MRO applications like: transportation, lawn / garden / farm / construction equipment, recreational vehicles

### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +105°C
Colour	Black
Flammability rating	UL 94 V-2
Other properties	UV-resistant, heat stabilised, Halogen free, Silicone free

Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TY23MX-A	92	2.3	0.9	2 - 16	80	1000	ERG50, ERG120*
TY24MX-A	140	3.6	1.1	2 - 29	180	1000	WT193A
TY25MX-A	186	4.8	1.2	3.5 - 45	220	1000	
TY27MX-A	340	6.9	1.6	6 - 89	540	500	ERG120, L-500-EU

\* ERG120 can not be used with TY23MX-A and TY24MX-A

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

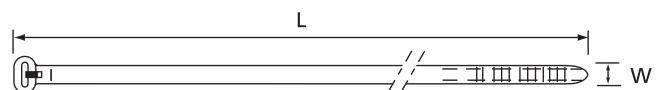
## Polyamide 4.6 cable ties - Extra high temperature

Premium cable ties with steel locking barb

- Extreme continuous temperature rating: -40°C to +150°C (in air)
- For high temperature environments in industrial, OEM, MRO and commercial construction applications such as: metal processing, paper mills, lighting, automotive

### Technical Information

Material - Moulding	Polyamide 4.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +150°C
Colour	Light green
Flammability rating	UL 94 V-2
Other properties	Extra high temperature resistant, Halogen free, Silicon free



Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TYHT23M	92	2.3	0.9	2 - 16	80	1000	ERG120*, ERG50
TYHT25M	186	4.8	1.2	3.5 - 45	220	1000	WT193A
TYHT28M	360	4.8	1.3	3.5 - 102	220	1000	
TYHT27M	340	6.9	1.6	6 - 89	540	500	ERG120, L-500-EU
TYHT277M	617	7.0	1.6	6 - 177	540	500	

\* ERG120 can not be used with TYHT23M

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Polyamide 12 cable ties - UV-resistant

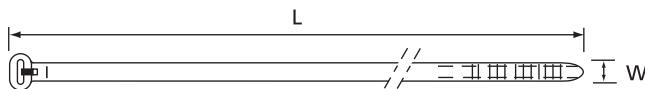
Premium cable ties with steel locking barb



- Polyamide 12 UV-resistant version, remains flexible in cold & dry environments.
- Ages better and has a better chemical resistance than Polyamide 6.6

### Technical Information

Material - Moulding	Polyamide 12
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Black
Flammability rating	UL 94 V-2
Other properties	UV-resistant, Halogen free, Silicone free



Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TYC25MX	186	4.8	1.1	3.5 - 45	150	1000	ERG50
TYC525MX	186	4.8	1.1	3.5 - 45	150	100	ERG120
TYC28MX	360	4.8	1.1	3.5 - 102	150	1000	WT193A
TYC272MX	222	7.6	1.6	6 - 50	380	500	
TYC27MX	340	7.0	1.6	6 - 90	380	500	ERG120
TYC527MX	340	7.0	1.6	6 - 90	380	50	L-500-EU
TYC29MX	771	7.6	1.6	6 - 229	380	500	

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

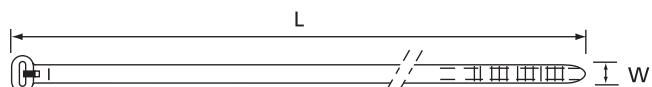
## Polypropylene cable ties - Weatherable

Premium cable ties with steel locking barb

- Polypropylene weatherable version, for increased resistance to chemicals
- Resistant against inorganic acids, polyhydric alcohols, neutral and basic salts

### Technical Information

Material - Moulding	Polypropylene
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Black
Flammability rating	UL 94 HB
Other properties	UV-resistant, Halogen free, Silicone free



Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TYP23MX	92	2.4	1.0	2 - 16	50	1000	
TYP25MX	186	4.8	1.1	3.5 - 45	130	1000	ERG50
TYP28MX	360	4.8	1.1	3.5 - 102	130	1000	WT193A
TYP27MX	340	7.0	1.6	6 - 90	270	500	ERG120, L-500-EU

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Detectable cable ties

Premium cable ties with steel locking barb



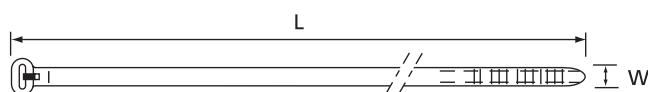
The new Ty-Rap® Detectable Cable Ties from Thomas & Betts incorporate a unique compound (patent pending) that can be detected by X-Ray equipment, metal detectors and visual inspection equipment.

Particularly recommended for applications in food, pharmaceutical and other contamination-sensitive industries using detection systems, where cable tie installation residuals (cut tails) are not allowed in the finished product.

- Detectable by metal detectors set at minimum 1.5 mm diameter ferrous sphere
- Detectable by X-Ray equipment
- Bright blue colour for an easy visual detection
- Help achieve the HACCP EU-Directive
- Available in standard Polyamide 6.6 or in buoyant Polypropylene version for liquid-processing applications
- Available in 4 different sizes in convenient small bags with Euroslot

## Technical Information

Material - Moulding	Polyamide 6.6 or Polypropylene
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Bright blue
Flammability rating	UL 94 V-2 (Polyamide 6.6) UL 94 HB (Polypropylene)
Other properties	Halogen free, silicone free



Product Ref.	Material	Length L [mm]	Width W [mm]	Bundle diameter from...to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
<b>DETECTABLE POLYAMIDE 6.6</b>							
TY523M-NDT	Polyamide 6.6	92	2.4	2 - 16	80	100	ERG50, WT193A
TY525M-NDT	Polyamide 6.6	186	4.8	3.5 - 45	220	100	ERG50, ERG120
TY528M-NDT	Polyamide 6.6	360	4.8	3.5 - 102	220	100	WT193A
TY527M-NDT	Polyamide 6.6	340	7.0	6 - 90	540	50	ERG120, L-500-EU
<b>DETECTABLE POLYPROPYLENE</b>							
TY523M-PDT	Polypropylene	92	2.4	2 - 16	50	100	
TY525M-PDT	Polypropylene	186	4.8	3.5 - 45	130	100	ERG50, WT193A
TY528M-PDT	Polypropylene	360	4.8	3.5 - 102	130	100	
TY527M-PDT	Polypropylene	340	7.0	6 - 90	270	50	ERG120, L-500-EU

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

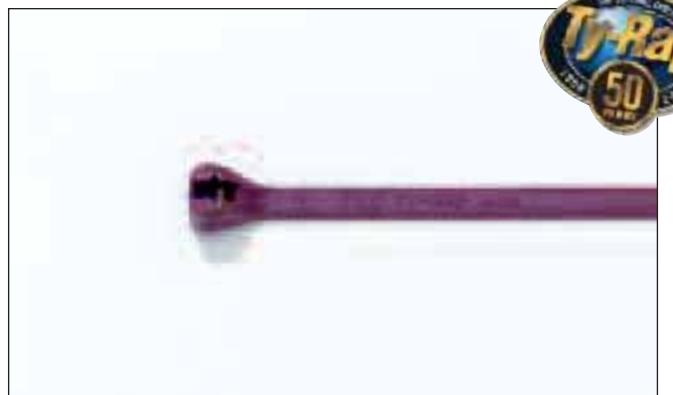
## Fluoropolymer cable ties - ECTFE

Premium cable ties with steel locking barb

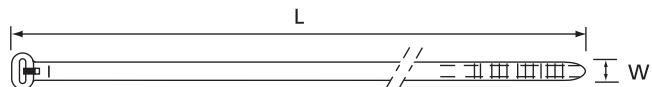
- Outstanding characteristic: lower smoke density when burnt
- Recommended for applications where smoke generation is a concern, such as plenum areas

### Technical Information

Material - Moulding	Fluoropolymer ECTFE
Material - Locking barb	316 grade stainless steel
Temperature range	-46°C to +140°C
Colour	Maroon
Flammability rating	UL 94 V-0
Other properties	UV-resistant, low smoke



E49405



Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TYV23M	92	2.4	1.0	2 - 16	80	1000	ERG50
TYV523M	92	2.4	1.0	2 - 16	80	100	WT193A
TYV25M	186	4.8	1.1	3.5 - 45	220	1000	ERG50, ERG120
TYV525M	186	4.8	1.1	3.5 - 45	220	100	WT193A

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

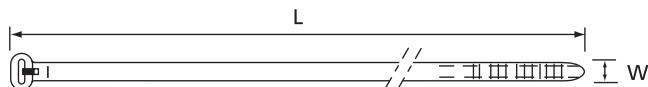
For tooling specifications: see pages 122 to 133

## Fluoropolymer cable ties - ETFE

Premium cable ties with steel locking barb



E49405



- ETFE Fluoropolymer version, resistant to chemicals and to radiation
- Non-outgassing properties for zero gravity applications
- The best all around plastic material for cable ties
- Typical applications include: nuclear, power plants, space industry, etc.

## Technical Information

Material - Moulding	Fluoropolymer ETFE
Material - Locking barb	316 grade stainless steel
Temperature range	-46°C to +150°C
Colour	Aquamarine
Flammability rating	UL 94 V-0
Other properties	UV-resistant, Silicone free, inert to most solvents and chemicals, hydrolytically stable, radiation resistant. Non-outgassing properties for zero gravity applications.

Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TYZ23M*	92	2.4	1.0	2 - 16	80	1000	
TYZ523M*	92	2.4	1.0	2 - 16	80	100	
TYZ25M	186	4.8	1.1	3.5 - 45	220	1000	ERG50
TYZ525M	186	4.8	1.1	3.5 - 45	220	100	ERG120**
TYZ28M	360	4.8	1.1	3.5 - 102	220	500	WT193A
TYZ528M	360	4.8	1.1	3.5 - 102	220	100	
TYZ27M	340	7.0	1.6	6 - 90	540	100	ERG120, L-500-EU
TYZ527M	340	7.0	1.6	6 - 90	540	50	

\* Product Ref. TYZ23M and TYZ523M are UL listed (E49405), all other items are UL recognized

\*\* ERG120 not to be used on TYZ23M

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Integrated mounting hole cable ties

*Special ties with steel locking barb*

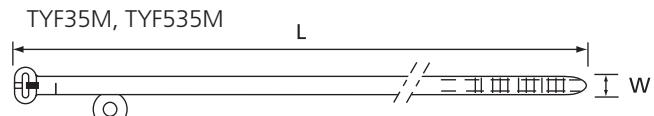
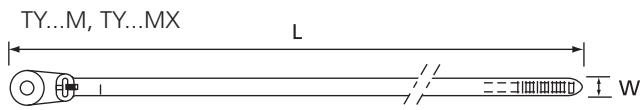
- Can be directly mounted onto a support with screws, bolts or rivets
- Mounting and bundling in one maintenance-friendly assembly.
- Typical application: cable harness manufacture and pre- and end-mounting of bundles and parts. Maintenance friendly mounting of cables, tubes and parts in all types and sizes of machines and installations - indoor and outdoor.

### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Natural or UV-resistant black (see table)
Flammability rating	UL 94 V-2
Other properties	UV-resistant (black), Halogen free Silicone free



VG \*  
approved  
E49405  
VG95387  
part 4, type B



Product Ref.	Colour	Diameter of mounting hole [mm]	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TY33M	natural	3.0	102	2.3	0.9	2 - 16	80	1000	
TY533M	natural	3.0	102	2.3	0.9	2 - 16	80	100	
TY33MX	UV-resistant black	3.0	102	2.3	0.9	2 - 16	80	1000	ERG50
TY533MX	UV-resistant black	3.0	102	2.3	0.9	2 - 16	80	100	WT193A
TY34M	natural	4.4	151	3.5	1.0	2 - 29	180	1000	
TY534M	natural	4.4	151	3.5	1.0	2 - 29	180	100	
TY34MX	UV-resistant black	4.4	151	3.5	1.0	2 - 29	180	1000	
TY534MX	UV-resistant black	4.4	151	3.5	1.0	2 - 29	180	100	
TY635M	natural	4.0	198	4.7	1.1	3.5 - 45	220	1000	
TY635MX	UV-resistant black	4.0	198	4.7	1.1	3.5 - 45	220	1000	ERG50
TY35M	natural	5.1	199	4.7	1.1	3.5 - 45	220	1000	WT193A
TY535M	natural	5.1	199	4.7	1.1	3.5 - 45	220	100	ERG120
TY35MX	UV-resistant black	5.1	199	4.7	1.1	3.5 - 45	220	1000	
TY535MX	UV-resistant black	5.1	199	4.7	1.1	3.5 - 45	220	100	
TY1435M	natural	6.7	198	4.7	1.1	3.5 - 45	220	1000	
TY37M	natural	6.7	356	7.7	2.0	6 - 90	540	500	
TY537M	natural	6.7	356	7.7	2.0	6 - 90	540	50	ERG120
TY37MX	UV-resistant black	6.7	356	7.7	2.0	6 - 90	540	500	L-500-EU
TY537MX	UV-resistant black	6.7	356	7.7	2.0	6 - 90	540	50	
TYF35M	natural	4.0	186	4.7	1.2	3.5 - 45	220	1000	ERG50, ERG120
TYF535M	natural	4.0	186	4.7	1.2	3.5 - 45	220	100	WT193A

\* Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

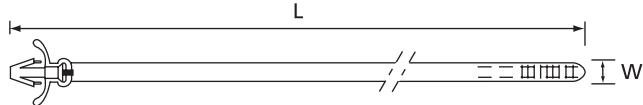
For tooling specifications: see pages 122 to 133

## Panel mounting cable ties

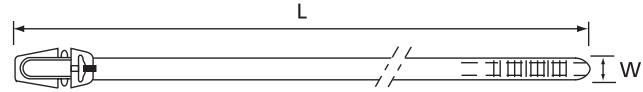
Special ties with steel locking barb



TY...



696-...



Product Ref.	Colour	Diameter of mounting hole [mm]	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Suitable for board/wall thickness from to [mm]	Quantity [pieces]	Tooling
<b>ANCHOR TYPE</b>										
TY54SM	natural	4.5 - 5.2	150	3.5	1.0	2 - 32	130	0.1 - 2.5	1000	ERG50
TY54SMX	UV-resistant black	4.5 - 5.2	150	3.5	1.0	2 - 32	130	0.1 - 2.5	1000	ERG120**
TY38M	natural	6.4 - 6.7	200	4.7	1.3	3.5 - 44	220	1.0 - 4.0	1000	WT193A
TY38MX	UV-resistant black	6.4 - 6.7	200	4.7	1.3	3.5 - 44	220	1.0 - 4.0	1000	
<b>STANDARD TYPE</b>										
696-41836	natural	5.8 - 7.5	197	4.8	1.1	3.5 - 45	220	2.2 - 3.7	1000	ERG50 , ERG120
696-41836X	UV-resistant black	5.8 - 7.5	197	4.8	1.1	3.5 - 45	220	2.2 - 3.7	1000	WT193A

\* Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations

\*\* ERG120 only to be used with TY38M and TY38MX

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Blind mounting cable ties

*Special ties with steel locking barb*

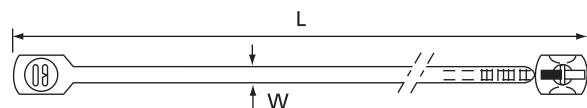
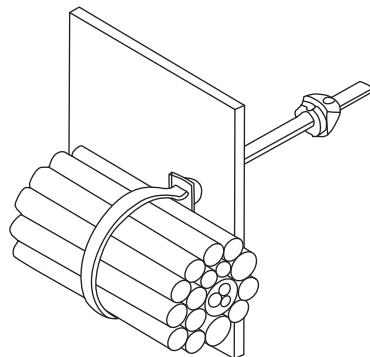
- Suitable for hard-to-reach areas
- Fast hidden mounting on walls and vehicle chassis
- Twist off the locking head
- Pull the tie end through the fastening hole
- Place locking head on tie end
- Pull tight and cut off excess
- In the locked state, the locking head neatly covers the mounting hole

### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Natural or UV-resistant black (see table)
Flammability rating	UL 94 V-2
Other properties	UV-resistant (black), Halogen free Silicone free



E49405



Product Ref.	Colour	Diameter of mounting [mm]	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TYG34M	natural	6.4 - 7.0	160	3.6	1.1	2 - 32	180	1000	ERG50 WT193A
TYG534M	natural	6.4 - 7.0	160	3.6	1.1	2 - 32	180	100	
TYG34MX	UV-resistant black	6.4 - 7.0	160	3.6	1.1	2 - 32	180	1000	WT193A
TYG534MX	UV-resistant black	6.4 - 7.0	160	3.6	1.1	2 - 32	180	100	

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Blind mounting cable ties

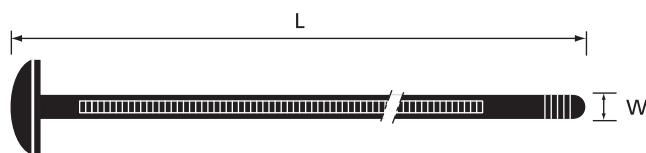
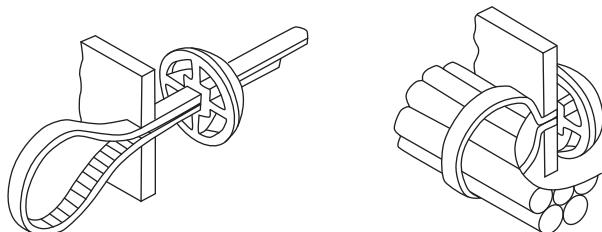
## Special ties



- Suitable for hard-to-reach areas
- Fast hidden mounting on walls and vehicle chassis
- Ideal for mounting on vehicle chassis. Can still be released before final tensioning
- In the locked state, the locking head neatly covers the mounting hole

## Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	UV-resistant black
Flammability rating	UL 94 V-2
Other properties	UV-resistant, Halogen free, Silicone free



Product Ref.	Diameter of mounting hole [mm]	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TY41M	8.1 - 17.3	244	5.7	1.7	5 - 60	300	500	
TY541M	8.1 - 17.3	244	5.7	1.7	5 - 60	300	50	ERG120

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

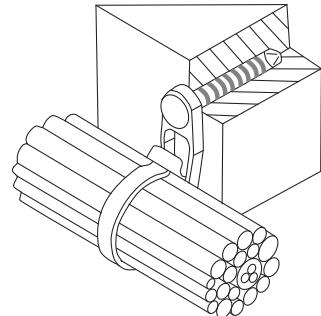
## Integrated peg / nail cable ties

*Special ties with steel locking barb*

- TY545MX, with integrated nail for mounting onto wood or similar materials
- TY544MX, with integrated peg for mounting onto porous concrete or similar materials (masonry)
- Very simple application

### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	UV-resistant black
Flammability rating	UL 94 V-2
Other properties	UV-resistant, Halogen free, Silicone free



TY544MX



TY545MX



Product Ref.	Diameter of mounting hole [mm]	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Mounting hole depth [mm]	Quantity [pieces]	Tooling
TY544MX	6.4	200	4.6	1.0	3.5 - 45	220	25 min.	50	ERG50, ERG120
TY545MX	-	200	4.7	1.0	4.7 - 38.1	220	-	50	WT193A

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Releasable cable ties

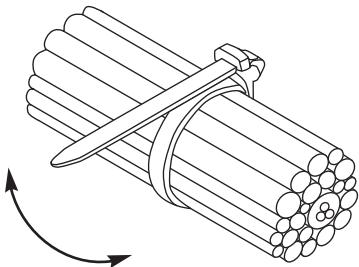
## Special ties



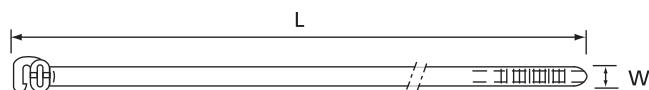
- For temporary but strong bundling, especially during control box wiring
- Very simple application
- Available in 2 lengths for different applications
- May be re-used many times
- No tooling necessary

## Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



Pull end of tie through head. Turn tie end back on itself and insert into side of clip. To open, release tie end from clip and open tie.



Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]
TYR505	190	4.7	1.19	10 - 44	220	100
TYR508	364	4.7	1.19	10 - 102	220	100

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

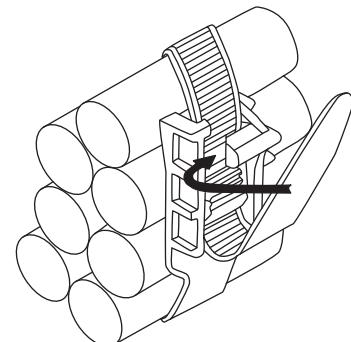
## Releasable lashing ties with incorporated fastener

## Special ties

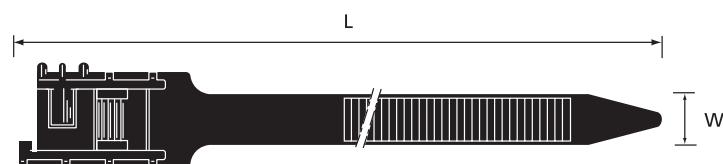
- Rugged one-piece construction, for heavy-duty applications
- Releasable and re-usable, ideal for temporary installations
- Fast and durable
- Easy handling
- No tooling necessary
- Specially developed accessories, like the wall plug TC5359 and the mounting bases TC5355 to TC5357 (see page 95 for details)

## Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	UV-resistant black
Flammability rating	UL 94 V-2
Other properties	UV-resistant, Halogen free, Silicone free



Introduce the cable tie tail into the lower slot in the head. Tighten the tie and pull it back. Slide in the tie under the catch from the side until it snaps into position.



Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]
TY409	483	12.7	2.0	45 - 121	890	100
TY5409	483	12.7	2.0	45 - 121	890	25

Description of Product Reference structure: see page 10

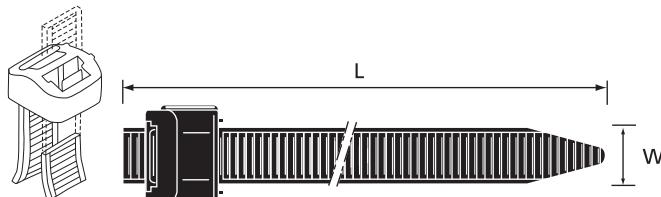
Description of materials and properties: see pages 134 to 145

## Releasable 2-piece lashing ties, pre-assembled version

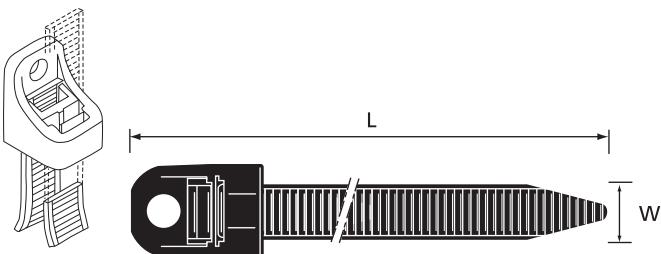
### Special ties



TY54XXPX



TY53418PX



- Heavy-duty lashing ties, in cut lengths with pre-assembled heads
- Also available on reel with separate heads (see page 35)
- UV-resistant Polypropylene, ideal for applications where chemical resistance is important (heads in weatherable rigid Polyamide 6.6)
- Extremely robust (670N)
- Easily releasable & reusable
- 2 types of head: type A: no mounting hole  
type B: with mounting hole
- Typical applications: Indoor and outdoor fastening of cables, pipes and other parts in industry, shipbuilding, chemical industry etc

#### Technical Information

Material - Tie	Weatherable Polypropylene
Material - Head	Polyamide 6.6
Temperature range	Head: -40°C to +85°C Tie: -55°C to +110°C
Colour	UV-resistant black
Flammability rating	UL 94 V-2
Other properties	UV-resistant, Halogen free

Product Ref.	Diameter of mounting hole [mm]	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]
TY53418PX	6.9	457	13.2	1.9	45 - 127	670	25
TY5418PX	-	457	13.2	1.8	45 - 127	670	25
TY5424PX	-	610	13.2	1.8	10 - 178	670	25
TY5442PX	-	1067	13.2	1.8	10 - 305	670	10
TY5460PX	-	1524	13.2	1.8	10 - 457	670	10

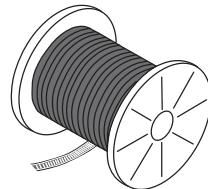
Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

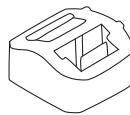
## Releasable 2-piece lashing ties on reel with separate heads

Special ties

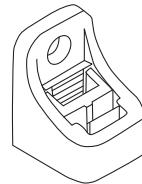
- Heavy-duty lashing ties on reel with separate heads
- Also available in cut lengths with pre-assembled heads (see page 34)
- UV-resistant Polypropylene, ideal for applications where chemical resistance is important (heads in weatherable rigid Polyamide 6.6)
- Extremely robust (670N)
- Easily releasable & reusable
- 2 types of head: type A: no mounting hole  
type B: with mounting hole
- Typical applications: Indoor and outdoor fastening of cables, pipes and other parts in industry, shipbuilding, chemical industry etc.
- **Product Ref. 696-41563:** lashing tie on reel (300 m), in weatherable Polypropylene
- **Product Ref. 696-41562:** separate head, type A (no mounting hole), weatherable Polyamide 6.6 (200 pieces)
- **Product Ref. 696-41614:** separate head, type B (with mounting hole), weatherable Polyamide 6.6 (200 pieces) Mounting hole: Ø 6.9 mm
- **Product Ref. TY4100PX:** kit containing 30 m of lashing tie on reel + 50 separate heads, type A



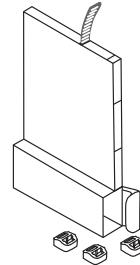
696-41563



696-41562



696-41614



TY4100PX



696-41563

Product Ref.	Lashing tie, dimensions			Separate locking heads		Min. tensile strength of assembly [N]
	length [mm]	width [mm]	thickness [mm]	Quantity [pieces]	type	
696-41563	300	13.2	1.8	—	—	670
696-41562	—	—	—	200	Type A, no mounting hole	670
696-41614	—	—	—	200	Type B, with mounting hole	670
TY4100PX	30	13.2	1.8	50	Type A, no mounting hole	670

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

## Cable ties with identification tag

*Special ties with steel locking barb*

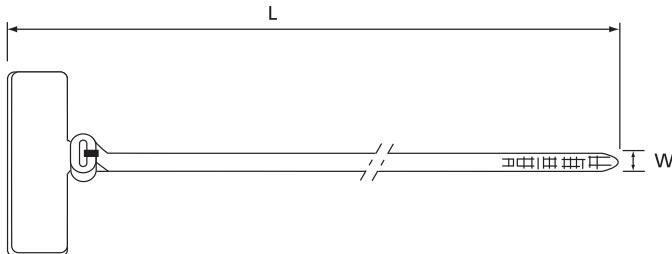


- Identification ties with incorporated label for durable marking and tying
- Label forms onto the bundle for types TY512M, TY51M and protrudes for ties TY532M and TY53M
- Type 51M is MIL (MS-3368-5) approved
- Trouble-free installation
- Simple marking on the roughened writing surface using the special marking pen WT163M-1 (black ink) or WT163M-3 (red ink) - See page 38
- All edges are rounded to make installation easier
- Available in bulk packaging (500 / 1000 pieces) or in small packaging (100 pieces)

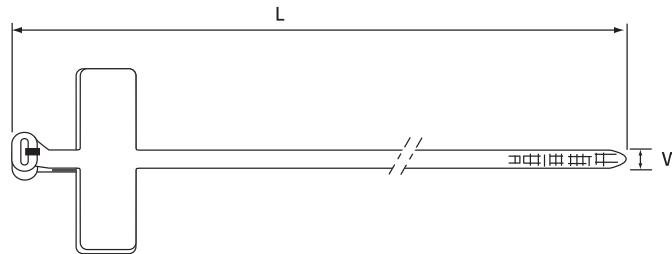


E49405

TY53M, TY553M, TY532M, TY5532M



TY51M, TY551M, TY512M, TY5512M



### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Natural
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free

Product Ref.	MIL Spec.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Label dimensions [mm]	Quantity [pieces]	Tooling
TY51M	MS-3368-5	92	2.4	1.0	10 - 16	80	25.4 x 7.9	500	ERG50 WT193A
TY551M	MS-3368-5	92	2.4	1.0	10 - 16	80	25.4 x 7.9	100	
TY512M	-	210	2.4	1.0	10 - 51	80	25.4 x 7.9	1000	
TY5512M	-	210	2.4	1.0	10 - 51	80	25.4 x 7.9	100	
TY53M	-	102	2.4	1.0	2 - 16	80	20.6 x 9.3	500	
TY553M	-	102	2.4	1.0	2 - 16	80	20.6 x 9.3	100	
TY532M	-	212	2.4	1.0	2 - 51	80	20.6 x 9.3	1000	
TY5532M	-	212	2.4	1.0	2 - 51	80	20.6 x 9.3	100	

For other materials and colours contact your Sales Office

Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Cable ties with identification tag

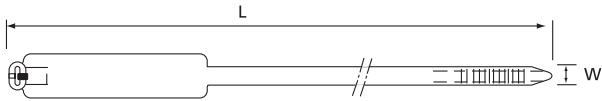
*Special ties with steel locking barb*

- Identification ties with incorporated label for durable marking and tying
- Label forms onto the bundle
- 5 different versions, up to 4 straps, in bulk and small packaging
- 4 versions (up to 3 straps) are Mil-specified
- Trouble free installation
- Labelling of bundles up to 102 mm diameter
- Simple marking on the roughened writing surface using the special marking pen WT163M-1 / WT163M-3 (black or red)
- All edges are rounded and surfaces smoothed to make installation easier

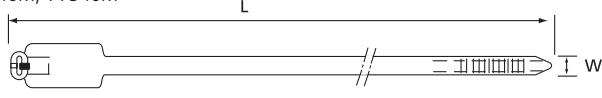
### Technical Information

Material - Moulding	Polyamide 6.6
Material - Locking barb	316 grade stainless steel
Temperature range	-40°C to +85°C
Colour	Natural
Approvals	MIL: MS-3368 -1, -2, -3, -4
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free

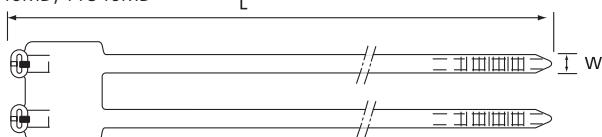
TY48M, TY548M



TY46M, TY546M

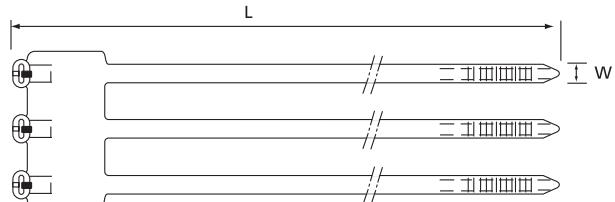


TY46MD, TY546MD

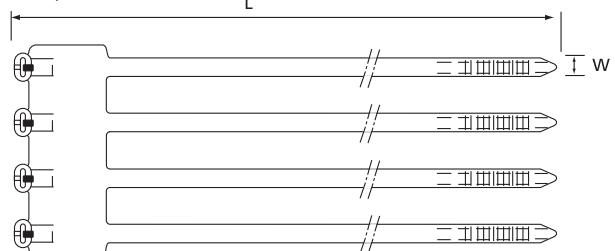


E49405

TY46MT, TY546MT



TY46MF, TY546MF



Product Ref.	MIL Spec.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Label dimensions [mm]	Quantity [pieces]	Tooling
TY48M	MS-3368-2	360	4.8	1.1	19 - 102	220	13.1 x 57.2	1000	
TY548M	MS-3368-2	360	4.8	1.1	19 - 102	220	13.1 x 57.2	100	
TY46M	MS-3368-1	184	4.8	1.1	9.5 - 45	220	13.1 x 27.0	1000	ERG50
TY546M	MS-3368-1	184	4.8	1.1	9.5 - 45	220	13.1 x 27.0	100	ERG120
TY46MD	MS-3368-3	184	4.8	1.1	9.5 - 45	220 x 2	29.7 x 27.0	500	WT193A
TY546MD	MS-3368-3	184	4.8	1.1	9.5 - 45	220 x 2	29.7 x 27.0	50	
TY46MT	MS-3368-4	184	4.8	1.1	9.5 - 45	220 x 3	46.0 x 27.0	500	
TY546MT	MS-3368-4	184	4.8	1.1	9.5 - 45	220 x 3	46.0 x 27.0	100	
TY46MF	-	184	4.8	1.1	9.5 - 45	220 x 4	63.1 x 27.0	250	
TY546MF	-	184	4.8	1.1	9.5 - 45	220 x 4	63.1 x 27.0	50	

For other materials and colours contact your Sales Office

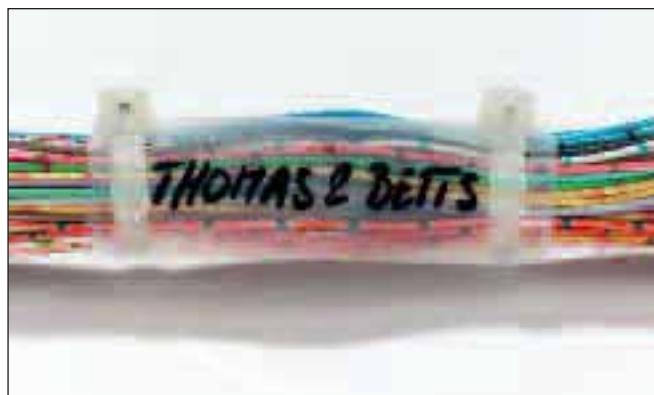
Description of Product Reference structure: see page 10

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Identification tags

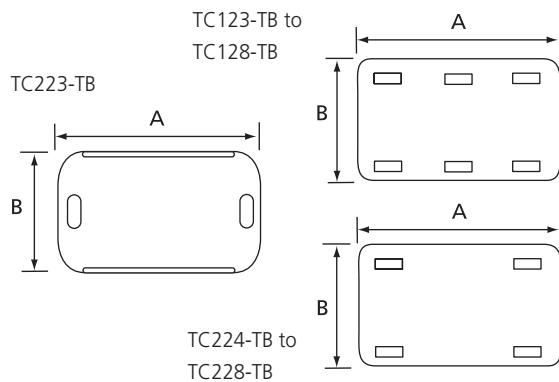
### Special ties



- Tie fastening labels
- For use in combination with the special marking pen WT163M-1 & WT163M-3 from Thomas & Betts, or with a hot foil marking
- For secure labelling of bundles, parts etc
- Available in 3 shapes to suit all design requirements

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



Product Ref.	Height A [mm]	Width B [mm]	Label thickness [mm]	Area for label height [mm]	width [mm]	For tie width up to [mm]	Weight [g/100]	Quantity [pieces]
TC123-TB	19.6	32.0	0.3	9.5	32.0	4.8	17	1000
TC124-TB	19.6	38.0	0.3	9.5	38.0	4.8	18	1000
TC125-TB	19.6	44.7	0.3	9.5	44.7	4.8	19	1000
TC126-TB	19.6	51.0	0.3	9.5	51.0	4.8	31	1000
TC128-TB	19.6	63.5	0.3	9.5	63.5	4.8	35	1000
TC223-TB	19.6	32.3	1.0	18.0	24.0	4.8	37	1000
TC224-TB	19.6	38.0	0.5	9.5	38.0	4.8	34	1000
TC225-TB	19.6	44.7	0.5	9.5	44.7	4.8	40	1000
TC226-TB	19.6	51.0	0.5	9.5	51.0	4.8	39	1000
TC228-TB	19.6	63.5	0.5	9.5	63.5	4.8	51	1000

## Special marking pen

### Special ties



- Optimally suited for fast and long-lasting writing on Polyamide surfaces
- Fast-drying ink
- The ink is resistant to humidity, oil and light solvents
- Non toxic
- Available in 2 colours of ink
- **Product. Ref. WT163M-1:** black ink
- **Product. Ref. WT163M-3:** red ink

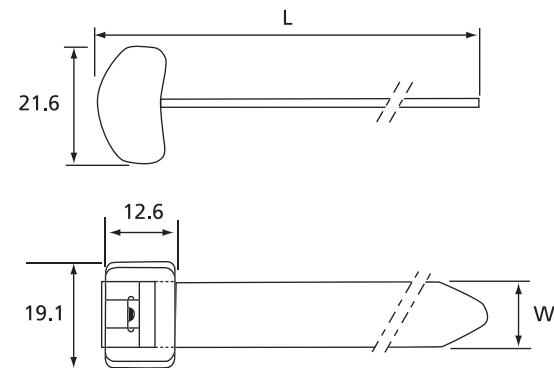
## Pre-assembled Deltec cable ties

Cable support system with metallic locking barb

- Provides a strong, long-life and cost saving method of securing communication and overhead cables
- Double locking head with corrosion resistant locking barbs in copper alloy
- Proven years of service: designed to last a minimum of 20 years outdoor
- No sharp edges: operator friendly, cable friendly!
- Easy to install, low installation costs
- Extremely robust ties, with high tensile strength (1110N) after fastening
- Available either in pre-cut and pre-assembled lengths, or on reels with separate heads for total flexibility
- Choice of specific spacers and accessories
- Month and year of manufacture stamped into strap material

### Technical Information

Material - Strap & head	Toughened weatherable acetal
Material - Locking barb	Marine grade, corrosion-resistant copper alloy
Temperature range	-40°C to +85°C
Flammability rating	UL 94 HB
Colour	Black
Other properties	UV-resistant, Halogen free, superior resistance to moisture and salt environments



Product Ref.	Length L [mm]	Width W [mm]	Bundle diameter max. [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TYD510M	1300.5	10.0	390	1110	100	
CSS-100	254.0	12.7	60	1110	50	WT3D
TYD5135M	342.9	12.7	90	1110	25	L-500-EU
CSS-160	406.4	12.7	110	1110	50	
TYD5270M	685.8	12.7	200	1110	10	

For tooling specifications: see pages 122 to 133

Note: the recommended maximum continuous static loading for the Deltec straps is 90 N per strap. For best results suggested spacing is 35 to 40 cm. It is the responsibility of the user to determine whether or not their application meets our recommendation.

## Strap on reel

*Cable support system with metallic locking barb*



- Strap on reel, with separate head
- Total flexibility & no waste: cut at the desired length
- Easy to store: reduced inventory
- User friendly

### Technical Information

Material	Toughened weatherable acetal
Temperature range	-40°C to +85°C
Flammability rating	UL 94 HB
Colour	Black
Other properties	UV-resistant, Halogen free, superior resistance to moisture and salt environments

Product Ref.	Length per reel L [m]	Width W [mm]	Minimum tensile strength [N]	Quantity [reels]	Tooling
TYD-50R	15.2	12.7	1110	1	WT3D
696-41794	304.8	12.7	1110	1	L-500-EU

For tooling specifications: see pages 122 to 133

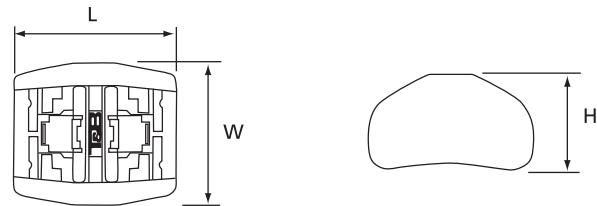
Note: the recommended maximum continuous static loading for the Deltec straps is 90 N per strap. For best results suggested spacing is 35 to 40 cm. It is the responsibility of the user to determine whether or not their application meets our recommendation.

## Double locking heads

Cable support system with metallic locking barb

### Technical Information

Material - moulding	Toughened weatherable acetal
Material - locking barb	Marine grade, corrosion-resistant copper alloy
Temperature range	-40°C to +85°C
Flammability rating	UL 94 HB
Colour	Black
Other properties	UV-resistant, Halogen free, superior resistance to moisture and salt environments



Product Ref.	Length L [mm]	Width W [mm]	Height H [mm]	Quantity [pieces]
TYD-LH	21.6	19.1	12.6	25
696-41795	21.6	19.1	12.6	1000

To be assembled with Deltec strap on reel see page 40

## Deltec Kits

Cable support system with metallic locking barb



- Convenient kits containing several reels of strap and separate locking heads, to provide all you need to be efficient on the field
- 2 configurations to match your need

Product Ref.	Reels		Locking heads Quantity [pieces]
	Length per reel [mm]	Quantity [reels]	
CSS-5K	15.2	5	150
CSS-10K	15.2	10	300

## Cable spacers

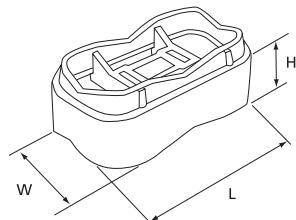
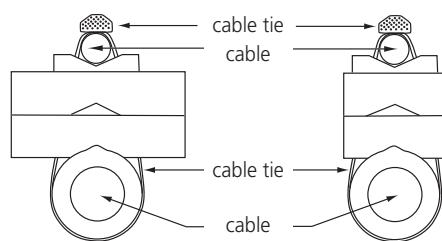
Cable support system with metallic locking barb



- Stackable height in 12.7 mm increments, for any desired spacing and all cable sizes - no need to stock multiple sizes of individual height spacers
- Designed to retain strap on each side and cradle the cable, providing restricted movement of spacer and preventing damage to cable
- Suitable for coaxial cables
- Can be used for parallel routing or for perpendicular cables

### Technical Information

Material	Weather-resistant polypropylene
Temperature range	-40°C to +85°C
Flammability rating	UL 94 HB
Colour	Black
Other properties	UV-resistant, Halogen free



Product Ref.	Length L [mm]	Width W [mm]	Height H [mm]	Quantity
TCP5255	53.3	30.5	12.7	25
TCP360	53.3	30.5	12.7	100

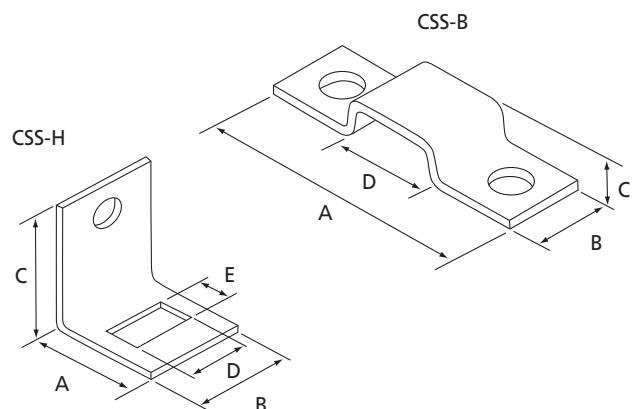
## Base and hanger

Cable support system with metallic locking barb

- To secure the cables to all types of surfaces

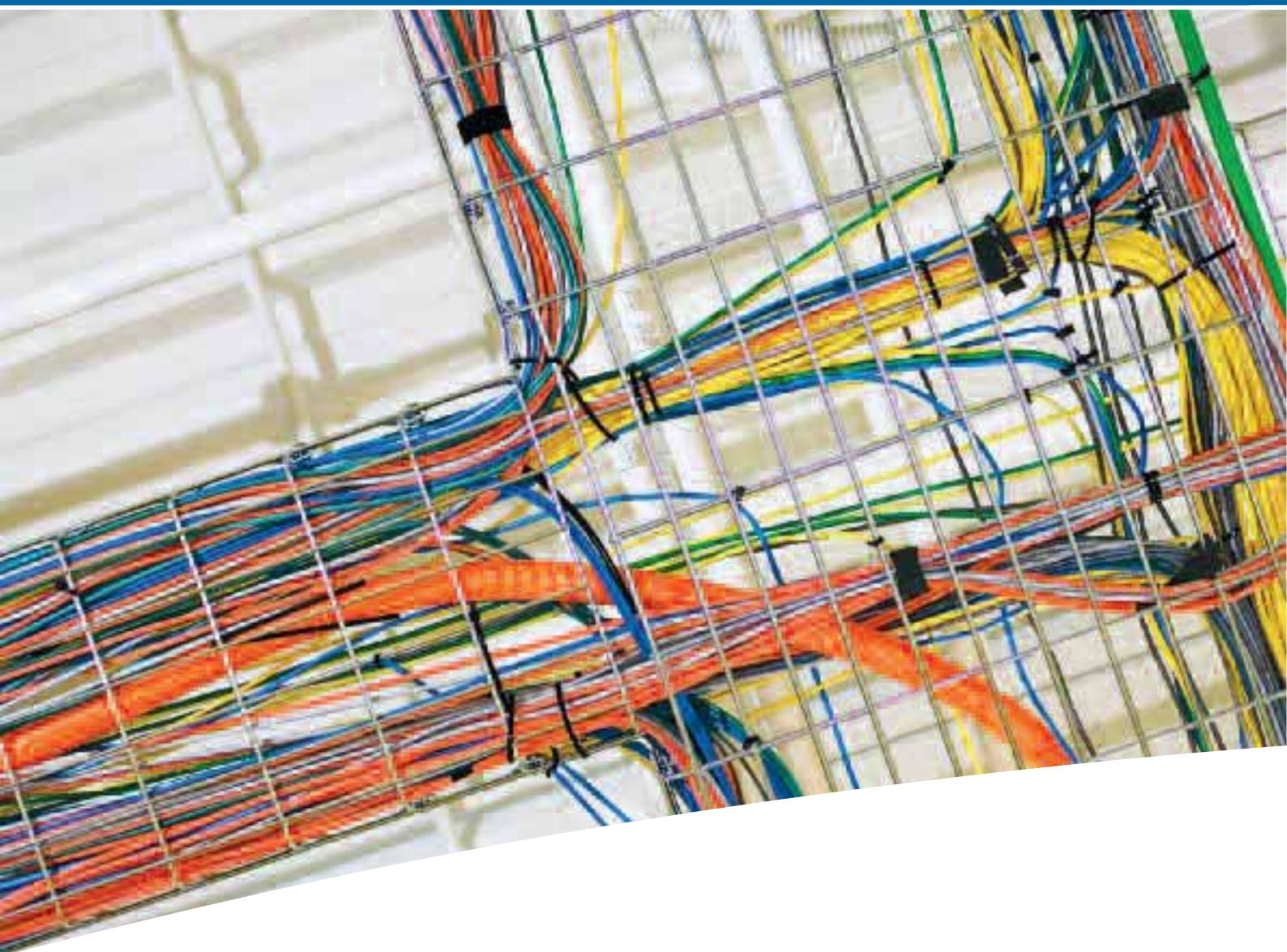
### Technical Information

Material	Zinc plated steel
Colour	Metallic



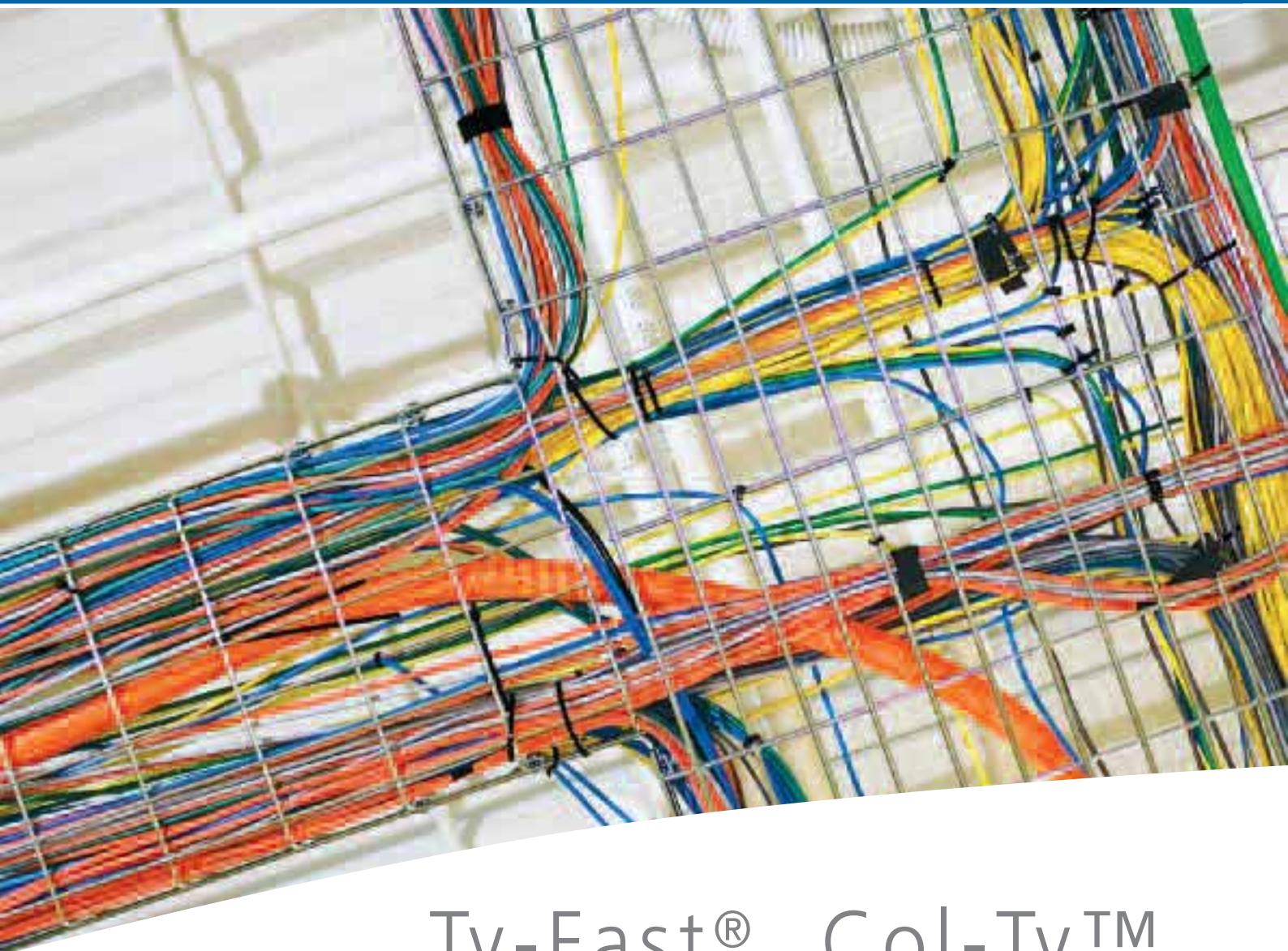
Product Ref.	Dimensions					Mounting hole diameter [mm]	Quantity [pieces]
	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]		
CSS-B	48.4	14.3	7.1	15.1	5.6	6.7 (2x)	50
CSS-H	22.5	22.2	29.8	13.6	8.3	6.9	50

Note: see pages 79 to 100 for other mounting bases in Nylon



Ty-Fast®, Col-Ty™,  
Safe-Ty™ and Ty-Grip™  
All plastic cable ties

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# Ty-Fast® , Col-Ty™ , Safe-Ty™ and Ty-Grip™ All plastic cable ties

Thomas & Betts offers a complete range of all plastic cable ties to cover the most demanding applications.

## Ty-Fast® All plastic ties

The all-plastic cable ties are available in lengths from 91 mm to 1214 mm and widths from 2.4 mm to 13.2 mm, offering a loop tensile strength up to 1120 N. Those cable ties will satisfy bundling requirements up to 381 mm. Those cable ties are halogen and silicone free Polyamide 6.6 and are available in 12 different colours.



*All plastic ties*  
*Heavy duty installation ties*  
*Low profile inline fasteners*  
*Hook & loop fasteners*

Ty-Fast® cable ties meet international standards such as UL, Germanischer Lloyd, Lloyd's Register of Shipping, Bureau Veritas, Mil-Specifications and QPL. State-of-the-art robotic and raw material handling equipment assures product and material integrity throughout the manufacturing process. The integrally formed Polyamide pawl combines low insertion and high locking strength.

A rounded, low-profile head makes for less snags, tails have improved two-sided finger grip design that helps the operator grasp and pull ties snug. The Sure Grip tab keeps the tail from popping out while being threaded, then holds it securely for final tightening by hand or tool.

#### **Heavy duty installation ties**

Col-Ty™ - the heavy-duty installation tie - is mainly used for securing and bundling of cables in the utility and construction industries. Col-Ty™ - made of Polyamide 12 - is ideal for hazardous environments, low temperatures and humidity. Col-Ty™ is conform to

EDF HN33/S/62 and its low profile double locking head with serration on the outer side of the tie eliminates the risk of damage to the cable.

#### **Low-profile inline fasteners**

The Safe-Ty™ design from Thomas & Betts is ideal for use where precision bundling is required and clearance is a necessity. A unique saddle back design curves to form a snug fit around the bundle, and allows for easy pull-trough in bulkheads and any other tight spaces.

#### **Hook & loop fasteners**

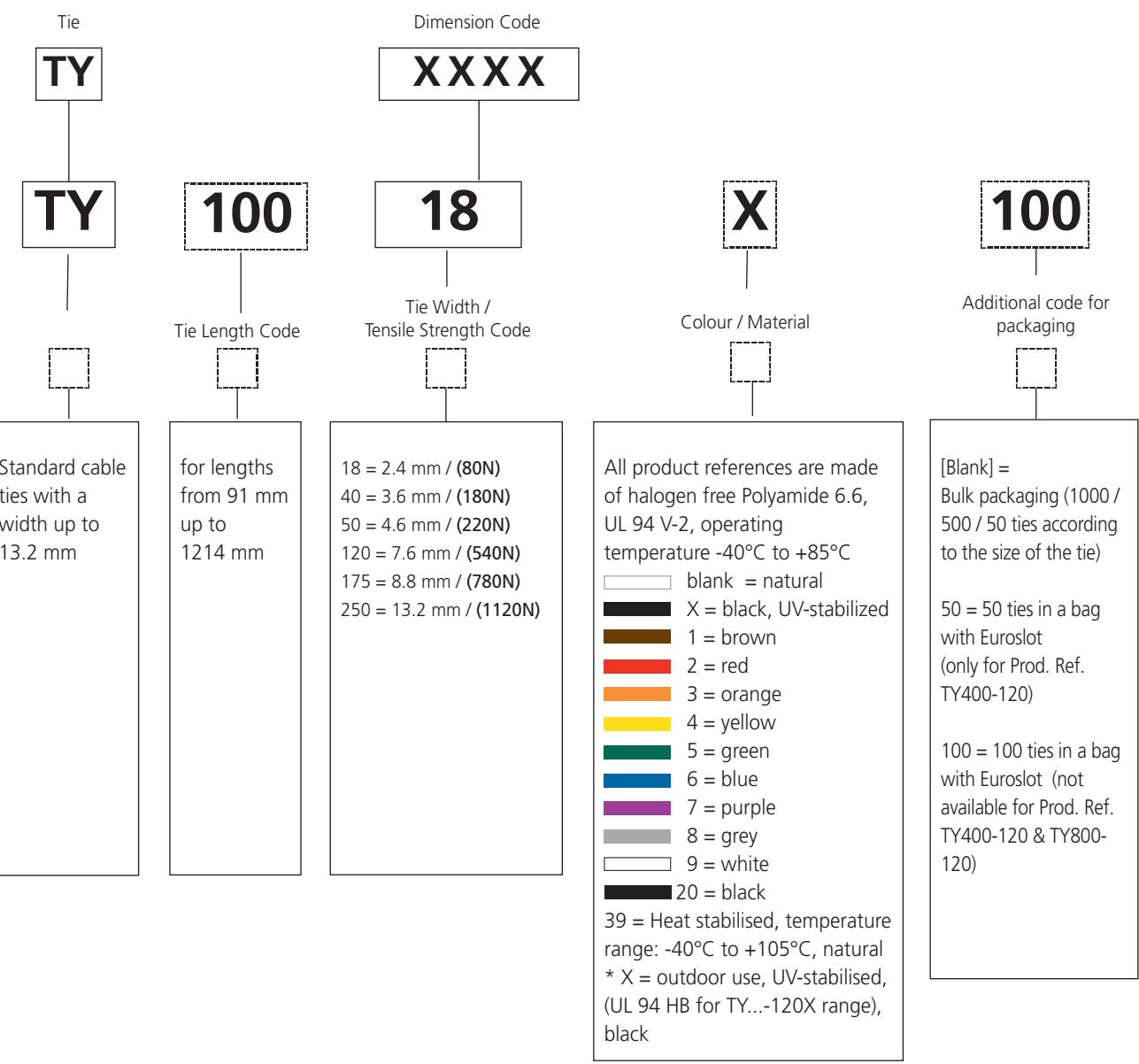
Ty-Grip™ cable ties are very easy to release and re-use, making them ideal for applications where changes are anticipated or continuous access is required. There is no risk of over-tightening the cables, which makes the Ty-Grip™ hook & loop fasteners ideal for specific applications in fiber optics, computer network wiring, telecom cables, etc.

## Product reference structure

All-plastic cable ties



Example:



Note: Nylon (Polyamide) is inherently susceptible to environmental conditions. Ty-Fast® cable ties are moisturised to optimum performance levels at machine-side and should be stored in cool dry areas out of direct sunlight. Cable ties are packaged in plastic bags to contain moisture and should remain sealed until ready for use.

## Standard cable ties

### All-plastic cable ties

State-of-the-art robotic and raw material handling equipment assures product and material integrity throughout the manufacturing process.

- The integrally formed Polyamide pawl combines low insertion and high locking strength
- A rounded, low-profile head makes for less snags
- Tails have improved two-sided finger grip design that helps the operator grasp and pull ties snug
- Sure Grip tab keeps the tail from popping out while being threaded, then holds it securely for final tightening by hand or tool
- Quick and easy pull through increases productivity, reduces operator fatigue

#### Technical Information

Material	Polyamide 6.6 (*)
Temperature range	-40°C to +85°C
Colour	Natural as standard colour (*)
Approvals	MIL: MS 3367-x (see table)
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free

(\*) For other materials and colours see the product reference structure page 48



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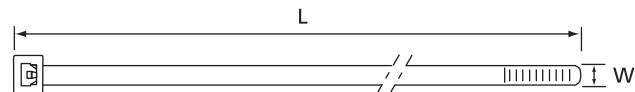
\*\*



TYPE  
APPROVED



BUREAU  
VERITAS



Product Ref.	MIL Spec.	Length L [mm]	Width W [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity	Tooling
TY075-18	MS-3367-4	91	2.4	1.6 - 20	80	1000	
TY100-18	-	112	2.4	1.6 - 25	80	1000	
TY125-18	-	136	2.4	1.6 - 32	80	1000	
TY200-18	-	203	2.4	1.6 - 50	80	1000	ERG50
TY125-40	MS-3367-5	141	3.5	1.6 - 32	180	1000	WT193A
TY200-40	-	205	3.5	1.6 - 50	180	1000	
TY300-40	-	290	3.5	1.6 - 76	180	1000	
TY400-40	-	368	3.5	1.6 - 102	180	1000	
TY175-50	MS-3367-1	186	4.6	1.6 - 44	220	1000	
TY225-50	-	226	4.6	1.6 - 57	220	1000	ERG50
TY300-50	-	291	4.6	1.6 - 76	220	1000	ERG120
TY400-50	MS-3367-2	366	4.6	1.6 - 102	220	1000	WT193A
TY200-120	-	219	7.6	4.8 - 50	540	500	ERG120
TY400-120	MS-3367-3	375	7.6	4.8 - 102	540	500	L-500-EU
TY800-120	-	706	7.6	4.8 - 203	540	50	WT3D

\*\* Some approvals may not be applicable to all the Product References. Contact your Sales office for approvals limitations

Description of Product Reference structure: see page 48

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Standard cable ties - Jars

All-plastic cable ties



- Ty-Fast® cable ties packed in an attractive plastic jar
- Ideal product for the distribution market
- Different dimensions in the same packaging: 112 mm x 2.4 mm, 141 mm x 3.6 mm and 186 mm x 4.7 mm
- Tensile strength from 80N to 220N
- Available in 3 different packaging configurations: 1 in natural cable ties and 2 in black cable ties
- Ideal product when small volumes are needed for various applications

### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural or UV-resistant black (see table)
Flammability rating	UL 94 V-2
Other properties	UV-resistant (black) Halogen free, Silicone free



Product Ref.	Content	Colour	Mil Spec.	Length L [mm]	Width W [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
JTN-500	TY100-18-100	natural	-	112	2.4	1.6 - 25	80	2 x 100	ERG50, WT193A
	TY125-40-100	natural	MS-3367-5	141	3.6	1.6 - 32	180	1 x 100	
	TY175-50-100	natural	MS-3367-1	186	4.7	1.6 - 44	220	2 x 100	
JTB-500	TY100-18-X-100	UV-resistant black	-	112	2.4	1.6 - 25	80	2 x 100	ERG50, WT193A
	TY125-40-X-100	UV-resistant black	MS-3367-5	141	3.6	1.6 - 32	180	1 x 100	
	TY175-50-X-100	UV-resistant black	MS-3367-1	186	4.7	1.6 - 44	220	2 x 100	
JTB1-500	TY100-18-X-100	UV-resistant black	-	112	2.4	1.6 - 25	80	2 x 100	ERG50, WT193A
	TY125-40-X-100	UV-resistant black	MS-3367-5	141	3.6	1.6 - 32	180	2 x 100	
	TY175-50-X-100	UV-resistant black	MS-3367-1	186	4.7	1.6 - 44	220	1 x 100	

Description of Product Reference structure: see page 48

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Extra-long cable ties

*All-plastic cable ties*

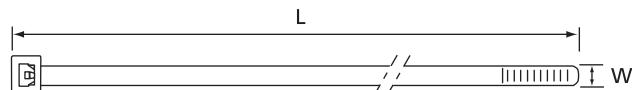
- Extremely long ties (up to 1214 mm)
- Robust construction (780N), for demanding applications where superior tensile strength is required
- The extra long Ty-Fast® ties are available in natural colour for indoor applications and in UV-resistant black for outdoor applications

### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural or UV-resistant black (see table)
Flammability rating	UL 94 V-2
Other properties	UV-resistant (black) Halogen free, Silicone free



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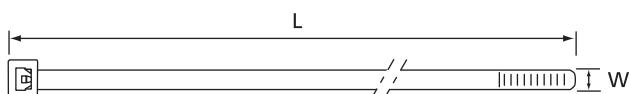
Product Ref.	Colour	Length L [mm]	Width W [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
L-36-175-0-L	UV-resistant black	930	8.8	5 - 273	780	50	
L-36-175-9-L	Natural	930	8.8	5 - 273	780	50	WT3D
L-41-175-0-L	UV-resistant black	1036	8.8	5 - 305	780	50	L300FR
L-41-175-9-L	Natural	1036	8.8	5 - 305	780	50	L-500-EU
L-48-175-0-L	UV-resistant black	1214	8.8	5 - 381	780	50	
L-48-175-9-L	Natural	1214	8.8	5 - 381	780	50	

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Heavy-duty cable ties

### All-plastic cable ties



- Extremely robust ties (1120N), for demanding applications where extreme tensile strength is required
- Available in natural colour for indoor applications and in UV-resistant black for outdoor applications

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural or UV-resistant black (see table)
Flammability rating	UL 94 V-2
Other properties	UV-resistant (black) Halogen free, Silicone free

Product Ref.	Colour	Length L [mm]	Width W [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TYL300M	natural	300	13.2	75	1120	50	
TYL300MX	UV-resistant black	300	13.2	75	1120	50	
TYL546M	natural	546	13.2	140	1120	50	
TYL546MX	UV-resistant black	546	13.2	140	1120	50	L-500-EU

Description of Product Reference structure: see page 48

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

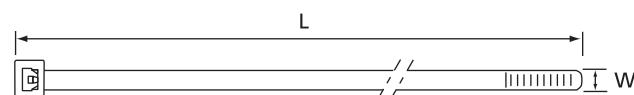
## UL 94 V-0 flame retardant cable ties

All-plastic cable ties

- Similar to our Ty-Rap® range of flame retardant ties, these all-plastic ties are made from low smoke flame retardant Polyamide 6.6 and meet the requirements of UL 94 V-0.
- Ideal for use where low flammability and low smoke are necessary such as public transport / buildings, tunnels etc.

## Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Milky white
Flammability rating	UL 94 V-0
Other properties	Limited fire hazard (low smoke) Halogen free, Silicone free



Product Ref.	Length L [mm]	Width W [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
TS1025HF	100	2.5	2 - 24	90	100	
TS1435HF	140	3.5	2.5 - 36	180	100	ERG50
TS2045HF	200	4.5	3 - 51	220	100	WT193A
TS2845HF	280	4.5	5 - 76	220	100	
TS3645HF	360	4.5	5 - 101	220	100	
TS3675HF	360	7.5	5 - 101	540	100	ERG120, L-500-EU WT3D

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Integrated mounting hole cable ties

Special all-plastic cable ties

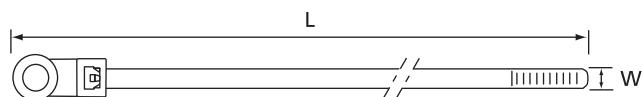


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- Cable tie can be directly mounted onto a support with screws, bolts or rivets.
- Mounting and bundling in one maintenance-friendly assembly.
- Cable harness manufacture and pre- and end- mounting of bundles and parts.
- UV-resistant version, especially recommended for outdoor applications

### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural or UV-resistant black (see table)
Flammability rating	UL 94 V-2
Other properties	UV-resistant (black) Halogen free, Silicone free



Product Ref.	Colour	Length L [mm]	Width W [mm]	Fixing screw size	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
L-5-30MH-0-C	UV-resistant black	152	3.3	M4	2 - 32	130	100	ERG50
L-5-30MH-9-C	natural	152	3.3	M4	2 - 32	130	100	WT193A
L-7-50MH-0-C	UV-resistant black	208	4.7	M5	2 - 44	220	100	ERG50
L-7-50MH-9-C	natural	208	4.7	M5	2 - 44	220	100	ERG120
L-11-50MH-0-C	UV-resistant black	314	4.7	M5	2 - 76	220	100	WT193A
L-11-50MH-9-C	natural	314	4.7	M5	2 - 76	220	100	WT3D
L-14-50MH-0-C	UV-resistant black	382	4.7	M5	2 - 102	220	100	ERG120
L-14-50MH-9-C	natural	382	4.7	M5	2 - 102	220	100	WT3D
L-14-120MH-0-C	UV-resistant black	382	7.6	M6	5 - 102	540	100	ERG120
L-14-120MH-9-C	natural	382	7.6	M6	5 - 102	540	100	L-500-EU, WT3D

Description of materials and properties: see pages 134 to 145  
 For tooling specifications: see pages 122 to 133

## Releasable panel mounting cable ties

Special all-plastic cable ties

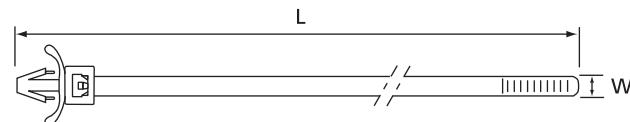
- Fastening and clip-mounting in one
- Fast pre- or on-site-assembly for a range of panel thickness up to 2.7 mm
- Fast and secure clip-mounting
- For use in 6.35 mm mounting hole
- Product References containing xxx-PMR-xxx are releasable

### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural or UV-resistant black (see table)
Flammability rating	UL 94 V-2
Other properties	UV-resistant (black) Halogen free, Silicone free



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Product Ref.	Colour	Length L [mm]	Width W [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity	Tooling
<b>STANDARD PANEL MOUNTING TIES</b>							
L-5-50PM-0-C	UV-resistant black	147	4.8	2 - 25	220	100	ERG50, ERG120
L-5-50PM-9-D	natural	147	4.8	2 - 25	220	1000	L-500-EU
L-7-50PM-0-C	UV-resistant black	208	4.8	2 - 44	220	100	WT193A
L-7-50PM-9-C	natural	208	4.8	2 - 44	220	100	
<b>RELEASABLE PANEL MOUNTING TIES</b>							
TB-4-50PMR-9-C-EU*	natural	110	4.8	2 - 22	220	100	ERG50, ERG120
L-5-50PMR-0-C	UV-resistant black	147	4.8	2 - 25	220	100	L-500-EU
L-5-50PMR-9-C	natural	147	4.8	2 - 25	220	100	WT193A
L-7-50PMR-0-C	UV-resistant black	208	4.8	2 - 44	220	100	WT1-TB, WT2-TB
L-7-50PMR-9-C	natural	208	4.8	2 - 44	220	100	

Description of materials and properties: see pages 134 to 145  
 For tooling specifications: see pages 122 to 133

\* Not UL registered

## Releasable cable ties

*Special all-plastic cable ties*



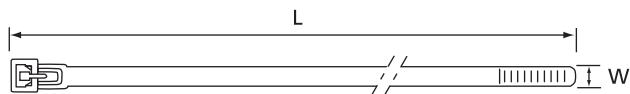
- Easy releasable and re-usable. UV-resistant version, especially recommended for outdoor applications.

### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural or UV-resistant black (see table)
Flammability rating	UL 94 V-2
Other properties	UV-resistant (black) Halogen free, Silicone free



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Product Ref.	Colour	Length L [mm]	Width W [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
L-5-50R-0-C	UV-resistant black	150	7.5	3 - 32	220	100	
L-5-50R-9-C	natural	150	7.5	3 - 32	220	100	
L-8-50R-0-C	UV-resistant black	198	7.5	3 - 51	220	100	
L-8-50R-9-C	natural	198	7.5	3 - 51	220	100	
L-10-50R-0-C	UV-resistant black	298	7.5	3 - 76	220	100	
L-10-50R-9-C	natural	298	7.5	3 - 76	220	100	

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

ERG120  
L-500-EU  
WT3D

## Cable ties with identification tag

Special all-plastic cable ties

- Identification ties with incorporated label for durable marking and tying.
- Simple marking on the roughened writing surface using the special marking pen WT163M-1 (black ink) or WT163M-3 (red ink)

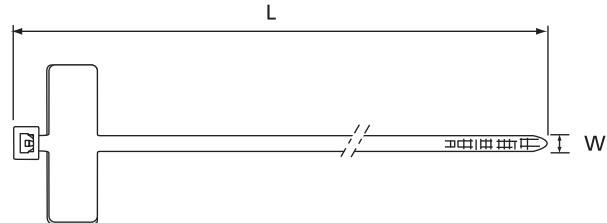
### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free

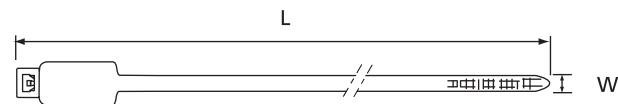


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L-4-18ID-9-C



L-7-50ID-9-C



Product Ref.	Length L [mm]	Width W [mm]	Label dimensions [mm]	Bundle diameter max. [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
L-4-18ID-9-C	102	2.5	7.9 x 24.7	19	80	100	ERG50
L-4-18ID-9-M	102	2.5	7.9 x 24.7	19	80	1000	WT193A
L-7-50ID-9-C	200	4.7	30 x 13.3	44	220	100	ERG50, ERG120
L-7-50ID-9-M	200	4.7	30 x 13.3	44	220	1000	WT193A, L-500-EU

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Special double-headed ties

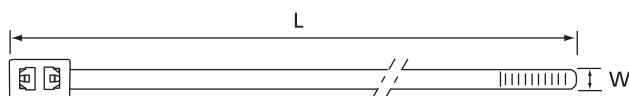
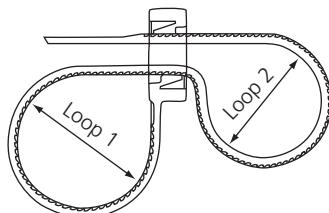
### Special all-plastic cable ties



- The double-headed ties allow the parallel routing of two bundles of cable with one single tie.
- Available in 3 different lengths.

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



Product Ref.	Length L [mm]	Width W [mm]	Bundle diameter		Minimum tensile strength [N]	Quantity [pieces]	Tooling
			Loop 1 from ... to [mm]	Loop 2 from ... to [mm]			
TB-50RLDH	200	4.8	2.5 - 47	2.0 - 45	220	1000	ERG50, ERG120
TB-12-50RLDH	300	4.8	2.5 - 72	2.0 - 70	220	1000	WT193A
TB-15-50RLDH	370	4.8	2.5 - 100	2.0 - 97	220	1000	L-500-EU

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

## Low profile in-line fasteners

Special all-plastic cable ties

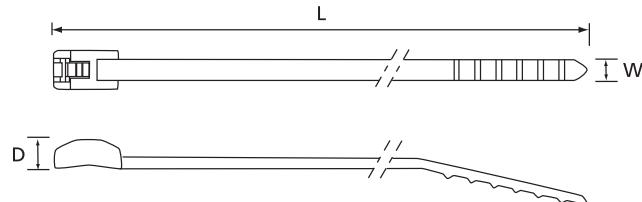
The Safe-Ty™ design from Thomas & Betts is ideal for use where precision bundling is required and clearance is a necessity. A unique saddle back design curves to form a snug fit around the bundle, and allows for easy pull-through in bulkheads and any other tight spaces.

- Low-profile, contoured head reduces clearance required for the bundle and enhances the appearance of your harness
- The safe-guard wall eliminates exposure to sharp edges
- The saddle back fits snug against the contour of the wiring harness
- Sizes and colours available to accommodate various requirements
- Recommended in all applications where the aesthetics and the user's safety can be a concern (thanks to the rounded edges): playgrounds, supermarket displays,...



### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural or UV-resistant (see table)
Flammability rating	UL 94 V-2
Other properties	UV-resistant (black), Halogen free Silicone free



Product Ref.	Colour	Length L [mm]	Width W [mm]	D [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity ** [pieces]	Tooling
SF100-18	natural*	118	2.4	3.2	3.2 - 25.4	80	100 / 1000	ERG50
SF100-18X	UV-resistant black	118	2.4	3.2	3.2 - 25.4	80	100 / 1000	WT193A
SF200-18	natural*	206	2.4	3.2	3.2 - 50.8	80	100 / 1000	
SF200-18X	UV-resistant black	206	2.4	3.2	3.2 - 50.8	80	100 / 1000	
SF175-50	natural*	201	4.7	4.5	4.7 - 44.5	220	100 / 1000	ERG50
SF175-50X	UV-resistant black	201	4.7	4.5	4.7 - 44.5	220	100 / 1000	ERG120
SF300-50	natural*	288	4.7	4.5	4.7 - 76.2	220	100 / 1000	WT193A
SF300-50X	UV-resistant black	288	4.7	4.5	4.7 - 76.2	220	100 / 1000	L-500-EU
SF400-50	natural*	369	4.7	4.5	9.5 - 101.6	220	100 / 1000	
SF400-50X	UV-resistant black	369	4.7	4.5	9.5 - 101.6	220	100 / 1000	
SF400-120	natural*	370	7.6	6.9	9.5 - 101.6	540	100 / 1000	ERG120
SF400-120X	UV-resistant black	370	7.6	6.9	9.5 - 101.6	540	100 / 1000	L-500-EU
SF600-120	natural*	533	7.6	6.9	9.5 - 152.4	540	100 / 1000	WT3D
SF600-120X	UV-resistant black	533	7.6	6.9	9.5 - 152.4	540	100 / 1000	

\* For other colours add colour suffix to Product Reference: 0 = black, 1 = brown, 2 = red, 3 = orange, 4 = yellow, 5 = green, 6 = blue, 8 = grey and 9 = white. For example: SF-175-50-2 (red)



\*\* Standard quantity = 1000. For bags of 100 add -100 to the product reference, for example. SF100-18-100.

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

Note: Nylon (Polyamide) is inherently susceptible to environmental conditions. Safe-Ty™ cable ties are moisturised to optimum performance levels at machine-side and should be stored in cool dry areas out of direct sunlight. Cable ties are packaged in plastic bags to contain moisture and should remain sealed until ready for use.

## Hook & Loop fasteners

### Special cable ties



FO series loop ties are ideal for wrapping pre-determined bundle diameters thanks to the convenient slotted head.



FOL series buckle ties provide added strength and stability thanks to the high performance polyamide buckle.

These handy ties are very easy to release and re-use, making them ideal for applications where changes are anticipated or continuous access is required.

- Quick bundling and re-adjustable tension
- No risk of over-tightening the cables, which makes the Ty-Grip™ Hook & Loop fasteners ideal for specific applications in fibre optics, computer network wiring, telecom cables, etc.
- Multiple colours available for identifying specific bundles
- Different sizes available to accommodate varying bundle diameters
- Screw-mount and self-adhesive mounting bases provide multiple mounting options

#### Technical Information FO Series

Material hook side	Polyamide
Material loop side	Low density Polyethylene
Temperature range	-20°C to +104°C
Colour	Standard colour: black - see note after table
Flammability rating	UL 94 HB
Peel-off strength	0.8N/cm

#### Technical Information FOL Series

Material hook	Polyamide
Temperature range	-20°C to +93°C
Colour	Standard colour: black - see note after table
Flammability rating	UL 94 HB
Peel-off strength	0.8N/cm

Product Ref.	Maximum bundle ø [mm]	Length [mm]	Width [mm]	Tensile strength [N]	Quantity [pieces]
<b>FO SERIES LOOP TIES</b>					
FO200-40-0	50.8	228.6	12.7	180	10
FO200-50-0	50.8	228.6	19.1	220	10
FO350-40-0	88.9	330.2	12.7	180	10
FO350-50-0	88.9	330.2	19.1	220	10
<b>FOL SERIES BUCKLE TIES</b>					
FOL300-50-0	76.2	304.8	19.1	220	10
FOL500-50-0	127.0	457.2	19.1	220	10

Standard colour: black

Replace “-0” in the Product Reference by the corresponding colour code: 1 = brown, 2 = red, 3 = orange, 4 = yellow, 5 = green, 6 = blue, 8 = grey and 9 = white

For example: FO 200-40-2 defines a red FO200-40 type fastener



Contact your Sales Office for Product Availability in the other colours

## Hook & Loop fasteners

*Special cable ties*

These handy ties are very easy to release and re-use, making them ideal for applications where changes are anticipated or continuous access is required.

- Quick bundling and re-adjustable tension
- No risk of over-tightening the cables, which makes the Ty-Grip™ Hook & Loop fasteners ideal for specific applications in fibre optics, computer network wiring, telecom cables, etc
- Multiple colours available for identifying specific bundles
- Different sizes available to accommodate varying bundle diameters
- Screw-mount and self-adhesive mounting bases provide multiple mounting options

### Technical Information FOS and FOR Series

Material hook side	Polyamide
Material loop side	Low density Polyethylene
Temperature range	-20°C to +104°C
Colour	Standard colour: black - see note after table
Flammability rating	UL 94 HB
Peel-off strength	0.8N/cm



FOS series strip ties are pre-cut which makes bundling easy.



FOR series rolled hook and loop allows customers to conveniently cut pieces to desired lengths, eliminating waste.

Product Ref.	Maximum bundle ø [mm]	Length [mm]	Width [mm]	Tensile strength [N]	Quantity [pieces]
<b>FOS SERIES STRIP TIES</b>					
FOS150-50-0	38.1	152.4	19.1	220	10
FOS320-50-0	81.3	304.8	19.1	220	10
FOS500-50-0	127.0	457.2	19.1	220	10
<b>FOR SERIES ROLLED STRIP</b>					
FOR180-50-0	Various	4572.0	19.1	220	1

Standard colour: black

Replace "-0" in the Product Reference by the corresponding colour code: 1 = brown, 2 = red, 3 = orange, 4 = yellow, 5 = green, 6 = blue, 8 = grey and 9 = white

For example: FOS150-50-2 defines a red FOS150-50 type fastener



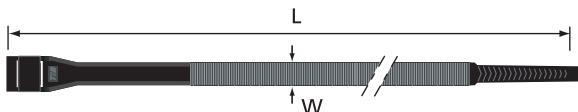
Contact your Sales Office for Product Availability in the other colours

## Heavy-duty double headed installation ties

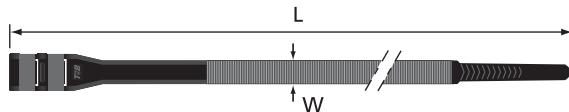
### Heavy-duty installation ties



Single locking head



Double locking head



- For securing and bundling of cables in the utility and construction industries
- Low profile double locking head\*
- Serrations on the outer side of the tie eliminates the risk of damage to the cable
- Ideal for hazardous environments, low temperatures and humidity
- Conform to EDF HN33/S/62

#### Technical Information

Material	Polyamide 12
Temperature range	-40°C to +80°C
Colour	Black
Flammability rating	UL 94 HB
Other properties	UV-resistant

Product Ref.	Length L [mm]	Width W [mm]	Thickness [mm]	Bundle diameter from ... to [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
CT-9-180-0-C*	180	9	1.8	10 - 42	440	100	
CT-9-260-0-C	260	9	2.0	15 - 62	520	100	L300-FR
CT-9-360-0-C	360	9	2.0	25 - 92	520	100	L-500-EU
CT-9-500-0-C	510	9	2.4	74 - 140	550	100	WT3D
CT-9-750-0-C	760	9	2.4	74 - 220	550	100	

\* Product Ref. CT-9-180-0-C has a single locking head

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

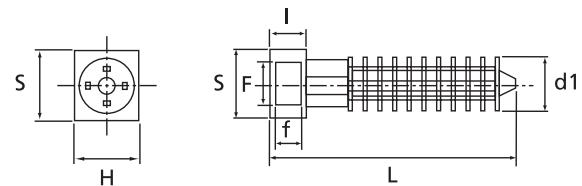
## Accessories

### Heavy-duty installation ties

- Wall plug suitable for  $\varnothing$  8 mm hole
- Simply drill hole and hammer the plug in

#### Technical Information

Material	Polyamide 11/12
Temperature range	-40°C to +80°C
Colour	Black
Flammability rating	UL 94 HB
Other properties	UV-resistant

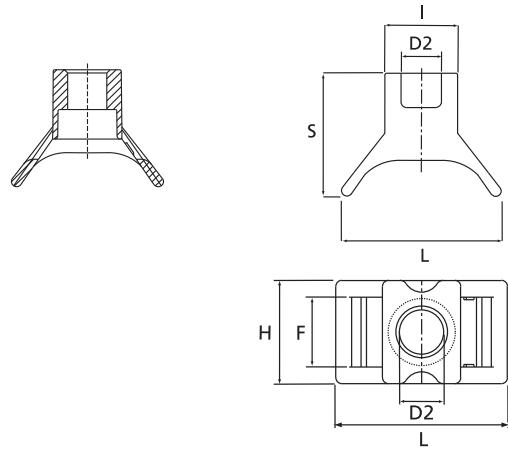


Product Ref.	L [mm]	$\varnothing$ d1 [mm]	S [mm]	H [mm]	I [mm]	F [mm]	f [mm]	Quantity [pieces]
CT-5359	43.1	9.6	13.2	16	6.3	9.5	2.4	100

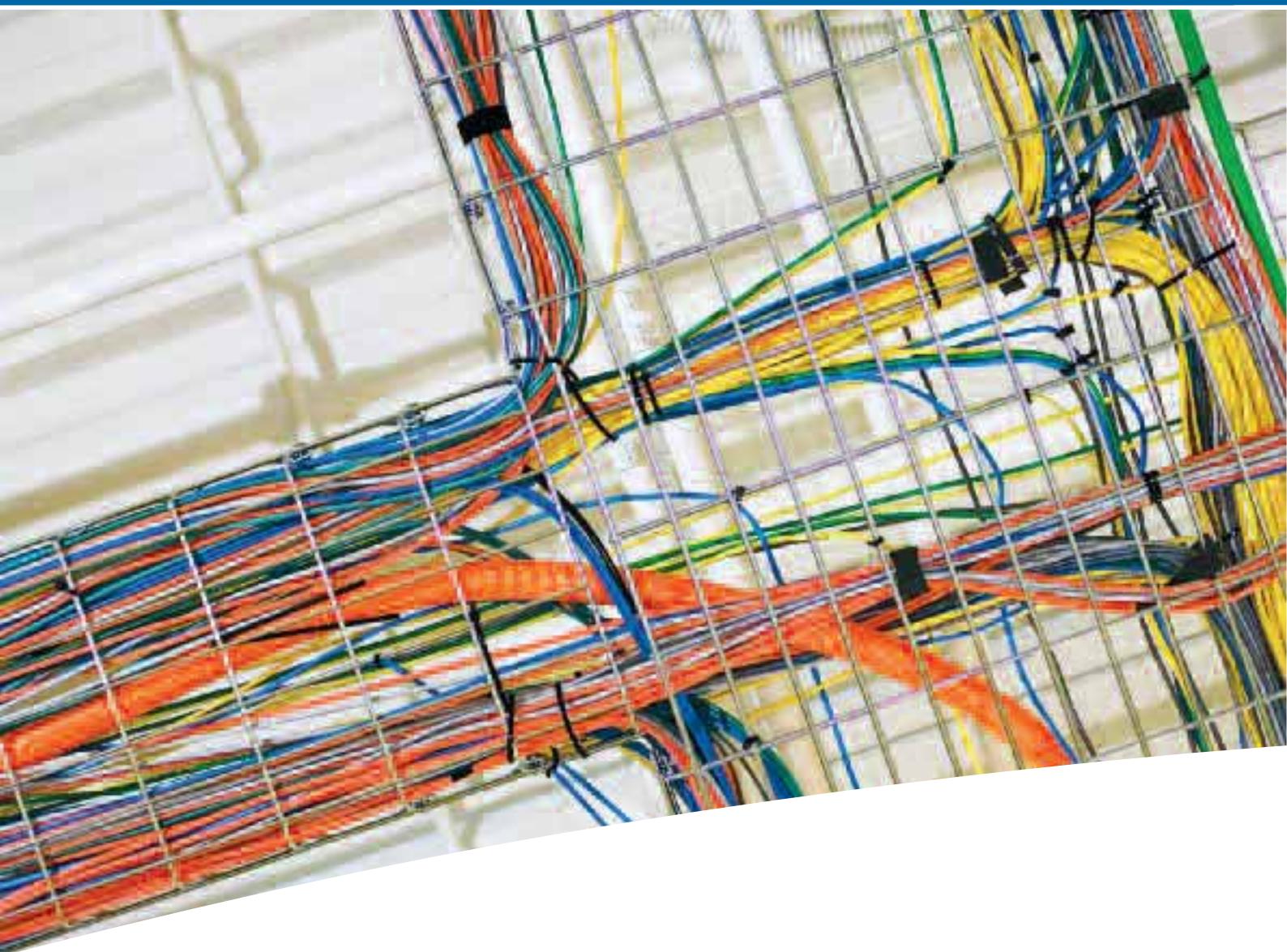
- Use 5 mm screw
- Cradle for ties up to 9 mm wide

#### Technical Information

Material	Polyamide 11/12
Temperature range	-40°C to +80°C
Colour	Black
Flammability rating	UL 94 HB
Other properties	UV-resistant



Product Ref.	L [mm]	I [mm]	S [mm]	H [mm]	F [mm]	d2 [mm]	Quantity [pieces]
CT-3401	22.9	10.5	17.6	13.8	9.4	5.9	100



# Ty-Met™ Stainless Steel cable ties

## FASTENING SYSTEMS

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## Ty-Met™ Stainless Steel cable ties

**The Ty-Met™ stainless steel ties are the ultimate solution to install your cables in extreme conditions and hazardous areas, indoor and outdoor, such as the petrochemical and food processing industries, power stations, mining, ship-building, offshore and other aggressive environments.**

The Ty-Met™ stainless steel ties provide a high mechanical strength combined with chemical durability and temperature resistance.

They are available in three different types:

- Ball-Lock Type: quick and reliable self-locking mechanism
- Ladder Type: easy application and strong locking system
- Releasable Type: can be unfastened for re-use



*Ty-Met™ stainless steel ties:  
the ultimate solution to install  
your cables in extreme conditions  
and hazardous areas*

All types are available in a broad range of lengths and two different widths, providing extreme levels of tensile strength. Two grades of non-magnetic stainless steel (304 & 316) and a coated and an uncoated version are available to cover most applications.

Ty-Met™ cable ties have international approvals such as UL, Germanischer Lloyd, Lloyd's Register and Det Norske Veritas.

Two grades of non-magnetic stainless steel are available:

- 304 grade stainless steel, for standard applications
- 316 grade (marine grade) stainless steel, for extra corrosion resistance

Available in uncoated version (for high temperature applications) or in fully coated version with non-toxic, halogen free Polyester coating, for a superior protection of cables and installer's hands and for an improved insulation between dissimilar materials.

Halogen free, corrosion proof and resistant to salt water.

A range of dedicated hand tools completes the product offering.

## Features & Benefits

### *Stainless steel cable ties*

The Ty-Met™ stainless steel ties are available in three different types:

- **Ball-Lock Type:** quick and reliable self-locking mechanism
- **Ladder Type:** easy application and strong locking system
- **Releasable Type:** can be unfastened for re-use

#### **Ball-Lock Type**

Easy application and strong self-locking mechanism (steel ball), with low insertion force



Rounded edges and smooth surfaces, for fast and safe hand installation

Uncoated or fully coated with non-toxic, Halogen free Polyester

Angled / rounded tail, for safer handling and easier insertion

#### **Ladder Type**

Self-locking mechanism (pawl and ratchet)



Low profile, flat head (no sharp edges), for easy and safe installation

Uncoated or fully coated with non-toxic, Halogen free Polyester

Larger slot at the end, allows the use of a hook-type tool

#### **Releasable Type**

The unique buckle design allows the tie to be unfastened for re-use



Additional ears can be bent back over the fastened tie to increase the tensile strength

Fully coated with non-toxic, Halogen free Polyester

Can be installed by hand, and if necessary, the slots at the end allow the use of a hook-type tool



UV-resistant



Fire-proof



Heat  
resistant



Low temperature  
flexibility



Weatherproof



Radiation  
resistant



Chemically  
resistant

## Ball-Lock Type - uncoated

*Stainless steel cable ties*

- "Ball-Lock" self-locking mechanism
- Uncoated version, for high temperature applications
- Suitable for indoor and outdoor applications
- Two grades of non-magnetic stainless steel:
  - 304 grade stainless steel, for standard applications
  - 316 grade (marine grade) stainless steel, for extra corrosion resistance
- Dedicated tooling: either Prod. Ref. CT3 for manual cutting, or Prod. Ref. CT6 for tension setting tool with automatic cutting
- Applications: Installation of cables and pipes in extreme conditions and hazardous areas, indoor and outdoor, such as: Petrochemical and food processing industries, power stations, mining, ship-building, offshore, other aggressive environments



### Technical Information

Material	A. 304 grade non-magnetic stainless steel B. 316 grade non-magnetic stainless steel
Temperature range	-80°C to +538°C
Colour	Metallic
Flammability rating	Absolutely fireproof
Other properties	UV-resistant



E49405\*



TYPE APPROVED PRODUCTS



Product Ref. Stainless steel 304	Product Ref. Stainless steel 316	Length x width [mm]	Material thickness [mm]	Max. bundle ø [mm]	Tensile strength [N]	Quantity [pieces]	Tooling
YLS-4.6-100A	YLS-4.6-100B	100 x 4.6	0.26	20	440	100	
YLS-4.6-125A	YLS-4.6-125B	125 x 4.6	0.26	22	440	100	
YLS-4.6-150A	YLS-4.6-150B	150 x 4.6	0.26	24	440	100	
YLS-4.6-200A	YLS-4.6-200B	200 x 4.6	0.26	50	440	100	
YLS-4.6-300A	YLS-4.6-300B	300 x 4.6	0.26	80	440	100	
YLS-4.6-360A	YLS-4.6-360B	360 x 4.6	0.26	100	440	100	
YLS-4.6-520A	YLS-4.6-520B	520 x 4.6	0.26	150	440	100	
YLS-4.6-680A	YLS-4.6-680B	680 x 4.6	0.26	200	440	100	
YLS-4.6-840A	YLS-4.6-840B	840 x 4.6	0.26	250	440	100	
YLS-4.6-1000A	YLS-4.6-1000B	1000 x 4.6	0.26	300	440	100	
YLS-4.6-1200A	YLS-4.6-1200B	1200 x 4.6	0.26	365	440	100	
YLS-4.6-1400A	YLS-4.6-1400B	1400 x 4.6	0.26	425	440	100	
YLS-7.9-100A	YLS-7.9-100B	100 x 7.9	0.26	20	1110	100	CT3
YLS-7.9-125A	YLS-7.9-125B	125 x 7.9	0.26	22	1110	100	CT6
YLS-7.9-150A	YLS-7.9-150B	150 x 7.9	0.26	24	1110	100	
YLS-7.9-200A	YLS-7.9-200B	200 x 7.9	0.26	50	1110	100	
YLS-7.9-300A	YLS-7.9-300B	300 x 7.9	0.26	80	1110	100	
YLS-7.9-360A	YLS-7.9-360B	360 x 7.9	0.26	100	1110	100	
YLS-7.9-520A	YLS-7.9-520B	520 x 7.9	0.26	150	1110	100	
YLS-7.9-680A	YLS-7.9-680B	680 x 7.9	0.26	200	1110	100	
YLS-7.9-840A	YLS-7.9-840B	840 x 7.9	0.26	250	1110	100	
YLS-7.9-1000A	YLS-7.9-1000B	1000 x 7.9	0.26	300	1110	100	
YLS-7.9-1200A	YLS-7.9-1200B	1200 x 7.9	0.26	365	1110	100	
YLS-7.9-1400A	YLS-7.9-1400B	1400 x 7.9	0.26	425	1110	100	

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

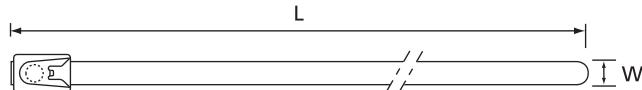
## Ball-Lock Type - coated

*Stainless steel cable ties*



TYPE  
APPROVED  
PRODUCTS

\* Some approvals may not be applicable to all the Product References.  
Contact your Sales Office for approvals limitations



Product Ref.	Length x width [mm]	Material thickness [mm]	Max. bundle ø [mm]	Tensile strength [N]	Quantity [pieces]	Tooling
YLS-4.6-100BC	100 x 4.6	0.36	20	440	100	
YLS-4.6-125BC	125 x 4.6	0.36	22	440	100	
YLS-4.6-150BC	150 x 4.6	0.36	24	440	100	
YLS-4.6-200BC	200 x 4.6	0.36	50	440	100	
YLS-4.6-300BC	300 x 4.6	0.36	80	440	100	
YLS-4.6-360BC	360 x 4.6	0.36	100	440	100	
YLS-4.6-520BC	520 x 4.6	0.36	150	440	100	
YLS-4.6-680BC	680 x 4.6	0.36	200	440	100	
YLS-4.6-840BC	840 x 4.6	0.36	250	440	100	
YLS-4.6-1000BC	1000 x 4.6	0.36	300	440	100	
YLS-4.6-1200BC	1200 x 4.6	0.36	365	440	100	
YLS-4.6-1400BC	1400 x 4.6	0.36	425	440	100	
YLS-7.9-100BC	100 x 7.9	0.36	20	530	100	CT3
YLS-7.9-125BC	125 x 7.9	0.36	22	530	100	CT6
YLS-7.9-150BC	150 x 7.9	0.36	24	530	100	
YLS-7.9-200BC	200 x 7.9	0.36	50	530	100	
YLS-7.9-300BC	300 x 7.9	0.36	80	530	100	
YLS-7.9-360BC	360 x 7.9	0.36	100	530	100	
YLS-7.9-520BC	520 x 7.9	0.36	150	530	100	
YLS-7.9-680BC	680 x 7.9	0.36	200	530	100	
YLS-7.9-840BC	840 x 7.9	0.36	250	530	100	
YLS-7.9-1000BC	1000 x 7.9	0.36	300	530	100	
YLS-7.9-1200BC	1200 x 7.9	0.36	365	530	100	
YLS-7.9-1400BC	1400 x 7.9	0.36	425	530	100	

Description of materials and properties: see pages 134 to 145  
For tooling specifications: see pages 122 to 133

## Ladder Type - uncoated

*Stainless steel cable ties*

The Ladder Type stainless steel ties from Thomas & Betts have a flat, low profile head for easy application.

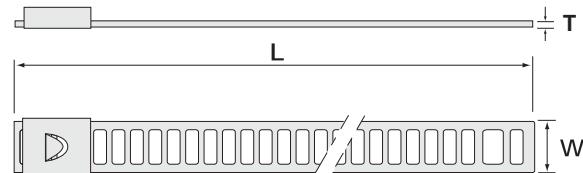
- Strong self-locking mechanism (pawl and ratchet), requires no time consuming crimping or folding operations
- Flat and low profile head (no sharp edge), for easy installation
- Corrosion resistant 316 grade stainless steel for high mechanical and chemical durability
- Uncoated version for high temperature applications
- Increased usable length (slots up to the end of the tail), allows larger bundle diameters with the same tie length
- Larger slot at the end, allows the use of a hook-type tool
- Applications: Installation of cables and pipes in extreme conditions and hazardous areas, indoor and outdoor, such as: petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments

### Technical Information

Material	316 grade stainless steel
Coating	Uncoated
Temperature range	-80°C to +538°C
Colour	Metallic
Flammability rating	Absolutely fireproof
Other properties	UV-resistant



TYPE  
APPROVED



Product Ref.	Length L [mm]	Width W [mm]	Thickness T [mm]	Max. Bundle diameter [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
YLD-7-150-B	150	7.0	0.30	43	445	100	
YLD-7-225-B	225	7.0	0.30	67	445	100	
YLD-7-300-B	300	7.0	0.30	91	445	100	
YLD-7-450-B	450	7.0	0.30	139	445	100	
YLD-7-610-B	610	7.0	0.30	190	445	100	
YLD-12-150-B	150	12.0	0.35	43	890	100	CT1-TB
YLD-12-225-B	225	12.0	0.35	67	890	100	CT2-TB
YLD-12-300-B	300	12.0	0.35	91	890	100	CT3
YLD-12-450-B	450	12.0	0.35	139	890	100	CT4-TB
YLD-12-610-B	610	12.0	0.35	190	890	100	CT5
							WT3S

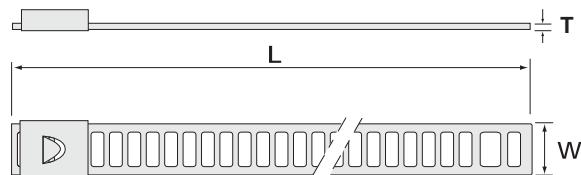
Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

\* Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations

## Ladder Type - coated

*Stainless steel cable ties*



The Ladder Type stainless steel ties from Thomas & Betts have a flat, low profile head for easy application.

- Strong self-locking mechanism (pawl and ratchet), requires no time consuming crimping or folding operations
- Flat and low profile head (no sharp edge), for easy installation
- Corrosion resistant 316 grade stainless steel for high mechanical and chemical durability
- Fully coated version with non-toxic, Halogen free Polyester coating, for a superior protection of cables and installer's hands and for an improved insulation between dissimilar materials
- Increased usable length (slots up to the end of the tail), allows larger bundle diameters with the same tie length
- Larger slot at the end, allows the use of a hook-type tool
- Applications: Installation of cables and pipes in extreme conditions and hazardous areas, indoor and outdoor, such as: petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments

### Technical Information

Material	316 grade stainless steel
Coating	Polyester
Temperature range	-80°C to +150°C
Colour	Black
Flammability rating	Absolutely fireproof
Other properties	UV-resistant, Halogen free, non-toxic

Product Ref.	Length L [mm]	Width W [mm]	Thickness T [mm]	Max. Bundle diameter [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
YLD-7-150-BC	150	7.0	0.41	43	445	100	
YLD-7-225-BC	225	7.0	0.41	67	445	100	
YLD-7-300-BC	300	7.0	0.41	91	445	100	
YLD-7-450-BC	450	7.0	0.41	139	445	100	
YLD-7-610-BC	610	7.0	0.41	190	445	100	
YLD-12-150-BC	150	12.0	0.46	43	890	100	CT1-TB
YLD-12-225-BC	225	12.0	0.46	67	890	100	CT2-TB
YLD-12-300-BC	300	12.0	0.46	91	890	100	CT3
YLD-12-450-BC	450	12.0	0.46	139	890	100	CT4-TB
YLD-12-610-BC	610	12.0	0.46	190	890	100	CT5
							WT3S

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

\* Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations

## Releasable Type

*Stainless steel cable ties*

The Releasable Type stainless steel ties from Thomas & Betts have a unique buckle design that allows the ties to be unfastened for re-use.

- Releasable and re-usable
- Corrosion resistant 316 grade stainless steel for high mechanical and chemical durability
- Fully coated version with non-toxic, Halogen free Polyester coating, for a superior protection of cables and installer's hands and for an improved insulation between dissimilar materials
- Fast, easy and reliable installation - can be installed by hand and if necessary, the slots at the end of the tie allow the use of a hook-type tool
- The additional ears can be bent back over the fastened tie to increase the tensile strength
- Applications: Installation of cables and pipes in extreme conditions and hazardous areas, indoor and outdoor, such as: petrochemical and food processing industries, power stations, mining, shipbuilding, offshore and other aggressive environments

### Technical Information

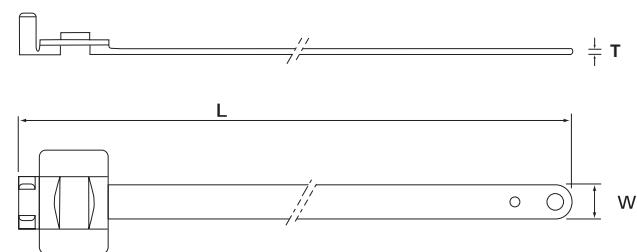
Material	316 grade stainless steel
Coating	Polyester
Temperature range	-80°C to +150°C
Colour	Black
Flammability rating	Absolutely fireproof
Other properties	UV-resistant, Halogen free, non-toxic



TYPE  
APPROVED



TYPE  
APPROVED  
PRODUCTS

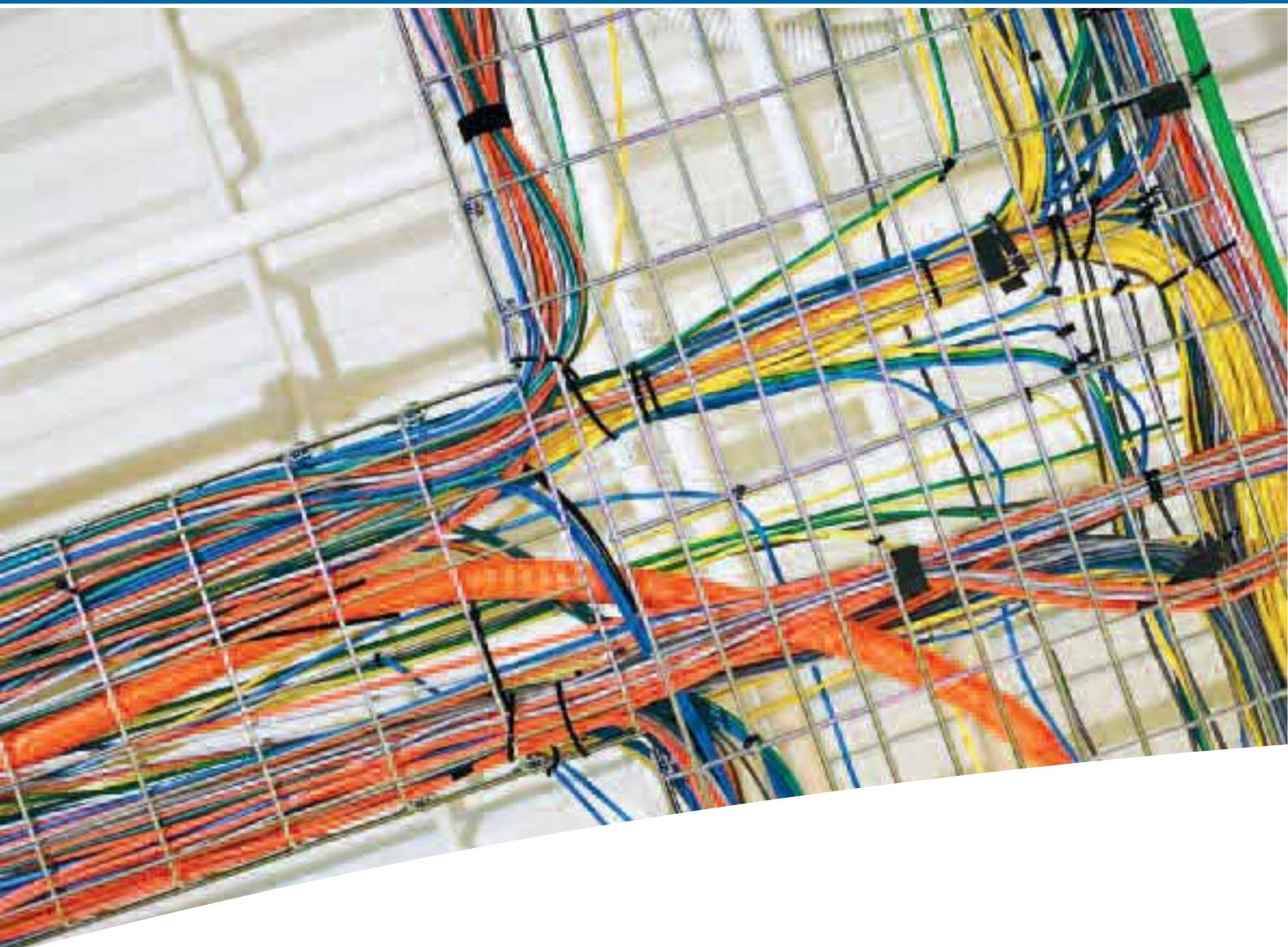


Product Ref.	Length L [mm]	Width W [mm]	Thickness T [mm]	Max. Bundle diameter [mm]	Minimum tensile strength [N]	Quantity [pieces]	Tooling
YRL-5-150-BC	150	5.0	0.61	35	334 (1334 for DNV)	100	
YRL-5-230-BC	230	5.0	0.61	60	334 (1334 for DNV)	100	
YRL-5-330-BC	330	5.0	0.61	95	334 (1334 for DNV)	100	
YRL-5-450-BC	450	5.0	0.61	130	334 (1334 for DNV)	100	
YRL-5-650-BC	650	5.0	0.61	195	334 (1334 for DNV)	100	
YRL-10-150-BC	150	10.0	0.61	35	1112 (2000 for DNV)	100	CT1-TB
YRL-10-230-BC	230	10.0	0.61	60	1112 (2000 for DNV)	100	CT2-TB
YRL-10-330-BC	330	10.0	0.61	95	1112 (2000 for DNV)	100	CT4-TB
YRL-10-450-BC	450	10.0	0.61	130	1112 (2000 for DNV)	100	
YRL-10-650-BC	650	10.0	0.61	195	1112 (2000 for DNV)	100	
YRL-10-750-BC	750	10.0	0.61	225	1112 (2000 for DNV)	100	
YRL-10-900-BC	900	10.0	0.61	270	1112 (2000 for DNV)	100	

Description of materials and properties: see pages 134 to 145

For tooling specifications: see pages 122 to 133

\* Some approvals may not be applicable to all the Product References. Contact your Sales Office for approvals limitations

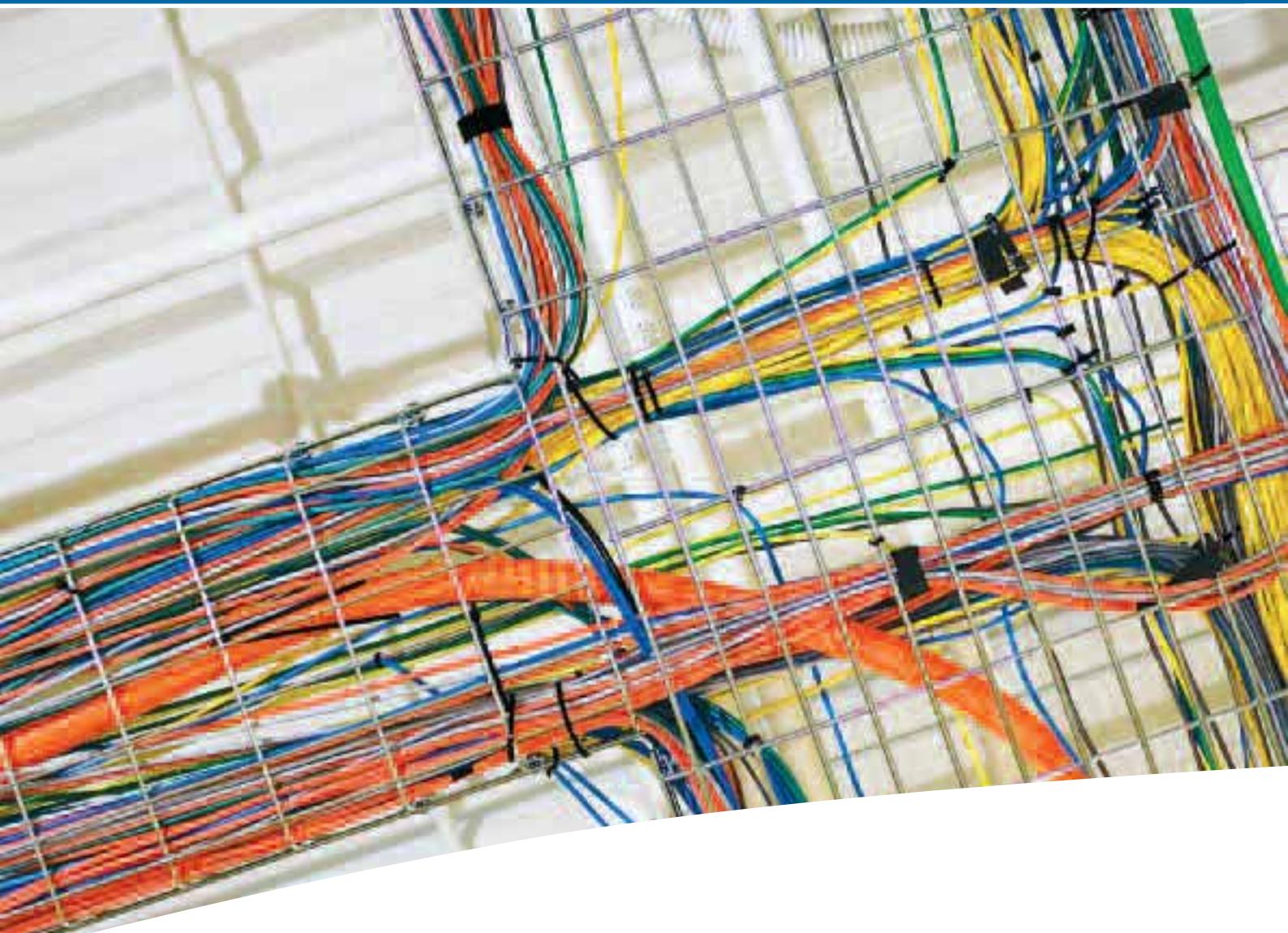


# Mounting Bases, Cable Clamps & Other Fastening Accessories

## FASTENING SYSTEMS

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## Ty-Rap® and Ty-Fast® Accessories

To complement the range of premium cable ties, Thomas & Betts has also developed an extensive range of mounting bases, cable clamps and other fastening accessories, to provide a professional solution to the most demanding applications in cable management.

A wide range of material is offered, from the classic Polyamide 6.6 to the high performance Fluoropolymer ETFE for applications in tough conditions.

To better suit each kind of applications, these products exist in a wide choice of shape & design, and with different mounting methods, from self-adhesive to glue and / or screw mounting.



## *Mounting Bases, Cable Clamps & Other Fastening Accessories*

In particular, with the new high performance mounting bases (TC345 series), Thomas & Betts is now offering a mounting base that leads the industry with more features and better performance:

- new design & materials, for increased performance
- special adhesive formulation, specifically for Nylon Mounting bases

Typical applications include wiring in:

- control boxes & machine control devices
- office equipment & home appliances
- military & medical equipment
- lighting & electronic equipment

## Overview

### Mounting Bases & Accessories



Mounting bases



Cable clamps

#### **Self-adhesive mounting bases and clamps for screw and rivet mounting**

The main difference between a mounting base and a cable clamp is the way the cable bundle can be mounted: while the cable bundle is attached directly to the clamp, the mounting base requires a cable tie to hold the bundle.

Thomas & Betts offers a wide range of mounting bases and cable clamps, which can be self-adhesive or for screw and rivet mounting.

- Standard material: Polyamide 6.6
- Available in different types / material to suit any application
- Available in a wide range of sizes
- Temperature range: -40°C to +85°C (+105°C for short periods)
- Low profile design
- Easy to install
- Extremely strong and durable adhesive
- The self-adhesive film is foam backed (0.8 mm) to compensate for any irregularities on the mounting surface
- When applicable Thomas & Betts accessories are UL recognised

#### **Typical applications**

Wiring of:

- Control boxes
- Vehicles
- Office equipment
- Machine control devices
- Machine construction
- Military equipment
- Aeronautics
- Railway industry
- Electronic equipment
- Home appliances
- Lighting
- Medical equipment

## 2-way entry Mounting bases

- Can be used in 2-way entry style for cable ties having a width up to 7.6 mm
- For cable ties having a width up to 4.8 mm, the mounting bases can be used in 4-way entry style
- Choice of 3 materials: Standard Polyamide 6.6 (natural), UV-resistant Polyamide 6.6 (black), Polyamide 6.6 flame retardant and ETFE Fluoropolymer (aquamarine)
- Supplied either on a rubber based (synthetic polymer) closed cell foam adhesive (installation: self-adhesive and/or screw) or without self-adhesive (installation: screw and/or 2-component glue\*)

### Technical Information TC347, TC347A, TC5347AR, TC347X and TC5347AX

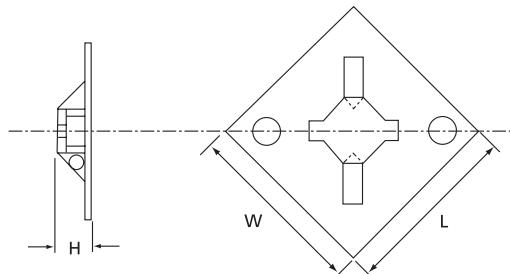
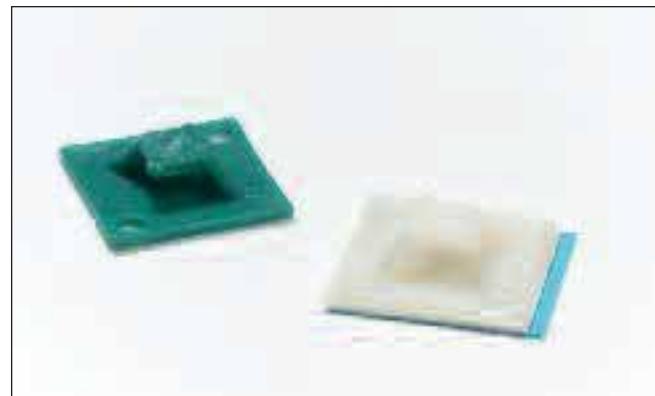
Material	Polyamide 6.6
Temperature range	-40°C to +85°C (Self-adhesive version: 0°C to +65°C)
Flammability rating	UL 94 V-2
Colour	(see table)
Other properties	UV-resistant (black), Halogen free, Silicone free

### Technical Information TC347FR (Flame retardant)

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Flammability rating	UL 94 V-0
Colour	Natural
Other properties	Halogen free, Silicone free

### Technical Information TCZ347 (Fluoropolymer)

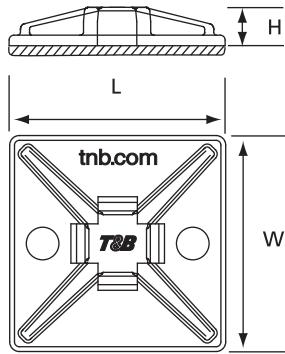
Material	ETFE Fluoropolymer
Temperature range	-46°C to +150°C
Flammability rating	UL 94 V-0
Colour	Aquamarine
Other properties	Silicone free, inert to most solvents and chemicals, hydrolytically stable, radiation resistant



Product Ref.	Colour	Mounting method	Dimensions			For tie width up to [mm]	Mounting hole ø [mm]	Quantity
			H [mm]	W [mm]	L [mm]			
TC347	natural	screw / glue*	7.8	28.6	28.6	7.6	4.4 (2x)	1000
TC347X	UV-resistant black	screw / glue*	7.8	28.6	28.6	7.6	4.4 (2x)	1000
TC347FR	natural / flame retardant	screw / glue*	7.8	28.6	28.6	7.6	4.4 (2x)	1000
TCZ347	aquamarine	screw / glue*	7.8	28.6	28.6	7.6	4.4 (2x)	500
TC347A	natural	self-adhesive / screw	8.5	29.0	29.0	7.6	4.4 (2x)	1000
TC5347AR	natural	self-adhesive / screw	8.5	29.0	29.0	7.6	4.4 (2x)	100
TC5347AX	UV-resistant black	self-adhesive / screw	8.5	29.0	29.0	7.6	4.4 (2x)	100

\* Glue = Product Ref. TC2PA (see page 137 for specifications)

## 4-way entry - high performance Mounting bases



- New design & materials, for increased performance
- Low profile shape (height: 5.1 mm), to save space and reduce the torque forces on the mounting base
- Ramped cable tie entries, for easier insertion of the cable tie
- Longer struts (up to the edges of the base), for better adhesion
- Special adhesive formulation (specifically for Nylon mounting bases) for high pull-off strength
- 2 kinds of self-adhesive material:
  - rubber-based, for immediate adhesion (15 minutes set-up time)
  - acrylic based, to have the possibility of repositioning the mounting base initially (set-up time: 24 to 72 hours)
- Two holes to have the possibility to use additional screws, for even stronger installations when required
- Supplied on two-up lining, for easy removal of the lining

### Technical Information

Material - Moulding	Polyamide or UV-resistant Polyamide or flame retardant Polyamide (See table)
Material - Self-adhesive	Rubber based or acrylic based (See table)
Temperature range	-40°C to +85°C (Self-adhesive version: 0°C to +65°C)
Flammability rating	UL 94 V-2 or UL 94 V-0 (for flame retardant Polyamide)
Colours	Natural or UV-resistant black (see table)
Other properties	UV-resistant (black), Halogen free, Silicone free

Product Ref.	Colour	Mounting method	Dimensions			For tie width up to [mm]	Mounting holes ø [mm]	Quantity [pieces]
			L [mm]	W [mm]	H [mm]			
TC345	natural	glue* / screws	28.6	28.6	5.1	5.2	4.0	1000
TC345A	natural	self-adhesive (rubber based) / screws	28.6	28.6	5.1	5.2	4.0	1000
TC5345A	natural	self-adhesive (rubber based) / screws	28.6	28.6	5.1	5.2	4.0	100
TC345AX	UV-resistant black	self-adhesive (rubber based) / screws	28.6	28.6	5.1	5.2	4.0	1000
TC5345AX	UV-resistant black	self-adhesive (rubber based) / screws	28.6	28.6	5.1	5.2	4.0	100
TC345AFR	natural / flame retardant	self-adhesive (rubber based) / screws	28.6	28.6	5.1	5.2	4.0	1000
TC345AHTFR	natural / flame retardant	self-adhesive (acrylic based) / screws	28.6	28.6	5.1	5.2	4.0	1000
TC5345AHTFR	natural / flame retardant	self-adhesive (acrylic based) / screws	28.6	28.6	5.1	5.2	4.0	100

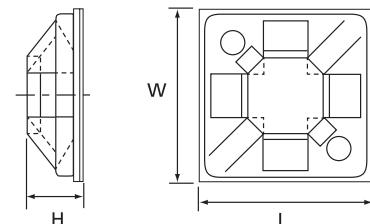
\* Glue = Product Ref TC2PA (see page 137 for specifications)

## 4-way entry Mounting bases

- Supplied either on a rubber based (synthetic polymer) closed cell foam adhesive or without self adhesive (installation: screw and/or 2 component glue\*)
- Available in standard Polyamide 6.6 (natural) or UV-resistant Polyamide 6.6 (black)

### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C (Self-adhesive version: 0°C to +65°C)
Flammability rating	UL 94 V-2
Colours	Natural or UV-resistant black (see table)
Other properties	UV-resistant (black), Halogen free, Silicone free

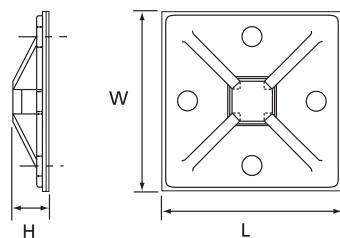


Product Ref.	Colour	Mounting method	Dimensions			For tie width up to [mm]	Mounting hole ø [mm]	Quantity
			L [mm]	W [mm]	H [mm]			
<b>FOR TIE WIDTH UP TO 3.0 MM</b>								
TC050x050A	natural	self-adhesive	12.7	12.7	4.5	3.0	–	1000
TC050x050A-C	natural	self-adhesive	12.7	12.7	4.5	3.0	–	100
TC050x050AX	UV-resistant black	self-adhesive	12.7	12.7	4.5	3.0	–	1000
TC050x050AX-C	UV-resistant black	self-adhesive	12.7	12.7	4.5	3.0	–	100
<b>FOR TIE WIDTH UP TO 3.6 MM</b>								
TC344	natural	screw / glue*	19.1	19.1	4.9	3.6	3.0	1000
TC5344	natural	screw / glue*	19.1	19.1	4.9	3.6	3.0	100
TC344A	natural	self-adhesive / screw	19.1	19.1	4.9	3.6	3.0	1000
TC5344AR	natural	self-adhesive / screw	19.1	19.1	4.9	3.6	3.0	100
TC344AX	UV-resistant black	self-adhesive / screw	19.1	19.1	4.9	3.6	3.0	1000
TC5344AX	UV-resistant black	self-adhesive / screw	19.1	19.1	4.9	3.6	3.0	100

\* Glue = Product Ref TC2PA (see page 137 for specifications)

## 4-way entry - for wide cable ties

Mounting bases



- Supplied either on a rubber based (synthetic polymer) closed cell foam adhesive or without self adhesive (installation: screw and/or 2 component glue\*)
- Available in standard Polyamide 6.6 (natural) or UV-resistant Polyamide 6.6 (black)

### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C (Self-adhesive version: 0°C to +65°C)
Flammability rating	UL 94 V-2
Colours	Natural or UV-resistant black (see table)
Other properties	UV-resistant (black), Halogen free, Silicone free

Product Ref.	Colour	Mounting method	L [mm]	Dimensions W [mm]	H [mm]	For tie width up to [mm]	Mounting hole ø [mm]	Quantity [pieces]
<b>FOR TIE WIDTH UP TO 7.9 MM (38.1 MM x 38.1 MM BASE)</b>								
TC150x150	natural	screw / glue*	38.1	38.1	7.4	7.9	4.3	500
TC150x150L	natural	screw / glue*	38.1	38.1	7.4	7.9	4.3	50
TC150x150A	natural	self-adhesive / screw	38.1	38.1	7.4	7.9	4.3	500
TC150x150A-L	natural	self-adhesive / screw	38.1	38.1	7.4	7.9	4.3	50
TC150x150AX	UV-resistant black	self-adhesive / screw	38.1	38.1	7.4	7.9	4.3	500
TC150x150AX-L	UV-resistant black	self-adhesive / screw	38.1	38.1	7.4	7.9	4.3	50
<b>FOR TIE WIDTH UP TO 7.9 MM (50.8 MM x 50.8 MM BASE)</b>								
TC200x200	natural	screw / glue*	50.8	50.8	7.4	7.9	4.3	500
TC200x200L	natural	screw / glue*	50.8	50.8	7.4	7.9	4.3	50
TC200x200A	natural	self-adhesive / screw	50.8	50.8	7.4	7.9	4.3	500
TC200x200A-L	natural	self-adhesive / screw	50.8	50.8	7.4	7.9	4.3	50
TC200x200AX	UV-resistant black	self-adhesive / screw	50.8	50.8	7.4	7.9	4.3	500
<b>FOR TIE WIDTH UP TO 19.1 MM (50.8 MM x 50.8 MM BASE)</b>								
TC368	natural	screw / glue*	50.8	50.8	6.6	19.1	4.3	500
TC368A	natural	self-adhesive / screw	50.8	50.8	6.6	19.1	4.3	500

\* Glue = Product Ref TC2PA (see page 137 for specifications)

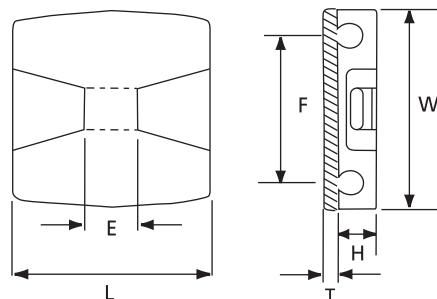
## Low profile plates

### Mounting bases

- Low profile
- Easy to use
- Available in several materials
- Self-adhesive or to be glued with 2-component glue\*

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C (Self-adhesive version: 0°C to +65°C)
Colour	Natural or UV-resistant black (see table)
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free, UV-resistant (black)

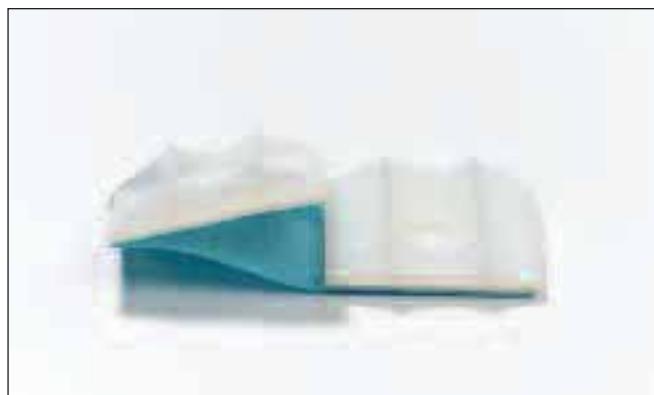


Product Ref.	Colour	Mounting method	Dimensions					For tie width up to [mm]	Weight [g/100]	Quantity	
			H [mm]	T [mm]	W [mm]	L [mm]	E [mm]				
TC817-TB	natural	glue*	4.8	–	11.0	11.0	–	–	4.8	51	1000
TC342	natural	glue*	5.7	–	29.0	29.0	7.5	21.0	4.8	340	1000
TC342X	UV-resistant black	glue*	5.7	–	29.0	29.0	7.5	21.0	4.8	340	1000
TC342A	natural	self-adhesive	5.7	0.8	29.0	29.0	7.5	21.0	4.8	360	1000
TC5342A	natural	self-adhesive	5.7	0.8	29.0	29.0	7.5	21.0	4.8	360	100
TC342A-X	UV-resistant black	self-adhesive	5.7	0.8	29.0	29.0	7.5	21.0	4.8	360	1000

\* Glue = Product Ref. TC2PA (see page 137 for specifications)

## Self-adhesive mounting cradle

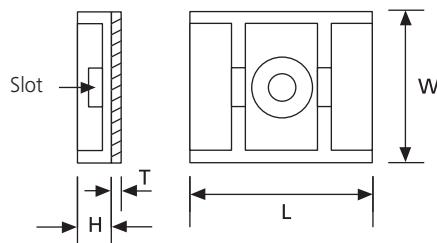
### Mounting bases



- Accepts cable ties to 7.6 mm width
- Supplied “two-up” on closed cell foam with synthetic polymer “rubber” based adhesive
- Use M3.5 self-tapping screw for added strength if desired

#### Technical Information

Material	Polyamide 6.6
Temperature range	0°C to +65°C
Colour	Natural or UV-resistant black (see table)
Mounting method	Self adhesive and/or screw
Flammability rating	UL 94 V-2
Other properties	UV-resistant (black), Halogen free, Silicone free



Product Ref.	Colour	Dimensions				For tie width up to [mm]	Quantity [pieces]
		H [mm]	T [mm]	L [mm]	W [mm]		
MCNY-1250-9-L	natural	7.2	0.8	31.7	25.4	7.6	50
MCNY-1250-9-C	natural	7.2	0.8	31.7	25.4	7.6	100
MCNY-1250-9-D	natural	7.2	0.8	31.7	25.4	7.6	500
MCNY-1250-0-C	UV-resistant black	7.2	0.8	31.7	25.4	7.6	100

\* Glue = Product Ref. TC2PA (see page 137 for specifications)  
For other colours and quantities please contact your Sales Office

## Saddle support

### Mounting bases

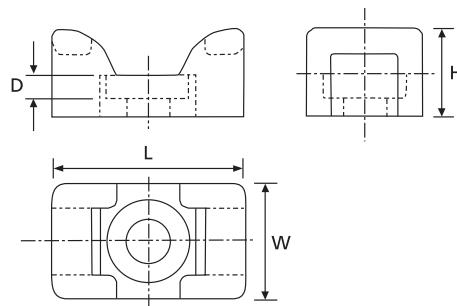
- Tie mounting bases with supporting saddle
- For screw- or rivet-mounting
- The prism-shape of the saddle prevents twisting around the fixture
- High strength through compact design
- Non-conductive, non-corrosive, resistant to fuels, lubricants and most chemicals
- Available in UV-resistant, heat stabilised black version

#### Technical Information

Material	Polyamide 6.6 or heat stabilised Polyamide 6.6
Temperature range	-40°C to +85°C (Natural) -40°C to +105°C (UV-resistant black)
Colour	Natural or UV-resistant black (see table)
Mounting method	Screw
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free, UV-resistant (black)



E49405



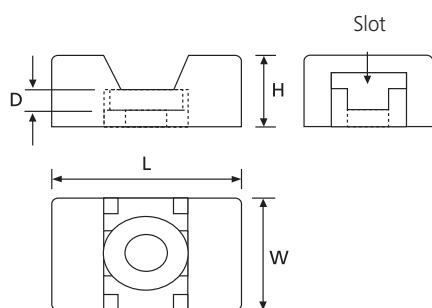
Product Ref.	Colour	H [mm]	Dimensions W [mm]	L [mm]	D [mm]	For tie width up to [mm]	Mounting hole ø [mm]	Quantity [pieces]
TC140	natural	6.7	8.7	14.2	1.8	2.4	3.0	500
TC5140	natural	6.7	8.7	14.2	1.8	2.4	3.0	100
TC141	natural	7.5	11.1	17.0	2.3	4.8	3.8	500
TC5141	natural	7.5	11.1	17.0	2.3	4.8	3.8	100
TC142	natural	10.7	14.2	23.4	2.9	7.6	5.2	500
TC5142	natural	10.7	14.2	23.4	2.9	7.6	5.2	100
TC142X*	UV-resistant black / heat stabilised	10.7	14.2	23.4	2.9	7.6	5.2	500
TC5142X*	UV-resistant black / heat stabilised	10.7	14.2	23.4	2.9	7.6	5.2	100

For other colours and quantities please contact your Sales Office

\* Are not UL recognised

## Saddle support

### Mounting bases



- Tie mounting bases with supporting saddle
- For screw- or rivet-mounting
- The prism-shape of the saddle prevents twisting around the fixture
- High strength through compact design
- Non-conductive, non-corrosive, resistant to fuels, lubricants and most chemicals
- Available in UV-resistant, heat stabilised black version

#### Technical Information

Material	Polyamide 6.6 or heat stabilised Polyamide 6.6
Temperature range	-40°C to +85°C (Natural) -40°C to +105°C (UV-resistant black)
Colour	Natural or UV-resistant black
Mounting method	Screw
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free, UV-resistant (black)

Product Ref.	Colour	Dimensions				For tie width up to [mm]	Mounting hole ø [mm]	Quantity
		H [mm]	W [mm]	L [mm]	D [mm]			
SMNY-001-9-D	natural	7.1	9.8	15.2	4.7	4.8	4.2	500
SMNY-001-0-D	UV-resistant black heat stabilised	7.1	9.8	15.2	4.7	4.8	4.2	500

For other colours and quantities please contact your Sales Office

## Saddle-type mounting base

### Mounting bases

The saddle-type mounting bases allow 3 possible cable mounting:

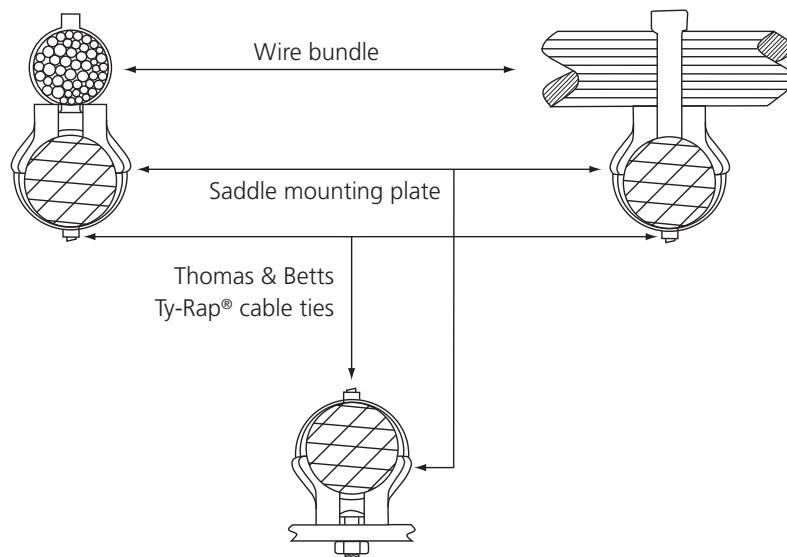
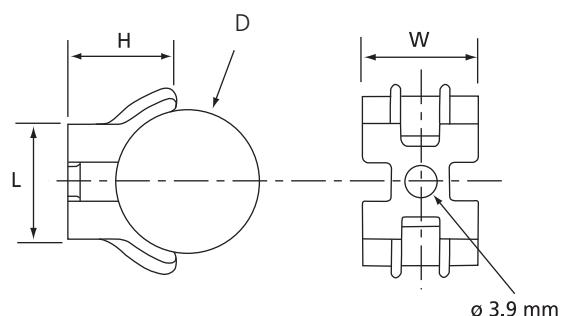
- the cables can be attached to a flat surface on which the base is screwed
- the cable bundles can be mounted in parallel
- the cable bundles can be mounted crosswise

Can also be used for the mounting of cylindrical objects having a diameter between 12.7 and 31.8 mm

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Mounting method	Screw
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free

Diameter from  
12.7 to 31.8 mm



Product Ref.	Dimensions			For tie width up to [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity
	H [mm]	W [mm]	L [mm]	D [mm]			
TC92	14.3	15.1	15.1	12.7 - 31.8	4.8	3.9	143
							100

## Screw-mounted miniature bases Mounting bases



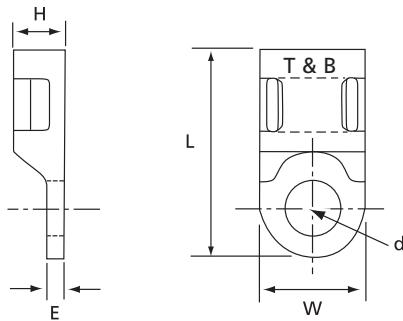
- Low profile mounting base
- For screw- or rivet-mounting
- Easy to use thanks to the cable tie insertion guide

### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Mounting method	Fillister-head screw
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



E49405



Product Ref.	Dimensions				For tie width up to [mm]	Mounting hole ø d [mm]	Weight [g/100]	Quantity
	H [mm]	W [mm]	L [mm]	E [mm]				
TC814-TB	4.8	9.5	19.1	2.0	4.8	3.3	44	1000
TC112-TB	4.8	9.5	19.1	2.0	4.8	4.4	44	1000
TC812-TB	4.8	9.5	19.1	2.0	4.8	5.1	44	1000

For other colours and quantities please contact your Sales Office

## Screw-mounted miniature bases

### Mounting bases

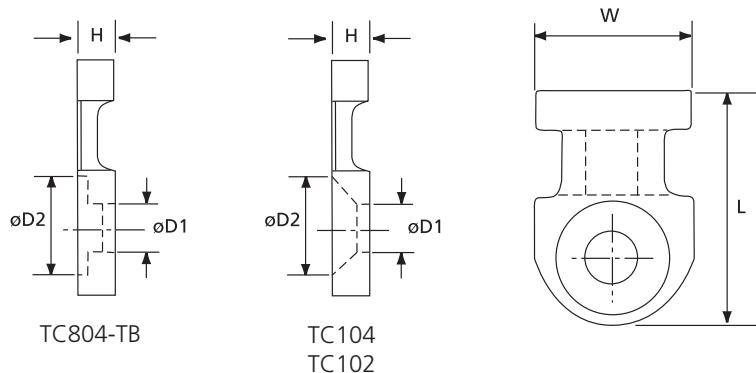
- Extremely low profile
- For screw- or rivet-mounting
- Easy to use thanks to the cable tie insertion guide

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Mounting method	Screw
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



E49405



Product Ref.	Dimensions			For tie width up to [mm]	Mounting hole		Weight [g/100]	Quantity [pieces]
	H [mm]	W [mm]	L [mm]		ØD1 [mm]	ØD2 [mm]		
TC804-TB	2.4	7.9	10.2	2.4	2.3	4.7	11	1000
TC104	2.4	7.9	10.3	2.4	3.4	6.5	11	1000
TC102	3.2	12.7	19.1	4.8	4.4	8.7	50	1000

For other colours and quantities please contact your Sales Office

## Screw-mounted - for wide cable ties

### Mounting bases



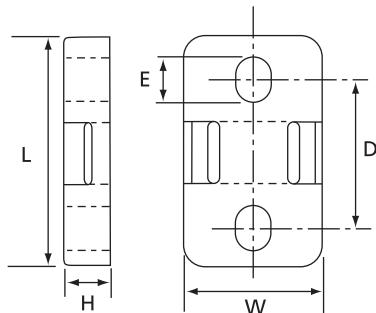
- Extremely low profile
- For screw- or rivet-mounting
- Easy to use thanks to the cable tie insertion guide
- Secure fixing with 2 fastening holes

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Mounting method	2 screws
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



E49405



Product Ref.	Dimensions					For tie width up to [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity [pieces]
	H [mm]	W [mm]	L [mm]	D [mm]	E [mm]				
TC815-TB	6.4	19.1	31.2	19.9	6.4	7.6	5.3	278	500

For other colours and quantities please contact your Sales Office

## Screw-mounted - for crosswise fastening

## Mounting bases

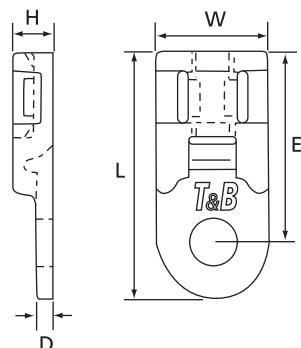
- Extremely low profile
- For screw- or rivet-mounting
- Easy to use thanks to the cable tie insertion guide
- Two ties can be fastened crosswise to securely fix cable intersections

## Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Mounting method	Screw
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



E49405



Product Ref.	Dimensions					For tie width up to [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity
	H [mm]	W [mm]	L [mm]	D [mm]	E [mm]				
TC828-TB	3.8	10.1	22.5	1.5	13.4	4.8	4.3	46	1000
TC5828	3.8	10.1	22.5	1.5	13.4	4.8	4.3	46	100

## Screw-mounted - for crosswise fastening

### Mounting bases



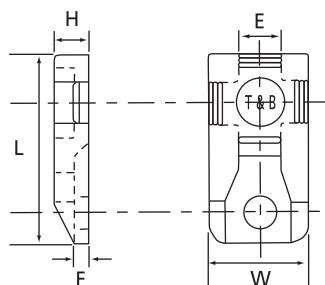
- Extremely low profile
- For screw- or rivet-mounting
- Easy to use thanks to the cable tie insertion guide
- Two ties can be fastened crosswise to securely fix cable intersections

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Mounting method	Screw
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



E49405



Product Ref.	Dimensions					For tie width up to [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity [pieces]
	H [mm]	W [mm]	L [mm]	E [mm]	F [mm]				
TC826-TB	5.7	12.7	23.8	5.3	2.0	4.8	4.4	102	1000

For other colours and quantities please contact your Sales Office

## Screw-mounted supporting bases

### Mounting bases

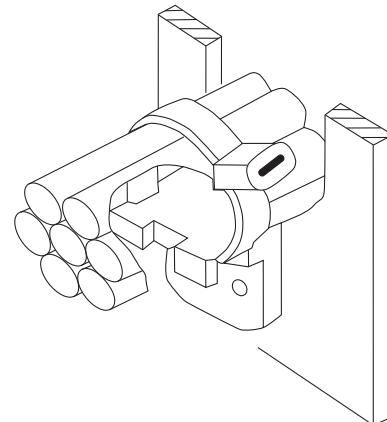
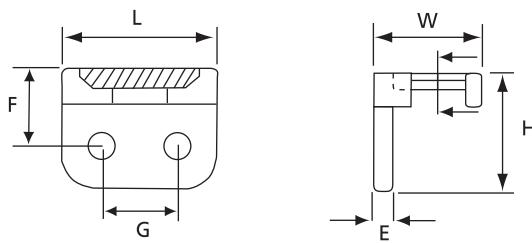
- Supporting mounting base with strong hold thanks to 2 mounting holes
- Can be screwed or riveted
- Allows double and/or crosswise (two ties) fixing
- For parallel and through mounting with support
- Suitable for large bundle diameters

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Mounting method	2 screws
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



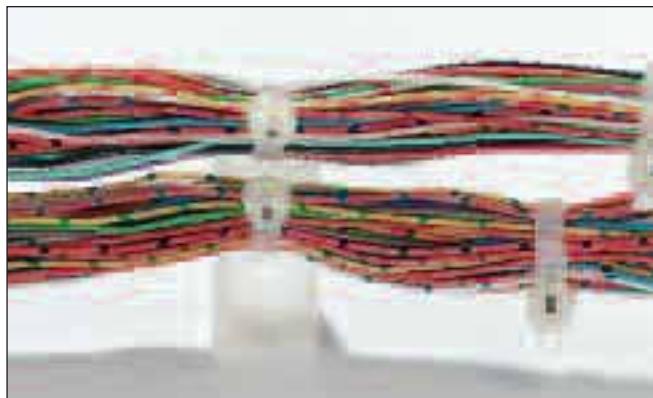
E49405



Product Ref.	Dimensions						For tie width up to [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity
	H [mm]	W [mm]	L [mm]	G [mm]	E [mm]	F [mm]				
TC106	25.4	19.1	25.4	12.7	4.6	16.5	7.6	3.3 (x 2)	435	200
TC109	11.1	9.9	14.3	7.1	1.7	7.0	4.8	2.4 (x 2)	45	1000

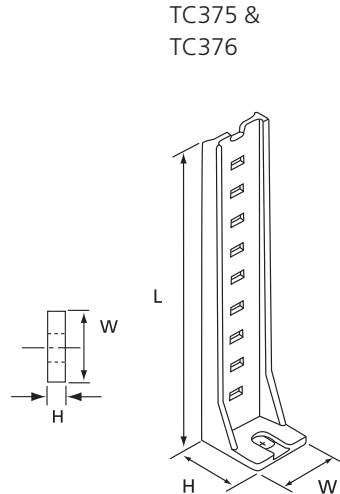
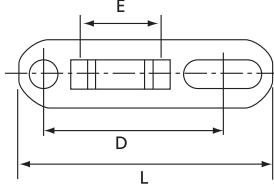
## Screw-mounted strips for multiple bundling

### Mounting bases



E49405

TC101 & TC103



- Tie mounting strips for up to 6 bundles simultaneously
- When mounted, the tie is guided through the clamp for fast assembly

#### Product Ref. TC1101 to TC1117

- Simple and strong flat mounting beams for fixing multiple cables, bundles or components
- Mil. Specified (MS-3339-...-...)
- VG approved (VG 95387, item 2)

#### Product Ref. TC375 and TC376

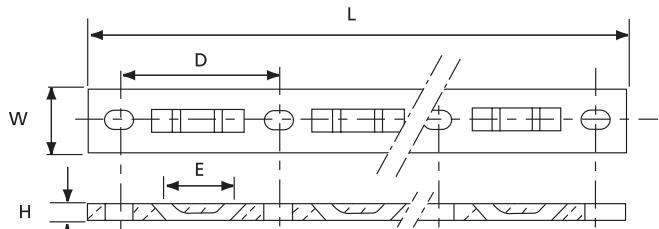
- For vertical and double-side mounting

#### Product Ref. TC101 and TC103

- Elongated fastening hole on one end allows greater flexibility during mounting

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Mounting method	2 screws (1 screw for Prod. Ref. TC376 & TC375)
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



TC1101 ... TC1117

Product Ref.	Mil Spec.	Dimensions					Max. number of bundles	For tie width up to [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity
		H [mm]	W [mm]	L [mm]	D [mm]	E [mm]					
TC101	-	3.2	12.7	50.0	35.6	9.5	1	4.8	5.2	151	1000
TC103	-	5.1	15.8	79.0	59.6	18.6	1	7.6	6.9	505	500
TC1101	MS-3339-1-9	3.2	12.7	44.0	31.8	9.5	1	4.8	3.7	160	100
TC1102	MS-3339-2-9	3.2	12.7	76.0	31.8	9.5	2	4.8	3.7	280	100
TC1103	MS-3339-3-9	3.2	12.7	108.0	31.8	9.5	3	4.8	3.7	400	100
TC1104	MS-3339-4-9	3.2	12.7	140.0	31.8	9.5	4	4.8	3.7	520	100
TC1105	MS-3339-5-9	3.2	12.7	171.0	31.8	9.5	5	4.8	3.7	650	100
TC1112	MS-3339-11-9	5.2	15.9	244.0	38.1	14.3	6	7.6	3.7	1679	100
TC1113	MS-3339-6-9	5.2	15.9	53.3	38.1	14.3	1	7.6	3.7	385	100
TC1114	MS-3339-7-9	5.2	15.9	91.4	38.1	14.3	2	7.6	3.7	658	100
TC1115	MS-3339-8-9	5.2	15.9	130.0	38.1	14.3	3	7.6	3.7	914	100
TC1116	MS-3339-9-9	5.2	15.9	168.0	38.1	14.3	4	7.6	3.7	1190	100
TC1117	MS-3339-10-9	5.2	15.9	206.0	38.1	14.3	5	7.6	3.7	1141	100
TC375	-	19.1	17.5	93.0	-	6.4	5	4.8	4.8	486	100
TC376	-	17.0	17.5	44.0	-	6.4	2	4.8	4.8	253	100

For other colours and quantities please contact your Sales Office

## Weather resistant - Heavy-duty Mounting bases

- Tie mounting base for outdoor installation
- A strong, weatherproof and durable outdoor fastening solution for pipes, hoses, cables, etc.

### Product Ref. TC5358 and TC5359

- Built-in plug for mounting into walls
- Easy to install: the plug is simply hammered into a hole
- The lamellar plug ensures high tensile strength and durability

### Product Ref. TC5355 to TC5357

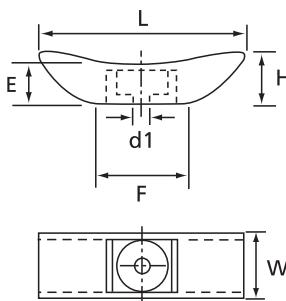
- For screw-fastening
- Ergonomically shaped for trouble-free installation



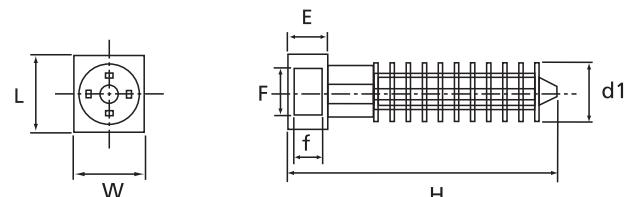
### Technical Information

Material	UV-stabilised Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Black
Mounting method	Screw (for Product ref. TC5355 to TC5357 only)
Flammability rating	UL 94 V-2
Other properties	UV-resistant, Halogen free, Silicone free

TC5355-TC5356-TC5357



TC5358-TC5359



Product Ref.	Dimensions						For tie width up to [mm]	Mounting hole ø d1 [mm]	Weight [g/100]	Quantity
	H [mm]	W [mm]	L [mm]	E [mm]	F [mm]	f [mm]				
<b>MOUNTING CRADLE</b>										
TC5355	15.9	19.1	44.5	11.1	28.6	—	12.7	4.6	500	25
TC5356	15.9	19.1	44.5	11.1	28.6	—	12.7	5.2	500	25
TC5357	15.9	19.1	44.5	11.1	28.6	—	12.7	6.7	500	25
<b>WALL PLUG</b>										
TC5358	31.8	9.9	9.9	7.1	5.6	2.3	4.8	6.4 (in wall)	120	100
TC5359	38.4	19.1	19.1	8.1	14.0	3.1	12.7	9.5 (in wall)	320	50

## Clip-in mounting bases for blind mounting

### Mounting bases



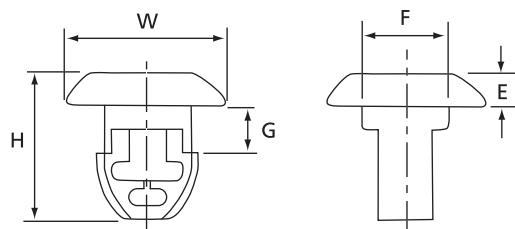
- Clip-in tie mounting bases for housings, faceplates etc
- With fastening clip for blind-mounting and two openings for two 2.8 mm or 4.8 mm ties
- Low profile

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Mounting method	Clip in
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



E49405



Product Ref.	Dimensions					Panel thickness from ... to [mm]	For tie width up to [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity
	H [mm]	W [mm]	G [mm]	E [mm]	F [mm]					
TC121-TB	10.4	11.2	3.4	2.0	6.1	0.1 - 3.2	2.4 and 4.8	6.3	31	1000

## Clip-in mounting bases for surface mounting

### Mounting bases

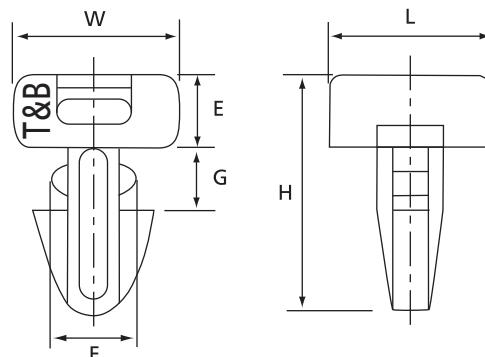
- Clip-in tie mounting bases for housings, faceplates etc
- With fastening clip for surface mounting
- Low profile

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural (TC823-TB & TC5823) UV-resistant black (TC823X)
Mounting method	Clip in
Flammability rating	UL 94 V-2
Other properties	UV-resistant (black), Halogen free, Silicone free



E49405



Product Ref.	Dimensions						Panel thickness from ... to [mm]	For tie width up to [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity
	H [mm]	W [mm]	L [mm]	G [mm]	E [mm]	F [mm]					
TC823-TB	16.8	11.1	11.1	3.6	5.1	5.8	0.1 - 3.2	4.8	6.2 - 6.5	68	1000
TC5823	16.8	11.1	11.1	3.6	5.1	5.8	0.1 - 3.2	4.8	6.2 - 6.5	68	100
TC823X*	16.8	11.1	11.1	3.6	5.1	5.8	0.1 - 3.2	4.8	6.2 - 6.5	68	1000

For other colours and quantities please contact your Sales Office

\* Not UL recognised

## Rivet-mounted bases

### Mounting bases



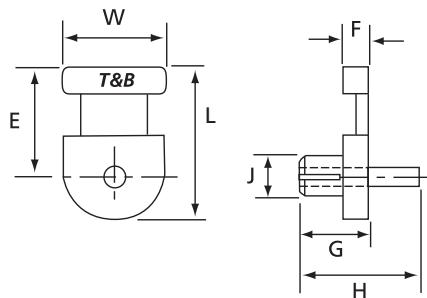
- Low profile mounting base with integrated rivet
- Easy to install into normal or blind holes: just hammer in the expanding harbour
- Parts are colour-coded according to hole diameter to avoid confusion

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	See table
Mounting method	Rivet mounted
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



E49405



Product Ref.	Colour	Dimensions						For tie width up to [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity
		W [mm]	L [mm]	F [mm]	E [mm]	G [mm]	H [mm]				
TC116-TB	red	12.7	19.1	3.2	13.9	8.6	15	3.9	4.8	3.7	70.5
TC118-TB	blue	12.7	19.1	3.2	13.9	8.6	15	4.5	4.8	4.4	71.0
TC120	yellow	12.7	19.1	3.2	13.9	8.6	15	5.2	4.8	4.9	71.5

## Aluminium plates

### Mounting bases

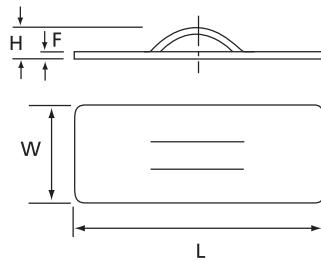
- Very strong mounting base for gluing or screw mounting or self-adhesive mounting
- Low profile
- Soft material can be perfectly shaped onto any support
- Lightweight
- Does not age even under extreme temperatures

#### Technical Information

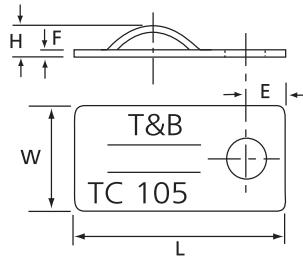
Material	Aluminium (3003, ASTMB-209)
Temperature range	-100°C to +450°C (Self-adhesive version: 0°C to +65°C)
Colour	Metallic
Mounting method	Glue (*) and / or screw or self-adhesive
Flammability rating	Fire proof
Other properties	UV-resistant



TC824-TB



TC105 and TC105AP



Product Ref.	Mounting method	Dimensions					For tie width up to [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity [pieces]
		H [mm]	W [mm]	L [mm]	E [mm]	F [mm]				
TC105AP	self-adhesive / screw	3.8	13.2	25.4	4.8	0.8	4.8	4.9	67	1000
TC105	screw	3.8	13.2	25.4	4.8	0.8	4.8	4.9	67	1000
TC5105	screw	3.8	13.2	25.4	4.8	0.8	4.8	4.9	67	100
TC824-TB	2-component glue*	3.8	9.5	34.9	—	0.8	4.8	—	69	1000

\* Glue = Product Ref TC2PA (see page 137 for specifications)

## Special mounting bases for Ty-Rap® cable ties

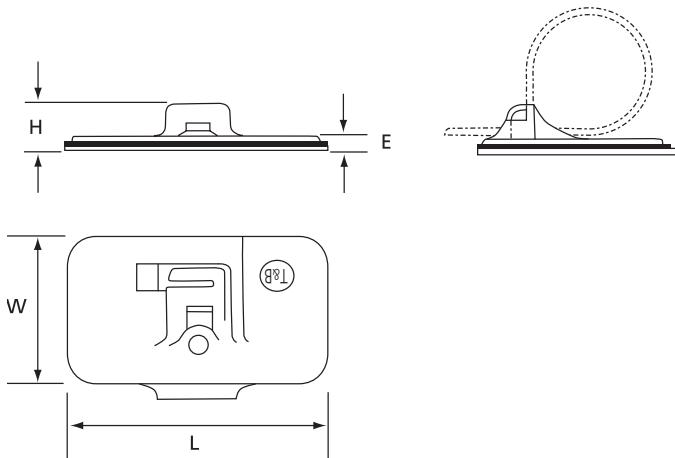
### Mounting bases



- Easy to install: The Ty-Rap® is slid into the mounting base before its installation
- Recommended for use with Ty-Rap® cable ties TY25M, TY253M and TY28M (see page 11)

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C (Self-adhesive version: 0°C to +65°C)
Colour	Natural
Mounting method	Self-adhesive and / or screw-mounting
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



Product Ref.	Mounting method	H [mm]	Dimensions W [mm]	L [mm]	E [mm]	For tie width up to [mm]	Adhesive strength on steel [N/cm]	Hole diameter [mm]	Weight [g/100]	Quantity
TC353A	self-adhesive / screw	9.1	25.4	50.9	2.5	4.8	72	3.8	320	100
TC5353A	self-adhesive / screw	9.1	25.4	50.9	2.5	4.8	72	3.8	320	25
TC353	screw	8.4	26.5	52.0	1.4	4.8	—	3.8	320	100

See page 137 for self-adhesive material specifications.

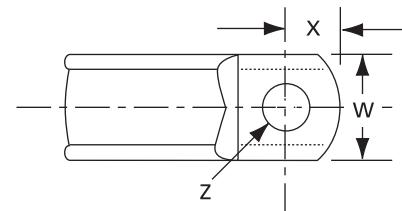
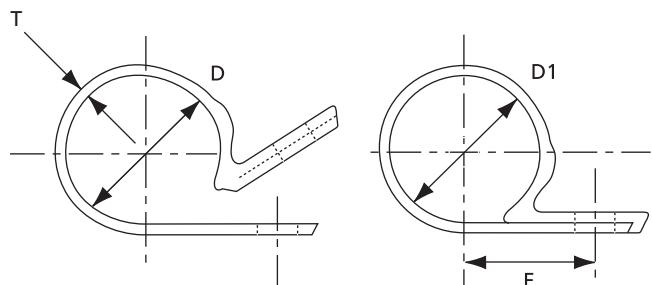
## Heat stabilised self-aligning clamps

Cable clamps

- Moulded-in saddle washer enhances performance and appearance
- Self-alignment feature makes this clamp ideal for assembly applications
- 14 diameters and 2 widths with mounting holes for M4 and M5 screws
- Item numbers moulded-in for easy identification
- Indoor application

### Technical Information

Material	Heat-stabilised Polyamide 6.6
Temperature range	-40°C to +105°C
Colour	Black
Mounting method	Screw
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



Product Ref.	D nominal diameter [mm]	D1 closed diameter [mm]	Dimensions	E [mm]	T [mm]	W [mm]	Z [mm]	X [mm]	Quantity [pieces]
W4NY-125-0-C	3.17	2.89	8.46	1.02	9.52	4.24	4.24	6.53	100
W4NY-187-0-C	4.76	4.36	9.02	1.02	9.52	4.24	4.24	5.53	100
W4NY-250-0-C	6.34	5.94	9.70	1.02	9.52	4.24	4.24	4.83	100
W4NY-312-0-C	7.93	7.54	10.71	1.02	9.52	4.24	4.24	5.21	100
W4NY-375-0-C	9.52	9.11	11.53	1.02	9.52	4.24	4.24	5.33	100
W4NY-500-0-C	12.69	12.29	12.45	1.02	9.52	4.24	4.24	6.76	100
W6NY-562-0-C	14.28	13.90	16.68	1.52	12.69	5.15	5.15	5.99	100
W6NY-625-0-C	15.87	15.46	16.17	1.52	12.69	5.15	5.15	7.37	100
W6NY-687-0-C	17.46	17.06	17.63	1.52	12.69	5.15	5.15	8.31	100
W6NY-750-0-C	19.04	18.64	18.44	1.52	12.69	5.15	5.15	8.28	100
W6NY-812-0-C	20.63	20.24	19.71	1.52	12.69	5.15	5.15	8.20	100
W6NY-875-0-C	22.22	21.81	18.62	1.52	12.69	5.15	5.15	7.87	100
W6NY-1000-0-C	25.39	24.99	22.38	1.52	12.69	5.15	5.15	7.42	100
W6NY-1250-0-C	31.73	31.16	25.65	1.52	12.69	5.15	5.15	8.61	100

Also available in quantities of 1,000 pieces. For other colours please contact your Sales Office

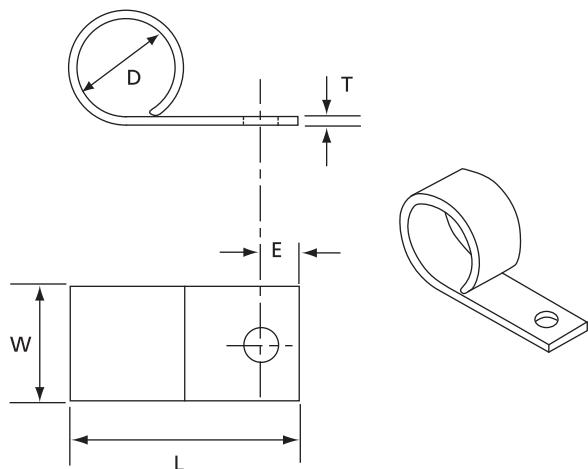
## Rigid PVC clamps Cable clamps



- Open mounting clips
- Easy to use: cables, for example, are simply pushed sideways into the clip one by one

### Technical Information

Material	Rigid PVC
Temperature range	-40°C to +50°C
Colour	White
Mounting method	Screw
Flammability rating	UL 94 V-2



Product Ref.	Dimensions					Mounting hole ø	Weight	Quantity
	øD [mm]	W [mm]	L [mm]	T [mm]	E [mm]	[mm]	[g/100]	[pieces]
TC70	6.4	9.9	22.2	1.2	6.4	5.2	49	100
TC71	12.7	9.9	29.0	1.6	6.4	5.2	123	100
TC72	20.6	13.1	36.9	2.0	6.4	5.2	259	100
TC73	25.4	13.1	46.8	2.4	6.4	5.2	399	100
TC74	38.1	13.1	58.3	2.8	6.4	5.2	608	100

For other quantities please contact your Sales Office

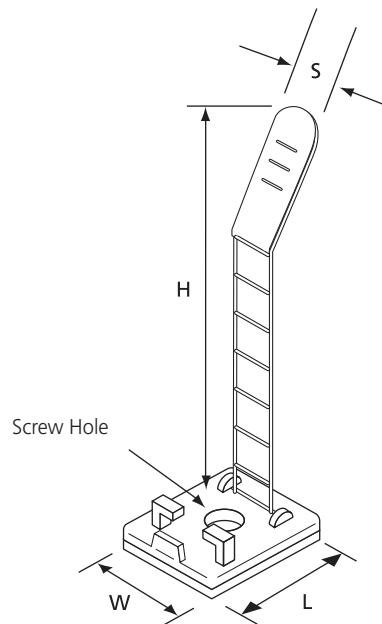
## Adjustable, ladder style clamps

*Cable clamps*

- Ladder style fastener is easily released and refastened
- Supplied "single-cut" on a rubber based closed cell foam adhesive
- In addition, can also be mounted with a screw, for improved pull-off strength

### Technical Information

Material	Polyamide 6.6
Temperature range	0°C to +65°C
Colour	Grey
Mounting method	Self adhesive and / or screw-mounting
Flammability rating	UL 94 V-2 (clamp)
Other properties	Halogen free, Silicone free



Product Ref.	Dimensions				Bundle diameter range [mm]	Screw hole diameter [mm]	Quantity [pieces]
	H [mm]	W [mm]	L [mm]	S [mm]			
ULNY-013-8-C	59.5	18	25	8	3 - 12.7	2.79	100
ULNY-018-8-C	79.4	21	30	12	5 - 21.0	2.79	100
ULNY-023-8-C	85.5	25	35	14	7 - 25.0	3.43	100

For other quantities please contact your Sales Office

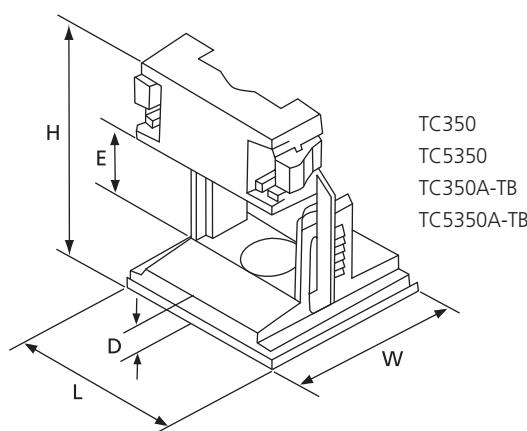
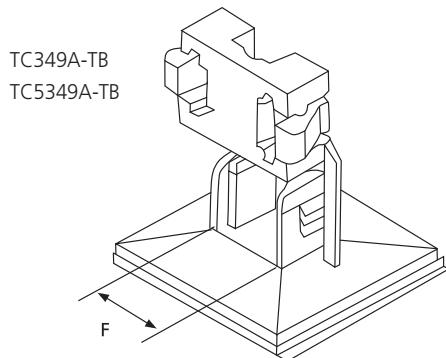
## Latching clamps Cable clamps



- Re-usable tie mounting clamps
- For self-adhesive and / or screw- or rivet mounting
- One-piece design with integrated releasable lock
- The inner profile protects sensitive cables, fibre optics etc
- Desired height can be set in 3 or 6 ratchet steps
- The large base surface area and the strong adhesive film guarantees a high adhesive strength
- The self-adhesive film is foam backed (0.8 mm) to compensate for any irregularities on the mounting surface

### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C (Self-adhesive version: 0°C to +65°C)
Colour	Natural
Mounting method	Self adhesive or screw-mounting
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



Product Ref.	Mounting method	Dimensions						E Height of clamping area from ... to [mm]	F Width of clamping area [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity [pieces]
		H max. [mm]	H min. [mm]	W [mm]	L [mm]	D [mm]						
TC349A-TB	self-adhesive	14.5	11.5	25.0	25.0	2.7	6 - 8.5	6	-	120	1000	
TC5349A-TB	self-adhesive	14.5	11.5	25.0	25.0	2.7	6 - 8.5	6	-	120	100	
TC350A-TB	self-adhesive / screw	22.0	18.0	25.0	25.0	4.7	6 - 12.5	15	4.3	400	1000	
TC5350A-TB	self-adhesive / screw	22.0	18.0	25.0	25.0	4.7	6 - 12.5	15	4.3	400	100	
TC350	screw	21.3	17.2	25.0	25.0	4.0	6 - 12.5	15	4.3	380	1000	
TC5350	screw	21.3	17.2	25.0	25.0	4.0	6 - 12.5	15	4.3	380	100	

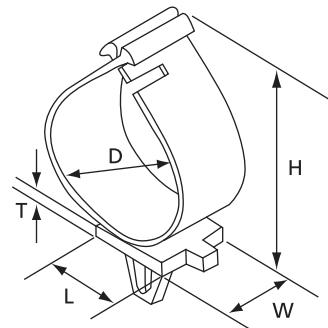
## Re-openable clamps

### Cable clamps

- Simple installation
- Can be mounted by clipping-in or gluing
- For series production or as a temporary support during wiring installation
- Clip ends are rounded for comfortable re-opening
- Product Ref. TC95 features 2-stage lock

#### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural
Mounting method	Clip in
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



Product Ref.	Dimensions					For wall thickness from ... to [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity
	H [mm]	W [mm]	L [mm]	D [mm]	T [mm]				
TC88	22.6	12.7	19.1	12.7	2.5	2.5 - 3.6	5.7 - 7	115	100
TC95	40.5	12.7	19.1	25.4	2.5	2.5 - 3.6	5.7 - 7	278	100

## Re-openable clamps with springs

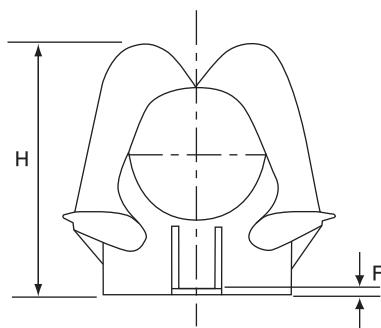
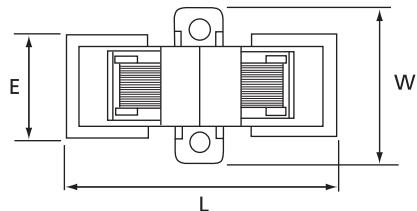
*Cable clamps*



- Holding clips with rubberised fabric tape
- The built-in springs hold the cable bundle safely in the desired position
- The upper clip end is rounded for easy addition of cables
- Strong fixing due to two mounting holes, aligned along the axis of the cable bundle

### Technical Information

Material - Body	Polyamide 6.6
Material - Elastic	Rayon & natural rubber
Material - Spring	Steel
Temperature range	-40°C to +85°C
Colour	Natural
Mounting method	2 screws
Flammability rating	UL 94 V-2 (body)
Other properties	Halogen free



Product Ref.	Dimensions					Max. bundle ø [mm]	Mounting hole ø [mm]	Weight [g/100]	Quantity
	H [mm]	L [mm]	W [mm]	E [mm]	F [mm]				
TC86	46	44.5	31.8	22.2	2.5	19	3.9	860	25
TC87	58	62.7	38.1	25.4	2.5	32	3.9	1950	25

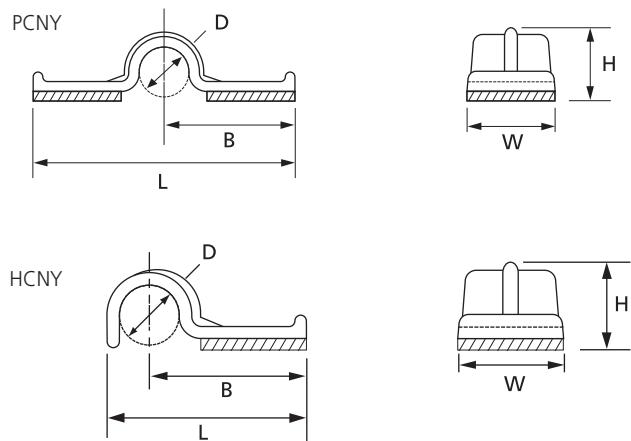
## Self-adhesive press clips

Cable clamps

- Available in "full clip" version (PCNY series) or "half clip" version (HCNY series)
- 4 sizes to accommodate bundles up to 12 mm
- Clips are provided "two-up" on a rubber based closed cell foam adhesive

### Technical Information

Material	Polyamide 6.6 (clip)
Temperature range	0°C to +65°C
Colour	Natural
Mounting method	Self-adhesive
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



Product Ref.	D [mm]	L [mm]	Dimensions	B [mm]	H [mm]	W [mm]	Quantity [pieces]
<b>FULL PRESS CLIPS</b>							
PCNY-125-9-C	3.17	19.30		9.65	5.36	9.52	100
PCNY-125-9-D	3.17	19.30		9.65	5.36	9.52	500
PCNY-250-9-C	6.35	35.05		17.52	8.23	12.69	100
PCNY-250-9-D	6.35	35.05		17.52	8.23	12.69	500
PCNY-375-9-C	9.52	37.32		18.61	11.29	15.87	100
PCNY-375-9-D	9.52	37.32		18.61	11.29	15.87	500
PCNY-500-9-C	12.69	40.57		20.19	14.85	19.05	100
PCNY-500-9-D	12.69	40.57		20.19	14.85	19.05	500
<b>HALF PRESS CLIPS</b>							
HCNY-125-9-C	3.17	12.52		9.65	4.57	9.52	100
HCNY-125-9-M	3.17	12.52		9.65	4.57	9.52	1000
HCNY-250-9-C	6.35	21.97		17.52	8.25	12.69	100
HCNY-250-9-M	6.35	21.97		17.52	8.25	12.69	1000
HCNY-375-9-C	9.52	24.88		19.05	10.54	15.87	100
HCNY-375-9-M	9.52	24.88		19.05	10.54	15.87	1000
HCNY-500-9-C	12.69	28.19		20.83	14.22	19.05	100
HCNY-500-9-M	12.69	28.19		20.83	14.22	19.05	1000

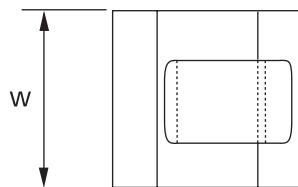
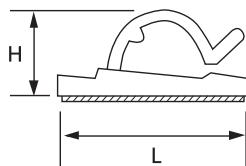
## Self-adhesive clips for round cable Cable clamps



- Diverse cable clamps for bundle diameters from 4 mm to 15.8 mm
- Clips are provided two-up on a rubber based closed cell foam adhesive
- Flexible centre tongue for removal or addition of cables

### Technical Information

Material	Polyamide 6.6 (clip)
Temperature range	0°C to +65°C
Colour	Natural or black
Mounting method	Self-adhesive
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



Product Ref.	Colour	Dimensions			Max. bundle ø [mm]	Quantity [pieces]
		H [mm]	L [mm]	W [mm]		
RANY-160-9-D	natural	6.4	16.0	14.8	4.0	500
RANY-280-9-D	natural	10.4	25.4	25.4	7.1	500
RANY-280-0-D	black	10.4	25.4	25.4	7.1	500
RANY-530-9-D	natural	15.8	25.4	25.4	13.5	500
RANY-620-9-D	natural	14.2	31.8	28.5	15.8	500

For other quantities please contact your Sales Office

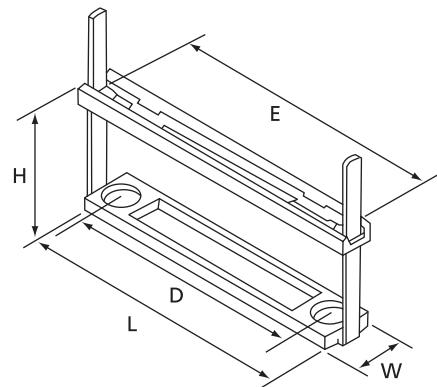
## Cable clamps

Accessories for flat cables

- This system allows the secure and neat fixing of between 1 and 25 ribbon cables
- Clamp height adapts accurately to the desired number of ribbon cables
- Suitable for ribbon cables up to 60 conductors with a pitch of 1.27 mm (76.2 mm wide)
- Can be re-opened for later addition or removal of a cable
- Very strong hold
- All versions can be mounted with countersunk-head screws or rivets
- Some versions have an additional self-adhesive foam, for fast mounting

### Technical Information

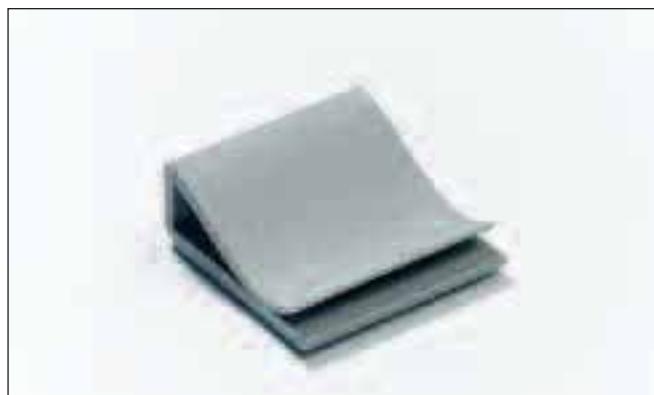
Material	Polyamide 6.6 (clip)
Temperature range	-40°C to +85°C (Self-adhesive version: 0°C to +65°C)
Colour	Natural
Mounting method	Self-adhesive and / or for screw- or rivet-mounting
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



Product Ref.	Mounting method	Dimensions						Adhesive strength on steel/ fastening hole	Weight [g/100]	Quantity [pieces]
		H max. [mm]	H min. [mm]	W [mm]	L [mm]	D mounting centres from ... to [mm]	E [mm]			
FCC-1	countersunk screws	21.0	8.0	12.7	32.5	—	25.4	M4	260	50
FCC-1A	countersunk screws / self-adhesive	21.0	8.8	12.7	32.5	—	25.4	76 N/cm	275	50
FCC-2	countersunk screws	36.0	8.0	12.7	57.9	39.1	50.8	M4	340	50
FCC-2A	countersunk screws / self-adhesive	36.0	8.8	12.7	57.9	39.1	50.8	76 N/cm	390	50
FCC-3	countersunk screws	36.0	8.0	12.7	83.3	64.5	76.2	M4	475	50
FCC-3A	countersunk screws / self-adhesive	36.0	8.8	12.7	83.3	64.5	76.2	76 N/cm	490	50

## PVC cable-clips

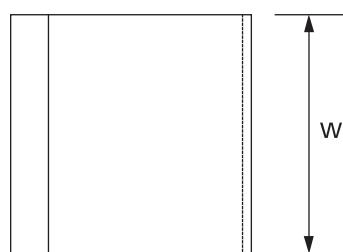
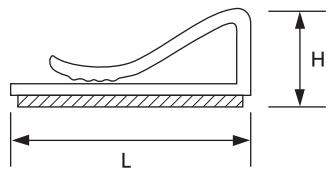
Accessories for flat cables



- Low profile clip for single or multiple layers of flat ribbon cable
- "Single cut" on a rubber based closed cell foam adhesive

### Technical Information

Material	PVC (clip)
Temperature range	0°C to +65°C
Colour	Grey
Mounting method	Self-adhesive
Flammability rating	UL 94 V-0 (clip)
Other properties	UV-resistant



Product Ref.	Dimensions			Quantity [pieces]
	H [mm]	L [mm]	W [mm]	
FRPV-1000-8-C	5.8	27	25.4	100
FRPV-1000-8-D	5.8	27	25.4	500

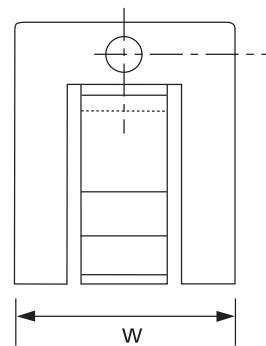
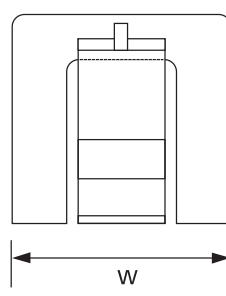
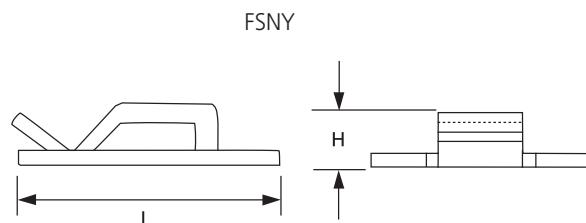
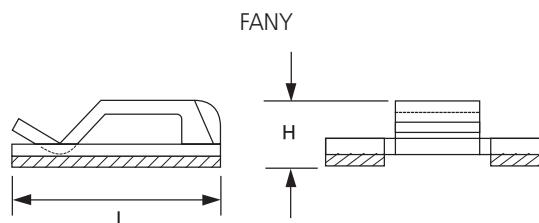
## Clips with flexible leg

Accessories for flat cables

- Low profile clip for single or multiple layers of flat ribbon cable
- Flexible centre leg allows for easy removal and replacement of desired cable
- Non-conductive, non-corrosive, resistant to fuels, lubricants and most chemicals
- FANY supplied "two-up" on a rubber based closed cell foam adhesive
- FSNY type has an additional mounting hole for screw mounting (M4 screw)

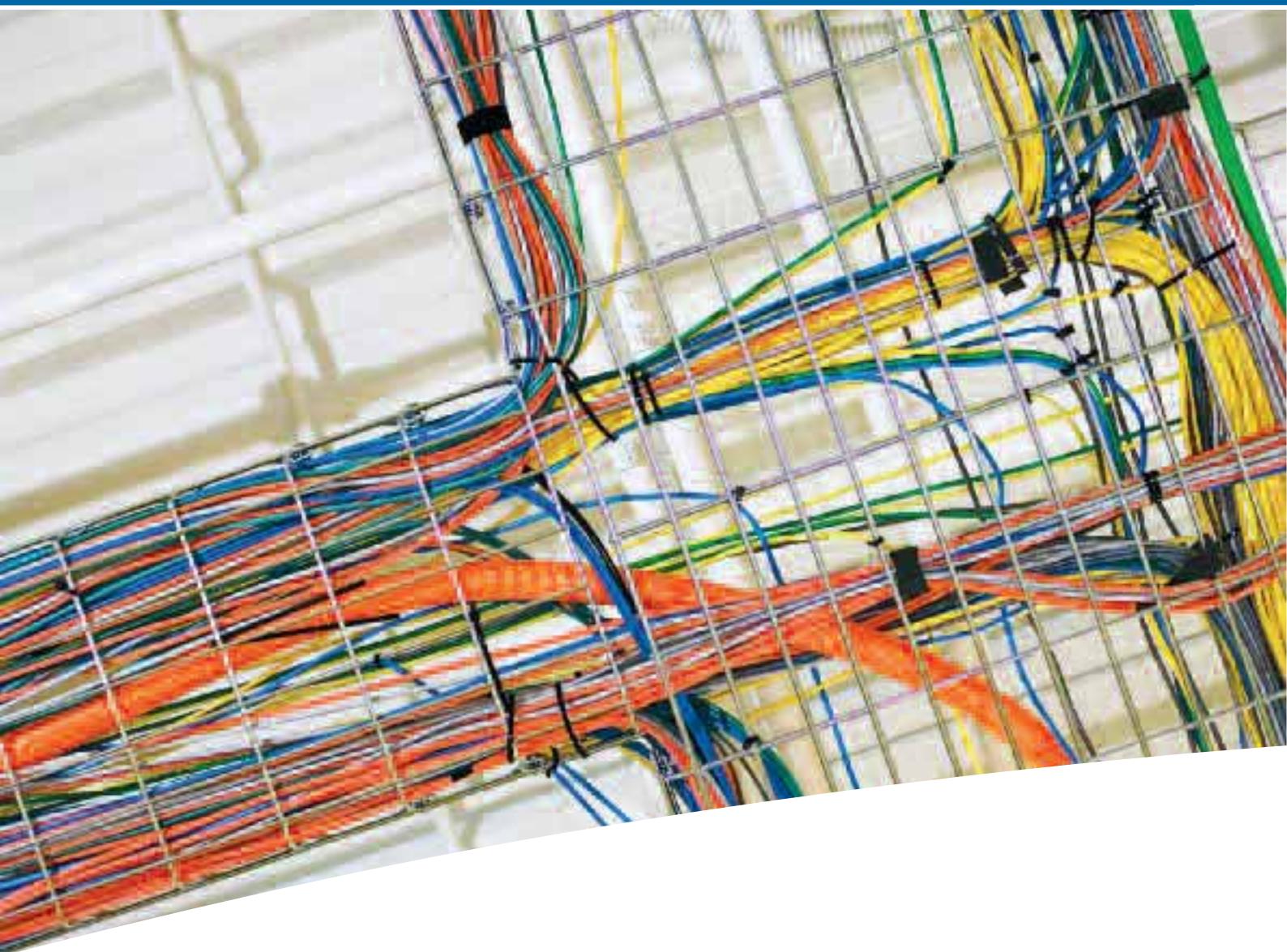
### Technical Information

Material	Polyamide 6.6 (clip)
Temperature range	-40°C to +85°C (Self-adhesive version: 0°C to +65°C)
Colour	Natural
Mounting method	Self-adhesive or screw
Flammability rating	UL 94 V-2 (clip)
Other properties	Halogen free, Silicone free



Product Ref.		Dimensions			Quantity
		H [mm]	L [mm]	W [mm]	[pieces]
FSNY-812-9-C	M4 screw	3.17	30.15	25.40	100
FANY-812-9-C	self-adhesive	7.14	25.40	25.40	100
FANY-812-9-D	self-adhesive	7.14	25.40	25.40	500

For other quantities please contact your Thomas & Betts Sales Office



# Bind-It® Cable Protection Systems

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# Bind-It® Cable Protection Systems

**The Cable Protection Systems (CPS) from Thomas & Betts**

**captures different products:**

- **Wrap-around woven sleeving**
- **Braided sleeving**
- **Spiral wrap**
- **Extruded grommeting**

The wrap-around sleeving – better known under the name Bind-It® - is a tough but lightweight sleeve used to bundle and protect wires and cables from abrasion, sharp edges and chafing. Bind-It® is a self-wrapping sleeve that is very quick and easy to install and remove. Bind-It® is also available in a flame retardant version. No heat is necessary to seal the ends of this product. The ends can be secured by using Ty-Rap® cable ties.



*Cable Protection Systems,  
to protect and bundle wires  
and cables.*

The braided sleeving of Thomas & Betts is used for bundling and protecting cables. The braided sleeving is a closed sleeve available in a flame and a non-flame retardant version. This product is mainly used inside cabinets and enclosures. To stop the end of the sleeving fraying it is necessary to heat seal the ends using a "hotwire" device.

Spiral wrap is mainly used for protection of bundles. This product is available in a natural and UV-resistant version and supplied in a Euroslot bag, ideal for the distribution market.

Finally the extruded grommeting of Thomas & Betts is used to line panel edges and knock-outs where the chafing of passing wires is a concern. In most applications, grommeting will grip tightly by itself.

## Wrap-around woven sleeving

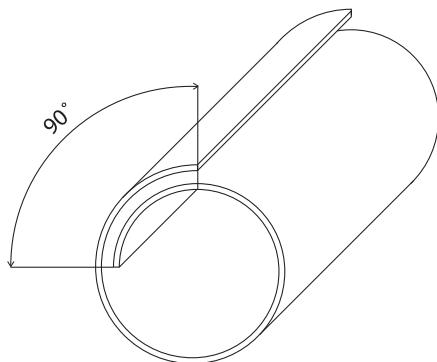
### Cable protection systems



- Offers excellent protection for cable assemblies against abrasion
- No heat is required to seal the ends of this product as with traditional braided sleeving
- With its wrap-around design, it can be installed on assemblies where the wires are already terminated or wires need to be broken-out
- Bind-It® is available in nominal sizes from 5 mm to 38 mm
- A professional assembly tool is supplied for the 5 mm, 8 mm and 13 mm nominal sizes
- Product is supplied black as standard with a white version available on request

#### Technical Information

Material	Mono and multifilaments of polyester
Temperature range	-70°C to +125°C
Melt temperature	+256°C (ASTM D-2117)
Colour	Black
Flammability rating	Self-extinguishing, type B (FMVSS-302 Test method D45 1333)



\* Nominal size is determined by wrapping the product around a mandrel of a given size to obtain 90 degrees of overlap (average value).

Product Ref.	Nominal Size* [mm]	Length per mini-reel [m]
CPS05W-150	5	150
CPS08W-100	8	100
CPS13W-50	13	50
CPS19W-25	19	25
CPS25W-25	25	25
CPS29W-25	29	25
CPS32W-15	32	15
CPS38W-15	38	15

#### Material Specification

Property	Test method	Typical performance
Low temperature flexibility	MIL-DTL-23053E	-70°C
Smoke density	ASTM E-1354	Pending
Hard Vacuum	ASTM E-595	
• TML (Mass)		0.63 %
• CVCM (Condensation)		0.16 %
• WVR (Steam)		0.06 %
Corrosivity	MIL-I-23053	No corrosive smoke
Fluid resistance	MIL-I-23053	Tensile retention
• Jet fuel: JP-41		100 %
• Hydraulic fluid: (MIL-H-5606)		100 %
• Lube oil: (MIL-I-7808)		100 %
• De-icing fluid: (MIL-A-8243)		100 %
• Salt Water: (O-S-1926)		100 %

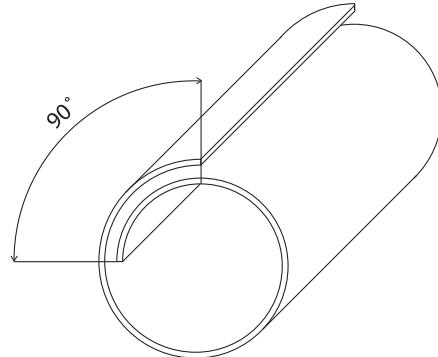
## Wrap-around woven sleeving - Flame retardant

Cable protection systems

- Wrap-around sleeving manufactured from flame-retardant polyester monofilaments and multifilaments
- Designed for mechanical protection and maintenance of wire and cable bundles
- Its construction with 100% covering ratio provides excellent cut-through and abrasion resistance
- Bind-It® has many applications in the marine, railway and electronic industries
- No heat is required to seal the ends of this product as with traditional braided sleeving
- With its wrap-around design, it can be installed on assemblies where the wires are already terminated or wires need to be broken-out
- Bind-It® is available in nominal sizes from 5 mm to 50 mm
- A professional assembly tool is supplied for the 5 mm, 8 mm and 13 mm nominal sizes
- For a UL version please contact your Sales Office

### Technical Information

Material	Mono and multifilaments of polyester
Temperature range	-50°C to +125°C
Melt temperature	+250°C (ASTM D-2117)
Colour	Black
Flammability rating	Flame retardant (I3-F2) according to NF16 101 & NF16 102
Other properties	Halogen free, Silicone free



\* Nominal size is determined by wrapping the product around a mandrel of a given size to obtain 90 degrees of overlap (average value).

Product Ref.	Nominal Size* [mm]	Length per mini-reel [m]
CPS05W-150-FR	5	150
CPS08W-100-FR	8	100
CPS13W-50-FR	13	50
CPS19W-25-FR	19	25
CPS25W-25-FR	25	25
CPS29W-25-FR	29	25
CPS32W-25-FR	32	25
CPS38W-25-FR	38	25
CPS50W-25-FR	50	25

### Material Specification

Property	Test method	Typical performance
Low temperature flexibility	MIL-DTL-23053E	-50°C
Fluid resistance	MIL-I-23053	Tensile retention
• Jet fuel: JP-41		100 %
• Hydraulic fluid: (MIL-H-5606)		100 %
• Lube oil: (MIL-I-7808)		100 %
• De-icing fluid: (MIL-A-8243)		100 %
• Salt Water: (O-S-1926)		100 %

## Braided sleeving

Cable protection systems



- Standard colour – black or grey
- Non-flame retardant Polyester rated at UL 94 V-2
- Available in nominal diameters from 3 to 50 mm to cover bundle diameters of 1 to 66 mm, giving flexibility when adding to or removing cables from wire looms
- For use in temperature ranges from -50°C to +150°C
- Good chemical resistance
- Halogen free
- For protecting and bundling cables and wires inside cabinets and enclosures

To stop the ends of the sleeving fraying it is necessary to heat seal the ends using a "hotwire" device. (see Product Ref. WT-HSG)

### Technical Information

Material	Polyester
Temperature range	-50°C to +150°C
Colour	Black or grey
Flammability rating	UL 94 V-2
Other properties	Good chemical resistance, Halogen free

1:2

Product Ref. Black	Product Ref. Grey	Nominal Diameter as supplied [mm]	Expandable Diameter Range [mm]	Length per mini-reel [m]
CPS3B-100	CPS3G-100	3	1 - 5	100
CPS4B-100	CPS4G-100	4	2 - 7	100
CPS5B-100	CPS5G-100	5	3 - 9	100
CPS6B-100	CPS6G-100	6	4 - 11	100
CPS8B-100	CPS8G-100	8	5 - 12	100
CPS10B-100	CPS10G-100	10	7 - 15	100
CPS12B-50	CPS12G-50	12	8 - 17	50
CPS15B-50	CPS15G-50	15	10 - 20	50
CPS20B-25	CPS20G-25	20	14 - 26	25
CPS25B-25	CPS25G-25	25	18 - 34	25
CPS30B-25	CPS30G-25	30	20 - 40	25
CPS40B-25	CPS40G-25	40	30 - 50	25
CPS50B-25	CPS50G-25	50	40 - 66	25

## Braided sleeving - Flame retardant Cable protection systems

- Standard colour – black with grey identification yarn
- Flame-retardant polyester, rated at UL 94 V-0
- Available in nominal diameters from 3 mm to 50 mm to cover bundle diameters of 2 mm to 60 mm, giving flexibility when adding to or removing cables from wire looms
- For use in temperature ranges from -50°C to +150°C
- Good chemical resistance
- Excellent abrasion resistance
- For protecting and bundling cables and wires inside cabinets and enclosures

To stop the ends of the sleeving fraying it is necessary to heat seal the ends using a "hotwire" device. (see Product Ref. WT-HSG)

### Technical Information

Material	Flame-retardant polyester
Temperature range	-50°C to +150°C
Colour	Black with grey identification yarn
Flammability rating	UL 94 V-0
Other properties	Good chemical resistance, excellent abrasion resistance

1:2



Product Ref. WT-HSG

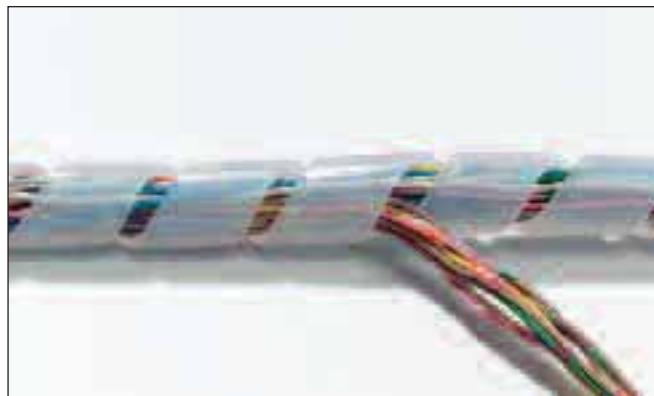
Product Ref.	Nominal Diameter as supplied [mm]	Expandable Diameter Range [mm]	Length per mini-reel [m]
CPS3B-100-V0	3	2 - 5	100
CPS4B-100-V0	4	3 - 7	100
CPS5B-100-V0	5	4 - 9	100
CPS6B-100-V0	6	5 - 11	100
CPS8B-100-V0	8	7 - 13	100
CPS10B-50-V0	10	9 - 15	50
CPS12B-50-V0	12	11 - 17	50
CPS15B-50-V0	15	13 - 20	50
CPS20B-50-V0	20	18 - 25	50
CPS25B-50-V0	25	22 - 30	50
CPS30B-50-V0	30	27 - 40	50
CPS40B-50-V0	40	35 - 50	50
CPS50B-50-V0	50	45 - 60	50

Grey sleeving and other lengths available to special order, please contact your Sales Office

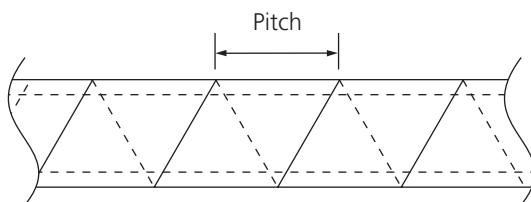
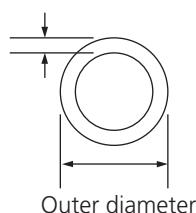


## Spiral wrap

### Cable protection systems



Nominal thickness



- For protection of bundles from 4 mm to 130 mm
- Install gapped for greater flexibility or butted for maximum abrasion resistance, insulation and rigidity
- Counter-clockwise cut
- Delivered in bags with Euroslot
- Available in natural and UV-resistant black Polyethylene

#### Technical Information

Material	Polyethylene
Temperature range	-40°C to +100°C
Colour	Natural and UV-resistant black
Flammability rating	UL 94 HB
Other properties	UV-resistant (black), Halogen free, Silicone free

Product Ref.	Colour	Outer diameter [mm]	Pitch [mm]	Nominal thickness [mm]	Min. - max. bundle ø [mm]	Length [m]
SRPE-6-9	natural	6.0	7.0	0.5	4 - 50	10
SRPE-8-9	natural	8.0	10.8	0.5	6 - 60	10
SRPE-10-9	natural	10.0	11.4	0.8	7.5 - 60	10
SRPE-12-9	natural	12.0	13.9	0.9	9 - 65	10
SRPE-15-9	natural	15.0	15.0	1.0	12 - 70	10
SRPE-19-9	natural	19.0	18.2	1.3	15 - 100	10
SRPE-24-9	natural	24.0	19.6	1.5	20 - 130	10
SRPE-6-0	UV-resistant black	6.0	7.0	0.5	4 - 50	10
SRPE-8-0	UV-resistant black	8.0	10.8	0.5	6 - 60	10
SRPE-10-0	UV-resistant black	10.0	11.4	0.8	7.5 - 60	10
SRPE-12-0	UV-resistant black	12.0	13.9	0.9	9 - 65	10
SRPE-15-0	UV-resistant black	15.0	15.0	1.0	12 - 70	10
SRPE-19-0	UV-resistant black	19.0	18.2	1.3	15 - 100	10
SRPE-24-0	UV-resistant black	24.0	19.6	1.5	20 - 130	10

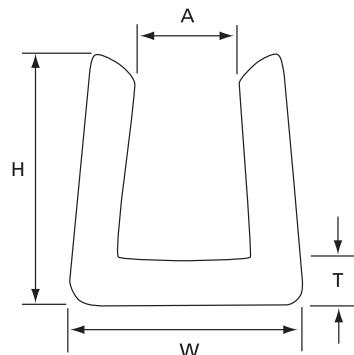
## Extruded grommeting

Cable protection systems

- Used to line panel edges and knock-outs where the chafing of passing wires is a concern
- Available in 8 stock sizes in 30.5 m lengths for panels from 1 mm to 6.35 mm
- In most applications, grommeting will grip tightly by itself, if not, a touch of Epoxy will keep it in place

### Technical Information

Material	Polyamide 6.6
Temperature range	-40°C to +85°C
Colour	Natural or black
Flammability rating	UL 94 V-2
Other properties	Halogen free, Silicone free



Product Ref.	Colour	Internal width A [mm]	Thickness T [mm]	H [mm]	W [mm]	Length per reel [m]
GRNY-040-9-C	natural	1.01	1.01	4.82	3.17	30.5
GRNY-052-9-C	natural	1.32	1.01	4.82	3.17	30.5
GRNY-062-9-C	natural	1.57	1.14	5.08	4.32	30.5
GRNY-085-9-C	natural	2.15	1.14	5.08	4.32	30.5
GRNY-100-9-C	natural	2.54	1.14	5.58	5.33	30.5
GRNY-125-9-C	natural	3.17	1.27	5.58	5.23	30.5
GRNY-187-9-C	natural	4.74	1.27	6.85	6.98	30.5
GRNY-250-9-C	natural	6.35	1.27	7.11	9.39	30.5
GRNY-040-0-C	black	1.01	1.01	4.82	3.17	30.5
GRNY-052-0-C	black	1.32	1.01	4.82	3.17	30.5
GRNY-062-0-C	black	1.57	1.14	5.08	4.32	30.5
GRNY-085-0-C	black	2.15	1.14	5.08	4.32	30.5
GRNY-100-0-C	black	2.54	1.14	5.58	5.33	30.5
GRNY-125-0-C	black	3.17	1.27	5.58	5.23	30.5
GRNY-187-0-C	black	4.74	1.27	6.85	6.85	30.5
GRNY-250-0-C	black	6.35	1.27	7.11	9.39	30.5



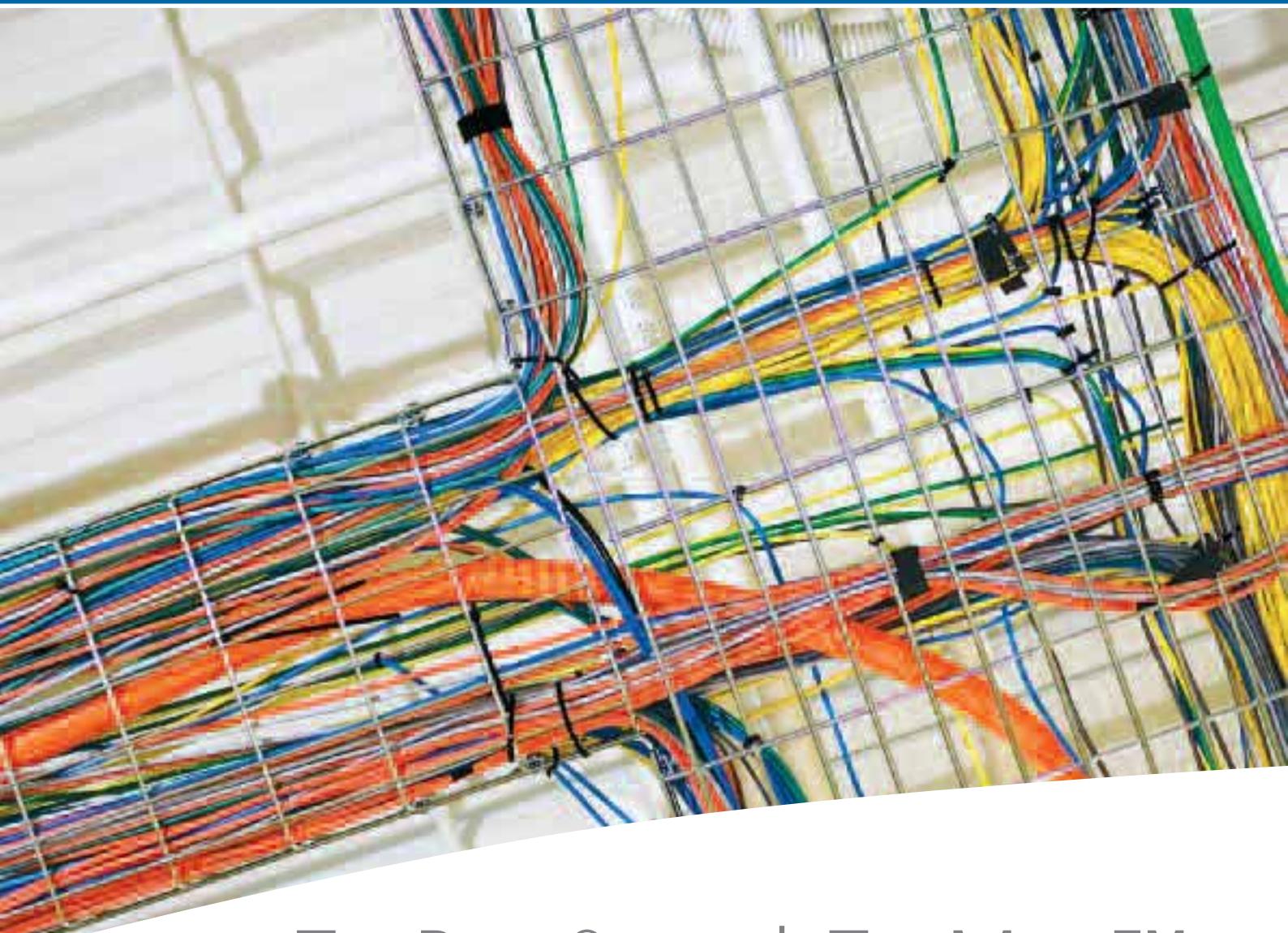
## Ty-Rap® and Ty-Met™ Tooling

## FASTENING SYSTEMS

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# Ty-Rap® and Ty-Met™ Tooling

**Thomas & Betts offers a comprehensive range of tooling to complement the full range of cable ties.**

**The range includes low-cost tools for maintenance and small batch requirements, as well as robust and ergonomic tools with tension setting and automatic cutting.**

In particular, the new ERG50 and ERG120 tools provide a superior level of reliability and performance, combined with enhanced ergonomics and comfort of use.

These ergonomic tools, with adjustable tension and automatic cutting, are ideally suited for efficiently installing all kinds of plastic cable ties in industrial (Original Equipment Manufacturers, Maintenance and Repair Organisations, etc) and construction applications.



*Cable tie fastening tools to install,  
tension and cut  
plastic and metal ties*

#### **ERG50 & ERG120**

##### **Superior reliability and performance**

- Developed to meet the market needs for a more rugged and longer lasting tool
- Designed to integrate the greatest number of features in the market

##### **Enhanced ergonomics and comfort of use**

- First class design and materials, for maximum convenience
- As a result, the operator is subject to less stress, less fatigue and less risk of trauma due to long term use (such as Carpal Tunnel Syndrome)

##### **Increased efficiency**

- Exclusive features for quick set-up and fast installation
- Confidence to achieve a highly professional result, installation after installation

## Selection guide Fastening tools

Tool Ref.	Features	Tensioning	Cutting	For cable ties	Page
<b>TOOLING FOR PLASTIC TIES</b>					
	ERG50 Ergonomic hand tool with superior level of reliability and performance	adjustable	automatic	2.4 mm - 4.8 mm	127
	WT199 Semi-automatic MIL specified hand tool (MIL. Nr. MS-90387-1)	adjustable	automatic	2.4 mm - 4.8 mm	128
	WT193A Robust construction, ideal for industrial mass finishing applications like cable-tree assemblies	adjustable	automatic	2.4 mm - 4.8 mm	128
	WT1-TB Basic tensioning tool, intended for maintenance and small batch use	basic	twist cut	2.4 mm - 4.8 mm	130
	ERG120 Ergonomic hand tool with superior level of reliability and performance	adjustable	automatic	4.8 mm - 7.6 mm	127
	WT197 Semi-automatic MIL specified hand tool (MIL. Nr. MS-90387-2)	adjustable	automatic	4.8 mm - 7.6 mm	128
	WT2-TB Basic tensioning tool, intended for maintenance and small batch use	basic	twist cut	4.8 mm - 7.6 mm	130
	L300-FR Rugged construction with field proven durability	basic	manual	7.6 mm - 9 mm	129
	WT3D Robust metal body with plastic hand-grips, designed for tensioning and cutting heavy-duty cable ties	basic	twist cut	7.6 mm - 12.7 mm	129
	L-500-EU Rugged metallic construction	adjustable	automatic	4.7 mm - 13.3 mm	129
<b>TOOLING FOR TY-MET™ STAINLESS STEEL TIES</b>					
	CT1-TB Tensioning hook provides extra-leverage for tensioning the ties by hand	basic	no cutting	Releasable & Ladder Type	133
	CT2-TB Basic hand tool	basic	no cutting	Releasable & Ladder Type	132
	CT4-TB Bantam tool, unique 3-way handle can be used in various positions. Especially useful in tight areas with minimal access	basic	manual	Releasable & Ladder Type	133
	WT3S A robust metallic hand tool with rubber grips	basic	no cutting	Ladder Type	132
	CT3 Economic tensioning tool	basic	manual	Ladder & Ball-Lock Type	131
	CT5 Adjustable tension setting tool with automatic cutting	adjustable	automatic	Ladder Type	131
	CT6 Adjustable tension setting tool with automatic cutting	adjustable	automatic	Ball-Lock Type	131

## Tools for plastic cable ties

Fastening tools

The new ERG50 and ERG120 tools from Thomas & Betts provide a superior level of reliability and performance, combined with enhanced ergonomics and comfort of use.

These ergonomic tools, with adjustable tension and automatic cutting, are ideally suited for efficiently installing all kinds of plastic cable ties in industrial (Original Equipment Manufacturers, Maintenance and Repair Organisations, etc) and construction applications.

Developed to meet the market needs for a more rugged and longer lasting tool, and to integrate the greatest number of features in the market:

- **360° rotating nose (patented)**, allows the tool to be used in any position
- **Tension adjustment lock**, for constant tension setting
- **Quick tension-adjustment wheel** located towards the front for easy access and fast changes
- **Adjustable handle span** fits large and small hands.
- **Anti-recoil mechanism (patented)** reduces vibration shock
- **First class design and materials**: ergonomic shape with rounded edges, soft rubber handles, well balanced center of gravity
- **Longest stroke length on the market (25.4 mm)**, meaning less tensioning cycles, for time and cost saving
- **High / low force setting (patent pending)**, for a selection between "high force & long stroke" or "low force & short stroke"
- **The cable tie is cut flush to the head**, with no remaining protrusion, and the cut tail remains captive in the tool for a cleaner installation
- **Easy access to spare blade nest**, always a spare blade at hand (each tool is supplied with a spare blade)

ERG50



ERG120



## Technical Information ERG50

Tool type	Ergonomic hand tool
Nose colour	Black
For type of cable tie	Plastic ties
For tie width	2.4 mm - 4.8 mm
Features	Adjustable tension setting, automatic cutting, retraction of the strap end after application of Ty-Rap® cable ties
Weight	260 g
Dimensions [L x W x H]	178 x 127 x 38 mm
Replacement blades	Product Ref. ERG50B

## Technical Information ERG120

Tool type	Ergonomic hand tool
Nose colour	Orange
For type of cable tie	Plastic ties
For tie width	4.8 mm - 7.6 mm
Features	Adjustable tension setting, automatic cutting, retraction of the strap end after application of Ty-Rap® cable ties
Weight	278 g
Dimensions [L x W x H]	178 x 127 x 38 mm
Replacement blades	Product Ref. ERG120B

## Tools for plastic cable ties

### Fastening tools



#### Product Ref.: WT193A

- High quality hand tool, to bind, tension and cut in one operation
- Solid lightweight metal body
- Tension setting to ensure product consistency
- Robust construction, ideal for industrial mass finishing applications like cable-tree assemblies

#### Technical Information

Tool type	Heavy-duty hand tool
For type of cable tie	Plastic ties
For tie width	2.4 mm - 4.8 mm
Features	Adjustable tension setting, automatic cutting
Weight	300 g
Dimensions [L x W x H]	182 x 135 x 19.5 mm
Replacement blades	Product Ref. R464201



#### Product Ref.: WT199

- Semi-automatic hand tool
- MIL. Nr. MS-90387-1
- Tension setting to ensure product consistency
- Robust metal construction
- Ideal for industrial mass finishing applications like cable tree assemblies, for example in the military industry

#### Technical Information

Tool type	Semi-automatic hand tool
For type of cable tie	Plastic ties
For tie width	2.4 mm - 4.8 mm
Features	Adjustable tension setting, automatic cutting, MIL specified (MS-90387-1)
Weight	410 g
Dimensions [L x W x H]	163 x 134 x 24 mm



#### Product Ref.: WT197

- Semi-automatic hand tool
- MIL. Nr. MS-90387-2
- Tension setting to ensure product consistency
- Robust metal construction
- Ideal for industrial mass finishing applications like cable tree assemblies, for example in the military industry

#### Technical Information

Tool type	Semi-automatic hand tool
For type of cable tie	Plastic ties
For tie width	4.8 mm - 7.6 mm
Features	Adjustable tension setting, automatic cutting, MIL specified (MS-90387-2)
Weight	420 g
Dimensions [L x W x H]	165 x 135 x 29 mm

## Tools for plastic cable ties

*Fastening tools*

### Product Ref.: WT3D

- Designed for tensioning and cutting heavy-duty cable ties
- Robust metal body with plastic hand-grips

#### Technical Information

Tool type	Hand tool for Deltec ties, Col-Ty™ installation ties and other wide cable ties
For type of cable tie	Plastic ties
For tie width	7.6 mm - 12.7 mm
Features	Tensioning, manual cutting (by twisting the tool)
Weight	225 g
Dimensions [L x W x H]	178 x 112 x 20 mm



### Product Ref.: L-500-EU

- Rugged metallic construction makes this tool ideal for use with our 4.7 mm to 13.3 mm wide ties
- Set tension adjuster to give desired tie tightness
- Pull trigger and tie is automatically tensioned and cut

#### Technical Information

Tool type	Hand tool
For type of cable tie	Plastic ties
For tie width	4.7 mm - 13.3 mm
Features	Tensioning, automatic cutting



### Product Ref.: L300-FR

- Rugged construction makes this tool ideal for use with our 7.6 mm to 9 mm wide ties
- Pull tie to desired tension and pull trigger to cut excess flush at cable tie head
- Field proven durability

#### Technical Information

Tool type	Hand tool for Col-Ty™ installation ties and other wide cable ties
Colour	White
For type of cable tie	Plastic ties
For tie width	7.6 mm - 9 mm
Features	Tensioning, manual cutting
Weight	330 g
Dimensions [L x W x H]	195 x 100 x 25 mm



## Tools for plastic cable ties

### Fastening tools



#### Product Ref.: WT1-TB

- Twist-and-cut tensioning tool in plastic, intended for maintenance and small batch use

#### Technical Information

Tool type	Low-cost hand tool
Colour	Orange
For type of cable tie	Plastic ties
For tie width	2.4 mm - 4.8 mm
Features	Basic tensioning, twist cut
Weight	28.4 g
Dimensions [L x W x H]	134 x 55 x 27 mm



#### Product Ref.: WT2-TB

- Twist-and-cut tensioning tool in plastic, intended for maintenance and small batch use

#### Technical Information

Tool type	Low-cost hand tool
Colour	Black
For type of cable tie	Plastic ties
For tie width	4.8 mm - 7.6 mm
Features	Basic tensioning, twist cut
Weight	28.4 g
Dimensions [L x W x H]	134 x 55 x 27 mm

## Tools for stainless steel ties

### Fastening tools

#### Product Ref.: CT3

- Cost-effective tensioning tool
- Cut-off by hand-activated lever

#### Technical Information

Tool type	Hand tool
For type of cable tie	Ladder Type & Ball-Lock Type stainless steel ties, coated and uncoated
Features	Tensioning, manual cutting
Weight	550 g
Dimensions [L x W x H]	210 x155 x 35 mm



#### Product Ref.: CT5

- Suitable for coated and uncoated Ladder Type stainless steel ties
- Adjustable tension settings
- Automatic cutting once desired tension has been reached

#### Technical Information

Tool type	Tension setting hand tool
For type of cable tie	Ladder Type stainless steel ties
Features	Adjustable tension setting, automatic cutting
Weight	430 g
Dimensions [L x W x H]	173 x 158 x 22 mm



#### Product Ref.: CT6

- Suitable for coated and uncoated Ball-Lock Type stainless steel ties
- Adjustable tension settings
- Automatic cutting once desired tension has been reached

#### Technical Information

Tool type	Tension setting hand tool
For type of cable tie	Ball-Lock Type stainless steel ties, coated and uncoated
Features	Adjustable tension setting, automatic cutting
Weight	430 g
Dimensions [L x W x H]	173 x 158 x 22 mm



## Tools for stainless steel ties

## Fastening tools

**Product Ref.: WT3S**

- A robust metallic hand tool with rubber grips designed for tensioning Ladder Type stainless steel ties
- After tensioning, the stainless steel ties can easily be cut with side-cutters

**Technical Information**

Tool type	Hand tool
For type of cable tie	Ladder Type stainless steel ties
Features	Tensioning, no cutting
Weight	225 g
Dimensions [L x W x H]	178 x 112 x 20 mm

**Product Ref.: CT2-TB**

- Cable tie tensioner suitable for Releasable Type and Ladder Type stainless steel ties
- Tensions the ties to their optimum holding power with a simple squeeze: a flick of the wrist and they're locked tight

**Technical Information**

Tool type	Hand tool
For type of cable tie	Releasable Type and Ladder Type stainless steel ties
Features	Tensioning, no cutting
Weight	300 g
Dimensions [L x W x H]	195 x 90 x 30 mm

## Tools for stainless steel ties

Fastening tools

**Product Ref.: CT1-TB**

- Tensioning hook suitable for Releasable Type and Ladder Type stainless steel ties
- Provides extra-leverage for tensioning the ties by hand

**Technical Information**

Tool type	Hand tool
For type of cable tie	Releasable Type and Ladder Type stainless steel ties
Features	Tensioning, no cutting
Weight	50 g
Dimensions [L x W x H]	85 x 106 x 15 mm

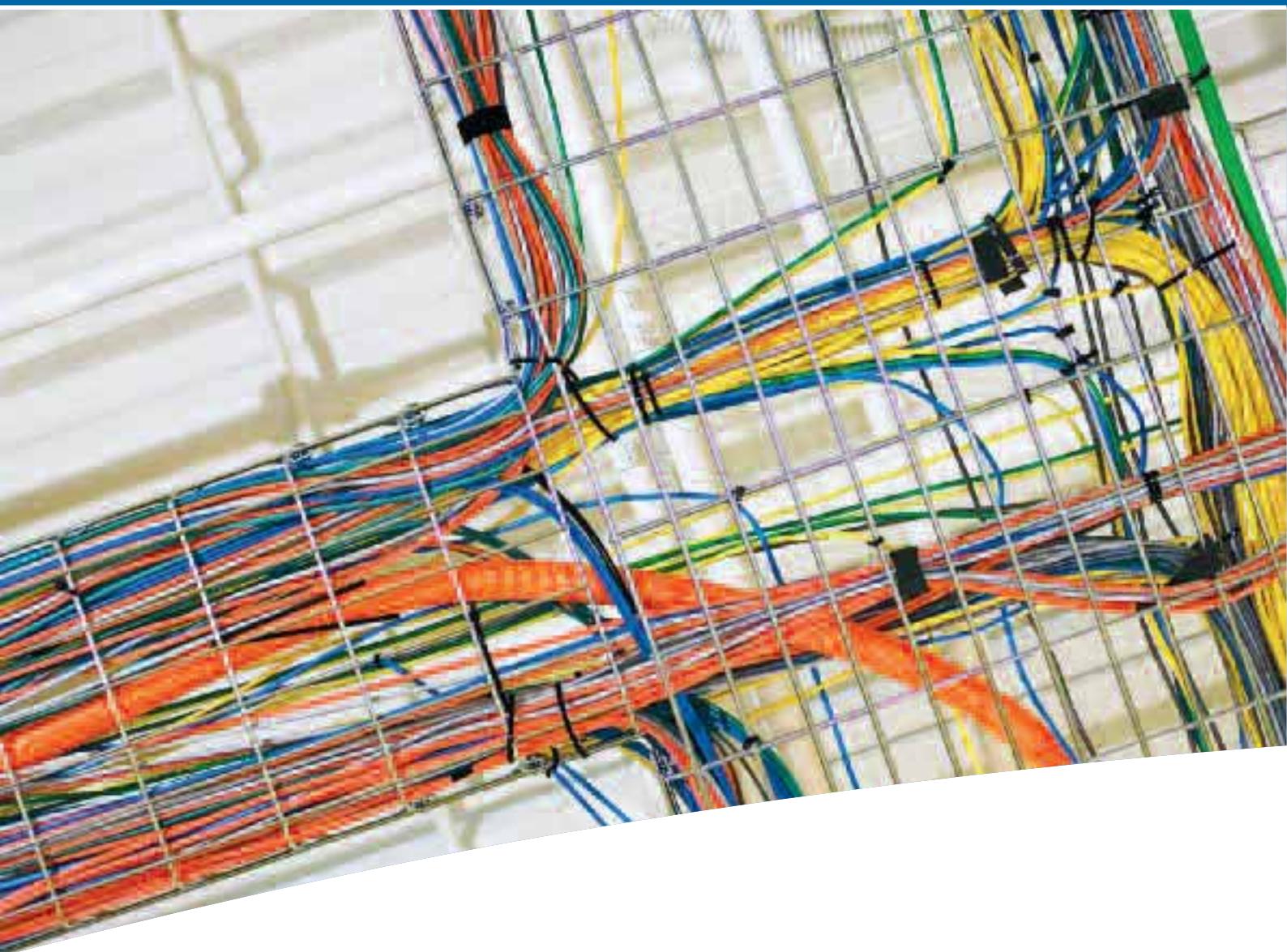
**Product Ref.: CT4-TB**

- Bantam tool, suitable for Releasable Type and Ladder Type stainless steel ties
- Unique 3-way handle can be used in various positions. Especially useful in tight areas with minimal access

**Technical Information**

Tool type	Hand tool
For type of cable tie	Releasable Type and Ladder Type stainless steel ties
Features	Tensioning, manual cutting
Weight	1200 g
Dimensions [L x W x H]	156 x 180 x 80 mm





# Material specifications

## FASTENING SYSTEMS

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## UL flammability ratings

### Materials specifications



#### Flammability ratings for selecting cable ties

Note: Flammability ratings of cable tie materials per UL as follows. These tests for flammability of plastic material are intended to serve as a preliminary indication of acceptability with respect to flammability for particular applications.

#### UL 94 vertical burn test procedures

Test specimens of the material, with dimensions 127 x 12.7 mm (5" x 1/2"), with the thickness intended for use in the end product, are tested in both the manufactured condition and in the aged state. The test requires that the specimen be supported in a vertical fixture and a precisely controlled flame applied for a 10 second period. The flame is removed and the duration of flaming is noted. If the flame extinguishes, a second exposure to flame for 10 seconds is applied and duration of flaming is again noted. It is observed and recorded whether or not test specimens drip flaming particles that ignite a cotton swab.

#### Materials classed 94 V-0:

A material classed 94 V-0 shall:

- A Not have any specimens that burn with flaming combustion for more than 10 seconds after either application of the test flame
- B Not have a total flaming combustion time exceeding 50 seconds for the 10 flame applications for each set of five specimens
- C Not have any specimens that burn with flaming or glowing combustion up to the holding fixture
- D Not have any specimens that drip flaming particles that ignite the dry absorbent surgical cotton located 304.8 mm (12") below the test specimen
- E Not have any specimens with glowing combustion that persists for more than 30 seconds after the second removal of the test flame

#### Materials classed 94 V-1:

A material classed 94 V-1 shall:

- A Not have any specimens that burn with flaming combustion for more than 30 seconds after either application of the test flame
- B Not have a total flaming combustion time exceeding 250 seconds for the 10 flame applications for each set of five specimens
- C Not have any specimens that burn with flaming or glowing combustion up to the holding fixture

D Not have any specimens that drip flaming particles that ignite the dry absorbent surgical cotton located 304.8 mm (12") below the test specimen

E Not have any specimens with glowing combustion that persists for more than 60 seconds after the second removal of the test flame.

#### Materials classed 94 V-2:

A material classed 94 V-2 shall:

- A Not have any specimens that burn with flaming combustion for more than 30 seconds after either application of the test flame
- B Not have a total flaming combustion time exceeding 250 seconds for the 10 flame applications for each set of five specimens
- C Not have any specimens that burn with flaming or glowing combustion up to the holding fixture
- D Be permitted to have specimens that drip flaming particles that burn only briefly, some of which ignite the dry absorbent surgical cotton placed 304.8 mm (12") below the test specimen
- E Not have any specimens with glowing combustion that persists for more than 60 seconds after the second removal of the test flame

#### UL 94 horizontal burn (HB) test procedures

The test uses a 1/2 inch x 5 inches (12.7 mm x 127 mm) specimen held at one end in a horizontal position with marks at 1 inch (25.4 mm) and 5 inches (127 mm) from the free end. A flame is applied to the free end for 30 seconds or until the flame front reaches the 1 inch (25.4 mm) mark. If combustion continues the duration is timed between the 1 inch (25.4 mm) mark and the 5 inch (127 mm) mark. If combustion stops before the 5 inch (127 mm) mark, the time of combustion and the damaged length between the two marks are recorded. A set of three specimens are tested.

#### Materials classed 94 HB

A material that is less than 0.118 inch (3 mm) in thickness will be classified 94HB if it has a burning rate of less than 3 inches (76.2 mm) per minute or stops burning before the 5 inches (127 mm) mark. If one specimen from the set of three fails to comply, then a second set of three are tested. All three of this second set must comply. HB rated materials are considered "self-extinguishing". This is the lowest (least flame retardant) UL94 rating.

**Nylon 6.6 = Polyamide 6.6 is Halogen-free and Silicone-free.**

## Adhesive material specifications

## Materials specifications

Property	Method	Unit of measure	Rubber based (self-adhesive)	Acrylic based (2 component glue)
Coated Sides	–	each	2	2
Foam Density	–	Kg/m <sup>3</sup>	96.9	96.9
Peel Adhesion	PSTC 1	N/cm width	10.9	
	ASTM D 1000	Average		8.8
Shear Adhesion				
22°C 50% RH	PSTC 7	Hours	100 +	8 +
22°C Occasional Wetting		N/m <sup>2</sup>	68971	15174
Tensile Strength	ASTM D 412	PSI	100	100 +
Tear Resistance	ASTM D 624	N/cm	52.6	52.6 +
Elongation at Break	–	%	400	200
Service Temperature	–	°C Min	-18	-29
	–	°C Max	+66	+79
Flammability	ASTM D 624		Slow Burn	Slow Burn

## Installation instructions for self-adhesive mounting bases

- Mounting surfaces should be cleaned with alcohol based (IPA) cleaner before application
- The self-adhesive mounting bases have a double-sided adhesive tape made of synthetic foam, covered by a protecting foil.
- To install the self-adhesive mounting base, remove the protecting foil and press the mounting base onto the cleaned surface
- The thickness of the self-adhesive foam (0.8 mm) compensates the irregularities of the application surfaces and allows installations on structured surfaces of cabinet doors, on sheet metal, on machines, etc
- The adhesion is achieved immediately during the installation, which means that later repositioning is not possible

## Installation instructions for Product Ref. :

## TC2PA (2 component glue)

- Mounting surfaces should be cleaned before application
- The liquid adhesive in the tube is to be spread onto the mounting surface. It can be used on most rough surfaces (like concrete)
- The activator liquid is then spread onto the surface of the mounting base
- Place the surface of the mounting base in contact with the surface where it has to be mounted, position the mounting base correctly and then press firmly
- Repositioning the mounting base remains possible only for a few seconds
- Do not use the mounting base immediately after installation. The Acrylic-based adhesive requires a set-up time that can be influenced by factors such as temperature (allow 24 - 72 hours for maximum performance)
- Temperature of installation needs to be above +20°C

## Product Ref.: TC2PA

- 2 component glue
- Consists of one tube each of adhesive and activator
- Easy application
- Stable and durable adhesion
- Applicable on all Polyamide and Aluminium mounting bases and cable clamps
- Also applicable on concrete and other porous surfaces
- UV resistant

## Technical Information

Description	2 component glue
Weight	0.21 kg

*Important note: The quality of installation of the glue mounted and self-adhesive mounting bases depend a lot on the state of the mounting surfaces (smooth or rough, clean or dirty, presence of oil, grease, dust, etc) and on the dexterity of the installer.*

*Thomas & Betts can not control these external parameters and therefore can not accept any responsibility about the performances of the glue mounted mounting bases and self-adhesive mounted bases.*

## Material selection and specifications

### Materials specifications



UV-resistant



Flame retardant



Heat resistant



Weatherproof



Low temperature flexibility



Radiation resistant



Low smoke



Chemically resistant



Detectable

### Selecting the right material for your applications

Thomas & Betts offers cable ties and accessories in a wide variety of materials, each suited for specific environments. The purpose of this document, therefore, is to assist in choosing the best material for a particular application.

The effects of weathering, flame, chemicals, extreme temperatures and radiation on the different materials is clearly presented in tabular

form. This will facilitate the choice of the best material for the application.

Having determined the most suitable material, one can choose from the wide variety of cable ties, identification ties, mounting bases, lashing ties, etc., offered by Thomas & Betts.

### Material specifications

Note: Nylon (Polyamide) is inherently susceptible to environmental conditions. Polyamide 6.6 cable ties are moisturised to optimum performance levels at machine-side and should be stored in cool dry areas out of direct sunlight. Cable ties are packaged in plastic bags to contain moisture and should remain sealed until ready for use.

#### Polyamide 6.6

- Thermoplastic material used in cable ties for universal applications in the industry
- Excellent resistance to shocks, chemicals, oils and temperature fluctuations
- High surface hardness and a small coefficient of friction
- Flammability rating: UL 94 V-2
- Halogen free and Silicone free
- Available in natural version or in a wide range of colours
- Indoor applications

#### Polyamide 6.6, weather resistant



- Similar to Polyamide 6.6, but recommended for outdoor applications
- UV-resistant
- Halogen free and Silicone free
- Colour: black
- Flammability rating: UL 94 V-2

#### Polyamide 6.6, heat stabilised



- Similar to Polyamide 6.6, but increased operating temperatures, up to 105°C
- Excellent tensile strength
- High temperature resistance
- Colour: natural (may have a greenish tint)
- Flammability rating: UL 94 V-2

#### Polyamide 6.6, heat stabilised and UV-resistant



- Similar to Polyamide 6.6, but recommended for outdoor applications and/or high temperature applications, up to 105°C
- Combines the features & benefits of Polyamide 6.6, weather resistant and Polyamide 6.6, heat stabilised
- Colour: black
- Flammability rating: UL 94 V-2

#### Polyamide 6.6, flame retardant



- Excellent flammability rating: UL 94 V-0
- Ideal in areas where human life is at risk
- Colour: white

#### Polyamide 6.6, detectable



- Similar to Polyamide 6.6, but contains a compound detectable by metal detectors (tested and rated at 1.5 mm diameter ferrous sphere setting) and X-ray equipment
- Colour: bright blue, also contributes to visual detection
- Especially recommend for the food industry, and for any other contamination sensitive industry using detection equipment
- Halogen free and silicone free
- Flammability rating: UL 94 V-2

## Material selection and specifications

### Materials specifications

#### Polyamide 4.6, extra high temperature (150°C)



- Similar to Polyamide 6.6, but outstanding resistance to high temperatures up to 150°C
- Halogen free and silicone free
- Colour: light green
- Flammability rating: UL 94 V-2

#### Polyamide 12, weather resistant



- Extremely flexible, also at low temperatures
- Ages better than Polyamide 6.6
- UV-resistant and weatherproof
- Better chemical resistance than Polyamide 6.6
- Colour: black
- Flammability rating: UL 94 V-2

#### Polypropylene, weather resistant



- Resistant against inorganic acids, polyhydric alcohols, neutral and basic salts
- Resists a number of other chemicals
- UV resistant
- Lower tensile strength than Polyamide 6.6
- Colour: black
- Flammability rating: UL 94 HB

#### Polypropylene, detectable



- Similar to standard Polypropylene, but contains a compound detectable by metal detectors (tested and rated at 1.5 mm diameter ferrous sphere setting) and X-ray equipment
- Colour: bright blue, also contributes to visual detection
- Buoyant (floats on the surface), for use in liquid-processing applications
- Especially recommend for the food industry, and for any other contamination sensitive industry using detection equipment
- Halogen free and silicone free
- Flammability rating: UL 94 HB

#### ETFE Fluoropolymer



- Tensile strength slightly lower than Polyamide 6.6
- ETFE Fluoropolymer is inert to most solvents and chemicals, hydrolytically stable, UV and weather resistant
- Radiation resistant (meets IEEE383) and approved for nuclear plant use
- Non-outgassing properties for zero gravity applications
- Very high temperature resistance
- Flammability rating: UL 94 V-0
- The best all around plastic material for cable ties
- Colour: aquamarine

#### ECTFE Fluoropolymer



- Similar to ETFE Fluoropolymer in performance
- Outstanding characteristic: lower smoke density when burnt
- Recommended for applications where smoke generation is a concern, such as plenum areas
- Colour: maroon
- Flammability rating: UL 94 V-0

#### Toughened weatherable acetal



- Excellent resistance to a wide variety of solvents, esters, oils, greases, gasoline and other petroleum hydrocarbons
- Resistant to weak acids and bases
- Excellent resistance to UV (weatherable acetal)
- Limited self-extinguishing properties
- Colour: black
- Flammability rating: UL 94 HB

#### 302/304 Stainless Steel

##### 316 Stainless Steel



- Superior corrosion resistance
- Excellent tensile strengths at extreme temperatures
- High resistance to chemicals, acids and radiation
- 316 grade has a better resistance to saltwater corrosion and can be supplied with a halogen free coating
- Extensively used in offshore, rail and petrochemical industries

## Material selection and specifications

### Materials specifications

#### General

There is a number of factors to be considered when choosing the proper materials for a specific environment. It is extremely difficult to provide data on all the possible combinations or conditions that can occur and therefore, it is recommended that this information be used as a guideline and that cable tie samples be tested in the intended application, by the user, to determine suitability.

#### How to use Table 1:

If your application is in an extremely cold environment, three materials will answer your need: ETFE Fluoropolymer, Polyamide 12 and stainless steel. If you also require high tensile strength, then stainless steel is your best choice. Where high strength is not required, Polyamide 12 might be your choice as it is the less costly.

This information is based on data provided by the manufacturers of the specific materials listed and is provided only as a general guide. No specific recommendation is intended. As each application may vary, testing should be conducted by the user in the intended environment. Table 1 gives relative performance ratings of the different materials we offer. Chemical resistance is shown in Table 2

**Table 1 - Information on cable tie materials**

	Polyamide 6.6 PA6.6	Polyamide 6.6 weather resistant* UV PA6.6	Polyamide 6.6 heat stabilised HS PA6.6	Polyamide 6.6 heat stabilised UV resistant HSUV PA6.6	Polyamide 6.6 flame retardant FR PA6.6
Material Code	TY...M	TY...MX	TYH...M	TY...MXA	TY...MFR
	TY...	TY...X	TY...39		TS...HF
Max. operating temperature	+85°C	+85°C	+105°C	+105°C	+85°C
Min. operating temp.	-40°C	-40°C	-40°C	-40°C	-40°C
UL flammability rating	V-2	V-2	V-2	V-2	V-0
Specific density	1.14	1.14	1.14	1.14	1.16
Water absorption (24h/ASTM)	2.5 - 3.1%	2.5 - 3.1%	2.5 - 3.1%	2.5 - 3.1%	3.0 - 3.5%
Colours	Natural**	Black	Natural***	Black	White
E-module (N/mm <sup>2</sup> )	2000	2000	2000	2000	1400
Notch impact strength conform DIN 53453 (kJ/m <sup>2</sup> )	2-20	2-20	2-20	2-20	3-25
UV resistant	■			■	
Flame retardant					■
Heat resistant		■		■	
Enhanced weatherability			■		■
Flexible at low temperatures					
Radiation resistant					
Chemically resistant					See table 2 (pages 142 - 144)
Halogen free	■	■	■	■	■
Silicon free	■	■	■	■	■

\* 2% Carbon for military specifications

\*\* Can be supplied in a wide range of colours

\*\*\* May have a greenish tint

# Material selection and specifications

## Materials specifications

### Material codes used in tables

Material	Code
STANDARD POLYAMIDE 6.6	PA6.6
WEATHER RESISTANT POLYAMIDE 6.6	UV PA6.6
HEAT-STABILISED POLYAMIDE 6.6	HS PA6.6
HEAT-STABILISED UV RESISTANT POLYAMIDE 6.6	HSUV PA6.6
FLAME RETARDANT POLYAMIDE 6.6	FR PA6.6
HIGH TEMPERATURE POLYAMIDE 4.6	HT PA4.6
WEATHER RESISTANT POLYAMIDE 12	UV PA12
POLYPROPYLENE	PP
WEATHER RESISTANT POLYPROPYLENE	UV PP
ETFE FLUOROPOLYMER	TZ
ECTFE FLUOROPOLYMER	HAL
TOUGHENED WEATHERABLE ACETAL	DEL
STAINLESS STEEL	SS

Polyamide 4.6 high temperature HT PA4.6	Polyamide 12 weather resistant UV PA12	Polypropylene weather resistant UV PP	ETFE	ECTFE	Toughened weatherable acetal DEL	Stainless Steel SS
TYHT...M	TYC...MX	TYP...MX	TYZ...M	TYV...M	TYD... CSS	YRL.. or YLD... or YLS...
TY...PX						
+150°C	+85°C	+85°C	+150°C	+140°C	+85°C	+538°C +150°C for coated
-40°C	-40°C	-40°C	-46°C	-40°C	-40°C	-80°C
V-2	V-2	HB	V-0	V-0	HB	Excellent
1.18	1.02	0.90 - 0.91	1.67 - 1.75	-	-	7.95
1.3%	0.7 - 1.1%	0.01 - 0.03%	0.02%	-	-	0%
Light green	Black	Black	Aquamarine	Maroon	Black	Metallic / Black
3200	1600	1100-1300	1000	-	-	193000
	3.5-13	3-17	o.B.	-	-	122J(IZOD)
■	■	■	■	■	■	■
■		■	■	■		■
■	■	■	■	■	■	■
■			■			■
■	■	■	■	■	■	■
■	■	■	■	■	■	■

## Material selection and specifications

### Materials specifications

**Table 2 - Resistance of available materials to various chemicals at 21°C**

Reagents	Concentration	HS PA6.6	HAL	DEL	PA6.6	UV PA6.6	FR PA6.6	UV PA12	PP	UVPP	TZ	SS
Arsenic Acid	40%	—	—	—	—	—	—	—	E	E	—	E
Acetaldehyde	50%	S	—	—	S	S	S	—	—	—	—	—
Acetone	100%	E	E	F	E	E	E	E	E	E	E	E
Aluminum Hydroxide	AQ	—	E	—	—	—	—	—	E	E	E	E
Ammonia	All	—	E	—	—	—	—	E	E	E	E	E
Ammonium Carbonate	5%	S	E	—	S	S	S	E	E	E	E	E
Ammonium Hydroxide	10%	E	E	F	E	E	E	—	E	E	E	E
Ammonium Nitrate	—	—	E	—	—	—	—	E	E	E	E	E
Ammonium Sulfate	10%	—	E	—	—	—	—	S	S	S	S	S
Barium Carbonate	All	—	E	—	—	—	—	E	E	E	E	E
Barium Chloride	5%	NR	—	NR	NR	NR	E	E	E	E	E	E
Barium Sulfate	10%	E	—	E	E	E	E	E	E	E	E	E
Barium Sulfide	10%	S	—	S	S	S	E	E	E	E	E	E
Benzene	100%	E	E	F	E	E	E	E	S	S	E	E
Benzoic Acid	100%	NR	E	—	NR	NR	NR	E	E	E	E	E
Butyric Acid	50%	NR	E	—	NR	NR	NR	—	E	E	E	E
Calcium Carbonate	AQ	—	E	—	—	—	—	—	E	E	E	E
Calcium Hydroxide	20%	—	F	E	—	—	—	—	E	E	E	E
Calcium Hydrochlorite	2	NR	—	—	NR	NR	NR	—	F	F	F	F
Calcium Sulfate	2%	—	E	—	—	—	—	—	E	E	E	E
Carbon Tetrachloride	100%	E	E	E	E	E	E	E	F	F	E	E
Chlorine (WET)	—	NR	—	—	NR	NR	NR	—	F	F	F	F
Chlorine (DRY)	—	NR	—	—	NR	NR	NR	—	NR	NR	F	F
Chloroacetic Acid	30%	NR	—	—	NR	NR	NR	—	—	—	F	F
Chloroform	100%	—	E	—	—	—	—	—	F	F	E	E
Chromic Acid	50%	NR	S	—	NR	NR	NR	—	F	F	F	F
Citric Acid	50%	S	E	E	S	S	S	E	E	E	E	E
Copper Cyanide	10%	—	E	—	—	—	—	—	E	E	E	E
Copper Nitrate	50%	—	E	—	—	—	—	—	E	E	E	E
Cider	—	—	E	—	—	—	—	—	E	E	E	E
Dichloroethane	100%	—	E	—	—	—	—	—	—	—	E	E
Diethyl Ether	100%	—	E	S	—	—	—	E	E	E	E	E
Ethyl Alcohol	100%	S	E	—	S	S	S	E	E	E	E	E
Ethyl Chloride	100%	—	S	E	—	—	—	F	F	F	E	E
Ethylene Glycol	100%	E	E	S	E	E	E	—	E	E	E	E
Ferric Hydroxide	All	—	E	—	—	—	—	—	E	E	E	E
Ferric Nitrate	10%	—	E	—	—	—	—	—	E	E	E	E
Ferrous Sulfate	10%	—	E	—	—	—	—	—	E	E	E	E
Fuel Oil	100%	—	E	—	—	—	—	E	—	—	E	E

#### Ratings

E = Excellent

S = Satisfactory

F = Fair

NR = Not Recommended

(AQ = Aqueous)

## Material selection and specifications

## Materials specifications

Table 2 - Resistance of available materials to various chemicals at 21°C

Reagents	Concentration	HS PA6.6	HAL	DEL	PA6.6	UV PA6.6	FR PA6.6	UV PA12	PP	UVPP	TZ	SS
Furfural	100%	-	E	-	-	-	-	-	F	F	E	E
Gallic Acid	AQ	-	E	-	-	-	-	-	-	-	E	E
Gasoline	100%	E	E	-	E	E	E	-	S	S	E	E
Glycerine	100%	-	E	-	-	-	-	E	E	E	-	E
Hydrocyanic Acid	All	-	E	-	-	-	-	-	E	E	E	E
Hydrogen Peroxide	30%	NR	E	F	NR	NR	NR	S	E	E	E	E
Hydrogen Sulfide	Dry	NR	E	-	NR	NR	NR	E	E	E	E	E
Iodoform	100%	-	E	-	-	-	-	-	-	-	E	E
Isopropyl Alcohol	100%	S	E	-	S	S	S	E	E	E	E	E
Jet Fuel	100%	E	E	-	E	E	E	-	S	S	E	E
Lactic Acid	10%	E	E	-	E	E	E	S	E	E	E	E
Lanolin	10%	E	E	-	E	E	E	E	E	E	E	E
Lead Acetate	5%	-	E	-	-	-	-	-	E	E	E	E
Linseed Oil	10%	E	E	E	E	E	E	E	E	E	E	E
Magnesium Carbonate	All	-	E	-	-	-	-	E	E	E	E	E
Magnesium Chloride	10%	F	-	-	F	F	F	F	F	F	F	F
Magnesium Nitrate	All	-	E	-	-	-	-	E	E	E	E	E
Malic Acid	AQ	-	E	-	-	-	-	-	E	E	E	E
Mercury	100%	-	E	-	-	-	-	E	E	E	E	E
Methyl Alcohol	100%	S	E	-	S	S	S	E	E	E	E	E
Methyl Chloride	100%	-	S	-	-	-	-	-	S	S	E	E
MethylEethyl Ketone	100%	-	E	F	-	-	-	E	E	E	E	E
Naptha	100%	-	E	-	-	-	-	-	E	E	E	E
Nitric Acid	30%	NR	E	NR	NR	NR	NR	-	E	E	E	E
Nitric Acid	30-70%	NR	S	NR	NR	NR	NR	-	F	F	S	E
Nitrous Acid	5%	-	E	-	-	-	-	-	F	F	E	E
Oleic Acid	100%	-	E	S	-	-	-	-	E	E	E	E
Oxalic Acid	10%	-	E	-	-	-	-	S	E	E	E	E
Paraffin	100%	E	E	-	E	E	E	E	E	E	E	E
PetroleumEther	100%	-	E	-	-	-	-	E	F	F	E	E
Phenol	90%	NR	E	NR	NR	NR	NR	-	E	E	E	E
Phosphoric Acid	10%	NR	E	-	NR	NR	NR	-	E	E	E	E
Picric Acid	1%	-	E	-	-	-	-	-	E	E	E	E
Potassium Bromide	AQ	-	-	-	-	-	-	-	S	S	S	S
Potassium Carbonate	1%	-	E	-	-	-	-	E	E	E	E	E
Potassium Chlorate	AQ	-	E	-	-	-	-	S	E	E	E	E
Potassium Dichromate	40%	NR	E	-	NR	NR	NR	F	E	E	E	E
Potassium Ferrocyanide	25%	-	E	-	-	-	-	-	E	E	E	E
Potassium Hydroxide	5%	S	E	-	S	S	S	-	E	E	E	E

## Ratings

E = Excellent

S = Satisfactory

F = Fair

NR = Not Recommended

(AQ = Aqueous)

## Material selection and specifications

### Materials specifications

**Table 2 - Resistance of available materials to various chemicals at 21°C**

Reagents	Concentration	HS PA6.6	HAL	DEL	PA6.6	UV PA6.6	FR PA6.6	UV PA12	PP	UVPP	TZ	SS
Potassium Iodide	All	-	E	-	-	-	-	E	E	E	E	E
Potassium Nitrate	50%	F	E	-	F	F	F	E	E	E	E	E
Potassium Permanganate	5%	NR	E	S	NR	NR	NR	NR	E	E	E	E
PotassiumSulfate	5%	-	E	-	-	-	-	E	E	E	E	E
PotassiumSulfide	AQ	-	E	-	-	-	-	-	E	E	E	E
Propyl Alcohol	100%	E	E	-	E	E	E	-	E	E	E	E
Silver Nitrate	10%	-	E	-	-	-	-	E	E	E	E	E
Sodium Acetate	60%	E	E	-	E	E	E	-	E	E	E	E
Sodium Bicarbonate	All	E	E	-	E	E	E	E	E	E	E	E
Sodium Bisulfate	10%	-	E	E	-	-	-	E	E	E	E	E
Sodium Borate	All	-	E	-	-	-	-	-	E	E	E	E
Sodium Carbonate	5%	E	E	S	E	E	E	E	E	E	E	E
Sodium Chlorate	25%	-	E	E	-	-	-	S	E	E	E	E
Sodium Chloride	2%	E	E	S	E	E	E	E	E	E	E	E
Sodium Fluoride	5%	-	-	-	-	-	-	-	F	F	F	F
Sodium Hydroxide	10%	E	E	S	E	E	E	E	E	E	E	E
Sodium Hyposulfite	AQ	-	E	-	-	-	-	-	-	-	E	E
Sodium Nitrate	5%	E	E	-	E	E	E	E	E	E	E	E
Sodium Nitrite	AQ	-	E	-	-	-	-	S	E	E	E	E
Sodium Perchlorate	10%	-	E	-	-	-	-	-	-	-	E	E
Sodium Phosphate	5%	-	E	-	-	-	-	E	E	E	E	E
Sodium Sulfate	5%	S	E	-	S	E	E	E	E	E	E	E
Sodium Thiosulfate	5%	-	-	S	-	-	-	S	S	S	S	S
Stearic Acid	100%	-	E	-	-	-	-	F	E	E	E	E
Sulfur	100%	-	E	-	-	-	-	E	E	E	E	E
Sulfur Dioxide	All	NR	E	-	NR	NR	NR	E	E	E	E	E
Sulfuric Acid	Conc.	NR	E	NR	NR	NR	NR	-	S	S	E	E
Sulfuric Acid	5%	NR	F	F	NR	NR	NR	F	F	F	F	F
Tannic Acid	10%	-	E	-	-	-	-	-	E	E	E	E
Tartaric Acid	50%	-	E	E	-	-	-	E	E	E	E	E
Tetrahydrofuran	100%	-	F	E	-	-	-	S	F	F	E	E
Toluene	100%	E	E	F	E	E	E	E	F	F	E	F
Xylene	100%	E	-	E	E	E	E	F	F	E	E	E
Zinc Chloride	70%	F	E	NR	F	F	F	E	E	E	E	E
Zinc Nitrate	AQ	-	E	-	-	-	-	E	E	E	E	E
Zinc Sulfate	AQ	-	E	-	-	-	-	E	E	E	E	E

#### Ratings

E = Excellent

S = Satisfactory

F = Fair

NR = Not Recommended

(AQ = Aqueous)

# Unit conversion factors

## Materials specifications

Unit	x	Constant	=	Unit
BTU		778.0		foot-pound (ft x lb)
BTU		1054.8		Joules
BTU		0.293		Watt-hours (W x h)
centimetres (cm)	0.032808			feet (ft)
centimetres (cm)	0.3937			inches (in)
centimetres (cm)	0.00001			kilometres (km)
centimetres (cm)	0.010			metres (m)
centimetres (cm)	10.0			millimetres (mm)
circular mils	0.00064516			circular millimetres
circular mils	0.0000007854			inches <sup>2</sup> (in <sup>2</sup> )
circular mils	0.000506671			square millimetres (mm <sup>2</sup> )
circular mils	0.7854			mils <sup>2</sup>
cubic centimetre (cm <sup>3</sup> )	0.000035314			cubic foot (ft <sup>3</sup> )
cubic centimetre (cm <sup>3</sup> )	0.061023			cubic inch (in <sup>3</sup> )
cubic centimetre (cm <sup>3</sup> )	0.000001			cubic metre (m <sup>3</sup> )
cubic centimetre (cm <sup>3</sup> )	0.0026417			gallons
cubic foot (ft <sup>3</sup> )	17280.			cubic inch (in <sup>3</sup> )
cubic foot (ft <sup>3</sup> )	28317.016			cubic centimetre (cm <sup>3</sup> )
cubic inch (in <sup>3</sup> )	0.00057870			cubic feet (ft <sup>3</sup> )
cubic inch (in <sup>3</sup> )	0.000016387			cubic metre (m <sup>3</sup> )
cubic inch (in <sup>3</sup> )	16.387162			cubic centimetre (cm <sup>3</sup> )
cubic metre (m <sup>3</sup> )	1000000.0			centimetre (cm)
cubic metre (m <sup>3</sup> )	35.314456			cubic foot (ft <sup>3</sup> )
cubic metre (m <sup>3</sup> )	264.17			gallons
foot (ft)	0.00018939			miles
foot (ft)	0.33333			yards (yd)
foot (ft)	12			inches (in)
foot (ft)	0.00030480			kilometres (km)
foot (ft)	0.30480			metres (m)
foot (ft)	30.480			centimetres (cm)
foot (ft)	304.80			millimetres (mm)
foot/pound (ft/lb)	0.00067197			metres/grams (m/g)
foot-pound (ft x lb)	0.001285			BTU
foot-pound (ft x lb)	1.356			Joules (J)
foot/pound (ft/lb)	0.1383			kilogram/metre (kg/m)
gallons (US)	3.785332			litres (l)

Unit	x	Constant	=	Unit
gallons		0.13368		cubic foot (ft <sup>3</sup> )
gallons		231.0		cubic inch (in <sup>3</sup> )
gallons		3785.332		cubic centimetres (cm <sup>3</sup> )
grams (g)		15.432		grains
gram/centimetre <sup>3</sup> (gm/cm <sup>3</sup> )	0.0361275			pounds/in <sup>3</sup> (lb/in <sup>3</sup> )
horsepower (hp)	33000.0			ft x lb/min
horsepower (hp)	550.0			ft x lb/sec
horsepower (hp)	745.7			Watts (W)
inch (in)	0.027178			yards (yd)
inch (in)	0.083333			feet (ft)
inch (in)	0.00002540			kilometre (km)
inch (in)	0.025400			metre (m)
inch (in)	2.54000514			centimetre (cm)
inch (in)	25.4000514			millimetre (mm)
inch (in)	1000.0			mils
Joules	0.000948			BTU
Joules	107			ergs
liters (l)	61.0250			cubic inch (in <sup>3</sup> )
metres (m)	1.093611			yard (yd)
metres (m)	3.2808333			feet (ft)
metres (m)	39.37			inch (in)
metres (m)	100.0			centimetre (cm)
miles	1760.0			yards (yd)
miles	5280.0			feet (ft)
miles	1.6093			kilometre (km)
millimetres (mm)	0.0032808			feet (ft)
millimetres (mm)	0.03937			inch (in)
millimetres (mm)	0.001			metres (m)
millimetres (mm)	0.01			centimetres (cm)
millimetres (mm)	39.3701			mils
millimetres (mm)	1000.0			microns (μm)
Watts (W)	44.25			ft x lb/minute
Watts (W)	0.737562			ft x lb/sec
Watts (W)	0.001341			horsepower (hp)
Watt-hours (W x h)	3.41266			BTU



E-Klips®  
Electrical and  
Mechanical Spring  
Steel Fasteners

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E-KLIPS® ELECTRICAL AND MECHANICAL SPRING STEEL FASTENERS

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# E-Klips® Electrical and Mechanical Spring Steel Fasteners

## Reduced installation

**Every E-Klips® spring steel fastener has been developed to reduce installation time. They are easy to install using a hammer, screwdriver, spanner or pliers.**

## History

The E-Klips® spring steel fasteners range has been manufactured in the UK for over 25 years. Formerly known as Furse Fastway they offer a quick, easy and reliable method of fixing services to steelwork without the need for bracket making, drilling holes or the use of nuts and bolts. Previously sold under the Furse Fastway



*E-Klips® spring steel fasteners range provides a fixing for almost every application including: Cables, trunking, cable tray, conduit, pipework, ducting, light fittings, suspended ceilings,...*

brand, the E-Klips® electrical and mechanical fixing systems have now been integrated into the Thomas & Betts product portfolio.

#### **Quality Assurance**

E-Klips® is registered for BS EN ISO 9001 and has a comprehensive test and inspection programme so that all products comply with our specifications, whether they are of our own manufacture or from a quality approved source. This is to ensure that all order requirements are met. Any further details required on quality are available on request.

#### **F.M.R.C. Approval**

F.M. approval indicates that the product has been tested and approved by the Factory Mutual Research Corporation (F.M.R.C.) for use in buildings where fire regulations and environmental concerns would apply

#### **Load Rating**

The load rating of E-Klips® fasteners is expressed as a maximum static load limit. This is the stationary vertical load limit for a fixing product and incorporates a significant safety factor. Where fasteners are combined, the load rating is determined by the lowest rated fastener. If the load rating of the steel work is less than that of the fastener, this becomes the maximum static load rating for the system. For further information please contact the sales office.

#### **Materials**

E-Klips® products are manufactured using steel in accordance to BSEN1449 - part 1.15 CS70. Furthermore products are annealed and oiled. All components are hardened and aust tempered using the shaker hearth furnace method to give a final hardness reading of 400-450 HV-10 Vickers.

## Protection against corrosion

### Electrical and mechanical spring steel fasteners



#### Protection against corrosion

The majority of E-Klips spring steel fasteners are zinc coated. The clips have a zinc silver coloured sacrificial coating which deposits two layers of zinc and an application of a waterproof topcoat. This gives a high level of protection against first white corrosion and then red rust according to ASTM-B695-90 or equivalent. The corrosion resistance is measured by a salt spray test conforming to ASTM-B-117-90, DIN 50021 or equivalent.

E-Klips zinc plated products are salt spray rated to a minimum of 600 hours and are coded F8+.

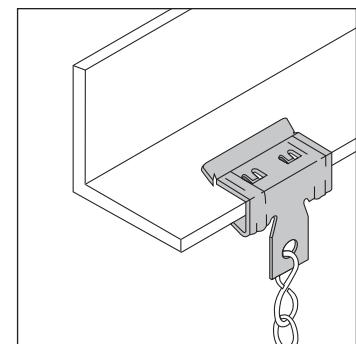
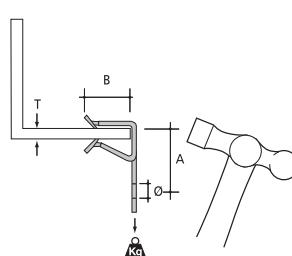


#### Key to finishes and applications:

- F1 Electroplated zinc finish, generally 8-12 microns thick with chromate coating, approximately 72 hours salt spray resistance ASTM-B117-90, DIN 50021, suitable for indoor, non-corrosive environments.
- F2 Galvanised, generally hot dipped to a thickness of 50-70 microns, suitable for indoor and outdoor, humid and mildly corrosive environments.
- F3 Stainless steel, suitable for indoor and outdoor and mildly corrosive environments.
- F4 Painted finish to compliment indoor applications.
- F5 Black phosphate finish in accordance with BS3189 Class 1 suitable to achieve 72 hours salt spray rating for indoor, non-corrosive environments.
- F6 Self colour, unfinished and unprotected product for indoor applications.
- F7 Flexible plastic coating with good chemical and corrosion resistance to protect the base material.
- F8+ Zinc silver coloured sacrificial coating (Z600+), enhanced by an application of waterproof topcoat giving a corrosion resistance of more than 600 hours, for use in indoor and outdoor humid and mildly corrosive environments. Coating is completely chromium free.

## Girder clips for chain and wire

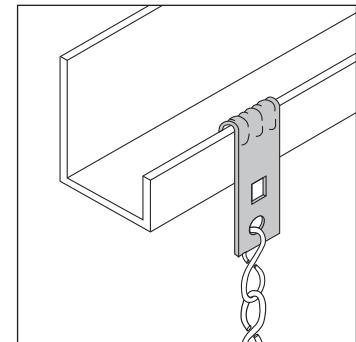
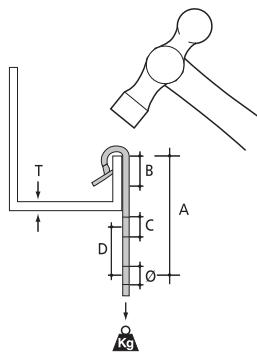
Girder and Purlin



Product Ref.	T [mm]	Ø [mm]	A [mm]	B [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
AH-153	1.5-3	6.5	16	12.5	72	F8+	100
AH-38	3-8	6.5	18	20.3	90	F8+	100
AH-814	8-14	6.5	26	20.3	90	F8+	100
AH-1420	14-20	6.5	30	26.6	90	F8+	100

## Purlin clips for chain and wire

Girder and Purlin

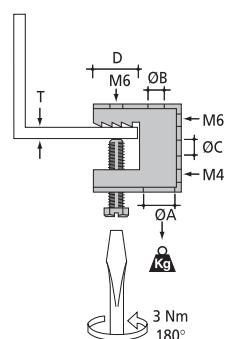
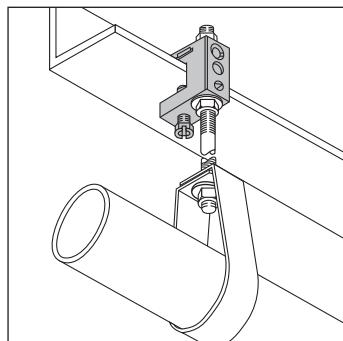


Product Ref.	T [mm]	Ø [mm]	A [mm]	B [mm]	C [mm]	D [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
AV-155	1.5-5	6.5	42	14	6.5	12	72	F8+	100
AV-57	5-7	6.5	42	15	6.5	12	72	F8+	100

\* See page 150 for material finishes

## Girder clamps for threaded rod

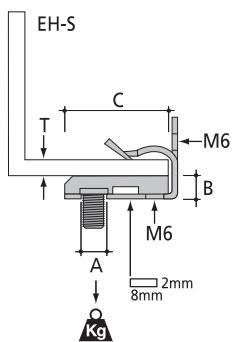
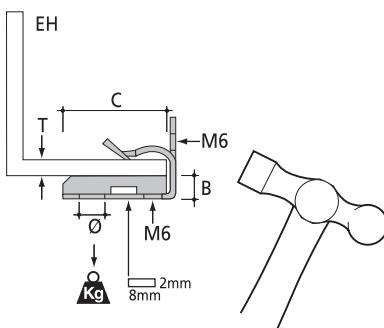
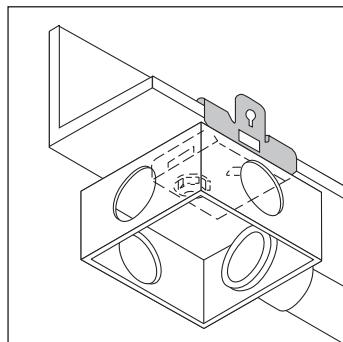
*Girder and Purlin*



Product Ref.	T [mm]	ØA [mm]	ØB [mm]	ØC [mm]	D [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
FH-65	Max 18	12.7	6.5	6.5	19.5	45	F8+	100
FH-107	Max 18	10.7	10.7	6.5	19.5	45	F8+	100

## Girder clips for conduit boxes

*Girder and Purlin*

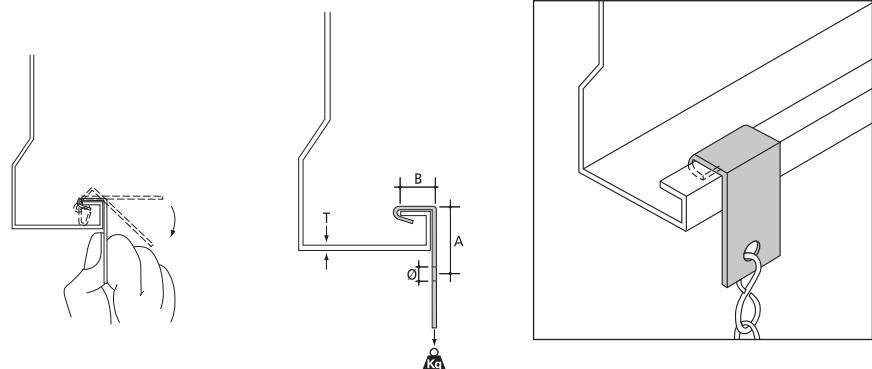


Product Ref.	T [mm]	Ø [mm]	A [mm]	B [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
EH-38	3-8	7	—	7.5	33	45	F8+	100
EH-814	8-14	7	—	7.5	33	45	F8+	100
EH-1420	14-20	7	—	7.5	33	45	F8+	100
EH-38S	3-8	—	M6x10	7.5	33	45	F8+	100
EH-814S	8-14	—	M6x10	7.5	33	45	F8+	100
EH-1420S	14-20	—	M6x10	7.5	33	45	F8+	100

\* See page 150 for material finishes

## Purlin clips for chain and wire

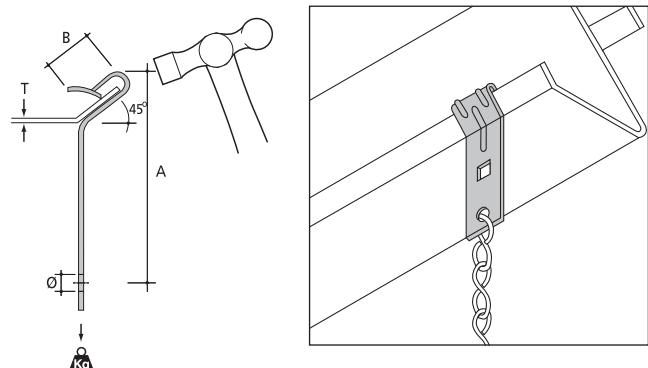
*Girder and Purlin*



Product Ref.	T [mm]	Ø [mm]	A [mm]	B [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
SM-125	≤3.0	6.5	37	12.5	20	F2	100

## Purlin clips for chain and wire

*Girder and Purlin*

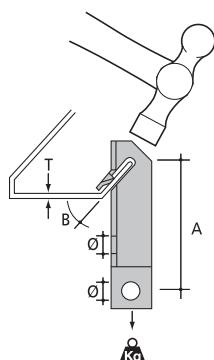
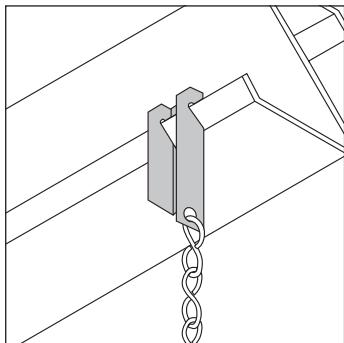


Product Ref.	T [mm]	Ø [mm]	A [mm]	B [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
RM-055	0.5-5	6.5	53	15	45	F8+	100

\* See page 150 for material finishes

## Purlin clips for chain and wire

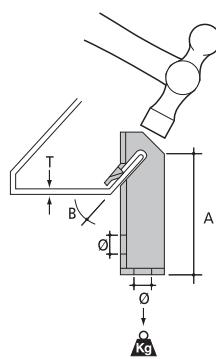
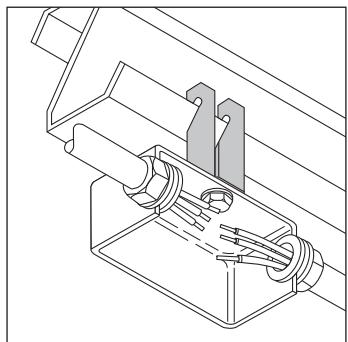
*Girder and Purlin*



Product Ref.	T [mm]	Ø [mm]	A [mm]	B	Load rating [kg]	Material finishes*	Quantity [pieces]
VM-03	0-3	6.5	48	45°	45	F8+	100

## Purlin clips for conduit boxes

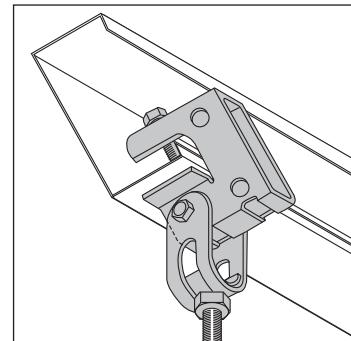
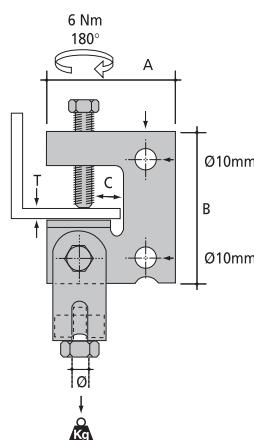
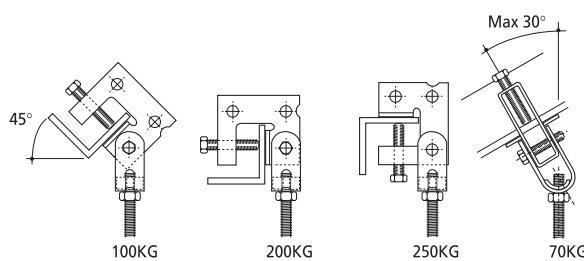
*Girder and Purlin*



Product Ref.	T [mm]	Ø [mm]	A [mm]	B	Load rating [kg]	Material finishes*	Quantity [pieces]
TM-03	0-3	6.5	43	45°	45	F8+	100

## Girder clamps for threaded rod

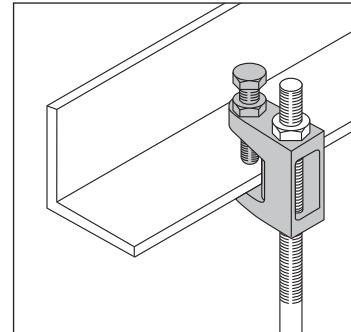
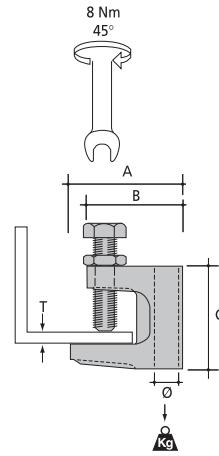
Rod



Product Ref.	T [mm]	Ø [mm]	A [mm]	B [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
SRH	Max 25	M10	71	60	12	200	F8+	10

## Girder clamps for threaded rod

Rod

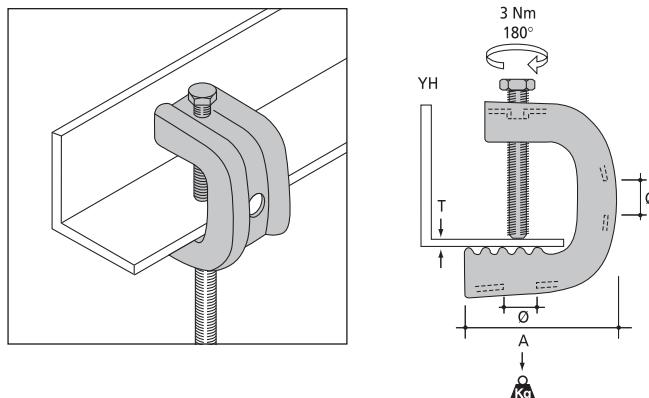


FM

Product Ref.	T [mm]	Ø [mm]	A [mm]	B [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
FC-7	Max 19	7	50	42	45	120	F1	25
FC-9	Max 19	9	50	42	45	120	F1	25
FC-11	Max 19	11	50	42	45	250	F1	25
FC-13	Max 23	13	59	49	54	350	F1	25
FC-17	Max 28	17	58	55	58	550	F1	25
FC-6T	Max 19	M6	50	42	45	120	F1	25
FC-8T	Max 19	M8	50	42	45	120	F1	25
FC-10T	Max 19	M10	50	42	45	250	F1	25
FC-12T	Max 23	M12	59	49	54	350	F1	25
FC-16T	Max 28	M16	58	55	58	550	F1	25

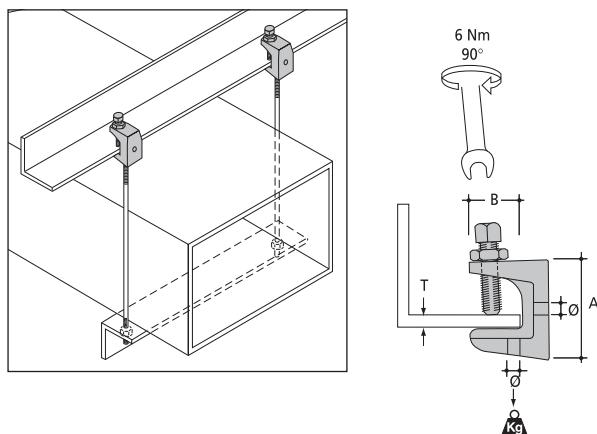
\* See page 150 for material finishes

## Girder clamps for threaded rod Rod



Product Ref.	T [mm]	Ø [mm]	A [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
YH-1021	10-21	14	47	110	F2	25
YH-1533	15-33	14	60	110	F2	25
YH-3247	32-47	14	70	110	F2	25
SSYH-1021	10-21	14	47	110	F3	25
SSYH-1533	15-33	14	60	110	F3	25
SSYH-3247	32-47	14	70	110	F3	25

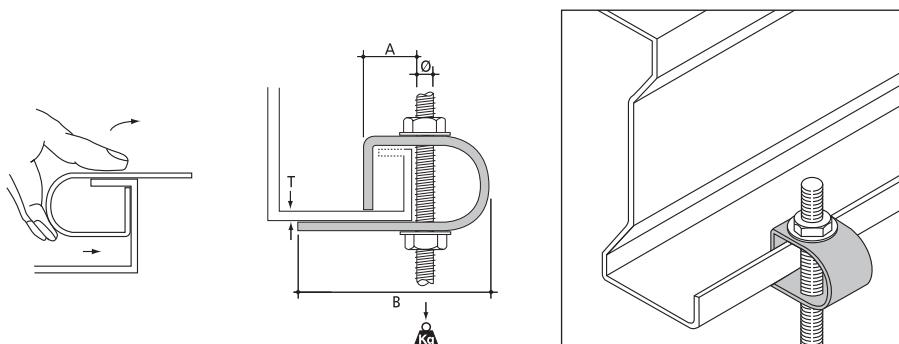
## Girder clamps for threaded rod Rod



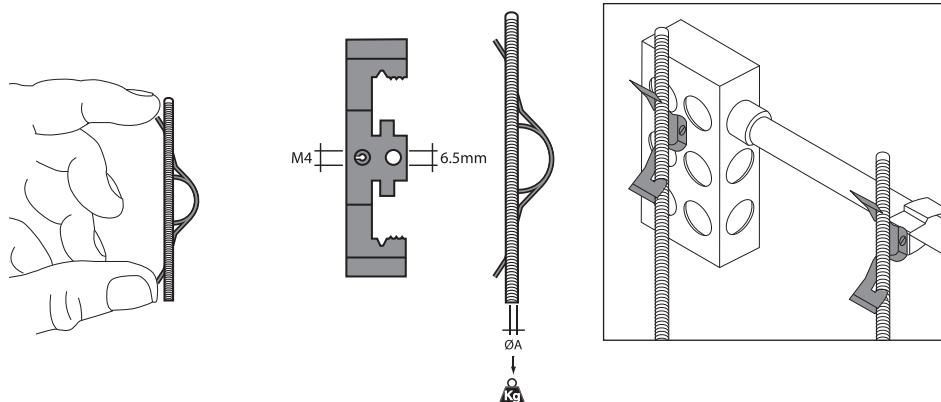
Product Ref.	T [mm]	Ø	A [mm]	B [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
BH-6T	Max 18	M6	40	22	60	F1	25
BH-8T	Max 18	M8	40	22	60	F1	25
BH-10T	Max 18	M10	40	22	60	F1	25

## Girder clamps for threaded rod

Rod



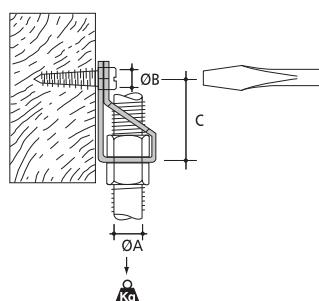
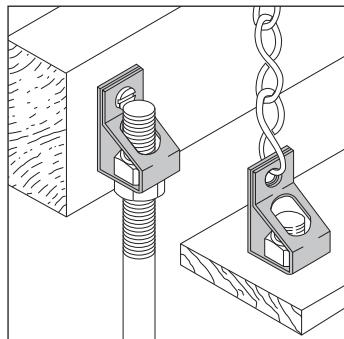
Product Ref.	T [mm]	Ø [mm]	A [mm]	B [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
PD	≤4	12	15	85	40	F2	50

Rod  
Rod

Product Ref.	ØA	Load rating [kg]	Material finishes*	Quantity [pieces]
FM-313T	M6/M8/M10	10	F8+	100
FM-320T	M6/M8/M10	10	F8+	100

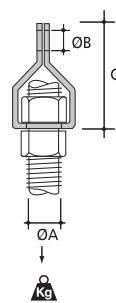
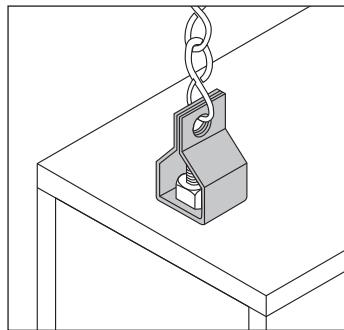
\* See page 150 for material finishes

## Rod Rod

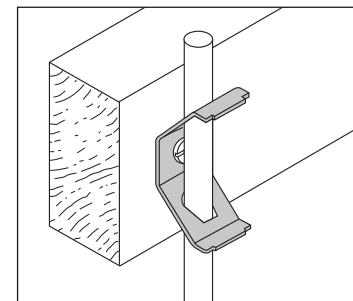
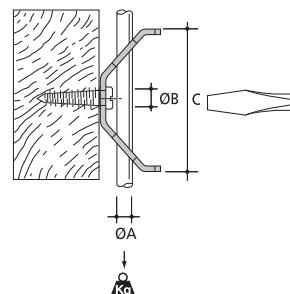
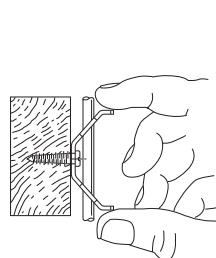


Product Ref.	ØA [mm]	ØB [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
AM-127	12.7	6.5	28	68	F8+	100
AM-6T	M6	6.5	28	68	F8+	100
AM-8T	M8	6.5	28	68	F8+	100
AM-10T	M10	6.5	28	68	F8+	100

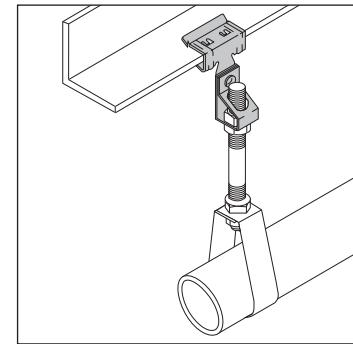
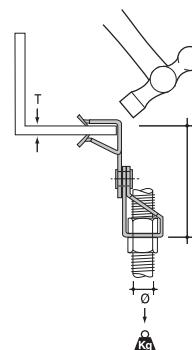
## Rod Rod



Product Ref.	ØA [mm]	ØB [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
YM-127	12.7	6.5	30	90	F8+	100

Rod  
Rod

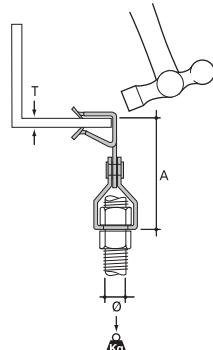
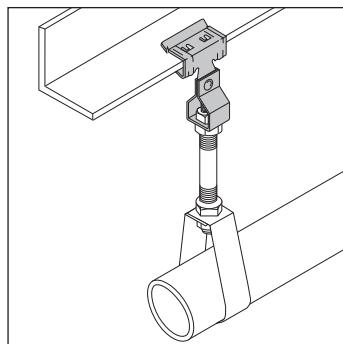
Product Ref.	ØA [mm]	ØB [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
BM-4	4/M4	6.5	45	90	F8+	100
BM-6	6/M6	6.5	45	90	F8+	100
BM-8	8/M8	6.5	45	90	F8+	100
BM-10	10/M10	6.5	45	90	F8+	100

Girder clips for hanging threaded rod  
Rod

Product Ref.	T [mm]	Ø [mm]	A [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
AH153-AM127	1.5-3	12.7	44	68	F8+	25
AH38-AM127	3-8	12.7	46	68	F8+	25
AH814-AM127	8-14	12.7	54	68	F8+	25
AH1420-AM127	14-20	12.7	66	68	F8+	25
AH153-AM6T	1.5-3	M6	44	68	F8+	25
AH38-AM6T	3-8	M6	46	68	F8+	25
AH814-AM6T	8-14	M6	54	68	F8+	25
AH1420-AM6T	14-20	M6	66	68	F8+	25
AH153-AM8T	1.5-3	M8	44	68	F8+	25
AH38-AM8T	3-8	M8	46	68	F8+	25
AH814-AM8T	8-14	M8	54	68	F8+	25
AH1420-AM8T	14-20	M8	66	68	F8+	25
AH153-AM10T	1.5-3	M10	44	68	F8+	25
AH38-AM10T	3-8	M10	46	68	F8+	25
AH814-AM10T	8-14	M10	54	68	F8+	25
AH1420-AM10T	14-20	M10	66	68	F8+	25

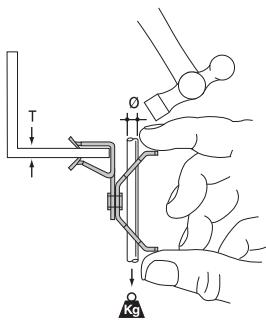
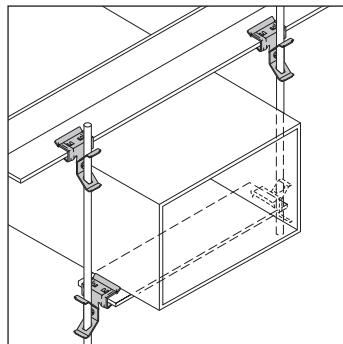
\* See page 150 for material finishes

## Girder clips for hanging threaded rod Rod



Product Ref.	T [mm]	Ø [mm]	A [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
AH153-YM127	1.5-3	12.7	48	72	F8+	25
AH38-YM127	3-8	12.7	48	90	F8+	25
AH814-YM127	8-14	12.7	56	90	F8+	25
AH1420-YM127	14-20	12.7	70	90	F8+	25

## Girder clips for hanging threaded rod Rod

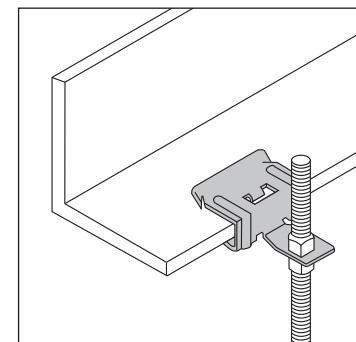
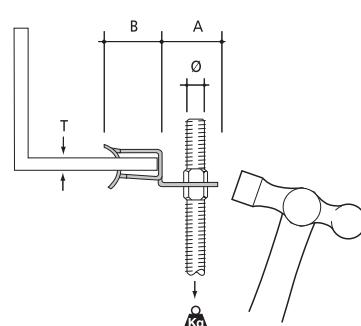


Product Ref.	T [mm]	Ø [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
AH153-BM4	1.5-3	4/M4	72	F8+	25
AH38-BM4	3-8	4/M4	90	F8+	25
AH814-BM4	8-14	4/M4	90	F8+	25
AH1420-BM4	14-20	4/M4	90	F8+	25
AH153-BM6	1.5-3	6/M6	72	F8+	25
AH38-BM6	3-8	6/M6	90	F8+	25
AH814-BM6	8-14	6/M6	90	F8+	25
AH1420-BM6	14-20	6/M6	90	F8+	25
AH153-BM8	1.5-3	8/M8	72	F8+	25
AH38-BM8	3-8	8/M8	90	F8+	25
AH814-BM8	8-14	8/M8	90	F8+	25
AH1420-BM8	14-20	8/M8	90	F8+	25
AH153-BM10	1.5-3	10/M10	72	F8+	25
AH38-BM10	3-8	10/M10	90	F8+	25
AH814-BM10	8-14	10/M10	90	F8+	25
AH1420-BM10	14-20	10/M10	90	F8+	25

\* See page 150 for material finishes

## Girder clips for hanging threaded rod

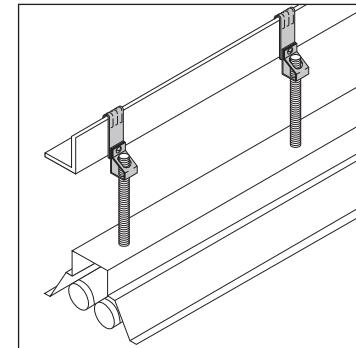
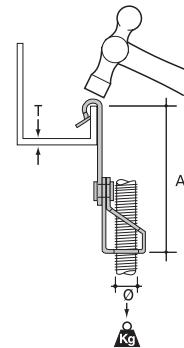
Rod



Product Ref.	T [mm]	Ø [mm]	A [mm]	B [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
AHB-153	1.5-3	6.5	22	12.5	20	F8+	100
AHB-38	3-8	6.5	25	20.3	20	F8+	100
AHB-814	8-14	6.5	26	20.3	20	F8+	100
AHB-1420	14-20	6.5	27	26.6	20	F8+	100

## Purlin clips for hanging threaded rod

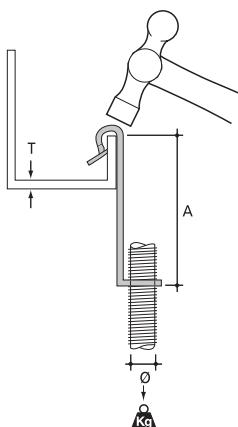
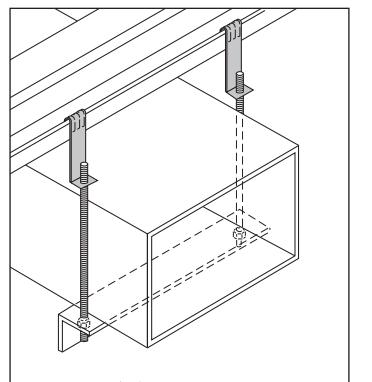
Rod



Product Ref.	T [mm]	Ø [mm]	A [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
AV155-AM127	1.5-5	12.7	70	68	F8+	25
AV155-AM6T	1.5-5	M6	70	68	F8+	25
AV155-AM8T	1.5-5	M8	70	68	F8+	25
AV155-AM10T	1.5-5	M10	70	68	F8+	25
AV57-AM127	5-7	12.7	70	68	F8+	25
AV57-AM6T	5-7	M6	70	68	F8+	25
AV57-AM8T	5-7	M8	70	68	F8+	25
AV57-AM10T	5-7	M10	70	68	F8+	25

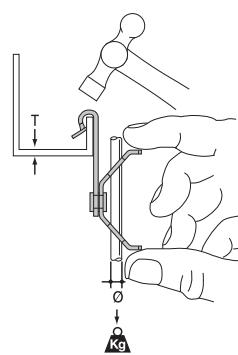
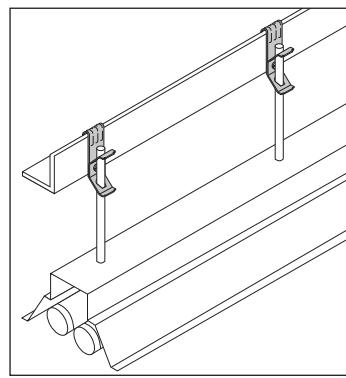
\* See page 150 for material finishes

## Purlin clips for hanging threaded rod Rod



Product Ref.	T [mm]	Ø	A [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
AVB-6T	1.5-5	M6	34	20	F8+	100
AVB-8T	1.5-5	M8	34	20	F8+	100

## Purlin clips for hanging rod Rod

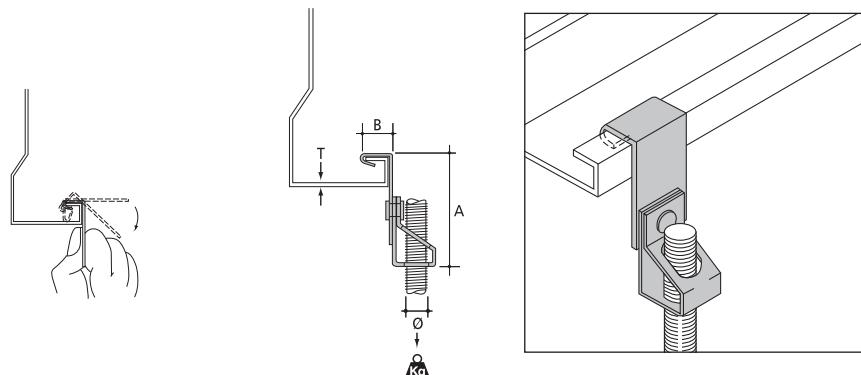


Product Ref.	T [mm]	Ø [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
AV155-BM4	1.5-5	4/M4	72	F8+	25
AV155-BM6	1.5-5	6/M6	72	F8+	25
AV155-BM8	1.5-5	8/M8	72	F8+	25
AV155-BM10	1.5-5	10/M10	72	F8+	25
AV57-BM4	5-7	4/M4	72	F8+	25
AV57-BM6	5-7	6/M6	72	F8+	25
AV57-BM8	5-7	8/M8	72	F8+	25
AV57-BM10	5-7	10/M10	72	F8+	25

\* See page 150 for material finishes

## Purlin clips for hanging threaded rod

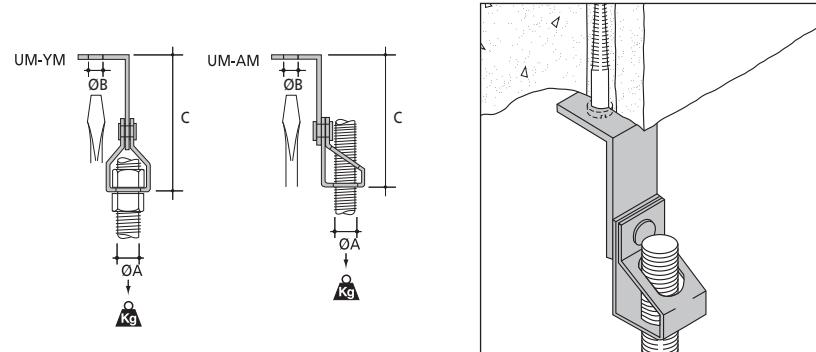
Rod



Product Ref.	T [mm]	Ø [mm]	A [mm]	B [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
SM125-AM127	≤3.0	12.7	65	12.5	20	F2	25
SM125-AM6T	≤3.0	M6	65	12.5	20	F2	25
SM125-AM8T	≤3.0	M8	65	12.5	20	F2	25
SM125-AM10T	≤3.0	M10	65	12.5	20	F2	25

## Fastening clips for threaded rod

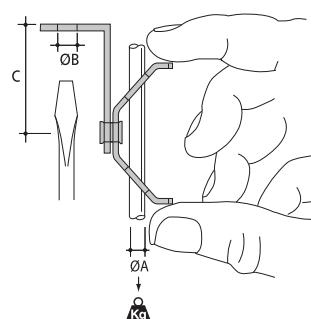
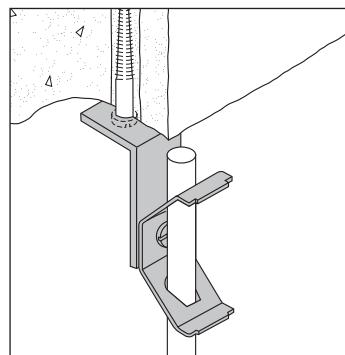
Rod



Product Ref.	ØA [mm]	ØB [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
UM44-AM6T	M6	6.5	69	68	F8+	25
UM44-AM8T	M8	6.5	69	68	F8+	25
UM44-AM10T	M10	6.5	69	68	F8+	25
UM44-AM127	12.7	6.5	69	68	F8+	25
UM44-YM127	12.7	6.5	71	90	F8+	25

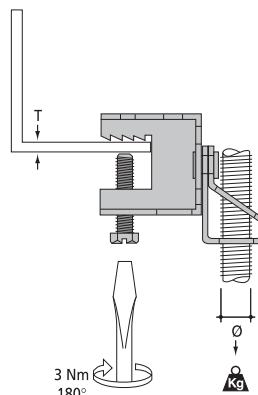
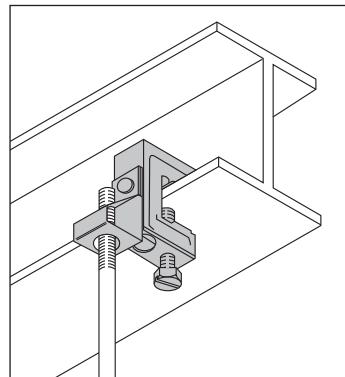
\* See page 150 for material finishes

## Fastening clips for rod Rod



Product Ref.	ØA [mm]	ØB [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
UM44-BM4	4/M4	6.5	39	90	F8+	25
UM44-BM6	6/M6	6.5	39	90	F8+	25
UM44-BM8	8/M8	6.5	39	90	F8+	25
UM44-BM10	10/M10	6.5	39	90	F8+	25

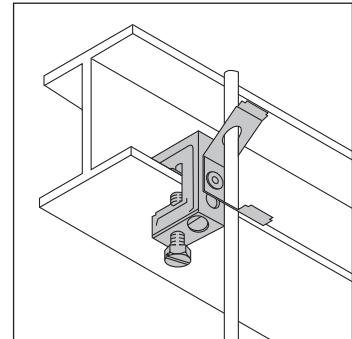
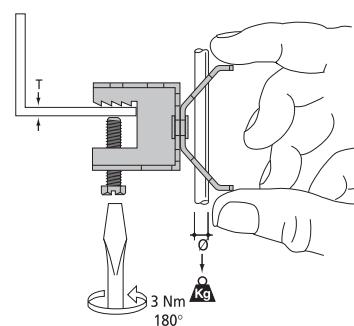
## Girder clamps for hanging threaded rod Rod



Product Ref.	T [mm]	Ø [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
FH107-AM127	Max 18	12.7	45	F8+	25
FH107-AM6T	Max 18	M6	45	F8+	25
FH107-AM8T	Max 18	M8	45	F8+	25
FH107-AM10T	Max 18	M10	45	F8+	25

## Girder clamps for hanging rod

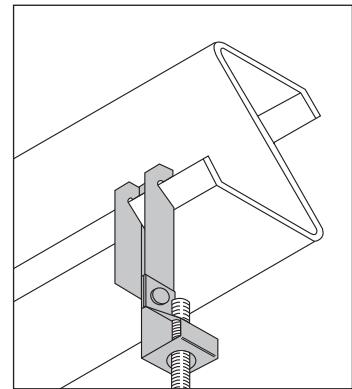
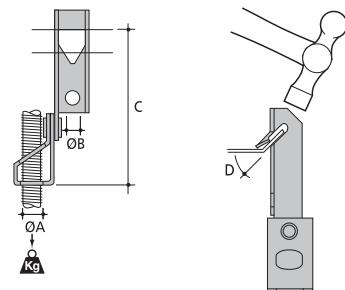
Rod



Product Ref.	T [mm]	Ø [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
FH107-BM4	Max 18	4/M4	45	F8+	25
FH107-BM6	Max 18	6/M6	45	F8+	25
FH107-BM8	Max 18	8/M8	45	F8+	25
FH107-BM10	Max 18	10/M10	45	F8+	25

## Purlin clips for hanging threaded rod

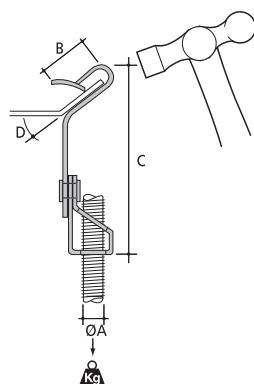
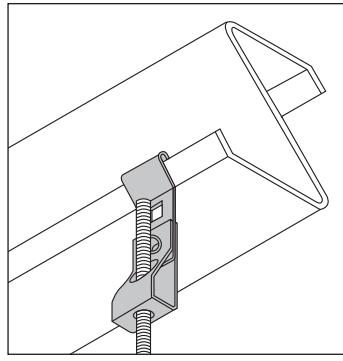
Rod



Product Ref.	ØA [mm]	ØB [mm]	C [mm]	D	Load rating [kg]	Material finishes*	Quantity [pieces]
VM03-AM127	12.7	6.5	77	45°	45	F8+	25
VM03-AM6T	M6	6.5	77	45°	45	F8+	25
VM03-AM8T	M8	6.5	77	45°	45	F8+	25
VM03-AM10T	M10	6.5	77	45°	45	F8+	25

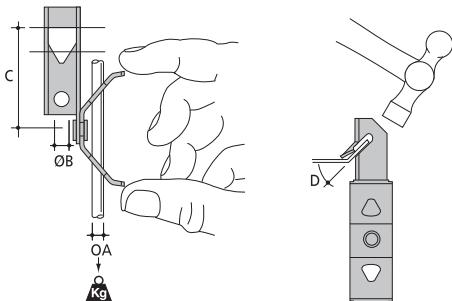
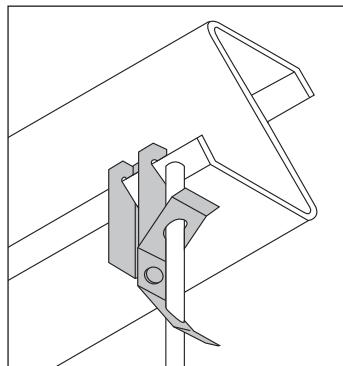
\* See page 150 for material finishes

## Purlin clips for hanging threaded rod Rod



Product Ref.	ØA [mm]	B [mm]	C [mm]	D	Load rating [kg]	Material finishes*	Quantity [pieces]
RM055-AM127	12.7	15	77	45°	45	F8+	25
RM055-AM6T	M6	15	77	45°	45	F8+	25
RM055-AM8T	M8	15	77	45°	45	F8+	25
RM055-AM10T	M10	15	77	45°	45	F8+	25

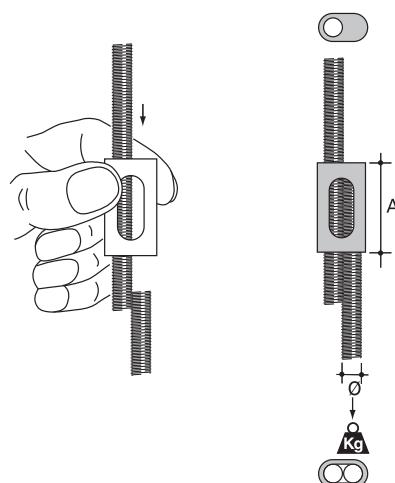
## Purlin clips for hanging rod Rod



Product Ref.	ØA [mm]	ØB [mm]	C [mm]	D	Load rating [kg]	Material finishes*	Quantity [pieces]
VM03-BM4	4/M4	6.5	48	45°	45	F8+	25
VM03-BM6	6/M6	6.5	48	45°	45	F8+	25
VM03-BM8	8/M8	6.5	48	45°	45	F8+	25
VM03-BM10	10/M10	6.5	48	45°	45	F8+	25

## Rod connectors

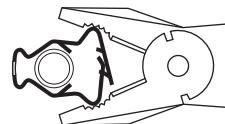
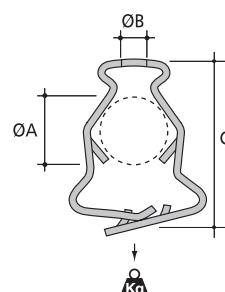
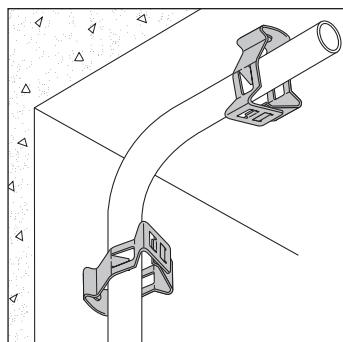
## Rod



Product Ref.	Ø	A [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
TL6	M6	35	160	F2	25
TL8	M8	35	160	F2	25
TL10	M10	35	300	F2	25

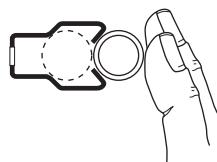
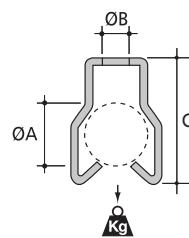
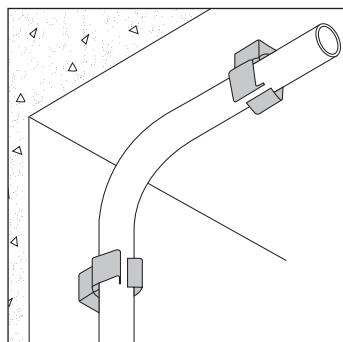
\* See page 150 for material finishes

## Wall fixing clips for conduits *Conduits*



Product Ref.	ØA [mm]	ØB [mm]	C [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
GM-1219	12-19	6.5	44	7/9/11	45	F8+	100
GM-1926	19-26	6.5	44	13.5/16	45	F8+	100
GM-2632	26-32	6.5	55	21	45	F8+	100
GM-3240	32-40	6.5	68	29	45	F8+	100
GM-4047	40-47	6.5	79	36	45	F8+	100
GM-4757	47-57	6.5	87	36/42	45	F8+	100

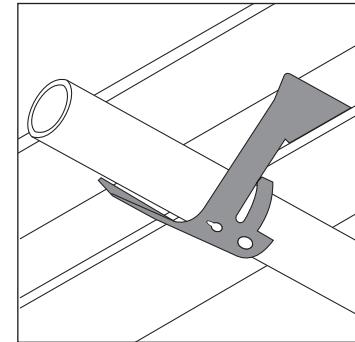
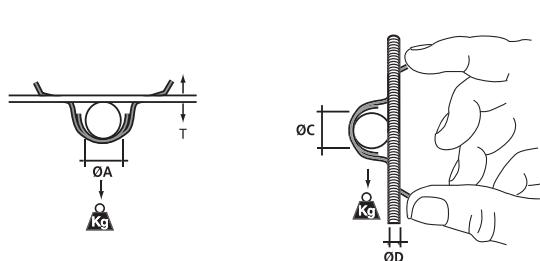
## Wall fixing clips for conduits *Conduits*



Product Ref.	ØA [mm]	ØB [mm]	C [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
JM-1825	18-22	6.5	33	11/13.5/16	11	F8+	100
JM-2229	22-29	6.5	38	16/21	11	F8+	100
JM-2933	29-33	6.5	43	-	11	F8+	100

## Rod clips for conduits

*Conduits*

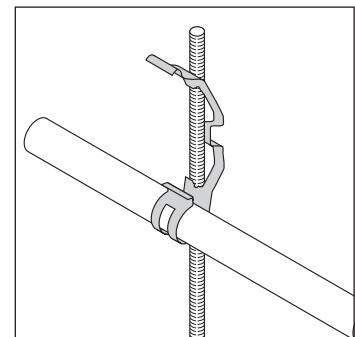
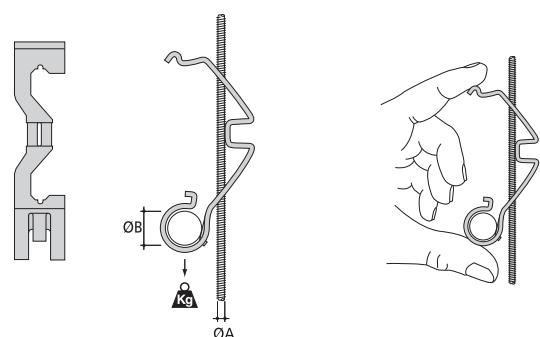


Product Ref.	T [mm]	ØA [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
FM-313T	3-5	16-25	11/13.5/16	45	F8+	100
	6-9	16-20	11/13.5	45	F8+	100
	9-13	16	11	45	F8+	100
FM-320T	3-5	20-38	13.5/16/21/29	45	F8+	100
	6-9	20-35	13.5/16/21	45	F8+	100
	9-13	20-30	13.5/16/21	45	F8+	100
	13-16	20-25	13.5/16	45	F8+	100
	16-20	20	13.5	45	F8+	100

Product Ref.	ØC [mm]	ØD [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
FM-313T	20 Max	M6/M8/M10	11	22	F8+	100
FM-320T	40 Max	M6/M8/M10	29	22	F8+	100

## Rod clips for conduits

*Conduits*

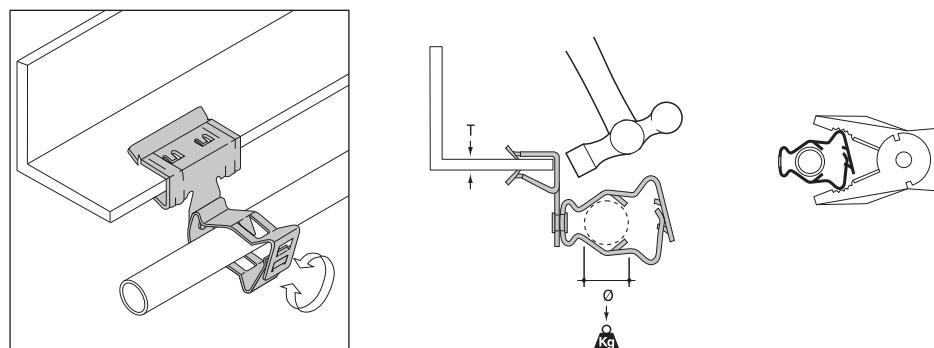


Product Ref.	ØA [mm]	ØB [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
FM-1116	3-6	10-18	11	F5	100

\* See page 150 for material finishes

## Girder clips for conduits

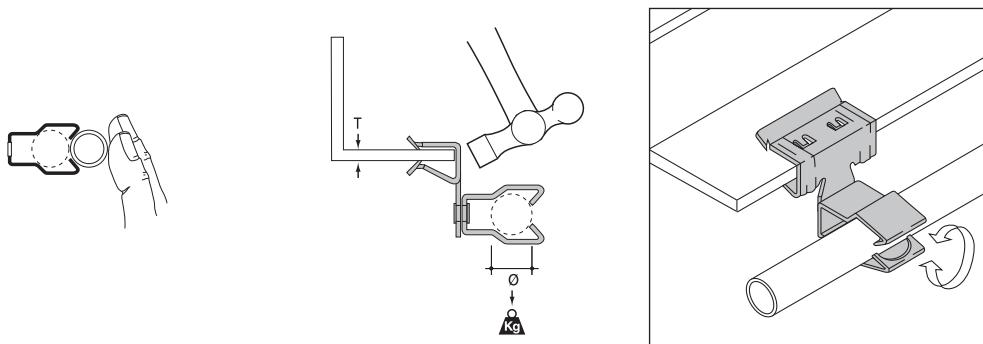
### Conduits



Product Ref.	T [mm]	Ø [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
AH153-GM1219	1.5-3	12-19	7/9/11	12	F8+	25
AH153-GM1926	1.5-3	19-26	13.5/16	12	F8+	25
AH153-GM2632	1.5-3	26-32	21	12	F8+	25
AH153-GM3240	1.5-3	32-40	29	12	F8+	25
AH153-GM4047	1.5-3	40-47	36	12	F8+	25
AH153-GM4757	1.5-3	47-57	36/42	12	F8+	25
AH38-GM1219	3-8	12-19	7/9/11	12	F8+	25
AH38-GM1926	3-8	19-26	13.5/16	12	F8+	25
AH38-GM2632	3-8	26-32	21	12	F8+	25
AH38-GM3240	3-8	32-40	29	12	F8+	25
AH38-GM4047	3-8	40-47	36	12	F8+	25
AH38-GM4757	3-8	47-57	36/42	12	F8+	25
AH814-GM1219	8-14	12-19	7/9/11	12	F8+	25
AH814-GM1926	8-14	19-26	13.5/16	12	F8+	25
AH814-GM2632	8-14	26-32	21	12	F8+	25
AH814-GM3240	8-14	32-40	29	12	F8+	25
AH814-GM4047	8-14	40-47	36	12	F8+	25
AH814-GM4757	8-14	47-57	36/42	12	F8+	25
AH1420-GM1219	14-20	12-19	7/9/11	12	F8+	25
AH1420-GM1926	14-20	19-26	13.5/16	12	F8+	25
AH1420-GM2632	14-20	26-32	21	12	F8+	25
AH1420-GM3240	14-20	32-40	29	12	F8+	25
AH1420-GM4047	14-20	40-47	36	12	F8+	25
AH1420-GM4757	14-20	47-57	36/42	12	F8+	25

## Girder clips for conduits

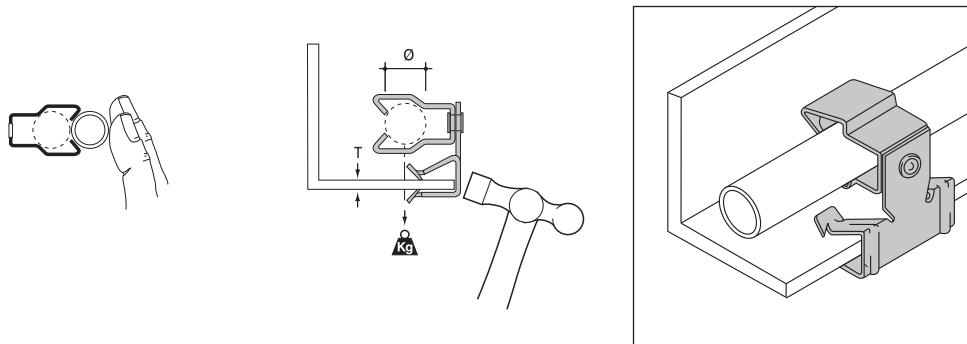
Conduits



Product Ref.	T [mm]	Ø [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
AH38-JM1825	3-8	18-22	11/13.5/16	7	F8+	25
AH38-JM2229	3-8	22-29	16/21	7	F8+	25
AH38-JM2933	3-8	29-33	–	7	F8+	25
AH814-JM1825	8-14	18-22	11/13.5/16	7	F8+	25
AH814-JM2229	8-14	22-29	16/21	7	F8+	25
AH814-JM2933	8-14	29-33	–	7	F8+	25
AH1420-JM1825	14-20	18-22	11/13.5/16	7	F8+	25
AH1420-JM2229	14-20	22-29	16/21	7	F8+	25
AH1420-JM2933	14-20	29-33	–	7	F8+	25

## Girder clips for conduits

Conduits

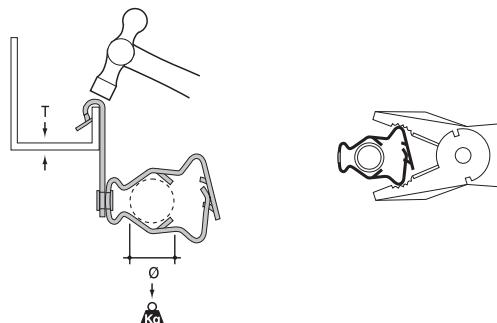
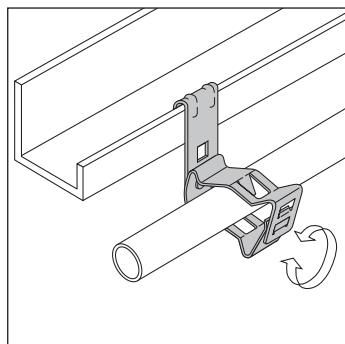


Product Ref.	T [mm]	Ø [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
AH38-JM1825R	3-8	18-22	11/13.5/16	7	F8+	25
AH38-JM2229R	3-8	22-29	16/21	7	F8+	25
AH814-JM1825R	8-14	18-22	11/13.5/16	7	F8+	25
AH814-JM2229R	8-14	22-29	16/21	7	F8+	25
AH814-JM2933R	8-14	29-33	–	7	F8+	25
AH1420-JM1825R	14-20	18-22	11/13.5/16	7	F8+	25
AH1420-JM2229R	14-20	22-29	16/21	7	F8+	25
AH1420-JM2933R	14-20	29-33	–	7	F8+	25

\* See page 150 for material finishes

## Purlin clips for conduits

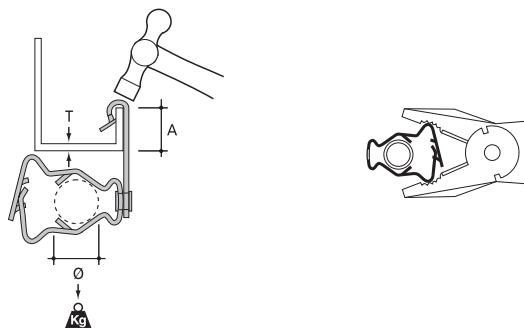
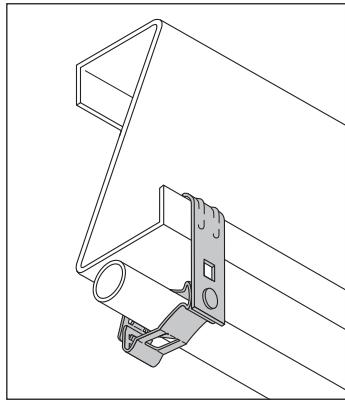
### Conduits



Product Ref.	T [mm]	Ø [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
AV155-GM1219	1.5-5	12-19	7/9/11	12	F8+	25
AV155-GM1926	1.5-5	19-26	13.5/16	12	F8+	25
AV155-GM2632	1.5-5	26-32	21	12	F8+	25
AV155-GM3240	1.5-5	32-40	29	12	F8+	25
AV155-GM4047	1.5-5	40-47	36	12	F8+	25
AV155-GM4757	1.5-5	47-57	36/42	12	F8+	25
AV57-GM1219	5-7	12-19	7/9/11	12	F8+	25
AV57-GM1926	5-7	19-26	13.5/16	12	F8+	25
AV57-GM2632	5-7	26-32	21	12	F8+	25
AV57-GM3240	5-7	32-40	29	12	F8+	25
AV57-GM4047	5-7	40-47	36	12	F8+	25
AV57-GM4757	5-7	47-57	36/42	12	F8+	25

## Purlin clips for conduits

### Conduits

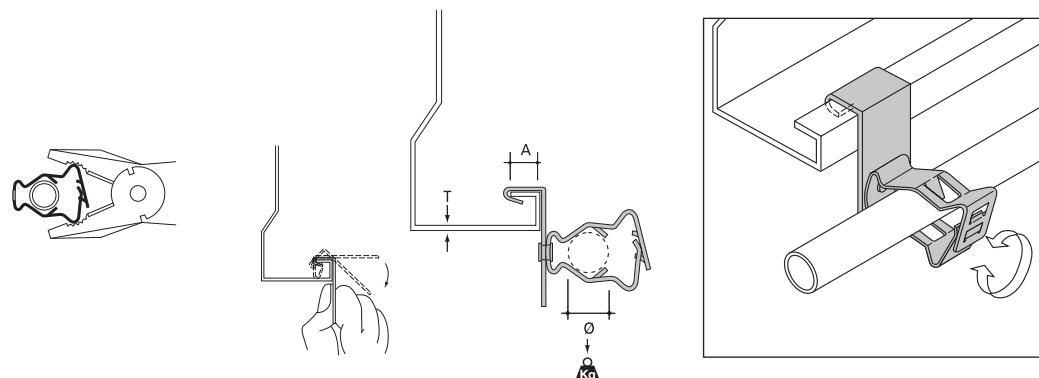


Product Ref.	T [mm]	Ø [mm]	PG Type	A [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
AV155-GM1219R	1.5-5	12-19	7/9/11	Max 15	12	F8+	25
AV155-GM1926R	1.5-5	19-26	13.5/16	Max 12	12	F8+	25
AV155-GM2632R	1.5-5	26-32	21	Max 25	12	F8+	25
AV57-GM1219R	5-7	12-19	7/9/11	Max 15	12	F8+	25
AV57-GM1926R	5-7	19-26	13.5/16	Max 12	12	F8+	25
AV57-GM2632R	5-7	26-32	21	Max 25	12	F8+	25

\* See page 150 for material finishes

## Purlin clips for conduits

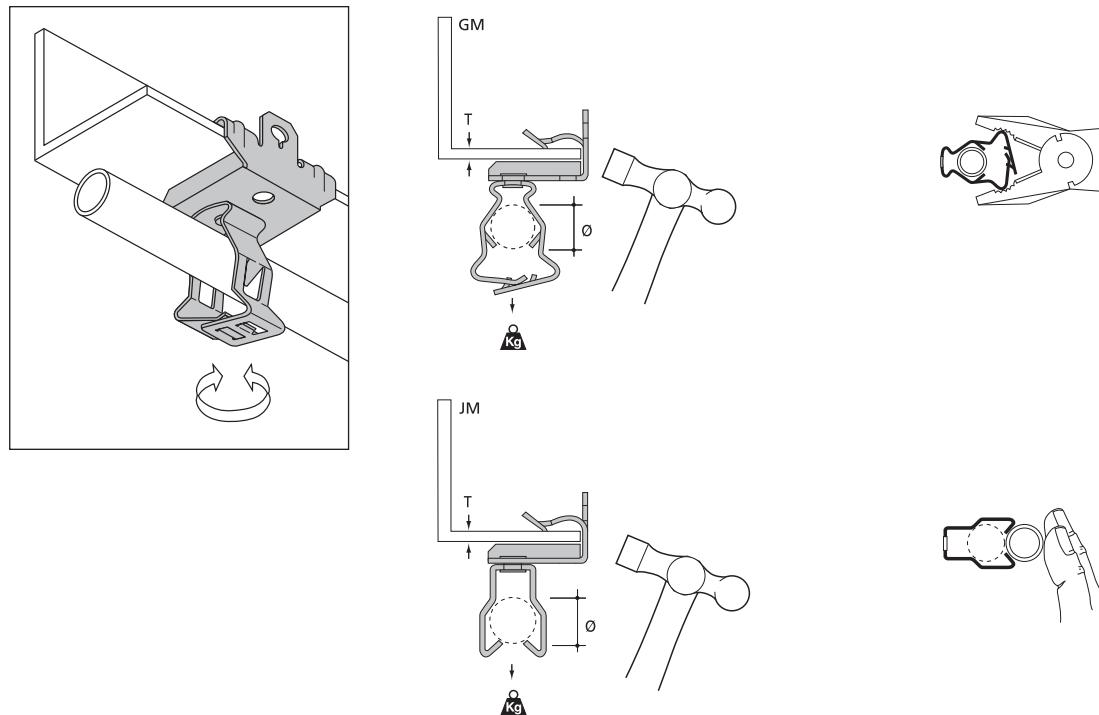
Conduits



Product Ref.	T [mm]	Ø [mm]	PG Type	A [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
SM125-GM1219	≤3.0	12-19	7/9/11	12.5	12	F2	25
SM125-GM1926	≤3.0	19-26	13.5/16	12.5	12	F2	25
SM125-GM2632	≤3.0	26-32	21	12.5	12	F2	25
SM125-GM3240	≤3.0	32-40	29	12.5	12	F2	25
SM125-GM4047	≤3.0	40-47	36	12.5	12	F2	25
SM125-GM4757	≤3.0	47-57	36/42	12.5	12	F2	25

\* See page 150 for material finishes

## Girder clips for conduits Conduits

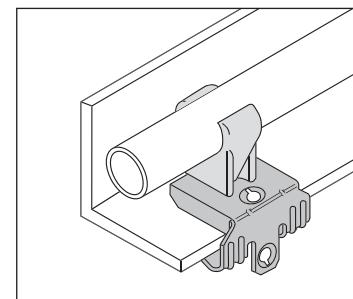
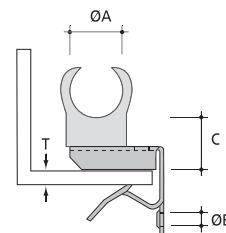
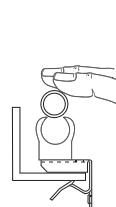


Product Ref.	T [mm]	Ø [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
EH38-GM1219	3-8	12-19	7/9/11	45	F8+	25
EH38-GM1926	3-8	19-26	13.5/16	45	F8+	25
EH38-GM2632	3-8	26-32	21	45	F8+	25
EH38-GM3240	3-8	32-40	29	45	F8+	25
EH38-GM4047	3-8	40-47	36	45	F8+	25
EH38-GM4757	3-8	47-57	36/42	45	F8+	25
EH814-GM1219	8-14	12-19	7/9/11	45	F8+	25
EH814-GM1926	8-14	19-26	13.5/16	45	F8+	25
EH814-GM2632	8-14	26-32	21	45	F8+	25
EH814-GM3240	8-14	32-40	29	45	F8+	25
EH814-GM4047	8-14	40-47	36	45	F8+	25
EH814-GM4757	8-14	47-57	36/42	45	F8+	25
EH1420-GM1219	14-20	12-19	7/9/11	45	F8+	25
EH1420-GM1926	14-20	19-26	13.5/16	45	F8+	25
EH1420-GM2632	14-20	26-32	21	45	F8+	25
EH1420-GM3240	14-20	32-40	29	45	F8+	25
EH1420-GM4047	14-20	40-47	36	45	F8+	25
EH1420-GM4757	14-20	47-57	36/42	45	F8+	25
EH38-JM1825	3-8	18-22	11/13.5/16	11	F8+	25
EH38-JM2229	3-8	22-29	16/21	11	F8+	25
EH38-JM2933	3-8	29-33	–	11	F8+	25
EH814-JM1825	8-14	18-22	11/13.5/16	11	F8+	25
EH814-JM2229	8-14	22-29	16/21	11	F8+	25
EH814-JM2933	8-14	29-33	–	11	F8+	25
EH1420-JM1825	14-20	18-22	11/13.5/16	11	F8+	25
EH1420-JM2229	14-20	22-29	16/21	11	F8+	25
EH1420-JM2933	14-20	29-33	–	11	F8+	25

\* See page 150 for material finishes

## Girder clips for conduits

*Conduits*

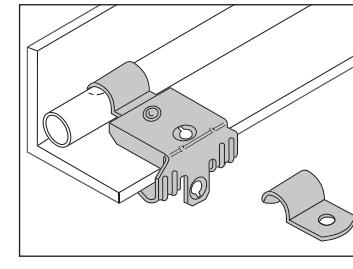
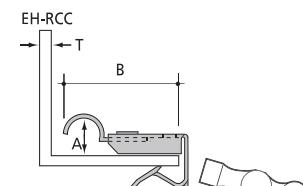
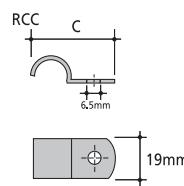


Product Ref.	T [mm]	ØA [mm]	ØB	C [mm]	Material finishes*	Quantity [pieces]
EH38-P15	3-8	15	M6	22	F8+**	25
EH38-P22	3-8	22	M6	22	F8+**	25
EH38-P28	3-8	28	M6	22	F8+**	25
EH814-P15	8-14	15	M6	22	F8+**	25
EH814-P22	8-14	22	M6	22	F8+**	25
EH814-P28	8-14	28	M6	22	F8+**	25
EH1420-P15	14-20	15	M6	22	F8+**	25
EH1420-P22	14-20	22	M6	22	F8+**	25
EH1420-P28	14-20	28	M6	22	F8+**	25

\*\* Conduit clips P15, P22 and P28 are made of Polypropylene

## Girder clips for conduits / cables

*Conduits*

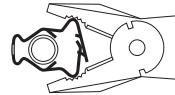
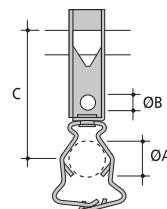
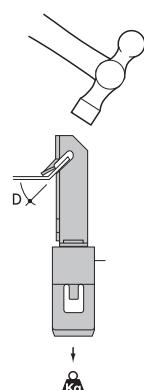
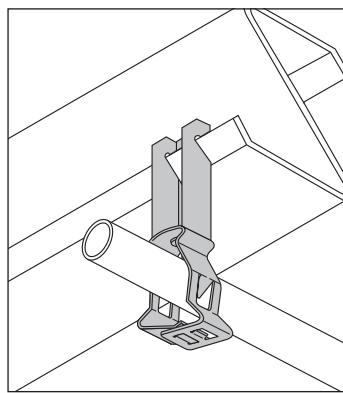


Product Ref.	T [mm]	A [mm]	B [mm]	C [mm]	Material finishes*	Quantity [pieces]
EH38-RCC13	3-8	13	51	—	F8+	25
EH38-RCC15	3-8	15	53	—	F8+	25
EH814-RCC13	8-14	13	51	—	F8+	25
EH814-RCC15	8-14	15	53	—	F8+	25
EH1420-RCC13	14-20	13	51	—	F8+	25
EH1420-RCC15	14-20	15	53	—	F8+	25
RCC-6-FU	—	6	—	29	F8+	100
RCC-8	—	8	—	31	F8+	100
RCC-10	—	10	—	33	F8+	100
RCC-13	—	13	—	36	F8+	100
RCC-15	—	15	—	38	F8+	100
RCC-20	—	20	—	43	F8+	100
RCC-25	—	25	—	48	F8+	100

\* See page 150 for material finishes

## Purlin clips for conduits

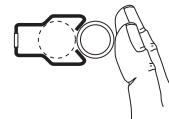
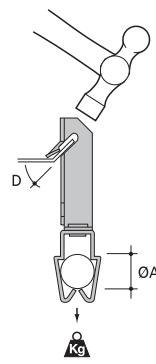
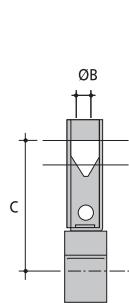
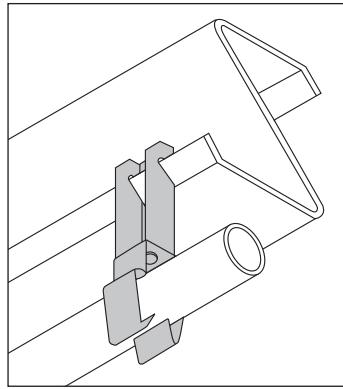
*Conduits*



Product Ref.	ØA [mm]	ØB [mm]	C [mm]	D	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
TM03-GM1219	12-19	6.5	58	45°	7/9/11	45	F8+	25
TM03-GM1926	19-26	6.5	59	45°	13.5/16	45	F8+	25
TM03-GM2632	26-32	6.5	70	45°	21	45	F8+	25
TM03-GM3240	32-40	6.5	74	45°	29	45	F8+	25
TM03-GM4047	40-47	6.5	80	45°	36	45	F8+	25
TM03-GM4757	47-57	6.5	80	45°	36/42	45	F8+	25

## Purlin clips for conduits

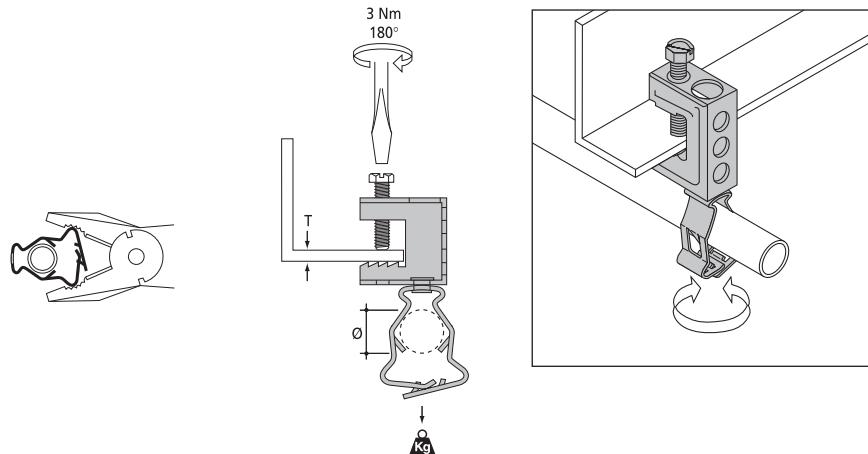
*Conduits*



Product Ref.	ØA [mm]	ØB [mm]	C [mm]	D	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
TM03-JM1825	18-22	6.5	63	45°	11/13.5/16	11	F8+	25
TM03-JM2229	22-29	6.5	64	45°	13.5/21	11	F8+	25
TM03-JM2933	29-33	6.5	69	45°	–	11	F8+	25

## Girder clamps for conduits

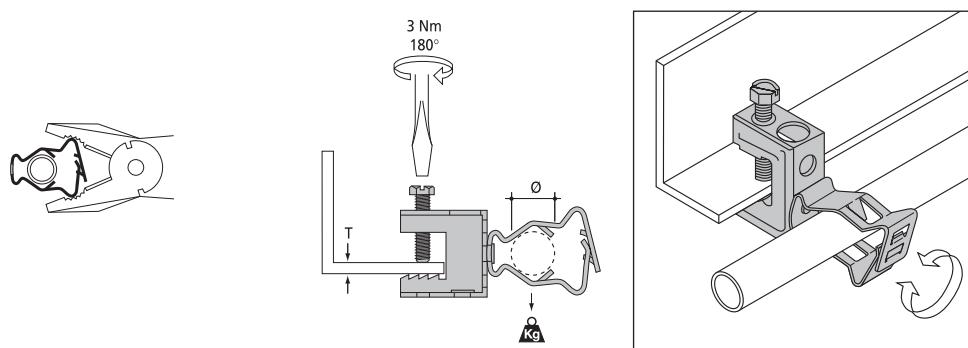
*Conduits*



Product Ref.	T [mm]	Ø [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
FH65-GM1219	Max 18	12-19	7/9/11	45	F8+	25
FH65-GM1926	Max 18	19-26	13.5/16	45	F8+	25
FH65-GM2632	Max 18	26-32	21	45	F8+	25
FH65-GM3240	Max 18	32-40	29	45	F8+	25
FH65-GM4047	Max 18	40-47	36	45	F8+	25
FH65-GM4757	Max 18	47-57	36/42	45	F8+	25

## Girder clamps for conduits

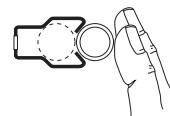
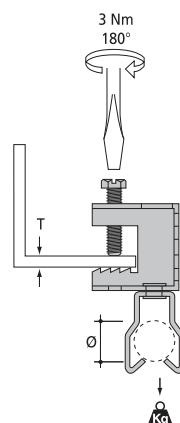
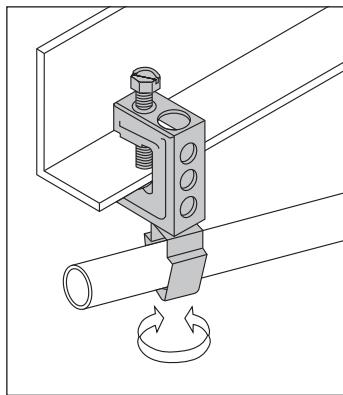
*Conduits*



Product Ref.	T [mm]	Ø [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
FH107-GM1219	Max 18	12-19	7/9/11	12	F8+	25
FH107-GM1926	Max 18	19-26	13.5/16	12	F8+	25
FH107-GM2632	Max 18	26-32	21	12	F8+	25
FH107-GM3240	Max 18	32-40	29	12	F8+	25
FH107-GM4047	Max 18	40-47	36	12	F8+	25
FH107-GM4757	Max 18	47-57	36/42	12	F8+	25

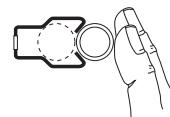
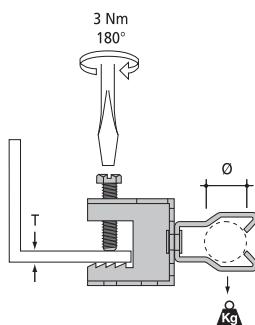
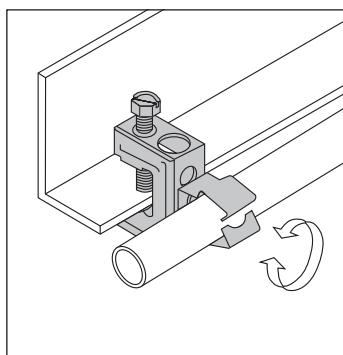
\* See page 150 for material finishes

## Girder clamps for conduits *Conduits*



Product Ref.	T [mm]	Ø [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
FH65-JM1825	Max 18	18-22	11/13.5/16	11	F8+	25
FH65-JM2229	Max 18	22-29	13.5/21	11	F8+	25
FH65-JM2933	Max 18	29-33	–	11	F8+	25

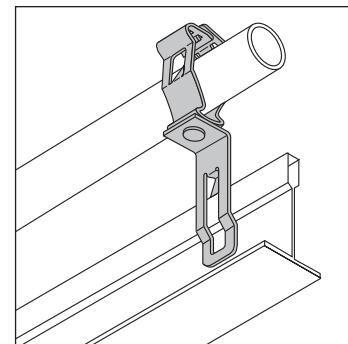
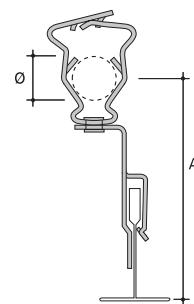
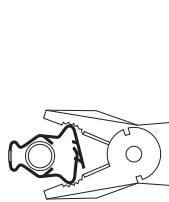
## Girder clamps for conduits *Conduits*



Product Ref.	T [mm]	Ø [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
FH107-JM1825	Max 18	18-22	11/13.5/16	7	F8+	25
FH107-JM2229	Max 18	22-29	13.5/21	7	F8+	25
FH107-JM2933	Max 18	29-33	–	7	F8+	25

## T-bow clips for conduits

*Conduits*

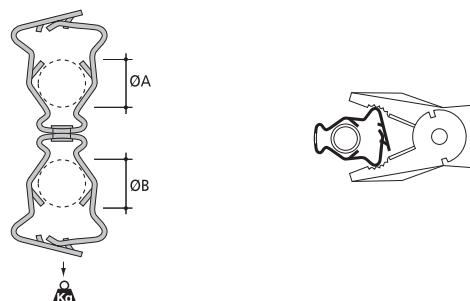
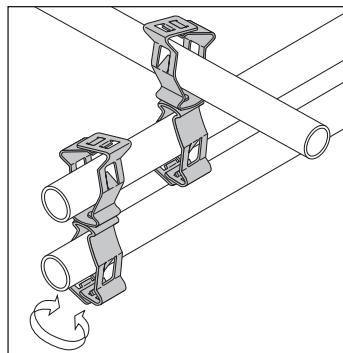


Product Ref.	Ø [mm]	A [mm]	PG Type	Material finishes*	Quantity [pieces]
PMB65-GM1219	12-19	74	7/9/11	F8+	25
PMB65-GM1926	19-26	75	13.5/16	F8+	25
PMB65-GM2632	26-32	86	21	F8+	25
PMB65-GM3240	32-40	90	29	F8+	25
PMB65-GM4047	40-47	92	36	F8+	25
PMB65-GM4757	47-57	90	36/42	F8+	25

\* See page 150 for material finishes

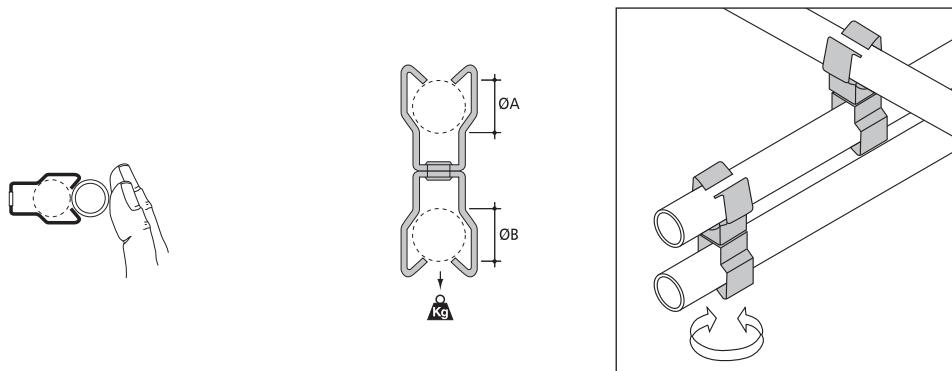
## Clips for attaching conduits to conduits

*Conduits*



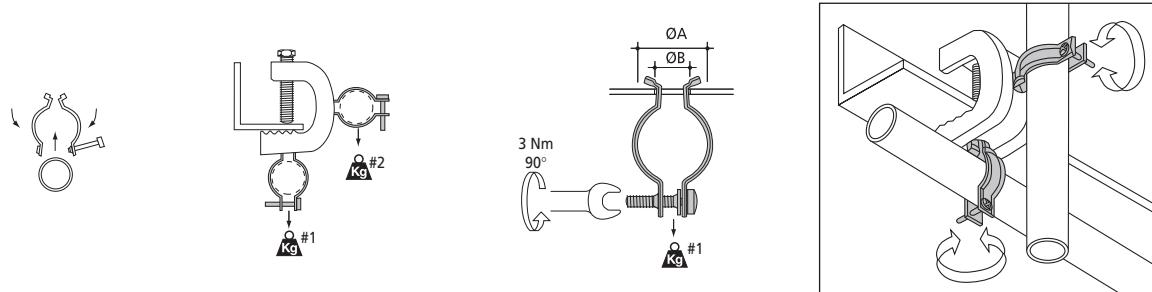
Product Ref.	ØA [mm]	ØB [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
GM1219-GM1219	12-19	12-19	7/9/11	45	F8+	25
GM1219-GM1926	12-19	19-26	13.5/16	45	F8+	25
GM1219-GM2632	12-19	26-32	21	45	F8+	25
GM1219-GM3240	12-19	32-40	29	45	F8+	25
GM1219-GM4047	12-19	40-47	36	45	F8+	25
GM1219-GM4757	12-19	47-57	36/42	45	F8+	25
GM1926-GM1926	19-26	19-26	13.5/16	45	F8+	25
GM1926-GM2632	19-26	26-32	21	45	F8+	25
GM1926-GM3240	19-26	32-40	29	45	F8+	25
GM1926-GM4047	19-26	40-47	36	45	F8+	25
GM1926-GM4757	19-26	47-57	36/42	45	F8+	25
GM2632-GM2632	26-32	26-32	21	45	F8+	25
GM2632-GM3240	26-32	32-40	29	45	F8+	25
GM2632-GM4047	26-32	40-47	36	45	F8+	25
GM2632-GM4757	26-32	47-57	36/42	45	F8+	25
GM3240-GM3240	32-40	32-40	29	45	F8+	25
GM3240-GM4047	32-40	40-47	36	45	F8+	25
GM3240-GM4757	32-40	47-57	36/42	45	F8+	25
GM4047-GM4047	40-47	40-47	36	45	F8+	25
GM4047-GM4757	40-47	47-57	36/42	45	F8+	25
GM4757-GM4757	47-57	47-57	36/42	45	F8+	25

## Clips for attaching conduits to conduits

*Conduits*

Product Ref.	ØA [mm]	ØB [mm]	PG Type	Load rating [kg]	Material finishes*	Quantity [pieces]
JM1825-JM1825	18-22	18-22	11/13.5/16	11	F8+	25
JM1825-JM2229	18-22	22-29	16/21	11	F8+	25
JM1825-JM2933	18-22	29-33	-	11	F8+	25
JM2229-JM2229	22-29	22-29	16/21	11	F8+	25
JM2229-JM2933	22-29	29-33	-	11	F8+	25
JM2933-JM2933	29-33	29-33	-	11	F8+	25

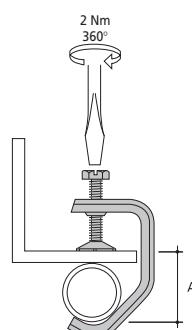
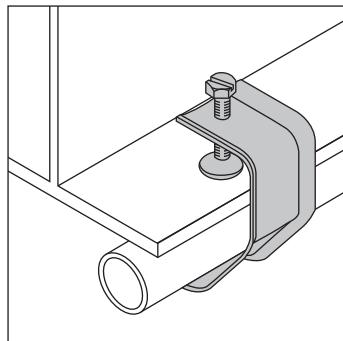
## Girder clamps for conduits

*Conduits*

Product Ref.	ØA [mm]	ØB [mm]	PG Type	Load rating #1 [kg]	Load rating #2 [kg]	Material finishes*	Quantity [pieces]
YHR-1618	16-18	14	11	40	15	F2	100
YHR-1821	18-21	14	13.5/16	40	15	F2	100
YHR-2427	24-27	14	21	40	15	F2	100
YHR-3034	30-34	14	29	40	15	F2	50
YHR-3438	34-38	14	29	40	15	F2	50
YHR-4751	47-51	14	36	40	15	F2	50
YHR-5963	59-63	14	48	40	15	F2	25
SSYHR-1618	16-18	14	11	40	15	F3	100
SSYHR-1821	18-21	14	13.5/16	40	15	F3	100
SSYHR-2427	24-27	14	21	40	15	F3	100
SSYHR-3034	30-34	14	29	40	15	F3	50
SSYHR-3438	34-38	14	29	40	15	F3	50
SSYHR-4751	47-51	14	36	40	15	F3	50
SSYHR-5963	59-63	14	48	40	15	F3	25

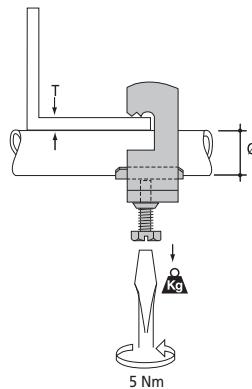
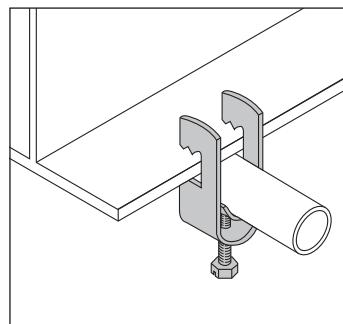
\* See page 150 for material finishes

## Girder clamps for conduits / pipes Conduits



Product Ref.	A [mm]	Material finishes*	Quantity [pieces]
ECH-33	33	F2	25
ECH-37	37	F2	25
ECH-41	41	F2	25
ECH-45	45	F2	25
ECH-49	49	F2	25
ECH-53	53	F2	25

## Girder clamps for conduits / pipes Conduits

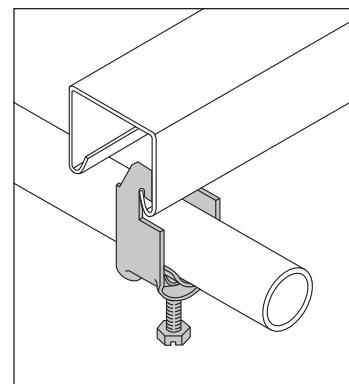
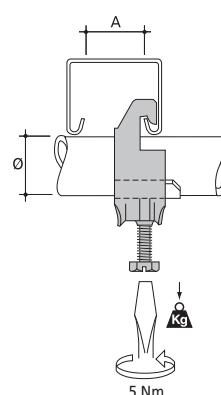


Product Ref.	T [mm]	Ø [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
RA-0612	Max 12	6-12	60	F2	25
RA-1014	Max 12	10-14	60	F2	25
RA-1216	Max 12	12-16	60	F2	25
RA-1418	Max 12	14-18	60	F2	25
RA-1822	Max 12	18-22	60	F2	25
RA-2226	Max 12	22-26	80	F2	25
RA-2630	Max 12	26-30	80	F2	25
RA-3034	Max 12	30-34	80	F2	25
RA-3438	Max 12	34-38	100	F2	25
RA-3842	Max 12	38-42	100	F2	25
RA-4246	Max 12	42-46	100	F2	25
RA-4650	Max 12	46-50	100	F2	25
RA-5054	Max 12	50-54	100	F2	25
RA-5458	Max 12	54-58	100	F2	25
RA-5864	Max 12	58-64	100	F2	25
RA-6470	Max 12	64-70	100	F2	25
RA-7076	Max 12	70-76	100	F2	25
RA-7682	Max 12	76-82	100	F2	25
RA-8290	Max 12	82-90	100	F2	25
RA-90100	Max 12	90-100	100	F2	25
RA-100110	Max 12	100-110	100	F2	25

\* See page 150 for material finishes

## Girder clamps for conduits / pipes

*Conduits*

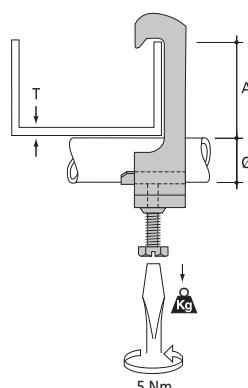
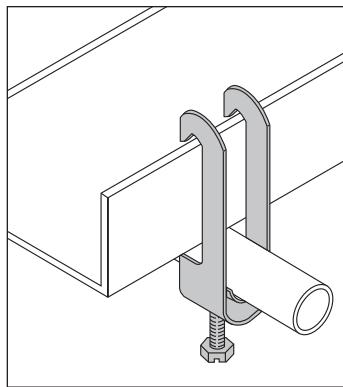


Product Ref.	A [mm]	Ø [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
S-0612	Min 18	6-12	60	F2	25
S-1014	Min 18	10-14	60	F2	25
S-1216	Min 18	12-16	60	F2	25
S-1418	Min 18	14-18	60	F2	25
S-1822	Min 18	18-22	60	F2	25
S-2226	Min 18	22-26	80	F2	25
S-2630	Min 18	26-30	80	F2	25
S-3034	Min 18	30-34	80	F2	25
S-3438	Min 18	34-38	100	F2	25
S-3842	Min 18	38-42	100	F2	25
S-4246	Min 18	42-46	100	F2	25
S-4650	Min 18	46-50	100	F2	25
S-5054	Min 18	50-54	100	F2	25
S-5458	Min 18	54-58	100	F2	25
S-5864	Min 18	58-64	100	F2	25
S-6470	Min 18	64-70	100	F2	25
S-7076	Min 18	70-76	100	F2	25
S-7682	Min 18	76-82	100	F2	25
S-8290	Min 18	82-90	100	F2	25
S-90100	Min 18	90-100	100	F2	25
S-100110	Min 18	100-110	100	F2	25

\* See page 150 for material finishes

## Girder clamps for conduits / pipes

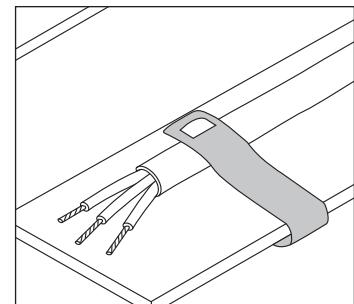
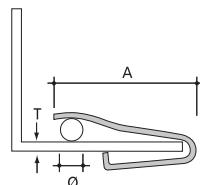
### Conduits



Product Ref.	T [mm]	Ø [mm]	A [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
H-0612	Max 6	6-12	Max 40	80	F2	25
H-1014-FU	Max 6	10-14	Max 40	80	F2	25
H-1216	Max 6	12-16	Max 40	80	F2	25
H-1418	Max 6	14-18	Max 40	80	F2	25
H-1822	Max 6	18-22	Max 40	80	F2	25
H-2226	Max 6	22-26	Max 40	80	F2	25
H-2630	Max 6	26-30	Max 40	80	F2	25
H-3034	Max 6	30-34	Max 40	80	F2	25
H-3438	Max 6	34-38	Max 40	100	F2	25
H-3842	Max 6	38-42	Max 40	100	F2	25
H-4246	Max 6	42-46	Max 40	100	F2	25
H-4650	Max 6	46-50	Max 40	100	F2	25
H-5054	Max 6	50-54	Max 40	100	F2	25
H-5458	Max 6	54-58	Max 40	100	F2	25
H-5864	Max 6	58-64	Max 40	100	F2	25
H-6470	Max 6	64-70	Max 40	100	F2	25
H-7076	Max 6	70-76	Max 40	100	F2	25
H-7682	Max 6	76-82	Max 40	100	F2	25
H-8290	Max 6	82-90	Max 40	100	F2	25
H-90100	Max 6	90-100	Max 40	100	F2	25
H-100110	Max 6	100-110	Max 40	100	F2	25

## Girder clips for single cables

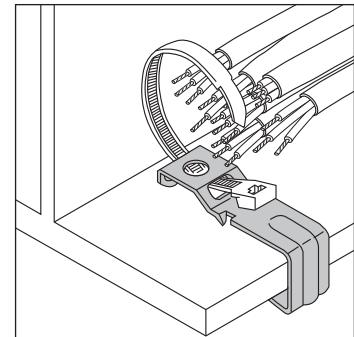
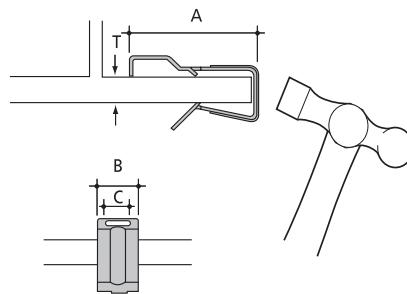
Cable



Product Ref.	T [mm]	Ø [mm]	A [mm]	Material finishes*	Quantity [pieces]
LM-38	3-5	6-16	46	F8+	100
	5-8	3-10			
LM-811	8-9	7-20	46	F8+	100
	10-11	7-12			

## Girder clips for multi cables

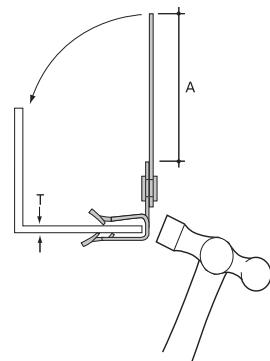
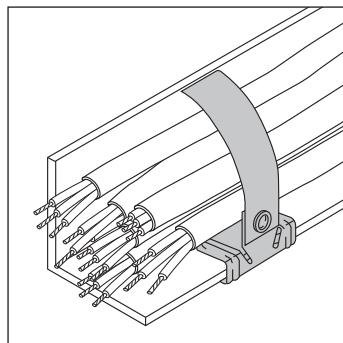
Cable



Product Ref.	T [mm]	A [mm]	B [mm]	C [mm]	Material finishes*	Quantity [pieces]
GH-310	3-10	52	16	10	F8+	100
GH-1018	10-18	52	16	10	F8+	100

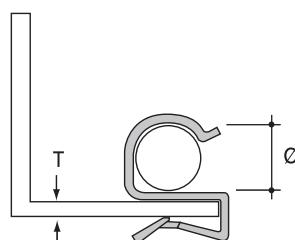
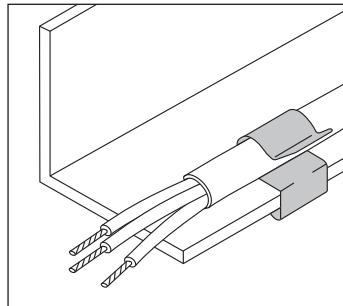
\* See page 150 for material finishes

## Girder clips for multi cables Cable



Product Ref.	T [mm]	A [mm]	Material finishes*	Quantity [pieces]
AH153-B	1.5-3	65	F8+	25
AH38-B	3-8	58	F8+	25
AH814-B	8-14	58	F8+	25
AH1420-B	14-20	58	F8+	25

## Girder clips for single cables Cable

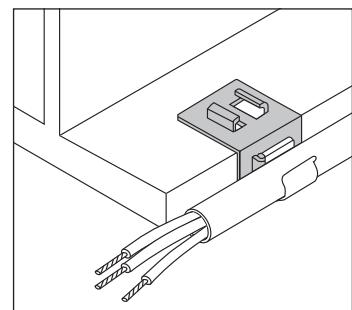
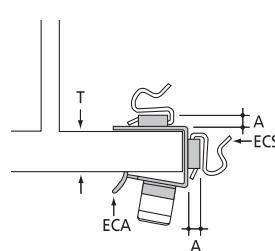


Product Ref.	T [mm]	Ø [mm]	Material finishes*	Quantity [pieces]
ECS-4555	2-4	4.5-5.5	F8+	100
ECS-67	2-4	6-7	F8+	100
ECS-89	2-4	8-9	F8+	100
ECS-1011	2-4	10-11	F8+	100
ECS-1214	2-4	12-14	F8+	100
ECS-1519	2-4	15-18	F8+	100
ECS-2024	2-4	19-24	F8+	100
ECS-2532	2-4	25-32	F8+	100
ECM-4555	4-7	4.5-5.5	F8+	100
ECM-67	4-7	6-7	F8+	100
ECM-89	4-7	8-9	F8+	100
ECM-1011	4-7	10-11	F8+	100
ECM-1214	4-7	12-14	F8+	100
ECM-1519	4-7	15-18	F8+	100
ECM-2024	4-7	19-24	F8+	100
ECM-2532	4-7	25-32	F8+	100
ECL-4555	8-12	4.5-5.5	F8+	100
ECL-67	8-12	6-7	F8+	100
ECL-89	8-12	8-9	F8+	100
ECL-1011	8-12	10-11	F8+	100
ECL-1214	8-12	12-14	F8+	100
ECL-1519	8-12	15-18	F8+	100
ECL-2024	8-12	19-24	F8+	100
ECL-2532	8-12	25-32	F8+	100

\* See page 150 for material finishes

## Girder clips for single cables

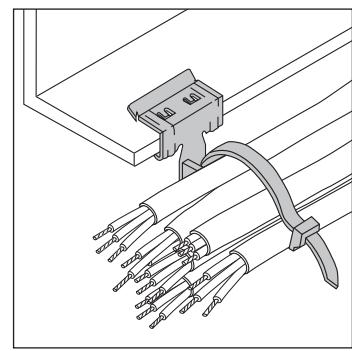
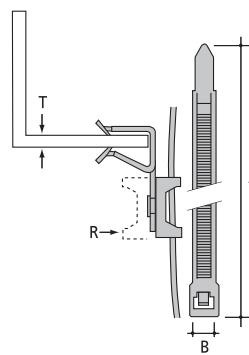
Cable



Product Ref.	T [mm]	A [mm]	Material finishes*	Quantity [pieces]
ECA-1215	12-15	2-4	F8+	100
ECA-1520	15-20	2-4	F8+	100

## Girder clips, mounting base and cable tie for cable bundles

Cable



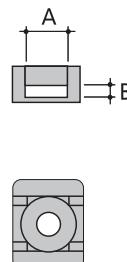
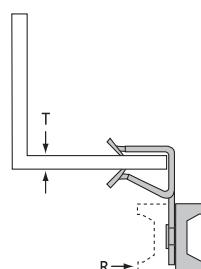
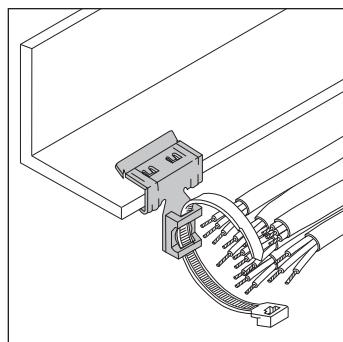
Product Ref.	T [mm]	A [mm]	B [mm]	Material finishes*	Quantity [pieces]
AH153-CT2	1.5-3	200	7.6	F8+**	25
AH153-CT2R	1.5-3	200	7.6	F8+**	25
AH153-CT4	1.5-3	370	7.6	F8+**	25
AH38-CT2	3-8	200	7.6	F8+**	25
AH38-CT2R	3-8	200	7.6	F8+**	25
AH38-CT4	3-8	370	7.6	F8+**	25
AH814-CT2	8-14	200	7.6	F8+**	25
AH814-CT2R	8-14	200	7.6	F8+**	25
AH814-CT4	8-14	370	7.6	F8+**	25
AH1420-CT2	14-20	200	7.6	F8+**	25
AH1420-CT2R	14-20	200	7.6	F8+**	25
AH1420-CT4	14-20	370	7.6	F8+**	25

\*\* Mounting Bases and Cable Ties are made of polyamide 6.6

\* See page 150 for material finishes

## Girder clips and mounting base for cable bundles

*Cable*

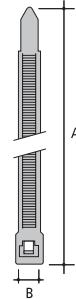
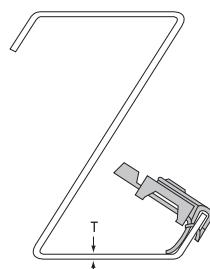
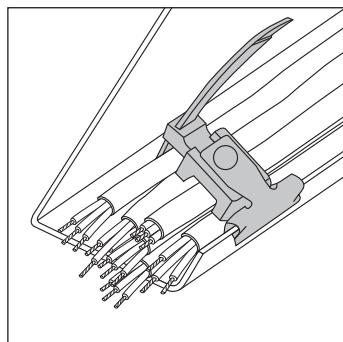


Product Ref.	T [mm]	A [mm]	B [mm]	Material finishes*	Quantity [pieces]
AH153-M	1.5-3	9	3.5	F8+**	25
AH153-MR	1.5-3	9	3.5	F8+**	25
AH38-M	3-8	9	3.5	F8+**	25
AH38-MR	3-8	9	3.5	F8+**	25
AH814-M	8-14	9	3.5	F8+**	25
AH814-MR	8-14	9	3.5	F8+**	25
AH1420-M	14-20	9	3.5	F8+**	25
AH1420-MR	14-20	9	3.5	F8+**	25

\*\* Mounting Bases are made of polyamide 6.6

## Purlin clips, mounting base and cable tie for cable bundles

*Cable*

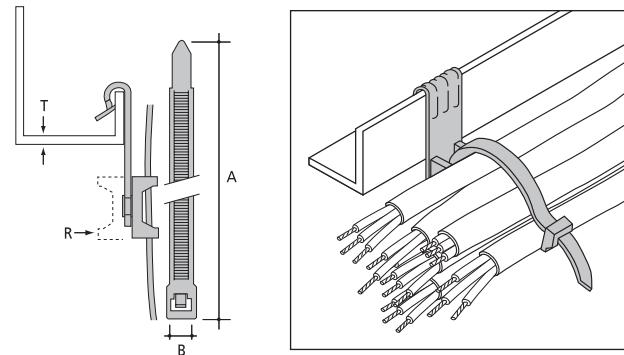


Product Ref.	T [mm]	A [mm]	B [mm]	Material finishes*	Quantity [pieces]
AH153-CT2R	1.5-3	200	7.6	F8+**	25

\*\* Mounting Bases and Cable Ties are made of polyamide 6.6

## Girder clips, mounting base and cable tie for cable bundles

*Cable*

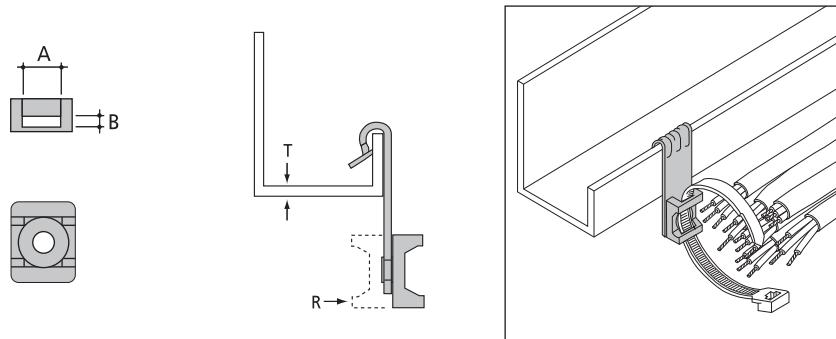


Product Ref.	T [mm]	A [mm]	B [mm]	Material finishes*	Quantity [pieces]
AV155-CT2	1.5-5	200	7.6	F8+**	25
AV155-CT2R	1.5-5	200	7.6	F8+**	25
AV155-CT4	1.5-5	370	7.6	F8+**	25
AV57-CT2	5-7	200	7.6	F8+**	25
AV57-CT2R	5-7	200	7.6	F8+**	25
AV57-CT4	5-7	370	7.6	F8+**	25

\*\* Mounting Bases and Cable Ties are made of polyamide 6.6

## Purlin clips and mounting base for cable bundles

*Cable*



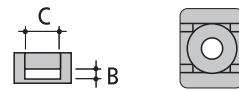
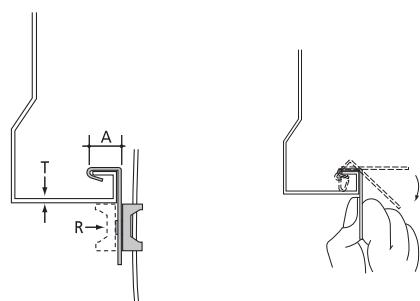
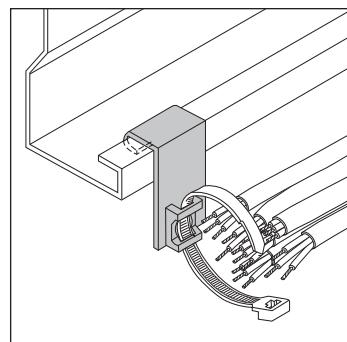
Product Ref.	T [mm]	A [mm]	B [mm]	Material finishes*	Quantity [pieces]
AV155-M	1.5-5	9	3.5	F8+**	25
AV155-MR	1.5-5	9	3.5	F8+**	25
AV57-M	5-7	9	3.5	F8+**	25
AV57-MR	5-7	9	3.5	F8+**	25

\*\* Mounting Bases are made of polyamide 6.6

\* See page 150 for material finishes

## Purlin clips and mounting base for cable bundles

### Cable

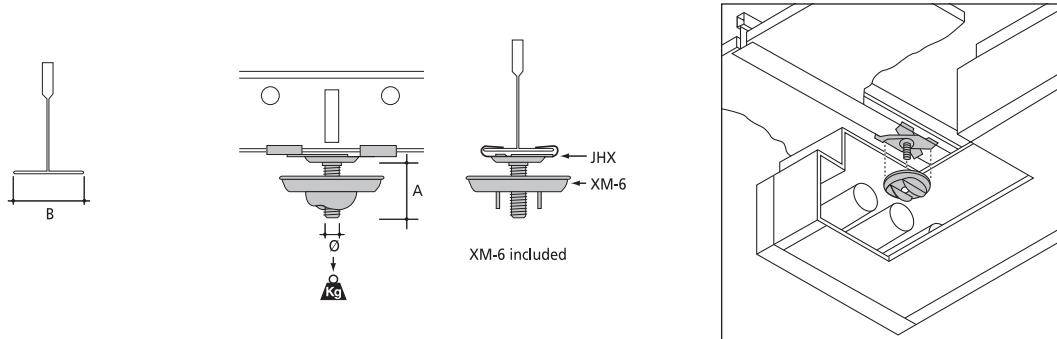


Product Ref.	T [mm]	A [mm]	B [mm]	C [mm]	Material finishes*	Quantity [pieces]
SM125-M	≤3.0	9	3.5	12.5	F2**	25
SM125-MR	≤3.0	9	3.5	12.5	F2**	25

\*\* Mounting Bases are made of polyamide 6.6

## Suspended ceiling clips

*Ceiling*

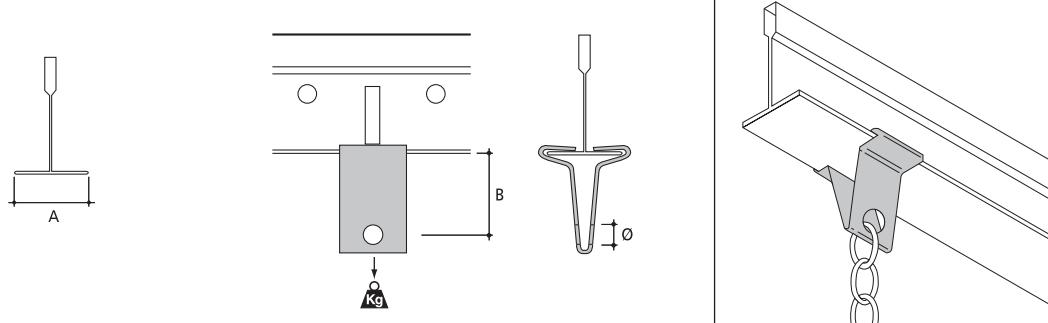


Product Ref.	Ø [mm]	A [mm]	B [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
JHX-16SW	M6	16	25	9	F4	100
JHX-16S	M6	16	25	22	F8+	100
JHX-38S	M6	38	25	22	F8+	100
JHX-50S	M6	50	25	22	F8+	100
JHX-72S	M6	72	25	22	F8+	100
JH-15SW	M6	15	15	22	F4	100

JH-15SW in White

## Suspended ceiling clips

*Ceiling*



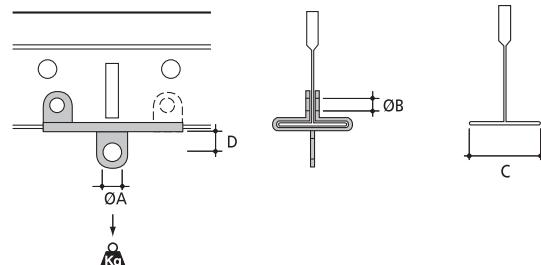
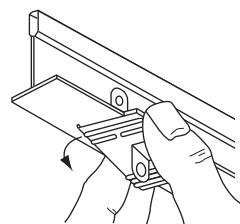
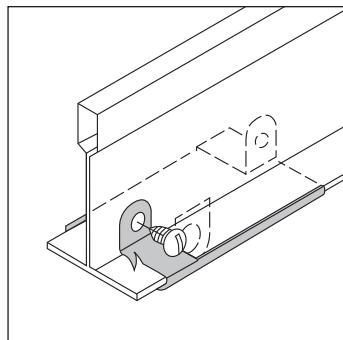
Product Ref.	Ø [mm]	A [mm]	B [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
LH-25	7	25	20	18	F1	100
LH-25W	7	25	20	18	F4	100

LH-25W in White

\* See page 150 for material finishes

## Suspended ceiling clips

*Ceiling*

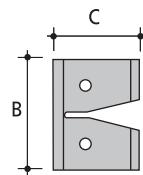
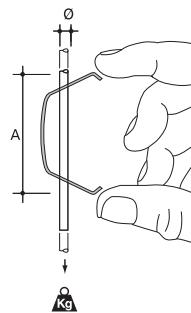
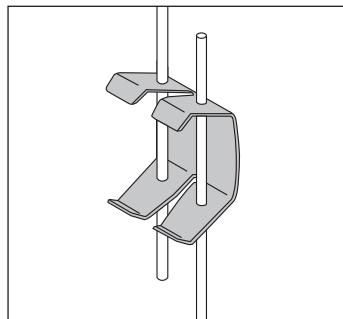


Product Ref.	ØA [mm]	ØB [mm]	C [mm]	D [mm]	Load Rating [kg]	Material finishes*	Quantity [pieces]
KH-6W	6	3	25	7	22	F4	100

KH-6W in White

## Suspended ceiling hangers

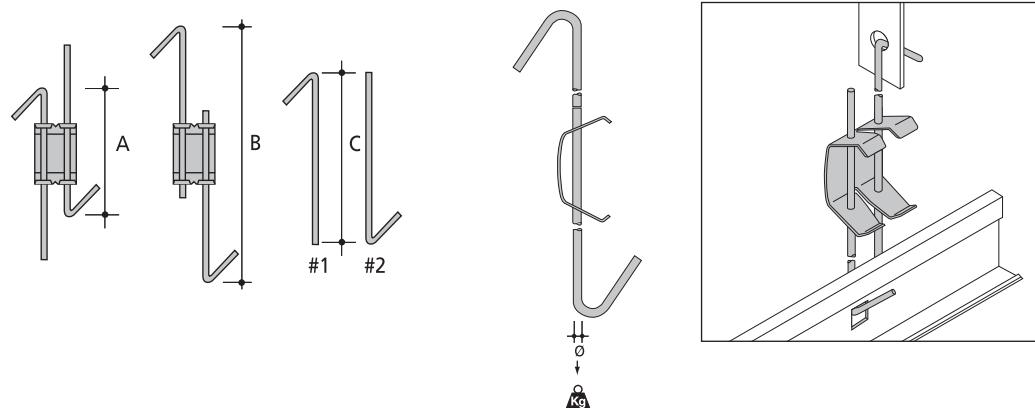
*Ceiling*



Product Ref.	Ø [mm]	A [mm]	B [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
ADS-3	3	55	30	18	100	F1	100
ADS-4	4	55	30	18	100	F1	100

## Suspended ceiling hangers

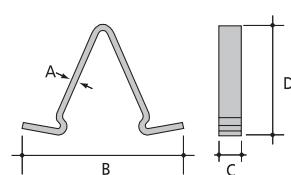
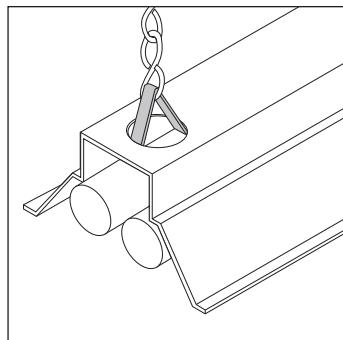
Ceiling



Product Ref.	Ø [mm]	A [mm]	B [mm]	C#1 [mm]	C#2 [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
ADSH10-30	4	100	300	190	190	100	F1	25
ADSH30-60	4	300	600	340	340	100	F1	25
ADSH60-100	4	600	1000	540	540	100	F1	25
ADSH100-125	4	1000	1250	990	340	100	F1	25
ADSH125-150	4	1250	1500	1040	540	100	F1	25
ADSH150-175	4	1500	1750	1290	540	100	F1	25
ADSH175-200	4	1750	2000	1540	540	100	F1	25

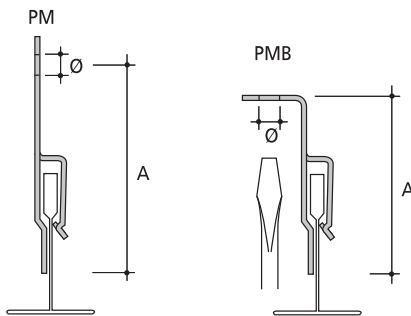
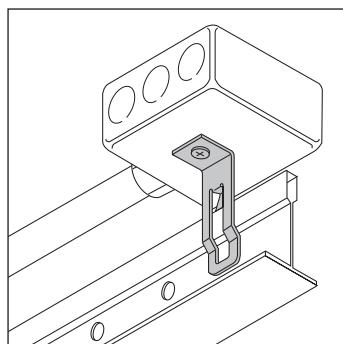
\* See page 150 for material finishes

## Clips for chain hanging Decking



Product Ref.	A [mm]	B [mm]	C [mm]	D [mm]	Material finishes*	Quantity [pieces]
V-1	1	50.8	8	35	F1	100

## T-bar clips for conduit boxes Decking

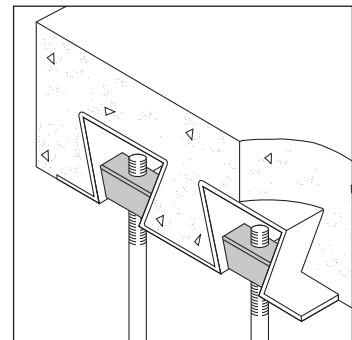
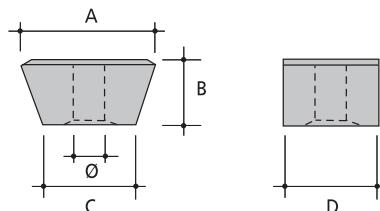


Product Ref.	Ø [mm]	A [mm]	Material finishes*	Quantity [pieces]
PMB-6T	M6	59	F8+	100
PMB-65	6.5	59	F8+	100
PM-6T	M6	71	F8+	100
PM-65	6.5	71	F8+	100

\* See page 150 for material finishes

## Wedge nuts

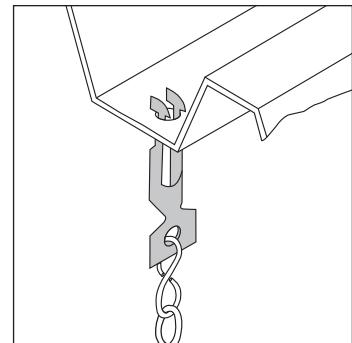
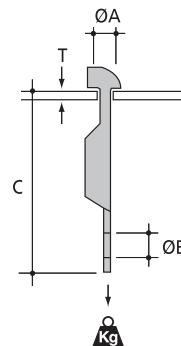
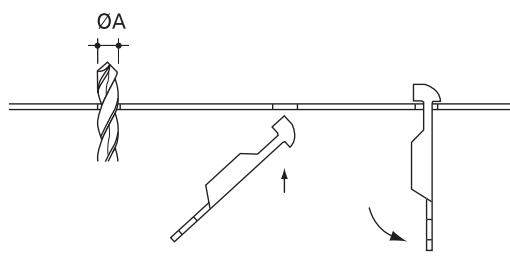
### Decking



Product Ref.	Ø	A [mm]	B [mm]	C [mm]	D [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
WN6	M6	25	13	19	12	20	F1	100
WN8	M8	25	13	19	12	36	F1	100
WN10	M10	25	13	19	12	58	F1	100

## Decking clips for chain and wire

### Decking

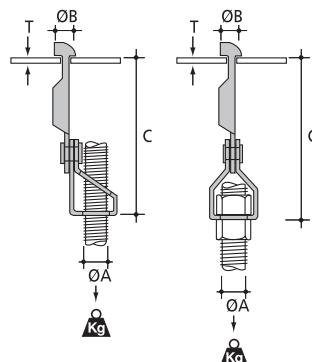
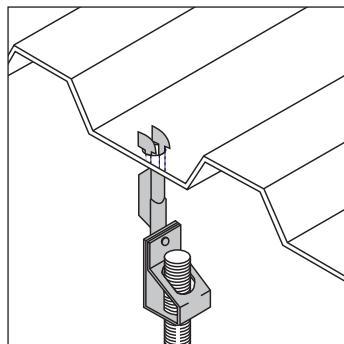


Product Ref.	T [mm]	ØA [mm]	ØB [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
NH-083	0.8-2 2-3	7	6.5	45	45 90	F8+	100

\* See page 150 for material finishes

## Decking clips for threaded rod

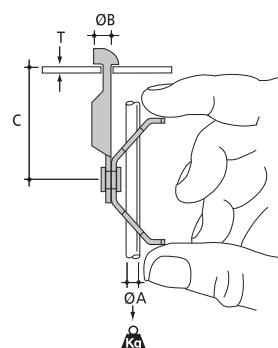
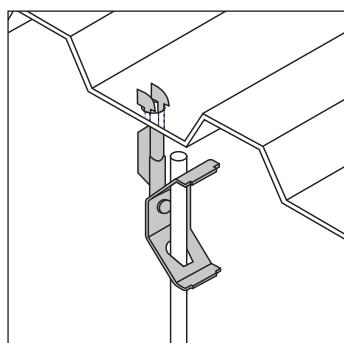
### Decking



Product Ref.	T [mm]	ØA [mm]	ØB [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
NH083-AM127	0.8-2 2-3	12.7	7	74	45 68	F8+	25
NH083-AM6T	0.8-2 2-3	M6	7	74	45 68	F8+	25
NH083-AM8T	0.8-2 2-3	M8	7	74	45 68	F8+	25
NH083-AM10T	0.8-2 2-3	M10	7	74	45 68	F8+	25
NH083-YM127	0.8-2 2-3	12.7	7	76	45 90	F8+	25

## Decking clips for rod

### Decking

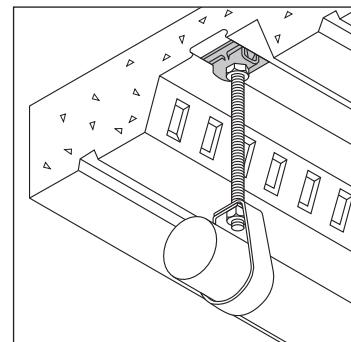
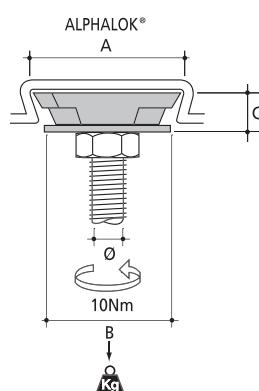


Product Ref.	T [mm]	ØA [mm]	ØB [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
NH083-BM4	0.8-2 2-3	4	7	45	45 90	F8+	25
NH083-BM6	0.8-2 2-3	6	7	45	45 90	F8+	25
NH083-BM8	0.8-2 2-3	8	7	45	45 90	F8+	25
NH083-BM10	0.8-2 2-3	10	7	45	45 90	F8+	25

\* See page 150 for material finishes

## Decking clips for threaded rod

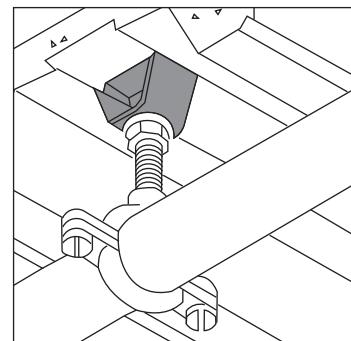
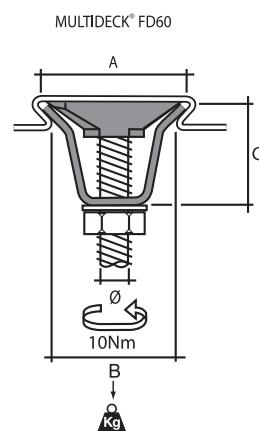
Decking



Product Ref.	A [mm]	B [mm]	C [mm]	Ø [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
DWH-6T	50	40	15	M6	100	F1	25
DWH-8T	50	40	15	M8	100	F1	25
DWH-10T	50	40	15	M10	100	F1	25

## Decking clips for threaded rod

Decking

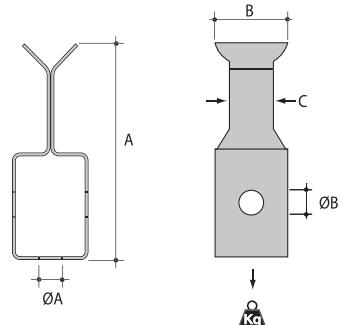
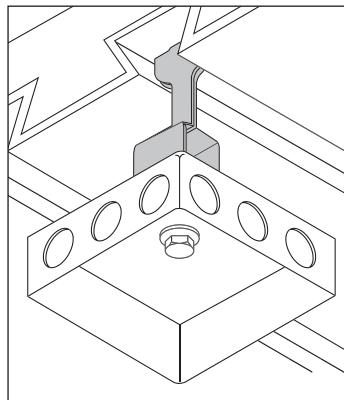


Product Ref.	A [mm]	B [mm]	C [mm]	Ø [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
DMH-6T	50	40	34	M6	150	F1	25
DMH-8T	50	40	34	M8	150	F1	25
DMH-10T	50	40	34	M10	150	F1	25

\* See page 150 for material finishes

## Decking clips for conduit boxes

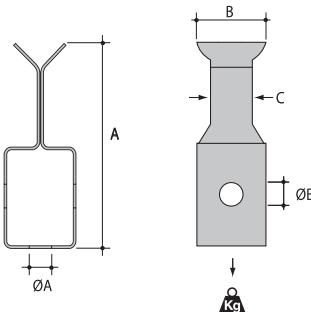
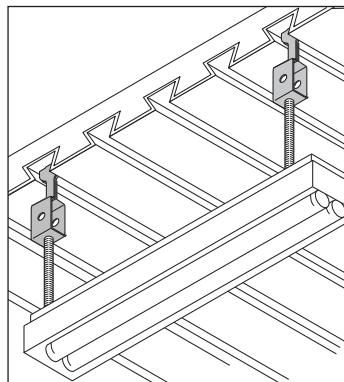
### Decking



Product Ref.	ØA [mm]	ØB [mm]	A [mm]	B [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
DH1217-105	10.5	6.5	60	20	11.5	60	F3	100
DH1217-65	6.5	6.5	60	20	11.5	60	F3	100
DH1722-105	10.5	6.5	60	25	16.5	60	F3	100
DH1722-65	6.5	6.5	60	25	16.5	60	F3	100

## Decking clips for threaded rod

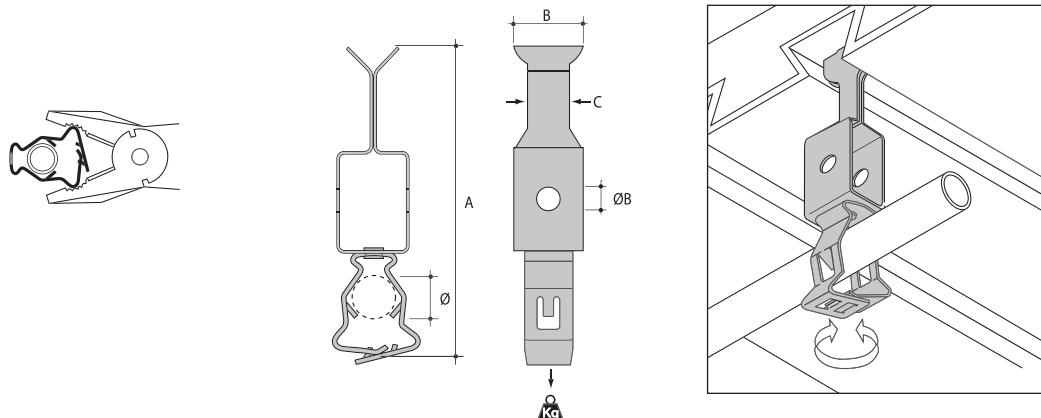
### Decking



Product Ref.	ØA [mm]	ØB [mm]	A [mm]	B [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
DH1217-M8	M8	6.5	60	20	11.5	60	F3	100
DH1217-M10	M10	6.5	60	20	11.5	60	F3	100
DH1722-M8	M8	6.5	60	25	16.5	60	F3	100
DH1722-M10	M10	6.5	60	25	16.5	60	F3	100

## Decking clips for conduits

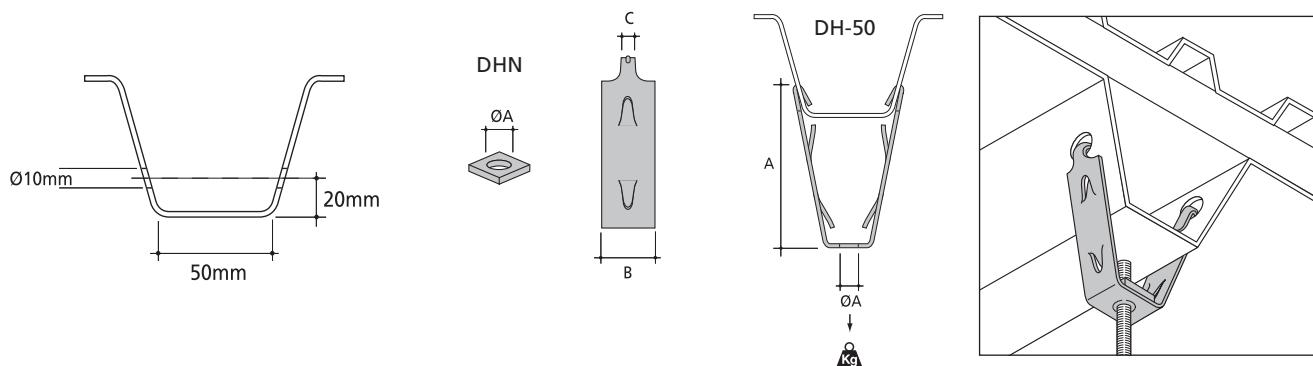
## Decking



Product Ref.	Ø [mm]	A [mm]	B [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
DH1217-GM1219	12-19	104	20	11.5	45	F3	25
DH1217-GM1926	19-26	104	20	11.5	45	F3	25
DH1217-GM2632	26-32	115	20	11.5	45	F3	25
DH1217-GM3240	32-40	128	20	11.5	45	F3	25
DH1217-GM4047	40-47	139	20	11.5	45	F3	25
DH1217-GM4757	47-57	147	20	11.5	45	F3	25
DH1722-GM1219	12-19	104	25	16.5	45	F3	25
DH1722-GM1926	19-26	104	25	16.5	45	F3	25
DH1722-GM2632	26-32	115	25	16.5	45	F3	25
DH1722-GM3240	32-40	128	25	16.5	45	F3	25
DH1722-GM4047	40-47	139	25	16.5	45	F3	25
DH1722-GM4757	47-57	147	25	16.5	45	F3	25

## Decking clips for threaded rod

## Decking

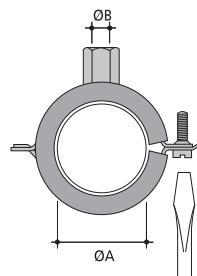
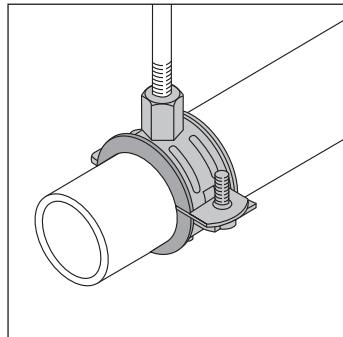


Product Ref.	ØA [mm]	A [mm]	B [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
DH-50	10.5	100	30	8	75	F8+	50
DHN-6T	M6	—	—	—	75	F8+	50
DHN-8T	M8	—	—	—	75	F8+	50
DHN-10T	M10	—	—	—	75	F8+	50

\* See page 150 for material finishes

## Lined pipe hangers for threaded rod

*Pipe*

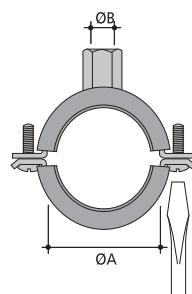
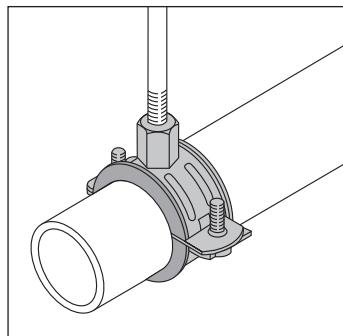


Product Ref.	ØA [mm]	ØB	Material finishes*	Quantity [pieces]
PCH-1415	14-15	M8/M10	F1	50
PCH-1618	16-18	M8/M10	F1	50
PCH-2022	20-22	M8/M10	F1	50
PCH-2528	25-28	M8/M10	F1	50
PCH-3335	33-35	M8/M10	F1	50
PCH-3638	36-38	M8/M10	F1	25
PCH-4244	42-44	M8/M10	F1	25
PCH-4850	48-50	M8/M10	F1	25
PCH-5254	52-54	M8/M10	F1	25
PCH-5760	57-60	M8/M10	F1	25

DIN4109

## Lined pipe hangers for threaded rod

*Pipe*



Product Ref.	ØA [mm]	ØB	Material finishes*	Quantity [pieces]
PCS-1519	15-19	M8/M10	F1	50
PCS-2025	20-25	M8/M10	F1	50
PCS-2630	26-30	M8/M10	F1	50
PCS-3236	32-36	M8/M10	F1	50
PCS-3843	38-43	M8/M10	F1	25
PCS-4751	47-51	M8/M10	F1	25
PCS-5358	53-58	M8/M10	F1	25
PCS-6064	60-64	M8/M10	F1	25
PCS-6872	68-72	M8/M10	F1	25
PCS-7580	75-80	M8/M10	F1	25
PCS-8186	81-86	M8/M10	F1	25
PCS-8792	87-92	M8/M10	F1	25
PCS-99105	99-105	M8/M10	F1	25
PCS-107112	107-112	M8/M10	F1	25
PCS-113118	113-118	M8/M10	F1	25
PCS-125130	125-130	M8/M10	F1	25
PCS-132137	132-137	M8/M10	F1	25
PCS-138142	138-142	M8/M10	F1	25
PCS-148152	148-152	M8/M10	F1	25
PCS-159166	159-166	M8/M10	F1	25
PCS-200212	200-212	M8/M10	F1	25
PCS-215220	215-220	M8/M10	F1	25
PCS-248252	248-252	M8/M10	F1	25

DIN4109

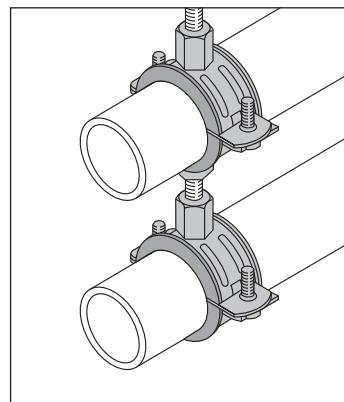
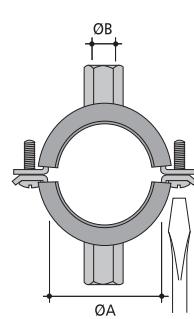
\* See page 150 for material finishes

## Lined pipe hangers for threaded rod

Pipe

Product Ref.	ØA [mm]	ØB	Material finishes*	Quantity [pieces]
PCSD-1518	15-18	M8/M10	F1	50
PCSD-2024	20-24	M8/M10	F1	50
PCSD-2630	26-30	M8/M10	F1	50
PCSD-3236	32-36	M8/M10	F1	50
PCSD-3842	38-42	M8/M10	F1	25
PCSD-4750	47-50	M8/M10	F1	25
PCSD-6064	60-64	M8/M10	F1	25
PCSD-7580	75-80	M8/M10	F1	25
PCSD-8590	85-90	M8/M10	F1	25
PCSD-100106	100-106	M8/M10	F1	25
PCSD-114119	114-119	M8/M10	F1	25
PCSD-133140	133-140	M8/M10	F1	25
PCSD-159165	159-165	M8/M10	F1	25

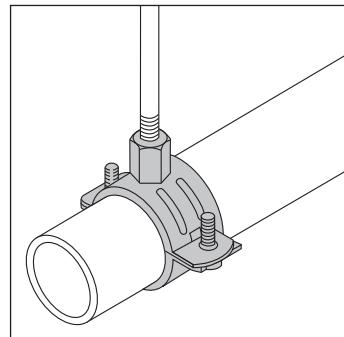
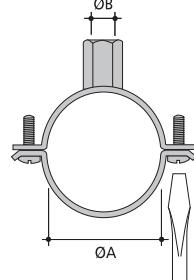
DIN4109



## Unlined pipe hangers for threaded rod

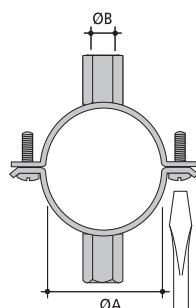
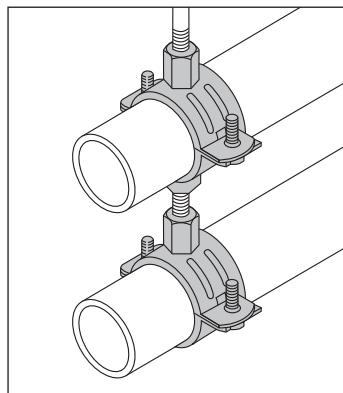
Pipe

Product Ref.	ØA [mm]	ØB	Material finishes*	Quantity [pieces]
PB-1519	15-19	M8/M10	F1	50
PB-2025	20-25	M8/M10	F1	50
PB-2630	26-30	M8/M10	F1	50
PB-3236	32-36	M8/M10	F1	50
PB-3843	38-43	M8/M10	F1	25
PB-4751	47-51	M8/M10	F1	25
PB-5358	53-58	M8/M10	F1	25
PB-6064	60-64	M8/M10	F1	25
PB-6872	68-72	M8/M10	F1	25
PB-7580	75-80	M8/M10	F1	25
PB-8186	81-86	M8/M10	F1	25
PB-8792	87-92	M8/M10	F1	25
PB-99105	99-105	M8/M10	F1	25
PB-107112	107-112	M8/M10	F1	25
PB-113118	113-118	M8/M10	F1	25
PB-125130	125-130	M8/M10	F1	25
PB-132137	132-137	M8/M10	F1	25
PB-138142	138-142	M8/M10	F1	25
PB-148152	148-152	M8/M10	F1	25
PB-159166	159-166	M8/M10	F1	25
PB-200212	200-212	M8/M10	F1	25
PB-215220	215-220	M8/M10	F1	25
PB-248252	248-252	M8/M10	F1	25



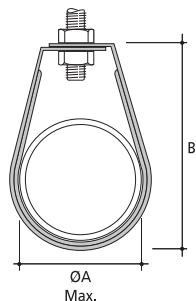
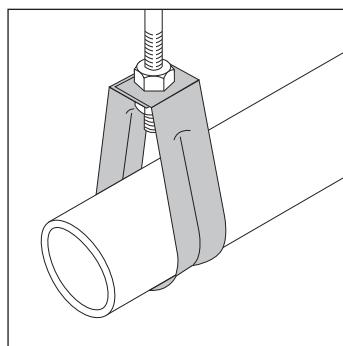
\* See page 150 for material finishes

## Unlined pipe hangers for threaded rod Pipe



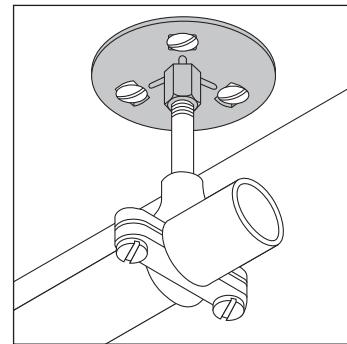
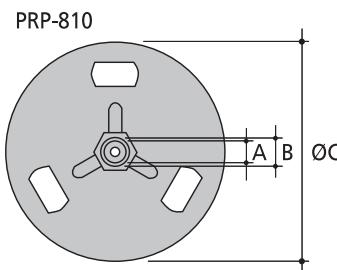
Product Ref.	ØA [mm]	ØB	Material finishes*	Quantity [pieces]
PBD-1518	15-18	M8/M10	F1	50
PBD-2024	20-24	M8/M10	F1	50
PBD-2630	26-30	M8/M10	F1	50
PBD-3236	32-36	M8/M10	F1	50
PBD-3842	38-42	M8/M10	F1	25
PBD-4750	47-50	M8/M10	F1	25
PBD-6064	60-64	M8/M10	F1	25
PBD-7580	75-80	M8/M10	F1	25
PBD-8590	85-90	M8/M10	F1	25
PBD-100106	100-106	M8/M10	F1	25
PBD-114119	114-119	M8/M10	F1	25
PBD-133140	133-140	M8/M10	F1	25
PBD-159165	159-165	M8/M10	F1	25

## Filbow hangers for threaded rod Pipe

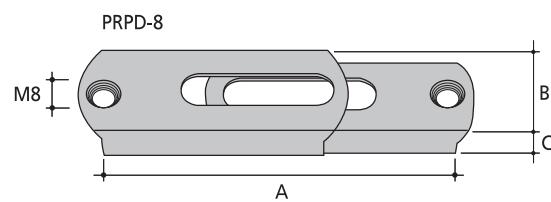
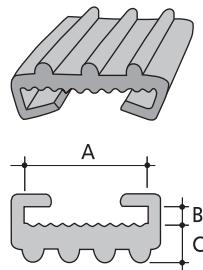


Product Ref.	ØA [mm]	B [mm]	Material finishes*	Quantity [pieces]
PH-20-FU	20	64	F2	25
PH-25-FU	25	72	F2	25
PH-32	32	83	F2	25
PH-40	40	96	F2	25
PH-50	50	113	F2	25
PH-65	65	132	F2	25
PH-80	80	156	F2	25
PH-100	100	215	F2	10
PH-125	125	242	F2	10
PH-150	150	279	F2	10



Pipe  
Pipe

PS-20

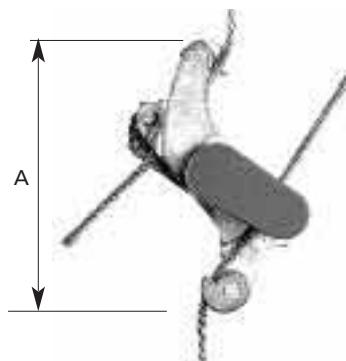


Product Ref.	A [mm]	B [mm]	C [mm]	Material finishes*	Quantity [pieces]
PRP-810	M8	M10	76	F1	25
PRPD-8	50-95	27	10	F1	25
PS-20	20	2.0	4.5	–	20m

\* See page 150 for material finishes

## Fast-Lock wire suspension

### Fast-Lock



Product Ref.	Ø [mm]	A [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
FL-2250	1-2	60	50	F6	25



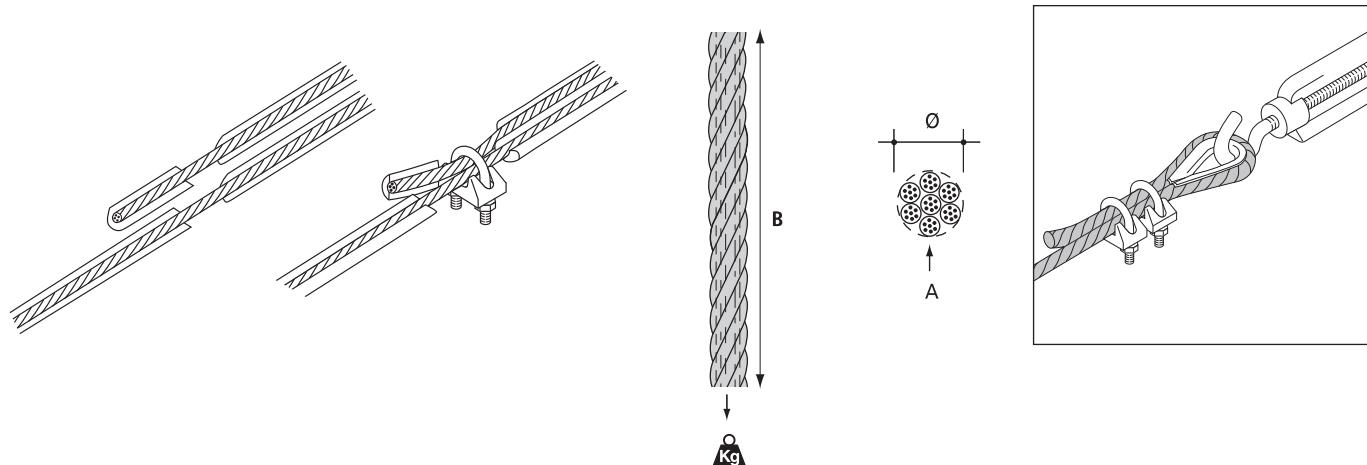
Product Ref.	Ø [mm]	B [mm]	A [m]	Load rating [kg]	Material finishes*	Quantity [pieces]
CW050-2	2	7x7	50	80	F2	1
CW100-2	2	7x7	100	80	F2	1



Product Ref.	Ø [mm]	Quantity [pieces]
WC-1	1-4	1
WC-7	1-4	1



## Catenary wire Suspension

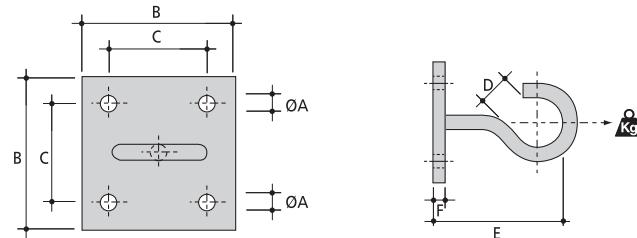
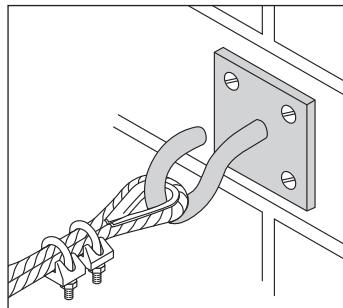


Product Ref.	Ø [mm]	A [mm]	B [m]	Load rating [kg]	Material finishes*	Quantity [pieces]
CW100-2	2	7 x 7	100	80	F2	1
CW30-3	3	7 x 7	30	190	F2	1
CW50-3	3	7 x 7	50	190	F2	1
CW100-3	3	7 x 7	100	190	F2	1
CW30-4	4	7 x 7	30	350	F2	1
CW50-4	4	7 x 7	50	350	F2	1
CW100-4	4	7 x 7	100	350	F2	1
CW30-6	6	7 x 7	30	760	F2	1
CW50-6	6	7 x 7	50	760	F2	1
CW100-6	6	7 x 7	100	760	F2	1
SSCW100-2	2	7 x 7	100	80	F3	1
SSCW30-3	3	7 x 7	30	190	F3	1
SSCW50-3	3	7 x 7	50	190	F3	1
SSCW100-3	3	7 x 7	100	190	F3	1
SSCW30-4	4	7 x 7	30	350	F3	1
SSCW50-4	4	7 x 7	50	350	F3	1
SSCW100-4	4	7 x 7	100	350	F3	1
SSCW30-6	6	7 x 7	30	760	F3	1
SSCW50-6	6	7 x 7	50	760	F3	1
SSCW100-6	6	7 x 7	100	760	F3	1
CW30-3PVC	3	7 x 7	30	190	F2 + PVC	1
CW50-3PVC	3	7 x 7	50	190	F2 + PVC	1
CW100-3PVC	3	7 x 7	100	190	F2 + PVC	1
CW30-4PVC	4	7 x 7	30	350	F2 + PVC	1
CW50-4PVC	4	7 x 7	50	350	F2 + PVC	1
CW100-4PVC	4	7 x 7	100	350	F2 + PVC	1
CW30-6PVC	6	7 x 7	30	760	F2 + PVC	1
CW50-6PVC	6	7 x 7	50	760	F2 + PVC	1
CW100-6PVC	6	7 x 7	50	760	F2 + PVC	1

\* See page 150 for material finishes

## Suspension

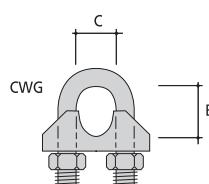
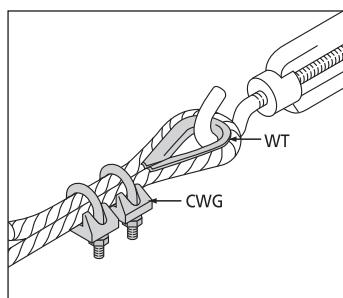
### Suspension



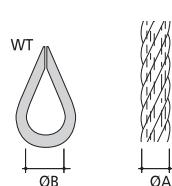
Product Ref.	ØA [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
HW50	5.5	50	32	8	55	5	25	F2	10

## Suspension

### Suspension



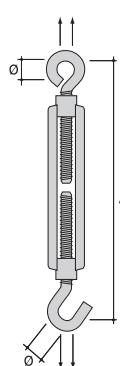
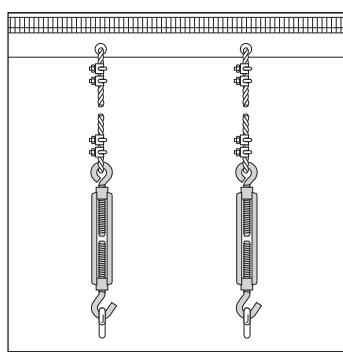
Product Ref.	ØA [mm]	B [mm]	C [mm]	Material finishes*	Quantity [pieces]
CWG-23	2-3	Max 9	6.5	F2	25
CWG-4	4	Max 12	7.0	F2	25
CWG-6	6	Max 18	8.0	F2	25
SSCWG-2	2	Max 9	6.5	F3	1
SSCWG-3	3	Max 9	6.5	F3	1
SSCWG-4	4	Max 12	7.0	F3	1
SSCWG-6	6	Max 18	8.0	F3	1



Product Ref.	ØA [mm]	ØB [mm]	Material finishes*	Quantity [pieces]
WT-23	2-3	10	F2	25
WT-34	3-4	14	F2	25
WT-6-FU	6	16	F2	25
SSWT-2	2	10	F3	1
SSWT-34	3-4	14	F3	1
SSWT-6	6	16	F3	1

## Suspension for catenary wire

### Suspension

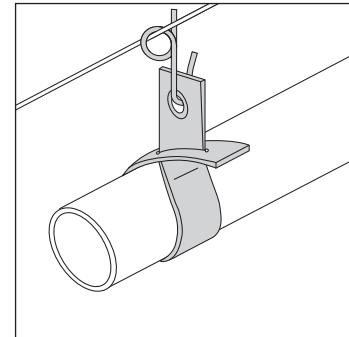
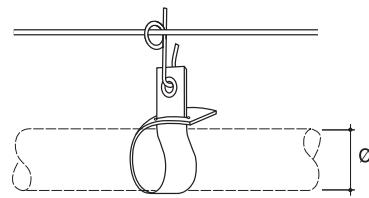
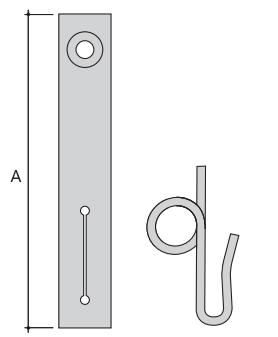


Product Ref.	Ø [mm]	A [mm]	Material finishes*	Quantity [pieces]
CWT-23	10	155-245	F2	10
CWT-46	12	230-325	F2	10
SSCWT-23	10	155-245	F3	10
SSCWT-46	12	230-325	F3	10

\* See page 150 for material finishes

## Suspension

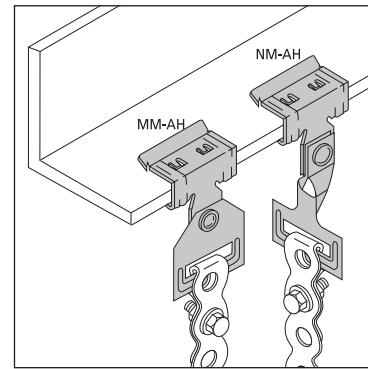
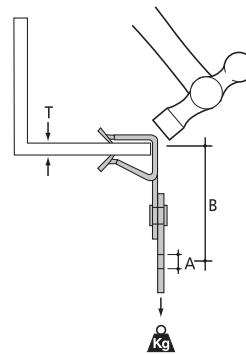
### Suspension



Product Ref.	A [mm]	Ø [mm]	Material finishes*	Quantity [pieces]
LS-32	152	Max 32	F6	10
LS-38	178	Max 38	F6	10
LS-48	203	Max 48	F6	10
LS-54	228	Max 54	F6	10
LS-60	254	Max 60	F6	10
LS-72	305	Max 72	F6	10

## Girder clips for perforated band

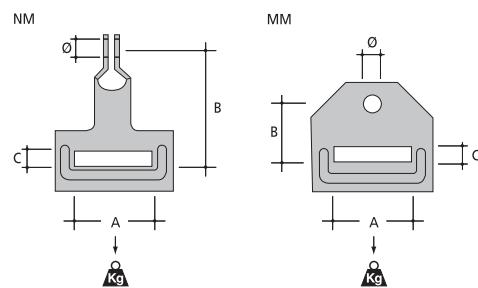
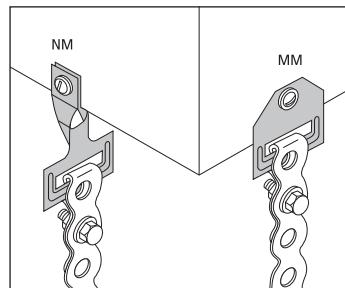
### Suspension



Product Ref.	T [mm]	A [mm]	B [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
MM65-AH153	1.5-3	6.3	36	72	F8+	25
MM65-AH38	3-8	6.3	38	90	F8+	25
MM65-AH814	8-14	6.3	46	90	F8+	25
MM65-AH1420	14-20	6.3	58	90	F8+	25
NM65-AH153	1.5-3	6.3	58	72	F8+	25
NM65-AH38	3-8	6.3	60	90	F8+	25
NM65-AH814	8-14	6.3	68	90	F8+	25
NM65-AH1420	14-20	6.3	80	90	F8+	25

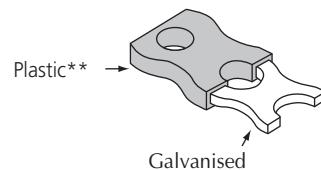
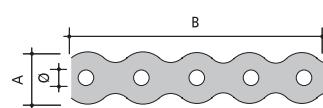
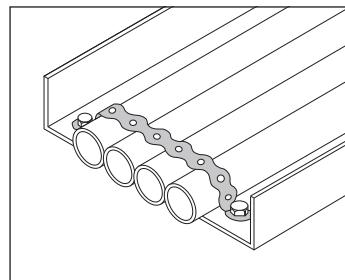
\* See page 150 for material finishes

## Suspension for perforated band Suspension



Product Ref.	Ø [mm]	A [mm]	B [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
MM-65	6.5	28	20	6.3	90	F8+	100
NM-65	6.5	28	42	6.3	90	F8+	100

## Perforated band Suspension

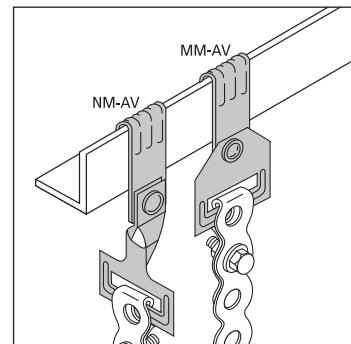
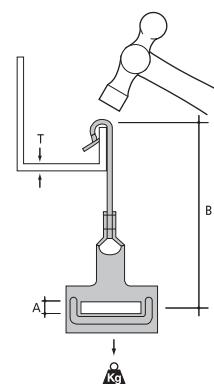


Product Ref.	Colour	Ø [mm]	A [mm]	B [m]	Load rating [kg]	Material finishes*	Quantity [pieces]
<b>PLASTIC **</b>							
SP-13B	black	4	13	10	37	F7	1
SP-19B	black	6.5	19	10	42	F7	1
SP-27B	black	7.5	27	10	90	F7	1
SP-13O	orange	4	13	10	37	F7	1
SP-19O	orange	6.5	19	10	42	F7	1
SP-13R-FU	red	4	13	10	37	F7	1
SP-19R-FU	red	6.5	19	10	42	F7	1
SP-13W	white	4	13	10	37	F7	1
SP-19W	white	6.5	19	10	42	F7	1
<b>GALVANISED</b>							
SG-12-FU	–	5	12	10	37	F2	1
SG-18	–	7	18	10	42	F2	1
SG-26	–	8	26	10	90	F2	1
<b>STAINLESS STEEL</b>							
SS-12	–	5	12	10	43	F3	1
SS-18-FU	–	7	18	10	48	F3	1
SS-26	–	8	26	10	100	F3	1
<b>COPPER</b>							
SC-12	–	5	12	10	16	F6	1
SC-18	–	7	18	10	21	F6	1

\*\* Material: Plascoat PPA 571

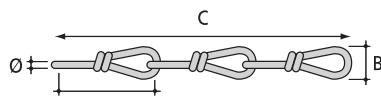
\* See page 150 for material finishes

## Purlin clips for perforated band Suspension

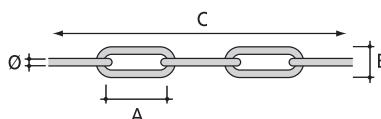


Product Ref.	T [mm]	A [mm]	B [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
MM65-AV155	1.5-5	6.3	62	72	F8+	25
MM65-AV57	5-7	6.3	62	72	F8+	25
NM65-AV155	1.5-5	6.3	84	72	F8+	25
NM65-AV57	5-7	6.3	84	72	F8+	25

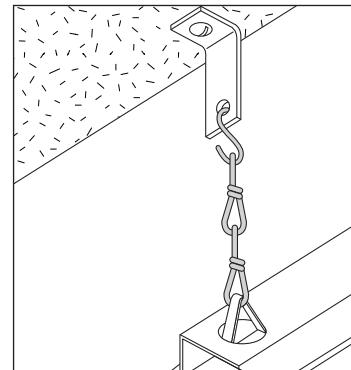
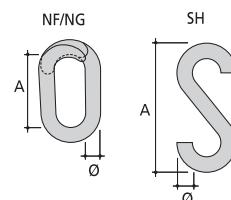
## Metal chain Suspension



KN - Stainless Steel DIN 763  
KK - Electroplate DIN 5686



KG - Electroplate DIN 5685  
KF - Hot Dip Galvanised DIN 5685

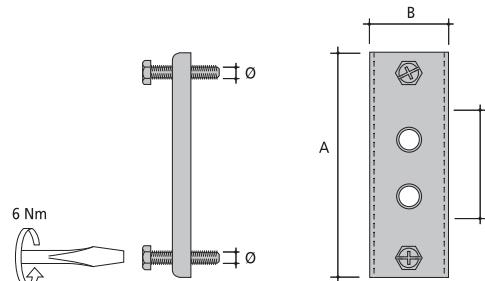
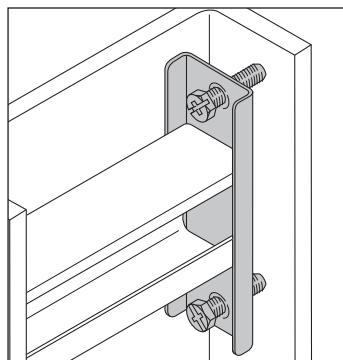


Product Ref.	Ø [mm]	A [mm]	B [mm]	C [m]	Load rating [kg]	Material finishes*	Quantity [pieces]
KK-20	1.8	25	8	30	70	F1	1
KK-30	2.8	39	12.5	30	190	F1	1
KG-3	3	26	12	30	45	F1	1
KG-4	4	32	16	30	80	F1	1
KF-3	3	26	12	30	45	F2	1
KF-4	4	32	16	30	80	F2	1
KN-2	2	22	8	30	50	F3	1
KN-3	3	26	12	30	120	F3	1
NG-4	4	20	—	—	—	F1	100
NF-4	4	20	—	—	—	F2	100
SH-4	4	35	—	—	20	F1	100
SH-5	5	45	—	—	30	F1	100

\* See page 150 for material finishes

## Fixing plates

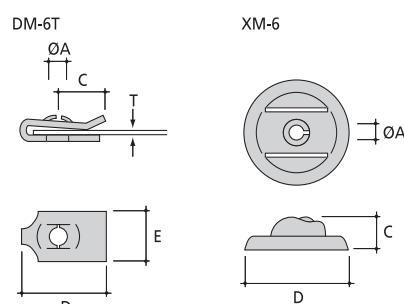
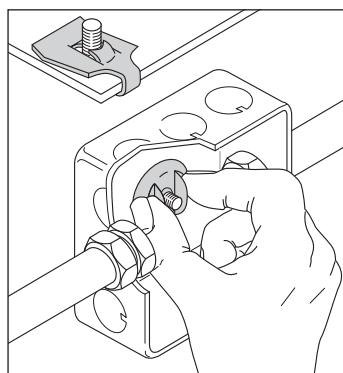
*Miscellaneous*



Product Ref.	$\varnothing$ [mm]	A [mm]	B [mm]	C [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
CMP-400	M8 x 25	90	45	35	45	F2	20

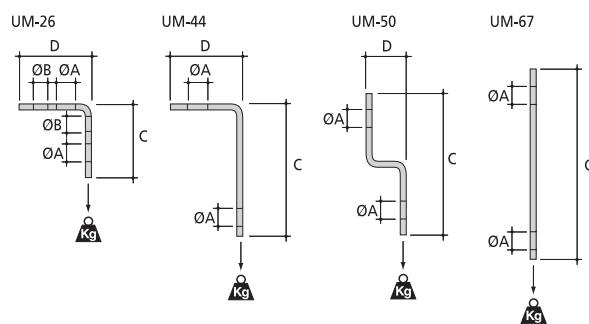
## Speed nuts

*Miscellaneous*

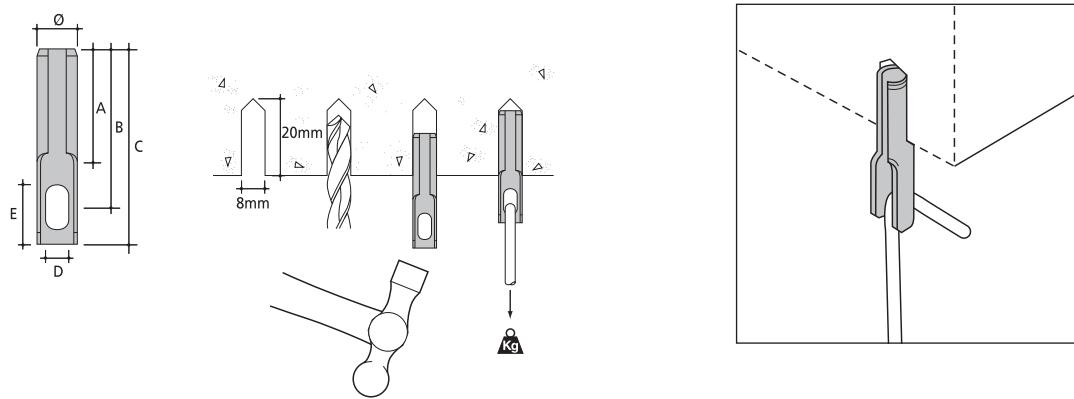


Product Ref.	T [mm]	$\varnothing$ A [mm]	C [mm]	D [mm]	E [mm]	Material finishes*	Quantity [pieces]
DM-6T	2.5-4	M6	12.6	25	16	F1	100
XM-6	–	M6	10.0	32	–	F8+	100

\* See page 150 for material finishes

Miscellaneous  
Miscellaneous

Product Ref.	ØA [mm]	ØB [mm]	C [mm]	D [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
UM-26	6.5	4.6	26	26	90	F2	100
UM-44	6.5	—	44	26	90	F8+	100
UM-50	6.5	4.6	50	26	70	F2	100
UM-67	6.5	—	67	—	90	F8+	100

Miscellaneous  
Miscellaneous

Product Ref.	Ø [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Load rating [kg]	Material finishes*	Quantity [pieces]
A100	8.75	25	34	42	5	10	40	F1	100

\* See page 150 for material finishes

## Merchandiser Unit

## Miscellaneous

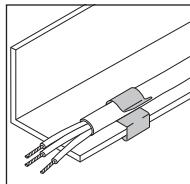


Product Ref.	Description
EKLIPSUNIT	Complete merchandiser unit
Product Ref. Included	Quantity [number of packages]
AH38-GM1926	2
AH814-GM1926	2
AV155-AM6T	2
AV155-AM10T	2
FC-11	2
PPAH38	4
PPAH814	4
PPAV155	4
PPFH65	4
PPJHX16S	4
PPECS89	4
PPECS1011	4
PPECS1214	4
PPECS1519	4
PPECS2024	4
PPECM89	4
PPECM1011	4
PPECM2024	4
PPECL89	4
PPECL1011	4
PPECL1214	4
PPECL1519	4
PPECL2024	4

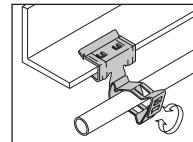
## Merchandiser Unit

### Miscellaneous

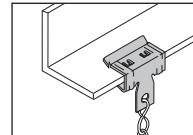
Product Ref.	Quantity [pieces]
PPECS89	25
PPECS1011	25
PPECS1214	25
PPECS1519	25
PPECS2024	25
PPECM89	25
PPECM1011	25
PPECM1214	25
PPECM1519	25
PPECM2024	25
PPECL89	25
PPECL1011	25
PPECL1214	25
PPECL1519	25
PPECL2024	25



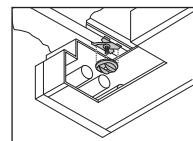
Product Ref.	Quantity [pieces]
AH38-GM1926	25
AH814-GM1926	25



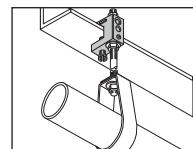
Product Ref.	Quantity [pieces]
PPAH38	25
PPAH814	25



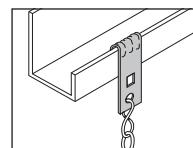
Product Ref.	Quantity [pieces]
PPJHX16S	25



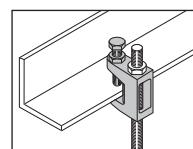
Product Ref.	Quantity [pieces]
PPFH65	25



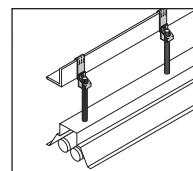
Product Ref.	Quantity [pieces]
PPAV155	25

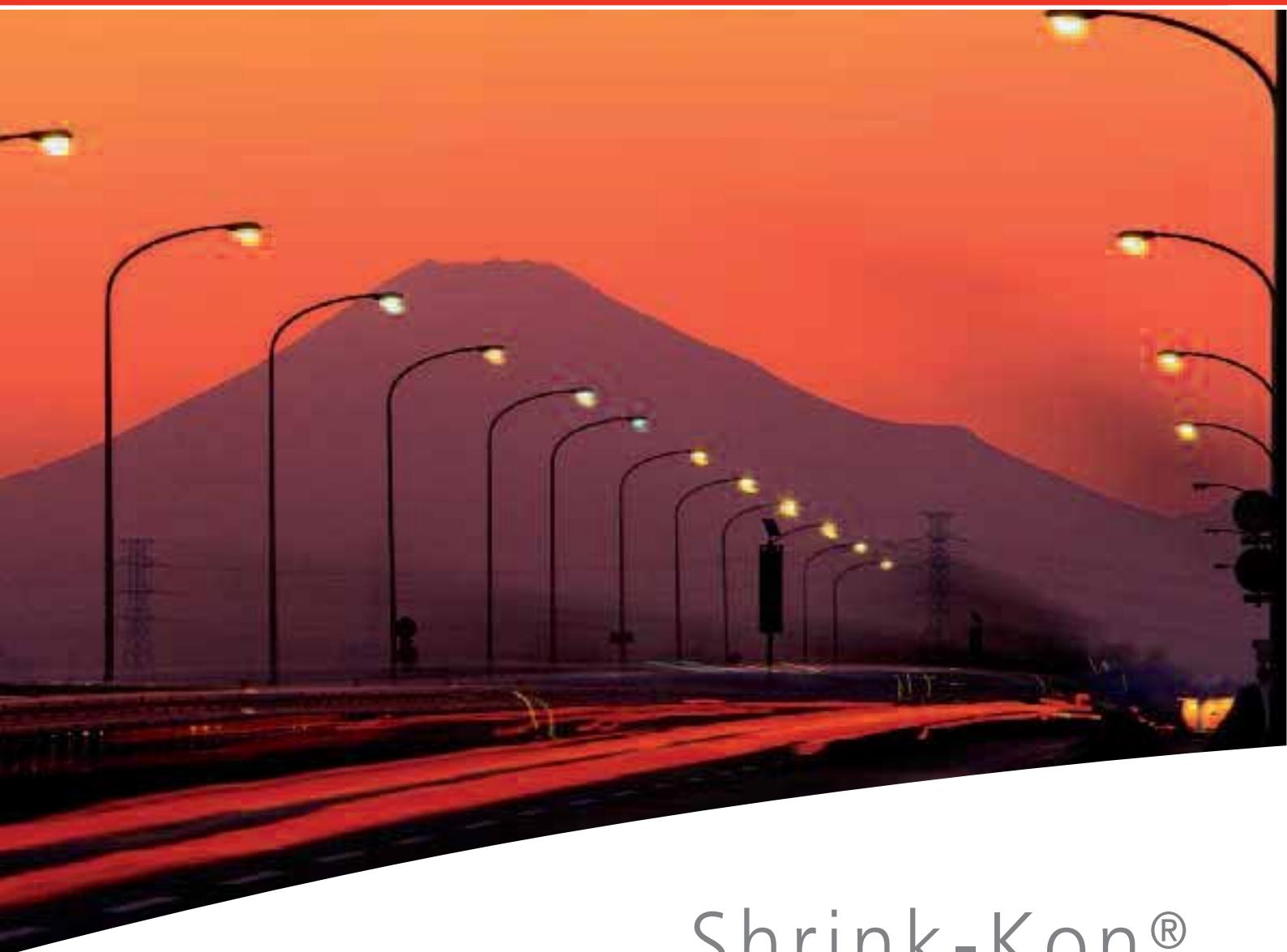


Product Ref.	Quantity [pieces]
FC-11	25



Product Ref.	Quantity [pieces]
AV155-AM6T	25
AV155-AM10T	25





Shrink-Kon®  
To insulate and  
protect cables

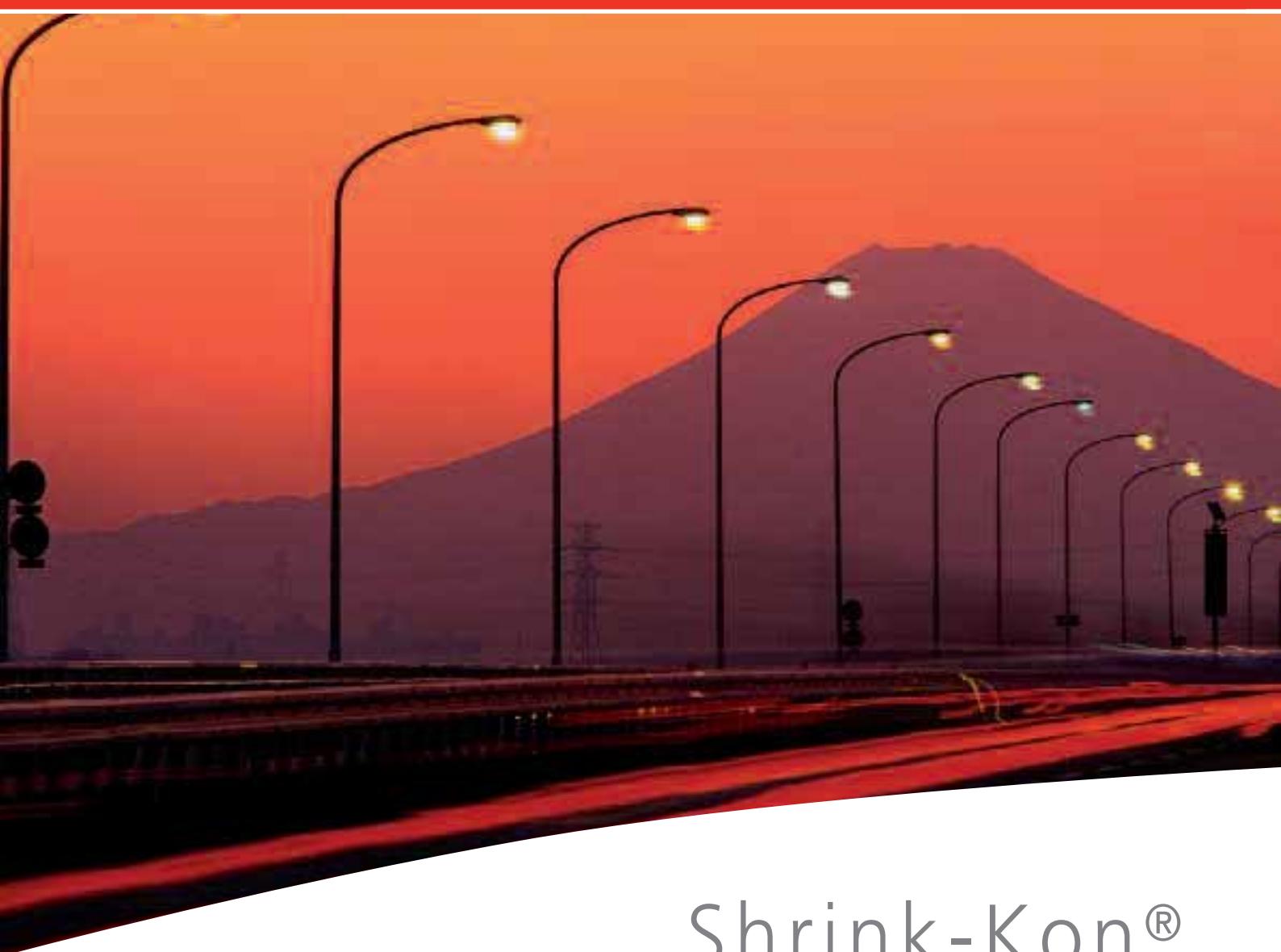
## 3.1 HEAT SHRINK TECHNOLOGIES

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Type MLP - flexible for high specifications	227
Type GYS - flexible green and yellow	229
Type GYS - HSB boxes	230
Type PIG - very flexible for highly contoured components	231
Type PIG - HSB boxes	232
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## 3.2 RESIN TECHNOLOGIES

248



# Shrink-Kon® Heat shrink technologies

Thomas & Betts has you covered when it comes to insulation!

- Easy to use
- Heat shrinkable
- Heavy, medium, and thin walls products

## Shrink-Kon® Thin Wall Tubing

Manufactured from crosslinked Polyolefin, these products are used to insulate bare Sta-Kon® and Color Keyed® connectors and splices. They also provide a degree of strain relief and may be used to harness wires. Available in cut pieces or reels.

Featured Products Include:

- Single wall non-lined 2:1 and 3:1 thin wall tubing
- 3:1 and 4:1 dual wall adhesive lined thin-wall PKG series provides excellent flexibility with environmental sealing capability



*Protect against moisture,  
corrosion, and abrasion!*

- Transparent heat shrink tubing for use on power connections and data connections
- Zero Halogen and flame retardant version for use in contained areas

#### **Shrink-Kon® Medium Wall Tubing**

More flexible than heavy-wall products, with excellent resistance to impact and abrasion.

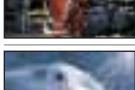
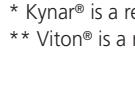
- Seals and protects cable splices and terminations
- Thermoplastic adhesive liner guarantees complete environmental protection and insulation

#### **Thick Wall Shrink-Kon® Heat-Shrinkable Insulators**

When it comes to moisture-proofing connections and terminations, Thomas & Betts's heat-shrinkable tubing, cable breakouts and end caps have proven themselves over years of service to the industry. Made of thermally stabilized cross-linked polyolefin, these heat-shrinkable insulators can be used over lead, steel, aluminum, copper, standard plastic, and elastomeric insulating materials. Thomas & Betts heat-shrinkable insulators are designed to be easy to use. They provide an appropriate level of insulation and abrasion protection.

## Selection guide

### Heat shrink technologies

Product type	General description	Typical application
	PLG/ PLG in HSB Boxes  Multipurpose tube in flexible polyolefin	General purpose, flexible heat shrink tubing for the protection, insulation and bundling of cables
	CMP  Multipurpose tube in flexible polyolefin-Dual listed	Typical applications are mechanical and electrical insulation, corrosion protection, bundling, mechanical protection and much more
	MLP  Multipurpose tube in flexible polyolefin-Dual listed	Typical applications are insulation, corrosion protection, component strain relief and connections in applications requiring the highest specifications (e.g. aeronautical and military)
	GYS/ GYS in HSB Boxes  Striped green and yellow, Flexible polyolefin	For identifying and marking earthing connectors and cables
	PIG/ PIG in HSB Boxes  Very flexible polyolefin, High shrink ratio	For highly contoured components with large diameter variations. Green and yellow for earthing applications
	PKG/ PKG in HSB Boxes  Flexible polyolefin, High shrink ratio, adhesive bonds to plastics, rubber, neoprene, steel and polyethylene	Adhesive-lined heat shrink tubing ideal for a moisture-resistant insulation
	KYN  High specifications, semi-rigid Kynar®* heat shrink tubing with excellent mechanical and electrical insulation performance	Ideal for specific applications where mechanical and chemical protection are required. Enables see through inspections
	VIT  High flexibility Viton®** fluoroelastomer for enhanced protection in extreme electrical, chemical and thermal environments	Its specificity make it the product of choice for heavy-duty conditions e.g. sensors in vehicle engine compartments
	ZHFR  Zero halogen, low smoke, flexible heat shrink tubing	Particularly recommended for use in contained areas and with Halogen free wires and cables
	SSB  Insulation and shielding in one process Inner aluminium layer and silver coloured outer PVC/Polyester layer	Typical applications including shielding of both power and signal cables to reduce EMI radiation and susceptibility
	TBM  Medium heat shrink tubing ideal for the protection of cable joints and terminations in low voltage power applications	For a variety of low voltage applications where lighter weight and greater flexibility are important
	TBW  Thick wall heat shrink ideal for underground low voltage power applications and terminations	This heavy wall product provides maximum reliability for insulating and protecting cable joints
	VMS (Low voltage kits)  Medium and heavy wall cable jointing kit for polymeric insulated cables	Low voltage jointing applications
	TEB  Medium and heavy wall adhesive lined heat shrink cable breakouts	To insulate and seal low voltage cable crutches
	TEC  Medium and heavy wall adhesive lined heat shrink end caps	To seal and protect cable-ends against the ingress of moisture and contamination
	TBTA-ZH (Self amalgamating tape)  Self-amalgamating tape which provides a thick insulating layer	Flawless electrical stability and for long term resistance to moisture penetration

\* Kynar® is a registered trademark of ATOFINA

\*\* Viton® is a registered trademark of DuPont de Nemours

Characteristics	Shrink ratio	Temperature range	Flame rating	Certification(s)	Page
Single wall	2:1	-55°C to +125°C	Flame retardant***		221
Single wall	2:1	-55°C to +125°C	Flame retardant***	UL, CSA	226
Single wall	2:1	-55°C to +135°C	Flame retardant***	UL, CSA, MIL	227
Single wall	2:1	-55°C to +135°C	Flame retardant	MIL	229
Single wall	3:1	-55°C to +135°C	Flame retardant***	MIL	231
Dual wall	3:1 and 4:1	-55°C to +110°C (outer jacket)	Flame retardant***		233
Non polyolefin: crosslinked polyvinylidene fluoride (Kynar®*)	2:1	-55°C to +175°C	High flame retardancy	MIL	236
Non polyolefin: crosslinked fluoroelastomer (Viton®**)	2:1	-55°C to +220°C	High flame retardancy	MIL	237
Single wall	2:1	-40°C to +105°C	Flame retardant	DEF STAN	238
Dual wall	2:1	-10°C to +125°C	-		239
Medium wall	3:1	-55°C to +110°C	Non Flame retardant		240
Thick wall	3:1	-55°C to +110°C	Non Flame retardant		241
Medium and thick wall	3:1	-55°C to +110°C	Non Flame retardant		242
Medium and thick wall	>2:1	-55°C to +100°C	Non Flame retardant		243
Medium and thick wall	>2:1	-55°C to +100°C	Non Flame retardant		244
EPR based tape	1:3	-55°C to +105°C	Flame retardant		245

\* Kynar® is a registered trademark of ATOFINA

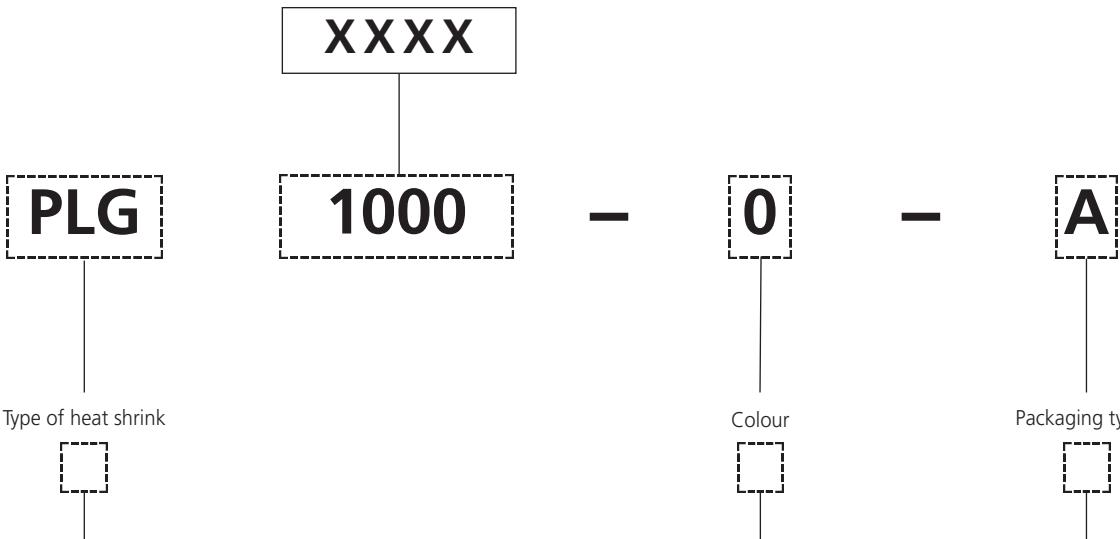
\*\* Viton® is a registered trademark of DuPont de Nemours

\*\*\* except transparent version

## Product reference structure

Thin wall heat shrink tubing

Example:

Expanded diameter as supplied  
in thousandths of an inch

PLG = flexible  
 CMP = Dual listed  
 MLP = flexible for high specifications  
 GYS = flexible green and yellow  
 PIG = very flexible for highly contoured components  
 PKG = flexible for moist environments  
 KYN = semi-rigid transparent  
 VIT = highly flexible, flame retardant  
 ZHFR = flexible, halogen free & flame retardant

0 = black (standard)
1 = brown
2 = red
3 = orange
4 = yellow
5 = green
6 = blue
7 = violet
8 = grey
9 = white
C = transparent
E = green / yellow

See product page for colour availability

A = 1,22 m cut lengths  
 B = reels  
 BG = reels  
 C = 0,6 m cut lengths  
 D = box  
 E = mini-reels

\* Not necessary for PLG-HSB boxes

## Type PLG - HSB boxes

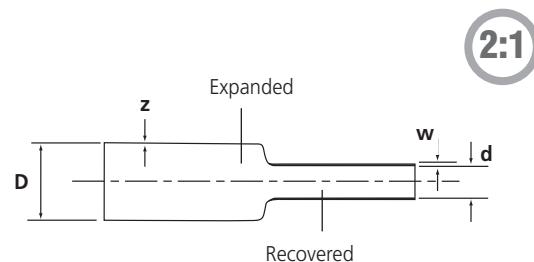
Thin wall heat shrink tubing

- PLG heat shrink tubing in a compact, handy sized box used for electrical maintenance and repair
- Convenient amount of heat shrink, for small users
- Offered in 10 sizes to cover a heat shrink range from Ø 1.2 mm to Ø 25.4 mm
- Stackable boxes for easy storage
- Flexible, rapid shrinkage, non-melting for effective electrical insulation
- Flame retardant
- Available colours: see below (see page 220 for product reference structure)



## Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +125°C
Shrinking temperature	+110°C
Material	Crosslinked polyolefin
IP rating	IP60
Standard colour	Black
Other properties	Silicone, Cadmium and Lead free Transparent version: Halogen free



Product Ref.	Expanded diameter as supplied		Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Length per box [m]
	[inch]	[mm]				
HSB46	3/64	1.2	0.6	0.20	0.4	12.0
HSB63	1/16	1.6	0.8	0.20	0.4	12.0
HSB93	3/32	2.4	1.2	0.25	0.5	11.5
HSB125	1/8	3.2	1.6	0.25	0.5	11.5
HSB187	3/16	4.7	2.4	0.25	0.5	9.5
HSB250	1/4	6.4	3.2	0.30	0.6	7.5
HSB375	3/8	9.5	4.7	0.30	0.6	6.5
HSB500	1/2	12.7	6.4	0.30	0.7	6.0
HSB750	3/4	19.1	9.5	0.40	0.7	5.0
HSB1000	1	25.4	12.7	0.45	0.8	3.3

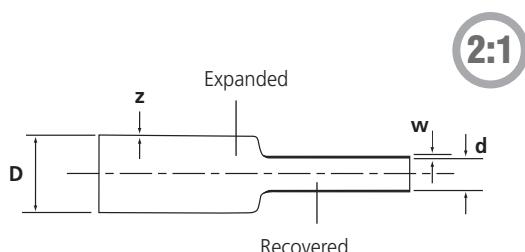
For other colours add colour suffix to Product Reference:

1 = brown, 2 = red, 4 = yellow, 5 = green, 6 = blue, 8 = grey, 9 = white and C = transparent



## Type PLG - flexible

Thin wall heat shrink tubing



- Multi-purpose use for insulation, bundling, identification, strain relief and much more
- Heat shrink tubing with 14 nominal diameters to enclose components from Ø 1.2 mm to Ø 101.6 mm
- Flame retardant
- Flexible, rapid shrinkage, non melting for effective electrical insulation
- Available colours: see below (see page 220 for product reference structure)
- Special colours available on request

### Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +125°C
Shrinking temperature	+110°C
Material	Crosslinked polyolefin
IP rating	IP60
Standard colour	Black
Other properties	Silicone, Cadmium and Lead free Transparent version: Halogen free

Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Total length per box [m]	Quantity per box [pieces 1.22m]
PLG46-0-A	3/64	1.2	0.6	0.20	0.4	30.5
PLG63-0-A	1/16	1.6	0.8	0.20	0.4	30.5
PLG93-0-A	3/32	2.4	1.2	0.25	0.5	30.5
PLG125-0-A	1/8	3.2	1.6	0.25	0.5	30.5
PLG187-0-A	3/16	4.7	2.4	0.25	0.5	30.5
PLG250-0-A	1/4	6.4	3.2	0.30	0.6	30.5
PLG375-0-A	3/8	9.5	4.8	0.30	0.6	30.5
PLG500-0-A	1/2	12.7	6.4	0.40	0.7	30.5
PLG750-0-A	3/4	19.1	9.5	0.40	0.7	12.2
PLG1000-0-A	1	25.4	12.7	0.45	0.8	12.2
PLG1500-0-A	1 1/2	38.0	19.0	0.50	1.0	6.1
PLG2000-0-A	2	50.8	25.4	0.55	1.1	6.1
PLG3000-0-A	3	76.2	38.1	0.65	1.3	2.4
PLG4000-0-A	4	101.6	50.8	0.70	1.4	1.2

For other colours add colour suffix to Product Reference:

0 = black, 1 = brown, 2 = red, 4 = yellow, 5 = green, 6 = blue, 8 = grey, 9 = white and C = transparent



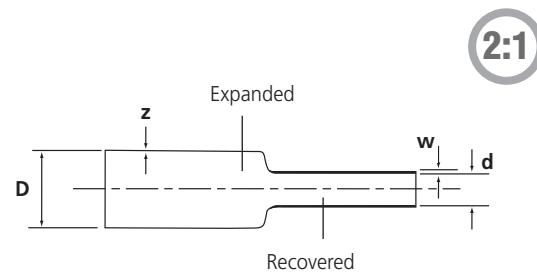
## Type PLG - flexible

*Thin wall heat shrink tubing*

- Multi-purpose use for insulation, bundling, identification, strain relief and much more
- Heat shrink tubing with 14 nominal diameters to enclose components from Ø 1.2 mm to Ø 101.6 mm
- Flame retardant
- Flexible, rapid shrinkage, non-melting for effective electrical insulation
- Available colours: see below (see page 220 for product reference structure)
- Special colours available on request

### Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +125°C
Shrinking temperature	+110°C
Material	Crosslinked polyolefin
IP rating	IP60
Standard colour	Black
Other properties	Silicone, Cadmium and Lead free Transparent version: Halogen free



Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Length per reel [m]	Length per mini-reel [m]
PLG46-0-E	3/64	1.2	0.6	0.20	0.4	— 150
PLG63-0-E	1/16	1.6	0.8	0.20	0.4	— 150
PLG93-0-E	3/32	2.4	1.2	0.25	0.5	— 150
PLG125-0-E	1/8	3.2	1.6	0.25	0.5	— 150
PLG187-0-B	3/16	4.7	2.4	0.25	0.5	300 —
PLG187-0-E	3/16	4.7	2.4	0.25	0.5	— 75
PLG250-0-B	1/4	6.4	3.2	0.30	0.6	300 —
PLG250-0-E	1/4	6.4	3.2	0.30	0.6	— 75
PLG375-0-B	3/8	9.5	4.8	0.30	0.6	150 —
PLG375-0-E	3/8	9.5	4.8	0.30	0.6	— 75
PLG500-0-B	1/2	12.7	6.4	0.40	0.7	100 —
PLG500-0-E	1/2	12.7	6.4	0.40	0.7	— 50
PLG750-0-B	3/4	19.1	9.5	0.40	0.7	50 —
PLG750-0-E	3/4	19.1	9.5	0.40	0.7	— 30
PLG1000-0-B	1	25.4	12.7	0.45	0.8	50 —
PLG1000-0-E	1	25.4	12.7	0.45	0.8	— 30
PLG1500-0-B	1 1/2	38.1	19.0	0.50	1.0	50 —
PLG1500-0-E	1 1/2	38.1	19.0	0.50	1.0	— 30
PLG2000-0-B	2	50.8	25.4	0.55	1.1	50 —
PLG2000-0-E	2	50.8	25.4	0.55	1.1	— 30
PLG3000-0-B	3	76.2	38.1	0.65	1.3	25 —
PLG4000-0-B	4	101.6	50.8	0.70	1.4	25 —

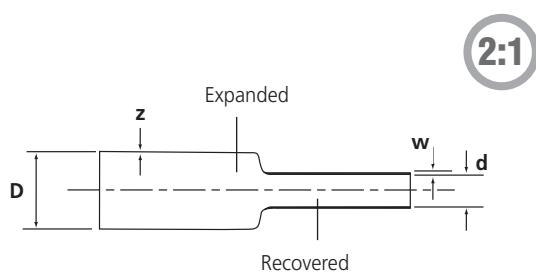
For other colours add colour suffix to Product Reference:

0 = black, 1 = brown, 2 = red, 4 = yellow, 5 = green, 6 = blue, 8 = grey, 9 = white and C = transparent



## Type PLG - pre-cut bags

*Thin wall heat shrink tubing*



- The Shrink-Kon® Pre-cut packs of PLG heat shrink are available to replenish the Shrink-Kon® Set or for use on displays
- 9 different expanded diameters
- 6 different colours
- Packed in small quantities
- Flexible, rapid shrinkage, non-melting for effective electrical insulation
- Flame retardant
- Available colours: see below (see page 220 for product reference structure)

### Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +125°C
Shrinking temperature	+110°C
Material	Crosslinked polyolefin
IP rating	IP60
Other properties	Silicone, Cadmium and Lead free Transparent version: Halogen free

Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Colour	Length [cm]	Quantity [pieces]	
PLG 63-0-5R	1/16	1.6	0.8	0.20	0.4	Black	5	50
PLG 63-C-5R	1/16	1.6	0.8	0.20	0.4	Transparent	5	50
PLG 93-0-5R	3/32	2.4	1.2	0.25	0.5	Black	5	50
PLG 93-C-5R	3/32	2.4	1.2	0.25	0.5	Transparent	5	50
PLG125-9-10R	1/8	3.2	1.6	0.25	0.5	White	10	25
PLG125-4-10R	1/8	3.2	1.6	0.25	0.5	Yellow	10	25
PLG125-C-10R	1/8	3.2	1.6	0.25	0.5	Transparent	10	25
PLG125-0-10R	1/8	3.2	1.6	0.25	0.5	Black	10	25
PLG187-0-10R	3/16	4.8	2.4	0.25	0.5	Black	10	25
PLG187-6-5R	3/16	4.8	2.4	0.25	0.5	Blue	5	40
PLG187-4-5R	3/16	4.8	2.4	0.25	0.5	Yellow	5	40
PLG187-C-5R	3/16	4.8	2.4	0.25	0.5	Transparent	5	40
PLG250-6-10R	1/4	6.4	3.2	0.30	0.6	Blue	10	20
PLG250-0-10R	1/4	6.4	3.2	0.30	0.6	Black	10	20
PLG250-9-5R	1/4	6.4	3.2	0.30	0.6	White	5	40
PLG250-4-5R	1/4	6.4	3.2	0.30	0.6	Yellow	5	40
PLG375-0-10R	3/8	9.5	4.7	0.30	0.6	Black	10	15
PLG375-6-10R	3/8	9.5	4.7	0.30	0.6	Blue	10	15
PLG500-2-10R	1/2	12.7	6.4	0.40	0.7	Red	10	15
PLG500-0-18R	1/2	12.7	6.4	0.40	0.7	Black	18	8
PLG750-6-10R	3/4	19.1	9.5	0.40	0.7	Blue	10	10
PLG750-0-18R	3/4	19.1	9.5	0.40	0.7	Black	18	6
PLG1000-0-18R	1	25.4	12.7	0.45	0.8	Black	18	3

Other dimensions or colours available upon request.

## Shrink-Kon® Set

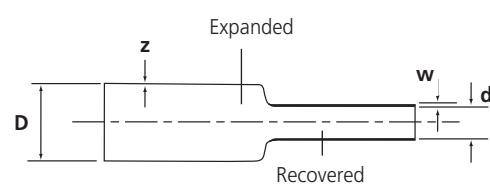
*Thin wall heat shrink tubing*

- A kit comprising PLG heat shrink with or without hot air tool in a handy carry case
- Maintenance and repair, research and development, small series manufacture and much more
- 9 different expanded diameters
- 6 different colours
- 23 types
- Flame retardant
- Case made from shock-resistant plastic
- All types available in refill packages
- **Product Ref.: SK-1400GTG** (with GR121)
- **Product Ref.: SK-1400GTG-UK** (with GR321)
- **Product Ref.: SK-1400G** (without hot air tool)

See page 246 for tooling specifications

### Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +125°C
Shrinking temperature	+110°C
Material	Crosslinked polyolefin
IP rating	IP60
Other properties	Silicone, Cadmium and Lead free Transparent version: Halogen free



Set contents Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Colour	Length [cm]	Quantity [pieces]	
PLG63-0	1/16	1.6	0.8	0.20	0.4	Black	5	20
PLG63-C	1/16	1.6	0.8	0.20	0.4	Transparent	5	20
PLG93-C	3/32	2.4	1.2	0.25	0.5	Transparent	5	20
PLG93-0	3/32	2.4	1.2	0.25	0.5	Black	10	15
PLG125-C	1/8	3.2	1.6	0.25	0.5	Transparent	10	15
PLG125-4	1/8	3.2	1.6	0.25	0.5	Yellow	10	10
PLG125-9	1/8	3.2	1.6	0.25	0.5	White	10	10
PLG125-0	1/8	3.2	1.6	0.25	0.5	Black	10	12
PLG187-C	3/16	4.8	2.4	0.25	0.5	Transparent	5	10
PLG187-4	3/16	4.8	2.4	0.25	0.5	Yellow	5	10
PLG187-6	3/16	4.8	2.4	0.25	0.5	Blue	5	20
PLG187-0	3/16	4.8	2.4	0.25	0.5	Black	10	12
PLG250-4	1/4	6.4	3.2	0.30	0.6	Yellow	5	16
PLG250-6	1/4	6.4	3.2	0.30	0.6	Blue	10	12
PLG250-9	1/4	6.4	3.2	0.30	0.6	White	5	16
PLG250-0	1/4	6.4	3.2	0.30	0.6	Black	10	10
PLG375-6	3/8	9.5	4.8	0.30	0.6	Blue	10	10
PLG375-0	3/8	9.5	4.8	0.30	0.6	Black	18	4
PLG500-2	1/2	12.7	6.4	0.40	0.7	Red	10	6
PLG500-0	1/2	12.7	6.4	0.40	0.7	Black	18	4
PLG750-6	3/4	19.1	9.5	0.40	0.7	Blue	10	4
PLG750-0	3/4	19.1	9.5	0.40	0.7	Black	18	4
PLG1000-0	1	25.4	12.7	0.45	0.8	Black	18	3

## Type CMP - dual listed

Thin wall heat shrink tubing

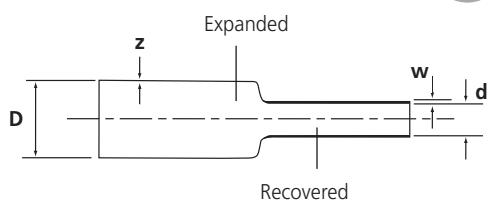


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- Typical applications are mechanical and electrical insulation, corrosion protection, bundling, mechanical protection and much more
- Internal diameters from 1.2 mm to 51 mm
- Flame retardant
- Flammability per UL 224
- The tubing is marked
- Available colours: see below (see page 220 for product reference structure)

### Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +125°C
Shrinking temperature	+110°C
Material	Crosslinked polyolefin
IP rating	IP60
Standard colour	Black
Other properties	Silicon, Cadmium and Lead free Transparent version: Halogen free

Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Length per reel [m]	Total length per box [m]	Quantity per box [pieces 1.22m]
CMP46-0-A	3/64	1.2	0.6	0.20	0.4	–	30.5
CMP46-0-BG	3/64	1.2	0.6	0.20	0.4	300	–
CMP63-0-A	1/16	1.6	0.8	0.20	0.4	–	30.5
CMP63-0-BG	1/16	1.6	0.8	0.20	0.4	300	–
CMP93-0-A	3/32	2.4	1.2	0.25	0.5	–	30.5
CMP93-0-BG	3/32	2.4	1.2	0.25	0.5	300	–
CMP125-0-A	1/8	3.2	1.6	0.25	0.5	–	30.5
CMP125-0-BG	1/8	3.2	1.6	0.25	0.5	300	–
CMP187-0-A	3/16	4.7	2.4	0.25	0.5	–	30.5
CMP187-0-BG	3/16	4.7	2.4	0.25	0.5	300	–
CMP250-0-A	1/4	6.4	3.2	0.30	0.6	–	30.5
CMP250-0-BG	1/4	6.4	3.2	0.30	0.6	300	–
CMP375-0-A	3/8	9.5	4.8	0.30	0.6	–	30.5
CMP375-0-BG	3/8	9.5	4.8	0.30	0.6	150	–
CMP500-0-A	1/2	12.7	6.4	0.30	0.7	–	30.5
CMP500-0-BG	1/2	12.7	6.4	0.30	0.7	100	–
CMP750-0-A	3/4	19.1	9.5	0.40	0.7	–	12.2
CMP750-0-BG	3/4	19.1	9.5	0.40	0.7	50	–
CMP1000-0-A	1	25.4	12.7	0.45	0.8	–	12.2
CMP1000-0-BG	1	25.4	12.7	0.45	0.8	50	–
CMP1500-0-BG	1 1/2	38.0	19.0	0.50	1.0	50	–
CMP2000-0-BG	2	51.0	25.4	0.55	1.1	50	–

\* Transparent version not UL recognized

For other colours add colour suffix to Product Reference:

0 = black, 1 = brown, 2 = red, 4 = yellow, 5 = green, 6 = blue, 8 = grey, 9 = white and C = transparent



## Type MLP - flexible for high specifications

Thin wall heat shrink tubing

- Typical applications are insulation, corrosion protection, component strain relief and connections in applications requiring the highest specifications (e.g. aeronautical and military applications)
- Internal diameters from 1.2 mm to 25.4 mm
- Dual Listed
- Meets MIL-DTL-23053/5 requirements, Class 1 and Class 2
- Weather UV-resistant
- Good chemical resistance
- Flame retardant
- Available colours: see below (see page 220 for product reference structure)

## Technical Information

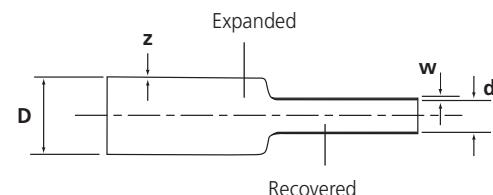
Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +135°C
Shrinking temperature	+90°C
Material	Crosslinked polyolefin
IP rating	IP60
Standard colour	Black
Other properties	Silicone, Cadmium and Lead free Transparent version: Halogen free



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Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Total length per box [m]	Quantity per box [pieces 1.22m]
MLP46-0-A	3/64	1.2	0.6	0.20	30.5	25
MLP63-0-A	1/16	1.6	0.8	0.20	30.5	25
MLP93-0-A	3/32	2.4	1.2	0.25	30.5	25
MLP125-0-A	1/8	3.2	1.6	0.25	30.5	25
MLP187-0-A	3/16	4.7	2.4	0.25	30.5	25
MLP250-0-A	1/4	6.4	3.2	0.30	30.5	25
MLP375-0-A	3/8	9.5	4.8	0.30	30.5	25
MLP500-0-A	1/2	12.7	6.4	0.30	30.5	25
MLP750-0-A	3/4	19.1	9.5	0.40	12.2	10
MLP1000-0-A	1	25.4	12.7	0.45	12.2	10

For other colours add colour suffix to Product Reference:

0 = black, 1 = brown, 2 = red, 4 = yellow, 5 = green, 6 = blue, 8 = grey, 9 = white and C = transparent



## Type MLP - flexible for high specifications

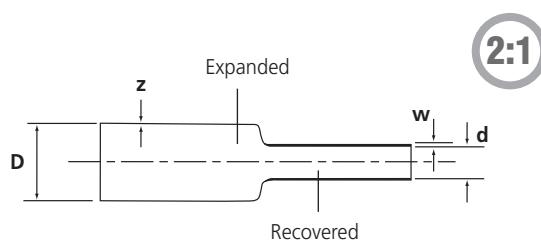
*Thin wall heat shrink tubing*



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- Typical applications are insulation, corrosion protection, component strain relief and connections in applications requiring the highest specifications (e.g. aeronautical and military applications)
- Internal diameters from 1.2 mm to 25.4 mm
- Dual Listed
- Meets MIL-DTL-23053/5 requirements, Class 1 and Class 2
- Weather UV-resistant
- Good chemical resistance
- Flame retardant
- Available colours: see below (see page 220 for product reference structure)

### Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +135°C
Shrinking temperature	+90°C
Material	Crosslinked polyolefin
IP rating	IP60
Standard colour	Black
Other properties	Silicone, Cadmium and Lead free Transparent version: Halogen free

Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Length per reel [m]
MLP46-0-BG	3/64	1.2	0.6	0.20	0.4
MLP63-0-BG	1/16	1.6	0.8	0.20	0.4
MLP93-0-BG	3/32	2.4	1.2	0.25	0.5
MLP125-0-BG	1/8	3.2	1.6	0.25	0.5
MLP187-0-BG	3/16	4.7	2.4	0.25	0.5
MLP250-0-BG	1/4	6.4	3.2	0.30	0.6
MLP375-0-BG	3/8	9.5	4.8	0.30	0.6
MLP500-0-BG	1/2	12.7	6.4	0.30	0.7
MLP750-0-BG	3/4	19.1	9.5	0.40	0.7
MLP1000-0-BG	1	25.4	12.7	0.45	0.8

For other colours add colour suffix to Product Reference:

0 = black, 1 = brown, 2 = red, 4 = yellow, 5 = green, 6 = blue, 8 = grey, 9 = white and C = transparent



## Type GYS - flexible green and yellow

Thin wall heat shrink tubing

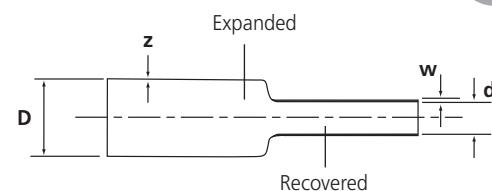
- For identifying and marking earthing connectors and cables
- Mechanical and electrical insulation, corrosion protection
- Internal diameters from 3.2 mm to 25.4 mm
- Flame retardant
- Meets MIL-DTL-23053/5 requirements, Class 1 and Class 2  
(see page 220 for product reference structure)

## Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +135°C
Shrinking temperature	+90°C
Material	Crosslinked polyolefin
IP rating	IP60
Standard colour	Green / Yellow striped
Other properties	Silicone, Cadmium and Lead free



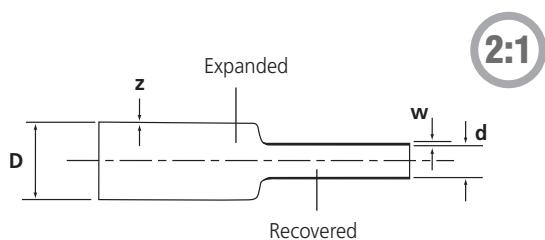
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Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Length per mini-reel [m]	Total length per box [m]	Quantity per box [pieces 1.22m]
GYS125-E-A	1/8	3.2	1.6	0.25	0.51	–	30.5
GYS125-E-E	1/8	3.2	1.6	0.25	0.51	150	–
GYS187-E-A	3/16	4.8	2.4	0.25	0.51	–	30.5
GYS187-E-E	3/16	4.8	2.4	0.25	0.51	75	–
GYS250-E-A	1/4	6.4	3.2	0.32	0.64	–	30.5
GYS250-E-E	1/4	6.4	3.2	0.32	0.64	75	–
GYS375-E-A	3/8	9.5	4.8	0.32	0.64	–	30.5
GYS375-E-E	3/8	9.5	4.8	0.32	0.64	75	–
GYS500-E-A	1/2	12.7	6.4	0.32	0.64	–	30.5
GYS500-E-E	1/2	12.7	6.4	0.32	0.64	50	–
GYS750-E-A	3/4	19.1	9.5	0.38	0.76	–	12.2
GYS750-E-E	3/4	19.1	9.5	0.38	0.76	30	–
GYS1000-E-A	1	25.4	12.7	0.45	0.89	–	12.2
GYS1000-E-E	1	25.4	12.7	0.45	0.89	30	–

## Type GYS - HSB boxes

*Thin wall heat shrink tubing*



- For identifying and marking earthing connectors and cables
- GYS heat shrink in a compact, handy sized box
- Convenient amount of heat shrink, for small users
- Offered in 7 sizes to cover a heat shrink range from 3.2 mm to 25.4 mm diameters
- Stackable boxes for easy storage
- Flame retardant
- Meets MIL-DTL-23053/5 requirements, Class 1 and Class 2
- Mechanical and electrical insulation, corrosion protection (see page 220 for product reference structure)

### Technical Information

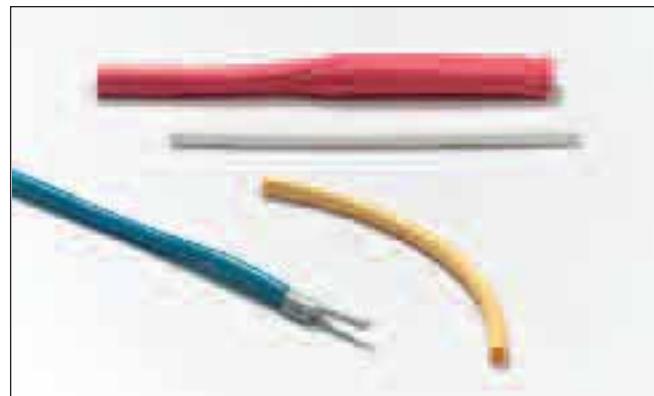
Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +135°C
Shrinking temperature	+90°C
Material	Crosslinked polyolefin
IP rating	IP60
Standard colour	Green / Yellow striped
Other properties	Silicone, Cadmium and Lead free

Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Length per box [m]
GYS125-E-D	1/8	3.2	1.6	0.25	0.51
GYS187-E-D	3/16	4.8	2.4	0.25	0.51
GYS250-E-D	1/4	6.4	3.2	0.32	0.64
GYS375-E-D	3/8	9.5	4.8	0.32	0.64
GYS500-E-D	1/2	12.7	6.4	0.32	0.64
GYS750-E-D	3/4	19.1	9.5	0.38	0.76
GYS1000-E-D	1	25.4	12.7	0.45	0.89

## Type PIG - very flexible for highly contoured components

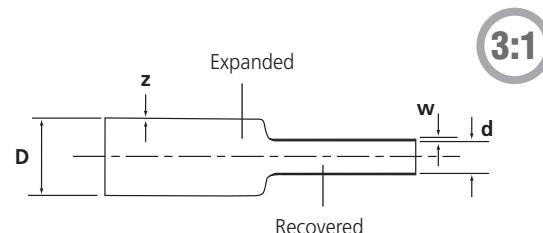
Thin wall heat shrink tubing

- Heat shrink tubing to enclose highly contoured components with large diameter variations. Provides mechanical and electrical protection
- Meets UL 224 requirements
- Internal diameters from 1.6 mm to 40 mm
- Excellent mechanical strength
- Resistant to common fluids and solvents
- Flame retardant
- Meets MIL-DTL-23053/5 requirements, Class 1 and Class 2 (except green / yellow version)
- Available colours: see below (see page 220 for product reference structure)
- Special colours available on request



## Technical Information

Wall thickness	Thin
Shrink ratio	3:1
Tube characteristics	Single wall
Temperature range	-55°C to +135°C
Shrinking temperature	+90°C
Material	Crosslinked polyolefin
IP rating	IP60
Standard colour	Black
Other properties	Silicone, Cadmium and Lead free Transparent version: Halogen free



Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Length per reel [m]
PIG0150-0-B*	1/16	1.6	0.5	0.15	300
PIG0301-0-B*	1/8	3.2	1.0	0.18	300
PIG0451-0-B	3/16	4.5	1.5	0.20	300
PIG0602-0-B	1/4	6.4	2.0	0.22	300
PIG0903-0-B	3/8	9.5	3.0	0.25	0.75
PIG1204-0-B	1/2	12.7	4.0	0.25	0.75
PIG1806-0-B	3/4	19.0	6.0	0.27	0.80
PIG2408-0-B	1	25.4	8.0	0.33	1.00
PIG4013-0-B	1 1/2	40.0	13.0	0.38	1.15

\* Not available in green / yellow

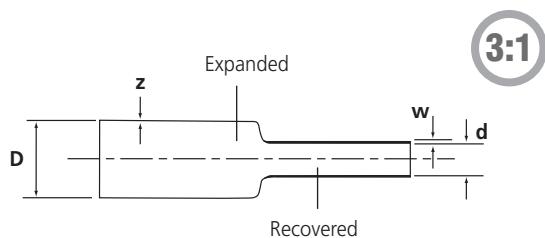
For other colours add colour suffix to Product Reference:

0 = black, 1 = brown, 2 = red, 4 = yellow, 6 = blue, 8 = grey, 9 = white, C = transparent and E = green / yellow striped



## Type PIG - HSB boxes

*Thin wall heat shrink tubing*



- PIG heat shrink in a compact, handy sized box
- Workshop, installation, laboratory and much more
- Heat shrink tubing to enclose highly contoured components with large diameter variations. Provides mechanical and electrical protection
- Convenient amount of heat shrink, for small users
- Offered in 8 sizes to cover a heat shrink range from  $\varnothing$  1.6 mm to  $\varnothing$  25.4 mm
- Stackable boxes for easy storage
- Meets UL 224 requirements
- Excellent mechanical strength
- Resistant to common fluids and solvents
- Flame retardant
- Meets MIL-DTL-23053/5 requirements, Class 1 and Class 2 (except green / yellow version)
- Available colours: see below (see page 220 for product reference structure)
- Special colours available on request

### Technical Information

Wall thickness	Thin
Shrink ratio	3:1
Tube characteristics	Single wall
Temperature range	-55°C to +135°C
Shrinking temperature	+90°C
Material	Crosslinked polyolefin
IP rating	IP60
Standard colour	Black
Other properties	Silicone, Cadmium and Lead free Transparent version: Halogen free

Product Ref.	Expanded diameter as supplied		Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Length per box [m]
	D [inch]	[mm]				
PIG0150-0-D*	1/16	1.6	0.5	0.15	0.45	10.5
PIG0301-0-D*	1/8	3.2	1.0	0.18	0.55	10.0
PIG0451-0-D	3/16	4.5	1.5	0.20	0.60	9.0
PIG0602-0-D	1/4	6.4	2.0	0.22	0.65	7.0
PIG0903-0-D	3/8	9.5	3.0	0.25	0.75	6.0
PIG1204-0-D	1/2	12.7	4.0	0.25	0.75	5.5
PIG1806-0-D	3/4	19.0	6.0	0.27	0.80	4.5
PIG2408-0-D	1	25.4	8.0	0.33	1.00	3.3

\* Not available in green/yellow

For other colours add colour suffix to Product Reference:

0 = black, 1 = brown, 2 = red, 4 = yellow, 6 = blue, 8 = grey, 9 = white, C = transparent and E = green / yellow striped



## Type PKG - flexible for moist environments

Thin wall heat shrink tubing

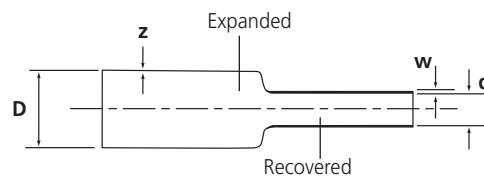
- Crosslinked modified Polyolefin with thermoplastic adhesive lining
- Particularly suitable for corrosion and damp protected casings as well as highly contoured components
- Flame retardant
- Moisture resistant, good chemical resistance
- High mechanical stability
- The high shrink ratio and flexibility of this range allows the user maximum coverage with minimal parts
- The adhesive lining bonds to plastic, rubber, neoprene, steel and polyethylene
- Available colours: see below (see page 220 for product reference structure)



## Technical Information

Wall thickness	Thin
Shrink ratio	3:1
Tube characteristics	Dual wall
Temperature range	-55°C to +110°C (outer jacket)
Shrinking temperature	+95°C
Material	Crosslinked polyolefin with adhesive lining
IP rating	IP65
Standard colour	Black
Other properties	Silicone, Cadmium and Lead free

3:1



Product Ref.	Expanded diameter as supplied D [mm]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Length per reel [m]	Total length per bag [m]	Quantity per bag [pieces 0.6 m]
PKG0301-0-B	3.0	1.0	0.4	1.0	300	—	—
PKG0301-0-C	3.0	1.0	0.4	1.0	—	12.0	20
PKG0602-0-B	6.0	2.0	0.5	1.0	300	—	—
PKG0602-0-C	6.0	2.0	0.5	1.0	—	9.0	15
PKG0903-0-B	9.0	3.0	0.5	1.4	150	—	—
PKG0903-0-C	9.0	3.0	0.5	1.4	—	6.0	10
PKG1204-0-B	12.0	4.0	0.5	1.8	100	—	—
PKG1204-0-C	12.0	4.0	0.5	1.8	—	5.4	9
PKG1806-0-B	18.0	6.0	0.6	2.2	50	—	—
PKG1806-0-C	18.0	6.0	0.6	2.2	—	3.6	6
PKG2408-0-B	24.0	8.0	0.7	2.5	50	—	—
PKG2408-0-C	24.0	8.0	0.7	2.5	—	3.0	5
PKG4013-0-B	40.0	13.0	0.7	2.5	30	—	—
PKG4013-0-C	40.0	13.0	0.7	2.5	—	2.4	4

For other colours add colour suffix to Product Reference:

0 = black and C = transparent



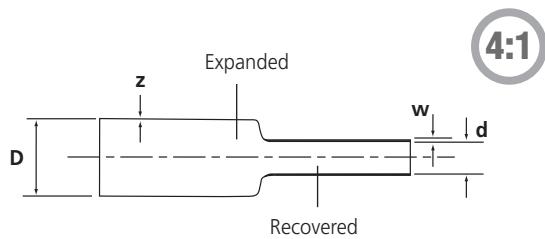
## Type PKG - flexible for moist environments

*Thin wall heat shrink tubing*



- Crosslinked modified Polyolefin with thermoplastic adhesive lining
- Particularly suitable for corrosion and damp protected casings as well as highly contoured components
- Flame retardant
- Moisture resistant, good chemical resistance
- High mechanical stability
- The high shrink ratio and flexibility of this range allows the user maximum coverage with minimal parts
- The adhesive lining bonds to plastic, rubber, neoprene, steel and polyethylene
- Available colours: see below (see page 220 for product reference structure)

### Technical Information



Wall thickness	Thin
Shrink ratio	4:1
Tube characteristics	Dual wall
Temperature range	-55°C to +110°C (outer jacket)
Shrinking temperature	+95°C
Material	Crosslinked polyolefin with adhesive lining
IP rating	IP65
Standard colour	Black
Other properties	Silicone, Cadmium and Lead free

Product Ref.	Expanded diameter as supplied D [mm]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Length per reel [m]	Total length per bag [m]	Quantity per bag [pieces 0.6m]
PKG0401-0-B	4.0	1.0	0.4	1.0	300	—	—
PKG0401-0-C	4.0	1.0	0.4	1.0	—	12.0	20
PKG0802-0-B	8.0	2.0	0.5	1.0	150	—	—
PKG0802-0-C	8.0	2.0	0.5	1.0	—	9.0	15
PKG1203-0-B	12.0	3.0	0.5	1.4	100	—	—
PKG1203-0-C	12.0	3.0	0.5	1.4	—	6.0	10
PKG1604-0-B	16.0	4.0	0.5	1.7	50	—	—
PKG1604-0-C	16.0	4.0	0.5	1.7	—	5.4	9
PKG2406-0-B	24.0	6.0	0.6	2.1	50	—	—
PKG2406-0-C	24.0	6.0	0.6	2.1	—	3.0	5
PKG3208-0-B	32.0	8.0	0.7	2.4	50	—	—
PKG3208-0-C	32.0	8.0	0.7	2.4	—	3.0	5
PKG5213-0-B	52.0	13.0	0.7	2.4	30	—	—
PKG5213-0-C	52.0	13.0	0.7	2.4	—	1.8	3

For other colours add colour suffix to Product Reference:  
0 = black and C = transparent



## Type PKG - HSB boxes

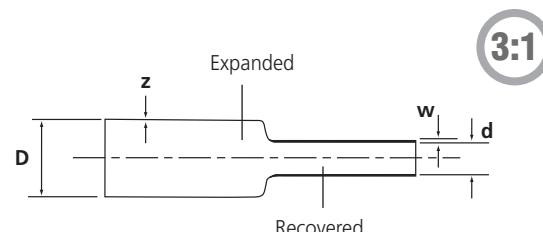
Thin wall heat shrink tubing

- PKG heat shrink in a compact, handy sized box
- Convenient amount of heat shrink, for small users
- Particularly suitable for corrosion and damp protected casings as well as highly contoured components
- Offered in 6 sizes to cover a heat shrink range from Ø 3.0 mm to Ø 24.0 mm
- Stackable boxes for easy storage
- The adhesive lining bonds to plastic, rubber, neoprene, steel and polyethylene
- Flame retardant
- Moisture resistant
- Available colours: see below (see page 220 for product reference structure)



## Technical Information

Wall thickness	Thin
Shrink ratio	3:1
Tube characteristics	Dual wall
Temperature range	-55°C to +110°C (outer jacket)
Shrinking temperature	+95°C
Material	Crosslinked polyolefin with adhesive lining
IP rating	IP65
Standard colour	Black
Other properties	Silicone, Cadmium and Lead free



Product Ref.	Expanded diameter as supplied D [mm]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Length per box [m]
PKG0301-0-D	3.0	1.0	0.4	1.0	5.0
PKG0602-0-D	6.0	2.0	0.5	1.0	3.5
PKG0903-0-D	9.0	3.0	0.5	1.4	3.0
PKG1204-0-D	12.0	4.0	0.5	1.8	2.5
PKG1806-0-D	18.0	6.0	0.6	2.2	2.0
PKG2408-0-D	24.0	8.0	0.7	2.5	1.5

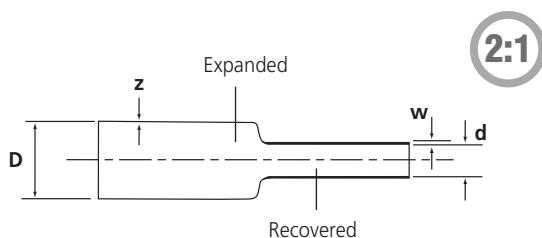
For other colours add colour suffix to Product Reference:

0 = black and C = transparent



## Type KYN - semi-rigid transparent

*Thin wall heat shrink tubing*



- In areas of heavy mechanical loads, high temperatures and chemical stress. Insulation in densely packed wiring, in heating elements and much more
- Internal diameters from 1.2 mm to 25.4 mm
- High mechanical strength
- Excellent electrical insulation performance
- High flame retardancy
- Highly abrasion and cut resistant
- Resistant to Diesel
- Very good resistance against chemicals and solvents
- Meets MIL-DTL-23053/8 requirements

### Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +175°C
Shrinking temperature	+175°C
Material	Crosslinked and rigid Polyvinylidene Fluoride (Kynar®*)
IP rating	IP60
Standard colour	Transparent
Other properties	Silicone, Cadmium, Lead and Halogen free

\* registered trademark of ATOFINA

Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Total length per box [m]	Quantity per box [pieces 1.22m]
KYN46-C-A	3/64	1.2	0.6	0.12	30.5	25
KYN63-C-A	1/16	1.6	0.8	0.12	30.5	25
KYN93-C-A	3/32	2.4	1.2	0.12	30.5	25
KYN125-C-A	1/8	3.2	1.6	0.12	30.5	25
KYN187-C-A	3/16	4.8	2.4	0.12	30.5	25
KYN250-C-A	1/4	6.4	3.2	0.15	12.2	10
KYN375-C-A	3/8	9.5	4.8	0.15	12.2	10
KYN500-C-A	1/2	12.7	6.0	0.15	12.2	10
KYN750-C-A	3/4	19.1	9.5	0.20	12.2	10
KYN1000-C-A	1	25.4	12.7	0.25	12.2	10

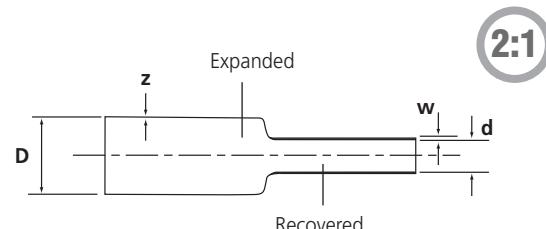
## Type VIT - highly flexible, flame retardant

Thin wall heat shrink tubing

- High flexibility makes it suitable even under heavy-duty conditions e.g. sensors in vehicle engine compartments
- Excellent strength and resistance against corrosive fluids even at high temperatures
- Internal diameters from 3.2 mm to 38.1 mm
- Offers excellent resistance to aggressive fuels and chemicals
- High flame retardancy
- Meets MIL-DTL-23053/13 requirements

## Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-55°C to +220°C
Shrinking temperature	+175°C
Material	Viton®*, Crosslinked fluoroelastomer
IP rating	IP60
Standard colour	Black
Other properties	Silicone, Cadmium and Lead free



\*Viton® is a registered trademark of DuPont.

Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness before shrinking z [mm]	Wall thickness after shrinking w [mm]	Total length per box [m]	Quantity per box [pieces 0.6m]
VIT125-0-C	1/8	3.2	1.6	0.40	0.8	6.0
VIT187-0-C	3/16	4.8	2.4	0.45	0.9	6.0
VIT250-0-C	1/4	6.4	3.2	0.45	0.9	6.0
VIT375-0-C	3/8	9.5	4.8	0.45	0.9	4.8
VIT500-0-C	1/2	12.7	6.4	0.45	0.9	4.2
VIT750-0-C	3/4	19.1	9.5	0.55	1.3	3.6
VIT1000-0-C	1	25.4	12.7	0.70	1.4	2.4
VIT1500-0-C	1 1/2	38.1	19.0	0.80	1.9	1.8

## Type ZHFR - flexible, Halogen free & flame retardant

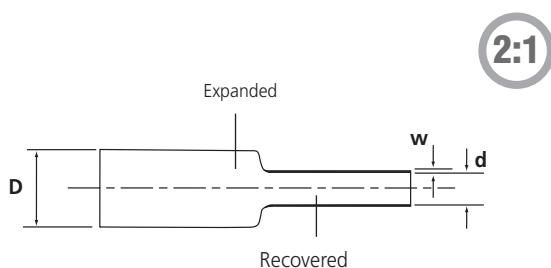
*Thin wall heat shrink tubing*



- Flexible
- Low smoke generation when burnt
- Halogen free
- Flame retardant
- Particularly recommended for use in contained areas and with Halogen free wires and cables
- Meets DEF STAN 59-97, issue 3, type 8
- Available colours: see below (see page 220 for product reference structure)
- Special colours available on request

### Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Single wall
Temperature range	-40°C to +105°C
Shrinking temperature	+115°C
Material	Crosslinked polyolefin
IP rating	IP60
Standard colour	Black
Other properties	Silicone, Cadmium, Lead and Halogen free



Product Ref.	Expanded diameter as supplied D [inch]	Fully recovered diameter d [mm]	Wall thickness after shrinking w [mm]	Length per mini-reel [m]
ZHFR93-0-E	3/32	2.4	0.8	0.45
ZHFR125-0-E	1/8	3.2	1.6	0.51
ZHFR187-0-E	3/16	4.8	2.4	0.51
ZHFR250-0-E	1/4	6.4	3.2	0.64
ZHFR375-0-E	3/8	9.5	4.8	0.64
ZHFR500-0-E	1/2	12.7	6.4	0.64
ZHFR750-0-E	3/4	19.1	9.5	0.76
ZHFR1000-0-E	1	25.4	12.7	0.89

For other colours add colour suffix to Product Reference:

0 = black, 4 = yellow, 9 = white



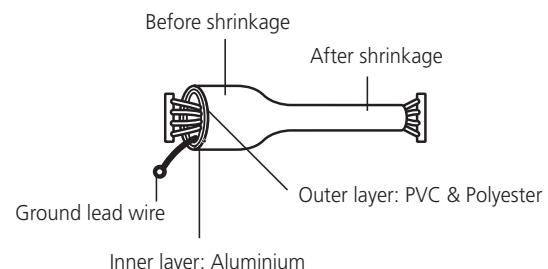
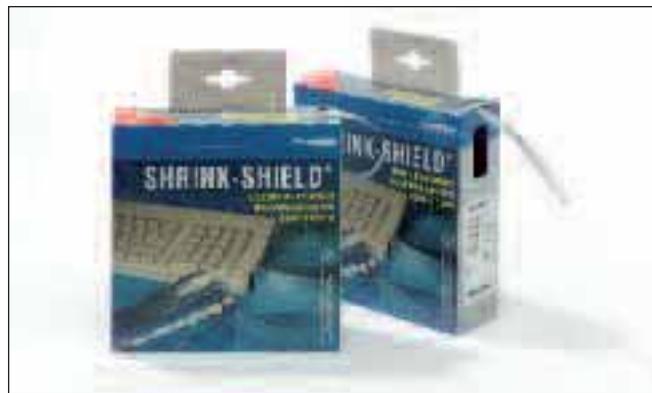
## Type SSB - Shrink-Shield

*Thin wall heat shrink tubing*

- Insulation and shielding in one process
- Shrink-Shield in the handy format of the HSB boxes
- Typical applications including shielding of both power and signal cables to reduce EMI radiation and susceptibility
- Inner aluminium layer and silver coloured outer PVC/Polyester layer
- Shrinks from 90°C
- Fulfils UL 224 VW-1 requirements

### Technical Information

Wall thickness	Thin
Shrink ratio	2:1
Tube characteristics	Dual wall
Temperature range	-10°C to +125°C
Shrinking temperature	+90°C
Material outer layer	PVC & Polyester
Material inner layer	Aluminium
Standard colour	Silver

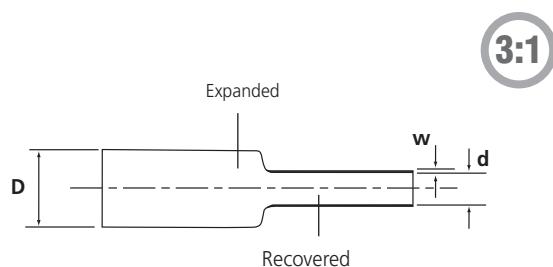


Product Ref.	Flat width [mm]	Expanded diameter as supplied [mm]	Fully recovered diameter [mm]	Wall thickness after shrinking [mm]	Length per box [m]
SSB010-1	12.5	6.4	3.2	0.14	10
SSB015-1	16.0	9.6	4.8	0.14	8
SSB020-1	22.0	13.0	6.5	0.14	7
SSB025-1	27.0	16.0	8.0	0.14	6
SSB040-1	42.0	25.4	12.7	0.14	4

For technical information on the shielding please consult the information available on the European online catalogue.

## Type TBM - rated for 600V, 90°C continuous use

Medium wall heat shrink tubing



- TBM is an excellent product for sealing and insulating cable splices, connections, terminations and jacket repairs where light weight and high flexibility are required
- The tubing is designed to withstand the severe mechanical requirements of submersible and direct-buried installations
- High resistance to abrasion, corrosion and chemicals
- Excellent weatherability
- 11 standard sizes in medium wall: internal diameters from 10.2 mm to 228.6 mm
- Meets requirements of ESI 09-11

### Technical Information

Wall thickness	Medium
Shrink ratio	3:1
Tube characteristics	Dual wall
Temperature range	-55°C to +110°C
Shrinking temperature	+120°C
Material	Crosslinked polyolefin with thermoplastic adhesive liner
IP rating	IP67
Standard colour	Black
Other properties	Silicone, Halogen, Cadmium and Lead free

Product Ref.	Expanded diameter as supplied D [mm]	Fully recovered diameter d [mm]	Wall thickness after shrinking w [mm]	Length per bag [m]	Quantity per bag [pieces 1.22m]
TBM0400	10.2	3.8	2.0	6.1	5
TBM0750	19.1	5.6	2.0	6.1	5
TBM0950	24.1	8.1	2.0	3.6	3
TBM1100	27.9	10.2	2.0	3.6	3
TBM1500	38.1	12.7	2.0	2.4	2
TBM2050	52.1	19.1	2.0	1.2	1
TBM2750	69.9	25.4	2.0	1.2	1
TBM3500	88.9	30.0	2.4	1.2	1
TBM4700	119.4	39.9	2.7	1.2	1
TBM6700	170.2	58.4	2.8	1.2	1
TBM9000	228.6	77.0	3.0	1.2	1

Do not stock at temperatures over 40°C. Do not expose directly to sun rays for long periods.

## Type TBW - rated for 600V, 90°C continuous use

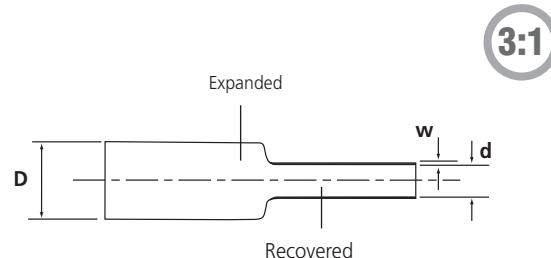
Thick wall heat shrink tubing

- TBW is an excellent product for sealing and insulating cable splices, connections, terminations and jacket repairs.
- The tubing is designed to withstand the severe mechanical requirements of submersible and direct-buried installations
- Low voltage power applications 600V
- High resistance to abrasion, corrosion and chemicals
- Excellent weatherability
- 9 standard sizes in thick wall: internal diameters from 8.9 mm to 119.9 mm
- Meets requirements of ESI 09-11



## Technical Information

Wall thickness	Thick
Shrink ratio	3:1
Tube characteristics	Dual wall
Temperature range	-55°C to +110°C
Shrinking temperature	+120°C
Material	Crosslinked polyolefin with thermoplastic adhesive liner
IP rating	IP67
Standard colour	Black
Other properties	Silicone, Halogen, Cadmium and Lead free



Product Ref.	Expanded diameter as supplied D [mm]	Fully recovered diameter d [mm]	Wall thickness after shrinking w [mm]	Length per bag [m]	Quantity per bag [pieces 1.22m]
TBW0350	8.9	3.0	1.8	6.1	5
TBW0500	13.0	4.1	2.4	6.1	5
TBW0750	19.1	6.1	2.4	6.1	5
TBW1100	27.9	8.9	3.0	2.4	2
TBW1500	38.1	11.9	4.1	2.4	2
TBW2000	50.8	16.0	4.1	1.2	1
TBW2700	68.1	22.1	4.1	1.2	1
TBW3500	89.9	30.0	4.1	1.2	1
TBW4700	119.9	39.9	4.3	1.2	1

Do not stock at temperatures over 40°C. Do not expose directly to sun rays for long periods.

## Low voltage kits up to 600V

Medium and Thick wall heat shrink tubing



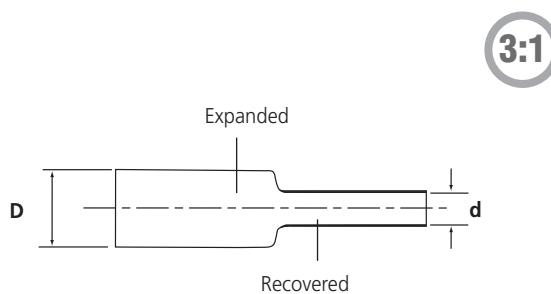
- VMS heat shrinkable sleeves (TBM and TBW) are suitable for jointing multi-core, polymeric insulated energy cables in the low voltage range
- Quick, simple installation
- Exceptionally good electrical insulation and environmental protection
- Good mechanical load-bearing ability
- No maintenance time necessary
- Unlimited storage life
- Tested to DIN 47632 / VDE 0278 Part 1 and 3

### Standard Content

- 1 Outer sleeve (TBW)
- 4 Inner sleeves (TBM) for VMS2 to VMS9, 5 inner sleeves for VMS1
- Cleaning cloths
- Abrasive cloth
- Installation instructions

### Technical Information

Wall thickness	Medium (TBM) and thick (TBW)
Shrink ratio	3:1
Tube characteristics	Dual wall
Temperature range	-55°C to +110°C
Shrinking temperature	+120°C
Material	Crosslinked polyolefin with thermoplastic adhesive liner
IP rating	IP67
Standard colour	Black
Other properties	Silicone and Halogen free



Product Ref.	CONTENT PER KIT									
	Wire range [mm²]	Inner sleeves [pieces]	Shrinkage		Length [mm]	Outer sleeve [pieces]	Shrinkage		Length [mm]	
			Expanded D [mm]	Recovered d [mm]			Expanded D [mm]	Recovered d [mm]		
VMS1	1.5 - 6	5	12	3	50	1	30	10	200	
VMS2	2.5 - 16	4	12	3	125	1	40	12	500	
VMS3	6 - 35	4	20	6	125	1	54	18	500	
VMS6	16 - 50	4	20	6	250	1	70	25	700	
VMS7	35 - 150	4	30	10	300	1	90	30	800	
VMS8	120 - 240	4	40	12	300	1	90	30	800	
VMS9	185 - 300	4	54	18	300	1	120	40	900	

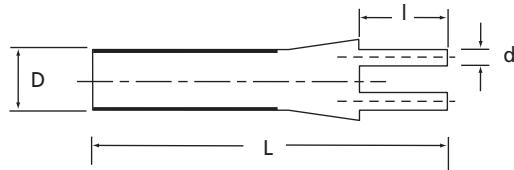
## Type TEB - cable breakouts

Medium and Thick wall heat shrink tubing

- Cable Breakouts are designed for the insulation and sealing of cable crutches
- They offer extreme strain relief and mechanical protection
- Adhesive line provides complete sealing
- UV-resistant
- They also provide good insulation and resistance to common fluids and solvents

### Technical Information

Wall thickness	Medium and thick
Shrink ratio	Various
Tube characteristics	Dual wall
Temperature range	-55°C to +100°C
Shrinking temperature	+135°C
Material	Crosslinked polyolefin with thermoplastic adhesive liner
IP rating	IP67
Standard colour	Black
Other properties	Silicone, Halogen, Cadmium and Lead free



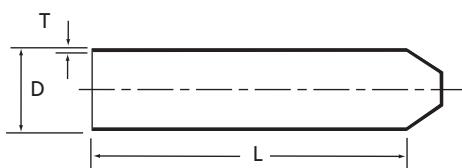
Product Ref.	Breakout Main ø Expanded D [mm]	Main ø Recovered [mm]	Finger ø Expanded d [mm]	Finger ø Recovered [mm]	Cable size [mm <sup>2</sup> ]	Core Ø range [mm]	Overall Ø range [mm]	Recovered Full Length L [mm]	Recovered Finger Length l [mm]	Number of break- outs	Quantity [pieces]
<b>TEB2 2-BREAKOUTS</b>											
TEB2-30/15	30	9.4	15	4.1	—	—	—	84.6	27.0	2	10
TEB2-50/21	50	24.0	21	7.0	—	—	—	107.1	30.6	2	10
<b>TEB3 3-BREAKOUTS</b>											
TEB3-38/11	38	14.0	11	4.0	10 - 25	5.1 - 7.7	16.5 - 22.0	110.0	20.0	3	10
TEB3-60/24	60	22.0	24	8.0	35 - 70	8.8 - 12.0	24.5 - 32.0	185.0	45.0	3	10
TEB3-80/36	80	33.0	36	16.0	95 - 150	13.7 - 17.0	36.0 - 44.0	210.0	50.0	3	10
TEB3-110/48	110	47.0	48	20.0	185 - 300	17.0 - 24.3	49.0 - 62.0	260.0	75.0	3	10
TEB3-125/55	125	47.0	55	20.0	185 - 500	17.0 - 31.1	49.0 - 77.5	260.0	75.0	3	10
<b>TEB4 4-BREAKOUTS</b>											
TEB4-38/11	38	14.0	11	4.0	10 - 25	5.1 - 7.7	17.5 - 24.5	110.0	20.0	4	10
TEB4-55/20	55	22.0	20	8.5	35 - 50	8.8 - 10.0	27.0 - 31.0	190.0	45.0	4	10
TEB4-72/25	72	22.0	25	8.5	35 - 70	8.8 - 12.0	27.0 - 35.5	190.0	45.0	4	10
TEB4-100/35	100	33.0	35	14.0	95 - 150	13.7 - 17.0	40.0 - 49.0	215.0	50.0	4	10
TEB4-125/54	125	47.0	54	22.0	185 - 400	19.2 - 27.4	54.5 - 69.0	245.0	72.0	4	10

## Type TEC - end caps

Medium and Thick wall heat shrink tubing



2:1



- End Caps are designed to seal and to protect cable-ends against the ingress of moisture and contamination
- They offer extreme strain relief and mechanical protection
- Adhesive line provides complete sealing
- They also provide optimal sealing and resistance to chemicals and solvents
- UV-resistant

## Technical Information

Wall thickness	Medium and thick
Shrink ratio	> 2:1
Tube characteristics	Dual wall
Temperature range	-55°C to +100°C
Shrinking temperature	+120°C
Material	Crosslinked polyolefin with thermoplastic adhesive liner
IP rating	IP67
Standard colour	Black
Other properties	Silicone, Halogen, Cadmium and Lead free

Product Ref.	Expanded diameter as supplied [mm]	Fully recovered diameter D [mm]	Recovered length L [mm]	Wall thickness after shrinking T [mm]	Cable diameter [mm <sup>2</sup> ]	Quantity [pieces]
TEC15/4.5	15.0	4.5	44.0	1.0	5 - 12	100
TEC25/9	25.0	9.0	69.0	2.7	10 - 22	50
TEC36/15	36.0	15.0	93.0	2.8	17 - 30	10
TEC55/25	55.0	25.0	107.0	3.3	28 - 47	10
TEC80/40	80.0	40.0	127.0	3.6	45 - 70	10
TEC102/60	102.0	60.0	152.0	3.6	68 - 90	5
TEC124/60	124.0	60.0	152.0	3.6	75 - 110	5
TEC148/57	148.0	57.0	152.0	4.5	80 - 135	5

## TBTA-ZH - self amalgamating tape

Heat shrink technologies

- Self amalgamating tape
- Thomas & Betts TBTA-ZH tape provides a thick insulating layer with flawless electrical stability and a long term resistance to moisture penetration, which demands waterproofing
- To repair and maintain cable sleaving up to 30 Kv
- For installations, where open flame and heat may not be used
- Excellent resistance to UV rays and Ozone
- Easy to apply - no tools or heating required
- Excellent protection at low temperatures

### Technical Information

Stretch ratio	3:1
Temperature range	-55°C to +105°C
Material	EPR based tape
IP rating	IP67
Standard colour	Black
Other properties	Silicone, Halogen, Cadmium and Lead free

3:1



TBTA-ZH must be stretched on application for the self-adhesive properties to be activated. TBTA-ZH has a stretch ratio of more than 3:1.

### Installation notes

1. The surface of the connection and the cable entry must be clean
2. TBTA-ZH should be used under high tension as the stretching process activates the adhesive
3. By wrapping the TBTA-ZH tape around the cable, a sealed casing is created
4. If a cable or pipe needs protection, the TBTA-ZH tape should be wrapped around itself twice at the beginning point and then should overlap throughout by 50%. This means that the tape will also stretch when the cable is under tension
5. Finally, the surface (see point 4) should be covered once more using 100% tape overlap
6. At the end, the tape should be held at the overlap point and torn off
7. To conclude the installation, the ripped off end should be pressed firmly to close.

Product Ref.	Roll length [m]	Width [mm]	Thickness [mm]
TBTA-ZH-19	9.0	19	0.76
TBTA-ZH-25	9.0	25	0.76
TBTA-ZH-38	9.0	38	0.76
TBTA-ZH-51	9.0	51	0.76

## Hot air tool

Heat shrink technologies



The Hot Air Tool from Thomas & Betts achieves a rapid shrink action. This tool is ideal for industrial and military applications.

### Technical Information

Property	Typical performance
Power Consumption	1400W
Temperature	+350°C to +500°C
Air Flow	350 / 500 l/min
Static pressure max.	1250 Pa
Weight	570 g
Electronics	Flicker-conformity



WT992GR



WT993GR



WT994GR



WT995GR



WT996GR



WT998GR



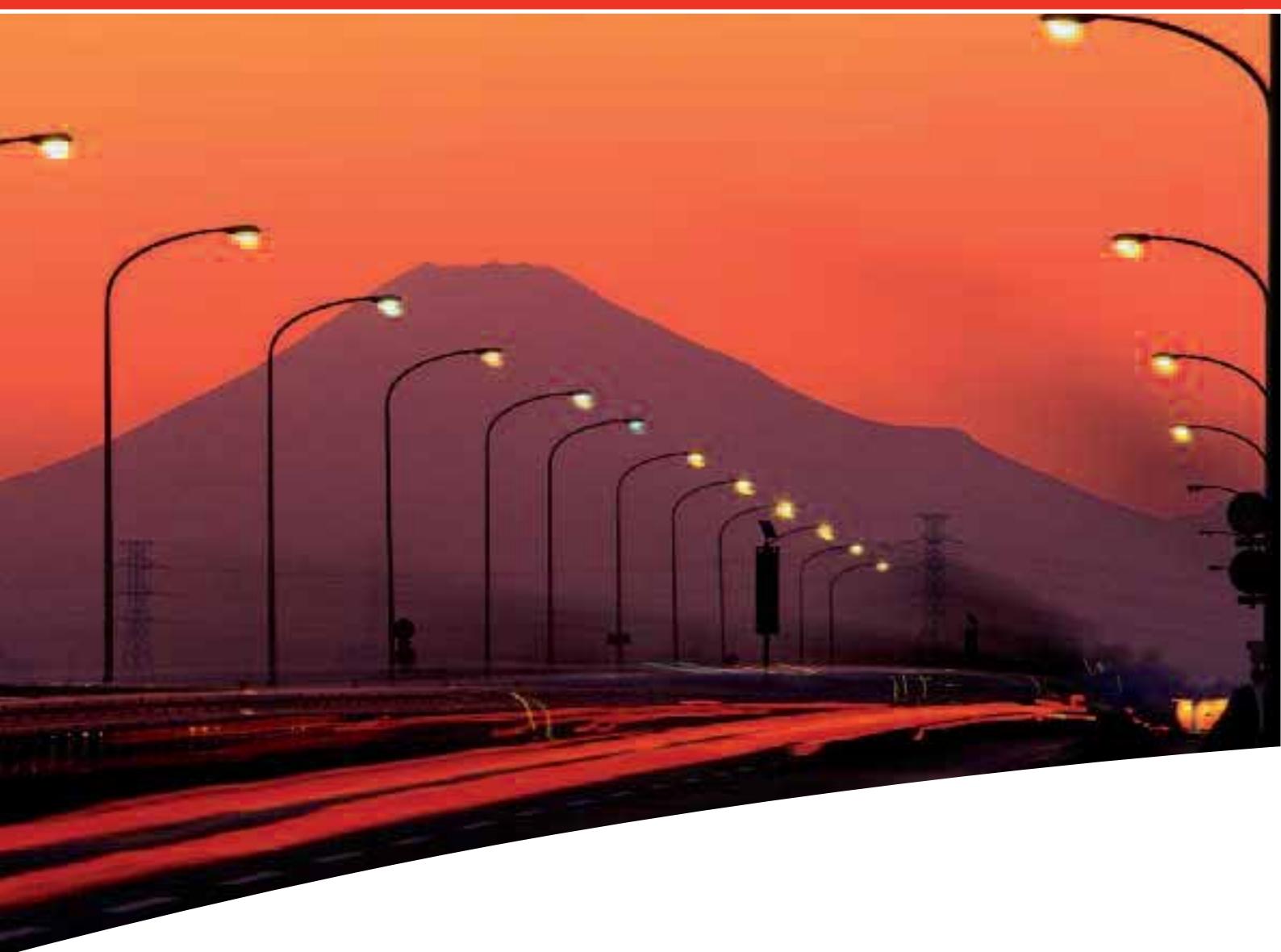
WT999GR

Product Ref.	Description
GR121	Hot Air Tool (European Plug and WT993GR nozzle)
GR321	Hot Air Tool (UK Plug and WT993GR nozzle)
WT992GR	Wide slot nozzle
WT993GR	Reflector nozzle
WT994GR	Reduction nozzle Ø 20mm
WT995GR	Welding nozzle
WT996GR	Overlap welding nozzle
WT998GR	Solder sleeve reflector nozzle
WT999GR	Glass protection nozzle

Product name	Material	Mechanical Behaviour	Operating temp.	Shrink Ratio	Expanded Diameter	Silicon free	Cadmium + Lead free	Non Halogen	Spec. Gravity	Longitudinal Shrinkage	Tensile Strength after Heatshock	Elongation after Heatshock	Ultimate Elongation	
Test Method														
PLG	PE-Polyolefin	Flexible	-55°C to +125°C	2:1	1.2-101.6mm / 3/64"-4"	Yes	Yes	No*	1.3g / cm <sup>3</sup> (1)	-10% (3)	13 MPa / 4h at 200°C (4)	400% / 4h at 200°C (4)	450%	
CMP	PE-Polyolefin	Flexible	-55°C to +125°C	2:1	1.25-1.0mm / 3/64"-2"	Yes	Yes	No*	1.3g / cm <sup>3</sup> (1)	-10% (3)	13 MPa / 4h at 200°C (4)	400% / 4h at 200°C (4)	450%	
MPL	PE-Polyolefin	Flexible	-55°C to +135°C	2:1	1.2-25.4mm / 3/64"-1"	Yes	Yes	No*	1.3g / cm <sup>3</sup> (1)	-5% (3)	19 MPa / 4h at 250°C (5)	No cracking or flowing (3)	500%	
GYS	PE-Polyolefin	Flexible	-55°C to +135°C	2:1	3.2-25.4mm / 1/8"-1"	Yes	Yes	No	1.3g / cm <sup>3</sup> (1)	-10% (3)	14 MPa / 4h at 200°C (4)	400% / 4h at 200°C (4)	450%	
PLG	PE-Polyolefin	Very Flexible	-55°C to +135°C	3:1	1.6-40.0mm / 1/16"-11/2"	Yes	Yes	No	1.3g / cm <sup>3</sup> (1)	-5% (3)	19 MPa / 4h at 250°C (5)	No cracking or flowing (3)	500%	
PLG green yellow	PE-Polyolefin	Very Flexible	-55°C to +135°C	3:1	4.5-40.0mm / 1/16"-11/2"	Yes	Yes	No	1.3g / cm <sup>3</sup> (1)	-10% (3)	14 MPa / 4h at 200°C (4)	400% / 4h at 200°C (4)	450%	
PLG clear	PE-Polyolefin	Very Flexible	-55°C to +135°C	3:1	1.6-40.0mm / 1/16"-11/2"	Yes	Yes	Yes	1.0g / cm <sup>3</sup> (1)	-5% (3)	15 MPa / 4h at 250°C (5)	No cracking or flowing (3)	550%	
PKG	PE-Polyolefin	Flexible	-55°C to +110°C	3:1 / 4:1	3.0-52.0mm / 1/16"-2"	Yes	Yes	No	1.3g / cm <sup>3</sup> (1)	-15% (3) (1) (3) (4) (1) (8)	15 MPa / 4h at 200°C (4)	360% / 4h at 200°C (4)	400%	
KYN	Kynar** PVDF	55°C to +175°C	2:1	1.2-25.4mm / 3/64"-1"	Yes	Yes	No	1.8g / cm <sup>3</sup> (1)	-6% (3)	48 MPa / 4h at 250°C (4)	300% / 4h at 300°C (4)	450%		
VIT	Viton**	55°C to +200°C	2:1	3.2-38.1mm / 1/8"-11/2"	Yes	Yes	No	1.9g / cm <sup>3</sup> (1)	-10% (3)	17 MPa / 4h at 300°C (4)	250% / 4h at 300°C (4)	520%		
ZHFR	PE-Polyolefin	Flexible	-40°C to +105°C	2:1	2.4-25.4mm / 3/32"-1"	Yes	Yes	Yes	1.45g / cm <sup>3</sup> (2)	-10% (3)	9 MPa / 4h at 150°C (3)	100% / 4h at 150°C (3)	200%	
TBM	PE-Polyolefin	Semi-Rigid	-55°C to +110°C	3:1	10-228.6mm	Yes	Yes	Yes	1.10g / cm <sup>3</sup> (1)	+1% to -10% (3)	4h at 225°C	No cracking or flowing (3)	600%	
TBW	PE-Polyolefin	Semi-Rigid	-55°C to +110°C	3:1	8.9-119.3mm	Yes	Yes	Yes	1.10g / cm <sup>3</sup> (1)	+1% to -10%	4h at 225°C	No cracking or flowing (3)	550%	
LV-Kit	PE-Polyolefin	Semi-Rigid	-55°C to +110°C	3:1	various	Yes	Yes	Yes	1.10g / cm <sup>3</sup>	+1% to -10%	4h at 225°C	No cracking or flowing (3)	-/	
TB	PE-Polyolefin	Semi-Rigid	-55°C to +100°C	various	30.0-125.0mm	Yes	Yes	Yes	1.10g / cm <sup>3</sup>	-15%	6 MPa (3) (9)	200% (3) (9)	300%	
TEC	PE-Polyolefin	Flexible	-55°C to +105°C	1:3	15.0-148.0mm	Yes	Yes	Yes	1.10g / cm <sup>3</sup>	-15%	6 MPa (3) (9)	200% (3) (9)	300%	
TBTA-ZH	EPR-Tape				19.0-51.0mm	Yes	Yes	-/-	-/-	-/-	-/-	-/-	750%	
Product name	Tensile Strength	Secant Modulus	Tensile Strength after heat aging	Elongation after heat aging	Low temp. Flexibility	Combustion behaviour	Shrinkage	Storage Resistance	Water Fungus	Spec. Volume	Dielectric Strength	Dielectric Strength	Spec. Resistance	
Test Method	IEC 60684-2 (6)	ASTM-D 882 (10)	UL 224 (11)	ASTM-D 2671 (3)	ISO 37 (13)	ASTM-D 2671 Meth. C (27)	UL 224 VW-1 (11)	UL 224 (14)	VDE 0472 (19)	IEC-243 (24)				
	ISO 37 (7)	Def Stan 59-97 (31)		IEC 811-1-2 (4)	ISO-188 (12)	ASTM-D 638 (9)	ASTM-D 876 (15)	ASTM-D 635 (16)	ISO-62 (20)	VDE 0303 Part 2 (25)				
	ASTM-D 412 (8)	ASTM-D 638 (9)	Def Stan 59-97 (31)			ASTM-D 257 (32)	FMVSS 302 (17)	ESI 09-13 (18)	ASTM-D 570 (21)	ASTM-D 570 (21)	Def Stan 59-97 (31)	Def Stan 59-97 (31)	ASTM-D 570 (21)	
PLG	15 MPa (6)	175 MPa max. (10)	12 MPa / 168h at 158°C (11)	300% / 168h at 158°C (11)	Does not break at -55°C (27)	Flame retardant**** (1) (4) (17)	+110°C	Good	0.3% (19)	Very good	24kV / mm (25)	10.15 Ohms x cm		
CMP	15 MPa (6)	175 MPa max. (10)	12 MPa / 168h at 158°C (11)	300% / 168h at 158°C (11)	Does not break at -55°C (27)	Flame retardant**** (1) (4) (17)	+110°C	Good	0.3% (19)	Very good	24kV / mm (25)	10.15 Ohms x cm		
MPL	17 MPa (6)	175 MPa max. (10)	13 MPa / 168h at 175°C (3)	300% / 168h at 175°C (3)	Does not break at -55°C (27)	Flame retardant**** (1) (4) (17)	+90°C	Good	0.2% (19)	Very good	24kV / mm (25)	10.15 Ohms x cm		
GYS	15 MPa (6)	175 MPa max. (10)	12 MPa / 168h at 175°C (11)	300% / 168h at 175°C (11)	Does not break at -55°C (27)	Flame retardant**** (1) (4) (17)	+90°C	Good	0.2% (19)	Very good	24kV / mm (25)	10.15 Ohms x cm		
PLG	17 MPa (6)	175 MPa max. (10)	13 MPa / 168h at 175°C (3)	300% / 168h at 175°C (3)	Does not break at -55°C (27)	Flame retardant**** (1) (4) (17)	+90°C	Good	0.2% (19)	Very good	24kV / mm (25)	10.15 Ohms x cm		
PLG green yellow	15 MPa (6)	175 MPa max. (10)	12 MPa / 168h at 175°C (11)	300% / 168h at 175°C (11)	Does not break at -55°C (27)	Flame retardant**** (1) (4) (17)	+90°C	Good	0.2% (19)	Very good	24kV / mm (25)	10.15 Ohms x cm		
PLG clear	20 MPa (6)	175 MPa max. (10)	18 MPa / 168h at 175°C (3)	500% / 168h at 175°C (3)	Does not break at -55°C (27)	Passed per FMVSS 302 (17)	+90°C	Good	0.2% (19)	Very good	24kV / mm (25)	10.15 Ohms x cm		
PKG	15 MPa (6)	175 MPa max. (10)	12 MPa / 168h at 158°C (4)	320% / 168h at 158°C (4)	Does not break at -55°C (27)	Flame retardant**** (1) (5) (17)	+95°C	Good	0.2% (19)	Very good	22kV / mm (25)	10.14 Ohms x cm		
KYN	50 MPa (6)	750 MPa max. (10)	40 MPa / 168h at 158°C (4)	230% / 168h at 158°C (4)	Does not break at -55°C (27)	Flame retardant**** (1) (11)	+175°C	+30°C	Very good	0.07% (19)	31.5kV / mm (25)	10.15 Ohms x cm		
VIT	18 MPa (6)	70 MPa max. (10)	14 MPa / 168h at 158°C (4)	220% / 168h at 158°C (4)	Does not break at -55°C (27)	Flame retardant (33)	+175°C	+30°C	Very good	0.2% (19)	16kV / mm (25)	10.13 Ohms x cm		
ZHFR	10 MPa (6)	175 MPa max. (10)	12 MPa / 168h at 158°C	150% / 168h at 158°C (3)	Does not break at -40°C (27)	Flame retardant (16)	+115°C	+30°C	Good	0.2% (21)	Very good	24kV / mm (24)	10.16 Ohms x cm	
Test Method														
TBM	14.5 MPa (7) (8)	90 MPa (3) (1)	12 MPa (3) (6)	500% / 168h at 150°C (13)	Does not break at -55°C (27)	Non Flame retardant	+120°C	+30°C	Good	0.2% (21)	Very good	20kV / mm (24) (28)	10.16 Ohms x cm	
TBW	14.5 MPa (7) (8)	90 MPa (3) (1)	-/-	500% / 168h at 150°C (13)	Does not break at -55°C (27)	Non Flame retardant	+120°C	+30°C	Good	0.2% (21)	Very good	20kV / mm (24) (28)	10.16 Ohms x cm	
LV-Kit	-/-	90 MPa (3) (1)	12 MPa (3) (6)	500% (3) (9)	Does not break at -55°C	Non Flame retardant	+120°C	+30°C	Good	0.2% (21)	Very good	20kV / mm (24) (28)	10.16 Ohms x cm	
TEC	12 MPa (9)	80 MPa (3) (1)	-/-	-/-	-/-	Non Flame retardant	+120°C	+30°C	Good	1% (20)	Very good	12kV / mm (24)	10.16 Ohms x cm	
TRTA-ZH	2.5 MPa (3) (1)	-/-	-/-	-/-	-/-	Flame retardant	+20°C	+30°C	Good	0.06% (31)	Very good	30kV / mm (31)	n/a	

\*Transparent version is halogen free  
\*\* Vinnor is a registered trademark of ATOMINA

\*\*\* VITON is a registered trademark of DuPont  
\*\*\* Evcon front version



# Rezi-Kon™ Cast resin joints

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# Rezi-Kon™ Cast resin joints

**The new range of Rezi-Kon™ cast resin joints from Thomas & Betts provide a convenient and reliable solution for splicing and branching low voltage cables, in applications like street and leisure lighting, airfield lighting, utility / home connections.**

The Rezi-Kon™ cable joints are made of a Polycarbonate shell filled with a Polyurethane resin, which provides a watertight connection that can be immediately operational.

They are available in two styles, for a complete range of cable sizes from 1.5 to 400 mm<sup>2</sup>:

- straight: for splicing or repairing existing cables
- branch: for tapping a new cable on an existing line



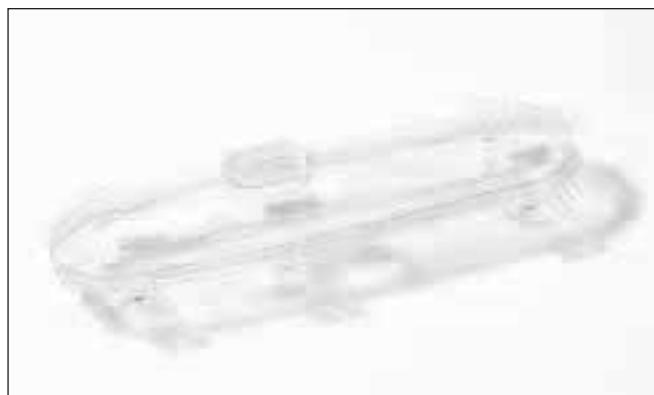
*A range of high performance cast resin joints, for a quick and reliable installation on the field*

- Suitable for voltages up to 3.6 kV
- Easy to use on the field: no heat source or power required
- Quick and easy to install, immediately operational
- Can be buried
- Watertight: protection against water ingress from the cable and from the shell
- Excellent electrical properties
- BS EN 50393-2006 compliant
- Halogen free
- The shell and the resin meet the requirements of the petro-chemical industry and are suitable for immersion in hydrocarbons

- Exclusive shell design, with a unique "clip" system for easy assembly and watertight closing
- Transparent shell, for a better inspection before and during the casting
- High grade Polycarbonate: UV-resistant, impact resistant, chemical resistant, flame retardant
- 2-component Polyurethane resin
- Reduced exothermic properties (generates little heat during the reaction of polymerisation), therefore suitable for all kinds of cables (power, phone, control)
- Duo-bag packaging: pre-filled bag for correct mix ratio and safe mixing (no contact with the components)
- Range of exclusive insulated connectors

## Straight joints for non-armoured cables

Resin technologies



A range of high performance cast resin joints, for a quick and reliable installation on the field with a watertight protection. Recommended for the connection of low voltage non-armoured cables (up to 3.6 kV), from 1.5 to 400 mm<sup>2</sup>.

- Watertight protection, both longitudinal (from inside the cable) and transversal (from the shell)
- For permanent installation
- Easy to install, allows easy cable crossing
- BS EN 50393-2006 compliant
- The shell and the resin meet the requirements of the petrochemical industry and are suitable for immersion in hydrocarbons

Each kit is supplied in a box containing:

- 1 Polycarbonate shell (upper and lower halves)
- the 2-component Polyurethane resin, in pre-filled duo-bag containing the correct volume to suit the size of cable joint
- a pair of gloves, a reel of tape, a strip of sand paper, an instruction sheet

### Technical Information

Material	PC - Polycarbonate and PU - Polyurethane
Voltage	3.6 kV
IP Rating	Watertight
Flammability rating	Flame retardant
Colour	Transparent
Other properties	Halogen free, good chemical resistance, UV-resistant, impact resistant

Product ref.	Conductor cross section [mm <sup>2</sup> ]															
	1.5	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240	300
CRJ-S4																
CRJ-S10																
CRJ-S16																
CRJ-S25																
CRJ-S50																
CRJ-S120																
CRJ-S240																
CRJ-S400																

Tables are valid for non-armoured cables with four conductors

## Straight joints for armoured cables

Resin technologies

A range of high performance cast resin joints, for a quick and reliable installation on the field with a watertight protection. Recommended for the connection of low voltage armoured cables (up to 3.6 kV), from 1.5 to 400 mm<sup>2</sup>.

- Available in 2 versions: with mechanical connectors or without connector
- Watertight protection, both longitudinal (from inside the cable) and transversal (from the shell)
- For permanent installation
- Easy to install, allows easy cable crossing
- BS EN 50393-2006 compliant
- The shell and the resin meet the requirements of the petrochemical industry and are suitable for immersion in hydrocarbons

Each kit is supplied in a box containing:

- 1 Polycarbonate shell (upper and lower halves)
- the 2-component Polyurethane resin, in pre-filled duo-bag containing the correct volume to suit the size of cable joint
- an earth kit: 2 constant force springs + 1 braided cable
- a pair of gloves, a reel of tape, a strip of sand paper, an instruction sheet

#### Technical Information

Material***	PC - Polycarbonate and PU - Polyurethane
Voltage	3.6 kV
IP Rating	Watertight
Flammability rating	Flame retardant
Colour	Transparent
Other properties	Halogen free, good chemical resistance, UV-resistant, impact resistant



Product Ref. with insulated connector	Product Ref. without connector	Conductor cross section [mm <sup>2</sup> ]															
		1.5	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240	300
CRJ-S4-UK-CO	CRJ-S4-UK																
CRJ-S10-UK-CO	CRJ-S10-UK																
CRJ-S16-UK-CO	CRJ-S16-UK																
CRJ-S25-UK-CO	CRJ-S25-UK																
CRJ-S50-UK-CO	CRJ-S50-UK																
CRJ-S120-UK-CO	CRJ-S120-UK																
CRJ-S240-UK-CO*	CRJ-S240-UK**																
CRJ-S400-UK-CO*	CRJ-S400-UK**																

\* Supplied with non-insulated mechanical connectors and heat shrink sleeves. The earth kit is a cage shaped conductor

\*\* The earth kit is a cage shaped conductor

\*\*\* Material: Styrene and PU - Polyurethane for Product Ref. CRJ-S400-UK-CO and CRJ-S400-UK

Table is valid for armoured cables with four conductors

## Straight joints for control cables

Resin technologies



A range of high performance cast resin joints, for a quick and reliable installation on the field. Recommended for the connection of multi-core control cables (up to 48 cores).

- Watertight protection, both longitudinal (from inside the cable) and transversal (from the shell)
- For permanent installation
- Easy to install, allows easy cable crossing

Each kit is supplied in a box containing:

- 1 Polycarbonate shell (upper and lower halves)
- the 2-component Polyurethane resin, in pre-filled duo-bag containing the correct volume to suit the size of cable joint
- an earth kit: 2 constant force springs + 1 braided cable
- the adequate quantity of insulated crimp connectors (butt splices)
- a pair of gloves, a reel of tape, a strip of sand paper, an instruction sheet

### Technical Information

Material	PC - Polycarbonate and PU - Polyurethane
Voltage	3.6 kV
IP Rating	Watertight
Flammability rating	Flame retardant
Colour	Transparent
Other properties	Halogen free, good chemical resistance, UV-resistant, impact resistant

Product Ref.	Conductor cross section [mm <sup>2</sup> ]	2		4		5		7		8		10		11		16		27		30		48	
		cores																					
CRJ-SCC4-UK-CO	1.5																						
	2.5																						
CRJ-SCC8-UK-CO	1.5																						
	2.5																						
CRJ-SCC16-UK-CO	1.5																						
	2.5																						
CRJ-SCC48-UK-CO	1.5																						
	2.5																						

## Straight joints for telephone cables

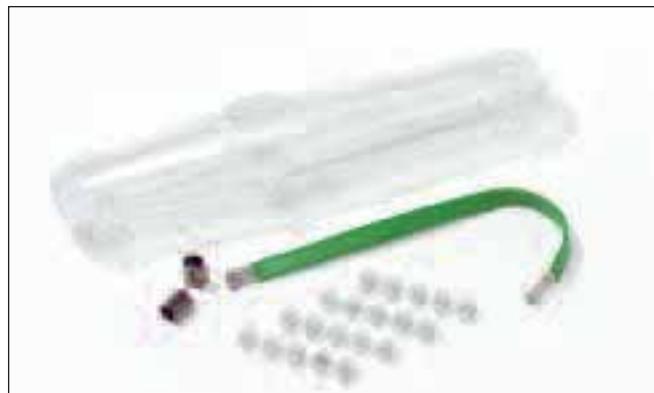
Resin technologies

A range of high performance cast resin joints, for a quick and reliable installation on the field. Recommended for the connection of multi-pair telephone cables (up to 100 pairs).

- Watertight protection, both longitudinal (from inside the cable) and transversal (from the shell)
- For permanent installation
- Easy to install, allows easy cable crossing

Each kit is supplied in a box containing:

- 1 Polycarbonate shell (upper and lower halves)
- the 2-component Polyurethane resin, in pre-filled duo-bag containing the correct volume to suit the size of cable joint
- an earth kit: 2 constant force springs + 1 braided cable
- the adequate quantity of insulation displacement connectors (IDC)
- a pair of gloves, a reel of tape, a strip of sand paper, an instruction sheet



## Technical Information

Material	PC - Polycarbonate and PU - Polyurethane
Voltage	3.6 kV
IP Rating	Watertight
Flammability rating	Flame retardant
Colour	Transparent
Other properties	Halogen free, good chemical resistance, UV-resistant, impact resistant

Product Ref.	Conductor cross section [mm <sup>2</sup> ]	2 pairs	5 pairs	10 pairs	15 pairs	25 pairs	40 pairs	50 pairs	100 pairs
CRJ-ST5-UK-CO	0.9								
CRJ-ST15-UK-CO	0.9								
CRJ-ST25-UK-CO	0.9								
CRJ-ST50-UK-CO	0.9								
CRJ-ST100-UK-CO	0.9								

## Branch joints for non-armoured cables

Resin technologies



A range of high performance cast resin joints, for a quick and reliable installation on the field with a watertight protection. Recommended for the connection of low voltage non-armoured cables (up to 3.6 kV), from 1.5 to 400 mm<sup>2</sup>.

- Watertight protection, both longitudinal (from inside the cable) and transversal (from the shell)
- For permanent installation
- Easy to install, allows easy cable crossing
- BS EN 50393-2006 compliant
- The shell and the resin meet the requirements of the petrochemical industry and are suitable for immersion in hydrocarbons

Each kit is supplied in a box containing:

- 1 Polycarbonate shell (upper and lower halves)
- the 2-component Polyurethane resin, in pre-filled duo-bag containing the correct volume to suit the size of cable joint
- a pair of gloves, a reel of tape, a strip of sand paper, an instruction sheet

### Technical Information

Material	PC - Polycarbonate and PU - Polyurethane
Voltage	3.6 kV
IP Rating	Watertight
Flammability rating	Flame retardant
Colour	Transparent
Other properties	Halogen free, good chemical resistance, UV-resistant, impact resistant

Product Ref.		Conductor cross section [mm <sup>2</sup> ]															
		1.5	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240	300
CRJ-SB4	Main cable																
	Branch cable																
CRJ-SB10	Main cable																
	Branch cable																
CRJ-SB25	Main cable																
	Branch cable																
CRJ-SB50*	Main cable																
	Branch cable																
CRJ-SB120*	Main cable																
	Branch cable																
CRJ-SB240*	Main cable																
	Branch cable																
CRJ-SB400*	Main cable																
	Branch cable																

\* Shell in Styrene

Tables are valid for non-armoured cables with four conductors

## Branch joints for armoured cables

Resin technologies

A range of high performance cast resin joints, for a quick and reliable installation on the field with a watertight protection. Recommended for making cable taps, with low voltage armoured cable (up to 3.6 kV), from 1.5 to 400 mm<sup>2</sup>.

- Available in 2 versions: with mechanical connectors or without connector
- Watertight protection, both longitudinal (from inside the cable) and transversal (from the shell)
- For permanent installation
- Easy to install
- BS EN 50393-2006 compliant
- The shell and the resin meet the requirements of the petrochemical industry and are suitable for immersion in hydrocarbons

Each kit is supplied in a box containing:

- 1 Polycarbonate shell (upper and lower halves)
- the 2-component Polyurethane resin, in pre-filled duo-bag containing the correct volume to suit the size of cable joint
- an earth kit: 3 constant force springs + 1 braided cable
- a pair of gloves, a reel of tape, a strip of sand paper, an instruction sheet



## Technical Information

Material	PC - Polycarbonate and PU - Polyurethane
Voltage	3.6 kV
IP Rating	Watertight
Flammability rating	Flame retardant
Colour	Transparent
Other properties	Halogen free, good chemical resistance, UV-resistant, impact resistant

Product Ref. with connectors	Product Ref. without connectors		Conductor cross section [mm <sup>2</sup> ]																	
			1.5	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400	
<b>SERVICE BRANCH JOINTS</b>																				
CRJ-SB4-UK-CO	CRJ-SB4-UK	Main cable																		
		Branch cable																		
CRJ-SB10-UK-CO	CRJ-SB10-UK	Main cable																		
		Branch cable																		
CRJ-SB25-UK-CO	CRJ-SB25-UK	Main cable																		
		Branch cable																		
CRJ-SB50-UK-CO*	CRJ-SB50-UK*	Main cable																		
		Branch cable																		
CRJ-SB120-UK-CO*	CRJ-SB120-UK*	Main cable																		
		Branch cable																		
CRJ-SB240-UK-CO*	CRJ-SB240-UK*	Main cable																		
		Branch cable																		
CRJ-SB400-UK-CO*	CRJ-SB400-UK*	Main cable																		
		Branch cable																		

<b>MAIN BRANCH JOINTS</b>		Main cable																	
CRJ-MB120-UK-CO*	CRJ-MB120-UK*	Main cable																	
		Branch cable																	
CRJ-MB240-UK-CO*	CRJ-MB240-UK*	Main cable																	
		Branch cable																	
CRJ-MB400-UK-CO*	CRJ-MB400-UK*	Main cable																	
		Branch cable																	

\* Shell in Styrene

Table is valid for armoured cables with four conductors

## Resin bags

### Resin technologies



Product Ref.	Volume [litre]	Weight [g]	Quantity [pieces]
CRJ-PU-0075	0.075	107	1
CRJ-PU-0175	0.175	250	1
CRJ-PU-0300	0.300	429	1
CRJ-PU-0550	0.550	787	1
CRJ-PU-1000	1	1287	1
CRJ-PU-2000	2	2860	1
CRJ-PU-3000	3	4290	1

The convenient pre-filled duo-bag guarantees a correct mix ratio and a safe mixing, by preventing the installer from having possible contact with the components.

- 2-component Polyurethane in ready-to-mix duo-bag packaging
- No need to open the bag, just remove the separation for a safe mixing without contact with the components
- Pre-filled duo-bag, always the correct mix ratio and the exact volume for the joint size
- Low exothermic properties, can be used with all kind of cables (power, phone, control)
- For permanent application
- Excellent electrical and mechanical properties: good elasticity and adhesion to all kinds of cables
- Transparent bag, for a better inspection of the mixing process
- Specific colour after mixing: beige
- 3 years shelf life (outer protective envelope in aluminium)
- BS EN 50393-2006 compliant
- Meet the requirements of the petrochemical industry and are suitable for immersion in hydrocarbons
- Halogen free.

## Insulated connectors

### Resin technologies



Product Ref.	Cable range [mm <sup>2</sup> ]	Quantity [pieces]
CRJ-IC-010	0.75 - 10	1
CRJ-IC-025	4 - 25	1
CRJ-IC-050	16 - 50	1
CRJ-IC-120	35 - 120	1

Exclusive connectors, specially designed for the straight Rezi-Kon™ joints.

- Safe and easy connection: the 4 conductors always remain separated from each other
- Insulation in Polypropylene, contacts in brass
- 4 screws per contact
- Suitable for voltages up to 1 kV

#### Technical Information

Material	Brass
Insulation	P.P. - Polypropylene
Voltage	1 kV
Colour	White

## Separate earth kits

Resin technologies

A range of separate earth kits, to achieve the earth continuity of armoured cables. Available for straight joints and branch joints.

Each kit consists of:

- a piece of insulated braided cable, or round cable (for the smallest S4 and SB4 sizes) or cage-shape conductor (for the large size joints)
- 2 or 3 pieces of Constant Force Springs (2 for straight joints, 3 for branch joints)

Product Ref.	Shape	For joint kit*	Quantity [pieces]
<b>EARTH KITS FOR STRAIGHT JOINTS</b>			
CRJ-EK-S4	round	CRJ-S4-XX-YY	1
CRJ-EK-S10	braided	CRJ-S10-XX-YY	1
CRJ-EK-S16	braided	CRJ-S16-XX-YY	1
CRJ-EK-S25	braided	CRJ-S25-XX-YY	1
CRJ-EK-S50	braided	CRJ-S50-XX-YY	1
CRJ-EK-S120	braided	CRJ-S120-XX-YY	1
CRJ-EK-S240	cage	CRJ-S240-XX-YY	1
CRJ-EK-S400	cage	CRJ-S400-XX-YY	1
<b>EARTH KITS FOR BRANCH JOINTS</b>			
CRJ-EK-SB4	round	CRJ-SB4-XX-YY	1
CRJ-EK-SB10	braided	CRJ-SB10-XX-YY	1
CRJ-EK-SB25	braided	CRJ-SB25-XX-YY	1
CRJ-EK-SB50	braided	CRJ-SB50-XX-YY	1
CRJ-EK-SB120	braided	CRJ-SB120-XX-YY	1
CRJ-EK-SB240	braided	CRJ-SB240-XX-YY	1
CRJ-EK-SB400	braided	CRJ-SB400-XX-YY	1

\* XX can be left empty or replaced by UK  
YY can be left empty or replaced by CO

Braided cable



Cage-shape conductor





Flexible conduits  
Excellent mechanical  
strength and flexibility  
for use in demanding  
environments

## CONDUIT &amp; FITTINGS

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# Shureseal™ and Shureflex® Flexible conduits

## Thomas & Betts ... The Complete Product Line

For a century, Thomas & Betts has been a recognised leader in electrical conduits & fittings. Industry standards such as Chase Nipples and Erickson Couplings were introduced by Thomas & Betts and are still popular in the industry. This leadership continues. Here's why.

262

The **Shureseal™ flexible metallic liquidtight conduits** provide an excellent protection for electrical cables against: aggressive media, pressure loads, moisture and liquid, chemicals and oil, dust and pollution, extreme temperatures.

All grades of Shureseal™ conduits are constructed using an interlocking, convoluted, heavy-duty galvanised steel core. Depending on the grade and size of the conduit, a packing material



*Excellent mechanical strength  
and flexibility for use  
in demanding environments*

is added to the convolutions of the core to improve performance. Finally, a smooth jacket is extruded over the steel core to give protection and improve flexing properties. Ideal for applications which require resistance to bending strain vibration or similar forces.

The **Shureseal™ flexible non-metallic liquidtight conduits** offer an excellent protection for electrical cables combined with an outstanding flexibility, a strong resistance to chemicals and a good level of mechanical resistance. Their smooth inner surface ensures that cables and conductors can be fed through with ease. Ideal for applications which require resistance to bending strain, vibration or similar forces, the range of Shureseal™ flexible, non-metallic liquidtight conduits is installable with the appropriate fittings available in the Shureseal™ range.

The **Shureflex® system of ultra-flexible metallic conduits** in galvanised steel offers an economic solution for the protection of

cables in industrial and commercial applications. They have an excellent resistance to crushing, vibrations and bending, as well as high flexibility and pull off strength. The Shureflex® conduits are also available in stainless steel upon request.

The **new range of Shureflex® Nylon conduit and fittings** provides all the benefits of a Halogen free, flexible watertight system of protection for electrical cables. The Shureflex® Nylon conduits are made from Halogen free Polyamide 6 (PA6) and Polyamide 12 (PA12) and are recommended for the insulation and the mechanical protection of electrical cables, in accordance with EN60204 (Machine Safety). With its wide range of fittings and accessories, this system is ideally suitable for all types of applications in general wiring, industrial equipment, machine tools and machinery, production equipment, control equipment, robotics, automotive, transportation, railway.

## Selection guide

### Flexible conduits

Conduit type	Features	Typical Applications	Flexible	High mechanical strength	Oil and chemical resistant
<b>SHURESEAL™ FLEXIBLE METALLIC LIQUIDTIGHT CONDUITS</b>					
	TBEF	Flexible, VDE approved, for heavy-duty use	Standard multi-purpose conduit	B	yes
	TBDL	UL / CSA approved, silicone free for heavy-duty use, multi-purpose	Export-oriented mechanical and plant engineering (USA, Canada etc.)	B	yes
	TBOR	Same as TBEF – plus high resistance to oil and chemicals	Mechanical engineering with high exposure to oil or chemicals	B	yes
	TBEHC	Remains flexible at extreme temperatures	Same as TBEF but for higher temperatures	B	yes
	TBZH	Halogen-free, low smoke and flexible	Where human life is at risk e.g. underground, railway stations	B	yes
<b>SHURESEAL™ FLEXIBLE NON-METALLIC LIQUIDTIGHT CONDUITS</b>					
	TYPEA	Multi-layer construction, UL / CSA approved	Robotics, export version	A	yes
	EFC	Highly flexible, crush-resistant, very good chemical resistance	OEM: flexing component wiring protection, fiber optic cable protection etc	A	yes
	LTC	Smooth inner and outer surfaces, UL & CSA listed	Industrial applications: machinery, food processing equipment, etc	A	yes
	LTC-GY	Smooth inner and outer surfaces, UL & CSA listed, grey	Commercial applications: indoor & outdoor lighting, etc	A	yes
<b>SHUREFLEX® FLEXIBLE METALLIC CONDUITS</b>					
	UGS	Extremely flexible, even at industrial and commercial applications such as extremely high and low temperatures	Industrial and commercial applications such as lighting, security cameras and underfloor wiring	A	yes
	PGS	Flexible, PVC-covered*	Industrial and commercial applications such as lighting, security cameras and underfloor wiring	B	yes
<b>SHUREFLEX® ULTRA-FLEXIBLE NYLON CONDUITS</b>					
	LG	Halogen-free Polyamide 6 Very flexible and cost effective Easy installation (push-mount fitting)	General wiring, machine tools, industrial equipment and automotive	A	yes
	SG	Halogen-free Polyamide 6 Very flexible and light Easy installation (push-mount fitting)	General wiring, machine tools, industrial equipment and automotive	A	yes
	MG	Halogen-free Polyamide 6 Flexible with increased mechanical strength Easy installation (push-mount fitting)	Machine tools and machinery, industrial equipment, railway	A	yes
	EG	Halogen-free Polyamide 12 Extremely flexible, even at negative temperatures and in very dry atmosphere Easy installation (push-mount fitting)	Demanding applications requiring repetitive bending and flexing movements: robotics, automation, production equipment	A	yes

A = ultra flexible, B = flexible

\* LFH (Limited Fire Hazard) covering is available upon request

\*\* Only applicable when correctly installed with Thomas & Betts fittings

\*\*\* Fittings with IP65 rating are available upon request for the PGS conduits

Zero halogen	Low acid	Limited fire hazard	Flame retardant	Tempe- rature rating	IP rating**	Standard colour	Material Covering	Material Core	UL file Nr	CSA file Nr	Page
			yes	-25 to +105°C	IP67	black	PVC	galvanised steel			266
			yes	-25 to +105°C	IP67	black	PVC	galvanised steel	E125517	LL91693	267
			yes	-25 to +105°C	IP67	black	PVC	galvanised steel			268
			yes	-50 to +130°C	IP67	black	Polyester	galvanised steel			269
yes	yes	yes	yes	-25 to +90°C	IP67	black	Olefin	galvanised steel			270
				-20 to +60°C	IP66	orange		2 layers of PVC	E95745	232580	271
				-18 to +60°C	IP65	black		reinforced PVC	E96548	LL067241	272
				-18 to +105°C	IP65	black		PVC	E95745	LL80349	273
				-18 to +80°C	IP65	grey		PVC	E95745	LL80349	274
yes	yes	yes	yes	-50 to +300°C	IP40	metallic		galvanised steel			275
	yes	*	yes	-25 to +70°C	IP54***	black	PVC	galvanised steel			276
yes	yes	yes	yes	-40 to +105°C	IP66/IP69K	black		PA6	E96548		277
yes	yes	yes	yes	-40 to +105°C	IP66/IP69K	black		PA6	E96548		278
yes	yes	yes	yes	-40 to +105°C	IP66/IP69K	black		PA6	E96548		279
yes	yes			-50 to +90°C	IP66/IP69K	black		PA12			280

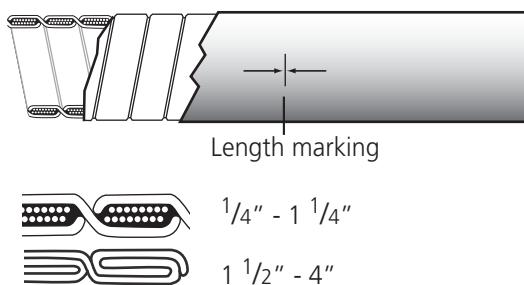
## Type TBEP - universal

Flexible metallic liquidtight conduits



- TBEP (now integrating the TBHT grade) conduit with heavy duty double interlocked / single interlocked (with packing) galvanised steel core
- Universal conduit for all liquidtight applications requiring good mechanical strength and flexibility: machinery, conveyors, etc.
- Cotton packing for high flexibility (up to 1 1/4")
- High performance acid and oil resistant, self-extinguishing PVC jacket
- High mechanical stability
- Tested and certified in accordance with DIN VDE 0605:1982-04 (File Nr: 24058-5410-0050 / 32CRB F41 / LR, Document Nr: 131354)
- Marked lengths (every 1 m) for quick and easy measuring and cutting

### Technical Information



Outer jacket	PVC, self-extinguishing within 30 seconds
Core	Galvanised steel
Packing	Cotton (up to 1 1/4")
Colour	Black or grey**
Temperature range	Static: -25°C to +105°C Flexing: -5°C to +105°C
Voltage breakdown (flash test)	> 2 kV
Insulation resistance	> 100 MΩ
IP rating	IP67, when correctly installed with Shureseal™ liquidtight fittings

\*\* (Grey available upon request. Suffix = G, e.g. TBEP0250-50G)

Product Ref.	Nominal size [inch]	Metric size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Min. bending radius [mm]	Mechanical values			Type of packaging
							min. tensile strength [N]	min. compression strength [N]		
TBEP0250-50*	1/4	10	50	6.2	11.4	45	500	1250	20.0	A
TBEP0312-50*	5/16	12	50	10.0	14.4	50	500	1250	22.2	A
TBEP0375-10	3/8	16	10	12.5	17.8	50	1000	1250	41.9	A
TBEP0375-75	3/8	16	75	12.5	17.8	50	1000	1250	41.9	B
TBEP0500-10	1/2	20	10	16.0	21.1	75	1000	1250	48.1	A
TBEP0500-60	1/2	20	60	16.0	21.1	75	1000	1250	48.1	B
TBEP0750-10	3/4	25	10	21.0	26.4	90	1000	1250	68.9	A
TBEP0750-50	3/4	25	50	21.0	26.4	90	1000	1250	68.9	C
TBEP1000-30	1	32	30	26.0	33.1	110	1000	1250	97.5	C
TBEP1250-30	1 1/4	40	30	34.8	41.8	130	1000	1250	123.3	C
TBEP1500-15*	1 1/2	50	15	40.4	47.7	190	2500	1250	144.8	C
TBEP2000-15*	2	63	15	51.6	60.0	250	2500	1250	161.0	C
TBEP2500-15*	2 1/2	75	15	63.3	72.6	480	2500	1250	298.0	C
TBEP3000-7*	3	90	7	78.4	88.4	760	2500	1250	327.8	C
TBEP4000-7*	4	115	7	102.1	113.8	860	2500	1250	394.4	C

\* Not VDE approved

Packaging sizes: A = box 370 x 370 x 180 mm, B = box 500 x 500 x 275 mm, C = reel 800 mm Ø

See page 281 for explanations on min. bending radius and temperature ranges

For Shureseal™ liquidtight fittings see pages 290 to 301

## Type TBDL - dual listed UL & CSA

Flexible metallic liquidtight conduits

- Type TBDL with UL / CSA approval, heavy duty double interlocked / single interlocked galvanised steel core
- Export and North-America oriented applications: multi-national projects, power plant, ...
- Copper wire packing for improved grounding (up to 1 1/4")
- High performance, acid- and oil-resistant PVC jacket, self-extinguishing in accordance with UL360
- Extremely high mechanical stability
- Marked lengths (every 1 m) for quick and easy measuring and cutting
- Silicone free

### Technical Information

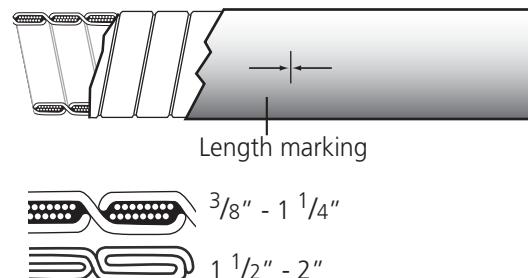
Outer jacket	PVC, self-extinguishing in 60 seconds
Core	Galvanised steel
Packing	Flat copper conductor (up to 1 1/4")
Colour	Black
Temperature range	Static: -25°C to +105°C (+120°C intermittent) Flexing: -5°C to +105°C UL rating: -10°C to +60°C CSA rating: -10°C to +75°C
IP rating	IP67, when correctly installed with Shureseal™ liquidtight fittings



091693



E125517



Product Ref.	Nominal size [inch]	Metric size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Min. bending radius [mm]	Mechanical values		Weight [kg/100 m]	Type of packaging
							min. tensile strength [N]	min. compression strength [N]		
TBDL0375-75	3/8	16	75	12.5	17.8	50	1000	4000	39.4	B
TBDL0500-60	1/2	20	60	16.0	21.1	80	1000	4000	48.5	B
TBDL0750-50	3/4	25	50	21.0	26.4	105	1000	1250	66.3	C
TBDL1000-30	1	32	30	26.0	33.1	165	1000	4000	112.0	C
TBDL1250-30	1 1/4	40	30	34.8	41.8	200	1000	1250	160.0	C
TBDL1500-15	1 1/2	50	15	40.4	47.7	280	2500	4000	193.5	C
TBDL2000-15	2	63	15	51.6	60.0	355	2500	1250	253.0	C

Packaging sizes: B = box 500 x 500 x 275 mm, C = reel 800 mm Ø

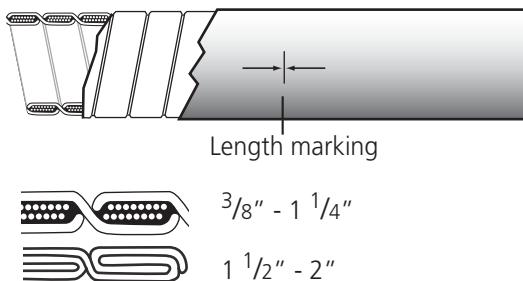
See page 281 for explanations on min. bending radius and temperature ranges

Other sizes available upon request - please contact your Sales Office

For Shureseal™ liquidtight fittings see pages 290 to 301

## Type TBOR - oil resistant

Flexible metallic liquidtight conduits



- Type TBOR, with heavy duty double interlocked / single interlocked (with packing) galvanised steel core
- Applications in greasy environments: machine tools, assembly machines, hydraulic machinery
- Cotton packing for high flexibility (up to 1 1/4")
- High performance acid- and oil-resistant PVC outer jacket, self-extinguishing within 30 seconds
- High mechanical stability in accordance with DIN 49 012
- Marked lengths (every 1m) for quick and easy measuring and cutting

### Technical Information

Outer jacket	PVC, self-extinguishing within 30 seconds
Core	Galvanised steel
Packing	Cotton (up to 1 1/4")
Colour	Black
Temperature range	Static: -25°C to +105°C Flexing: -5°C to +105°C
Voltage breakdown (flash test)	> 2 kV
Insulation resistance	> 100 MΩ
IP rating	IP67, when correctly installed with Shureseal™ liquidtight fittings

Product Ref.	Nominal size [inch]	Metric size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Min. bending radius [mm]	Mechanical values		Weight [kg/100 m]	Type of packaging
							min. tensile strength [N]	min. compression strength [N]		
TBOR0375-75	3/8	16	75	12.5	17.8	50	1000	1250	41.9	B
TBOR0500-60	1/2	20	60	16.0	21.1	75	1000	1250	48.1	B
TBOR0750-50	3/4	25	50	21.0	26.4	90	1000	1250	68.9	C
TBOR1000-30	1	32	30	26.0	33.1	110	1000	1250	97.5	C
TBOR1250-30	1 1/4	40	30	34.8	41.8	130	1000	1250	123.3	C
TBOR1500-15	1 1/2	50	15	40.4	47.7	190	2500	1250	144.8	C
TBOR2000-15	2	63	15	51.6	60.0	250	2500	1250	161.0	C

Packaging sizes: B = box 500 x 500 x 275 mm, C = reel 800 mm Ø

See page 281 for explanations on min. bending radius and temperature ranges

Other sizes available upon request - please contact your Sales Office

For Shureseal™ liquidtight fittings see pages 290 to 301

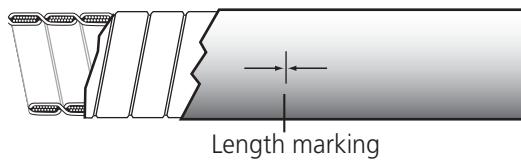
## Type TBEHC - extreme heat/cold

Flexible metallic liquidtight conduits

- Applications at extreme temperatures: refrigeration, transportation, industrial HVAC, heavy industries
- Very high tolerance to extreme changes in temperature
- Heavy duty double interlocked / single interlocked (with packing) galvanised steel core
- Cotton packing for high flexibility (up to 1 1/4")
- High performance acid- and oil-resistant Polyester jacket, self-extinguishing according to UL 94 V-2
- High mechanical stability in accordance with DIN 49 012
- Marked lengths (every 1m) for quick and easy measuring and cutting

### Technical Information

Outer jacket	Polyester, self-extinguishing within 30 seconds
Core	Galvanised steel
Packing	Cotton (up to 1 1/4")
Colour	Black
Temperature range	Static: -50°C to +130°C (+150°C intermittent) Flexing: -5°C to +130°C
Voltage breakdown (flash test)	> 2 kV
IP rating	IP67, when correctly installed with Shureseal™ liquidtight fittings



Product Ref.	Nominal size	Metric size	Length	Internal diameter	External diameter	Min. bending radius [mm]	Mechanical values		Weight [kg/100 m]	Type of packaging
							min. tensile strength [N]	min. compression strength [N]		
TBEHC0375-30	3/8	16	30	12.5	17.8	50	1000	1250	40.7	B
TBEHC0500-30	1/2	20	30	16.0	21.1	75	1000	1250	45.0	B
TBEHC0750-30	3/4	25	30	21.0	26.4	90	1000	1250	64.5	C
TBEHC1000-30	1	32	30	26.0	33.1	110	1000	1250	90.7	C
TBEHC1250-30	1 1/4	40	30	34.8	41.8	130	1000	1250	112.6	C
TBEHC1500-15	1 1/2	50	15	40.4	47.7	190	2500	1250	134.5	C
TBEHC2000-15	2	63	15	51.6	60.0	250	2500	1250	148.7	C

Packaging sizes: B= box 500 x 500 x 275 mm, C= reel 800 mm Ø

See page 281 for explanations on min. bending radius and temperature ranges

Other sizes available upon request - please contact your Sales Office

For Shureseal™ liquidtight fittings see pages 290 to 301

Special fittings (HT series) rated at 150°C are now available for high temperature applications - please contact your Sales Office for product availability.

TBEHC conduits with 316 grade stainless steel core (TBEHCSS series) can be available upon request - please contact your Sales Office for product availability and Minimum Order Quantities.

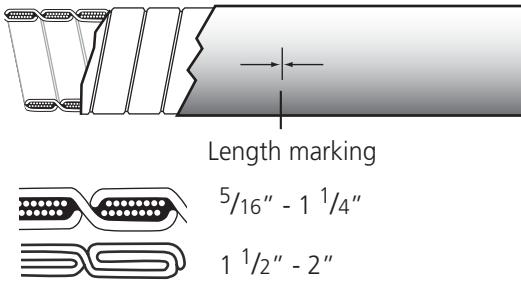
## Type TBZH - zero halogen

Flexible metallic liquidtight conduits



- Halogen free and low smoke outer jacket
- Ideal for applications where human lives can be a concern: public transportation, metro, train,...
- Heavy duty double interlocked / single interlocked (with packing) galvanised steel core
- Cotton packing for high flexibility (up to 1 1/4")
- High performance acid- and oil-resistant Olefin outer jacket, self-extinguishing within 30 seconds
- For use in safety areas (tunnels, public areas and transportation equipment)
- Marked lengths (every 1m) for quick and easy measuring and cutting
- NFF16-101 / NFF16-102 tested:  
I index = I3 (oxygen index = 40.7), F index = F1

### Technical Information



Outer jacket	Olefin, self-extinguishing within 30 seconds
Core	Galvanised steel
Packing	Cotton (up to 1 1/4")
Colour	Black
Temperature range	Static: -25°C to +90°C Flexing: -5°C to +90°C
Voltage breakdown (flash test)	> 2 kV
Insulation resistance	> 100 MΩ
IP rating	IP67, when correctly installed with Shureseal™ liquidtight fittings

Product Ref.	Nominal size [inch]	Metric size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Min. bending radius [mm]	Mechanical values		Weight [kg/100 m]	Type of packaging
							min. tensile strength [N]	min. compression strength [N]		
TBZH0375-75	3/8	16	75	12.5	17.8	60	1000	1250	41.9	B
TBZH0500-60	1/2	20	60	16.0	21.1	90	1000	1250	48.1	B
TBZH0750-50	3/4	25	50	21.0	26.4	110	1000	1250	68.9	C
TBZH1000-30	1	32	30	26.0	33.1	130	1000	1250	97.5	C
TBZH1250-30	1 1/4	40	30	34.8	41.8	160	1000	1250	123.3	C
TBZH1500-15	1 1/2	50	15	40.4	47.7	230	2500	1250	144.8	C
TBZH2000-15	2	63	15	51.6	60.0	300	2500	1250	161.0	C

Packaging sizes: B= box 500 x 500 x 275 mm, C = reel 800 mm Ø

For Shureseal™ liquidtight fittings see pages 290 to 301

See page 281 for explanations on min. bending radius and temperature ranges

## Type TYPEA - smooth outer surface

Flexible non-metallic liquidtight conduits

- UL and CSA approved
- Double layer construction offers a high level of mechanical stability for plastic tubing
- The Nylon lining between the 2 layers ensures a high level of flexibility
- High performance, durable acid- and oil resistant PVC outer jacket
- Perfectly designed for fittings which have to be safe, secure and electrically insulated
- Marked in lengths of 1 foot / 30.48 cm for quick and easy measuring and cutting
- High retention assured when used in association with T&B special fittings (Product Ref. 37XX and 63XX)

(see pages 302 and 303)



## Technical Information

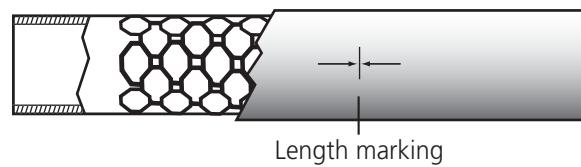
Material	2 layers of PVC with a woven Nylon fabric in between
Colour	Orange
Temperature range	-20°C to +60°C
IP rating	IP66, when correctly installed with Shureseal™ liquidtight fittings



232580



E95745



Product Ref.	Nominal size [inch]	Metric size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Min. bending radius [mm]	Weight [kg/100 m]
TYPEA38-250	3/8	16	76.2	12.32	19.63	63.5	23.3
TYPEA50-200	1/2	20	61.0	15.75	23.62	76.2	33.3
TYPEA75-175	3/4	25	53.3	20.70	29.72	101.6	46.7
TYPEA100-100	1	32	30.5	26.16	36.58	152.4	63.3
TYPEA125-100	1 1/4	40	30.5	34.80	46.36	177.8	93.3
TYPEA150-50	1 1/2	50	15.2	40.26	52.83	203.2	120.0
TYPEA200-50	2	63	15.2	52.71	65.79	228.6	180.0

For Shureseal™ liquidtight fittings for non-metallic conduits see pages 302 and 303  
 See page 281 for explanations on min. bending radius and temperature ranges

## Type EFC - with strengthened inner coil

Flexible non-metallic liquidtight conduits



- UL Type B liquidtight flexible non-metallic conduit, OEM grade
- Highly flexible, liquidtight plastic tubing with strengthened inner coil
- UV-resistant and weatherproof
- High chemical resistance
- UL recognised under File No. E 96548
- CSA approved File No. LL 067241
- Crush-resistant due to stiffening effects of strengthened inner coil
- The ultra-smooth inner surface ensures that cables and conductors can be fed through very easily
- Can be used with plastic or metallic T&B "Bullet" fittings (see pages 304 to 308)

### Technical Information



LL067241



E96548



Material	PVC
Colour	Black or orange* or blue*
Temperature range	-18°C to +75°C (CSA) -18°C to +60°C (UL)
IP rating	IP65, when correctly installed with Shureseal™ liquidtight fittings

Product Ref.	Nominal size [inch]	Metric size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Min. bending radius [mm]	Weight [kg/100 m]	Type of packaging
EFC025	1/4	10	30.5	10.0	14.6	20	7.3	reel
EFC038	3/8	16	30.5	12.3	18.0	25	10.7	reel
EFC050	1/2	20	30.5	15.8	21.3	30	12.4	reel
EFC075	3/4	25	30.5	20.8	26.7	40	15.3	reel
EFC100	1	32	30.5	26.4	33.4	50	23.8	reel
EFC125	1 1/4	40	30.5	35.1	42.2	60	31.6	reel
EFC150	1 1/2	50	15.2	40.0	48.3	70	43.8	reel
EFC200	2	63	15.2	51.3	60.3	85	59.5	reel

For Shureseal™ "Bullet" fittings see pages 304 to 308

\* For other colours add colour suffix to Product Reference. (e.g. EFC025-1 for orange conduit)  
Standard colour = black, 1 = orange, 2 = blue



See page 281 for explanations on min. bending radius and temperature ranges

## Type LTC - smooth outer surface

Flexible non-metallic liquidtight conduits

- UL Type B liquidtight flexible non-metallic conduit, industrial grade
- UL listed (E95745), CSA approved (LL80349)
- Highly flexible, with smooth outer jacket
- UV-resistant and weatherproof
- High chemical resistance
- The smooth inner surface ensures that cables and conductors can be fed through very easily
- Marked lengths (every 1 foot = 30.5 cm) for quick and easy measuring and cutting
- Can be used with plastic or metallic Shureseal™ "Bullet" fittings (see pages 304 to 308)
- Recommended industrial applications include: food processing equipment, extensions from wireways, sensor and microswitch control consoles



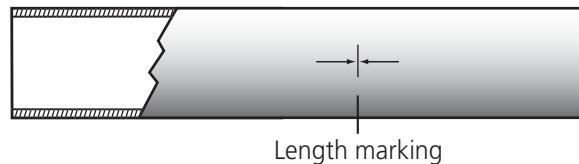
LL80349



E95745

### Technical Information

Material	PVC
Colour	Black or blue* or orange*
Temperature range	-18°C to +105°C
CSA rating:	-18°C to +75°C
UL rating:	-18°C to +105°C (dry) -18°C to +70°C (oil) -18°C to +60°C (wet)
Voltage rating	600V
Flammability rating	UL1660
UL specifications	Oil resistant: yes Outdoor applications: yes (black version only) Direct burial: yes
IP rating	IP65, when correctly installed with Shureseal™ plastic or metallic "Bullet" fittings



Length marking

Product Ref.	Nominal size [inch]	Metric size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Weight [kg/100 m]
LTC038	3/8	16	30.5	12.3	18.0	19.0
LTC050	1/2	20	30.5	15.8	21.3	22.0
LTC075	3/4	25	30.5	20.8	26.7	27.2
LTC100-TB	1	32	30.5	26.4	33.4	42.3
LTC125-TB	1 1/4	40	30.5	35.1	42.2	56.1
LTC150-TB	1 1/2	50	15.2	40.0	48.3	77.8
LTC200	2	63	15.2	51.3	60.3	105.7

Suitable for use in hazardous location where general purpose equipment is specifically permitted by the NEC Class I Div. 2, Class II, Div. 1 & 2 Class III, Div. 1 & 2, NEC 501-4(b) 502-4(a)(b) 503-3(a)(b).

Other lengths can be available - please contact your Sales Office for availability

For Shureseal™ "Bullet" fittings, see pages 304 to 308

\* For other colours add colour suffix to Product Reference. (e.g. LTC050-1 for orange conduit)

Standard colour = black, 1 = orange, 2 = blue



## Type LTC-GY - smooth outer surface

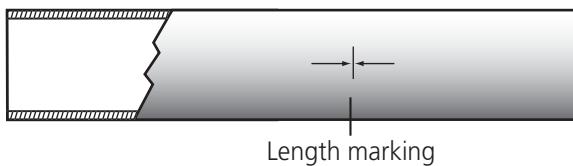
Flexible non-metallic liquidtight conduits



LL80349



E95745



- UL Type B liquidtight flexible non-metallic conduit, commercial grade
- UL listed (E95745), CSA approved (LL80349)
- Highly flexible, with smooth outer jacket
- UV-resistant and weatherproof
- High chemical resistance
- The smooth inner surface ensures that cables and conductors can be fed through very easily
- Can be used with plastic or metallic Shureseal™ "Bullet" fittings (see pages 304 to 308)
- Recommended for commercial applications

### Technical Information

Material	PVC
Colour	Grey
Temperature range	-18°C to +80°C
	UL rating: -18°C to +80°C (dry)
	-18°C to +70°C (oil)
	-18°C to +60°C (wet)
Voltage rating	600V
UL specifications	Oil resistant: yes Outdoor applications: yes Direct burial: yes
IP rating	IP65, when correctly installed with Shureseal™ plastic or metallic "Bullet" fittings

Product Ref.	Nominal size [inch]	Metric size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Weight [kg/100 m]
LTC038GY	3/8	16	30.5	12.3	18.0	19.0
LTC050GY	1/2	20	30.5	15.8	21.3	22.0
LTC075GY	3/4	25	30.5	20.8	26.7	27.2
LTC100GY	1	32	30.5	26.4	33.4	42.3
LTC125GY	1 1/4	40	30.5	35.1	42.2	56.1
LTC150GY	1 1/2	50	15.2	40.0	48.3	77.8
LTC200GY	2	63	15.2	51.3	60.3	105.7

Other lengths can be available – please contact your Sales Office for availability  
For Shureseal™ "Bullet" fittings, see pages 304 to 308

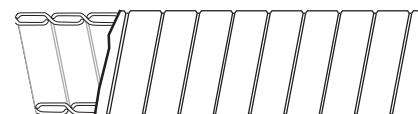
## Type UGS - uncovered version

*Ultra-flexible galvanised steel conduits*

- Highly crush-resistant with an excellent pull off strength
- An economic solution for the protection of cables in industrial and commercial applications where there is flexing, bending or vibration
- Stainless steel grade 316 conduits and fittings are available for specialised applications. Please contact your Sales Office for any specific requirements
- Wide choice of male fittings (fixed or swivel) with PG or metric threads, as well as a space saver version
- Typical applications include amongst others: lighting, security cameras, underfloor wiring, transport and machine-tools

### Technical Information

Outer jacket	None
Core	Continuous spiral in galvanised steel
Colour	Metallic
Temperature range	-50°C to +300°C
IP rating	IP40, when correctly installed with Shureflex® fittings



Product Ref.	Nominal size [mm]	Length [m]	Min. inner diameter [mm]	Max. outer diameter [mm]	Min. bending radius [mm]	Weight [kg/100 m]	Type of packaging
UGS1010	10	10	7.0	9.6	20	8.4	box
UGS1030	10	30	7.0	9.6	20	8.4	box
UGS1210	12	10	10.0	12.8	20	12.9	box
UGS1230	12	30	10.0	12.8	20	12.9	box
UGS1610	16	10	12.9	16.1	24	15.6	box
UGS1630	16	30	12.9	16.1	24	15.6	box
UGS2010	20	10	17.0	20.2	32	21.7	box
UGS2030	20	30	17.0	20.2	32	21.7	box
UGS2510	25	10	21.1	24.7	32	27.0	box
UGS2530	25	30	21.1	24.7	32	27.0	box
UGS3210	32	10	28.4	32.0	32	36.0	box
UGS3220	32	20	28.4	32.0	32	36.0	box
UGS4010	40	10	36.4	40.1	44	45.5	box
UGS4020	40	20	36.4	40.1	44	45.5	box
UGS5010	50	10	48.2	53.2	95	98.5	box
UGS5020	50	20	48.2	53.2	95	98.5	box

For T&B Shureflex® fittings see pages 313 and 314

For stainless steel grade 316 conduits please contact your Sales Office

See page 281 for explanations on min. bending radius and temperature ranges

## Type PGS - covered version

*Ultra-flexible galvanised steel conduits*



- Highly crush-resistant with an excellent pull off strength
- Improved IP rating (IP54), compared to the uncovered conduits (special fittings with IP65 rating are also available upon request)
- An economic solution for the protection of cables in industrial and commercial applications where there is flexing, bending or vibration
- Wide choice of male fittings (fixed or swivel) and female fittings (fixed), both with PG or metric threads, as well as a space saver version
- Typical applications include amongst others: lighting, security cameras, underfloor wiring, transport and machine-tools

### Technical Information

Outer jacket	Low acid PVC*
Core	Continuous spiral in galvanised steel
Colour	Black
Temperature range	-25°C to +70°C
IP rating	IP54, (or IP65 **), when correctly installed with Shureflex® fittings

\* Limited Fire Hazard covering available upon request

\*\* With special fitting, upon request

Product Ref.	Nominal size [mm]	Length [m]	Min. inner diameter [mm]	Max. outer diameter [mm]	Min. bending radius [mm]	Weight [kg/100 m]	Type of packaging
PGS1010	10	10	7.0	10.3	30	12.5	box*
PGS1030	10	30	7.0	10.3	30	12.5	box*
PGS1210	12	10	10.0	13.8	30	19.8	box*
PGS1230	12	30	10.0	13.8	30	19.8	box*
PGS1610	16	10	12.9	17.1	35	23.1	box*
PGS1630	16	30	12.9	17.1	35	23.1	box*
PGS2010	20	10	17.0	21.2	40	31.4	box*
PGS2030	20	30	17.0	21.2	40	31.4	box*
PGS2510	25	10	21.1	25.7	50	38.5	box*
PGS2530	25	30	21.1	25.7	50	38.5	box*
PGS3210	32	10	28.4	33.0	60	51.7	box*
PGS3220	32	20	28.4	33.0	60	51.7	box*
PGS4010	40	10	36.4	41.1	80	64.4	box*
PGS4020	40	20	36.4	41.1	80	64.4	box*
PGS5010	50	10	48.2	54.9	180	116.0	box*
PGS5020	50	20	48.2	54.9	180	116.0	box*

\* Packed in a cardboard box which contains a reel

For T&B Shureflex® fittings see pages 315 and 316

See page 281 for explanations on min. bending radius and temperature ranges

## Type LG - Light grade (PA6)

*Ultra-flexible nylon conduits*

- Specially modified Polyamide 6
- Light grade: cost effective version
- Resistant to fuel, mineral oils, greases and diluted bases
- To be used with the Shureflex® Nylon Fittings to provide a water-tight system (rated IP66) without the need for any additional accessory
- For the insulation and the mechanical protection of electrical cables in industrial applications, in accordance with EN60204 (Machine Safety)
- Typical applications include: general wiring, machine tools, industrial equipment, control equipment and automotive
- For slit version please contact your sales office for product availability

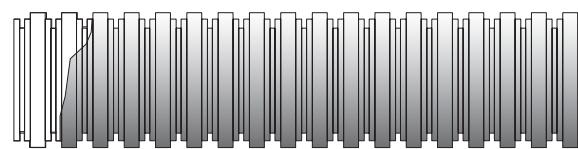


### Technical Information

Material	Polyamide 6
Colour	Black
Temperature range	-40°C to +105°C (intermittent: to +150°C)
Flammability rating	UL 94 HB
IP rating	IP66, with Shureflex® Nylon fittings IP69K, with Shureflex® Nylon fittings and additional Shureflex® washer and O-ring
Other properties	Halogen, Phosphor and Cadmium free, UV-resistant



E96548



Product Ref.	Nominal size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Min. bending radius [mm]	Type of packaging
NY-LG07-BK50	7	50	6.3	10.0	15	reel
NY-LG10-BK50	10	50	9.7	13.0	20	reel
NY-LG12-BK50	12	50	12.2	15.8	30	reel
NY-LG17-BK50	17	50	16.8	21.2	40	reel
NY-LG23-BK50	23	50	22.6	28.5	55	reel
NY-LG29-BK50	29	50	28.3	34.5	65	reel
NY-LG36-BK30	36	30	36.3	42.5	80	reel
NY-LG48-BK30	48	30	47.4	54.5	95	reel

For Shureflex® Nylon Fittings & Accessories: see pages 317 to 325  
See page 281 for explanations on min. bending radius and temperature ranges

## Type SG - Standard grade (PA6)

*Ultra-flexible nylon conduits*

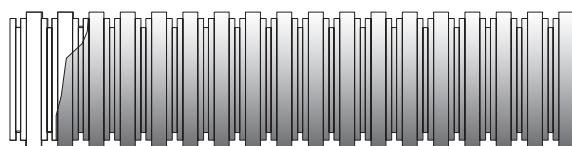


- High performance Polyamide 6
- Standard grade: very flexible and light
- Resistant to fuel, mineral oils, greases and diluted bases
- To be used with the Shureflex® Nylon Fittings to provide a water-tight system (rated IP66) without the need for any additional accessory
- For the insulation and the mechanical protection of electrical cables in industrial applications, in accordance with EN60204 (Machine Safety)
- Typical applications include: general wiring, machine tools, industrial equipment, control equipment and automotive

### Technical Information



E96548



Material	Polyamide 6
Colour	Black
Temperature range	-40°C to +105°C (intermittent: to +150°C)
Flammability rating	UL 94 V-2 (produced from UL 94 V-0 raw material)
IP rating	IP66, with Shureflex® Nylon fittings IP69K, with Shureflex® Nylon fittings and additional Shureflex® washer and O-ring
Other properties	Halogen, Phosphor and Cadmium free, UV-resistant

Product Ref.	Nominal size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Min. bending radius [mm]	Type of packaging
NY-SG07-BK50	7	50	6.3	10.0	15	reel
NY-SG10-BK50	10	50	9.7	13.0	20	reel
NY-SG12-BK50	12	50	12.2	15.8	30	reel
NY-SG17-BK50	17	50	16.8	21.2	40	reel
NY-SG23-BK50	23	50	22.6	28.5	55	reel
NY-SG29-BK50	29	50	28.3	34.5	65	reel
NY-SG36-BK30	36	30	36.3	42.5	80	reel
NY-SG48-BK30	48	30	47.4	54.5	95	reel

For Shureflex® Nylon Fittings & Accessories: see pages 317 to 325  
See page 281 for explanations on min. bending radius and temperature ranges

## Type MG - Medium grade (PA6)

*Ultra-flexible nylon conduits*

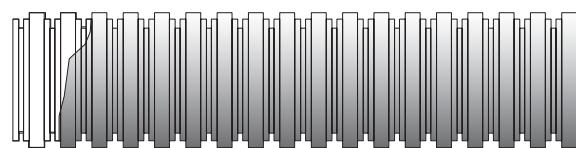
- High performance Polyamide 6
- Medium grade: flexible with increased mechanical strength (crush and impact resistance)
- Resistant to fuel, mineral oils, greases and diluted bases
- To be used with the Shureflex® Nylon Fittings to provide a water-tight system (rated IP66) without the need for any additional accessory
- For the insulation and the mechanical protection of electrical cables in industrial applications, in accordance with EN60204 (Machine Safety)
- Typical applications include: machine tools and machinery, industrial equipment, production equipment and railway industry

**Technical Information**

Material	Polyamide 6
Colour	Black
Temperature range	-40°C to +105°C (intermittent: to +150°C)
Flammability rating	UL 94 V-2 (produced from UL 94 V-0 raw material)
IP rating	IP66, with Shureflex® Nylon fittings IP69K, with Shureflex® Nylon fittings and additional Shureflex® washer and O-ring
Other properties	Halogen, Phosphor and Cadmium free, UV-resistant



E96548



Product Ref.	Nominal size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Min. bending radius [mm]	Type of packaging
NY-MG07-BK50	7	50	6.2	10.0	20	reel
NY-MG10-BK50	10	50	9.6	13.0	25	reel
NY-MG12-BK50	12	50	12.0	15.8	35	reel
NY-MG17-BK30	17	30	16.5	21.2	50	reel
NY-MG23-BK30	23	30	22.3	28.5	60	reel
NY-MG29-BK30	29	30	28.2	34.5	70	reel
NY-MG36-BK30	36	30	36.0	42.5	85	reel
NY-MG48-BK30	48	30	47.1	54.5	100	reel

For Shureflex® Nylon Fittings & Accessories: see pages 317 to 325  
See page 281 for explanations on min. bending radius and temperature ranges

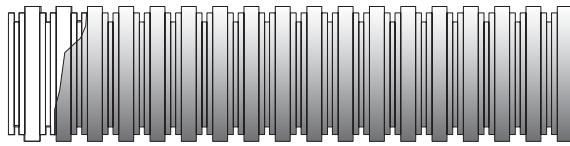
## Type EG - Extra Flexible grade (PA12)

*Ultra-flexible nylon conduits*



- High performance Polyamide 12
- Extremely flexible, even at negative temperatures and in very dry atmospheres
- Resistant to fuel, mineral oils, greases and diluted bases
- To be used with the Shureflex® Nylon Fittings to provide a water-tight system (rated IP66) without the need for any additional accessory
- For the insulation and the mechanical protection of electrical cables in industrial applications, in accordance with EN60204 (Machine Safety)
- Especially recommended for demanding applications requiring repetitive bending and flexing movements, such as robotics, automation, production equipment

### Technical Information



Material	Polyamide 12
Colour	Black
Temperature range	-50°C to +90°C (intermittent: to +140°C)
Flammability rating	UL 94 HB
IP rating	IP66, with Shureflex® Nylon fittings IP69K, with Shureflex® Nylon fittings and additional Shureflex® washer and O-ring
Other properties	Halogen, Phosphor and Cadmium free, UV-resistant

Product Ref.	Nominal size [mm]	Length [m]	Internal diameter [mm]	External diameter [mm]	Min. bending radius [mm]	Type of packaging
NY-EG07-BK50	7	50	6.5	10.0	20	reel
NY-EG10-BK50	10	50	9.5	13.0	25	reel
NY-EG12-BK50	12	50	12.0	15.8	35	reel
NY-EG17-BK30	17	30	16.4	21.2	50	reel
NY-EG23-BK30	23	30	22.6	28.5	60	reel
NY-EG29-BK30	29	30	28.1	34.5	70	reel
NY-EG36-BK10	36	10	36.0	42.5	85	reel
NY-EG48-BK10	48	10	47.5	54.5	100	reel

For Shureflex® Nylon Fittings & Accessories: see pages 317 to 325  
See page 281 for explanations on min. bending radius and temperature ranges

## Degree of protection (IP rating)

Material specifications

Degrees of Protection of enclosures according to DIN 40050  
IEC 144/529

IP (Ingress Protection) and 2 figures (IPXY) indicates the protection class, the first figure X indicating the degree of protection against ingress of solid foreign objects, and the second figure Y indicating the degree of protection against ingress of water.



Degree of protection X	Protection of equipment against ingress of solid foreign objects	Degree of protection Y	Protection of equipment against ingress of water
0	Non-protected	0	Non-protected
1	Protected against solid foreign objects of 50 mm ø & greater	1	Protected against vertically falling water drops
2	Protected against solid foreign objects of 12.5 mm ø & greater	2	Protected against vertically falling water drops when enclosure is tilted up to 15°
3	Protected against solid foreign objects of 2.5 mm ø & greater	3	Protected against spraying water
4	Protected against solid foreign objects of 1.0 mm ø & greater	4	Protected against splashing water
5	Dust-protected	5	Protected against water jets
6	Dust-tight	6	Protected against powerful water jets
		7	Protected against the effects of temporary immersion in water
		8	Protected against the effects of continuous immersion in water subject to agreement
		9K	Protected against the effects of high-pressure, high temperature steam cleaning: spray nozzle with 80 °C water at 8–10 MPa (80–100 bar) pressure (according to DIN 40050-9)

(CHART-IP Protection in accordance with DIN 40050 / IEC 144/529 )

Minimum Bending Radius  
Material specifications

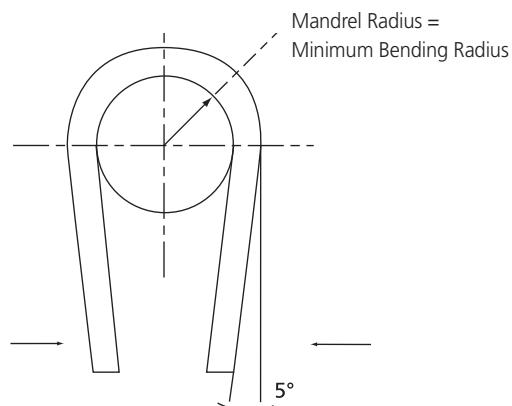
A flexible conduit is able to bend repetitively without permanent deformation. A way to compare the flexibility of different conduits is to define the amplitude of the bending that they can withstand, for example by bending the conduit around a cylindrical object (mandrel) of known radius.

While bending the conduit around a mandrel of large radius remains easy, this operation is getting more and more stringent when the radius is decreased, and the smallest radius that can be reached before damaging the conduit is called the Minimum Bending Radius. Therefore the conduits having smaller Minimum Bending Radius can be qualified as more flexible.

The method for checking the conduit bending is carried out by bending the conduit half turn around a solid mandrel at the Minimum Bending Radius.

As materials get stiffer at low temperatures, the use of the conduits in flexing mode is limited to a narrower range of temperatures than their use in static mode, as shown in the technical specifications of the conduits.

The Minimum Bending Radius shown in the tables is suitable for both the flexing mode (within the flexing temperature range) and the static mode (within the static temperature range)



## Prescriptions & specifications

### Material specifications

#### Conduits: directions for use

Below are a few short extracts taken from the relevant prescriptions.

VDE 0113/12.73

Metal tubing, pipes and conduits must be used in accordance with the prescribed safety standard.

Paragraph 10.3.1 states that all conduits must be designed to protect against the expected demands made on the product. This is to say, for example, that cable can only be fed through conduit if it is suitably protected from liquids, dust (IP-Protection) and other foreign substances.

Surfaces with which the laid conduits come into contact - such as edges, threads etc. should not damage the insulation of the conduit.

#### Fittings: directions for use

Conduits and fitting assemblies must be installed in accordance with VDE 0113.

It is not adequate just to feed the conduit into a housing. The conduit must be installed using a lock nut and fitting, which ensure a good electrical connection between the conduit and housing. The conduit must not reduce the protective capability of the housing.

In order to ensure the effective installation of the conduit, it is important not only to use a suitable conduit but also to use the appropriate type of fitting. (see IEC-204)

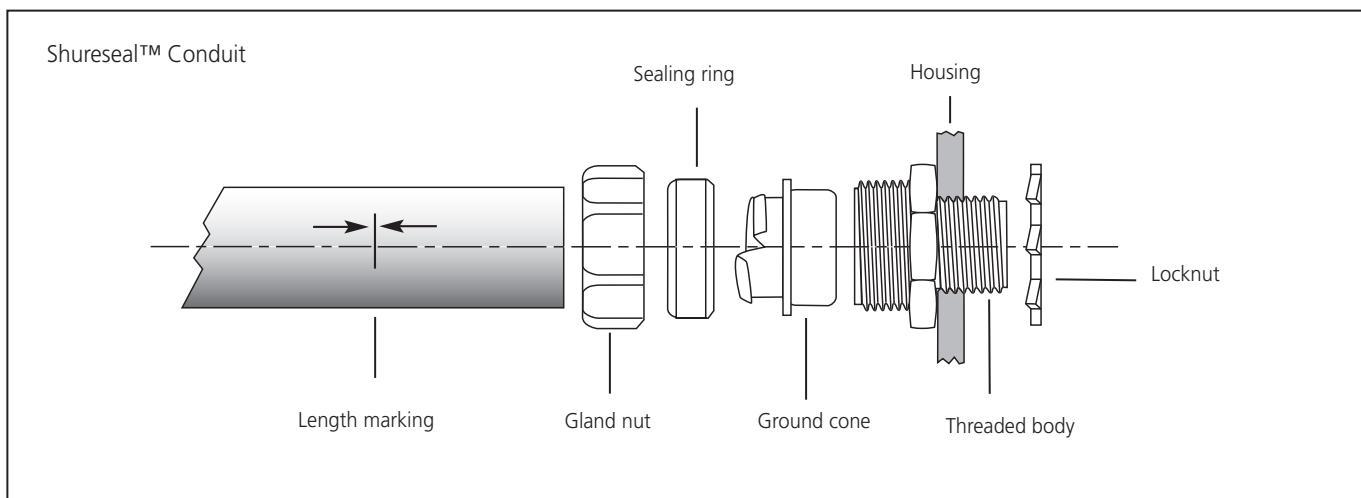
#### Specifications

Shureseal™ fittings and conduits satisfy the following specifications:

- for heavy industrial applications in accordance with DIN 49012.
- according to IP67 rating
- according to DIN/VDE 0650, section, 2.1.1b
- according to BS731, part 1
- and have the necessary approvals (UL/CSA and VDE)

#### Installation

Installation is simple. The fitting screws easily onto the conduit, without the need for special tools. The fitting can be removed and re-used again at any time. The fitting also performs excellently against severe vibration. The conduit is not deformed by the fitting. In tests, the fittings have been shown to be extremely secure and guarantee a high level of security and reliability.



## Material specifications table

## Material specifications

This chart gives an indication of the capabilities of the Shureseal™ liquidtight flexible metallic conduits. It is extremely difficult to provide data on all possible combinations or conditions that can occur.

Therefore it is recommended that this information should be used as a guideline and that the conduit should be tested in the intended application by the user, to determine suitability. If you have specific requirements, please contact Technical Support.

Chemical	TBEF	TBOR	TBHC	TBZH	TBDL	EFC LTC LTC-GY	TYPEA	PGS
<b>OILS AND HYDROCARBONS</b>								
ASTM Oil No 1	T	T	G	P	T	G	-	T
ASTM Oil No 2	T	T	G	P	L	-	-	L
ASTM Oil No 3	T	T	G	P	T	L	L	T
Diesel Oil	T	T	T	T	T	L	L	T
Lubricating Oil	L	L	G	L	L	G	G	L
Paraffin Oil	G	G	T	T	G	G	-	G
Petrol	G	G	L	T	G	-	-	G
Skydrol 500B	T	T	G	T	T	-	P	T
Transformer Oil	T	T	T	T	T	-	-	T
Vegetable Oils	T	T	T	T	T	-	G	T
<b>ORGANIC SOLVENTS</b>								
Acetone	P	P	L	P	P	P	P	P
Benzene	P	P	L	P	P	P	P	P
Ethyl Alcohol	P	P	L	L	P	G	L	P
Ethylene Glycol	L	L	G	T	L	G	G	L
Eteon 12	T	T	G	T	T	-	-	T
Methyl Alcohol	P	P	G	L	P	G	L	P
Methyl Ethyl Ketone	T	T	L	P	T	P	P	T
Toluene 100 %	P	P	L	L	P	P	P	P
Turpentine 100 %	L	L	T	L	L	L	L	L
White Spirit	T	T	T	L	T	-	-	T
<b>ACIDS AND SALTS GIVING ACID SOLUTIONS</b>								
Acetic Acid 10 %	G	G	G	T	G	G	G	G
Acetic Acid 20 %	L	L	G	T	L	-	-	L
Hydrochloric Acid 10 %	-	-	-	-	-	-	G	-
Hydrochloric Acid 20 %	L	L	L	P	L	G	-	L
Hydrochloric Acid 40 %	-	-	-	-	-	-	L	-
Lactic Acid (90%)	T	T	T	T	T	P	-	T
Oxalic Acid	G	G	T	T	G	G	G	G
Zinc Chloride	G	G	G	T	G	G	G	G
<b>BASES AND SALTS GIVING BASIC SOLUTIONS</b>								
Aluminium Chloride (10%)	G	G	G	G	G	G	G	G
Sodium Hydroxide (20%)	T	T	G	G	T	G	G	T
Sodium Hydroxide (45%)	T	T	L	L	T	G	G	T
<b>OTHERS</b>								
Ozone Gas	G	G	T	T	G	-	-	G
Sea Water	G	G	G	G	G	G	G	G

G = Good

L = Limited

P = Poor

T = No data available

likely to have minor effect



Fittings  
Metal and plastic fittings  
with positive sealing  
against liquids and dust

## CONDUIT &amp; FITTINGS

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## 4.3 SHURESEAL™ CABLE GLANDS



# Shureseal™ and Shureflex® Fittings & Accessories

All our high-performance products are designed to deliver excellent reliability as well as ease of installation in virtually any application. Thomas & Betts offers two ranges of fittings for its Shureseal™ and Shureflex® flexible conduits

## Shureseal™ liquidtight fittings for metallic conduits

Thomas & Betts offers the largest and most technologically advanced line of liquidtight fittings in the industry, including connectors for highly-specialised applications such as power and petrochemical plants, paper mills, robot manufacturers, packaging equipment, machine tool building, and other OEM and MRO applications. At Thomas & Betts, we integrate the



## *Metal and Plastic fittings with positive sealing against liquids and dust*

latest manufacturing technologies with the highest quality materials available. So you can be assured of reliable, liquidtight products that offer improved on-the-job performance and reduced installation time and costs.

### **Shureseal™ liquidtight fittings for non-metallic conduits**

This engineering breakthrough meets the demand for a tough, reusable, non-metallic liquidtight fitting for use with TYPEA, EFC, LTC conduits or flexible tubing.

The BULLET® non-metallic fitting provides a reliable liquidtight seal that combines high pullout resistance and ease of installation.

### **Shureflex® fittings for galvanised steel conduits**

Wide choice of fittings especially manufactured for Shureflex® galvanised steel conduits

- Manufactured in nickel-plated brass for a professional quality and finish
- Highly crush resistant with an excellent pull-off strength

Ideal for industrial and commercial applications where flexibility, crush and vibration resistance are required  
Offers an economic solution for the protection of cables for industrial and commercial applications

### **Shureflex® fittings for nylon conduits**

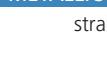
The Shureflex® Nylon conduit and fittings from Thomas & Betts provide all the benefits of a Halogen free, flexible watertight system of protection for electrical cables.

In particular, the high performance fitting, with its unique self-locking mechanism, allows a quick and secure installation with a watertight protection and an outstanding mechanical strength.

With four different grades of conduits and a wide range of fittings and accessories available in black, this system is ideally suitable for all types of applications in general wiring, industrial equipment, machine tools and machinery, production equipment, control equipment, robotics, automotive, transportation, railway.

## Selection guide

### Fittings and accessories

Fitting style type	Conduit	TB series	TYPEA	EFC	LTC series
<b>SHURESEAL™ FLEXIBLE METALLIC LIQUIDTIGHT CONDUITS</b>					
 	straight	Flexible metallic liquidtight conduits	X		
 	45° angled	Flexible metallic liquidtight conduits	X		
 	90° angled	Flexible metallic liquidtight conduits	X		
 	chase	Flexible metallic liquidtight conduits	X		
	hub & adaptor	Flexible metallic liquidtight conduits	X		
<b>SHURESEAL™ FLEXIBLE NON-METALLIC LIQUIDTIGHT CONDUITS</b>					
 	straight	Flexible non-metallic liquidtight conduits	X	X	X
 	45° angled	Flexible non-metallic liquidtight conduits	X	X	X
 	90° angled	Flexible non-metallic liquidtight conduits	X	X	X
	chase	Flexible non-metallic liquidtight conduits		X	X
<b>SHUREFLEX® FLEXIBLE METALLIC CONDUITS</b>					
	straight male	Flexible metallic conduits			
	straight female	Flexible metallic conduits			
	swiveled	Flexible metallic conduits			
	chase	Flexible metallic conduits			
<b>SHUREFLEX® ULTRA-FLEXIBLE NYLON CONDUITS</b>					
	straight	Ultra-flexible nylon conduits			
	45° angled	Ultra-flexible nylon conduits			
	90° angled	Ultra-flexible nylon conduits,			
	T-split	Ultra-flexible nylon conduits			

UGS PGS	NY series	ISO metric thread	NPT thread	Imperial thread	PG thread	UNEF thread	Approvals	Material	IP rating	Page
		X	X	X	X		UL / CSA	steel / stainless steel	IP67	292
		X	X	X	X		UL / CSA	steel / stainless steel	IP67	296
		X	X	X	X		UL / CSA	steel / stainless steel	IP67	294
							UL / CSA	steel	IP67	300
		X	X		X	UL / CSA	steel	IP67	301	
		X	X			UL / CSA / meets coast guard cg293	steel / thermoplastic	IP65 / IP66	from 302 to 307	
		X	X			UL / CSA	steel / thermoplastic	IP65 / IP66	from 302 to 307	
		X	X			UL / CSA / meets coast guard cg293	steel / thermoplastic	IP65 / IP66	from 302 to 307	
							steel	IP65	308	
		X	X		X		brass	IP40 / IP54	from 313 to 316	
		X	X		X		brass	IP40 / IP54	from 313 to 316	
		X	X		X		brass	IP40 / IP54	from 313 to 316	
		X					brass	IP40 / IP54	from 313 to 316	
		X	X		X	UL	Polyamide 6	IP66 / IP69K	318	
		X	X		X	UL	Polyamide 6	IP66 / IP69K	319	
		X	X		X	UL	Polyamide 6	IP66 / IP69K	320	
		X					Polyamide 6	IP66 / IP69K	321	

## Product description

### Liquidtight fittings for flexible metallic conduits

A standard fitting assembly is made of 4 pieces:

1. A screw body with a nylon throat on the connection side
2. The ground cone
3. The patented Nylon sealing ring
4. A gland nut

In addition, a locknut is supplied with the fittings with NPT thread.

#### Double Bevelled Sealing Ring

Unique sealing mechanism to prevent backwards installation. Look for the unique T&B Blue colour, ensuring the highest quality liquidtight product available.

#### Sure-Tight™ Gland Nuts

deflects water away from connector and prevents "pooling" of moisture. Look for the distinctive "Pumpkin" appearance of the gland nut.

**Self-Cleaning Threads** inside the gland nut keep dirt and grime out of the threads as you tighten.

#### Safe Edge™ Ground Cone

Provides superior bonding, stronger pullout and easy threading into the conduit core. The electrical continuity is ensured while the rounded edge protects the cable.

**Double Plating** for superior corrosion protection. Zinc plating with clear Chromate finish.

#### Precision Rolled Threads

provides smooth, easy installations and is stronger than cut threads. The body is drawn steel for exceptional strength and quality.

#### Heat Curled Insulator

curled inside the body provides excellent wire protection and easier glide of the conductors through and into the fitting. Also, the heat-curved finish gives the insulator more strength compared to "glue-in" versions. Look for the distinctive blue insulator for your assurance of T&B quality.

#### Case-Hardened Locknut with Teeth

provides superior strength and electrical bonding and can be installed without a wrench in the enclosure.

## Product description

*Liquidtight fittings for flexible metallic conduits*

When correctly installed, the Shureseal™ fittings produce a positive seal against oil, liquids, moisture and dust.

The main features of the assembly include:

- a high resistance to conduit pull-off and a great resistance to vibration from machines
- an excellent earth continuity
- simplicity of installation: ability to install quickly by hand (or with standard spanners or wrenches, but no special tools are needed)
- the fittings will not damage or distort the flexible conduit.
- the nylon throat bush makes it easier to pull wires through without risk of damage.
- the fittings have a rugged construction and can be disconnected and reused.
- available with N.P.T., Imperial, P.G. and metric (I.S.O.) threads
- excellent IP ratings

The patented ground cone design offers the following advantages:

- it compresses the metallic convolutions of the conduit, providing a high quality ground contact with low impedance and a high conduit pull-off resistance
- the single helical thread on the ground cone is easy to install without cross threading
- it tolerates variations in conduit diameters and convolution pitch
- its rolled-over edge protects the conductors

The patented sealing ring design has the following exclusive features:

- it grips and seals the conduit without damaging the conduit jacket
- its symmetrical shape assures a foolproof assembly
- it ensures a positive seal against oils, liquids, moisture and dust

The range of fittings includes 5 different styles:

- straight version
- 45° version
- 90° version
- "Chase" = compact version for confined spaces, behind panels and boxes
- "Female Hub" version, for connecting flexible conduit direct to rigid conduit and flexible conduits

### Approvals

- C.E.G.B. approved (UK)
- UL listed Liquidtight File No E 23018
- ISO threads per BS 4568
- PG threads per DIN 40430
- Canadian Standard Association: File No. 002884, File No. LR 52391, File No. LR 82069

### Easy assembly without the requirement of any special tooling

1. Slide the gland nut and the sealing ring onto the conduit



2. Screw the ground cone into the conduit (between the convolutions) as far as possible



3. Screw the body and the gland nut together and tighten



## Straight fittings

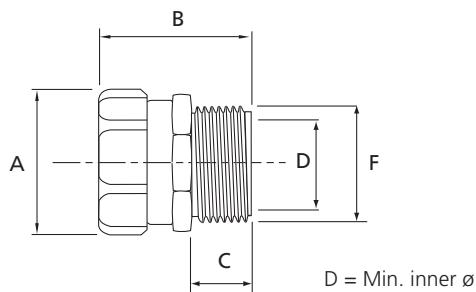
Liquidtight fittings for flexible metallic conduits



002884



E23018



- High-performance fittings for Shureseal™ Liquidtight conduits
- Safe and effective installation without any efforts
- The fitting is composed of 4 parts: the threaded body, the zinc plated steel ground cone, the nylon sealing ring and the gland nut ensuring an easy assembly without the need for specific tools
- The steel ground cone which is screwed into the conduit ensures an excellent earthing continuity and pull-off strength, as well as a very good resistance against vibrations
- Re-useable and independent replacement parts
- Special fittings (HT series) rated at 150°C are available for high temperature applications - please contact your Sales Office for product availability

### Technical Information

Conduit type	Shureseal™ flexible metallic conduit
Style	Straight
Thread	Metric (I.S.O.) and PG
IP rating	IP67
Material	Galvanised steel chromate finish
Inner sleeve and sealing ring	Polyamide
Colour	Metallic

Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size	A [mm]	B [mm]	C [mm]	D [mm]	F [mm]	Weight [kg/100]	Quantity
<b>STRAIGHT FITTING WITH METRIC (I.S.O.) THREAD</b>										
9306*	5/16	12	M16	22	36	12	10.0	16.0	5.1	25
9307	5/16	12	M20	22	36	12	10.0	20.0	5.1	25
9330*	1/4	10	M16	22	36	12	6.0	16.0	3.5	25
9331*	1/4	10	M20	22	36	12	6.0	20.0	3.5	25
9360	3/8	16	M16	29	40	16	11.0	16.0	6.3	25
9361	3/8	16	M20	29	40	16	11.0	20.0	6.3	25
9362	1/2	20	M20	35	42	16	14.5	20.0	8.1	25
9363	3/4	25	M25	42	45	16	20.0	25.0	12.6	25
9364	1	32	M32	47	54	15	25.0	32.0	23.0	5
<b>STRAIGHT FITTING WITH PG THREAD</b>										
7329	1/4	10	PG 7	12	23	6	5.6	12.2	2.2	25
7330*	1/4	10	PG 9	21	36	12	6.0	15.2	3.5	25
7360*	5/16	12	PG 9	26	36	12	10.0	15.2	5.1	25
7361	3/8	16	PG 11	29	40	14	11.0	18.6	6.3	25
7362	3/8	16	PG 13.5	29	40	14	11.0	20.4	6.3	25
7363	1/2	20	PG 16	35	41	14	14.5	22.5	8.1	25
7364	3/4	25	PG 21	42	43	14	20.0	28.3	12.6	25
7365	1	32	PG 29	47	56	19	25.0	37.0	23.0	5
7366	1 1/4	40	PG 36	58	67	21	33.5	47.0	41.4	5
7367	1 1/2	50	PG 42	69	72	21	38.5	54.0	47.3	2
7368	2	63	PG 48	83	81	21	49.5	59.3	72.0	1

\* The products with a \* are not UL/CSA approved

## Straight fittings

Liquidtight fittings for flexible metallic conduits

- High-performance fittings for Shureseal™ Liquidtight conduits
- Safe and effective installation without any efforts
- The fitting is composed of 4 parts: the threaded body, the zinc plated steel ground cone, the nylon sealing ring and the gland nut ensuring an easy assembly without the need for specific tools
- A locknut is supplied with the fittings with NPT thread
- The steel ground cone which is screwed into the conduit ensures an excellent earthing continuity and pull-off strength, as well as a very good resistance against vibrations
- Re-useable and independent replacement parts
- Special fittings (HT series) rated at 150°C are available for high temperature applications - please contact your Sales Office for product availability

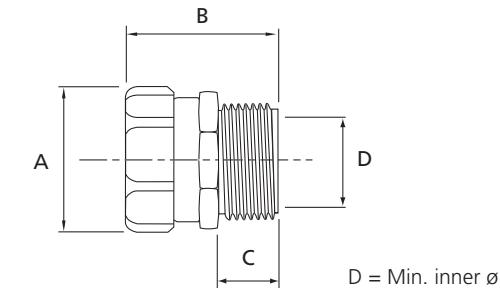
### Technical Information

Conduit type	Shureseal™ flexible metallic conduit
Style	Straight
Thread	NPT and Imperial
IP rating	IP67
Material	Galvanised steel chromate finish
Inner sleeve and sealing ring	Polyamide
Colour	Metallic



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Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size [inch]	A [mm]	B [mm]	Dimensions C [mm]	D [mm]	Weight [kg/100]	Quantity [pieces]
<b>STRAIGHT FITTING WITH NPT THREAD (SUPPLIED WITH LOCKNUT)</b>									
5229*	1/4	10	1/4"	21	35	12	6.0	3.5	25
5330*	5/16	12	3/8"	25	35	12	10.0	5.1	25
5331	3/8	16	1/2"	29	38	14	11.0	6.3	25
5332	1/2	20	1/2"	35	40	14	14.5	8.1	25
5333	3/4	25	3/4"	42	41	14	20.0	12.6	25
5334-TB	1	32	1"	48	52	19	25.0	23.0	10
5335	1 1/4	40	1 1/4"	58	64	21	33.5	41.4	5
5336	1 1/2	50	1 1/2"	69	68	21	38.5	47.3	2
5337	2	63	2"	83	78	22	49.5	72.0	5
5338	2 1/2	75	2 1/2"	95	105	25	61.0	135.5	5
5339	3	90	3"	114	108	25	75.0	168.8	5
5340	4	115	4"	140	114	29	99.0	275.4	1
<b>STRAIGHT FITTING WITH IMPERIAL THREAD</b>									
6365	1 1/4	40	1 1/2"	58	64	21	33.5	41.4	5
6366	1 1/2	50	2"	69	68	21	38.5	47.3	2
6367	2	63	2 1/2"	83	78	22	49.5	72.0	5

\* The products with a \* are not UL/CSA approved and are supplied without locknut

## 90° fittings

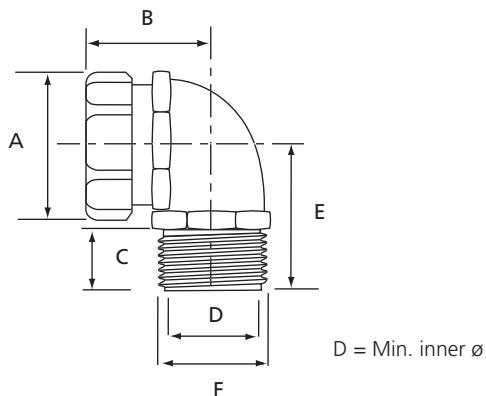
Liquidtight fittings for flexible metallic conduits



002884



E23018



- High-performance fittings for Shureseal™ Liquidtight conduits
- Safe and effective installation without any efforts
- The fitting is composed of 4 parts: the threaded body, the zinc plated steel ground cone, the nylon sealing ring and the gland nut ensuring an easy assembly without the need for specific tools
- The steel ground cone which is screwed into the conduit ensures an excellent earthing continuity and pull-off strength, as well as a very good resistance against vibrations
- Re-useable and independent replacement parts
- Special fittings (HT series) rated at 150°C are available for high temperature applications - please contact your Sales Office for product availability

## Technical Information

Conduit type	Shureseal™ flexible metallic conduit
Style	90°
Thread	Metric (I.S.O.) and PG
IP rating	IP67
Material	Galvanised steel chromate finish
Inner sleeve and sealing ring	Polyamide
Colour	Metallic

Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Weight [kg/100]	Quantity
<b>90° FITTING WITH METRIC (I.S.O.) THREAD</b>											
9350	3/8	16	M16	28	35	16	10.1	34	16.0	12.6	25
9351	3/8	16	M20	28	35	16	10.1	34	20.0	12.6	25
9352-TB	1/2	20	M20	34	39	16	14.5	34	20.0	14.4	25
9353-TB	3/4	25	M25	42	43	16	20.0	38	25.0	20.2	10
9354-TB	1	32	M32	47	48	23	25.0	43	32.0	30.6	5
<b>90° FITTING WITH PG THREAD</b>											
7351	3/8	16	PG 11	29	37	14	11.0	33	18.6	12.6	25
7352	3/8	16	PG 13.5	29	37	14	11.0	33	20.4	12.6	25
7353	1/2	20	PG 16	35	40	14	14.5	37	22.5	14.4	25
7354	3/4	25	PG 21	42	44	14	20.0	39	28.3	20.2	5
7355	1	32	PG 29	47	56	21	25.0	48	37.0	30.6	5
7356	1 1/4	40	PG 36	58	70	21	33.5	56	47.0	54.0	5
7357	1 1/2	50	PG 42	69	75	21	38.5	61	54.0	72.0	2
7358	2	63	PG 48	83	87	24	49.5	66	59.3	103.5	1

## 90° fittings

Liquidtight fittings for flexible metallic conduits

- High-performance fittings for Shureseal™ Liquidtight conduits
- Safe and effective installation without any efforts
- The fitting is composed of 4 parts: the threaded body, the zinc plated steel ground cone, the nylon sealing ring and the gland nut ensuring an easy assembly without the need for specific tools
- A locknut is supplied with the fittings with NPT thread
- The steel ground cone which is screwed into the conduit ensures an excellent earthing continuity and pull-off strength, as well as a very good resistance against vibrations
- Re-useable and independent replacement parts
- Special fittings (HT series) rated at 150°C are available for high temperature applications - please contact your Sales Office for product availability

### Technical Information

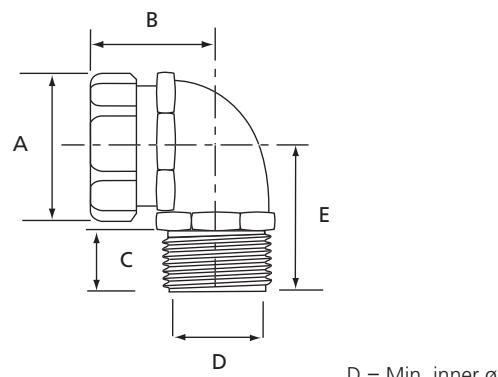
Conduit type	Shureseal™ flexible metallic conduit
Style	90°
Thread	NPT and Imperial
IP rating	IP67
Material	Galvanised steel chromate finish
Inner sleeve and sealing ring	Polyamide
Colour	Metallic



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Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size [inch]	A [mm]	B [mm]	Dimensions C [mm]	D [mm]	E [mm]	Weight [kg/100]	Quantity
<b>90° FITTING WITH NPT THREAD (SUPPLIED WITH LOCKNUT)</b>										
5351	3/8	16	1/2"	29	35	14	11.0	33	12.6	25
5352	1/2	20	1/2"	35	40	14	14.5	37	14.4	25
5353	3/4	25	3/4"	42	45	14	20.0	39	20.2	10
5354	1	32	1"	48	56	19	25.0	48	30.6	5
5355	1 1/4	40	1 1/4"	58	70	21	33.5	56	54.0	5
5356	1 1/2	50	1 1/2"	69	75	21	38.5	61	72.0	5
5357	2	63	2"	83	287	22	49.5	66	103.5	2
5358	2 1/2	75	2 1/2"	95	225	25	61.0	149	270.0	1
5359	3	90	3"	114	260	25	75.0	219	393.8	1
5360	4	115	4"	140	321	29	99.0	299	551.0	1
<b>90° FITTING WITH IMPERIAL THREAD</b>										
6355	1 1/4	40	1 1/2"	58	64	21	33.5	56	54.0	5

## 45° fittings

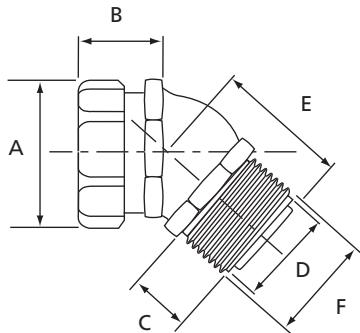
Liquidtight fittings for flexible metallic conduits



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D = Min. inner Ø

- High-performance fittings for Shureseal™ Liquidtight conduits
- Safe and effective installation without any efforts
- The fitting is composed of 4 parts: the threaded body, the zinc plated steel ground cone, the nylon sealing ring and the gland nut ensuring an easy assembly without the need for specific tools
- The steel ground cone which is screwed into the conduit ensures an excellent earthing continuity and pull-off strength, as well as a very good resistance against vibrations
- Re-useable and independent replacement parts
- Special fittings (HT series) rated at 150°C are available for high temperature applications - please contact your Sales Office for product availability

## Technical Information

Conduit type	Shureseal™ flexible metallic conduit
Style	45°
Thread	Metric (I.S.O.) and PG
IP rating	IP67
Material	Galvanised steel chromate finish
Inner sleeve and sealing ring	Polyamide
Colour	Metallic

Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	Weight [kg/100]	Quantity
<b>45° FITTING WITH METRIC (I.S.O.) THREAD</b>											
9340	3/8	16	M16	28	35	16	10.1	34	16.0	12.6	25
9341	3/8	16	M20	28	35	16	10.1	34	20.0	12.6	25
9342	1/2	20	M20	34	39	16	14.5	34	20.0	14.4	25
9343-TB	3/4	25	M25	42	43	16	20.0	38	25.0	20.2	10
9344	1	32	M32	47	48	23	25.0	43	32.0	30.6	5
<b>45° FITTING WITH PG THREAD</b>											
7341	3/8	16	PG 11	29	37	14	11.0	33	18.6	12.6	25
7342	3/8	16	PG 13.5	29	37	14	11.0	33	20.4	12.6	25
7343	1/2	20	PG 16	35	40	14	14.5	37	22.5	14.4	25
7344-TB	3/4	25	PG 21	42	44	14	20.0	39	28.3	20.2	5
7345	1	32	PG 29	47	56	21	25.0	48	37.0	30.6	5
7346	1 1/4	40	PG 36	58	70	21	33.5	56	47.0	54.0	5
7347	1 1/2	50	PG 42	69	75	21	38.5	61	54.0	72.0	2
7348-TB	2	63	PG 48	83	87	24	49.5	66	59.3	103.5	1

## 45° fittings

Liquidtight fittings for flexible metallic conduits

- High-performance fittings for Shureseal™ Liquidtight conduits
- Safe and effective installation without any efforts
- The fitting is composed of 4 parts: the threaded body, the zinc plated steel ground cone, the nylon sealing ring and the gland nut ensuring an easy assembly without the need for specific tools
- A locknut is supplied with the fittings with NPT thread
- The steel ground cone which is screwed into the conduit ensures an excellent earthing continuity and pull-off strength, as well as a very good resistance against vibrations
- Re-useable and independent replacement parts
- Special fittings (HT series) rated at 150°C are available for high temperature applications - please contact your Sales Office for product availability

### Technical Information

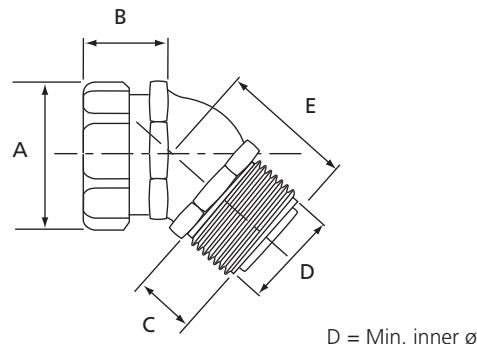
Conduit type	Shureseal™ flexible metallic conduit
Style	45°
Thread	NPT and Imperial
IP rating	IP67
Material	Galvanised steel chromate finish
Inner sleeve and sealing ring	Polyamide
Colour	Metallic



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Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size [inch]	A [mm]	B [mm]	Dimensions C [mm]	D [mm]	E [mm]	Weight [kg/100]	Quantity
<b>45° FITTING WITH NPT THREAD (SUPPLIED WITH LOCKNUT)</b>										
5341	3/8	16	1/2"	29	35	14	11.0	33	12.6	25
5342	1/2	20	1/2"	35	40	14	14.5	37	14.4	25
5343	3/4	25	3/4"	42	45	14	20.0	39	20.2	10
5344	1	32	1"	48	56	19	25.0	48	30.6	5
5345	1 1/4	40	1 1/4"	58	70	21	33.5	56	54.0	5
5346	1 1/2	50	1 1/2"	69	75	21	38.5	61	72.0	2
5347	2	63	2"	83	287	22	49.5	66	103.5	1
5348*	2 1/2	75	2 1/2"	95	225	25	61.0	149	270.0	1
5349*	3	90	3"	114	260	25	75.0	219	393.8	1
5350*	4	115	4"	140	321	29	99.0	299	551.0	1
<b>45° FITTING WITH IMPERIAL THREAD</b>										
6346	1 1/2	50	2"	69	68	21	38.5	61	72.0	2

\* The Product Ref. with a \* are not UL/CSA approved

## Straight stainless steel fittings

Liquidtight fittings for flexible metallic conduits

**NEW**



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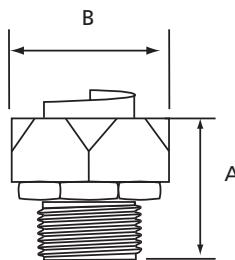


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- Ideal for industrial MRO and OEM applications in food and beverage, pharmaceutical, petrochemical, wastewater, salt water, and other corrosive environments
- 304 stainless steel body and gland-nut resists corrosion far better than other metallic fittings
- Stronger, more UV-resistant than non metallic fittings

### Technical Information

Conduit type	Shureseal™ flexible metallic conduit
Style	straight
Thread	Metric (I.S.O.) and NPT
IP rating	IP67
Material	304 stainless steel
Inner sleeve and sealing ring	Blue Polyamide
Colour	Metallic



Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size	Dimensions A [mm]	Dimensions B [mm]	Weight [kg/100]	Quantity [pieces]
<b>STRAIGHT FITTING WITH METRIC (I.S.O.) THREAD</b>							
9361SST	3/8	16	M20	34.5	27.0	5.2	25
9362SST	1/2	20	M20	34.5	30.0	6.2	25
<b>STRAIGHT FITTING WITH NPT THREAD</b>							
5331SST-EU	3/8	16	3/8	34.5	25.9	5.2	25
5332SST-EU	1/2	20	1/2	34.5	30.0	6.2	25
5333SST-EU	3/4	25	3/4	35.3	34.8	8.9	25
5334SST-EU	1	32	1	39.7	45.0	17.9	5
5335SST	1 1/4	40	1 1/4	43.7	53.9	27.9	5
5336SST	1 1/2	50	1 1/2	51.3	63.0	43.8	5
5337SST	2	63	2	59.3	77.2	73.5	2

## 45° and 90° stainless steel fittings

Liquidtight fittings for flexible metallic conduits

- Ideal for industrial MRO and OEM applications in food and beverage, pharmaceutical, petrochemical, wastewater, salt water, and other corrosive environments
- 304 stainless steel body and gland-nut resists corrosion far better than other metallic fittings
- Stronger, more UV-resistant than non metallic fittings

### Technical Information

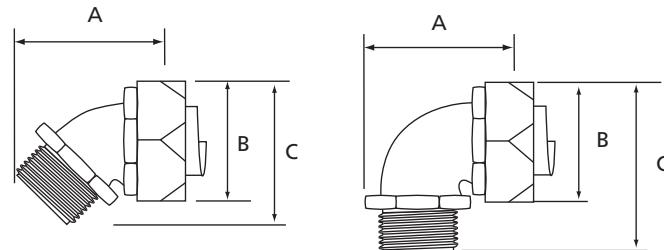
Conduit type	Shureseal™ flexible metallic conduit
Style	45° and 90°
Thread	Metric (I.S.O.) and NPT
IP rating	IP67
Material	304 stainless steel
Inner sleeve and sealing ring	Blue Polyamide
Colour	Metallic



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Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size	Dimensions A [mm]	Dimensions B [mm]	Dimensions C [mm]	Weight [kg/100]	Quantity [pieces]
<b>45° FITTING WITH METRIC (I.S.O.) THREAD</b>								
9341SST	3/8	16	M20	46.7	27.0	-	7.5	25
9342SST	1/2	20	M20	41.2	30.0	-	10.6	25
<b>45° FITTING WITH NPT THREAD</b>								
5341SST-EU	3/8	16	3/8	46.7	25.9	36.3	7.5	25
5342SST-EU	1/2	20	1/2	41.2	30.0	51.8	10.6	25
5343SST-EU	3/4	25	3/4	59.0	34.8	49.0	15.7	10
5344SST-EU	1	32	1	72.6	45.0	60.2	26.5	5
5345SST	1 1/4	40	1 1/4	84.6	53.9	71.1	45.2	5
5346SST	1 1/2	50	1 1/2	100.1	63.0	86.1	69.1	2
5347SST	2	63	2	120.1	77.2	107.4	125.0	1
<b>90° FITTING WITH METRIC (I.S.O.) THREAD</b>								
9351SST	3/8	16	M20	49.5	27.0	-	9.5	25
9352SST	1/2	20	M20	53.9	30.0	-	14.5	25
<b>90° FITTING WITH NPT THREAD</b>								
5351SST-EU	3/8	16	3/8	49.5	25.9	46.7	9.5	25
5352SST-EU	1/2	20	1/2	53.9	30.0	52.6	14.5	25
5353SST-EU	3/4	25	3/4	62.7	34.8	62.0	22.0	10
5354SST-EU	1	32	1	75.7	45.0	73.7	31.7	5
5355SST	1 1/4	40	1 1/4	89.7	53.9	85.3	57.6	5
5356SST	1 1/2	50	1 1/2	105.7	63.0	98.6	82.9	2
5357SST	2	63	2	218.4	77.2	119.1	143.0	1

## "Chase" fittings, straight or right-angled

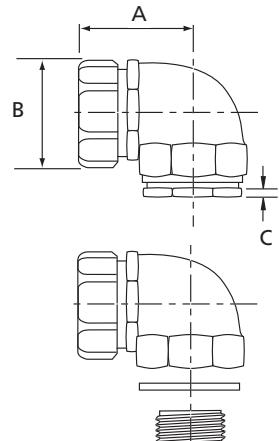
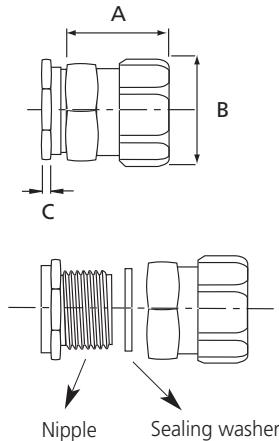
Liquidtight fittings for flexible metallic conduits



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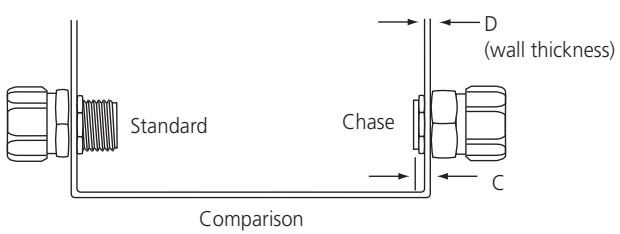
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- High-performance fittings for Shureseal™ liquidtight conduits
- Special compact version (CHASE) for space-saving assembly, thanks to the male nipple (supplied with the fitting) that can be screwed into the female thread of the body
- Safe and effective installation without any efforts
- The fitting is composed of 6 parts: the threaded body, the steel ground cone, the nylon sealing ring, the gland nut, the sealing washer and a male nipple, ensuring an easy assembly without the need for specific tools
- The steel ground cone which is screwed into the conduit ensures an excellent earthing continuity and pull-off strength, as well as a very good resistance against vibrations
- Re-useable and independent replacement parts

### Technical Information

Conduit type	Shureseal™ flexible metallic conduit
Style/thread	Straight, 90° angled / NPT threads
IP rating	IP67
Material	Zinc plated steel
Insulation throat and sealing ring	Polyamide
Colour	Metallic



Comparison

Product Ref.	For conduit size [inch]	Dimensions [mm]	For wall thickness (D) up to [mm]	Installation hole diameter [mm]	Weight [kg/100]	Quantity
STRAIGHT CHASE FITTING (SUPPLIED WITH MALE NIPPLE AND SEALING WASHER)						
5361	3/8	16	35	3.2	5	22.2
5362	1/2	20	35	4.7	5	22.2
5363	3/4	25	41	6.3	8	27.8
5364	1	32	52	6.3	10	33.3
5365	1 1/4	40	60	7.9	12	44.5
5366	1 1/2	50	69	9.5	13	50.8
5367	2	63	76	9.5	15	63.5
5368	2 1/2	75	100	11.1	15	76.2
5369	3	90	105	12.2	17	92.1
5370	4	115	111	19.0	19	117.5
90° CHASE FITTING (SUPPLIED WITH MALE NIPPLE AND SEALING WASHER)						
5371	3/8	16	38	3.2	5	22.2
5372	1/2	20	37	4.7	5	22.2
5373	3/4	25	48	6.3	8	27.8
5374	1	32	57	6.3	10	33.3

## Female hub and adaptor fittings

Liquidtight fittings for flexible metallic conduits

- Special type hub fitting with female (internal) thread for connecting flexible conduits to rigid conduits or for connecting 2 flexible conduits together (using male fittings)
- Special type adaptor fitting with female (internal) thread for connecting flexible conduits to AN-MS connector shells (such as MIL-C-5015 connectors and accessories)
- Safe and effective installation without any efforts
- The fitting is composed of 4 parts: the threaded body, the zinc plated steel ground cone, the nylon sealing ring and the gland nut ensuring an easy assembly without the need for specific tools
- The steel ground cone which is screwed into the conduit ensures an excellent earthing continuity and pull-off strength, as well as a very good resistance against vibrations
- Re-useable and independent replacement parts



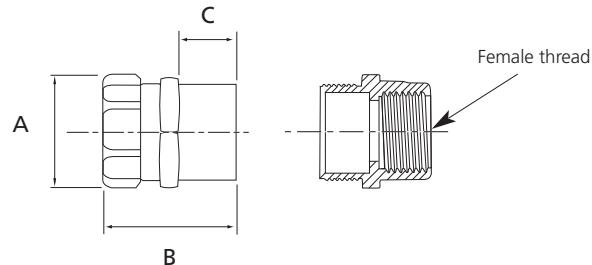
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### Technical Information

Conduit type	Shureseal™ flexible metallic conduits		
Style	Straight		
Thread	NPT, Metric (I.S.O.) and UNEF female threads		
IP rating	IP67		
Material	Zinc plated steel		
Insulation throat and sealing ring	Polyamide		
Colour	Metallic		



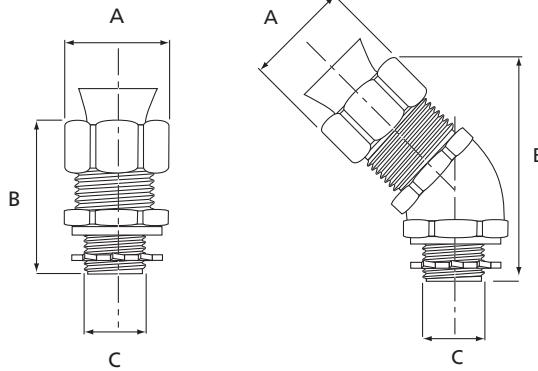
Product Ref.	For conduit size [inch]	For conduit size [mm]	Inner thread	AN-MS connector Shell size	Dimensions A [mm]	Dimensions B [mm]	Dimensions C [mm]	Weight [kg/100]	Quantity [pieces]
<b>STRAIGHT FEMALE HUB FITTING WITH METRIC (I.S.O.) THREAD</b>									
9270	3/8	16	M16	–	28	40	15	7.0	25
9271	3/8	16	M20	–	30	40	15	7.2	25
9272	1/2	20	M20	–	34	43	15	10.0	25
9273	3/4	25	M25	–	42	45	15	14.5	25
9274	1	32	M32	–	47	54	15	19.0	5
<b>STRAIGHT FEMALE HUB FITTING WITH NPT THREAD</b>									
5271	3/8	16	1/2"	–	25	40	15	7.2	25
5272	1/2	20	1/2"	–	32	43	15	10.0	25
5273	3/4	25	3/4"	–	38	44	15	14.5	25
5274	1	32	1"	–	44	54	20	19.0	10
5275	1 1/4	40	1 1/4"	–	58	64	20	32.6	5
5276	1 1/2	50	1 1/2"	–	70	68	20	54.4	5
5277	2	63	2"	–	88	78	25	72.5	5
<b>STRAIGHT ADAPTORS FITTING WITH UNEF THREAD</b>									
LTA03810	3/8	16	5/8" - 24 UNEF-2B	10SL, 12, 12S	25.4	11.9	–	6.8	25
LTA03814	3/8	16	3/4" - 20 UNEF-2B	14, 14S	25.4	11.9	–	7.3	25
LTA05014	1/2	20	3/4" - 20 UNEF-2B	14, 14S	31.8	23.8	–	8.7	25
LTA05016	1/2	20	7/8" - 20 UNEF-2B	16, 16S	31.8	23.8	–	8.7	25
LTA05018	1/2	20	1" - 20 UNEF-2B	18	31.8	23.8	–	8.7	25
LTA07516	3/4	25	7/8" - 20 UNEF-2B	16, 16S	38.1	27.0	–	13.6	25
LTA07518	3/4	25	1" - 20 UNEF-2B	18	38.1	27.0	–	13.6	25
LTA07520	3/4	25	13/16" - 18 UNEF-2B	20, 22	38.1	27.0	–	13.6	25
LTA10020	1	32	13/16" - 18 UNEF-2B	20, 22	43.7	44.5	–	21.0	10
LTA10024	1	32	17/16" - 18 UNEF-2B	25, 28	43.7	44.5	–	21.0	10

## Type TYPEA - metallic fittings

Liquidtight fittings for non-metallic conduits



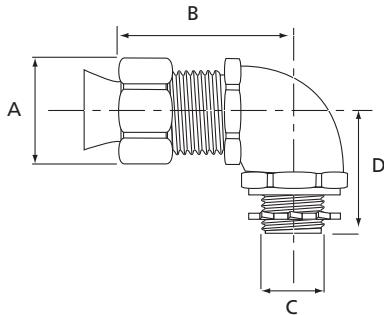
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- Easy installation
- Inner polyamide sleeve for protection of conductors
- Liquid- and dust-tight in accordance with IP66
- High mechanical stability (high retention)
- Supplied with locknut and sealing washer

### Technical Information

Conduit type	Shureseal™ conduit type TYPEA
Style/thread	Straight, 45°, 90° / NPT thread
IP rating	IP66
Material	Galvanised steel, chromate finish
Connecting sleeve and internal insulation	Polyamide 6.6
Sealing washer	Santoprene
Colour	Metallic



Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size [inch]	Dimensions A [mm]	B [mm]	C [mm]	D [mm]	Weight [kg/100]	Quantity [pieces]
<b>STRAIGHT FITTING WITH NPT THREAD (SUPPLIED WITH LOCKNUT AND SEALING WASHER)</b>									
3720-TB*	3/8	16	1/2	29.4	51.0	12.0	—	8.2	25
3721-TB	1/2	20	1/2	34.9	54.0	16.0	—	9.1	25
3722-TB	3/4	25	3/4	41.3	57.2	21.0	—	13.6	25
3723	1	32	1	47.6	63.5	26.0	—	23.6	10
3724-TB	1 1/4	40	1 1/4	60.3	76.2	35.0	—	40.0	5
3725	1 1/2	50	1 1/2	69.9	85.7	41.0	—	59.0	2
3726	2	63	2	89.7	92.1	50.0	—	118.0	1
<b>45° FITTING WITH NPT THREAD (SUPPLIED WITH LOCKNUT AND SEALING WASHER)</b>									
3730-TB*	3/8	16	1/2	29.4	51.6	12.0	—	5.4	25
3731-TB	1/2	20	1/2	34.9	65.1	16.0	—	8.2	25
3732	3/4	25	3/4	41.3	76.2	21.0	—	20.8	10
3733-TB	1	32	1	47.6	88.9	26.0	—	31.2	5
3734-TB	1 1/4	40	1 1/4	60.3	104.8	35.0	—	54.4	5
3735-TB	1 1/2	50	1 1/2	69.9	123.8	41.0	—	77.0	2
<b>90° FITTING WITH NPT THREAD (SUPPLIED WITH LOCKNUT AND SEALING WASHER)</b>									
3740*	3/8	16	1/2	29.4	41.3	12.0	33.3	5.0	25
3741	1/2	20	1/2	34.9	44.5	16.0	35.7	7.7	25
3742	3/4	25	3/4	41.3	57.2	21.0	39.7	22.6	10
3743-TB	1	32	1	47.6	65.1	26.0	47.6	30.7	5
3744-TB	1 1/4	40	1 1/4	60.3	82.6	35.0	57.2	54.4	5
3745	1 1/2	50	1 1/2	69.9	88.9	41.0	60.3	77.0	2
3746-TB	2	63	2	89.7	104.8	53.2	73.0	145.0	1

\* The Product Ref. with a \* are not UL approved

## Type TYPEA - plastic fittings

Liquidtight fittings for non-metallic conduits

- Easy installation
- High strength, chemical resistant, non-burning, non dripping thermoplastic construction
- Smooth insulated body throughout for maximum dielectric strength
- Ideal for corrosion resistant applications
- Liquid- and dust-tight in accordance with IP66
- Serrated design provides high mechanical pullout strength
- Supplied with steel locknut and sealing O-ring

### Technical Information

Conduit type	Shureseal™ conduit type TYPEA
Style	Straight, 90°
Thread	NPT
IP rating	IP66
Material	Thermoplastic
Gland nut	Thermoplastic
O-Ring	Neoprene
Locknut	Steel, case hardened and zinc plated
Colour	Blue
Flammability rating	UL 94 V-0

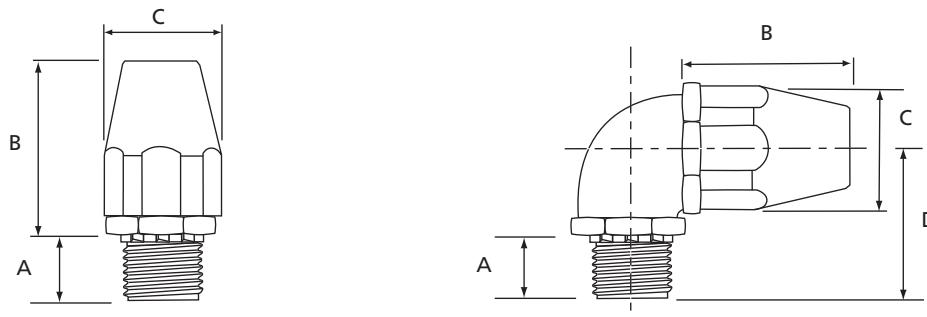


MEETS  
COAST  
GUARD



CG293

E23018



Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size [inch]	A [mm]	B [mm]	C [mm]	D [mm]	Quantity [pieces]
<b>STRAIGHT PLASTIC FITTING WITH NPT THREAD (SUPPLIED WITH LOCKNUT AND SEALING 'O' RING)</b>								
6302	1/2	20	1/2	37.6	57.9	14.5	–	20
6303	3/4	25	3/4	44.7	62.5	19.1	–	10
6304	1	32	1	53.3	67.6	24.4	–	5
6305	1 1/4	40	1 1/4	67.8	78.5	32.0	–	5
<b>90° PLASTIC FITTING WITH NPT THREAD (SUPPLIED WITH LOCKNUT AND SEALING 'O' RING)</b>								
6322	1/2	20	1/2	37.6	39.6	14.5	39.9	10
6323	3/4	25	3/4	44.7	44.2	19.1	43.4	10
6324	1	32	1	53.3	45.2	24.4	50.8	5
6325	1 1/4	40	1 1/4	67.8	54.1	32.0	61.2	5

## Type EFC / LTC / LTC-GY - plastic Bullet fittings

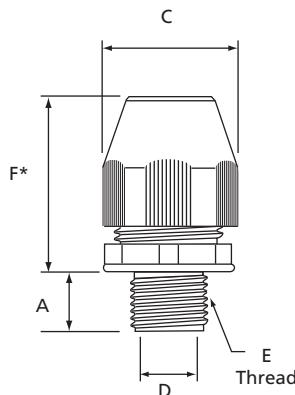
Liquidtight fittings for non-metallic conduits



LR52391



E23018



\* Variable dimensions

- Liquid-tight, dust-tight and oil-resistant
- Thomas & Betts patented quick connecting feature designed to prevent unlocking
- The spiral-shaped EFC conduit coil locks into fitting
- No loose pieces - secure against vibration
- Supplied with sealing washer O-ring
- Fittings with NPT threads are supplied with locknut

### Technical Information

Conduit type	Shureseal™ conduit type EFC / LTC / LTC-GY
Style	Straight
Thread	NPT and Metric (I.S.O.)
IP rating	IP65
Material	UV-resistant thermoplastic
Locknut	Zinc plated steel
O-ring	Nitryl
Colour	Black
Temperature range	-45°C to +105°C
Flammability rating	Self-extinguishing according to UL 94 V-2

Product Ref.	For conduit size [inch] [mm]	Thread size E	Dimensions A [mm]	Dimensions C [mm]	D Min. throat diameter [mm]	F* Approx. [mm]	Weight [kg/100]	Quantity [pieces]
<b>STRAIGHT FITTING WITH METRIC (I.S.O.) THREAD</b>								
LT38PISO20	3/8	16	M20	14.5	34.4	10.6	40.5	3.9
LT50PISO20	1/2	20	M20	14.5	36.8	14.0	41.6	4.1
LT75PISO25	3/4	25	M25	14.8	44.2	18.8	44.6	6.3
<b>STRAIGHT FITTING WITH NPT THREAD (SUPPLIED WITH LOCKNUT)</b>								
LT38P	3/8	16	1/2"	14.5	34.4	10.6	40.5	3.9
LT50P	1/2	20	1/2"	14.5	36.8	14.0	41.6	4.1
LT75P	3/4	25	3/4"	14.8	44.2	18.8	44.6	6.3
LT100P	1	32	1"	18.4	52.5	23.9	48.8	9.9
LT125P	1 1/4	40	1 1/4"	19.1	63.4	31.9	55.0	15.2
LT150P	1 1/2	50	1 1/2"	19.5	70.7	36.9	59.8	21.3
LT200P	2	63	2"	20.2	85.4	47.8	66.2	34.0

\* Dimensions F are after assembly (approx.)

## Type EFC / LTC / LTC-GY - plastic Bullet fittings

*Liquidtight fittings for non-metallic conduits*

- Liquid-tight, dust-tight and oil-resistant
- Thomas & Betts patented quick connecting feature designed to prevent unlocking
- The spiral-shaped EFC conduit coil locks into fitting
- No loose pieces - secure against vibration
- Supplied with sealing washer O-ring
- Fittings with NPT threads are supplied with locknut

### Technical Information

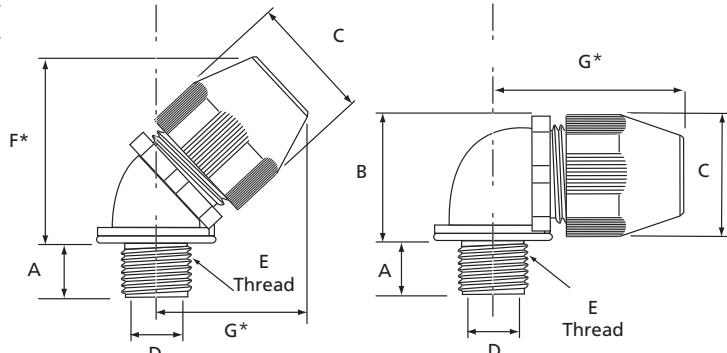
Conduit type	Shureseal™ conduit type EFC / LTC / LTC-GY
Style	45°, 90°
Thread	NPT and Metric (I.S.O.)
IP rating	IP65
Material	UV-resistant thermoplastic
Locknut	Zinc plated steel
O-ring	Nitryl
Colour	Black
Temperature range	-45°C to +105°C
Flammability rating	Self-extinguishing according to UL 94 V-2



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Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size E	A [mm]	B [mm]	C [mm]	D Min. throat diameter [mm]	F* Approx. [mm]	G* Approx. [mm]	Weight [kg/100]	Quantity
<b>90° FITTING WITH METRIC (I.S.O.) THREAD</b>											
LT938PISO20	3/8	16	M20	14.5	35.0	34.4	10.6	—	47.8	4.9	20
LT950PISO20	1/2	20	M20	14.5	37.8	36.8	14.0	—	50.4	4.9	20
LT975PISO25	3/4	25	M25	14.8	45.5	44.2	18.8	—	56.0	7.8	10
<b>90° FITTING WITH NPT THREAD (SUPPLIED WITH LOCKNUT)</b>											
LT938P	3/8	16	1/2"	14.5	35.0	34.4	10.6	—	47.8	4.9	10
LT950P	1/2	20	1/2"	14.5	37.8	36.8	14.0	—	50.4	4.9	10
LT975P	3/4	25	3/4"	14.8	45.5	44.2	18.8	—	56.2	7.8	10
LT9100P	1	32	1"	18.4	53.4	44.2	23.9	—	63.7	12.6	5
LT9125P	1 1/4	40	1 1/4"	19.1	65.1	52.5	31.9	—	72.5	21.3	2
LT9150P	1 1/2	50	1 1/2"	19.5	72.5	63.4	36.9	—	79.9	36.3	2
LT9200P	2	63	2"	20.2	87.2	70.7	47.8	—	93.3	40.8	1
<b>45° FITTING WITH NPT THREAD (SUPPLIED WITH LOCKNUT)</b>											
LT438P	3/8	16	1/2"	14.5	—	34.4	10.6	39.0	35.1	4.8	20
LT450P	1/2	20	1/2"	14.5	—	36.8	14.0	40.4	37.8	5.0	20
LT475P	3/4	25	3/4"	14.8	—	44.2	18.8	46.3	45.5	7.4	10
LT4100P	1	32	1"	18.4	—	52.5	23.9	51.7	53.4	11.7	5
LT4125P	1 1/4	40	1 1/4"	19.0	—	43.4	31.9	60.6	65.1	20.9	5
LT4150P	1 1/2	50	1 1/2"	19.5	—	70.7	36.9	66.1	72.5	24.7	2
LT4200P	2	63	2"	20.2	—	85.4	47.8	77.5	87.2	38.1	1

\* Dimensions F and G are after assembly (approx.)

## Type EFC / LTC / LTC-GY - metallic Bullet fittings

Liquidtight fittings for non-metallic conduits



- Robust construction, ideal for demanding applications like in the railway industry (can be used with other kind of conduits and hoses commonly used in the railway industry, such as textile inserted rubber hoses,...)
- Liquid-tight, dust-tight and oil-resistant
- Thomas & Betts patented quick connecting feature designed to prevent unlocking
- Separate rotating attachment for easy fitting of conduit
- Spiral-shaped EFC conduit coil locks into fitting
- No loose pieces - secure against vibration
- Delivered with locknut

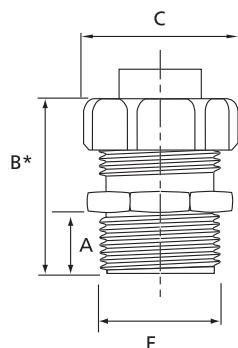
### Technical Information



LR52391



E23018



Conduit type	Shureseal™ conduit type EFC / LTC / LTC-GY
Style	Straight
Thread	NPT and Metric (I.S.O.)
IP rating	IP65
Material	Zinc plated steel
Gland nut	Zinc steel
Insert	Nylon
Colour	Metallic

Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size E	A [mm]	Dimensions B* [mm]	C [mm]	Weight [kg/100]	Quantity [pieces]
<b>STRAIGHT FITTING WITH METRIC (I.S.O) THREAD</b>								
LT38M-ISO20	3/8	16	M20	14.3	38.1	29.4	5.8	25
LT50M-ISO20	1/2	20	M20	14.3	39.7	34.9	7.7	25
LT75M-ISO25	3/4	25	M25	15.9	41.2	42.1	10.9	25
<b>STRAIGHT FITTING WITH NPT THREAD</b>								
LT38M	3/8	16	3/8"	14.3	38.1	29.4	5.8	25
LT50M	1/2	20	1/2"	14.3	39.7	34.9	7.7	25
LT75M	3/4	25	3/4"	15.9	41.2	42.1	10.9	25
LT100M	1	32	1"	19.0	52.4	47.6	16.1	10
LT125M	1 1/4	40	1 1/4"	20.6	63.5	60.3	28.9	5
LT150M	1 1/2	50	1 1/2"	20.6	68.2	69.8	46.7	2
LT200M	2	63	2"	20.6	77.8	88.1	69.9	1

\* Dimensions shown with a (\*) are after assembly (approx.)

## Type EFC / LTC / LTC-GY - metallic Bullet fittings

Liquidtight fittings for non-metallic conduits

- Robust construction, ideal for demanding applications like in the railway industry (can be used with other kind of conduits and hoses commonly used in the railway industry, such as textile inserted rubber hoses,...)
- Liquid-tight, dust-tight and oil-resistant
- Thomas & Betts patented quick connecting feature designed to prevent unlocking
- Separate rotating attachment for easy fitting of conduit
- Spiral-shaped EFC conduit coil locks into fitting
- No loose pieces - secure against vibration
- Delivered with locknut

### Technical Information

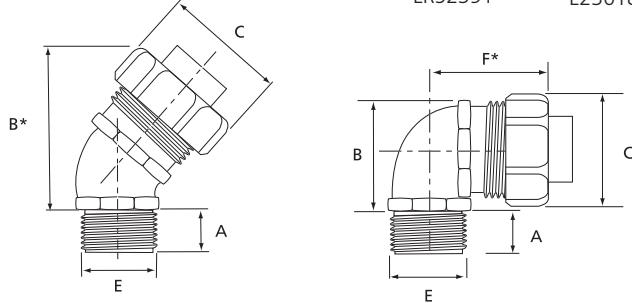
Conduit type	Shureseal™ conduit type EFC / LTC / LTC-GY
Style	45°, 90°
Thread	NPT and Metric (I.S.O.)
IP rating	IP65
Material	Zinc plated steel
Gland nut	Zinc steel
Insert	Nylon
Colour	Metallic



LR52391



E23018



Product Ref.	For conduit size [inch]	For conduit size [mm]	Thread size E	A [mm]	Dimensions B [mm]	C [mm]	F* [mm]	Weight [kg/100]	Quantity
<b>90° FITTING WITH METRIC (I.S.O) THREAD</b>									
LT938M-ISO20	3/8	16	M20	15.9	33.3	29.4	34.9	9.4	25
LT950M-ISO20	1/2	20	M20	15.9	36.5	34.9	39.7	13.2	25
LT975M-ISO25	3/4	25	M25	15.9	44.4	42.1	44.4	18.1	25
<b>90° FITTING WITH NPT THREAD</b>									
LT938M	3/8	16	3/8"	15.9	33.3	29.4	34.9	9.4	25
LT950M	1/2	20	1/2"	15.9	36.5	34.9	39.7	13.2	25
LT975M	3/4	25	3/4"	15.9	44.4	42.1	44.4	18.1	25
LT9100M	1	32	1"	20.6	49.2	47.6	55.5	30.2	10
LT9125M	1 1/4	40	1 1/4"	20.6	63.5	60.3	69.8	55.7	5
LT9150M	1 1/2	50	1 1/2"	20.6	71.4	69.8	74.6	76.4	2
LT9200M	2	63	2"	22.2	88.9	88.1	87.3	116.6	1
<b>45° FITTING WITH METRIC (I.S.O) THREAD</b>									
LT438M-ISO20	3/8	16	M20	14.3	49.8*	29.4	—	7.7	25
LT450M-ISO20	1/2	20	M20	14.3	47.6*	34.9	—	14.2	25
<b>45° FITTING WITH NPT THREAD</b>									
LT438M	3/8	16	3/8"	14.3	49.8*	29.4	—	7.7	25
LT450M	1/2	20	1/2"	14.3	47.6*	34.9	—	14.2	25
LT475M	3/4	25	3/4"	14.3	54.0*	42.1	—	18.6	10
LT4100M	1	32	1"	20.6	57.1*	47.6	—	25.5	5
LT4125M	1 1/4	40	1 1/4"	20.6	69.8*	60.3	—	49.6	5
LT4150M	1 1/2	50	1 1/2"	20.6	69.8*	69.8	—	68.0	2
LT4200M	2	63	2"	22.2	98.4*	88.1	—	99.8	1

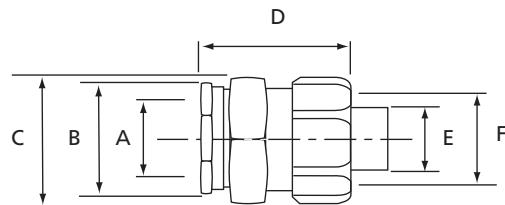
\* Dimensions shown with a (\*) are after assembly (approx.)

## Type EFC / LTC / LTC-GY - metallic Bullet, chase fitting

Liquidtight fittings for non-metallic conduits



- Metallic fitting, designed for type - EFC / LTC / LTC-GY flexible plastic conduit
- Special version (Chase) for space saving assembly, thanks to the male nipple that can be screwed into the female thread of the body
- Liquid-tight, dust-tight and oil-resistant
- Robust construction, ideal for demanding applications like in the railway industry (can be used with other kind of conduits and hoses commonly used in the railway industry, such as textile inserted rubber hoses,...)
- Spiral-shaped EFC conduit coil locks into fitting
- The fitting is composed of 5 components: nipple with insulation throat, O-ring, body, insert and gland nut (Product Ref. LT6275MI also includes an additional sleeve)



### Technical Information

Conduit type	Shureseal™ conduit type EFC / LTC / LTC-GY
Style	Straight
IP rating	IP65
Material	Zinc plated steel
Gland nut	Zinc plated steel
Insert	Nylon
O-ring	Neoprene
Colour	Metallic

Product Ref.	For conduit size		ø A*	Dimensions			ø E*	ø F*
	[inch]	[mm]		B across flats [mm]	C across flats [mm]	D approx. [mm]		
LT638MI	3/8	16	14.5	24	30	30	12.4	18.4
LT650MI	1/2	20	14.5	24	30	30	15.4	22.0
LT675MI	3/4	25	18.0	32	36	36	20.0	29.0
LT6100MI	1	32	23.5	40	41	41	26.0	35.0
LT6125MI	1 1/4	40	31.0	45	60	60	34.0	44.5
LT6150MI	1 1/2	50	38.0	54	65	65	39.0	50.0
LT6275MI	-	-	60.0	78	93	125	65.0	70.0

\* ø A = inner diameter in fitting

ø E = min. inner diameter of conduit

ø F = max. outer diameter of conduit

## Sealing washers

Accessories for liquidtight fittings

- Design locks resilient sealing material in steel
- Steel retainer protects seal from extruding out under torque and limits compression to an optimum predetermined value; provides high quality seal
- Resilient material flows and seals rough surfaces

### Technical Information

Fitting Type	Shureseal™ and Shureflex® fittings
Thread	NPT, Metric (I.S.O.) and Imperial
Material	Chromated galvanised steel, with blue Buna-N rubber or black synthetic rubber
Colour	Metallic



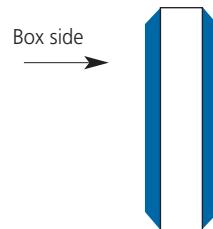
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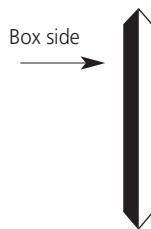
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Product Ref.	Thread size	Weight [kg/100]	Quantity [pieces]
<b>SEALING WASHERS FOR METRIC (I.S.O.) FITTINGS</b>			
051-72123-1*	M16	0.2	100
035-72272-1*	M20	0.2	100
035-72272-2*	M25	0.3	100
035-72272-3*	M32	0.3	100
<b>SEALING WASHERS FOR NPT FITTINGS</b>			
5261*	3/8"	0.2	50
5262	1/2"	0.2	50
5263	3/4"	0.3	25
5264	1"	0.3	25
5265	1 1/4"	1.8	5
5266	1 1/2"	1.9	5
5267	2"	2.0	5
5268	2 1/2"	2.2	5
5269	3"	2.9	5
5270	4"	3.8	5
<b>SEALING WASHERS FOR IMPERIAL FITTINGS</b>			
035-72272-4	1 1/2"	1.8	100

\* The Product Ref. with a \* are not UL approved



52XX



051-XXXXXX-X  
035-XXXXXX-X

## Locknuts

Accessories for liquidtight fittings



- Case-Hardened Locknut with Teeth provides superior strength and electrical bonding and can be installed without a wrench in the enclosure.

## Technical Information

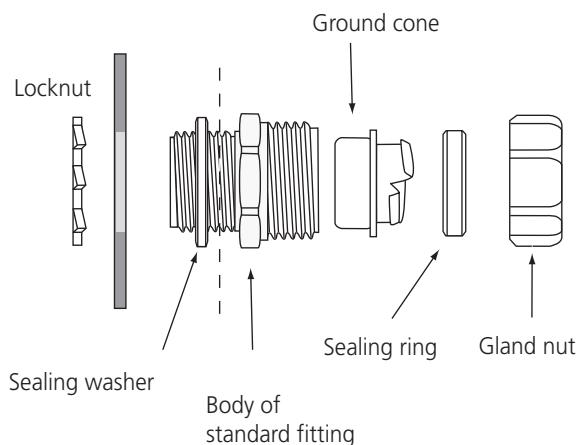
Fitting Type	Shureseal™ fittings
Thread	NPT
Material	Galvanised steel, chromated
Colour	Metallic



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Product Ref.	Thread size [inch]	Weight [kg/100]	Quantity [pieces]
139	1/4	0.4	100
140	3/8	0.5	100
141	1/2	0.5	100
142-TB	3/4	0.9	100
143	1	1.8	50
144	1 1/4	3.2	50
145	1 1/2	4.0	50
146-TB	2	6.3	25
147	2 1/2	11.7	15
148	3	18.0	5
149	3 1/2	19.8	5
150	4	23.4	5

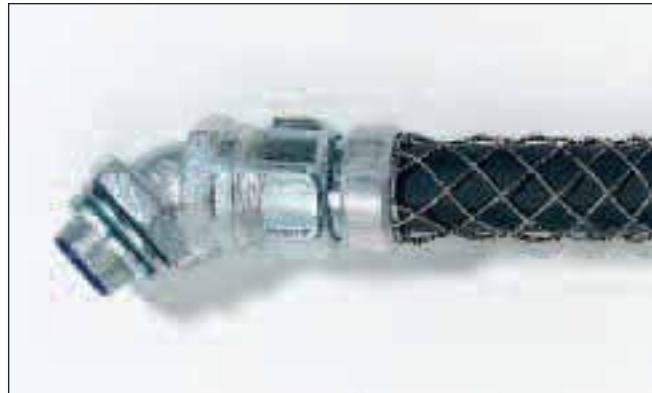
## Wire mesh adaptor

Accessories for liquidtight fittings

- Strain Relief Wire Mesh adaptor with integrated gland nut
- Simple installation: just replace the existing gland nut in the fitting with the wire mesh adaptor
- Provides a support function (strain relief), to protect the conduit at the point of connection
- Rounded corners ensure secure attachment of the conduit without the risk of damage
- Anti-corrosive

### Technical Information

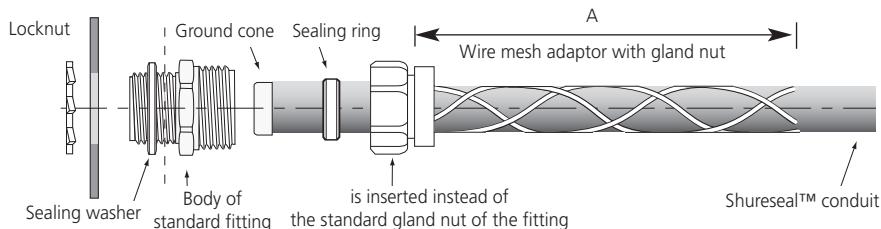
Fitting Type	Shureseal™ liquidtight fittings for metallic conduits (straight, 45°, 90°, chase, female hub)
Thread	Replaces the standard gland nut
Material	Gland nut: zinc plated steel Collar: aluminium, Wire mesh: aluminium
Colour	Metallic



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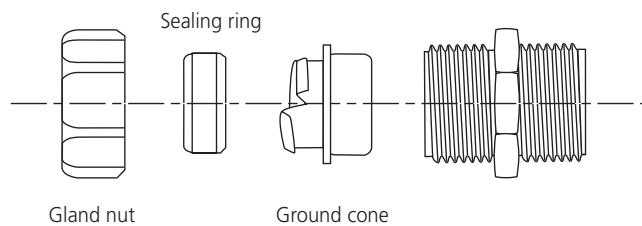
Product Ref.	Conduit size [inch]	Conduit size [mm]	Straight fitting [prod. ref.]	45° fitting [prod. ref.]	90° fitting [prod. ref.]	Chase fitting [prod. ref.]	Chase 90° fitting [prod. ref.]	Adapter [prod. ref.]	Weight [kg/100]	Quantity [pieces]
<b>FOR FITTINGS WITH ISO THREAD</b>										
WMG-LT1	3/8	16	9360, 9361	9340, 9341	9350, 9351	–	–	9270, 9271	2.5	10
WMG-LT2	1/2	20	9362	9342	9352-TB	–	–	9272	4.0	10
WMG-LT3	3/4	25	9363	9343-TB	9353-TB	–	–	9273	5.0	10
WMG-LT4	1	32	9364	9344	9354-TB	–	–	9274	10.0	10
<b>FOR FITTINGS WITH PG THREAD</b>										
WMG-LT1	3/8	16	7361, 7362	7341, 7342	7351, 7352	–	–	–	2.5	10
WMG-LT2	1/2	20	7363	7343	7353	–	–	–	4.0	10
WMG-LT3	3/4	25	7364	7344-TB	7354	–	–	–	5.0	10
WMG-LT4	1	32	7365	7345	7355	–	–	–	10.0	10
WMG-LT5	1 1/4	40	7366	7346	7356	–	–	–	17.0	2
WMG-LT6	1 1/2	50	7367	7347	7357	–	–	–	29.0	2
WMG-LT7	2	63	7368	7348-TB	7358	–	–	–	43.0	5
<b>FOR FITTINGS WITH NPT THREAD</b>										
WMG-LT1	3/8	16	5331	5341	5351	5361	5371	5271	2.5	10
WMG-LT2	1/2	20	5332	5342	5352	5362	5372	5272	4.0	10
WMG-LT3	3/4	25	5333	5343	5353	5363	5373	5273	5.0	10
WMG-LT4	1	32	5334-TB	5344	5354	5364	5374	5274	10.0	10
WMG-LT5	1 1/4	40	5335	5345	5355	5365	–	5275	17.0	2
WMG-LT6	1 1/2	50	5336	5346	5356	5366	–	5276	29.0	2
WMG-LT7	2	63	5337	5347	5357	5367	–	5277	43.0	5
<b>FOR FITTINGS WITH IMPERIAL THREAD</b>										
WMG-LT5	1 1/4	40	6365	–	6355	–	–	–	17.0	2
WMG-LT6	1 1/2	50	6366	6346	6356	–	–	–	29.0	2
WMG-LT7	2	63	6367	6347	–	–	–	–	43.0	5

## Replacement parts

### Accessories for liquidtight fittings



Fitting replacement parts



If after some time the fitting is released and needs to be re-secured, the seal and the ground cone should be replaced.

The following accessories are appropriate for all the standard liquidtight Shureseal™ fittings for metallic conduits:

- **Steel ground cone:** it provides a high quality ground contact with low impedance and high conduit pull-off resistance. The single helical thread on ground cone is easy to install by hand without cross threading. It tolerates variations in conduit diameters and convolution pitch. Its rolled-over edge protects the conductors. Manufactured in zinc plated steel.
- **Sealing ring:** it grips and seals the conduit without damaging the conduit jacket. Its symmetrical shape assures a foolproof assembly. It ensures a positive seal against oils, liquids, moisture and dust. Made from high-performance nylon. Colour: blue.
- **Gland nut:** rugged construction, made of zinc plated steel. Reinforced corners to allow hand screwing.

Ground cone Product Ref.	Sealing ring Product Ref.	Gland nut Product Ref.	Conduit size [inch]	Conduit size [mm]
R 719124	—	—	1/4	10
IR 719123	7 R68301	7 R68201	5/16	12
R 719101	IR 763101	R 735540	3/8	16
R 719125	IR 763102	R 735503	1/2	20
R 719126	IR 763108	R 735504	3/4	25
R 719127	IR 763104	R 735522	1	32
IR 719128	IR 763105	IR 735509	1 1/4	40
IR 719129	IR 763106	IR 723418	1 1/2	50
053-71814-127	053-71814-137	053-71814-7	2	63
053-71814-128	053-71814-28	053-71814-8	2 1/2	75
053-71814-129	053-71814-29	053-71814-9	3	90
053-71814-130	053-71814-30	053-71814-10	4	115

## Type UGS - uncovered conduit

Fittings for ultra-flexible galvanised steel conduit

- Wide choice of fittings especially manufactured for Shureflex® conduits
- Highly crush resistant with an excellent pull-off strength
- Ideal for industrial and commercial applications where flexibility, crush and vibration resistance are required

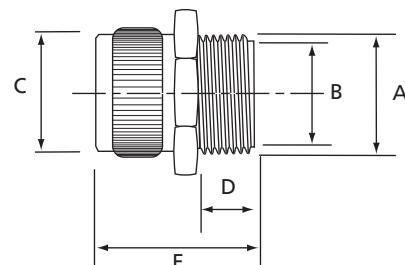
### Technical Information

Conduit type	Shureflex® type UGS uncovered conduits*
Style	Straight fixed male
Thread	Metric (I.S.O.) and PG
IP rating	IP40
Material	Nickel-plated brass
Colour	Metallic
Temperature range	-50°C to +300°C

\* Can also be used with Shureflex® stainless steel conduits

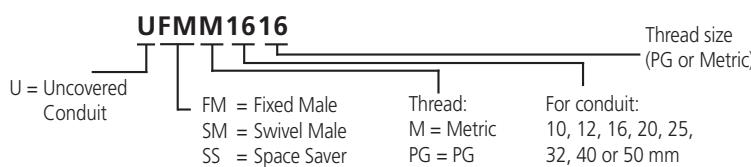


Type UFM



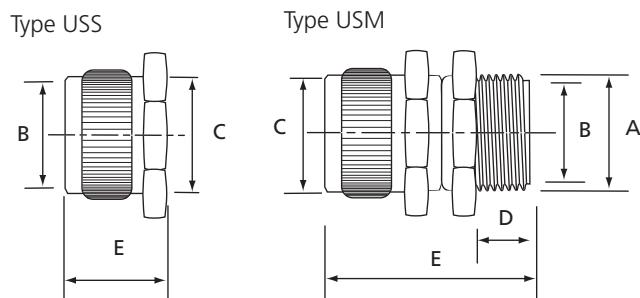
Product Ref.	Conduit type	Thread size	Dimensions				Weight	Quantity	
			A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	[g/100]	[pieces]
<b>TYPE UFMM: FIXED STRAIGHT FITTING WITH METRIC (I.S.O.) MALE THREAD</b>									
UFMM1616	UGS1610 / UGS1630	M16	16	10.8	19	10	24.5	550	25
UFMM1620	UGS1610 / UGS1630	M20	20	10.8	24	10	24.5	900	25
UFMM2020	UGS2010 / UGS2030	M20	20	14.8	24	10	24.5	700	25
UFMM2525	UGS2510 / UGS2530	M25	25	18.8	30	12	28.0	450	10
UFMM3232	UGS3210 / UGS3220	M32	32	25.8	36	13	29.0	350	5
UFMM4040	UGS4010 / UGS4020	M40	40	33.8	46	15	31.5	450	5
UFMM5050	UGS5010 / UGS5020	M50	50	41.8	55	15	33.0	400	2
<b>TYPE UMPG: FIXED STRAIGHT FITTING WITH PG MALE THREAD</b>									
UFMPG1007	UGS1010 / UGS1030	PG7	12.5	4.8	14.0	5.0	16.5	271	25
UFMPG1209	UGS1210 / UGS1230	PG9	15.2	7.8	17.0	8.0	21.5	532	25
UFMPG1611	UGS1610 / UGS1630	PG11	18.6	10.9	20.0	12.0	28.0	750	25
UFMPG2016	UGS2010 / UGS2030	PG16	22.5	14.9	24.0	12.0	28.0	1100	25
UFMPG2521	UGS2510 / UGS2530	PG21	28.3	18.9	30.0	13.5	31.0	650	10
UFMPG3229	UGS3210 / UGS3220	PG29	37.0	25.9	40.0	15.0	33.0	350	5
UFMPG4036	UGS4010 / UGS4020	PG36	47.0	33.9	49.6	17.0	36.0	900	5

### Product reference structure



## Type UGS - uncovered conduit

Fittings for ultra-flexible galvanised steel conduit



- Wide choice of fittings especially manufactured for Shureflex® conduits
- Highly crush resistant with an excellent pull-off strength
- Ideal for industrial and commercial applications where flexibility, crush and vibration resistance are required
- The swivel fittings improve the flexibility and decrease the stress in the connection of the conduit
- The space saver version, with its compact design, is perfectly appropriate for applications in confined spaces and to install the fitting directly on a panel

### Technical Information

Conduit type	Shureflex® type UGS uncovered conduits*
Style	Straight swivel male and straight space saver
Thread	Metric (I.S.O.) and PG
IP rating	IP40
Material	Nickel-plated brass
Colour	Metallic
Temperature range	-50°C to +300°C

\* Can also be used with Shureflex® stainless steel conduits

Product Ref.	Conduit type	Thread size	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Weight [g/100]	Quantity
<b>TYPE USMM: SWIVEL STRAIGHT FITTING WITH METRIC (I.S.O.) MALE THREAD</b>									
USMM1616	UGS1610 / UGS1630	M16	16	10.8	19	10	34.3	850	25
USMM2020	UGS2010 / UGS2030	M20	20	14.8	24	10	34.3	1020	25
USMM2525	UGS2510 / UGS2530	M25	25	18.8	30	12	40.5	840	10
USMM3232	UGS3210 / UGS3220	M32	32	25.8	36	13	41.5	850	5
USMM4040	UGS4010 / UGS4020	M40	40	33.8	46	15	47.3	730	5
USMM5050	UGS5010 / UGS5020	M50	50	41.8	55	15	47.0	750	2
<b>TYPE USMPG: SWIVEL STRAIGHT FITTING WITH PG MALE THREAD</b>									
USMPG1007	UGS1010 / UGS1030	PG7	12.5	4.8	14	5	22.0	550	25
USMPG1209	UGS1210 / UGS1230	PG9	15.2	7.8	17	8	30.3	750	25
USMPG1611	UGS1610 / UGS1630	PG11	18.6	10.9	20	12	38.0	1150	25
USMPG2016	UGS2010 / UGS2030	PG16	22.5	14.9	24	12	38.0	1300	25
USMPG2521	UGS2510 / UGS2530	PG21	28.3	18.9	30	12	41.0	1000	10
USMPG3229	UGS3210 / UGS3220	PG29	37.0	25.9	40	15	46.0	800	5
USMPG4036	UGS4010 / UGS4020	PG36	47.0	33.9	49	17	51.0	1250	5
<b>TYPE USSM: SPACE SAVER STRAIGHT FITTING (NO THREAD)</b>									
USSM1010	UGS1010 / UGS1030	—	—	4.8	14	—	11.5	255	25
USSM1212	UGS1210 / UGS1230	—	—	7.8	16	—	13.5	351	25
USSM1616	UGS1610 / UGS1630	—	—	10.8	19	—	14.5	470	25
USSM2020	UGS2010 / UGS2030	—	—	14.8	24	—	14.5	662	25
USSM2525	UGS2510 / UGS2530	—	—	18.8	30	—	16.0	370	10
USSM3232	UGS3210 / UGS3220	—	—	25.8	36	—	16.0	254	5
USSM4040	UGS4010 / UGS4020	—	—	33.8	46	—	16.0	322	5
USSM5050	UGS5010 / UGS5020	—	—	41.8	55	—	18.0	200	2

## Type PGS - covered conduit

Fittings for ultra-flexible galvanised steel conduit

- Wide choice of fittings especially manufactured for Shureflex® covered conduit
- Highly crush resistant with an excellent pull-off strength
- Improved IP rating (IP54) compared to the uncovered conduit
- Special IP65 rated fittings available on request
- Ideal for industrial and commercial applications where flexibility, crush and vibration resistance are required

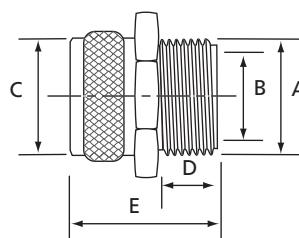
### Technical Information

Conduit Type	Shureflex® type PGS covered conduit
Style	Straight fixed male and female
Thread	Metric (I.S.O.) and PG
IP rating	IP54
Material	Nickel-plated brass
Colour	Metallic
Temperature range	-50°C to +300°C*

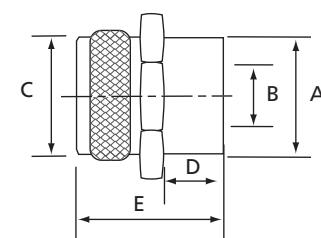
\* PGS conduit temperature -25°C to +70°C



Type PFM

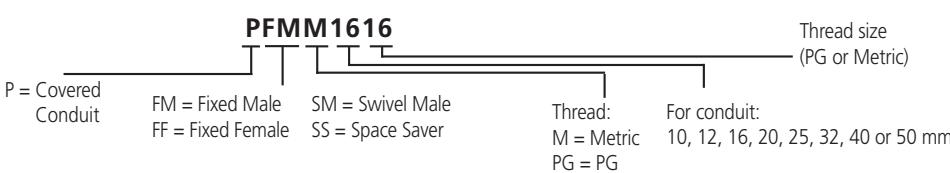


Type PFF



Product Ref.	Conduit type	Thread size	A [mm]	B [mm]	Dimensions C [mm]	D [mm]	E [mm]	Weight [g/100]	Quantity
<b>TYPE PFMM: FIXED STRAIGHT FITTING WITH METRIC (I.S.O.) MALE THREAD</b>									
PFMM1616	PGS1610 / PGS1630	M16	16	10.8	19	10	24.5	550	25
PFMM1620	PGS1610 / PGS1630	M20	20	10.8	24	10	24.5	900	25
PFMM2020	PGS2010 / PGS2030	M20	20	14.8	24	10	24.5	700	25
PFMM2525	PGS2510 / PGS2530	M25	25	18.8	30	12	28.0	450	10
PFMM3232	PGS3210 / PGS3220	M32	32	25.8	36	13	29.0	350	5
PFMM4040	PGS4010 / PGS4020	M40	40	33.8	46	15	31.5	450	5
PFMM5050	PGS5010 / PGS5020	M50	50	41.8	55	15	33.0	400	2
<b>TYPE PFMPG: FIXED STRAIGHT FITTING WITH PG MALE THREAD</b>									
PFMPG1007	PGS1010 / PGS1030	PG7	12.5	4.8	14.0	8.0	16.5	270	25
PFMPG1209	PGS1210 / PGS1230	PG9	15.2	7.8	17.0	8.0	21.5	483	25
PFMPG1611	PGS1610 / PGS1630	PG11	18.6	10.9	20.0	12.0	28.0	550	25
PFMPG2016	PGS2010 / PGS2030	PG16	22.5	14.9	24.0	12.0	28.0	1050	25
PFMPG2521	PGS2510 / PGS2530	PG21	28.3	18.9	30.0	13.5	31.0	650	10
PFMPG3229	PGS3210 / PGS3220	PG29	37.0	25.9	40.0	15.0	33.0	1150	5
PFMPG4036	PGS4010 / PGS4020	PG36	47.0	33.9	49.6	17.0	36.0	450	5
<b>TYPE PFFM: FIXED STRAIGHT FITTING WITH METRIC (I.S.O.) FEMALE THREAD</b>									
PFFM1616	PGS1610 / PGS1630	M16	16	10.8	19	10	23.5	552	25
PFFM2020	PGS2010 / PGS2030	M20	20	14.8	24	10	23.5	765	25
PFFM2525	PGS2510 / PGS2530	M25	25	18.8	30	12	28.0	511	10
PFFM3232	PGS3210 / PGS3220	M32	32	25.8	36	13	28.0	292	5
PFFM4040	PGS4010 / PGS4020	M40	40	33.8	46	15	30.5	535	5
<b>TYPE PFFPG: FIXED STRAIGHT FITTING WITH PG FEMALE THREAD</b>									
PFFPG1209	PGS1210 / PGS1230	PG9	15.2	7.8	19	8	20.5	389	25

### Product reference Structure

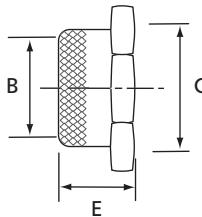


## Type PGS - covered conduit

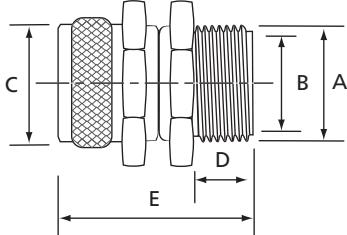
Fittings for ultra-flexible galvanised steel conduit



Type PSS



Type PSM



- Wide choice of fittings especially manufactured for Shureflex® covered conduit
- Highly crush resistant with an excellent pull-off strength
- Improved IP rating (IP54) compared to the uncovered conduit
- Special IP65 rated fittings available on request
- Ideal for industrial and commercial applications where flexibility, crush and vibration resistance are required
- The swivel fittings improve the flexibility and decrease the stress in the connection of the conduit
- The space saver version, with its compact design, is perfectly appropriate for applications in confined spaces and to install the fitting directly on a panel

### Technical Information

Conduit Type	Shureflex® type PGS covered conduit
Style	Straight swivel male, straight space saver
Thread	Metric (I.S.O.) and PG
IP rating	IP54
Material	Nickel-plated brass
Colour	Metallic
Temperature range	-50°C to +300°C*

\* PGS conduit temperature -25°C to +70°C

Product Ref.	Conduit type	Thread size	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Weight [g/100]	Quantity [pieces]
<b>TYPE PSMM: SWIVEL STRAIGHT FITTING WITH METRIC (I.S.O.) MALE THREAD</b>									
PSMM1616	PGS1610 / PGS1630	M16	16	10.8	19	10	34.3	860	25
PSMM2020	PGS2010 / PGS2030	M20	20	14.8	24	10	34.3	1060	25
PSMM2525	PGS2510 / PGS2530	M25	25	18.8	30	12	40.5	850	10
PSMM3232	PGS3210 / PGS3220	M32	32	25.8	36	13	41.5	800	5
PSMM4040	PGS4010 / PGS4020	M40	40	33.8	46	15	47.3	850	5
PSMM5050	PGS5010 / PGS5020	M50	50	41.8	55	15	47.0	700	2
<b>TYPE PSMPG: SWIVEL STRAIGHT FITTING WITH PG MALE THREAD</b>									
PSMPG1007	PGS1010 / PGS1030	PG7	12.5	4.8	14.0	8	22.0	280	25
PSMPG1209	PGS1210 / PGS1230	PG9	15.2	7.8	17.0	8	30.3	550	25
PSMPG1611	PGS1610 / PGS1630	PG11	18.6	10.9	20.0	12	38.0	1100	25
PSMPG2016	PGS2010 / PGS2030	PG16	22.5	14.9	24.0	12	38.0	1300	25
PSMPG2521	PGS2510 / PGS2530	PG21	28.3	18.9	30.0	12	41.0	950	10
PSMPG3229	PGS3210 / PGS3220	PG29	37.0	25.9	40.0	15	46.0	750	5
PSMPG4036	PGS4010 / PGS4020	PG36	47.0	33.9	49.6	17	51.0	850	5
<b>TYPE PSS: SPACE SAVER STRAIGHT FITTING (NO THREAD)</b>									
PSSM1010	PGS1010 / PGS1030	—	—	4.8	14	—	11.5	203	25
PSSM1212	PGS1210 / PGS1230	—	—	7.8	16	—	13.5	296	25
PSSM1616	PGS1610 / PGS1630	—	—	10.8	19	—	14.5	405	25
PSSM2020	PGS2010 / PGS2030	—	—	14.8	24	—	14.5	560	25
PSSM2525	PGS2510 / PGS2530	—	—	18.8	30	—	16.0	350	10
PSSM3232	PGS3210 / PGS3220	—	—	25.8	36	—	16.0	240	5
PSSM4040	PGS4010 / PGS4020	—	—	33.8	46	—	16.0	382	5
PSSM5050	PGS5010 / PGS5020	—	—	41.8	55	—	18.0	213	2

## Product description

### Fittings for ultra-flexible nylon conduits

**"One piece assembly"** fitting, no loose piece, handy to use, requires no tool

**Twelve flat edges**, for easy tightening

**Solid construction:** robust design, shock resistant and high quality material (Halogen free Polyamide 6), for a durable performance

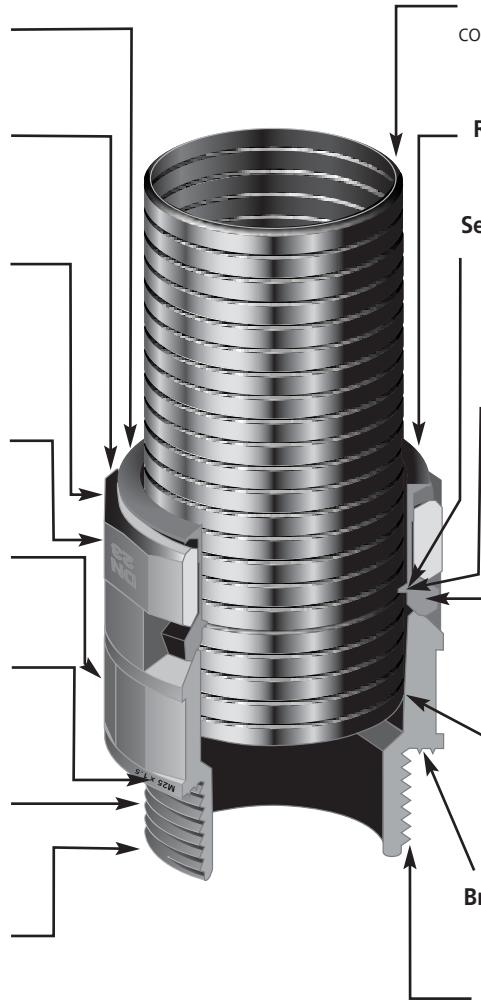
**Conduit size marking on the fitting**, for immediate identification

**Six flat edges**, for spanner tightening

**Thread style/size marking**, for immediate identification

**Optional O-ring and sealing washer**, for IP69K rating

**Range of accessories:** locknuts for panel mounting, mounting brackets for attaching the conduits, T-splits for connecting 3 conduits together



**Three grades of Halogen free flexible conduits**, available in 8 sizes, with an excellent combination of flexibility and mechanical strength

**Release ring**, for easy removal without any tool

**Self-locking (push-fit)**: mounting and locking at the same time, for a quick and easy installation

**After mounting, the fitting can rotate freely on the conduit**, allowing the possibility to pre-mount the straight fittings on the conduits before the final installation on the support (without causing the cables to be twisted)

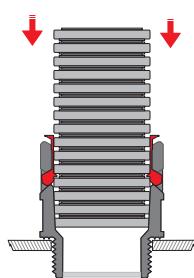
**Crown of self-locking clips around the whole circumference of the conduit**, for a secure locking and a superior pull-off strength

**Tapered fitting body**, providing a **standard IP66** watertight system, without the need for any additional accessory

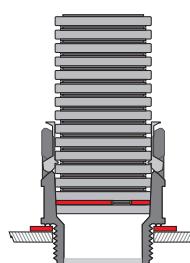
**Broad contact base**, with 2 built-in sealing rings  
**Available in straight, 90° and 45° versions, with Metric (I.S.O.) and PG threads**

#### One push and you're ready

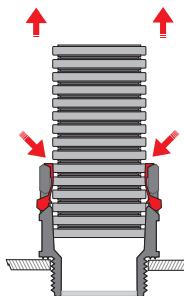
##### Installation with IP66 protection



##### Installation with IP69K protection



##### Easily released & removed



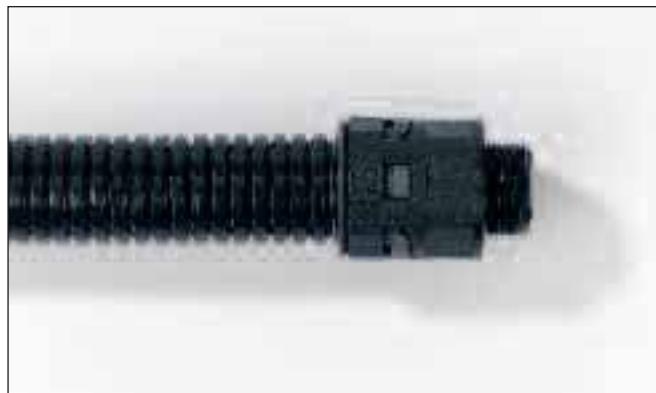
- Self-locking (push-fit) installation: simply push the conduit completely into the fitting. Mounting and locking the fitting are done simultaneously

- Optional sealing washer can be used (placed around the thread of the fitting), in combination with an optional O-ring (inserted in the first groove of the conduit)

- Just press the release ring of the fitting and pull the conduit out. No tool is required!

## Straight fittings

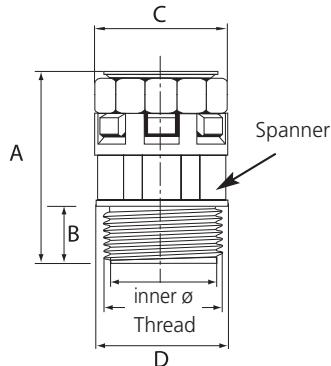
Fittings for ultra-flexible nylon conduits



- High quality Polyamide (PA6)
- UV and shock resistant
- Secure: self-locking (push-fit) installation onto the conduit
- Quick and easy to install and remove, no tool required
- Strong: high pull-off strength thanks to the self-locking clips around the whole circumference of the conduit
- Handy: "one-piece assembly" construction, no loose parts
- Watertight: IP66 rating as standard, without additional accessories
- Sealing washers and O-rings available (delivered separately) for the applications requiring a maximum IP rating (IP69K)
- Locknuts (delivered separately) are available for installations on panels and enclosures



E96548



### Technical Information

Conduit type	Shureflex® Nylon conduits
Style / thread	Straight / Metric (I.S.O.), PG thread
IP rating	IP66 (standard), IP69K (with additional Shureflex® washer and O-ring)
Material	Polyamide 6
Colour	Black
Temperature range	-30°C to +100°C (intermittent: to +150°C)
Flammability rating	UL 94 V-2 (produced from UL 94 V-0 raw material)
Other properties	Halogen, Phosphor and Cadmium free, UV-resistant. Good resistance to fuel, mineral oils, greases and diluted bases

Product Ref.	For conduit size [mm]	Thread size	Inner diameter [mm]	A [mm]	Dimensions	B [mm]	C [mm]	D [mm]	Spanner size [mm]	Weight [kg/100]	Quantity
<b>STRAIGHT FITTING WITH METRIC (I.S.O.) THREAD</b>											
NY-SF07-BKM12	7	M12 x 1.5	6.5	35.0	11.0	19.0	17.0	15	0.4	100	
NY-SF10-BKM16	10	M16 x 1.5	10.0	37.0	11.0	21.0	21.0	18	0.6	100	
NY-SF12-BKM16	12	M16 x 1.5	10.0	37.0	11.0	26.0	25.5	20	0.7	100	
NY-SF12-BKM20	12	M20 x 1.5	14.0	37.0	11.0	31.0	25.5	20	0.8	100	
NY-SF17-BKM20	17	M20 x 1.5	14.5	44.0	11.0	31.0	30.0	27	1.2	100	
NY-SF23-BKM25	23	M25 x 1.5	18.5	48.0	12.0	37.0	37.0	34	1.6	50	
NY-SF29-BKM32	29	M32 x 1.5	25.5	52.0	15.0	46.0	46.0	42	2.8	30	
NY-SF36-BKM40	36	M40 x 1.5	32.0	60.0	19.0	54.0	54.0	50	3.9	20	
NY-SF48-BKM50	48	M50 x 1.5	42.0	61.0	19.0	69.0	69.0	66	6.2	10	
<b>STRAIGHT FITTING WITH PG THREAD</b>											
NY-SF07-BKPG7	7	PG7	8.0	35.5	11.5	19.0	17.0	15	0.4	100	
NY-SF10-BKPG9	10	PG9	10.3	37.5	11.5	21.0	21.0	18	0.6	100	
NY-SF12-BKPG11	12	PG11	14.0	37.5	11.5	26.0	25.5	20	0.8	100	
NY-SF17-BKPG13	17	PG13.5	14.0	44.5	11.5	31.0	28.0	27	1.2	100	
NY-SF17-BKPG16	17	PG16	17.0	44.5	11.5	31.0	29.0	27	1.2	100	
NY-SF23-BKPG21	23	PG21	22.0	48.5	12.5	37.0	36.5	34	1.6	50	
NY-SF29-BKPG29	29	PG29	30.0	49.5	12.5	46.0	46.0	42	2.8	30	
NY-SF36-BKPG36	36	PG36	37.5	55.0	14.0	54.0	56.0	50	3.9	20	
NY-SF48-BKPG48	48	PG48	50.0	56.0	14.0	69.0	69.5	66	5.6	10	

See pages 322 to 325 for locknuts and accessories

## 90° fittings

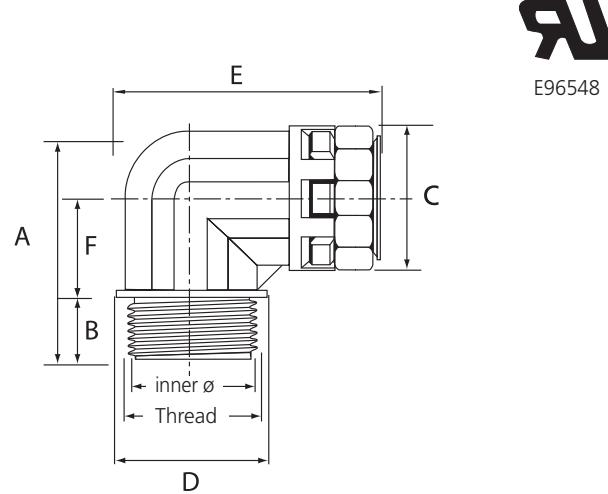
Fittings for ultra-flexible nylon conduits

- High quality Polyamide (PA6)
- UV and shock resistant
- Secure: self-locking (push-fit) installation onto the conduit
- Quick and easy to install and remove, no tool required
- Strong: high pull-off strength thanks to the self-locking clips around the whole circumference of the conduit
- Handy: "one-piece assembly" construction, no loose parts
- Watertight: IP66 rating as standard, without additional accessories
- Sealing washers and O-rings available (delivered separately) for the applications requiring a maximum IP rating (IP69K)
- Locknuts (delivered separately) are available for installations on panels and enclosures



### Technical Information

Conduit type	Shureflex® Nylon conduits
Style / thread	90° / Metric (I.S.O.), PG thread
IP rating	IP66 (standard), IP69K (with additional Shureflex® washer and O-ring)
Material	Polyamide 6
Colour	Black
Temperature range	-30°C to +100°C (intermittent: to +150°C)
Flammability rating	UL 94 V-2 (produced from UL 94 V-0 raw material)
Other properties	Halogen, Phosphor and Cadmium free, UV-resistant. Good resistance to fuel, mineral oils, greases and diluted bases



Product Ref.	For conduit size [mm]	Thread size	Inner diameter [mm]	A [mm]	B [mm]	Dimensions C [mm]	D [mm]	E [mm]	F [mm]	Weight [kg/100]	Quantity [pieces]
<b>90° FITTING WITH METRIC (I.S.O.) THREAD</b>											
NY-90F10-BKM16	10	M16 x 1.5	10.0	35.0	11.0	21.0	21.0	42.5	11.0	0.9	50
NY-90F12-BKM16	12	M16 x 1.5	10.5	39.0	11.0	25.0	23.0	44.0	15.0	1.3	50
NY-90F12-BKM20	12	M20 x 1.5	12.3	39.0	11.0	25.0	26.0	45.5	15.0	1.3	50
NY-90F17-BKM20	17	M20 x 1.5	14.5	45.0	11.0	30.0	30.0	58.0	18.0	2.2	50
NY-90F23-BKM25	23	M25 x 1.5	18.5	53.0	12.0	36.5	37.0	66.0	23.0	3.4	30
NY-90F29-BKM32	29	M32 x 1.5	25.5	66.0	15.0	45.0	46.0	76.0	27.0	5.5	20
NY-90F36-BKM40	36	M40 x 1.5	32.0	79.0	19.0	54.0	55.0	89.0	33.0	9.2	10
NY-90F48-BKM50	48	M50 x 1.5	42.0	92.0	19.0	68.0	69.0	103.0	39.0	15.0	10
<b>90° FITTING WITH PG THREAD</b>											
NY-90F10-BKPG9	10	PG9	10.3	35.0	11.5	21.0	21.5	42.5	11.0	0.8	50
NY-90F12-BKPG11	12	PG11	14.0	39.0	11.5	25.0	25.0	45.0	15.0	1.1	50
NY-90F17-BKPG13	17	PG13.5	14.0	45.0	11.5	30.0	27.0	56.5	18.0	2.2	50
NY-90F17-BKPG16	17	PG16	17.0	45.0	11.5	30.0	29.0	57.5	18.0	1.9	50
NY-90F23-BKPG21	23	PG21	22.0	53.0	12.5	37.0	36.5	65.5	23.0	3.0	30
NY-90F29-BKPG29	29	PG29	30.0	65.0	12.5	45.0	46.0	76.0	28.0	4.6	20
NY-90F36-BKPG36	36	PG36	37.5	79.0	14.0	54.0	56.0	89.5	33.0	7.5	10
NY-90F48-BKPG48	48	PG48	50.0	92.0	14.0	68.0	69.5	103.5	39.0	11.7	10

See pages 322 to 325 for locknuts and accessories

## 45° fittings

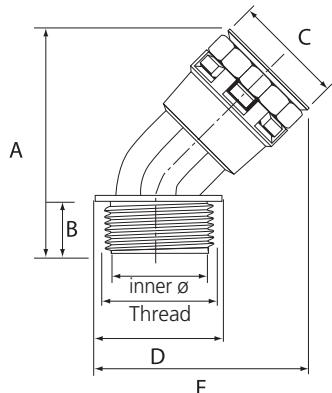
Fittings for ultra-flexible nylon conduits



- High quality Polyamide (PA6)
- UV and shock resistant
- Secure: self-locking (push-fit) installation onto the conduit
- Quick and easy to install and remove, no tool required
- Strong: high pull-off strength thanks to the self-locking clips around the whole circumference of the conduit
- Handy: "one-piece assembly" construction, no loose parts
- Watertight: IP66 rating as standard, without additional accessories
- Sealing washers and O-rings available (delivered separately) for the applications requiring a maximum IP rating (IP69K)
- Locknuts (delivered separately) are available for installations on panels and enclosures



E96548



## Technical Information

Conduit type	Shureflex® Nylon conduits
Style / thread	45° / Metric (I.S.O.), PG thread
IP rating	IP66 (standard), IP69K (with additional Shureflex® washer and O-ring)
Material	Polyamide 6
Colour	Black
Temperature range	-30°C to +100°C (intermittent: to +150°C)
Flammability rating	UL 94 V-2 (produced from UL 94 V-0 raw material)
Other properties	Halogen, Phosphor and Cadmium free, UV-resistant. Good resistance to fuel, mineral oils, greases and diluted bases

Product Ref.	For conduit size [mm]	Thread size	Inner diameter [mm]	A [mm]	B [mm]	Dimensions C [mm]	D [mm]	E [mm]	Weight [kg/100]	Quantity [pieces]
<b>45° FITTING WITH METRIC METRIC (I.S.O.) THREAD</b>										
NY-45F12-BKM16	12	M16 x 1.5	10.5	50.0	11.0	24.0	23.0	45.0	0.9	50
NY-45F17-BKM20	17	M20 x 1.5	11.5	60.0	11.0	29.0	27.0	56.0	1.4	50
NY-45F23-BKM25	23	M25 x 1.5	18.5	70.0	12.0	37.0	34.0	67.0	2.2	30
NY-45F29-BKM32	29	M32 x 1.5	25.7	80.0	15.0	45.0	41.0	76.0	3.6	10
NY-45F36-BKM40	36	M40 x 1.5	32.0	96.0	19.0	53.0	50.0	90.0	5.4	10
NY-45F48-BKM50	48	M50 x 1.5	42.0	109.0	19.0	67.0	60.0	106.0	8.4	5
<b>45° FITTING WITH PG THREAD</b>										
NY-45F12-BKPG11	12	PG11	11.5	50.0	11.0	24.0	26.0	47.0	0.9	50
NY-45F17-BKPG16	17	PG16	14.7	60.0	11.0	29.0	30.0	58.0	1.5	50
NY-45F23-BKPG21	23	PG21	18.5	69.0	11.0	37.0	37.0	69.0	2.2	30
NY-45F29-BKPG29	29	PG29	25.5	78.0	12.0	45.0	46.0	79.0	3.7	10
NY-45F36-BKPG36	36	PG36	32.0	90.0	13.0	53.0	56.0	94.0	5.5	10
NY-45F48-BKPG48	48	PG48	42.0	102.0	13.0	67.0	69.0	112.0	8.8	5

See pages 322 to 325 for locknuts and accessories

## T-splits

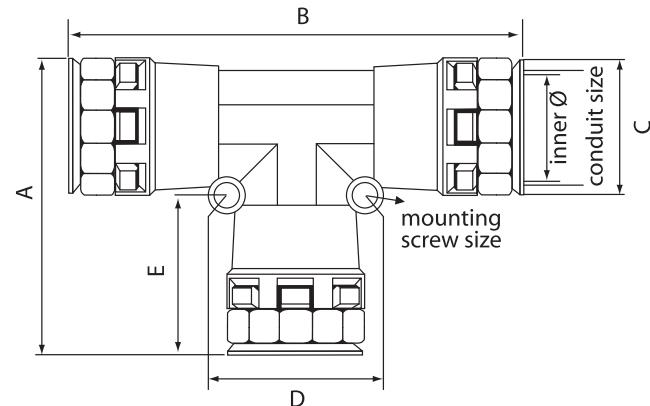
Fittings for ultra-flexible nylon conduits

- High quality Polyamide (PA6)
- UV and shock resistant
- Secure: self-locking (push-fit) installation onto the conduit
- Quick and easy to install and remove, no tool required
- Strong: high pull-off strength thanks to the self-locking clips around the whole circumference of the conduit
- Handy: "one-piece assembly" construction, no loose parts
- Watertight: IP66 rating as standard, without additional accessories
- O-rings are available (delivered separately) for the applications requiring a maximum IP rating (IP69K)
- Can be used with all the types of Shureflex® ultra-flexible nylon conduits, from 10 mm to 36 mm nominal sizes



## Technical Information

Conduit type	Shureflex® Nylon conduits
Style	T-split
IP rating	IP66 (standard) IP69K (with additional Shureflex® O-ring)
Material	Polyamide 6
Colour	Black
Temperature range	-30°C to +100°C (intermittent: to +150°C)
Flammability rating	UL 94 V-2 (produced from UL 94 V-0 raw material)
Other properties	Halogen, Phosphor and Cadmium free, UV-resistant. Good resistance to fuel, mineral oils, greases and diluted bases



Product Ref.	For conduit size [mm]	Thread size	Inner diameter [mm]	A [mm]	B [mm]	Dimensions C [mm]	D [mm]	E [mm]	Weight [kg/100]	Quantity [pieces]
NY-T10-BK	10 (3x)	M4 (2x)	11.2 (3x)	46.0	72.0	20.0 (3x)	19.0	27.0	1.5	20
NY-T12-BK	12 (3x)	M4 (2x)	12.8 (3x)	52.0	81.0	23.5 (3x)	20.5	30.0	2.1	20
NY-T17-BK	17 (3x)	M5 (2x)	18.0 (3x)	63.0	96.0	29.0 (3x)	28.0	35.0	3.4	20
NY-T23-BK	23 (3x)	M5 (2x)	25.5 (3x)	76.0	117.0	37.0 (3x)	36.0	40.0	5.3	10
NY-T29-BK	29 (3x)	M5 (2x)	31.5 (3x)	85.0	128.0	45.0 (3x)	41.5	41.0	8.6	5
NY-T36-BK	36 (3x)	M6 (2x)	38.5 (3x)	97.0	144.0	53.0 (3x)	50.5	46.0	11.7	5

See pages 322 to 325 for accessories

## Sealing washers

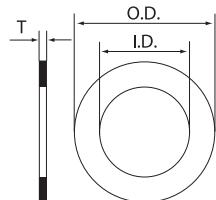
Accessories for nylon conduit and fittings



- To be placed around the thread of the Shureflex® Nylon fitting, between the fitting and the entry panel

### Technical Information

Fitting type	Shureflex® Nylon fittings
Material	Deformable, asbestos free material
Colour	Blue
Temperature range	-40°C to +200°C



Product Ref.	Thread size	Inner diameter I.D. [mm]	Outer diameter O.D. [mm]	Thickness T [mm]	Weight [kg/100]	Quantity [pieces]
<b>SEALING WASHERS FOR METRIC (I.S.O.) THREAD</b>						
NY-SW-M12	M12	12	18	1.5	0.04	100
NY-SW-M16	M16	16	22	1.5	0.05	100
NY-SW-M20	M20	20	27	1.5	0.07	100
NY-SW-M25	M25	25	35	1.5	0.14	50
NY-SW-M32	M32	32	43	1.5	0.19	30
NY-SW-M40	M40	40	55	1.5	0.34	20
NY-SW-M50	M50	50	69	1.5	0.50	10
<b>SEALING WASHERS FOR PG THREAD</b>						
NY-SW-PG7	PG7	12.4	18	1.5	0.04	100
NY-SW-PG9	PG9	15.2	21	1.5	0.04	100
NY-SW-PG11	PG11	18.6	26	1.5	0.07	100
NY-SW-PG13	PG13.5	20.4	29	1.5	0.09	100
NY-SW-PG16	PG16	22.5	33	1.5	0.13	100
NY-SW-PG21	PG21	28.3	39	1.5	0.29	50
NY-SW-PG29	PG29	37.0	49	1.5	0.34	30
NY-SW-PG36	PG36	47.0	59	1.5	0.25	20
NY-SW-PG48	PG48	59.3	71	1.5	0.30	10

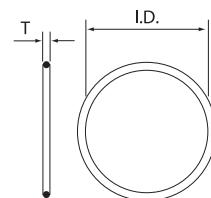
## O-rings

Accessories for nylon conduit and fittings

- To be inserted in the first groove of the Shureflex® Nylon conduit, prior to the insertion of the conduit into the fitting

### Technical Information

Conduit type	Shureflex® Nylon conduits
Material	NBR70 elastomer
Colour	Black
Temperature range	-30°C to +100°C



Product Ref.	Conduit size [mm]	Inner diameter I.D. [mm]	Diameter T [mm]	Weight [kg/100]	Quantity [pieces]
NY-OR-07	7	6.35	1.27	0.004	100
NY-OR-10	10	10.00	1.30	0.011	100
NY-OR-12	12	11.50	1.50	0.013	100
NY-OR-17	17	16.00	1.80	0.022	100
NY-OR-23	23	22.00	2.00	0.037	50
NY-OR-29	29	29.00	2.00	0.036	30
NY-OR-36	36	34.00	2.30	0.073	20
NY-OR-48	48	44.60	2.40	0.110	10

## Hexagonal locknuts

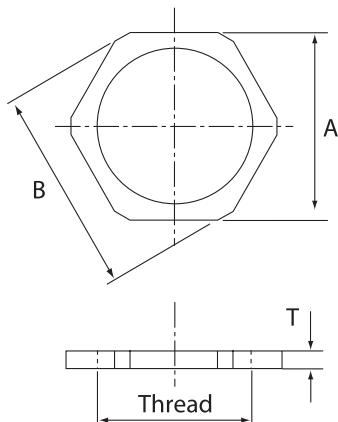
Accessories for nylon conduit and fittings



- For mounting the Shureflex® Nylon fittings on panels and enclosures
- High quality Polyamide (PA6)
- Shock resistant
- Thread style and thread size marked on the locknut for immediate identification
- Good resistance to mineral oils, greases and fuel

## Technical Information

Fitting type	Shureflex® Nylon fittings
Thread	Metric (I.S.O.), PG
Material	Polyamide 6
Colour	Black
Temperature range	-30°C to +100°C
Flammability rating	UL 94 V-2
Other properties	Halogen, Phosphor and Cadmium free



Product Ref.	Thread size	A - spanner size [mm]	Dimensions B - Across corner [mm]	T - thickness [mm]	Weight [kg/100]	Quantity [pieces]
<b>LOCKNUT WITH METRIC (I.S.O.) THREAD</b>						
NY-LNBK-M12	M12	17	18.0	5	0.09	100
NY-LNBK-M16	M16	22	24.0	5	0.14	100
NY-LNBK-M20	M20	26	28.0	6	0.20	100
NY-LNBK-M25	M25	32	35.0	6	0.30	100
NY-LNBK-M32	M32	42	47.0	7	0.60	100
NY-LNBK-M40	M40	52	57.5	7	0.88	50
NY-LNBK-M50	M50	62	68.0	9	1.66	50
<b>LOCKNUT WITH PG THREAD</b>						
NY-LNBK-PG7	PG7	15	16.5	4.5	0.05	100
NY-LNBK-PG9	PG9	19	20.9	4.5	0.11	100
NY-LNBK-PG11	PG11	22	24.2	5.0	0.12	100
NY-LNBK-PG13	PG13.5	24	26.4	5.5	0.17	100
NY-LNBK-PG16	PG16	27	29.7	6.0	0.25	100
NY-LNBK-PG21	PG21	32	35.2	6.5	0.29	100
NY-LNBK-PG29	PG29	41	45.1	7.5	0.48	50
NY-LNBK-PG36	PG36	54	59.4	9.0	0.79	20
NY-LNBK-PG48	PG48	67	73.7	9.5	1.16	1

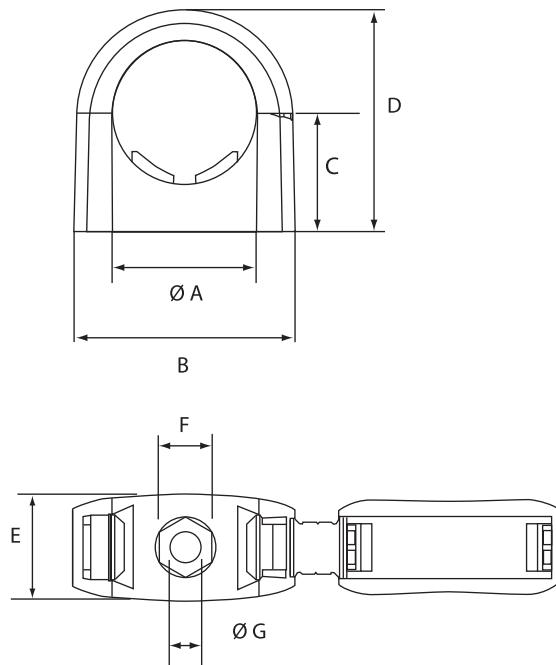
## Mounting brackets

Accessories for nylon conduit and fittings

- A range of mounting brackets for quickly and easily attaching the Shureflex® Nylon conduits to existing equipment
- Screw mounted (with 1 screw) for secure installation
- Quick installation: the cover is just snapped after inserting the conduit
- The conduits can rotate freely in the mounting bracket
- Releasable and re-usable
- Resistant to UV, to oils, greases, fuels, cleaning fluids and synthetic fluids

### Technical Information

Conduit type	Shureflex® Nylon conduits
Material	Polyamide 6.6
Colour	Black
Temperature range	-40°C to +120°C (intermittent: to +150°C)
Other properties	Halogen free, UV resistant



Product Ref.	Conduit size A [mm]	B [mm]	C [mm]	Dimensions D [mm]	E [mm]	F [mm]	ØG Installation hole [mm]	Weight [g/piece]	Quantity [pieces]
NY-MB-07	7	22.6	12.9	23.3	11.6	7.5	4.2	1.9	10
NY-MB-10	10	22.6	12.9	23.3	11.6	7.5	4.2	1.7	10
NY-MB-12	12	26.7	15.1	26.9	13.7	8.8	5.1	2.6	10
NY-MB-17	17	33.8	19.5	34.9	17.5	10.4	6.1	4.8	10
NY-MB-23	23	43.8	23.4	43.7	20.7	10.3	6.1	8.6	10
NY-MB-29	29	52.8	26.9	51.6	23.2	10.2	6.2	12.7	10
NY-MB-36	36	64.5	32.4	62.5	27.0	10.2	6.2	19.5	5
NY-MB-48	48	81.0	38.5	77.0	32.1	10.2	6.2	34.7	5

## Metallic fittings for threadless conduits

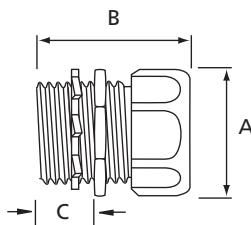
Rigid and intermediate metal conduit fittings



002884



E23018



- Makes a permanent connection and eliminates the need for cutting a thread on the rigid conduit.
- A split steel ring with diagonal serrations grips the conduit and bites into it for positive ground.
- Insulation helps to guarantee continuity of service with protection of the conductor at the critical point: the bushing
- Available in 2 versions, with or without nylon insert
- Components: gland nut, steel ring, steel spacer (only for sizes up to 1 inch), body (with or without insert), locknut

### Technical Information

Conduit Type	Metallic rigid conduits
Style	Straight
Thread	NPT (up to 1") or NPS (larger than 1")
Material	Zinc plated steel or malleable iron
Gland nut	Zinc plated steel (up to 1") or malleable iron (larger sizes)
Locknut	Zinc plated steel
Insert	Nylon

Product Ref. insulated	Product Ref. non-insulated	For conduit size [inch]	Thread size	Dimensions			Weight insulated [kg/100]	Weight non-insulated [kg/100]	Quantity insulated [pieces]	Quantity non-insulated [pieces]
8123	8121	1/2	1/2" NPT	31.0	42.9	38.1	9.1	9.5	10	25
8223	8221	3/4	3/4" NPT	38.9	44.5	38.1	12.0	11.7	10	25
8323	8321	1	1" NPT	48.4	50.8	14.3	18.1	18.0	5	5
8423	8421	1 1/4	1 1/4" NPS	34.9	61.9	27.0	36.3	34.7	5	5
8523	8521	1 1/2	1 1/2" NPS	68.3	66.7	19.1	40.8	48.8	2	2
8623	8621	2	2" NPS	82.6	71.4	21.4	72.6	71.2	2	2
8723-TB	8721	2 1/2	2 1/2" NPS	104.8	96.8	28.6	154.2	160.6	2	2
8823-TB	8821	3	3" NPS	123.8	101.6	13.5	181.4	195.0	1	1
8853	8851	3 1/2	3 1/2" NPS	139.7	104.8	28.6	220.0	226.8	1	1
8973	8971	4	4" NPS	153.2	123.8	28.6	275.0	283.5	1	1

Note: insulated version also available in right angled (elbow) style up to 2"

## Metallic couplings for threadless conduits

*Rigid and intermediate metal conduit fittings*

- Easy coupling between 2 rigid conduits
- Eliminates the need for cutting a thread on the rigid conduits
- When tightened with a wrench, they form a UL listed and CSA approved concrete-tight connection
- Components: 2 gland nuts, steel ring, steel spacer (only for sizes up to 1 inch), body

### Technical Information

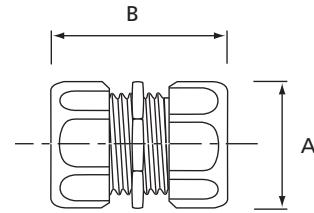
Conduit Type	Metallic rigid conduits
Style	Straight
Material	Zinc plated malleable iron or steel
Gland nut	Zinc plated steel (up to 1") or malleable iron (larger sizes)



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E23018



Product Ref.	For conduit size [inch]	Dimensions	Weight [kg/100]	Quantity [pieces]
		A [mm]	B [mm]	
8120	1/2	32.5	50.8	25
8220	3/4	40.5	58.7	25
8320	1	47.6	68.3	5
8420	1 1/4	60.3	71.4	5
8520	1 1/2	66.7	92.1	2
8620	2	82.6	96.8	2
8720	2 1/2	100.0	136.5	2
8820	3	119.1	139.7	1
8850	3 1/2	131.8	139.7	1
8970	4	144.5	139.7	1

## Plastic bushing

Rigid and intermediate metal conduit fittings

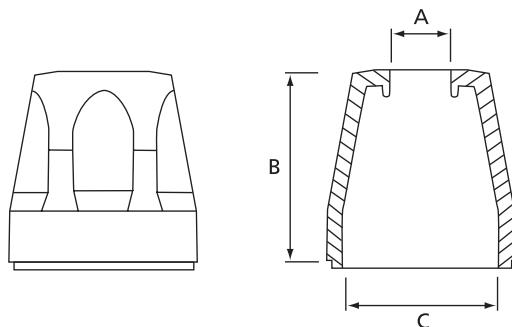
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4484

E13938

- For threadless rigid conduits and intermediate metal conduits
- When assembled to the end of a threadless conduit, provides a well rounded insulating surface over which conductors may be pulled or on which conductors may bear while in service.
- Designed to be popped onto, and bush, conduit end.
- Fast easy installation without screws
- High impact thermoplastic construction, for applications up to +105°C
- Flammability rating UL 94 V-1

## Technical Information

Conduit Type	Metallic rigid conduits
Style	Straight
Material	UL 94 V-1 rated thermoplastic
Conformity	UL514, ANSI C80.4, ANSI C33.84 NFPA 70-1978 (ANSI)

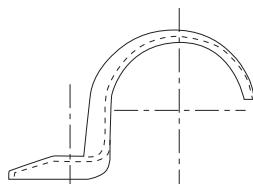


Product Ref.	For conduit size [inch]	A [mm]	Dimensions B [mm]	C [mm]	Weight [kg/100]	Quantity
TRIB50	1/2	15.1	15.1	27.0	0.4	50
TRIB75	3/4	19.8	35.3	31.8	1.1	50
TRIB100	1	25.4	38.1	39.7	1.5	25
TRIB125	1 1/4	23.8	41.3	48.8	2.9	10
TRIB150	1 1/2	38.9	42.1	55.2	4.3	5
TRIB200	2	50.0	46.0	68.3	7.9	2
TRIB250	2 1/2	59.9	50.8	82.6	7.7	2
TRIB300	3	74.2	56.4	99.2	5.0	2
TRIB350	3 1/2	85.7	58.7	113.1	14.7	2
TRIB400	4	97.6	61.1	127.0	14.7	2

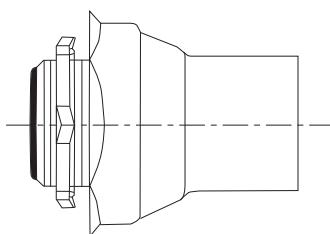
## Other Thomas & Betts Conduit and Fittings

Examples of other fittings and accessories for the rigid and intermediate metal conduit:

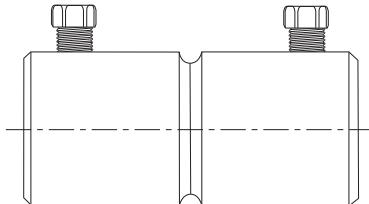
- Conduit straps and supports



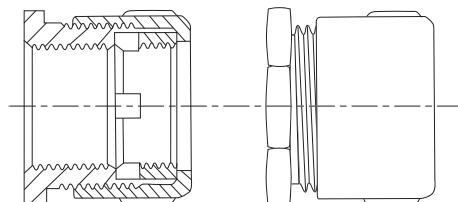
- Uncoated and PVC-coated hubs for threaded rigid conduits



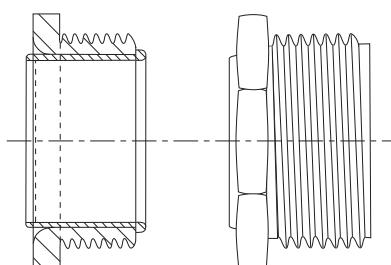
- Set screw connectors and couplings



- Threaded Erickson couplings



- Insulated nipples and bushings



The product ranges shown in this catalogue represent only a small part of the extensive range of conduits and fittings that Thomas & Betts offer on a global scale, including among others:

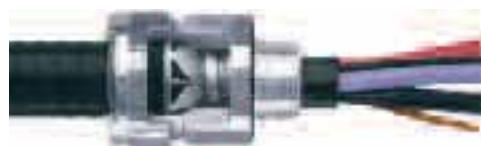
- Other special fittings for flexible metallic conduits (e.g. PVC coated fittings, aluminium fittings, fittings with revolving grounding lug, etc)
- Conduit outlet bodies, for ordinary and hazardous locations
- Explosion proof conduit outlet bodies, elbows, reducers, plugs, adapters and couplings



- Explosion proof aluminium sealing fittings



- STAR Teck metal clad cable glands for harsh and corrosive environments



- Non-metallic sheathed cable glands



- OCAL, corrosion resistant PVC-coated rigid conduits, junction boxes and accessories



For more detailed information on these products, please visit the Thomas & Betts global web site: [www.tnb-europe.com](http://www.tnb-europe.com) and / or contact your Sales Office for product availability.



Cable glands  
Providing strain relief  
and sealing  
for cable entries

## CONDUIT &amp; FITTINGS

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Whatever the application.  
Whatever the size.  
Thomas & Betts is your  
connection to tough,  
versatile cable glands.



*Shureseal™ Cable glands  
Providing strain relief and sealing  
for cable entries*

**The Liquidtight cable glands take twice the cable range of most ordinary strain relief connectors. T&B's cable glands allow you to reduce your inventory and save time, with one connector that can do the work of two. The sturdy nylon material of the plastic cable glands adds corrosion resistance to your installation.**

Thomas & Betts offers a complete line of rugged, reliable cable glands. All fittings are produced to the highest standards, combining innovative design and precision manufacturing methods to provide the products you need for your specific applications. Combining proven performance, installation advantages and availability of ranges, T&B is also your connection to lower installed costs for the life of your cord and cable requirements.

**Standard application**

- Provide means for passing a cable into an enclosure, through a bulkhead or into a rigid conduit.
- Form a mechanical grip and water and/or oil resistant seal for round cables.
- Form a non-slip connection or termination for flexible cable.

**Features**

- Extended range with superior strain relief.
- Reduced overall size fits into tighter spaces.
- Gland nut designed to restrict cable bending.

## Straight metallic cable glands

### Cable glands



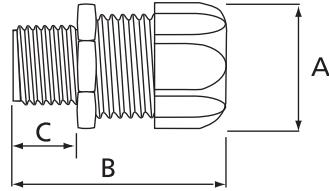
- Special construction prevents twisting and ensures effective strain relief

#### Technical Information

Style/thread	Straight / NPT and metric (I.S.O.)
IP rating	IP65
Material	Zinc or zinc plated steel
Gland nut	Steel or zinc plated steel
Seal	Neoprene or rubber
Colour	Metallic
Temperature range	-35°C to +105°C

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Product ref.	Material body	Material seal	Material nut	Cable ø range from...to [mm]	Thread size	A [mm]	Dimensions B [mm]	C [mm]	Quantity [pieces]
<b>STRAIGHT METALLIC CABLE GLAND WITH METRIC (I.S.O.) THREAD</b>									
9520*	zinc plated steel	Neoprene	zinc plated steel	3.2 - 6.3	M20	28.6	42.0	14.3	25
9521-EU*	zinc plated steel	Neoprene	zinc plated steel	6.3 - 9.5	M20	28.6	42.0	14.3	25
9522-EU*	zinc plated steel	Neoprene	zinc plated steel	9.5 - 12.7	M20	28.6	42.0	14.3	25
9523*	zinc plated steel	Neoprene	zinc plated steel	11.4 - 14.2	M20	28.6	42.0	14.3	25
9524-EU*	zinc plated steel	Neoprene	zinc plated steel	12.7 - 15.8	M20	34.9	44.5	15.0	25
<b>STRAIGHT METALLIC CABLE GLAND WITH NPT THREAD</b>									
2920	zinc	rubber	zinc plated steel	3.2 - 9.5	1/2	28.6	44.5	15.9	25
2921	zinc	rubber	zinc plated steel	7.9 - 14.2	1/2	28.6	44.5	15.9	25
2922	zinc	rubber	zinc plated steel	12.7 - 19.1	1/2	34.9	44.5	15.9	10
2930	zinc	rubber	zinc plated steel	3.2 - 9.5	3/4	34.9	45.2	19.1	10
2931	zinc	rubber	zinc plated steel	7.9 - 14.2	3/4	34.9	45.2	19.1	10
2932	zinc	rubber	zinc plated steel	12.7 - 19.1	3/4	34.9	45.2	19.1	10
2940	zinc	rubber	zinc plated steel	7.9 - 14.2	1	34.9	44.5	20.6	10
2941	zinc	rubber	zinc plated steel	12.7 - 19.1	1	34.9	44.5	20.6	10
2942	zinc	rubber	zinc plated steel	17.8 - 24.1	1	41.3	47.6	20.6	10
2520	zinc	Neoprene	steel	3.2 - 6.4	1/2	29.4	42.9	15.9	25
2521	zinc	Neoprene	steel	6.4 - 9.5	1/2	29.4	42.9	15.9	25
2522	zinc	Neoprene	steel	9.5 - 12.7	1/2	29.4	42.9	15.9	25
2523	zinc	Neoprene	steel	11.4 - 14.2	1/2	29.4	42.9	15.9	25
2524	zinc	Neoprene	steel	12.7 - 15.9	1/2	34.9	44.5	15.9	25
2525	zinc	Neoprene	steel	15.9 - 19.1	1/2	34.9	44.5	15.9	25
2558	zinc	Neoprene	steel	22.4 - 27.1	1 1/4	53.2	54.8	20.6	5
2559	zinc	Neoprene	steel	27.1 - 30.6	1 1/4	53.2	54.8	20.6	5
2562	zinc	Neoprene	steel	20.6 - 25.4	1 1/2	59.5	63.5	17.5	5
2563	zinc	Neoprene	steel	25.4 - 30.1	1 1/2	59.5	63.9	17.5	5
2574	zinc	Neoprene	steel	34.9 - 41.3	2	71.4	66.7	17.5	1
2575	zinc	Neoprene	steel	41.3 - 47.6	2	71.4	66.7	17.5	1

\* The Product Ref. with a \* are not CSA approved

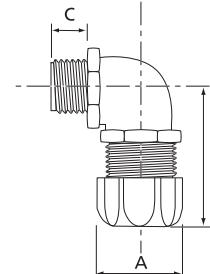
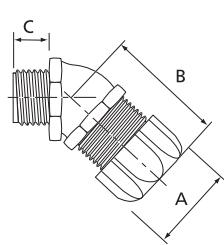
## 45° and 90° metallic cable glands

### Cable glands

- Special construction prevents twisting and ensures effective strain relief

#### Technical Information

Style/thread	45° and 90° / NPT
IP rating	IP65
Material	Zinc or zinc plated steel
Gland nut	Steel or zinc plated steel
Seal	Neoprene or rubber
Colour	Metallic
Temperature range	-35°C to +105°C



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Product ref.	Material body	Material seal	Material nut	Cable ø range from...to [mm]	Thread size	Dimensions		Quantity
90° METALLIC CABLE GLAND WITH NPT THREAD								
4960	zinc plated steel	rubber	steel	3.2 - 9.5	1/2	28.6	44.5	15.9
4961	zinc plated steel	rubber	steel	7.9 - 14.2	1/2	28.6	44.5	15.9
4970	zinc plated steel	rubber	steel	3.2 - 9.5	3/4	34.9	45.2	17.5
4971	zinc plated steel	rubber	steel	7.9 - 14.2	3/4	34.9	45.2	17.5
4972	zinc plated steel	rubber	steel	12.7 - 19.0	3/4	34.9	45.2	17.5
45° METALLIC CABLE GLAND WITH NPT THREAD								
2200	zinc plated malleable iron	Neoprene	zinc plated steel	3.2 - 6.3	1/2	29.4	32.5	14.3
2201	zinc plated malleable iron	Neoprene	zinc plated steel	6.3 - 9.5	1/2	29.4	32.5	14.3
2202	zinc plated malleable iron	Neoprene	zinc plated steel	9.5 - 12.7	1/2	29.4	32.5	14.3
2203	zinc plated malleable iron	Neoprene	zinc plated steel	11.4 - 14.2	1/2	29.4	32.5	14.3
2204	zinc plated malleable iron	Neoprene	zinc plated steel	12.7 - 15.9	1/2	34.9	35.7	14.3
2205	zinc plated malleable iron	Neoprene	zinc plated steel	15.9 - 19.1	1/2	34.9	35.7	14.3
2206-TB	zinc plated malleable iron	Neoprene	zinc plated steel	3.2 - 6.3	3/4	34.9	35.7	15.9
2207-TB	zinc plated malleable iron	Neoprene	zinc plated steel	6.3 - 9.5	3/4	34.9	35.7	15.9
2208-TB	zinc plated malleable iron	Neoprene	zinc plated steel	9.5 - 12.7	3/4	34.9	35.7	15.9
2209	zinc plated malleable iron	Neoprene	zinc plated steel	12.7 - 15.9	3/4	34.9	35.7	15.9
2210	zinc plated malleable iron	Neoprene	zinc plated steel	15.9 - 19.1	3/4	34.9	35.7	15.9
2211	zinc plated malleable iron	Neoprene	zinc plated steel	19.1 - 22.2	3/4	42.9	38.1	38.1
2213	zinc plated malleable iron	Neoprene	zinc plated steel	9.5 - 12.7	1	34.9	38.1	19.8
2214	zinc plated malleable iron	Neoprene	zinc plated steel	12.7 - 15.9	1	34.9	38.1	19.8
2215	zinc plated malleable iron	Neoprene	zinc plated steel	15.9 - 19.1	1	34.9	38.1	19.8
2216	zinc plated malleable iron	Neoprene	zinc plated steel	19.1 - 22.2	1	42.9	37.3	19.8
2217	zinc plated malleable iron	Neoprene	zinc plated steel	22.2 - 25.0	1	42.9	37.3	19.8
2218	zinc plated malleable iron	Neoprene	zinc plated steel	22.3 - 27.0	1	53.2	50.0	19.8
2219	zinc plated malleable iron	Neoprene	zinc plated steel	27.0 - 30.1	1	53.2	50.0	19.8
2220-TB	zinc plated malleable iron	Neoprene	zinc plated steel	22.3 - 27.0	1 1/4	53.2	48.4	20.6
2221	zinc plated malleable iron	Neoprene	zinc plated steel	27.0 - 30.1	1 1/4	53.2	48.4	20.6
2222	zinc plated malleable iron	Neoprene	zinc plated steel	30.1 - 34.9	1 1/4	59.5	57.2	20.6
2223	zinc plated malleable iron	Neoprene	zinc plated steel	34.9 - 37.7	1 1/4	59.5	57.2	20.6

## Plastic cable glands

### Cable glands



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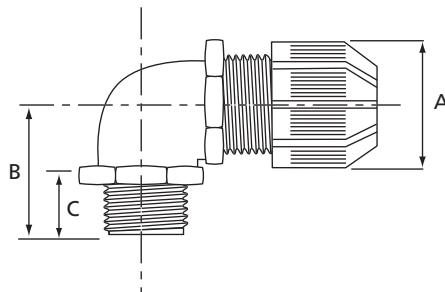
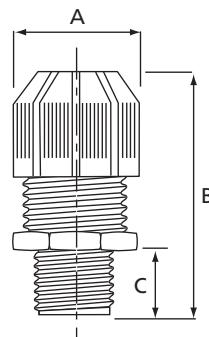


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- High performance plastic cable fittings
- Special construction prevents twisting and ensures effective strain relief
- Easy to install
- For all cable sizes between 3.2 and 24.1 mm of outer diameter

#### Technical Information

Style/thread	Straight and 90° / NPT threads
IP rating	IP65
Material	UV resistant polyamide 6.6.
Steel locknut	Chromate finished steel or zinc
Seal	Neoprene
Colour	Black
Flammability rating	UL 94 V-2
Temperature range	-34°C to +105°C



Product ref.	Cable diameter range from...to [mm]	Thread size [inch]	A [mm]	B [mm]	C [mm]	Quantity [pieces]
<b>STRAIGHT PLASTIC CABLE GLAND WITH NPT THREAD</b>						
2920NM	3.2 - 9.5	1/2	26.2	54.0	15.9	25
2921NM	7.9 - 14.2	1/2	26.2	54.0	15.9	25
2922NM	12.7 - 19.0	1/2	35.7	54.0	15.9	25
2930NM	3.2 - 9.5	3/4	35.7	55.6	15.9	10
2931NM	7.9 - 14.2	3/4	35.7	55.6	15.9	10
2932NM	12.7 - 14.2	3/4	35.7	55.6	15.9	10
2940NM	7.9 - 14.2	1	35.7	59.5	19.8	10
2941NM	12.7 - 19.0	1	35.7	59.5	19.8	10
2942NM	17.8 - 24.1	1	42.5	60.3	19.8	10
<b>90° PLASTIC CABLE GLAND WITH NPT THREAD</b>						
4960NM	3.2 - 9.5	1/2	30.9	31.8	15.9	25
4961NM	7.9 - 14.2	1/2	30.9	31.8	15.9	25
4970NM	3.2 - 9.5	3/4	35.7	34.9	15.9	10
4971NM	7.9 - 14.2	3/4	35.7	34.9	15.9	10
4972NM	12.7 - 19.0	3/4	35.7	34.9	15.9	10

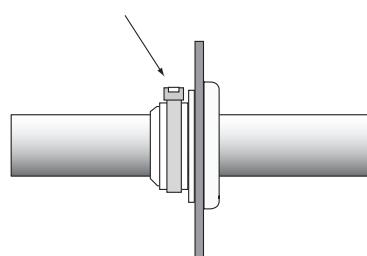
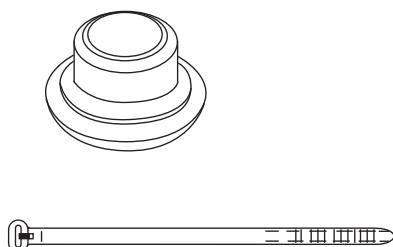
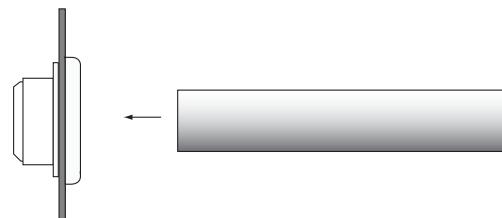
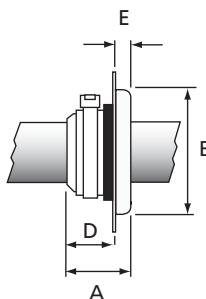
## Housing entry tubes with strain relief ties

Cable glands

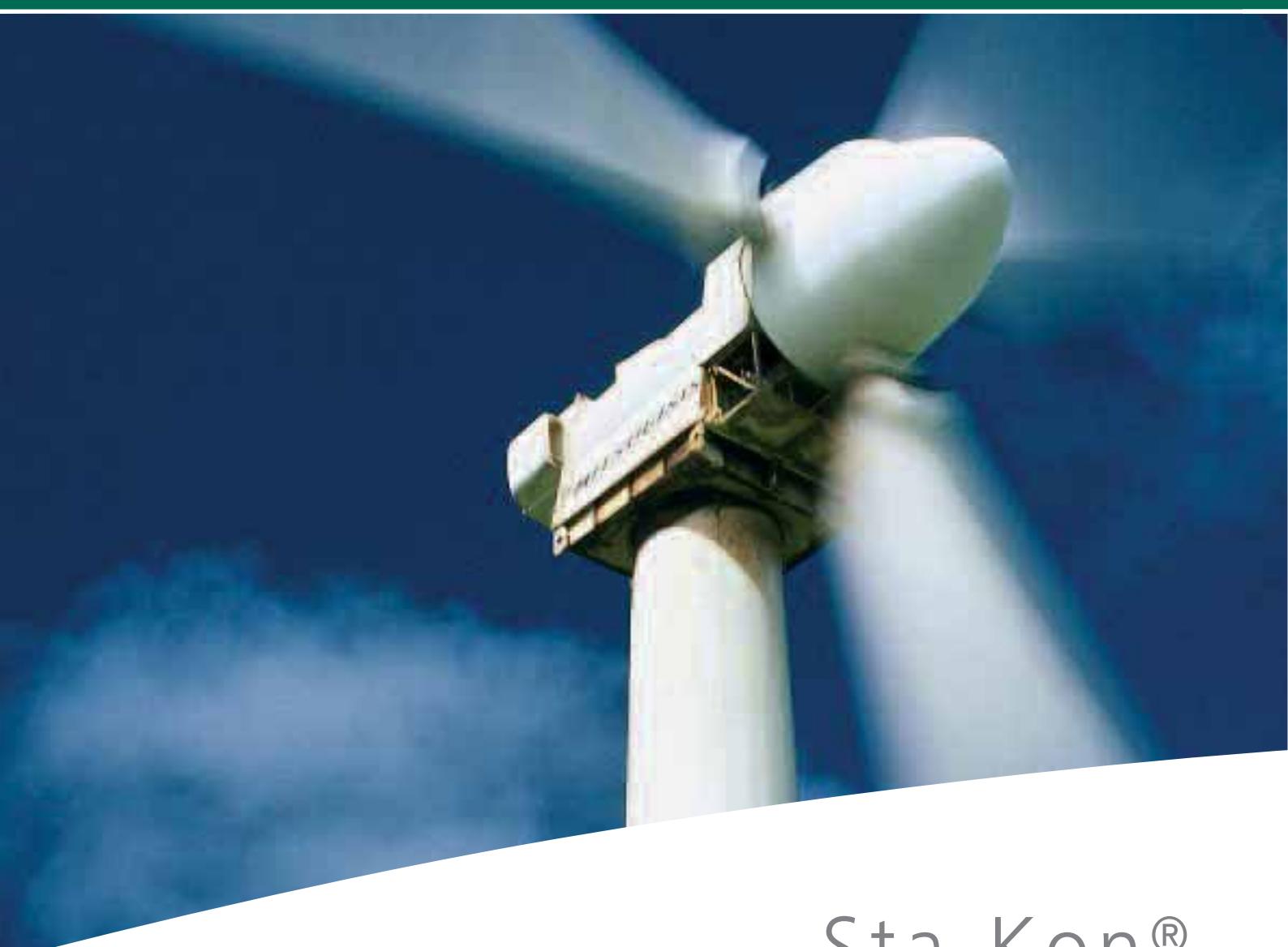
- Highly elastic material allows passing of single wires
- Resistant to chemicals
- Weatherproof
- Simple and fast installation
- Supplied with a UV-resistant Ty-Rap® cable tie (see chapter 1 for cable tie specifications) for strong, secure and watertight strain-relief

## Technical Information

Material - Housing	Neoprene
Material - Tie	Polyamide 6.6, UV-resistant
Temperature range	-30°C to +110°C for the housing -40°C to +85°C for the cable tie
Colour	Black (housing and tie)
Flammability rating	UL 514 (housing) UL 94 V-2 (cable tie)
Other properties	Halogen free, Silicone free



Product Ref.	Dimensions				for cable Ø from ... to [mm]	Ø of hole in panel [mm]	for panel thickness up to [mm]	Type of included cable tie	Weight [g/100]	Quantity
	A [mm]	B [mm]	D [mm]	E [mm]						
7401	18.6	24	13.6	5.0	4.0 - 9.0	16	2.2	TY24MX	420	10
7402	18.7	28	13.7	5.0	7.0 - 12.0	19	2.2	TY25MX	690	10
7403	22.0	34	17.0	5.0	12.0 - 18.0	25	2.2	TY25MX	1100	10
7404	24.0	43	19.0	5.0	18.0 - 25.0	32	2.2	TY25MX	1500	5
7405	24.5	51	18.5	6.0	25.0 - 32.0	38	2.2	TY25MX	1950	5



Sta-Kon®  
Solderless crimp  
connectors to  
terminate cables

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# Sta-Kon® Solderless crimp connectors

## Experience the Sta-Kon® advantage!

**Thomas & Betts developed the first tool-applied solderless terminals and connectors more than 60 years ago in response to industry awareness of the need for better performance of electrical systems.**

Since then, the crimping technology, in which a permanent joining of wires / cables to connectors is achieved by the insertion of a conductor into the barrel of the connector, which is then compressed to form a solid joint, has proven its many advantages year after year. Reliability of connection, low installed cost, low level of skill required to produce repeatable and quality crimps, environmental compliance (versus soldering for instance) are examples of benefits that have given this technology its natural superiority.



*Wide range of styles,  
materials and  
application tools*

#### **Easy entry design**

This feature makes wire insertion faster and easier. Chamfering eliminates wire strand "hang up" and departure upon insertion into the terminal's barrel. The loss of even a couple of wire strands can have negative results on electrical efficiency and resistance to mechanical strain.

#### **Brazed seam / tubular construction**

Sta-Kon® connectors have a barrel with brazed seam (or a tubular construction), which provides increased mechanical properties (no barrel separation during the crimp process, higher wire pull-out force) and electrical properties (reduced chances of wire strand loss and electrical failure) compared to butted seam connectors.

#### **Wide range of styles, materials and application tools**

Extensive range of styles to suit the various applications: rings, forks, blades, pins, bootlace ferrules, disconnects, splices...

Non-insulated or insulated with various types of material (Polycarbonate, Vinyl, Polyamide, Tefzel®...) according to the specific requirements.

Complete range of tooling, from ergonomic hand tool to pneumatic and hydraulic power tools.

## Selection guide

### Crimp terminals



With the Sta-Kon® range of solderless terminals, Thomas & Betts offer a complete termination system:

- Terminals for wires / cables from 0.25 to 150 mm<sup>2</sup>
- Insulated, non-insulated, disconnects and splices
- Copper lugs and compression connectors
- Standard and unique products for specific applications
- Products for harsh or ambient environments
- Low to high volume applications
- Complete range of tooling, from ergonomic hand tool to pneumatic and hydraulic power tools

Sta-Kon® terminals are available in insulated and non insulated versions (including copper tube terminals)

Features	Benefits	Insulated terminals	Non insulated terminals	Copper tube lugs
Easy entry design	Avoid wire hang up and allows fast and secure insertion of the conductor	x	x	x
High conductivity electrolytic copper	Superior conductivity and low contact resistance with a strong connection	x	x	x
Disconnects in brass with min. 70% copper	Improved mechanical properties (spring effect)	x	x	
Electro-tin plating	Maximum corrosion resistance	x	x	
The contact area on the terminal (e.g. in forks, rings,...) is harder than the crimp area	Better resistance to mechanical deformations	x	x	
Brazed seam (*)	No barrel separation during crimping	x	x	
Internal barrel serrations (with some terminals)	Better contact (low contact resistance) and improved mechanical properties (against vibration and pull out)	x	x	
Cable size and bolt size marking (on most terminals)	Instant identification and selection of the terminal	x	x	x
Dimensional specifications according to DIN 46235 and DIN 46234	Standardised dimensioning		x	
Several styles: Rings, Forks, Blades, pins, bootlace ferrules, Male and female disconnects, ...	To cover all types of application	x	x	
Special styles: Copper tube ring terminals, PCB terminals (DIN 46244)	To cover specific applications		x	x
Colour coded insulators, according to DIN cable sizes	Instant identification and selection of the terminal	x		
Several insulation materials: PVC (Vinyl), PA (Nylon), PC, Tefzel®	Multiple temperature and flammability rating	x		
Specifications	According to DIN specifications MIL, UL, CSA approved terminals available upon request	x	x	x
Dedicated tooling range: crimp tools cable strippers and cutters	Reliable and high quality crimps, for all kind of volumes Standard, ergonomic and heavy duty ranges	x	x	x

Tefzel® is a registered trademark of DuPont de Nemours

(\*) Note: some non-insulated terminals have a copper tube construction, for maximum resistance against barrel opening during the crimp process

## Selection guide

### Crimp terminals

Terminal type	Material	Plating	Marking	Metal barrel	Insulation	Colour coding	Cable insertion	Flammability rating	Page N°
<b>INSULATED TERMINALS</b>									
	Ring	Copper	Tin plated	Wire size & bolt size	Brazed seam	PC / PVC / PA	yes	Easy entry	UL 94 V-0 & UL 94 V-2 344
	Fork	Copper	Tin plated	Wire size & bolt size	Brazed seam	PC / PVC / PA	yes	Easy entry	UL 94 V-0 & UL 94 V-2 347
	Pin	Electrolytic Copper	Tin plated	-	Brazed seam	PC	yes	Easy entry	UL 94 V-2 350
	Blade	Electrolytic Copper	Tin plated	Wire size	Brazed seam	PC	yes	Easy entry	UL 94 V-2 351
	Bootlace	Copper	Tin plated	-	Copper tube	PA	yes	-	UL 94 V-2 352
	Disconnect	Brass with 70% copper**	Tin plated	-	Brazed seam*	PC / PVC / PA	yes	Easy entry	UL 94 V-0 & UL 94 V-2 353
	Bullet	Phosphor bronze / Brass	Tin plated	-	Brazed seam*	PC / PVC	yes	Easy entry	UL 94 V-0 & UL 94 V-2 356
	Splice	Electrolytic Copper / Brass	Tin plated	-	Brazed seam	PA / PC / heat shrink insulation / PP	yes	Easy entry	UL 94 V-2 358
<b>NON-INSULATED TERMINALS</b>									
	Ring	Electrolytic Copper	Electro-tin plating	Wire size & bolt size	Brazed seam	-	-	Easy entry	- 360
	Fork	Electrolytic Copper	Electro-tin plating	Wire size & bolt size	Brazed seam	-	-	Easy entry	- 361
	Pin	Electrolytic Copper	Tin plated	-	-	-	-	-	- 362
	Splice	Copper	Tin plated	-	Tubular construction	-	-	Easy entry	- 362
	Disconnect	Brass with 70% copper	Tin plated	-	-	-	-	-	- 365
	Solder tabs	Brass with 70% copper	Tin plated	-	-	-	-	-	- 367
<b>COPPER TUBE LUGS</b>									
	Ring	Electrolytic Copper	Tin plated	Wire size & bolt size	Copper tube	-	-	Easy entry	- 363

\* Non brazed, with brass support sleeve

\*\* 100% Brass for MTB1-TB

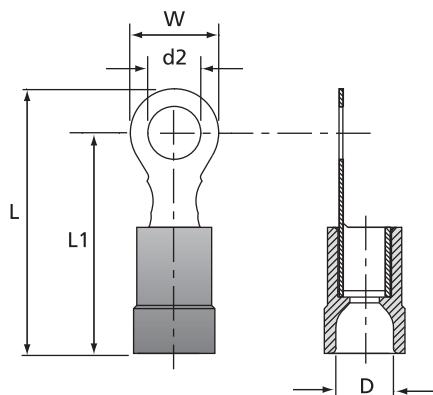
## Polycarbonate insulated ring terminals

*Insulated terminals*



### Technical Information

Material	Electrolytic copper
Plating	Tin plated
Marking	Wire size and bolt size stamped on the tongue
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PC = Polycarbonate High temperature applications, excellent deformation characteristics
Temperature resistance	+115°C / +125°C
Colour coding of the insulation	According to the wire size
Cable insertion	Easy entry
Flammability rating	UL 94 V-2



Product Ref.	Wire size range [mm <sup>2</sup> ]	Colour	Stud hole size d2	Dimensions	Weight [g/100]	Quantity [pieces]	Crimping tool*			
				W [mm]	L [mm]	D [mm]	L1 [mm]			
RZ 3	0.25 - 0.75	Green	M 3	5.5	18.0	3.2	15.0	36	100	
RZ 4	0.25 - 0.75	Green	M 4	7.5	21.0	3.2	17.5	45	100	ERG2510
RZ 5	0.25 - 0.75	Green	M 5	9.0	22.0	3.2	17.5	51	100	
RA3RR	0.5 - 1.5	Red	M 3	5.5	19.0	4.0	16.0	60	100	
RA4RR	0.5 - 1.5	Red	M 4	7.0	20.5	4.0	17.0	71	100	
RA5RR	0.5 - 1.5	Red	M 5	9.0	22.5	4.0	18.0	79	100	
RA6RR	0.5 - 1.5	Red	M 6	11.0	26.5	4.0	21.0	96	100	
RB 3	1.5 - 2.5	Blue	M 3	5.5	19.0	4.5	16.0	75	100	
RB 4-EU	1.5 - 2.5	Blue	M 4	7.0	20.5	4.5	17.0	92	100	ERG2000KE
RB 5	1.5 - 2.5	Blue	M 5	9.0	22.5	4.5	18.0	96	100	ERG2001A
RB 6	1.5 - 2.5	Blue	M 6	11.0	26.5	4.5	21.0	117	100	WT2124Y
RB 8	1.5 - 2.5	Blue	M 8	14.0	27.5	4.5	21.0	141	100	
RC 4	4.0 - 6.0	Yellow	M 4	8.0	24.0	6.4	20.5	158	50	
RC 5	4.0 - 6.0	Yellow	M 5	9.0	25.0	6.4	20.5	166	50	
RC 6-EU	4.0 - 6.0	Yellow	M 6	11.0	28.5	6.4	23.0	179	50	
RC 8	4.0 - 6.0	Yellow	M 8	14.0	31.0	6.4	24.0	220	50	
RC 10 E	4.0 - 6.0	Yellow	M 10	17.0	34.0	6.4	25.5	245	50	

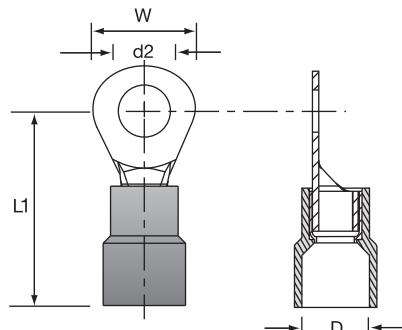
\* Use selection chart to determine die set (see page 376)  
See pages 370 to 376 for tooling specifications

## Nylon insulated ring terminals DIN 46237

Insulated terminals

## Technical Information

Material	Copper
Plating	Tin plated
Marking	Wire size and bolt size stamped on the tongue
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PA = Polyamide Ideal for harsh environments, excellent chemical, impact and abrasion resistance
Temperature resistance	+85°C / +105°C
Colour coding of the insulation	According to the wire size
Flammability rating	UL 94 V-2



Product Ref.	Wire size range [mm <sup>2</sup> ]	Colour	Stud hole size d2	Dimensions W [mm]	Dimensions L1 [mm]	Dimensions D [mm]	Weight [g/100]	Quantity [pieces]	Crimping tool*
TRA 3	0.5 - 1.5	Red	M 3	5.5	17.5	4.0	70	100	
TRA 35	0.5 - 1.5	Red	M 3.5	6.6	20.4	4.0	67	100	
TRA 4	0.5 - 1.5	Red	M 4	8.0	21.8	4.0	76	100	
TRA 5	0.5 - 1.5	Red	M 5	8.0	21.8	4.0	79	100	
TRA 6	0.5 - 1.5	Red	M 6	11.6	27.5	4.0	108	100	
TRA 8	0.5 - 1.5	Red	M 8	11.6	27.5	4.0	134	100	
TRB 3	1.5 - 2.5	Blue	M 3	6.0	20.6	4.5	79	100	
TRB 35	1.5 - 2.5	Blue	M 3.5	8.5	23.0	4.5	76	100	ERG2000KE
TRB 4	1.5 - 2.5	Blue	M 4	8.5	23.0	4.5	79	100	ERG2001A
TRB 5	1.5 - 2.5	Blue	M 5	9.5	22.9	4.5	89	100	WT2124Y
TRB 6	1.5 - 2.5	Blue	M 6	12.0	28.0	4.5	117	100	
TRB 8	1.5 - 2.5	Blue	M 8	12.0	28.0	4.5	148	100	
TRB 10	1.5 - 2.5	Blue	M 10	13.6	31.7	4.5	204	100	
TRC 4-EU	4.0 - 6.0	Yellow	M 4	7.4	26.7	6.4	158	100	
TRC 5-EU	4.0 - 6.0	Yellow	M 5	9.5	26.7	6.4	175	100	
TRC 6-EU	4.0 - 6.0	Yellow	M 6	12.0	32.7	6.4	187	100	
TRC 8	4.0 - 6.0	Yellow	M 8	15.0	34.9	6.4	230	100	
TRC 10	4.0 - 6.0	Yellow	M 10	15.0	34.9	6.4	296	100	

\* Use selection chart to determine die set (see page 376)

See pages 370 to 376 for tooling specifications

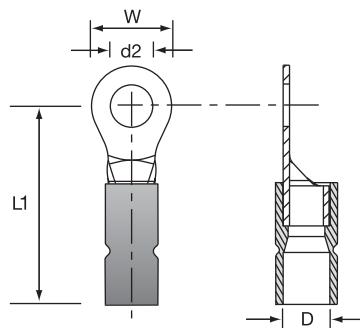
## Vinyl insulated ring terminals DIN 46237

*Insulated terminals*



### Technical Information

Material	Copper
Plating	Tin plated
Marking	Wire size and bolt size stamped on the tongue
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PVC = Polyvinylchloride (Vinyl) Economical yet premium quality, moisture resistant
Max. electrical rating	+75°C / 600 Volts max
Colour coding of the insulation	According to the wire size
Cable insertion	Easy entry
Flammability rating	UL 94 V-0



Product Ref.	Wire size range [mm <sup>2</sup> ]	Colour	Stud hole size d2	Dimensions W [mm]	Dimensions L1 [mm]	Dimensions D [mm]	Weight [g/100]	Quantity [pieces]	Crimping tool*
VB3RR	0.5 - 1.5	Red	M 3	6.0	17.2	4.0	68	100	
VB35RR	0.5 - 1.5	Red	M 3.5	6.0	17.2	4.0	69	100	
VB4RR	0.5 - 1.5	Red	M 4	8.0	18.2	4.0	73	100	
VB5RR	0.5 - 1.5	Red	M 5	10.0	19.2	4.0	92	100	
VB6RR	0.5 - 1.5	Red	M 6	10.0	19.2	4.0	87	100	
VB8RR	0.5 - 1.5	Red	M 8	14.0	23.2	4.0	139	100	
VB10RR	0.5 - 1.5	Red	M 10	14.0	23.2	4.0	100	100	
VB3BR	1.5 - 2.5	Blue	M 3	6.0	17.5	4.5	80	100	ERG2000KE
VB35BR	1.5 - 2.5	Blue	M 3.5	6.0	17.5	4.5	94	100	ERG2001A
VB4BR	1.5 - 2.5	Blue	M 4	8.0	18.5	4.5	83	100	WT2124Y
VB5BR	1.5 - 2.5	Blue	M 5	10.0	20.5	4.5	110	100	
VB6BR	1.5 - 2.5	Blue	M 6	11.0	22.5	4.5	122	100	
VB8BR	1.5 - 2.5	Blue	M 8	14.0	23.5	4.5	146	100	
VB10BR	1.5 - 2.5	Blue	M 10	15.0	23.5	4.5	204	100	
VB4YR	4.0 - 6.0	Yellow	M 4	8.0	22.1	6.3	167	100	
VB5YR	4.0 - 6.0	Yellow	M 5	10.0	23.1	6.3	196	100	
VB6YR	4.0 - 6.0	Yellow	M 6	11.0	24.1	6.3	195	100	
VB8YR	4.0 - 6.0	Yellow	M 8	14.0	27.1	6.3	250	100	
VB10YR	4.0 - 6.0	Yellow	M 10	18.0	29.1	6.3	305	100	

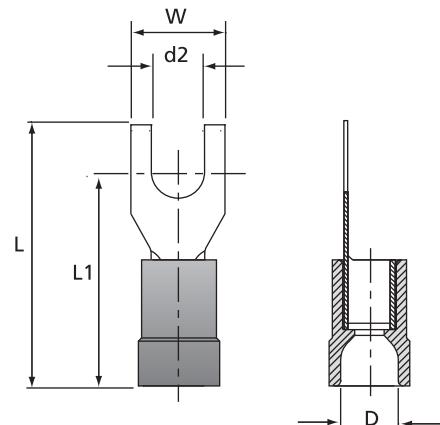
\* Use selection chart to determine die set (see page 376)  
See pages 370 to 376 for tooling specifications

## Polycarbonate insulated fork terminals

Insulated terminals

## Technical Information

Material	Electrolytic copper
Plating	Tin plated
Marking	Wire size and bolt size stamped on the tongue
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PC = Polycarbonate High temperature applications, excellent deformation characteristics
Temperature resistance	+115°C / +125°C
Colour coding of the insulation	According to the wire size
Cable insertion	Easy entry
Flammability rating	UL 94 V-2



Product Ref.	Wire size range [mm <sup>2</sup> ]	Colour	Stud hole size d2	Dimensions				Weight [g/100]	Quantity [pieces]	Crimping tool*
				W [mm]	L [mm]	D [mm]	L1 [mm]			
RZ 3F	0.25 - 0.75	Green	M 3	5.5	18.0	3.2	15.0	41	100	ERG2510
RZ 4F	0.25 - 0.75	Green	M 4	7.5	21.0	3.2	17.5	41	100	
RA 3F	0.5 - 1.5	Red	M 3	5.5	18.0	4.0	15.0	60	100	
RA 35F	0.5 - 1.5	Red	M 3.5	5.5	21.0	4.0	17.5	62	100	
RA 4F	0.5 - 1.5	Red	M 4	7.0	20.5	4.0	17.0	64	100	
RA 5F	0.5 - 1.5	Red	M 5	9.0	22.5	4.0	18.0	75	100	
RA 6F	0.5 - 1.5	Red	M 6	11.0	26.5	4.0	21.0	90	100	
RB 3F	1.5 - 2.5	Blue	M 3	5.5	19.0	4.5	16.0	72	100	
RB 4F	1.5 - 2.5	Blue	M 4	7.0	20.5	4.5	17.0	84	100	ERG2000KE
RB 5F	1.5 - 2.5	Blue	M 5	9.0	22.5	4.5	18.0	96	100	ERG2001A
RB 6F	1.5 - 2.5	Blue	M 6	11.0	26.5	4.5	21.0	113	100	WT2124Y
RC 4F	4.0 - 6.0	Yellow	M 4	8.0	24.0	6.4	20.5	159	50	
RC 5F	4.0 - 6.0	Yellow	M 5	9.0	25.0	6.4	20.5	161	50	
RC 6F	4.0 - 6.0	Yellow	M 6	11.0	28.5	6.4	23.0	174	50	
RC 8F	4.0 - 6.0	Yellow	M 8	14.0	31.0	6.4	24.0	207	50	
RC 10F	4.0 - 6.0	Yellow	M 10	18.0	36.0	6.4	27.0	280	50	

\* Use selection chart to determine die set (see page 376)

See pages 370 to 376 for tooling specifications

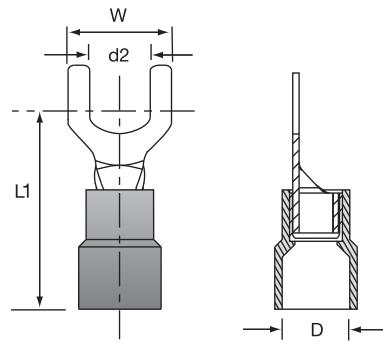
## Nylon insulated fork terminals DIN 46237

*Insulated terminals*



### Technical Information

Material	Copper
Plating	Tin plated
Marking	Wire size and bolt size stamped on the tongue
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PA = Polyamide Ideal for harsh environments, excellent chemical, impact and abrasion resistance
Temperature resistance	+85°C / +105°C
Colour coding of the insulation	According to the wire size (DIN)
Cable insertion	Easy entry
Flammability rating	UL 94 V-2



Product Ref.	Wire size range [mm²]	Colour	Stud hole size d2	Dimensions W [mm]	Dimensions L1 [mm]	Dimensions D [mm]	Weight [g/100]	Quantity [pieces]	Crimping tool*
TRA 3F	0.5 - 1.5	Red	M 3	5.7	22.0	4.0	65	100	
TRA 35F	0.5 - 1.5	Red	M 3.5	6.2	22.0	4.0	62	100	
TRA 4F	0.5 - 1.5	Red	M 4	7.2	22.0	4.0	70	100	
TRA 5F	0.5 - 1.5	Red	M 5	8.0	22.0	4.0	92	100	
TRA 6F	0.5 - 1.5	Red	M 6	10.8	23.0	4.0	102	100	
TRB 3F	1.5 - 2.5	Blue	M 3	5.7	22.2	4.5	81	100	ERG2000KE
TRB 35F	1.5 - 2.5	Blue	M 3.5	6.2	22.2	4.5	74	100	ERG2001A
TRB 4F	1.5 - 2.5	Blue	M 4	7.2	22.2	4.5	80	100	WT2124Y
TRB 5F	1.5 - 2.5	Blue	M 5	8.0	22.2	4.5	110	100	
TRB 6F	1.5 - 2.5	Blue	M 6	10.8	23.5	4.5	122	100	
TRC 4F	4.0 - 6.0	Yellow	M 4	8.2	26.7	6.4	163	100	
TRC 5F	4.0 - 6.0	Yellow	M 5	9.0	26.7	6.4	182	100	
TRC 6F	4.0 - 6.0	Yellow	M 6	12.0	30.3	6.4	190	100	

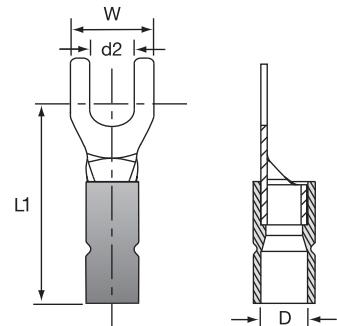
\* Use selection chart to determine die set (see page 376)  
See pages 370 to 376 for tooling specifications

## Vinyl insulated fork terminals DIN 46237

Insulated terminals

## Technical Information

Material	Copper
Plating	Tin plated
Marking	Wire size and bolt size stamped on the tongue
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PVC = Polyvinylchloride (Vinyl) Economical yet premium quality, moisture resistant
Max. electrical rating	+75°C / 600 Volts
Colour coding of the insulation	According to the wire size
Cable insertion	Easy entry
Flammability rating	UL 94 V-0



Product Ref.	Wire size range [mm <sup>2</sup> ]	Colour	Stud hole size d2	Dimensions	Weight [g/100]	Quantity [pieces]	Crimping tool*
VB3RF	0.5 - 1.5	Red	M 3	6.0    17.2    4.0	68	100	
VB35RF	0.5 - 1.5	Red	M 3.5	6.0    17.2    4.0	68	100	
VB4RF	0.5 - 1.5	Red	M 4	6.8    18.2    4.0	73	100	
VB5RF	0.5 - 1.5	Red	M 5	10.0    19.2    4.0	92	100	
VB6RF	0.5 - 1.5	Red	M 6	11.0    21.2    4.0	103	100	
VB3BF	1.5 - 2.5	Blue	M 3	5.5    19.5    4.5	90	100	ERG2000KE
VB35BF	1.5 - 2.5	Blue	M 3.5	6.0    17.5    4.5	97	100	ERG2001A
VB4BF	1.5 - 2.5	Blue	M 4	6.8    19.2    4.5	83	100	WT2124Y
VB5BF	1.5 - 2.5	Blue	M 5	10.0    20.5    4.5	110	100	
VB6BF	1.5 - 2.5	Blue	M 6	11.0    22.5    4.5	121	100	
VB4YF	4.0 - 6.0	Yellow	M 4	8.0    22.1    6.3	169	100	
VB5YF	4.0 - 6.0	Yellow	M 5	10.0    23.1    6.3	189	100	
VB6YF	4.0 - 6.0	Yellow	M 6	11.0    24.1    6.3	200	100	
VB8YF	4.0 - 6.0	Yellow	M 8	14.0    27.1    6.3	235	100	
VB10YF	4.0 - 6.0	Yellow	M 10	18.0    29.1    6.3	305	100	

\* Use selection chart to determine die set (see page 376)

See pages 370 to 376 for tooling specifications

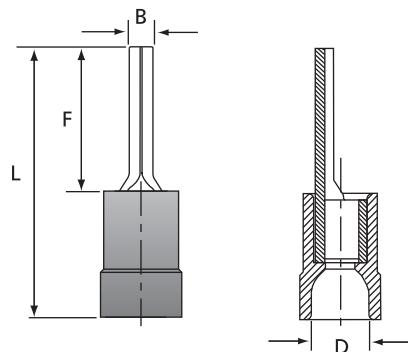
## Polycarbonate insulated pin terminals DIN 46231

*Insulated terminals*



### Technical Information

Material	Electrolytic copper
Plating	Tin plated
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PC = Polycarbonate
	High temperature applications, excellent deformation characteristics
Temperature resistance	+115°C / +125°C
Colour coding of the insulation	According to the wire size
Cable insertion	Easy entry
Flammability rating	UL 94 V-2



Product Ref.	Wire size range [mm <sup>2</sup> ]	Colour	Dimensions				Weight [g/100]	Quantity [pieces]	Crimping tool*
			L [mm]	F [mm]	B [mm]	D [mm]			
RZ P	0.25 - 0.75	Green	22.0	12.0	1.8	3.2	47	100	ERG2510
RA P	0.5 - 1.5	Red	22.0	12.0	1.9	4.0	67	100	ERG2000KE
RB P	1.5 - 2.5	Blue	22.0	12.0	1.9	4.5	80	100	ERG2001A
RC P	4.0 - 6.0	Yellow	27.0	14.0	2.8	6.4	175	50	WT2124Y

\* Use selection chart to determine die set (see page 376)

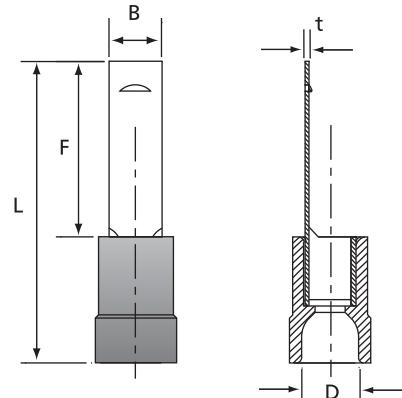
See pages 370 to 376 for tooling specifications

## Polycarbonate insulated blade terminals DIN 46231

Insulated terminals

## Technical Information

Material	Electrolytic copper
Plating	Tin plated
Marking	Wire size stamped on the tongue
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PC = Polycarbonate
	High temperature applications, excellent deformation characteristics
Temperature resistance	+115°C / +125°C
Colour coding of the insulation	According to the wire size (DIN)
Cable insertion	Easy entry
Flammability rating	UL 94 V-2



Product Ref.	Wire size range [mm <sup>2</sup> ]	Colour	Dimensions					Weight [g/100]	Quantity [pieces]	Crimping tool*
			L [mm]	F [mm]	B [mm]	t [mm]	D [mm]			
RZ PP	0.25 - 0.75	Green	20.0	10.0	2.5	0.5	3.2	39	100	ERG2510
RA PP**	0.5 - 1.5	Red	22.0	11.5	2.9	0.7	4.5	60	100	ERG2000KE
RB PP**	1.5 - 2.5	Blue	22.0	11.5	2.9	0.7	4.5	78	100	ERG2001A
RC PP***	4.0 - 6.0	Yellow	27.0	13.0	4.0	1.0	6.7	120	100	WT2124Y

\* Use selection chart to determine appropriate die set (see page 376)

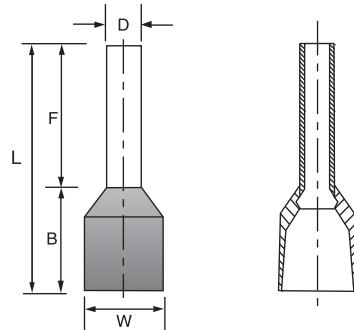
\*\* With locking tab

\*\*\* Product Ref. RCPP: PVC insulation and no easy entry

See pages 370 to 376 for tooling specifications

## Nylon insulated bootlace ferrules

*Insulated terminals*



### Technical Information

Material	Copper
Plating	Tin plated
Metal barrel	Copper tube
Insulation	PA = Polyamide
	Ideal for harsh environments, excellent chemical, impact and abrasion resistance
Electrical rating	+105°C / 300 Volts max
Colour coding of the insulation	According to the wire size and the country standard
	F=France, D=DIN, G=Germany
Flammability rating	UL 94 V-2

Product Ref.	Wire size [mm <sup>2</sup> ]	French colour*	German colour*	Din colour*	F [mm]	L [mm]	W [mm]	B [mm]	D [mm]	Weight [g/100]	Quantity	Crimping tool**
N-0306C*	0.30	Pink	Turquoise	NA	6.0	10.4	1.9	1.1	4.4	4.2	1000	TBZ3
N-0308C*	0.30	Pink	Turquoise	NA	8.0	12.4	1.9	4.4	1.1	4.9	1000	
N-0508C*	0.50	White	Orange	White	8.0	14.0	2.6	6.0	1.3	8.1	1000	
N-0510C*	0.50	White	Orange	White	10.0	16.0	2.6	6.0	1.3	8.5	1000	
N-7508C*	0.75	Blue	White	Grey	8.0	14.3	2.8	6.3	1.5	9.0	1000	
N-7512C*	0.75	Blue	White	Grey	12.0	18.3	2.8	6.3	1.5	12.0	1000	
N-1008C*	1.00	Red	Yellow	Red	8.0	14.3	3.0	6.3	1.7	10.0	1000	
N-1012C*	1.00	Red	Yellow	Red	12.0	18.3	3.0	6.3	1.7	14.0	1000	
N-1508C*	1.50	Black	Red	Black	8.0	14.3	3.5	6.3	2.0	12.0	1000	
N-1510C*	1.50	Black	Red	Black	10.0	16.36	3.5	6.3	2.0	13.0	1000	
N-1518C*	1.50	Black	Red	Black	18.0	24.3	3.5	6.3	2.0	19.0	1000	
N-2508C*	2.50	Grey	Blue	Blue	8.0	15.4	4.0	7.4	2.6	19.0	1000	
N-2512C*	2.50	Grey	Blue	Blue	12.0	19.4	4.0	7.4	2.6	21.0	1000	
N-2518C*	2.50	Grey	Blue	Blue	18.0	25.4	4.0	7.4	2.6	27.0	1000	
N-4010C*	4.00	Orange	Grey	Grey	10.0	17.4	4.5	7.4	3.2	28.0	1000	
N-4012C*	4.00	Orange	Grey	Grey	12.0	19.4	4.5	7.4	3.2	31.0	1000	
N-4018C*	4.00	Orange	Grey	Grey	18.0	25.4	4.5	7.4	3.2	42.0	1000	
N-6012C*	6.00	Green	Black	Yellow	12.0	20.5	6.0	8.5	3.9	45.0	1000	
N-6018C*	6.00	Green	Black	Yellow	18.0	26.5	6.0	8.5	3.9	57.0	1000	
N-10012C*	10.00	Brown	Ivory	Red	12.0	20.8	7.5	8.8	4.9	59.0	1000	
N-10018C*	10.00	Brown	Ivory	Red	18.0	26.8	7.5	8.8	4.9	76.0	1000	
N-16012C*	16.00	White	Green	Blue	12.0	22.0	8.7	10.0	6.2	68.0	500	
N-16018C*	16.00	White	Green	Blue	18.0	28.0	8.7	10.0	6.2	103.0	500	
N-25016C*	25.00	Black	Brown	Yellow	16.0	28.0	11.0	12.0	7.9	126.0	500	
N-25022C*	25.00	Black	Brown	Yellow	22.0	34.0	11.0	12.0	7.9	154.0	250	
N-35016C*	35.00	Red	Beige	Red	16.0	30.0	12.5	14.0	8.7	164.0	200	
N-35025C*	35.00	Red	Beige	Red	25.0	39.0	12.5	14.0	8.7	202.0	200	
N-50020C*	50.00	Blue	Olive	Blue	20.0	36.0	15.0	16.0	10.9	311.0	100	
N-50025C*	50.00	Blue	Olive	Blue	25.0	41.0	15.0	16.0	10.9	361.0	100	

\* For French Colour codes please add suffix "F" e.g. N-0508CF, for German Colour codes please add suffix "G" e.g. N-0508CG, for Din Colour codes add suffix "D" e.g. N-0508CD.

\*\* Use selection chart to determine appropriate die set (see page 376)

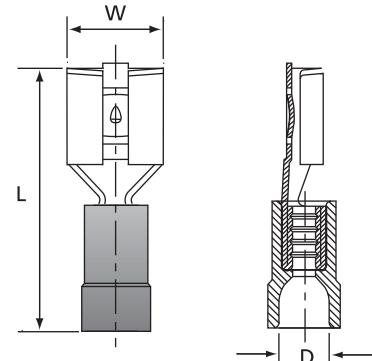
See pages 370 to 376 for tooling specifications

## Insulated female disconnects DIN 46245

Insulated terminals

## Technical Information

Material	Brass with 70% copper
Plating	Tin plated
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PC = Polycarbonate
	High temperature applications, excellent deformation characteristics
Temperature resistance	+115°C / +125°C (For PVC insulation +65°C / +75°C)
Colour coding of the insulation	According to the wire size (DIN)
Cable insertion	Easy entry
Flammability rating	UL 94 V-2



Product Ref.	Wire size range [mm <sup>2</sup> ]	For male tab size [mm x mm]	Colour	Dimensions			Weight [g/100]	Quantity [pieces]	Crimping tool*
				L [mm]	D [mm]	W [mm]			
RA 28	0.5 - 1.5	2.8 x 0.8	Red	18.5	3.3	3.5	60	100	
RA 29	0.5 - 1.5	2.8 x 0.5	Red	18.5	3.3	3.5	60	100	
RA 48**	0.5 - 1.5	4.8 x 0.8	Red	19.0	3.7	5.7	82	100	
RA 49**	0.5 - 1.5	4.8 x 0.5	Red	19.0	3.7	5.7	83	100	
RA 63	0.5 - 1.5	6.3 x 0.8	Red	20.0	4.0	7.6	96	100	
RB 48**	1.5 - 2.5	4.8 x 0.5	Blue	19.0	4.4	5.7	91	100	ERG2000KE
RB 49**	1.5 - 2.5	4.8 x 0.8	Blue	19.0	4.4	5.7	87	100	ERG2001A
RB 63	1.5 - 2.5	6.3 x 0.8	Blue	20.0	4.5	7.6	106	100	WT2124Y
RC 63	4.0 - 6.0	6.3 x 0.8	Yellow	24.0	6.4	7.6	183	50	
RC 95**	4.0 - 6.0	9.5 x 1.2	Yellow	31.0	6.2	11.0	233	50	

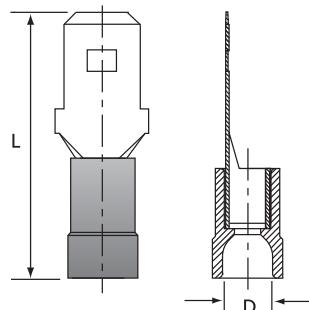
\* Use selection chart to determine the appropriate die set (see page 376)

\*\* Non-brazed with support sleeve and PVC insulation, not easy entry

See pages 370 to 376 for tooling specifications

## Insulated male disconnects DIN 46245

*Insulated terminals*



### Technical Information

Material	Brass with 70% copper
Plating	Tin plated
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PC = Polycarbonate High temperature applications, excellent deformation characteristics
Temperature resistance	+115°C / +125°C (For PVC insulation +65°C / +75°C)
Colour coding of the insulation	According to the wire size (DIN)
Cable insertion	Easy entry
Flammability rating	UL 94 V-2

Product Ref.	Wire size range [mm <sup>2</sup> ]	Male tab size [mm x mm]	Colour	Dimensions [mm]	Weight [g/100]	Quantity [pieces]	Crimping tool*
RA 63M	0.5 - 1.5	6.3 x 0.8	Red	22.0	4.0	107	100
RB 63M	1.5 - 2.5	6.3 x 0.8	Blue	22.0	4.5	107	100
RC 63M**	4.0 - 6.0	6.3 x 0.8	Yellow	25.0	6.3	155	50

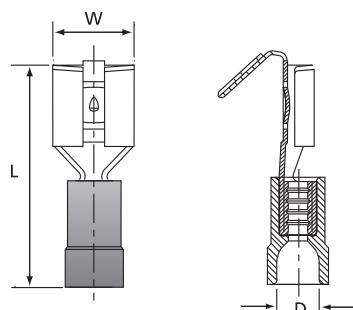
\*\* PVC insulation. no easy entry and non brazed, with brass support sleeve

\* Use selection chart to determine appropriate die set (see page 376)

See pages 370 to 376 for tooling specifications

## Insulated piggy back disconnects DIN 46245

*Insulated terminals*



### Technical Information

Material	Brass with 70% copper
Plating	Tin plated
Metal barrel	Non brazed, with brass support sleeve
Insulation	PVC = Polyvinylchloride (Vinyl) Economical yet premium quality, moisture resistant
Temperature resistance	+65°C / +75°C
Colour coding of the insulation	According to the wire size (DIN)
Flammability rating	UL 94 V-0

Product Ref.	Wire size range [mm <sup>2</sup> ]	For tab size [mm x mm]	Colour	Dimensions [mm]	Weight [g/100]	Quantity [pieces]	Crimping tool*
RA 63T	0.5 - 1.5	6.3 x 0.8	Red	22.0	3.7	7.4	135
RB 63T	1.5 - 2.5	6.3 x 0.8	Blue	22.0	4.3	7.5	146

\* Use selection chart to determine appropriate die set (see page 376)

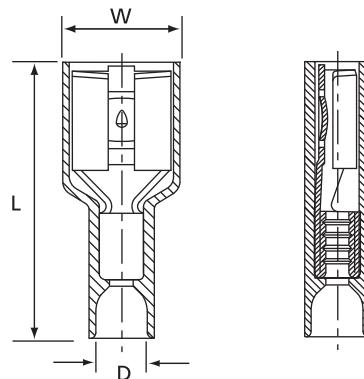
See pages 370 to 376 for tooling specifications

## Fully insulated female disconnects

*Insulated terminals*

### Technical Information

Material	Brass with 70% copper
Plating	Tin plated
Metal barrel	Non brazed, with brass support sleeve
Insulation	PA = Polyamide
	Ideal for harsh environments, excellent chemical, impact and abrasion resistance
Temperature resistance	+85°C / +105°C
Colour coding of the insulation	According to the wire size (DIN)
Flammability rating	UL 94 V-2



Product Ref.	Wire size range [mm <sup>2</sup> ]	For male tab size [mm x mm]	Colour	Dimensions W [mm]	Dimensions L [mm]	Dimensions D [mm]	Weight [g/100]	Quantity [pieces]	Crimping tool*
RA 28V	0.5 - 1.5	2.8 x 0.8	Red	5.0	19.3	3.8	110	100	
RA 29V	0.5 - 1.5	2.8 x 0.5	Red	5.0	19.3	3.8	110	100	
RA 48V	0.5 - 1.5	4.8 x 0.8	Red	7.4	20.2	3.6	115	100	
RA 49V	0.5 - 1.5	4.8 x 0.5	Red	7.4	20.2	3.6	115	100	
RA 63V**	0.5 - 1.5	6.3 x 0.8	Red	8.8	21.0	4.0	123	100	ERG2000KE
RB 48V	1.5 - 2.5	4.8 x 0.8	Blue	7.1	19.5	3.9	120	100	ERG2001A
RB 49V	1.5 - 2.5	4.8 x 0.5	Blue	7.1	19.5	3.9	120	100	WT2124Y
RB 63V**	1.5 - 2.5	6.3 x 0.8	Blue	8.8	21.0	4.5	132	100	
RC 63V	4.0 - 6.0	6.3 x 0.8	Yellow	9.0	26.0	5.3	215	50	

\* Use selection chart to determine appropriate die set (see page 376)

\*\* Easy entry and brazed barrel, polycarbonate insulator

See pages 370 to 376 for tooling specifications

## Insulated sectional terminal block (6 male tabs)

*Insulated terminals*



### Technical Information

Material	Brass
Plating	Tin plated
Insulation	PA = Polyamide Ideal for harsh environments, provides excellent chemical, impact and abrasion resistance
Colour	Black
Temperature resistance	+105°C
Voltage	250V
Flammability rating	UL 94 V-2

Product Ref.	Tab size [mm x mm]	Mounting method	Weight [g/100]	Quantity [pieces]
MTB1-TB	6 male tabs 6.3 x 0.8	M4 fillister head screw	798	100

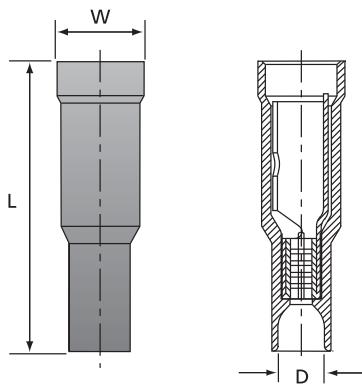
## Fully insulated bullet female receptacles

*Insulated terminals*



### Technical Information

Material RAB	Phosphor bronze
Material RB5B	Brass
Plating	Tin plated
Metal barrel: RAB	Brazed seam to prevent barrel separation
Metal barrel: RB5B	Non brazed, with brass support sleeve
Insulation RAB	Polycarbonate
Insulation RB5B	PVC
Colour coding of the insulation	According to the wire size (DIN)
Cable insertion	Easy entry for RAB



Product Ref.	Wire size range [mm <sup>2</sup> ]	Colour	Dimensions	Weight [g/100]	Quantity [pieces]	Crimping tool*
			W [mm]	L [mm]	D [mm]	
RAB	0.5 - 1.5	Red	3.9	25.0	4.0	115
RB5B	1.5 - 2.5	Blue	4.9	26.0	4.3	144

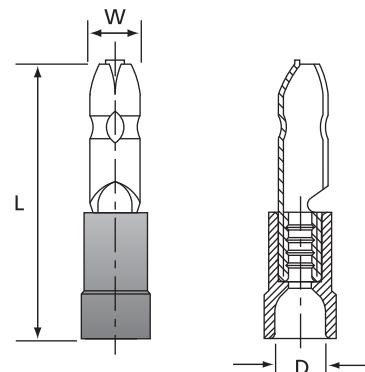
\* Use selection chart to determine appropriate die set (see page 376)  
See pages 370 to 376 for tooling specifications

## Insulated bullet male disconnects

*Insulated terminals*

### Technical Information

Material	Brass
Plating	Tin plated
Metal barrel	Brazed seam to prevent barrel separation
Insulation	RABM - Polycarbonate RB5BM - PVC
Temperature resistance	RABM: +115°C / +125°C RB5M: +65°C / +75°C
Colour coding of the insulation	According to the wire size (DIN)
Cable insertion	Easy entry except of RB5BM
Flammability rating	PVC: UL 94 V-0 PC: UL 94 V-2



Product Ref.	Wire size range [mm <sup>2</sup> ]	Colour	Dimensions			Weight [g/100]	Quantity [pieces]	Crimping tool*
			W [mm]	L [mm]	D [mm]			
RABM	0.5 - 1.5	Red	4.0	22.0	4.0	102	100	ERG2000KE
RB5BM**	1.5 - 2.5	Blue	5.0	20.0	4.3	109	100	ERG2001A, WT2124Y

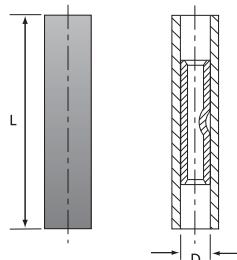
\* Use selection chart to determine appropriate die set (see page 376)

\*\* non braze, with brass support sleeve

See pages 370 to 376 for tooling specifications

## Fully insulated butt splices

*Insulated terminals*



### Technical Information

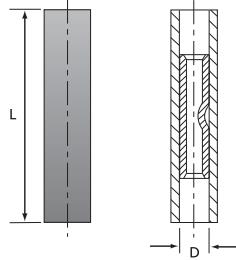
Material	Electrolytic copper
Plating	Tin plated
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PC = Polycarbonate
Temperature resistance	+115°C / +125°C
Colour coding of the insulation	According to the wire size (DIN)
Cable insertion	Easy entry
Flammability rating	UL 94 V-2

Product Ref.	Wire size range	Colour	Dimensions	Weight	Quantity	Crimping tool*
	[mm <sup>2</sup> ]		L [mm]	D [mm]	[g/100]	[pieces]
RAA15	0.5 - 1.5	Red	24.0	3.4	97	100
RBB25-EU	1.5 - 2.5	Blue	26.0	4.3	150	100
RCC6	4.0 - 6.0	Yellow	33.0	6.5	316	50

\* Use selection chart to determine appropriate die set (see page 376)  
See pages 370 to 376 for tooling specifications

## Insulated heat shrink butt splices

*Insulated terminals*



### Technical Information

Material	Electrolytic copper
Plating	Tin plated
Metal barrel	Brazed seam to prevent barrel separation
Insulation	Halogen free heat shrink insulation material
Colour coding of the insulation	According to the wire size (DIN)
Cable insertion	Easy entry
Other properties	Halogen free Waterproof after application (heat shrink)

Product Ref.	Wire size range	Colour	Dimensions	Weight	Quantity	Crimping tool*
	[mm <sup>2</sup> ]		L [mm]	D [mm]	[g/100]	[pieces]
RAA15SI	0.5 - 1.5	Red	35.0	4.5	100	25
RBB25SI	1.5 - 2.5	Blue	35.0	5.4	150	25
RCC6SI	4.0 - 6.0	Yellow	40.0	6.8	320	25

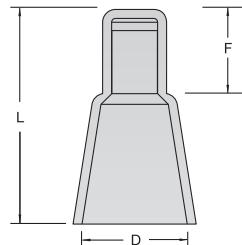
\* Use selection chart to determine appropriate die set (see page 376)  
See pages 370 to 376 for tooling specifications  
Requires a hot air tool for heat-shrinkage (see Shrink-Kon® section)

## Insulated wire joints

*Insulated terminals*

### Technical Information

Material	Brass
Plating	Tin plated
Metal barrel	Brazed seam to prevent barrel separation
Insulation	PA = Polyamide Ideal for harsh environments, provides excellent chemical, impact and abrasion resistance
Temperature resistance	+85°C / +105°C
Flammability rating	UL 94 V-2



Product Ref.	Wire size range	Colour	F [mm]	Dimensions	Weight [g/100]	Quantity [pieces]	Crimping tool*
			L [mm]	D [mm]			
RBJ	1.0 - 3.0	White	8.0	15.2	6.4	86	100
RCJ	2.0 - 6.0	White	9.0	17.7	9.2	166	50

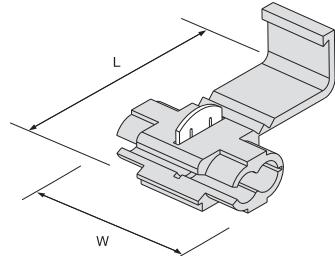
\* Use selection chart to determine appropriate die set (see page 376)  
See pages 370 to 376 for tooling specifications

## Insulated quick splice

*Insulated terminals*

### Technical Information

Material	Brass
Insulation	P.P. = Polypropylene
Max. electrical rating	+105°C / 600V
Colour coding of the insulation	According to the wire size (DIN)



Product Ref.		Dimensions		Quantity	
			L [mm]	W [mm]	[pieces]
TRAWT	0.5 - 1.5	Red	31.0	20.0	100
TRBWT	1.5 - 2.5	Blue	31.0	20.0	100

## Non-insulated ring terminals

### Non-insulated terminals

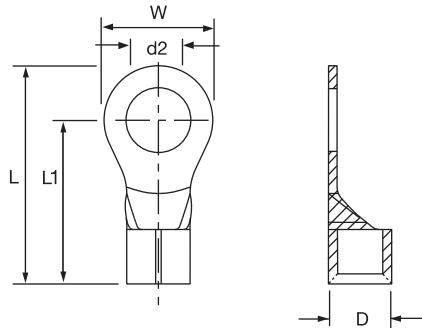


#### Technical Information

Material	Electrolytic copper for very good conductivity
Plating	Electro-tin plating, excellent corrosion resistance
Metal barrel	Brazed seam to prevent barrel separation
Current rating	0.5-1.5 mm <sup>2</sup> = 12 Ampere 1.5-2.5 mm <sup>2</sup> = 27 Ampere 4.0-6.0 mm <sup>2</sup> = 37 Ampere
Marking	Diameter and bolt size
Cable insertion	Easy entry (chamfered entry edges)



E9809



Product Ref.	Wire size range [mm <sup>2</sup> ]	Stud size d2	Dimensions W [mm]	L [mm]	D [mm]	L1 [mm]	Weight [g/100]	Quantity [pieces]	Crimping tool*
K18-6R-M	0.5 - 1.5	M 3.5	6.6	14.4	3.4	11.1	64	1000	
K18-8R-M	0.5 - 1.5	M 4	6.6	14.4	3.4	11.1	61	1000	
K18-10R-M	0.5 - 1.5	M 5	8.0	15.8	3.4	11.8	66	1000	
K18-14R-M	0.5 - 1.5	M 6	11.6	21.8	3.4	15.8	99	1000	
K18-516R-M	0.5 - 1.5	M 8	11.6	21.8	3.4	15.8	85	1000	
K14-6R-M	1.5 - 2.5	M 3.5	6.6	14.4	4.1	11.1	81	1000	
K14-8R-M	1.5 - 2.5	M 4	6.6	14.4	4.1	11.1	71	1000	
K14-10R-M	1.5 - 2.5	M 5	8.5	16.8	4.1	12.6	87	1000	
K14-14R-M	1.5 - 2.5	M 6	12.0	21.8	4.1	15.8	118	1000	ERG2002E
K14-516R-M	1.5 - 2.5	M 8	12.0	21.8	4.1	15.8	110	1000	ERG2000KE
K14-38R-M	1.5 - 2.5	M 10	13.6	25.5	4.1	18.7	114	1000	
K10-6R-M	4.0 - 6.0	M 3.5	7.2	15.7	5.6	12.1	128	1000	
K10-8R-M	4.0 - 6.0	M 4	7.2	15.7	5.6	12.1	123	1000	
K10-10R-M	4.0 - 6.0	M 5	9.5	19.6	5.6	15.1	155	1000	
K10-14R-M	4.0 - 6.0	M 6	12.0	22.5	5.6	16.5	192	1000	
K10-516R-M	4.0 - 6.0	M 8	15.0	27.0	5.6	19.5	242	1000	
K10-38R-M	4.0 - 6.0	M 10	15.0	27.0	5.6	19.5	207	1000	
K10-12R-D	4.0 - 6.0	M 12	19.2	31.6	5.6	22.0	299	500	

\* Use selection chart to determine appropriate die set (see page 376)  
See pages 370 to 376 for tooling specifications

## Non-insulated fork terminals

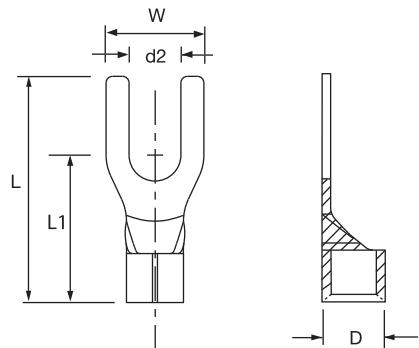
*Non-insulated terminals*

### Technical Information

Material	Electrolytic copper for very good conductivity
Plating	Electro-tin plating, excellent corrosion resistance
Metal barrel	Brazed seam to prevent barrel separation
Current rating	0.5-1.5 mm <sup>2</sup> = 12 Ampere 1.5-2.5 mm <sup>2</sup> = 27 Ampere 4.0-6.0 mm <sup>2</sup> = 37 Ampere
Marking	Diameter and bolt size
Cable insertion	Easy entry (chamfered entry edges)



E9809



Product Ref.	Wire size range [mm <sup>2</sup> ]	Stud size d2	W [mm]	Dimensions			Weight [g/100]	Quantity [pieces]	Crimping tool*
				L [mm]	D [mm]	L1 [mm]			
K18-6F-M	0.5 - 1.5	M 3.5	5.7	16.0	3.4	11.3	66	1000	
K18-8F-M	0.5 - 1.5	M 4	6.4	16.0	3.4	11.3	65	1000	
K18-10F-M	0.5 - 1.5	M 5	8.1	16.0	3.4	11.3	67	1000	
K14-6F-M	1.5 - 2.5	M 3.5	6.0	16.0	4.1	11.3	75	1000	
K14-8F-M	1.5 - 2.5	M 4	6.4	16.0	4.1	11.3	75	1000	ERG2002E
K14-10F-M	1.5 - 2.5	M 5	8.1	16.0	4.1	11.3	81	1000	ERG2000KE
K10-6F-M	4.0 - 6.0	M 3.5	7.2	17.4	5.6	13.5	140	1000	
K10-8F-M	4.0 - 6.0	M 4	9.0	18.5	5.6	13.0	146	1000	
K10-10F-M	4.0 - 6.0	M 5	9.0	18.5	5.6	13.0	142	1000	
K10-14F-M	4.0 - 6.0	M 6	9.0	18.5	5.6	13.0	143	1000	

\* Use selection chart to determine appropriate die set (see page 376)

See pages 370 to 376 for tooling specifications

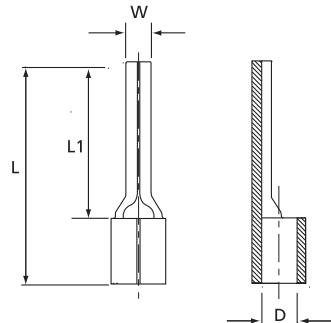
## Non-insulated pin terminal DIN 46230

*Non-insulated terminals*



### Technical Information

Material	Electrolytic copper
Plating	Tin plated



Product Ref.	Wire size range [mm <sup>2</sup> ]	L [mm]	L1 [mm]	D [mm]	W [mm]	Weight [g/100]	Quantity [pieces]	Crimping tool*
B6P	4.0 - 6.0	20.0	14.0	3.4	2.8	160	100	ERG2002E, ERG2000KE

\* Use selection chart to determine appropriate die set (see page 376)  
See pages 370 to 376 for tooling specifications

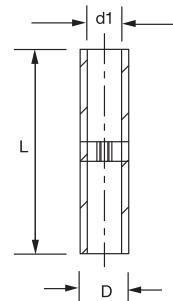
## Non-insulated butt splices

*Non-insulated terminals*



### Technical Information

Material	Copper
Plating	Tin plated
Metal barrel	Tubular construction
Cable insertion	Easy entry



E9809

Product Ref.	Wire size range [mm <sup>2</sup> ]	d1 [mm]	Dimensions L [mm]	D [mm]	Weight [g/100]	Quantity [pieces]	Crimping tool*
K18-BS-M	0.5 - 1.5	1.7	15.0	3.3	94	1000	ERG2002E
K14-BS-M	1.5 - 2.5	2.3	15.0	3.9	112	1000	ERG2000KE
K10-BS-M	4.0 - 6.0	3.5	15.0	5.4	183	1000	

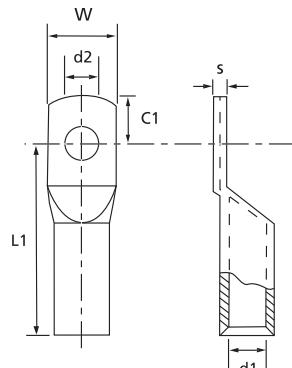
\* Use selection chart to determine appropriate die set (see page 376)  
See pages 370 to 376 for tooling specifications

## Non-insulated copper tube ring terminals DIN 46235

Non-insulated terminals

## Technical Information

Material	Electrolytic copper
Plating	Tin plated
Metal barrel	Copper tube
Marking	Cable cross-section area and bolt size
Cable insertion	Easy entry



Product Ref.	Wire size [mm <sup>2</sup> ]	Stud size	L1 [mm]	C1 [mm]	Dimensions W [mm]	s [mm]	d1 [mm]	d2 [mm]	Weight [kg/100]	Quantity [pieces]	Crimping tool*
T 2.5-4**	2.5	M 4	13.0	4.0	7.5	1.2	2.3	4.3	0.14	100	
T 4-6**	4.0	M 6	19.0	6.5	10.0	1.2	3.0	6.5	0.21	100	
T 6-5	6.0	M 5	24.0	6.5	8.5	1.5	3.8	5.3	0.34	100	
T 6-6	6.0	M 6	24.0	7.5	8.5	1.5	3.8	6.4	0.35	100	
T 10-6	10.0	M 6	27.0	7.5	9.0	1.5	4.5	6.4	0.40	100	
T 10-8	10.0	M 8	27.0	10.0	13.0	1.3	4.5	8.4	0.41	100	
T 16-6	16.0	M 6	36.0	7.5	13.0	2.5	5.5	6.4	1.50	100	
T 16-8	16.0	M 8	36.0	10.0	13.0	2.5	5.5	8.4	1.50	100	
T 16-10	16.0	M 10	36.0	12.0	17.0	2.5	5.5	10.5	1.50	100	
T 25-6	25.0	M 6	38.0	7.5	14.0	3.0	7.0	6.4	2.20	100	
T 25-8	25.0	M 8	38.0	10.0	16.0	3.0	7.0	8.4	2.20	100	
T 25-10	25.0	M 10	38.0	12.0	17.0	3.0	7.0	10.5	2.20	100	
T 25-12	25.0	M 12	38.0	13.0	19.0	3.0	7.0	13.5	2.20	100	
T 35-8	35.0	M 8	42.0	10.0	17.0	3.5	8.2	8.4	3.50	100	WT3165B
T 35-10	35.0	M 10	42.0	12.0	19.0	3.5	8.2	10.5	3.50	100	WTH500 (+Dies)
T 50-8	50.0	M 8	52.0	10.0	20.0	4.0	10.0	10.5	4.40	100	
T 50-10	50.0	M 10	52.0	12.0	19.0	3.5	10.0	10.5	4.40	100	
T 70-10	70.0	M 10	55.0	12.0	24.0	4.5	11.5	10.5	6.20	50	
T 95-10	95.0	M 10	65.0	12.0	28.0	5.0	13.5	10.5	8.70	25	
T 120-10	120.0	M 10	70.0	15.0	32.0	5.5	15.5	10.5	10.00	25	
T 150-12	150.0	M 12	78.0	15.0	34.0	6.0	17.0	10.5	12.00	100	WT3014E (+Dies)

\* Use selection chart to determine appropriate die set (see page 376)

\*\* Not according to DIN Ring form with inspection hole

See pages 370 to 376 for tooling specifications

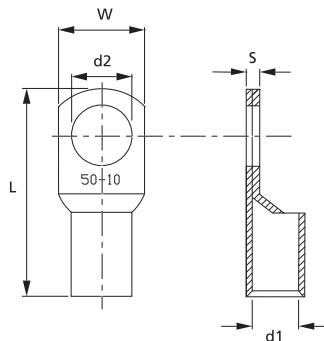
## Non-insulated copper tube ring terminals with inspection window

*Non-insulated terminals*



### Technical Information

Material	Electrolytic copper
Plating	Tin plated
Metal barrel	Copper tube with inspection window (hole)
Current rating	See table
Marking	Cable size (cross-section area) and bolt size
Cable insertion	Easy entry



Product Ref.	Wire size [mm <sup>2</sup> ]	Stud size	L [mm]	W [mm]	Dimensions	d1 [mm]	d2 [mm]	Current rating [Ampere]	Weight [kg/100]	Quantity [pieces]	Crimping tool*
TW 10-6	10	M6	27.0	12.6	0.85	4.5	6.5	90	0.29	100	ERG1016
TW 10-8	10	M8	27.0	12.6	0.85	4.5	8.4	90	0.27	100	WT3165B
TW 16-6	16	M6	29.5	12.6	0.85	5.5	6.5	125	0.38	100	WTH500 (+ Dies)
TW 16-8	16	M8	29.5	12.6	0.85	5.5	8.4	125	0.36	100	
TW 25-6	25	M6	33.0	15.0	1.0	7.0	6.5	160	0.68	100	WT3165B
TW 25-8	25	M8	33.0	15.0	1.0	7.0	8.4	160	0.63	100	
TW 25-10	25	M10	33.0	15.0	1.0	7.0	10.5	160	0.59	100	WTH500 (+ Dies)
TW 35-6	35	M6	38.0	15.2	2.5	8.2	6.5	200	1.14	100	
TW 35-8	35	M8	38.0	15.2	2.5	8.2	8.4	200	1.03	100	WT3165B
TW 35-10	35	M10	38.0	15.2	2.5	8.2	10.5	200	1.00	100	
TW 50-8	50	M8	44.5	18.5	2.9	10.0	8.4	250	1.86	100	WTH500 (+ Dies)
TW 50-10	50	M10	44.5	18.5	2.9	10.0	10.5	250	1.77	100	
TW 50-12	50	M12	44.5	18.5	2.9	10.0	13.0	250	1.71	100	WT3014E (+ Dies)
TW 70-8	70	M8	54.2	21.4	3.5	11.5	8.4	310	3.18	50	
TW 70-10	70	M10	54.2	21.4	3.5	11.5	10.5	310	3.08	50	WT3014E (+ Dies)
TW 70-12	70	M12	54.2	21.4	3.5	11.5	13.0	310	2.94	50	
TW 95-10	95	M10	59.0	25.5	3.9	13.5	10.5	380	4.42	50	WT3014E (+ Dies)
TW 95-12	95	M12	59.0	25.5	3.9	13.5	13.0	380	4.26	50	
TW 120-10	120	M10	66.7	28.3	4.5	15.5	10.5	440	6.83	25	WT3014E (+ Dies)
TW 120-12	120	M12	66.7	28.3	4.5	15.5	13.0	380	6.36	25	
TW 120-14	120	M14	66.7	28.3	4.5	15.5	15.0	380	5.93	25	WT3014E (+ Dies)
TW 120-16	120	M16	66.7	28.3	4.5	15.5	17.0	380	5.52	25	
TW 150-12	150	M12	74.5	31.0	4.7	17.0	13.0	510	8.34	25	WT3014E (+ Dies)
TW 150-14	150	M14	74.5	31.0	4.7	17.0	15.0	510	8.48	25	
TW 150-16	150	M16	74.5	31.0	4.7	17.0	17.0	510	8.34	25	WT3014E (+ Dies)

\* Use selection chart to determine appropriate die set (see page 376)

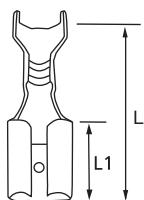
See pages 370 to 376 for tooling specifications

Other sizes available upon request - please contact your Sales Office

## Non-insulated female disconnect terminals

*Non-insulated terminals***Technical Information**

Material	Brass with 70% copper
Plating	Tin plated
Temperature rating	+110°C



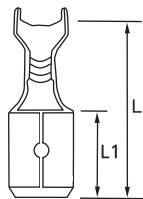
Product Ref.	Wire size range [mm <sup>2</sup> ]	Male tab size [mm x mm]	Dimensions [mm] L	Dimensions [mm] L1	Weight [g/100]	Quantity [pieces]	Crimping tool*
BA 285	0.5 - 1.0	2.8 x 0.5	12.7	5.0	21	100	
BA 288	0.5 - 1.0	2.8 x 0.8	12.7	5.0	25	100	
BA 485	0.75 - 1.5	4.8 x 0.5	16.0	6.4	47	100	ERG0560
BA 488	0.75 - 1.5	4.8 x 0.8	16.0	6.4	47	100	ERG1475
BA 638	0.75 - 1.5	6.3 x 0.8	19.0	7.6	77	100	
BB 638	1.5 - 2.5	6.3 x 0.8	19.0	7.6	80	100	
BC 638	4.0 - 6.0	6.3 x 0.8	19.0	7.6	86	100	ERG0560

\* Use selection chart to determine appropriate die set (see page 376)  
See pages 370 to 376 for tooling specifications

## Non-insulated female disconnect terminals

*Non-insulated terminals***Technical Information**

Material	Brass with 70% copper
Plating	Tin plated
Temperature rating	+110°C



Product Ref.	Wire size range [mm <sup>2</sup> ]	Male tab size [mm x mm]	Dimensions [mm] L	Dimensions [mm] L1	Weight [g/100]	Quantity [pieces]	Crimping tool*
BA 288M	0.5 - 1.0	2.8 x 0.8	13.0	5.5	23	100	ERG0560
BA 638M	0.5 - 1.5	6.3 x 0.8	19.0	8.0	57	100	ERG1475
BB 638M	1.5 - 2.5	6.3 x 0.8	20.0	8.0	61	100	ERG0560

\* Use selection chart to determine appropriate die set (see page 376)  
See pages 370 to 376 for tooling specifications

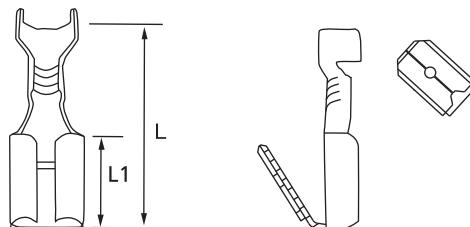
## Non-insulated Piggy back disconnect terminal

*Non-insulated terminals*



### Technical Information

Material	Brass with 70% copper
Plating	Tin plated
Temperature rating	+110°C



Product Ref.	Wire size range [mm²]	For male & female tab size [mm x mm]	Dimensions L [mm]	Dimensions L1 [mm]	Weight [g/100]	Quantity [pieces]	Crimping tool*
BA 638T	0.5 - 1.5	6.3 x 0.8	19.0	7.5	108	100	ERG0560, ERG1475

\* Use selection chart to determine appropriate die set (see page 376)  
See pages 370 to 376 for tooling specifications

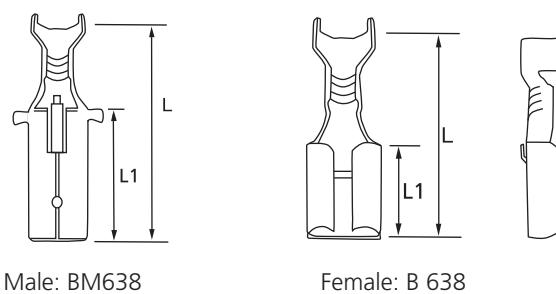
## Non-insulated disconnect terminals with lock tongues

*Non-insulated terminals*



### Technical Information

Material	Brass with 70% copper
Plating	Tin plated
Temperature rating	+110°C



Product Ref.	Wire size range [mm²]	For tab size [mm x mm]	Dimensions L [mm]	Dimensions L1 [mm]	Weight [g/100]	Quantity [pieces]	Crimping tool*
B 638	1.5 - 2.5	6.3 x 0.8	19.0	7.5	74	100	ERG0560
BM 638	1.5 - 2.5	6.3 x 0.8	28.0	16.0	82	100	

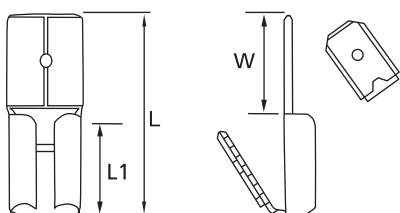
\* Use selection chart to determine appropriate die set (see page 376)  
See pages 370 to 376 for tooling specifications

## Non-insulated branch off tab

*Non-insulated terminals*

## Technical Information

Material	Brass with 70% copper
Plating	Tin plated
Temperature rating	+110°C



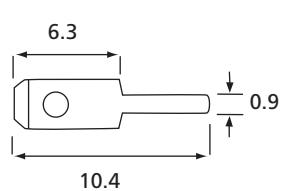
Product Ref.	Tab size [mm x mm]	L [mm]	Dimensions W [mm]	L1 [mm]	Weight [g/100]	Quantity [pieces]
Z 638-2	6.3 x 0.8	18.5	9	7.5	177	100

## Non-insulated tabs for soldering DIN 46244

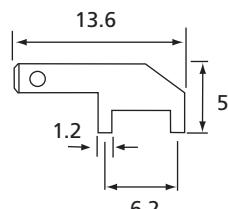
*Non-insulated terminals*

## Technical Information

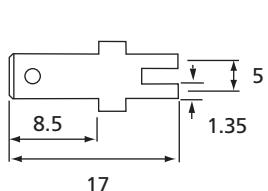
Material	Brass
Plating	Tin plated
Temperature rating	+110°C



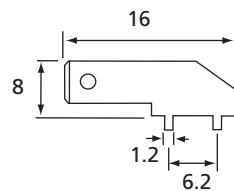
B 288L



B 288LD



B 638L



B 638LW

Product Ref.	Recommended drill hole Ø [mm]	Tab size [mm x mm]	Weight [g/100]	Quantity [pieces]
B 288L	1.00	2.8 x 0.8	16	100
B 288LD	1.30	2.8 x 0.8	37	100
B 638L	1.45	6.3 x 0.8	62	100
B 638LW	1.30	6.3 x 0.8	83	100

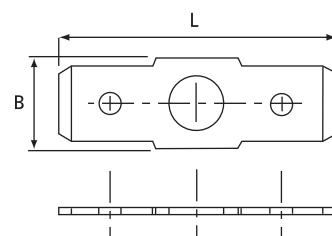
## Non-insulated screw mounted male disconnect tab terminals DIN 46244

*Non-insulated terminals*

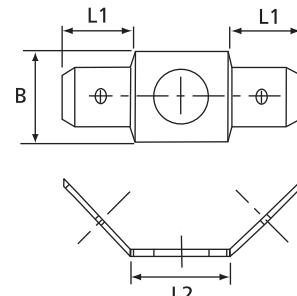


### Technical Information

Material	Brass
Plating	Tin plated
Temperature rating	+110°C



Product Ref.	Tab size [mm x mm]	Dimensions B [mm]	Dimensions L [mm]	Hole ø [mm]	Weight [g/100]	Quantity [pieces]
ZG 638-4	6.3 x 0.8	7.0	23.0	4.2	94	100



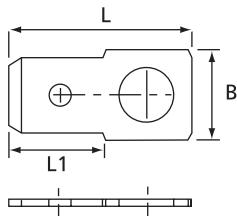
Product Ref.	Angle	Tab size [mm x mm]	B [mm]	Dimensions L1 [mm]	Dimensions L2 [mm]	Hole ø [mm]	Weight [g/100]	Quantity [pieces]
ZG 638-4W	2 x 45°	6.3 x 0.8	8.0	10.0	12.0	4.3	152	100

## Non-insulated screw mounted male disconnect tab terminals DIN 46244

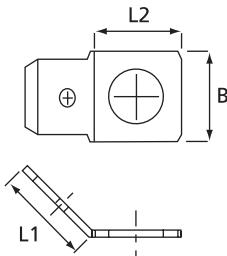
Non-insulated terminals

## Technical Information

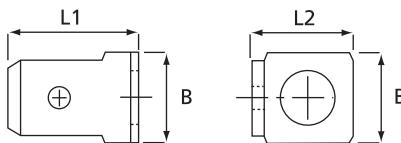
Material	Brass
Plating	Tin plated
Temperature rating	+110°C



Product Ref.	Tab size [mm x mm]	Dimensions			Hole ø [mm]	Weight [g/100]	Quantity
		B [mm]	L [mm]	L1 [mm]			
Z 288-2	2.8 x 0.8	4.5	13.1	5.5	2.8	24	100
Z 488-3	4.8 x 0.8	6.5	17.5	7.0	3.2	68	100
Z 638-4	6.3 x 0.8	8.1	19.1	8.3	4.4	80	100
Z 638-5	6.3 x 0.8	8.0	19.2	8.3	5.4	74	100



Product Ref.	Angle	Tab size [mm x mm]	Dimensions			Hole ø [mm]	Weight [g/100]	Quantity
			B [mm]	L1 [mm]	L2 [mm]			
Z 638-4-4	45°	6.3 x 0.8	8.0	8.0	8.0	4.1	81	100
Z 638-5-4	45°	6.3 x 0.8	8.0	8.0	8.0	5.4	74	100



Product Ref.	Angle	Tab size [mm x mm]	Dimensions			Hole ø [mm]	Weight [g/100]	Quantity
			B [mm]	L1 [mm]	L2 [mm]			
Z 488-3-9	90°	4.8 x 0.8	7.8	8.8	7.5	4.5	59	100
Z 638-4-9	90°	6.3 x 0.8	7.8	8.3	8.8	5.4	76	100

## Overview

### Crimping tools

An extensive range of tooling is available, suiting a variety of requirements, to crimp the following terminals:

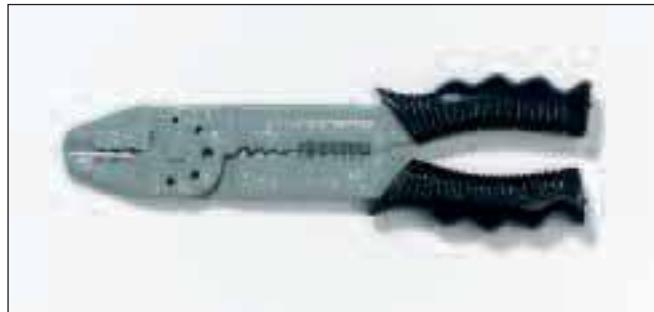
- Insulated terminals and bootlace ferrules
- Non-insulated terminals
- Copper tube terminals

Different types of tooling are offered, depending on volume and application:

- Plier type hand tools for occasional applications ("Do-It-Yourself" users)
- Standard hand tooling for low to medium volume applications
- Ergonomic hand tooling for low to medium volume applications, where high, repeatable quality is essential
- Large hand tools
- Hydraulic tooling for heavy-duty applications

## Plier type crimping tools

### Crimping tools



#### Product Ref.: WT52

- Plier type tool
- For insulated and non-insulated terminals from 0.5 to 6 mm<sup>2</sup>
- Incorporates wire stripper and bolt cutters
- Recommended for 'Do-It-Yourself' applications only
- Length: 225 mm
- Weight: 200 g

## Standard crimping tools

### Crimping tools



#### Product Ref.: WT2124Y

- Ratchet type hand tool, fixed die
- For **insulated terminals** from:
  - 0.5 to 1.5 mm<sup>2</sup> red
  - 1.5 to 2.5 mm<sup>2</sup> blue
  - 4.0 to 6.0 mm<sup>2</sup> yellow
- **Shure-Stake™ mechanism** to ensure a full compression every time
- Length: 228 mm
- Weight: 533 g



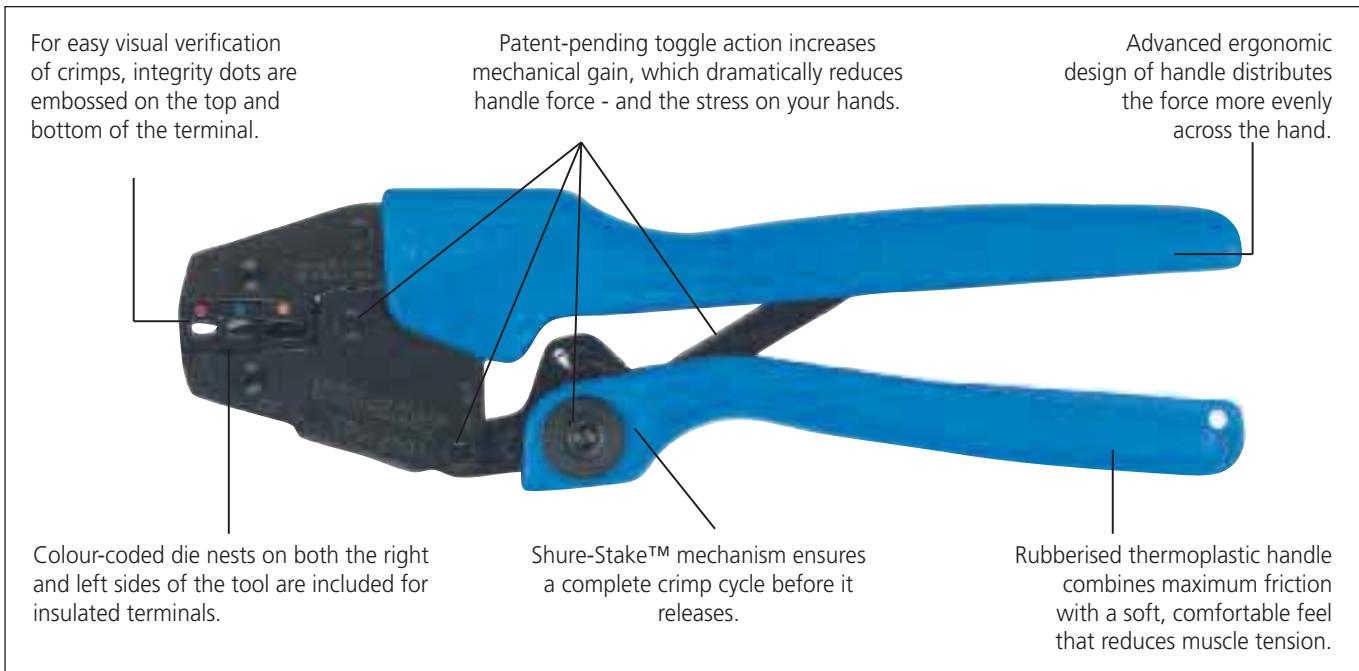
#### Product Ref.: TBZ3

- Ratchet type hand tool, fixed die
- Front loading
- For **insulated bootlace ferrules**, 0.5 to 6.0 mm<sup>2</sup>
- **Shure-Stake™ mechanism** to ensure a full compression every time
- Length: 195 mm
- Weight: 390 g

## Ergonomic hand tools

### Crimping tools

- Ergonomic ratchet style hand tools used for installing insulated and non-insulated terminals
- Specially designed ergonomic handles distribute the crimping force more evenly across the user's hands. This helps to reduce the risk of Carpal Tunnel Syndrome, the cause of almost one in two industrial injuries
- Ratchet design greatly reduces handle forces over conventional hand tools and incorporates the Shure-Stake™ mechanism which ensures a full crimp cycle every time
- Most dies incorporate wire range mark for easy inspection (insulated only)
- Colour coded die nests (insulated only) makes terminal and die nest selection easy
- The product design and engineering results in a long lasting precision tool
- Exists in 2 versions: with interchangeable dies or with fixed dies



## Ergonomic hand tools with interchangeable dies

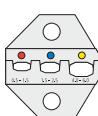
### Crimping tools



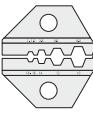
#### Product Ref.: ERG2000KE

- Ergonomic hand tool with interchangeable dies
- Frame, with the option of interchangeable steel dies
- A versatile tool, one frame with a selection of dies covers a large range of terminals.
- **Shure-Stake™ mechanism** to ensure a full compression every time
- Length: 255 mm
- Weight: 510 g

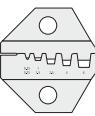
D-0760DIN



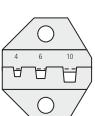
D-1060G



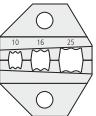
D-0560



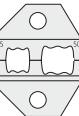
D-4010



D-1025



D-3550



#### ERG2000KE die selection chart

Die Product Ref.	Terminal description	Cross section [mm <sup>2</sup> ]
D-0760DIN	Insulated terminal	0.5 - 6.0
D-1060G	Non-insulated terminal & Copper tube lug	0.5 - 6.0
D-0560	Insulated bootlace ferrule & Non-insulated bootlace ferrule	0.5 - 6.0
D-4010	Insulated bootlace ferrule & Non-insulated bootlace ferrule	4, 6, 10
D-1025	Insulated bootlace ferrule & Non-insulated bootlace ferrule	10, 16, 25
D-3550	Insulated bootlace ferrule & Non-insulated bootlace ferrule	35, 50

## Ergonomic hand tools with fixed die

### Crimping tools



#### Product Ref.: ERG2001A

- Ergonomic fixed die tool, with three colour-coded die nests for easy selection
- For **insulated terminals** from:
  - 0.5 to 1.5 mm<sup>2</sup> red
  - 1.5 to 2.5 mm<sup>2</sup> blue
  - 4.0 to 6.0 mm<sup>2</sup> yellow
- **Shure-Stake™ mechanism** to ensure a full compression every time
- Length: 255 mm
- Weight: 560 g

## Ergonomic hand tools with fixed die *Crimping tools*

### Product Ref.: ERG2106

- Ergonomic fixed die tool, with 5 die nests
- For insulated and non-insulated bootlace ferrules (cord end terminals) from 0.5 to 6.0 mm<sup>2</sup>
- Shure-Stake™ mechanism to ensure a full compression every time
- Length: 255 mm
- Weight: 560 g



### Product Ref.: ERG2510

- Ergonomic fixed die tool, with 2 die nests
- For insulated terminals from:  
0.25 to 0.5 mm<sup>2</sup>  
0.5 to 1.0 mm<sup>2</sup>
- Shure-Stake™ mechanism to ensure a full compression every time
- Length: 215 mm
- Weight: 470 g



### Product Ref.: ERG1475

- Ergonomic fixed die tool, with 3 die nests
- For non-insulated male & female disconnects (F-crimps) from:  
0.1 to 0.5 mm<sup>2</sup>  
0.5 to 1.0 mm<sup>2</sup>  
1.0 to 1.5 mm<sup>2</sup>
- Shure-Stake™ mechanism to ensure a full compression every time
- Length: 215 mm
- Weight: 470 g



### Product Ref.: ERG0560

- Ergonomic fixed die tool, with 3 die nests
- For non-insulated male & female disconnects (F-crimps) from:  
0.5 to 1.5 mm<sup>2</sup>  
1.5 to 2.5 mm<sup>2</sup>  
4.0 to 6.0 mm<sup>2</sup>
- Shure-Stake™ mechanism to ensure a full compression every time
- Length: 255 mm
- Weight: 560 g



## Ergonomic hand tools with fixed die

*Crimping tools*



**Product Ref.: ERG2002**

- Ergonomic fixed die tool with 3 die nests
- For non-insulated terminals and copper tube lugs from:  
0.5 to 1.5 mm<sup>2</sup>  
1.5 to 2.5 mm<sup>2</sup>  
4.0 to 6.0 mm<sup>2</sup>
- Shure-Stake™ mechanism to ensure a full compression every time
- Length: 255 mm
- Weight: 550 g



**Product Ref.: ERG1016**

- Ergonomic fixed die tool, with 2 die nests
- For non-insulated terminals and copper tube lugs of:  
10 mm<sup>2</sup> and 16 mm<sup>2</sup>
- Shure-Stake™ mechanism to ensure a full compression every time
- Length: 255 mm
- Weight: 550 g

## Large hand tool

*Crimping tools*



**Product Ref.: WT3165B**

- Large fixed die tool, with rotating head and 6 nests
- For non-insulated terminals and copper tube lugs from:  
10 to 95 mm<sup>2</sup>
- According to DIN, SEN, BS, UL, Mil specifications
- Shure-Stake™ mechanism to ensure a full compression every time
- Length: 500 mm
- Weight: 2,8 kg
- Max. pressure: 130 kN

## Hydraulic tools

### Crimping tools

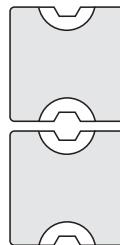
#### Product Ref.: WTH500

- High quality hydraulic hand tool with interchangeable dies
- For non-insulated terminals and copper tube lugs from: 10 to 95 mm<sup>2</sup>
- 180° rotating head to get into hard to reach places
- Shure-Stake™ mechanism to ensure a full compression every time
- Complete with plastic carrying case
- Length: 470 mm
- Weight: 3 kg
- Max. performance: 60 kN



#### WTH500 die selection chart

Product Ref.	Terminal description	Cross-section [mm <sup>2</sup> ]
TB6-8DIN	Copper tube lug	10 - 16
TB10-12DIN	Copper tube lug	25 - 35
TB14-16DIN	Copper tube lug	50 - 70
TB18DIN	Copper tube lug	95



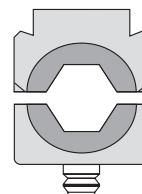
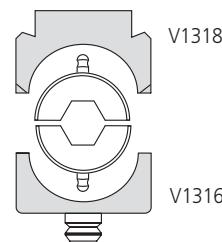
#### Product Ref.: WT3014E

- Hydraulic tool head with interchangeable dies
- For non-insulated terminals and copper tube lugs from: 10 to 300 mm<sup>2</sup>
- Crimping according to DIN46235
- Hand or foot activated switch
- Rapid coupling
- To be used with a hydraulic pump (10.000 p.s.i. = 690 bar = 69 MPa)
- Length: 295 mm
- Weight: 4 kg
- Output pressure: 15 ton
- Max. performance: 130kN



#### WT3014E die selection chart

Product Ref. (+ Die adapters)	Terminal description	Cross-section [mm <sup>2</sup> ]
B6DIN (+V1318, V1316)	Copper tube lug	10
B8DIN (+V1318, V1316)	Copper tube lug	16
B10DIN (+V1318, V1316)	Copper tube lug	25
B12DIN (+V1318, V1316)	Copper tube lug	35
B14DIN (+V1318, V1316)	Copper tube lug	50
B16DIN (+V1318, V1316)	Copper tube lug	70
B18DIN (+V1318, V1316)	Copper tube lug	95
B20DIN (+V1318, V1316)	Copper tube lug	120
B22DIN (+V1318, V1316)	Copper tube lug	150
13B25DIN	Copper tube lug	185
13B28DIN	Copper tube lug	240
13B32DIN	Copper tube lug	300



## Tooling and die selection chart

### Crimping tools

Terminal Type	Cross section [mm <sup>2</sup> ]	WT52	Fixed die hand tool Product Ref.	ERG2000KE Die Product Ref.	WTH500 Die Product Ref.	WT3014E Die Product Ref.
<b>INSULATED TERMINALS AND DISCONNECTS</b>						
	0.25 - 0.5		ERG2510			
	0.5 - 1.0	WT52	ERG2510	D-0760DIN		
	0.5 - 6.0	WT52	WT2124Y, ERG2001A	D-0760DIN		
<b>INSULATED BOOTLACE FERRULES**</b>						
	0.5 - 6.0	WT52	ERG2106, TBZ3	D-0560		
	4, 6, 10			D-4010		
	10, 16, 25			D-1025		
	35, 50			D-3550		
<b>NON-INSULATED TERMINALS</b>						
	0.5 - 6.0	WT52	ERG2002E	D-1060G		
<b>NON-INSULATED DISCONNECTS (F-CRIMPS)</b>						
	0.1 - 1.5		ERG1475			
	0.5 - 6.0		ERG0560			
<b>NON-INSULATED COPPER TUBE LUGS</b>						
	0.5 - 6.0		ERG2002E	D-1060G		
	10	ERG1016, WT3165B		TB6-8DIN	B6DIN*	
	16	ERG1016, WT3165B		TB6-8DIN	B8DIN*	
	25	WT3165B		TB10-12DIN	B10DIN*	
	35	WT3165B		TB10-12DIN	B12DIN*	
	50	WT3165B		TB14-16DIN	B14DIN*	
	70	WT3165B		TB14-16DIN	B16DIN*	
	95	WT3165B		TB18DIN	B18DIN*	
	120				B20DIN*	
	150				B22DIN*	
	185				13B25DIN	
	240				13B28DIN	
	300				13B32DIN	

\* To be used with a Hydraulic pump, with die adaptors V1316, V1318

\*\* The tools WT52, ERG2106, ERG2000KE can also crimp non-insulated bootlace ferrules

## Overview

### Stripping & cutting tools

Thomas & Betts offer a wide variety of specialty tools used most commonly by electricians. Easy to use, they are convenient to all kind of job, whether it is new installation or maintenance. Designed for the professionals, all the stripping and cutting tools from Thomas & Betts are manufactured from top quality materials to assure durability and a long usable life. Single purpose and combination function designs are included.

Different types of tools are offered, depending on volume and application:

- **Ergonomic hand tools** for medium to high volume applications, where high, repeatable quality as well as durability and comfort of use are essential
- **Standard hand tools** for medium volume applications
- **Heavy-duty cable cutters** for cables of large cross-section

## Ergonomic hand tools

### Stripping & cutting tools

#### Product Ref.: ERG1-WS

- Ergonomic, self-adjusting wire stripping & cutting tool
- The **widest** stripping range in the industry for this type of tool: from 0.02 mm<sup>2</sup> to 10 mm<sup>2</sup> insulated wires
- Incorporates interchangeable stripping cassettes for a wide range of wire insulations
- The lightweight, ergonomic design makes this tool ideal for higher volume production as well as portable field usage.
- Replaces the ERG1 cutting / stripping tool

#### Feature & Benefits:

- **Versatile** - Interchangeable cassettes for stripping a wide range of insulations without having to change tools. Integral wire cutter, to cut and strip with the same tool.
- **Powerful** - V-Blade cassette designed for stripping difficult insulations like PTFE coated wire.
- **Safe & Ergonomic** - Stationary handle has a soft grip moulded into the tool for extra comfort. Optimised grip span and lightweight ensures comfortable operation for the user. Cutting blades are not exposed so user's hands are protected.
- **Automatic & Precise** - Tool automatically strips wire to preset length. Hard plastic wire-stop allows the user to easily adjust wire strip length. The fine adjusting slide allows the user to strip thin insulation jackets without damaging conductors.
- **Durable & Reliable** - Cutting blades manufactured from high grade hardened steel. Body is moulded in a new high strength plastic to withstand the harshest working environments. The tool has been tested to over 150,000 cycles.
- **Stripping Capacity**
  - Straight Blade Cassette (SBC-1): PVC Insulations, 0.02 - 10 mm<sup>2</sup>
  - "V" Blade Cassette (VBC-1): all insulations, 0.02 - 6 mm<sup>2</sup>
- **Cutting Capacity**
  - Flexible wires: 10 mm<sup>2</sup>
  - Rigid wires: 1.5 mm<sup>2</sup>
- Dimensions: 191 x 123 x 20 mm
- Weight: 136 g



Product Ref.	Description
ERG1-WS	Ergonomic Wire Stripping & Cutting Tool, interchangeable cassettes. Supplied with 1ea. SBC-1 cassette
SBC-1	Replacement Cassette - Straight blade, for PVC insulations from 0.02 to 10 mm <sup>2</sup>
VBC-1	Replacement Cassette - "V" blade, for all insulations from 0.02 to 6 mm <sup>2</sup>

## Standard hand tools

### Stripping & cutting tools



#### Product Ref.: Superstrip 5

- Fully insulated automatic wire stripper
- The special scanning system automatically adjusts to the diameter of the wire and ensures quick and accurate stripping without leaving witness marks on the insulation, or damage to the conductor
- The ergonomic design and the light weight guarantee fatigue-free operation
- The slim plier type jaw enables access to wiring in confined spaces such as in switching cabinets, junction and distribution boxes
- Type: stranded and solid wires
- Cross section: 0.2 - 6.0 mm<sup>2</sup> (24 - 10 AWG)
- Weight: 105 g



#### Product Ref.: Cabstrip 4-16

- Accurate, fast and safe stripping
- Removable reducing adapter, made of highly abrasion resistant plastic (POM)
- No damage of the inner conductors due to infinitely variable adjustment of the cutting depth
- Each cable stripper contains a spare swivel-blade inside the handle
- Type: round cables
- Diameter: 4 - 16 mm
- Weight: 70 g



#### Product Ref.: Cabstrip 4-28H

- Accurate, fast and safe stripping
- Removable reducing adapter, made of highly abrasion resistant plastic (POM)
- No damage of the inner conductors due to infinitely variable adjustment of the cutting depth
- Each cable stripper contains a spare swivel-blade inside the handle
- Type: round cables
- Diameter: 4 - 28 mm
- Weight: 84 g



#### Product Ref.: Cabstrip 8-27

- Accurate, fast and safe stripping
- Removable reducing adapter, made of highly abrasion resistant plastic (POM)
- No damage of the inner conductors due to infinitely variable adjustment of the cutting depth
- Each cable stripper contains a spare swivel-blade inside the handle
- Type: round cables
- Diameter: 8 - 28 mm
- Weight: 72 g

## Standard hand tools

### Stripping & cutting tools

#### Product Ref.: Coaxstrip 3

- Two or three level stripping
- Ergonomic handle, for faster and more convenient stripping
- Needs no adjustment of the cutting depth
- Easily accessible built-in side cutter
- Type: coaxial cables & flexible cable
- Size: 4.8 - 7.5 mm diameter (coaxial) & 3 x 0.75 mm<sup>2</sup>, 10 mm<sup>2</sup> and 16 mm<sup>2</sup> (flexible)
- Weight: 55 g

#### Product Ref.: Coaxstrip 2

- In a few quick operations the braid, the dielectric and the inner conductor of coaxial cables are set free without damage
- Type: coaxial cables & flexible cable
- Size: 4.8 - 7.5 mm diameter (coaxial) & 3 x 0.75 mm<sup>2</sup>, 10 mm<sup>2</sup> and 16 mm<sup>2</sup> (flexible)
- Weight: 24 g

#### Product Ref.: Duocrimp 300

- Stripping and crimping with only one tool
- The special scanning system automatically adjusts to the wire diameter and allows fast and accurate stripping
- The insulation is stripped off at a length of 5 mm and remains on the conductor (this allows proper twisting of stranded wire ends)
- A gauge inside the handle simplifies stripping to a pre-set length
- Two crimping ranges are offered: 0.5 - 2.5 mm<sup>2</sup> (20 - 13 AWG) & 4.0 - 6.0 mm<sup>2</sup> (12 - 10 AWG)
- Easily accessible built-in side cutter for max 6.0 mm<sup>2</sup> (10 AWG) and solid conductors for 4.0 mm<sup>2</sup> (12 AWG)
- The blades are made of specially hardened steel
- Type: wires
- Size: 0.5 - 6.0 mm<sup>2</sup> (20 - 10 AWG)
- Weight: 116 g

#### Product Ref.: Duostrip 200

- Professional cable and wire stripping with only one tool

##### Cable Stripping:

- Allows variable adjustment of the cutting depth
- The cable holder is adjustable for cable diameters from 4 - 16 mm or 16 - 28 mm
- The tool handle contains a spare swivel-blade

##### Wire Stripping:

- Integrated scale for lengths from 8 - 20 mm
- The special scanning system automatically adjusts to the wire diameter and allows quick and accurate stripping
- Type: round cables & stranded and solid wires
- Size: 4 - 28 mm diameter (cables) & 0.5 - 6.0 mm<sup>2</sup> (20 - 10 AWG) (wires)
- Weight: 123 g



## Standard hand tools

### Stripping & cutting tools



#### Product Ref.: Duostrip 150

- Fully insulated automatic wire stripper with integrated scale for lengths from 8 - 20 mm
- The special scanning system automatically adjusts to the wire diameter and allows fast and accurate stripping
- Comes with an easily accessible built-in side cutter for stranded conductors up to 6.0 mm<sup>2</sup> (10 AWG) and solid conductors up to 4.0 mm<sup>2</sup> (12 AWG)
- Type: stranded and solid wires
- Size: 0.5 - 6.0 mm<sup>2</sup> (20 - 10 AWG)
- Weight: 110 g



#### Product Ref.: Multistrip 400

- Cable and wire stripper
- Allows circular and longitudinal stripping as well as flush stripping in hard-to-reach areas (e.g. ceilings and walls, junction and distribution boxes, switch cabinets)
- Easily accessible built-in side cutter for flexible conductors of maximum 6.0 mm<sup>2</sup> (10 AWG) and solid conductors of maximum 4.0 mm<sup>2</sup> (12 AWG)
- Type: round cables & stranded and solid wires
- Size: 8 - 13 mm diameter (cables) & 0.5 mm<sup>2</sup>, 4.0 mm<sup>2</sup> and 6.0 mm<sup>2</sup> (20 - 10 AWG) (wires)
- Weight: 78 g



#### Product Ref.: Cabstrip 13

- This tool has been specially designed to remove the outer insulation jacket of round cables in confined spaces
- Enables flush stripping in ceiling and wall areas, junction and distribution boxes, switch, cabinets, etc.
- The ergonomic tool design provides for a sure grip and comfort
- In only one operation, the cable sheath is cut and pulled off. No adjustment of cutting depth is necessary
- Type: round cables
- Size: 8 - 13 mm diameter
- Weight: 42 g

## Heavy-duty cable cutters

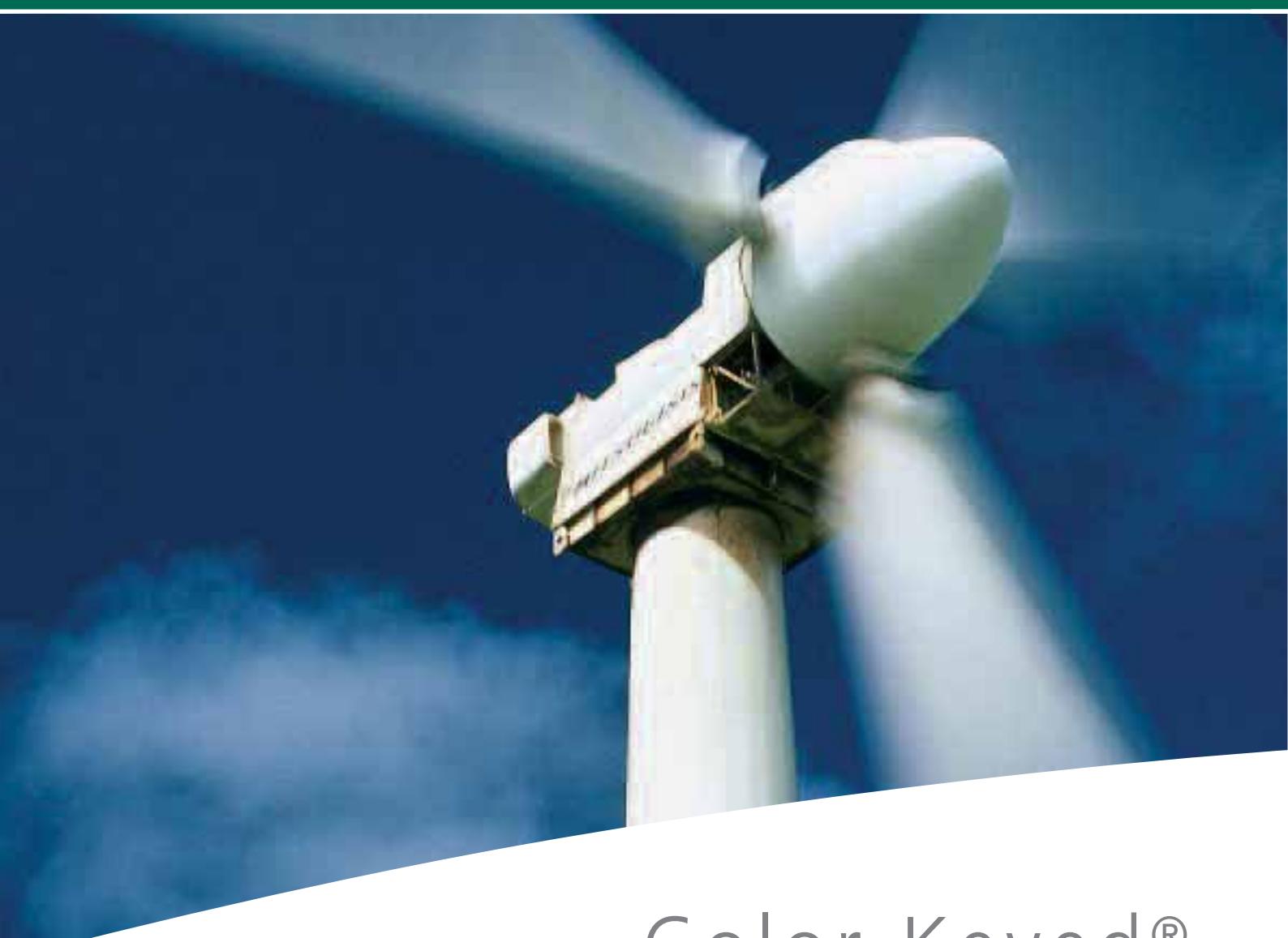
*Stripping & cutting tools*

### Product Ref.: 364RF and 366RF

- For copper and aluminium cable
- Cuts cables up to 500 mm<sup>2</sup>
- Fiberglass durable handles and carbon steel blades
- Precision circular cutting
- Easy to operate



Product Ref.	Max. cable cross-section [mm <sup>2</sup> ]	Max. cable diameter [mm]	Length [cm]	Weight [kg]	Replacement blade reference Product Ref.
364RF	250	30	53	1.6	C150001
366RF	500	50	74	3.6	C350001



Color-Keyed®  
Solderless compression  
connectors for  
power cables

## TERMINATION SYSTEMS

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# Color-Keyed® Solderless compression connectors for power cables

**The better method to install solderless compression connectors on power cables.**

**Designed to provide a tight degree of reliability in electrical wiring, this method allows electrical workers to make installations with little effort and considerable savings in time.**

384

**A simple installation method in just three steps:**

- First, the appropriate connector is chosen for the conductor size
- Next, the proper installing die is selected by matching the die colour to the connector colour
- Last, the die is installed in the tool, and the connector is compressed



## *Wide range of copper tube lugs, splices and installation tools*

### **Color-Keyed®: special lugs for special applications**

Thomas & Betts can solve your difficult wire bending and terminating problems in confined power distribution panels, switchgear and motor control enclosures. We have the design and production capability to deliver exactly the type of lug you need, shaped the way you need.

- Straight, 45° and 90° angle
- Stacking or non-stacking
- Narrow tongue or standard
- Tin, silver, lead, nickel plated Thomas & Betts offer an extensive line of copper Color-Keyed® lugs for flexible and solid cables.

The lug tongues are modified in several different configurations to meet your exact needs: 45° and 90° bend angles, narrow tongues to fit into circuit breakers, offset tongues to stack two cables, and special stud hole drilling.

These special configurations let you:

- run the cable directly to the bus bar with no bending,
- terminate into very narrow spaces, and
- utilise minimal bus bar space.

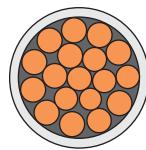
The specially designed lugs help you "clean up" your cabling in crowded enclosures.

### **Customised Color-Keyed® lugs**

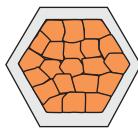
All customised lugs for Copper Cables can be made to order. Consult your Sales Office for price and delivery.

## Overview

### Power cable connectors



Before compression, a typical cross section of cable and connector consists of about 75% metal and 25% air.



Air compression by the T&B Method, the cross section looks like this, 100% metal with virtually no air spaces.



The die is positioned between colour bands for copper connectors and on the bands for aluminium connectors.

#### Precision dies form a solid, homogenous mass

The Thomas & Betts method utilising compression tools with matching dies forms the connector and conductor into a solid, homogenous mass to provide an optimum electrical bond between connector and conductor.

Color-Keyed® dies are designed to produce a circumferential, hex- or diamond-shaped compression rather than a simple indent. Precision dies are an integral part of the Thomas & Betts method.

Each die is designed so that all conductors receive the same amount of compression force. The circumferential compression creates a large area of high pressure contact between cable and connector which, in turn, assures high conductivity, low resistance, and high pullout values which exceed UL requirements.

These features result in a permanent, low installed cost connection. You can install it, and forget it.

#### The Color-Keyed® system from Thomas & Betts tells you where to place the installing die

Color-Keyed® connectors not only identify the correct installing die to be used for positive compressions, but also indicate the proper placement of the die on the connector. This is done by the coloured rings around the connector which match the colour on the dies. Compression is made between or on these colour bands. The colour name is also spelled on the connector as an added means of identification.

Features	Benefits
High conductivity electrolytic copper	Excellent electrical conductivity thanks to lowest electrical resistance, associated to superior tensile strength
Tubular construction	No seam, ensuring excellent mechanical properties
Electro-tin plated	Enhanced corrosion resistance
Colour-coding according to the cross-section of the cable, by marking the connector with coloured rings and with the name of the colour	Easy selection of the connector, the die and the tool according to the size of the cable
Die-code engraved on the surface of the die	Higher level of reliability
Specifications	Easy and reliable inspection
	According to DIN and UL

## Two-way splice connectors for copper cable - Standard barrel

Connectors for 600 V to 35 kV applications

Two-way connectors provide high pullout values, are easy to insulate, and provide a low resistance connection of high quality and low installed cost.

### Technical Information

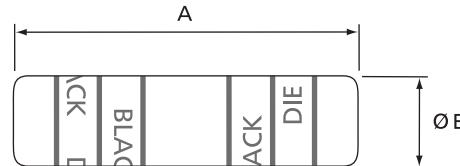
Material	High conductivity wrought copper
Plating	Electro-tin plated
Metal barrel	Copper tube
Voltage	600V to 35kV
Marking	Colour reference for die and cable size



004503



E9809



Product Ref.	USA cable size	Approx. European cable size [mm <sup>2</sup> ]	Colour	Tooling die code	Dimensions		Weight	Quantity
					A [mm]	E [mm]	[kg/100]	[pieces]
54504	# 8 AWG	8	Red	21	25.4	6.9	0.540	50
54505	# 6 AWG	13	Blue	24	25.4	7.6	0.553	50
54506	# 4 AWG	21	Grey	29	25.4	9.4	0.816	50
54507	# 2 AWG	25 - 34	Brown	33	31.8	10.4	1.252	25
54508	# 1 AWG	42	Green	37	38.1	11.9	1.633	20
54509	1/0 AWG	53	Pink	42H	41.4	13.2	2.132	10
54510	2/0 AWG	67	Black	45	44.5	14.5	2.903	10
54511	3/0 AWG	85	Orange	50	44.5	16.0	3.221	10
54512	4/0 AWG	107	Violet	54H	47.8	17.8	4.146	10
54513	250 kcmil	125	Yellow	62	57.2	19.6	4.990	10
54514	300 kcmil	150	White	66	54.1	21.1	6.328	10
54515	350 kcmil	175	Red	71H	57.2	22.9	7.711	10
54516	400 kcmil	200	Blue	76 / 80	69.9	23.6	10.582	6
54518	500 kcmil	250	Brown	87H	69.9	28.2	13.699	6
54520	600 kcmil	300	Green	94H	76.2	30.0	19.577	6
54522-TB	700 kcmil	350	Pink	99H	82.6	31.2	19.654	6
54523-TB	750 kcmil	375	Black	106H	76.2	33.0	22.362	6
54528	1000 kcmil	500	-	-	92.2	38.1	36.287	3

For tooling see pages 391 to 395

For American cable size conversion, see table page 427

This represents a small part of the Color-Keyed® range, please contact your Sales Office for additional product information

## Two-way splice connectors for copper cable - Long barrel

Connectors for 600 V to 35 kV applications



### Technical Information

Material	High conductivity wrought copper
Plating	Electro-tin plated
Metal barrel	Copper tube
Voltage	600V to 35kV
Marking	Colour reference for die and cable size



004503



E9809



Product Ref.	USA cable size	Approx. European cable size [mm <sup>2</sup> ]	Colour	Tooling die code	Dimensions		Weight	Quantity
					A [mm]	E [mm]	[kg/100]	[pieces]
54804	# 8 AWG	8	Red	21	44.5	6.4	0.789	50
54805	# 6 AWG	13	Blue	24	44.5	7.1	0.916	50
54806	# 4 AWG	21	Grey	29	44.5	9.1	1.315	50
54807	# 2 AWG	25 - 34	Brown	33	47.6	10.3	1.787	25
54808	# 1 AWG	42	Green	37	50.8	11.9	2.041	20
54809	1/0 AWG	53	Pink	42H	50.8	13.5	2.631	10
54810	2/0 AWG	67	Black	45	54.0	14.7	3.130	10
54811	3/0 AWG	85	Orange	50	57.2	15.9	4.014	10
54812	4/0 AWG	107	Violet	54H	69.9	17.9	5.874	10
54813	250 kcmil	125	Yellow	62	85.7	19.5	7.439	10
54814	300 kcmil	150	White	66	88.9	21.5	9.571	10
54815	350 kcmil	175	Red	71H	95.3	23.9	12.837	10
54816	400 kcmil	200	Blue	76 / 80	95.3	24.6	13.227	6
54818	500 kcmil	250	Brown	87H	120.7	27.8	23.678	6
54820	600 kcmil	300	Green	94H	108.0	30.2	25.809	6
54823	750 kcmil	375	Black	106H	120.7	33.7	35.380	6
54828	1000 kcmil	500	—	—	142.9	39.3	54.068	3
54833	1500 kcmil	750	—	—	165.1	47.6	95.000	3
54839	2000 kcmil	1000	—	106H	179.3	54.0	150.000	3

For tooling see pages 391 to 395

For American cable size conversion, see table page 427

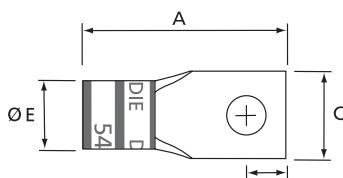
This represents a small part of the Color-Keyed® range, please contact your Sales Office for additional product information

# One hole lug for copper cable - Standard barrel

Connectors for 600 V to 35 kV applications

## Technical Information

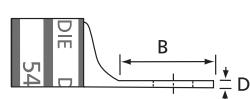
Material	High conductivity wrought copper
Plating	Electro-tin plated
Metal barrel	Copper tube
Voltage	600V to 35kV
Marking	Colour reference for die and cable size



004503



E9809



Product Ref.	USA cable size	Approx. European cable size [mm <sup>2</sup> ]	Stud size USA	Colour	Tooling die code	Dimensions						Weight [kg/100]	Quantity	
						A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]			
54132	# 8 AWG	8	3/8	M 8	Red	21	33.8	16.3	14.2	1.3	6.4	7.1	1.361	50
54136	# 6 AWG	13	3/8	M 8	Blue	24	35.8	17.0	15.2	1.8	7.9	7.9	0.603	50
54140	# 4 AWG	21	3/8	M 8	Grey	29	36.1	16.8	15.5	1.8	9.4	7.9	0.912	50
54145-TB	# 2 AWG	25 - 34	1/2	M 12	Brown	33	48.8	27.4	19.1	2.0	10.4	12.7	1.633	25
54150	# 1 AWG	42	1/2	M 12	Green	37	53.3	31.8	19.3	2.8	11.9	12.7	2.041	20
54155-TB	1/0 AWG	53	1/2	M 12	Pink	42H	55.9	31.8	19.1	3.3	13.2	12.7	3.062	10
54160	2/0 AWG	67	1/2	M 12	Black	45	57.2	31.8	21.1	3.3	14.5	12.7	3.334	10
54165-TB	3/0 AWG	85	1/2	M 12	Orange	50	59.7	31.8	23.4	3.3	16.0	12.7	4.082	10
54170	4/0 AWG	107	1/2	M 12	Violet	54H	63.5	31.8	26.2	3.6	17.8	12.7	5.171	10
54113	250 kcmil	125	1/2	M 12	Yellow	62	66.0	31.8	28.7	3.6	19.6	12.7	6.622	10
58165	4/0 Weld	—	1/2	M 12	Yellow	62	70.1	31.8	31.8	3.8	20.1	12.7	8.210	10
54114	300 kcmil	150	1/2	M 12	White	66	68.6	31.8	31.8	3.8	21.6	12.7	8.210	10
58171	300 Weld	—	1/2	M 12	Red	71H	72.4	31.8	34.5	4.6	23.6	12.7	10.705	10
54183	350 kcmil	175	5/8	M 16	Blue	76	81.5	40.1	34.5	4.6	23.6	15.9	10.909	10
54185	400 kcmil	200	5/8	M 16	Blue	80	89.7	40.1	35.8	4.3	24.4	15.9	11.340	6
58177	400 Weld	—	1/2	M 12	Black	107H	84.1	31.8	40.9	5.6	26.4	12.7	18.098	6
54187	500 kcmil	250	5/8	M 16	Brown	87H	92.2	40.1	40.9	5.6	27.9	15.9	19.958	6
58180	500 Weld	—	5/8	M 16	Green	94H	96.3	40.1	44.5	6.1	30.5	15.9	26.195	2
54120	600 kcmil	300	5/8	M 16	—	—	96.3	40.1	44.5	6.1	30.5	15.9	25.038	6
54122-TB	700 kcmil	350	5/8	M 16	Pink	99H	93.5	40.1	46.7	5.8	32.0	15.9	23.283	6
54123-TB	750 kcmil	375	5/8	M 16	Black	107H	98.3	40.1	49.3	6.9	33.8	15.9	31.661	6

For tooling see pages 391 to 395

For American cable and stud size conversion, see tables page 427

This represents a small part of the Color-Keyed® range, please contact your Sales Office for additional product information

# 5.2 Color-Keyed®

## Two hole lugs for copper cable - Long barrel

Connectors for 600 V to 35 kV applications



### Technical Information

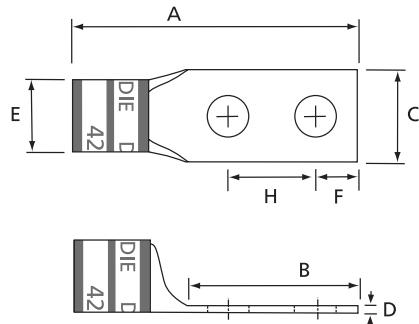
Material	High conductivity wrought copper
Plating	Electro tin plated
Metal barrel	Copper tube
Voltage	600V to 35kV
Marking	Colour reference for die and cable size



007222



E9809



Product Ref.	USA cable size	Approx. European cable size [mm <sup>2</sup> ]	Stud size USA metric equivalent	Colour	Tooling die code	Dimensions						Weight [kg/100]	Quantity		
						A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H [mm]			
256-30695-1157	# 8 AWG	6 - 8	3/8	M 8	Red	21	76.2	53.3	14.2	1.5	6.6	9.5	25.4	1.361	10
256-30695-1158	# 6 AWG	10 - 13	3/8	M 8	Blue	24	74.4	49.0	15.0	1.5	7.6	9.5	25.4	1.588	50
256-30695-1159	# 4 AWG	20 - 25	3/8	M 8	Grey	27	79.5	50.3	15.0	2.3	9.4	9.5	25.4	2.177	10
54811 BE	# 3-2 AWG	25 - 35	1/2	M 12	Brown	29	108.7	76.2	22.4	2.8	10.4	12.7	44.5	6.577	10
54857 BE	# 1 AWG	40	1/2	M 12	Green	33	112.5	76.2	22.4	2.8	11.9	12.7	44.5	7.348	10
256-30695-593	1/0 AWG	50	1/2	M 12	Pink	37	110.0	76.2	19.1	3.3	13.2	15.9	44.5	5.897	5
54862 BE	2/0 AWG	70	1/2	M 12	Black	42H	106.7	71.4	21.1	3.3	14.5	12.7	44.5	6.124	10
54864 BE	3/0 AWG	80 - 95	1/2	M 12	Orange	45	113.8	76.2	23.9	3.3	16.0	12.7	44.5	7.802	10
54866 BE	4/0 AWG	100 - 120	1/2	M 12	Violet	50	119.4	76.2	26.2	3.6	17.8	12.7	44.5	10.024	10
54868 BE	250 kcmil	125	1/2	M 12	Yellow	54H	125.0	76.2	28.7	3.6	19.6	12.7	44.5	11.567	10
54870 BE	300 kcmil	150	1/2	M 12	White	66	132.8	76.2	31.8	3.8	21.6	12.7	44.5	15.377	10
54872 BE	350 kcmil	170 - 185	1/2	M 12	Red	71H	137.2	76.2	34.5	4.6	23.6	12.7	44.5	18.915	10
54874 BE	400 kcmil	200	1/2	M 12	Blue	76/80	140.0	76.2	35.8	4.3	24.4	12.7	44.5	20.502	6
54876 BE	500 kcmil	250	1/2	M 12	Brown	87H	152.4	76.2	40.9	5.6	27.9	12.7	44.5	31.797	6
54878 BE	600 kcmil	300	1/2	M 12	Green	94H	148.1	76.2	44.5	6.1	30.5	12.7	44.5	37.798	6
54880 BE	750 kcmil	400	1/2	M 12	Black	106H	157.5	76.2	49.3	6.9	33.8	12.7	44.5	47.854	6

For tooling see pages 391 to 395

For American cable and stud size conversion, see tables page 427

This represents a small part of the Color-Keyed® range, please contact your Sales Office for additional product information

## Standard hand tool

### Crimping tools

#### Product Ref.: TBM25S

- Fixed die tool, with rotating head and 5 nests
- For Color-Keyed® copper tube lugs and splices from: 6 to 35 mm<sup>2</sup>
- Shure-Stake™ mechanism
- Length: 220 mm
- Weight: 430 g



## Large hand tools

### Crimping tools

#### Product Ref.: TBM5-S

- Large hand tool with interchangeable dies
- For Color-Keyed® copper tube lugs and splices from: 8 AWG to 250 kcmil (=8.4 to 126.7 mm<sup>2</sup>) in the case of copper cables
- Incorporates the Shure-Stake™ mechanism: once the pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle, ensuring a correct crimp every time
- Furnished complete with carrying case and 5 installing dies (Product Ref. 13454, 13455, 13456, 13457, 13458)
- Dies are colour-coded and die-code embossed
- Tool length: 650 mm approx.
- Tool weight: 3kg approx.



#### Product Ref.: TBM5

- Same specifications as Product Ref. TBM5-S but does not incorporate the Shure-Stake™ mechanism

#### Dies for TBM5 and TBM5-S

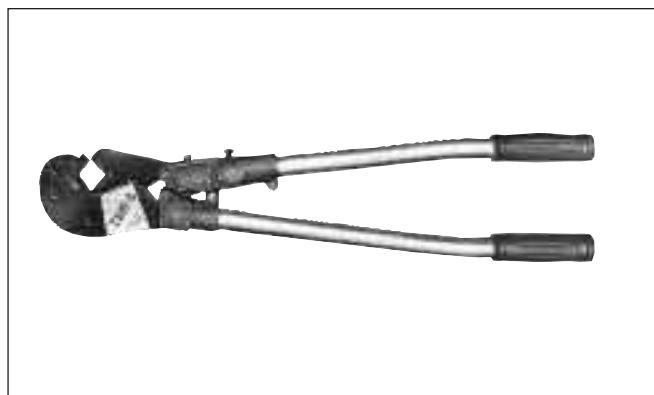
- Multi-nest dies, to cover a wire size range from: 8 AWG to 250 kcmil (=8.4 to 126.7 mm<sup>2</sup>) in the case of copper cables
- Each nest is colour-coded and die-code embossed

#### TBM5 and TBM5S die selection chart

Die Product Ref.	Nest identification colour-code	Nest identification die-code	Copper wire size USA	Copper wire size conversion to metric cross-section [mm <sup>2</sup> ]
13454	Red	21	8 AWG	8.4
	Blue	24	6 AWG	13.3
	Grey	29	4 AWG	21.1
	Brown	33	2 AWG	33.6
13455	Green	37	1AWG	42.4
	Pink	42H	1/0 AWG	53.5
	Black	45	2/0 AWG	57.4
13456	Orange	50	3/0 AWG	85.0
	Violet	54H	4/0 AWG	107.2
	Yellow	60	250 kcmil	126.7

Note: 2 other dies (Product Ref. 13457 and Product Ref. 13458) are available, but for aluminium wire sizes only

## Large hand tools *Crimping tools*



### Product Ref.: TBM8S

- Large hand tool with interchangeable dies
- For Color-Keyed® copper tube lugs and splices from: 8 AWG to 500 kcmil (= 8.4 to 253.4 mm<sup>2</sup> ) in the case of copper cables
- Incorporates the Shure-Stake™ mechanism: once the pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle, ensuring a correct crimp every time
- Furnished complete with carrying case and 8 installing dies (Product ref. 13461, 13462, 13463, 13464, 13465, 13466, 13467, 13468)
- Dies are colour-coded and die-code embossed
- Tool length: 650 mm
- Weight: 9.3 kg

### Product Ref.: TBM8

- Same specifications as Product Ref. TBM8S but does not incorporate the Shure-Stake™ mechanism

### Dies for TBM8 and TBM8S

- Multi-nest dies, to cover a wire size range from: 8 AWG to 500 kcmil (= 8.4 to 253.4 mm<sup>2</sup> ) in the case of copper cables
- Each nest is colour-coded and die-code embossed

### TBM8 and TBM8S die selection chart

Die Product Ref.	Nest identification colour-code	Nest identification die-code	Copper wire size USA	Copper wire size conversion to metric cross-section [mm <sup>2</sup> ]
13461	Red	21	8 AWG	8.4
	Blue	24	6 AWG	13.3
	Grey	29	4 AWG	21.1
	Brown	33	2 AWG	33.6
13462	Green	37	1AWG	42.4
	Pink	42H	1/0 AWG	53.5
	Black	45	2/0 AWG	57.4
13463	Orange	50	3/0 AWG	85.0
	Violet	54H	4/0 AWG	107.2
	Yellow	60	250 kcmil	126.7
13465	White	66	300 kcmil	152.0
13466	Red	71H	350 kcmil	177.3
13467	Blue	76	400 kcmil	202.7
13468	Brown	87H	500 kcmil	253.4

Note: 1 other die (Product Ref. 13464) is available, but for aluminium wire sizes only

## Hydraulic tools

### Crimping tools

#### Product Ref.: TBM14M

- Self-contained hydraulic hand tool with colour-coded interchangeable dies
- For Color-Keyed® copper tube lugs and splices from: 6 to 450 mm<sup>2</sup>
- Incorporates the Shure-Stake™ mechanism: once the pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle, ensuring a correct crimp every time
- Swiveled "C"- shaped head rotates 180°
- Complete with carrying case
- Weight: 6.8kg
- Output pressure: 14 ton



#### Product Ref.: TBM15i

- Hydraulic tool head with interchangeable dies
- For Color-Keyed® copper tube lugs and splices from: 6 to 500 mm<sup>2</sup>
- New longer, slimmer profile allows easier access into tight spaces
- Wider jaw opening eases crimping of larger connectors
- Available with an insulated head
- Supplied in a carrying case in steel
- Dies to be ordered separately
- Output Force: 15 tons (nominal)
- Operating Pressure: 10,000 psi (nominal) = 690 bar
- Tool weight: 7 kg (without dies)



#### TBM14M and TBM15i die selection chart

Die Product Ref.	Nest identification colour-code	Nest identification die-code	Copper wire size USA	Copper wire size conversion to metric cross-section [mm <sup>2</sup> ]
15520	Red	21	8 AWG	8.4
15522	Blue	24	6 AWG	13.3
15527-CK	Grey	29	4 AWG	21.1
15528	Brown	33	2 AWG	33.6
15513-CK	Green	37	1 AWG	42.4
15508	Pink	42H	1/0 AWG	53.5
15526	Black	45	2/0 AWG	57.4
15530	Orange	50	3/0 AWG	85.0
15511	Violet	54H	4/0 AWG	107.2
15510-CK	Yellow	60	250 kcmil	126.7
15534	White	66	300 kcmil	152.0
15514-CK	Red	71H	350 kcmil	177.3
15512	Blue	76	400 kcmil	202.7
15506	Brown	87H	500 kcmil	253.4
15611	Green	94H	600 kcmil	304.0
15505	Pink	99H	700 kcmil	354.7
15515-CK	Black	106H	750 kcmil	380.0
15603	—	125H	1000 kcmil	506.7

## Smart tools

### Crimping tools

- The SMART tools are designed to give you a uniform high quality compression connection over a wide connector range
- It easily installs copper and aluminium lugs from 6 mm<sup>2</sup> to 400 mm<sup>2</sup> without changing dies
- With its built-in intelligence, the tool will sense the barrel diameter and apply the correct amount of compression force
- Die selection mistakes are virtually eliminated

- The tool embosses a T&B mark on the connector for positive verification that the correct tool was used
- Tools are made from forged steel, suited to bench or fieldwork. Their "C"-shaped heads, light weight and compact size make them easy to use in almost any application



#### Product Ref.: TBM8-750

- Hydraulic remote tool head
- For aluminium and **copper** lugs from the Color-Keyed® line from 6 to 400 mm<sup>2</sup>
- Operates on standard 10,000 psi (= 690 bar) hydraulic pumps
- Length: 368 mm
- Weight: 4kg
- Output pressure: 12 ton
- Coupler: Pioneer, female



#### Product Ref.: TBM8-750M-1

- Self-contained hydraulic tool
- For aluminium and **copper** lugs from the Color-Keyed® line from 6 to 400 mm<sup>2</sup>
- Length: 538 mm
- Weight: 5.9kg
- Output pressure: 12 ton
- Operating pressure: 9800 psi = 676 bar

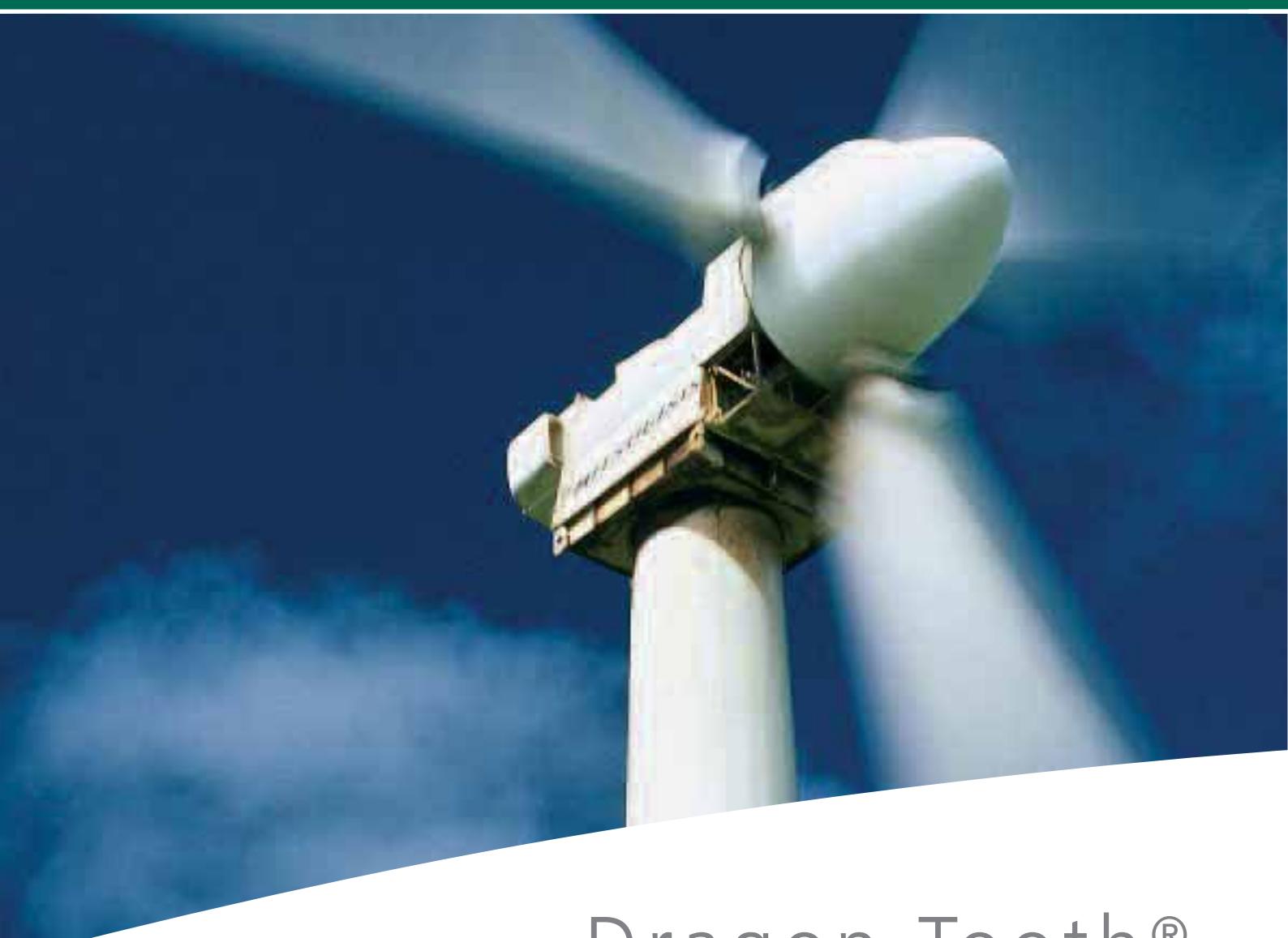
## Tool and die selection chart

*Crimping tools*

USA	Copper wire size Conversion to metric cross-section [mm <sup>2</sup> ]	Nest identification colour-code	Nest identification die-code	TBM8 TBM8S die product references	TBM5 TBM5-S die product references	TBM14M TBM15i die product references
8 AWG	8.4	Red	21	13461	13454	15520
6 AWG	13.3	Blue	24	13461	13454	15522
4 AWG	21.1	Grey	29	13461	13454	15527-CK
2 AWG	33.6	Brown	33	13461	13454	15528
1 AWG	42.4	Green	37	13462	13455	15513-CK
1/0 AWG	53.5	Pink	42H	13462	13455	15508
2/0 AWG	57.4	Black	45	13462	13455	15526
3/0 AWG	85.0	Orange	50	13462	13455	15530
4/0 AWG	107.2	Violet	54H	13463	13456	15511
250 kcmil	126.7	Yellow	60	13463	13456	15510-CK
300 kcmil	152.0	White	66	13465		15534
350 kcmil	177.3	Red	71H	13466		15514-CK
400 kcmil	202.7	Blue	76	13467		15512
500 kcmil	253.4	Brown	87H	13468		15506
600 kcmil	304.0	Green	94H			15611
700 kcmil	354.7	Pink	99H			15505
750 kcmil	380.0	Black	106H			15515-CK
1000 kcmil	506.7	—	125H			15603
1500 kcmil	760.1	—				
2000 kcmil	1013.4	Black				

For American cable size conversion, see table page 427

Note: This table is based on sizes of copper cable. In the case of aluminium cables, the correspondence between the cable size and the connector colour code (and therefore the appropriate die) may be different. Please contact your Sales Office for more information on the different possibilities of applications.



Dragon Tooth®  
Insulation piercing  
connectors to splice,  
tap and terminate  
magnet wire

## TERMINATION SYSTEMS

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# Dragon Tooth® The insulation piercing connector

**The Dragon Tooth® insulation piercing connectors for magnet wire penetrate the insulation and oxide layers to make a reliable electrical contact, eliminating the need for stripping, brazing, welding or other methods of joining magnet wire.**

In the conventional methods, different techniques are used to remove the insulating varnish: scratching, brushing, burning-off, dissolving. These methods are all costly and time consuming, and they generally lead to a risk of damage to the conductors and to a risk of injury of the operator. Health and environmental considerations can also be an issue.



## *Dragon Tooth®* Insulation piercing connectors to splice, tap and terminate magnet wire

The tough, high temperature insulation on magnet wire used by electrical motor and transformer manufacturers creates problems in splicing and terminating. The durability of magnet wire insulation has made dip-soldering or brazing extremely difficult without stripping the insulation.

Another splicing and terminating challenge involves the use of aluminium for magnet applications. A manufacturer connecting aluminium magnet wire to copper is faced with the problem of the different coefficients of thermal expansion of the two metals, galvanic corrosion, cold flow and the rapid formation of oxide film on the wire surface.

Thomas & Betts offer a solution for a highly reliable connection method for magnet wire, which eliminates welding, no longer requires removal of insulation and which can be installed in seconds. No special operator skills are needed. The connector and matching tooling do the entire job. To meet the essential requirements of

magnet wire connections, Thomas & Betts offer the insulation piercing Dragon Tooth® compression connector.

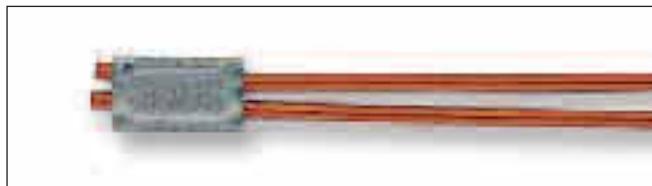
The result is a gas-tight, permanent connection with an exceptionally low contact resistance, capable of maintaining contact integrity throughout the life of the connection.

Dragon Tooth® connectors transform the perpendicular compression force, which would normally contribute to conductor creep, into distributive forces that effectively resist cold flow.

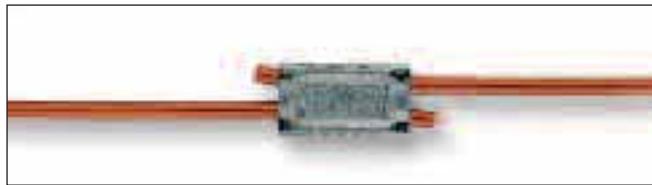
These connectors are made of copper alloy, tin plated, with a number of teeth on the inner surface. When the connector is compressed onto an insulated magnet wire, the sharp hardened teeth penetrate the insulation and the oxide and bite into the conductor. An electrically sound, low-resistance connection is established as a result of the combination of high pressures at the tip and edges of the teeth and the sliding action between the teeth and the conductor

## Overview

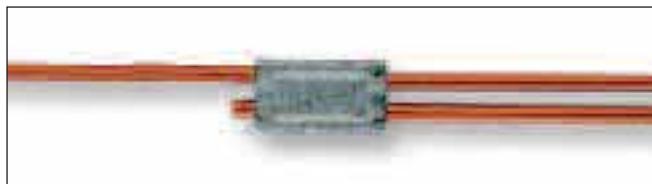
### Insulation piercing connectors



Splice



Parallel Splice



Tap



Termination

Thomas & Betts Dragon Tooth® connectors and installing tools are designed to splice, tap and terminate copper magnet wire from 32 AWG to 460,000 CMA (0,03 to 120 mm<sup>2</sup>) and aluminium magnet wire from 20 AWG to 460,000 CMA (0,5 to 120 mm<sup>2</sup>) in motor and transformer applications.

- Can be installed in seconds
- Requires minimal training for installation.
- Made of copper alloy, tin plated, with a number of teeth on the inner surface
- Splices and taps have an open side permitting easy access to wire and makes internal coil tapping possible (mid-span tapping and splicing)
- For aluminium to copper, aluminium to aluminium, or copper to copper magnet wire connections
- Ring terminals with bolt holes to accommodate M3 through M12 studs
- Male and female 6.35 mm x 0.8 mm disconnects
- Splices and fork terminals accommodate wire sizes 24 AWG (0.21 mm<sup>2</sup>) to 12 AWG (3.3 mm<sup>2</sup>) in a variety of combinations, including combining magnet wire with stripped wire lead. For solid or stranded wire 20 AWG (0.52 mm<sup>2</sup>) to 4/0 AWG (107.2 mm<sup>2</sup>)
- Larger connectors accommodate circular mil range from 50,000 to 460,000 CMA (25 to 120 mm<sup>2</sup>)
- Transition washers with teeth to penetrate aluminium and copper oxides, enabling copper to aluminium connections to be made in a bolted joint without the use of inhibiting compounds  
Transition washers also accommodate the difference in thermal expansion between copper and aluminium, and enhance the efficiency of bolted grounding connections
- Connector and matching tooling do the entire job

#### How to select a connector

1. Define the total cross-section (CMA) of the conductors
2. In the Ordering Information tables, refer to either Round Wire column, or Rectangular column, depending on the type you are using, and check any limitations, (such as max. wire i.e. width/height). If there are limitations, you may have to make a selection from next larger size.
3. Select the appropriate tool and die

#### Formula for calculating Circular Mil Area (CMA)

For square or rectangular wire:

Thickness x Width x  $1.273 \times 10^6$  = CMA (for dimensions in inch)

Thickness x Width x  $1.973 \times 10^3$  = CMA (for dimensions in mm)

For round wire:

Diameter<sup>2</sup> x  $10^6$  = CMA (for diameter in inch)

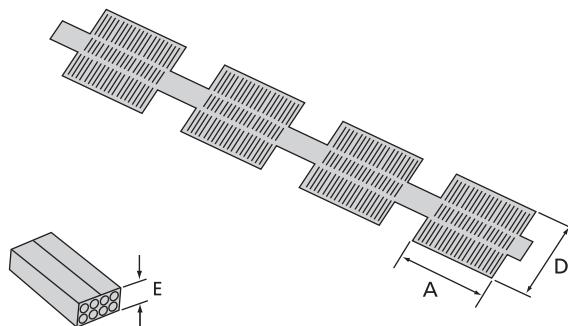
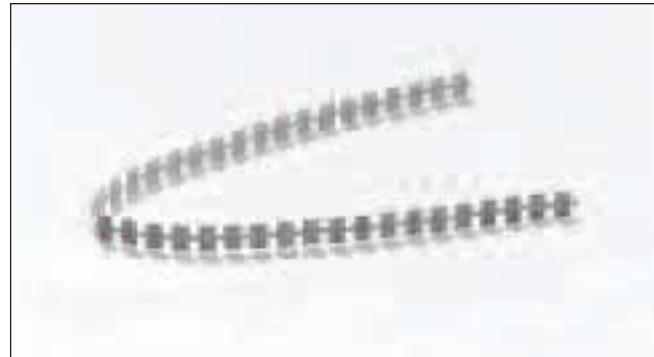
Diameter<sup>2</sup> x  $1.55 \times 10^3$  = CMA (for diameter in mm)

## Splices

Insulation piercing connectors

### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



Product Ref.	Dimensions			Combined wire size [mm <sup>2</sup> ]	Round wire range min - max [mm]	Rectangular wire range		Tooling
	A [mm]	D [mm]	E* [mm]			Thickness min - max [mm]	Width min - max [mm]	
220004	4.7	2.8	0.8	0.23 - 0.87	0.20 - 1.00**	—	—	13676A
220001	8.7	4.4	2.4	0.64 - 3.30	0.40 - 1.45**	0.60 - 1.00	0.60 - 2.30	13678
220006	11.9	6.4	2.4	1.30 - 6.24	1.30 - 2.05	1.30 - 2.05	1.30 - 4.10	13696
220002-TB	8.7	6.4	2.4	1.00 - 3.30	0.50 - 1.40**	0.50 - 1.00	0.50 - 2.30	13679

\* Reference dimension (crimped height): see installing die illustration for gauging

\*\* Not recommended for aluminium magnet wire finer than 0.4 mm<sup>2</sup>

Pages 420 to 424 for tooling specifications

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Splices

Insulation piercing connectors

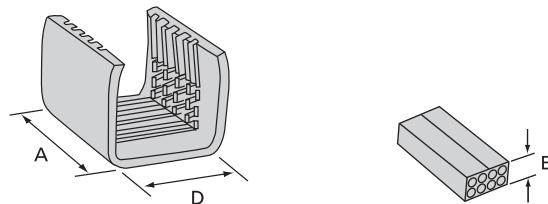


## Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



Product Ref.	Dimensions			Combined wire size [mm <sup>2</sup> ]	Round wire range min - max [mm]	Rectangular wire range		Tooling	
	A [mm]	D [mm]	E* [mm]			Thickness min - max [mm]	Width min - max [mm]	Hand tool	Power tool***
22L004	3.8	2.8	1.3	0.23 - 0.87	0.20 - 1.00**	—	—	ERG1804	11903A
22L001	8.1	4.1	2.5	0.20 - 2.10	0.50 - 1.45**	0.50 - 1.25	0.50 - 2.50	ERG1801	11904A
22L002	8.1	6.4	2.5	1.00 - 3.30	0.50 - 1.40**	0.50 - 1.25	0.50 - 2.80	ERG1802	13500
22L006	11.5	6.4	3.3	1.30 - 6.24	1.30 - 2.05	1.30 - 1.50	1.30 - 4.10	ERG1806	
22L008	17.8	12.7	3.8	6.50 - 15.50	1.00 - 1.30	1.00 - 1.60	1.60 - 9.53	—	13100A, 13400
22L009	17.8	14	5.6	18.30 - 43.60	1.30 - 2.58	2.00 - 4.60	2.00 - 9.50	—	TBM15i

\* Reference dimension (crimped height): see installing die illustration for gauging

\*\* Not recommended for aluminium magnet wire finer than 0.4 mm<sup>2</sup>

\*\*\* Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Splices

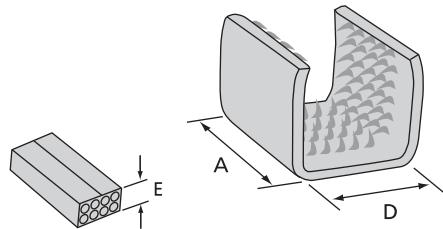
Insulation piercing connectors

### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



Product Ref.	Dimensions			Combined wire size [mm <sup>2</sup> ]	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling
	A [mm]	D [mm]	E* [mm]					
210214S	15.9	9.5	4.3	2.00 - 10.52	1.63 (a) - 2.58	2.00 - 2.30	2.00 - 4.57	13100A, 13400
204210S	17.5	13.5	6.3	5.20 - 26.60	2.05 (b) - 6.54 (c)	2.50 - 4.10	2.50 - 6.35	TBM15i

\* Reference dimension (crimped height): see installing die illustration for gauging

(a) Four wires max

(b) Six wires max

(c) Crimping dies may not bottom. Connector height will depend on number and sizes of wires in barrel. Pump must deliver 9800 PSI minimum

Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Splices

Insulation piercing connectors

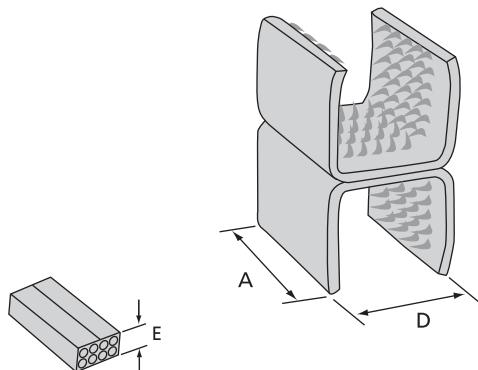


## Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



Product Ref.	Dimensions			Combined wire size [mm <sup>2</sup> ]	Round wire range min - max [mm]	Rectangular wire range		Tooling
	A [mm]	D [mm]	E* [mm]			Thickness min - max [mm]	Width min - max [mm]	
204210SH	17.5	13.5	11.9	(5.20 - 26.60) x2	2.05 (a) - 6.5 (b)	2.5 - 4.1	2.5 - 6.6	13100A, 13400 TBM15i

\* Reference dimension (crimped height): see installing die illustration for gauging

(a) Six wires max each barrel

(b) Conductors larger than 13 mm<sup>2</sup> require special dies

Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Splices

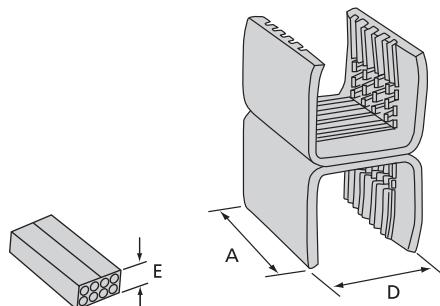
Insulation piercing connectors

### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



Product Ref.	Dimensions			Combined wire size [mm <sup>2</sup> ]	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling
	A [mm]	D [mm]	E* [mm]					
22L009H	17.8	13.8	9.7	(18.25 - 33.5) x 2	1.3 - 4.6	2.0 - 4.5	2.0 - 9.7	13100A, 13400 TBM15i

\* Reference dimension (crimped height): see installing die illustration for gauging  
 Use selection chart to determine appropriate die set (pages 425 and 426)  
 Pages 420 to 424 for tooling specifications

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Splices

Insulation piercing connectors

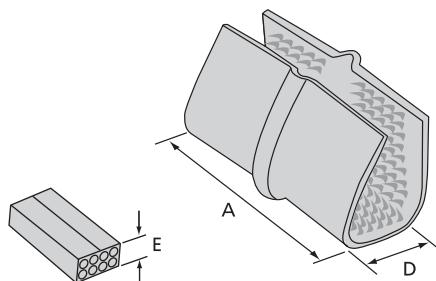


## Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



Product Ref.	Dimensions			Combined wire size [mm <sup>2</sup> ]	Rectangular wire range		Tooling
	A [mm]	D [mm]	E* [mm]		Thickness min - max [mm]	Width min - max [mm]	
220015	38.1	22.5	(a)	25 - 58	2.5 - 4.4	7.6 - 15.9	13100A
220019**	38.1	22.5	(a)	55 - 88	4.4 - 8.3	7.6 - 15.9	TBM15i
220023	44.5	22.5	(a)	55 - 115	4.4 - 8.3	7.6 - 15.9	

\* Reference dimension (crimped height): see installing die illustration for gauging

\*\* Not UL recognised

(a) Crimping dies may not bottom. Connector height will depend on number and sizes of wires in barrel. Pump must deliver 9.800 psi min.

Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

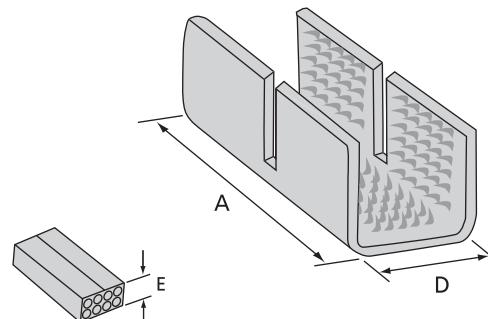
NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Splices

### Insulation piercing connectors

#### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



Product Ref.	Dimensions			Combined wire size [mm <sup>2</sup> ]	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling
	A [mm]	D [mm]	E* [mm]					
314118S	16.0	9.7	3.3	1.65 - 6.25	1.45 - 1.83	1.27 - 1.52	1.27 - 4.57	13100A, 13400, TBM15i

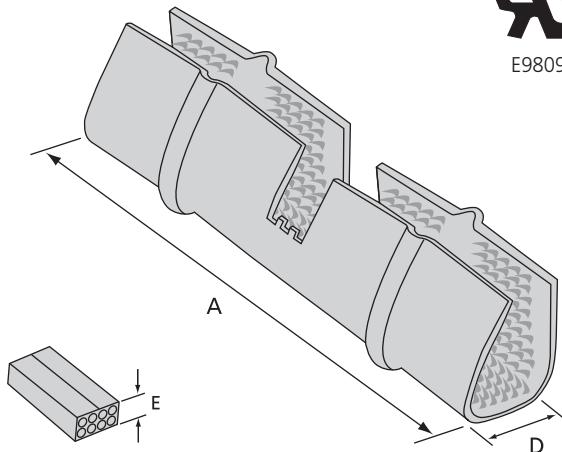
\* Reference dimension (crimped height): see installing die illustration for gauging  
 Use selection chart to determine appropriate die set (pages 425 and 426)  
 Pages 420 to 424 for tooling specifications

## Splices

### Insulation piercing connectors

#### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



Product Ref.	Dimensions			Combined wire size [mm <sup>2</sup> ]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling
	A [mm]	D [mm]	E* [mm]				
220016	79.5	22.5	(a)	(25.0 - 58.0) x 2	2.5 - 4.4	7.6 - 15.9	13100A
220020	79.5	22.5	(a)	(55.0 - 88.6) x 2	2.5 - 4.4	7.6 - 15.9	TBM15i
220024	92.2	22.5	(a)	(55.0 - 116.0) x 2	2.5 - 4.4	7.6 - 15.9	

\* Reference dimension (crimped height): see installing die illustration for gauging  
 Use selection chart to determine appropriate die set (pages 425 and 426)  
 Pages 420 to 424 for tooling specifications

(a) Crimping dies may not bottom  
 Connector height will depend on number and sizes of wires in barrel  
 Pump must deliver 9800 PSI minimum

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications.  
 Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with  
 the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Ring terminals

### Insulation piercing connectors

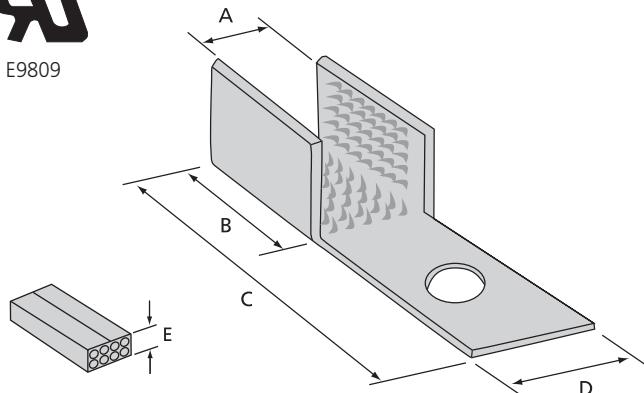


#### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



Product Ref.	USA Stud size**	Dimensions					Combined wire size [mm <sup>2</sup> ]	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling
		A [mm]	B [mm]	C [mm]	D [mm]	E*					
210219	8	9.5	14.3	31.0	10.3	4.3	2.1 - 10.5	1.63 (a) - 2.58	2.0 - 2.3	2.0 - 4.5	
210217	10	9.5	14.3	31.0	10.3	4.3	2.1 - 10.5	1.63 (a) - 2.58	2.0 - 2.3	2.0 - 4.5	
210216	1/4	9.5	14.3	31.0	10.3	4.3	2.1 - 10.5	1.63 (a) - 2.58	2.0 - 2.3	2.0 - 4.5	13100A
204217	10	13.5	15.5	40.1	12.7	6.4	5.2 - 26.6	2.05 (b) - 6.5 (c)	2.5 - 4.1	2.5 - 6.35	13400
204212	1/4	13.5	15.5	40.1	12.7	6.4	5.2 - 26.6	2.05 (b) - 6.5 (c)	2.5 - 4.1	2.5 - 6.35	TBM15i
314125***	10	9.7	14.2	31.0	10.3	6.9	1.7 - 6.2	1.45 - 1.83	1.27 - 1.52	1.27 - 4.57	
314123***	1/4	9.7	14.2	35.7	10.3	6.9	1.7 - 6.2	1.45 - 1.83	1.27 - 1.52	1.27 - 4.57	

(a) Four wires max

(b) Six wires max

(c) Conductors larger than 13 mm<sup>2</sup> require special dies

\* Reference dimension (crimped height): see installing die illustration for gauging

\*\* USA stud size: see page 427 for metric conversion

\*\*\* Not UL recognised

Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Ring terminals

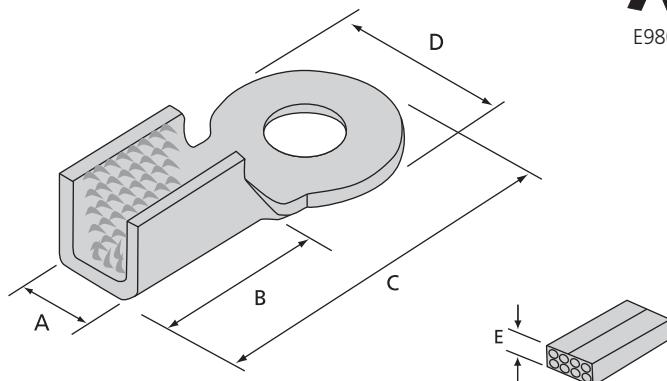
*Insulation piercing connectors*

### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



Product Ref.	USA Stud size**	Dimensions					Combined wire size [mm <sup>2</sup> ]	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling
		A [mm]	B [mm]	C [mm]	D [mm]	E*					
210214-1	1/4	9.5	14.3	35.7	17.5	4.3	2.0 - 10.5	1.6 (a) - 2.58	2.0 - 2.3	2.0 - 4.6	
210214-2	5/16	9.5	14.3	35.7	17.5	4.3	2.0 - 10.5	1.6 (a) - 2.58	2.0 - 2.3	2.0 - 4.6	
210214-3	3/8	9.5	14.3	35.7	17.5	4.3	2.0 - 10.5	1.6 (a) - 2.58	2.0 - 2.3	2.0 - 4.6	13100A
204210-1	1/4	13.5	15.5	40.1	20.6	6.3	5.2 - 26.6	2.05 (b) - 6.5 (c)	2.5 - 4.1	2.5 - 6.6	13400
204210-2	5/16	13.5	15.5	40.1	20.6	6.3	5.2 - 26.6	2.05 (b) - 6.5 (c)	2.5 - 4.1	2.5 - 6.6	TBM15i
204210-3	3/8	13.5	15.5	40.1	20.6	6.3	5.2 - 26.6	2.05 (b) - 6.5 (c)	2.5 - 4.1	2.5 - 6.6	
204210-5	1/2	13.5	15.5	40.1	20.6	6.3	5.2 - 26.6	2.05 (b) - 6.5 (c)	2.5 - 4.1	2.5 - 6.6	

(a) Four wires max

(b) Six wires max

(c) Conductors larger than 13 mm<sup>2</sup> require special dies

\* Reference dimension (crimped height): see installing die illustration for gauging

\*\* USA stud size: see page 427 for metric conversion

Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Ring terminals

Insulation piercing connectors

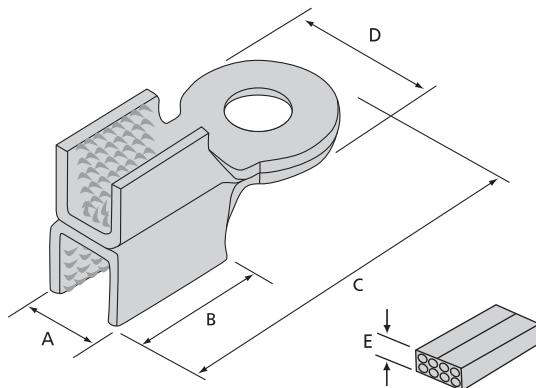


### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



Product Ref.	USA Stud size**	Dimensions					Combined wire size [mm <sup>2</sup> ]	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling
		A [mm]	B [mm]	C [mm]	D [mm]	E* [mm]					
204210-1H	1/4	13.5	15.5	40.1	20.6	11.9	(5.2 - 26.6) x 2	2.05 (b) - 6.54 (c)	2.5 - 4.1	2.5 - 6.6	13100A, 13400
204210-3H	3/8	13.5	15.5	40.1	20.6	11.9	(5.2 - 26.6) x 2	2.05 (b) - 6.54 (c)	2.5 - 4.1	2.5 - 6.6	TBM15i

(b) Six wires max

(c) Conductors larger than 13 mm<sup>2</sup> require special dies

\* Reference dimension (crimped height): see installing die illustration for gauging

\*\* USA stud size: see page 427 for metric conversion

Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

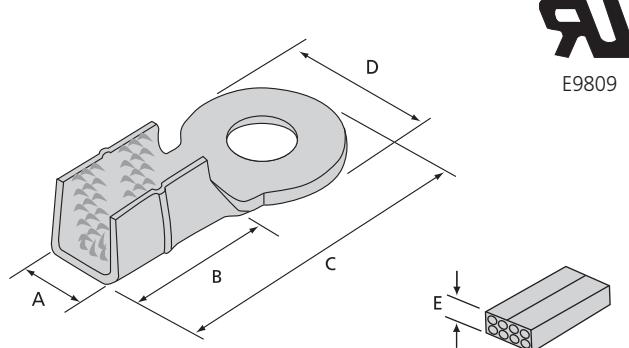
NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Ring terminals

*Insulation piercing connectors*

### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809

Product Ref.	USA Stud size**	Dimensions					Combined wire size [mm <sup>2</sup> ]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling
		A [mm]	B [mm]	C [mm]	D [mm]	E* [mm]				
220017	3/8	22.4	38.1	70.1	26.9	(a)	25.3 - 58.2	2.5 - 4.4	7.6 - 15.9	
220018	1/2	22.4	38.1	70.1	26.9	(a)	25.3 - 58.2	2.5 - 4.4	7.6 - 15.9	
220021 (b)	3/8	22.4	38.1	70.1	26.9	(a)	55.7 - 88.7	4.4 - 6.4	7.6 - 15.9	13100A
220022 (b)	1/2	22.4	38.1	70.1	26.9	(a)	55.7 - 88.7	4.4 - 6.4	7.6 - 15.9	TBM15i
220025	3/8	22.4	38.1	70.1	26.9	(a)	55.7 - 116.8	4.4 - 8.3	7.6 - 15.9	
220026	1/2	22.4	38.1	70.1	26.9	(a)	55.7 - 116.8	4.4 - 8.3	7.6 - 15.9	

(a) Crimping dies may not bottom. Connector height will depend on number and size of wires in barrel. Pump must deliver 9.800 psi min.

(b) Not UL approved

\* Reference dimension (crimped height): see installing die illustration for gauging

\*\* USA stud size: see page 427 for metric conversion

Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

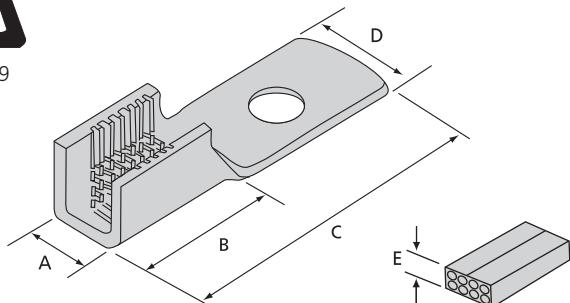
**NOTE:** Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Ring terminals

### Insulation piercing connectors



E9809



#### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic

Product Ref.	USA Stud size**	Dimensions				Combined wire size	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Tooling	
		A [mm]	B [mm]	C [mm]	D [mm]				Hand tool	Power tool
22R061	6	4.1	8.1	19.8	7.6	2.5	0.2 - 2.1	0.51 - 1.45 (a)	0.51 - 1.27	0.51 - 2.54
22R081	8	4.1	8.1	19.8	7.6	2.5	0.2 - 2.1	0.51 - 1.45 (a)	0.51 - 1.27	0.51 - 2.54
22R101	10	4.1	8.1	19.8	7.6	2.5	0.2 - 2.1	0.51 - 1.45 (a)	0.51 - 1.27	0.51 - 2.54
22R086	8	6.4	11.5	23.1	7.6	3.3	1.3 - 6.2	1.29 - 2.05	1.27 - 2.03	1.27 - 4.06
22R106	10	6.4	11.5	23.1	7.6	3.3	1.3 - 6.2	1.29 - 2.05	1.27 - 2.03	1.27 - 4.06

\* Reference dimension (crimped height): see installing die illustration for gauging

\*\* USA stud size: see page 427 for metric conversion

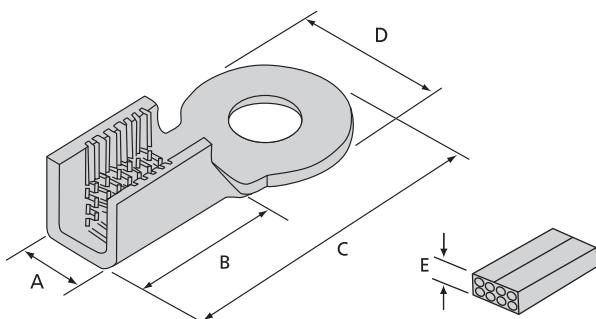
Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

(a) 0.51 - 0.64 mm diameter and equivalent rectangular wire size, copper only

## Ring terminals

### Insulation piercing connectors



#### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic

Product Ref.	USA Stud size**	Dimensions				Combined wire size	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Tooling	
		A [mm]	B [mm]	C [mm]	D [mm]				Hand tool	Power tool
22R146	1/4	6.4	11.5	24.2	10.7	3.3	1.3 - 6.2	1.29 - 2.05	1.27 - 2.03	1.27 - 4.06
									ERG1806	11904A
										13500

\* Reference dimension (crimped height): see installing die illustration for gauging

\*\* USA stud size: see page 427 for metric conversion

Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

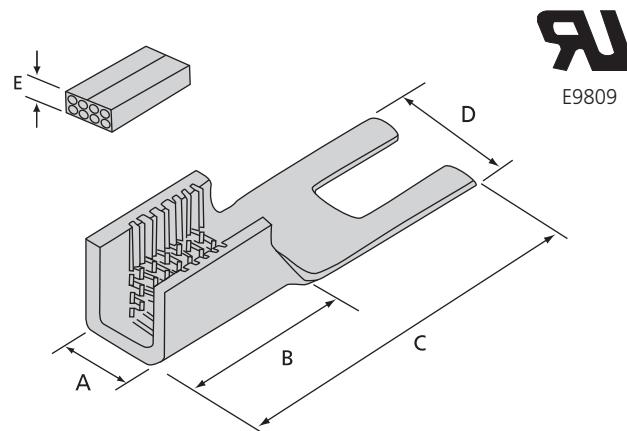
NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Fork terminals

Insulation piercing connectors

### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



Product Ref.	USA Stud size**	Dimensions					Combined wire size	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling	
		A [mm]	B [mm]	C [mm]	D [mm]	E* [mm]					Hand tool	Power tool
22F061	6	4.1	8.1	19.8	7.6	2.5	0.2 - 2.1	0.51 - 1.45 (a)	0.51 - 1.27	0.51 - 2.54		
22F081	8	4.1	8.1	19.8	7.6	2.5	0.2 - 2.1	0.51 - 1.45 (a)	0.51 - 1.27	0.51 - 2.54	ERG1801	11903A
22F101	10	4.1	8.1	19.8	7.6	2.5	0.2 - 2.1	0.51 - 1.45 (a)	0.51 - 1.27	0.51 - 2.54		11904A
22F066	6	6.4	11.4	23.1	7.6	3.3	1.3 - 6.2	1.29 - 2.05	1.27 - 2.03	1.27 - 4.06		13500
22F086	8	6.4	11.4	23.1	7.6	3.3	1.3 - 6.2	1.29 - 2.05	1.27 - 2.03	1.27 - 4.06	ERG1806	
22F106	10	6.4	11.4	23.1	7.6	3.3	1.3 - 6.2	1.29 - 2.05	1.27 - 2.03	1.27 - 4.06		

(a) 0.51 - 0.64 mm diameter and equivalent rectangular wire size, copper only

\* Reference dimension (crimped height): see installing die illustration for gauging

\*\* USA stud size: see page 427 for metric conversion

Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Disconnect terminals

### Insulation piercing connectors

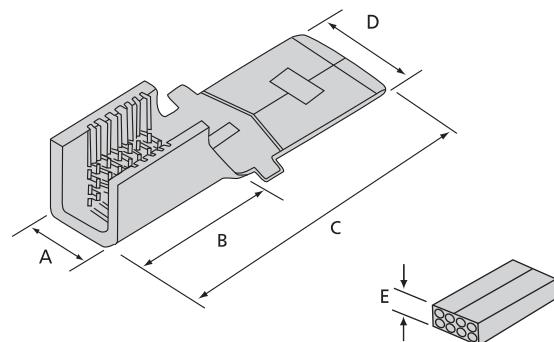


#### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



Product Ref.	Male tab size	Dimensions				Combined wire size	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling	
		A [mm]	B [mm]	C [mm]	D [mm]					Hand tool	Power tool
22LM01***	6.35 x 0.8	4.1	8.1	19.3	6.4	2.5	0.2 - 2.1	0.50 - 1.45***	0.51 - 1.27	0.5 - 2.5	ERG1801
22LM06	6.35 x 0.8	6.4	11.5	23.0	6.4	3.3	1.3 - 6.2	1.29 - 2.05	1.27 - 2.03	1.3 - 4.1	ERG1806

\* Reference dimension (crimped height): see installing die illustration for gauging

Use selection chart to determine appropriate die set (pages 425 and 426)

\*\*\* 0.51 - 0.64 mm diameter and equivalent wire size, copper only

Pages 420 to 424 for tooling specifications

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Disconnect terminals

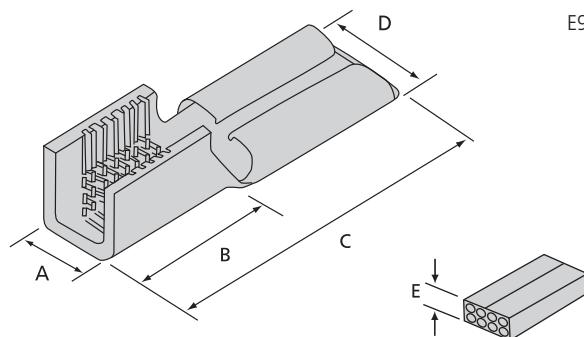
Insulation piercing connectors

### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



Product Ref.	For male tab size	Dimensions					Combined wire size	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling	
		A [mm x mm]	B [mm]	C [mm]	D [mm]	E* [mm]					Hand tool	Power tool
22LF01***	6.35 x 0.8	4.1	8.1	20.1	6.4	2.5	0.2 - 2.1	0.50 - 1.45***	0.51 - 1.27	0.5 - 2.5	ERG1801	11903A
22LF06	6.35 x 0.8	6.4	11.5	23.0	6.4	3.3	1.3 - 6.2	1.29 - 2.05	1.27 - 2.03	1.3 - 4.1	ERG1806	11904A
												13500

\* Reference dimension (crimped height): see installing die illustration for gauging

Use selection chart to determine appropriate die set (pages 425 and 426)

\*\*\* 0.51 - 0.64 mm diameter and equivalent wire size, copper only

Pages 420 to 424 for tooling specifications

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Taps

Insulation piercing connectors

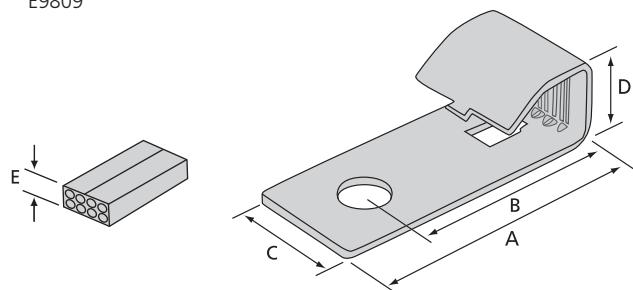


## Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



Product Ref.	USA Stud size**	Dimensions				Combined wire size	Round wire range min - max [mm]	Rectangular wire range Thickness min - max [mm]	Width min - max [mm]	Tooling
		A [mm]	B [mm]	C [mm]	D [mm]					
204T14	1/4	41.2	31.0	17.8	12.7	5.6	5.2 - 26.6	2.58 - 4.1	2.3 - 2.9	2.3 - 8.1
204T38	3/8	41.2	31.0	17.8	12.7	5.6	5.2 - 26.6	2.58 - 4.1	2.3 - 2.9	2.3 - 8.1

\* Reference dimension (crimped height): see installing die illustration for gauging

\*\* USA stud size: see page 427 for metric conversion

Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

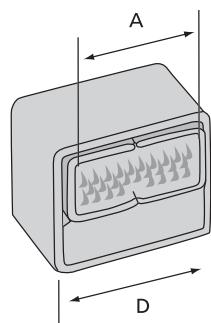
NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Modular connectors

*Insulation piercing connectors*

### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809

Product Ref.	Dimensions			Combined wire size**	Round wire range min - max [mm]	Rectangular wire range		Tooling
	A [mm]	D [mm]	E* [mm]			Thickness min - max [mm]	Width min - max [mm]	
210214MT	16.0	19.1	(a)	10.1 - 53.2	1.8 - 4.62	2.0 - 3.8 (upper half) 6.4 max. (lower half)	2.0 - 12.4 (upper half) 19.1 max. (lower half)	13100A 13400, TBM15i
204210MT	23.8	26.2	(a)	45.6 - 108.9	2.6 - 5.84	2.5 - 6.8 (upper half) 6.4 max. (lower half)	2.5 - 23.4 (upper half) 26.2 max. (lower half)	13400

\* Reference dimension (crimped height): see installing die illustration for gauging

(a) Crimping dies may not bottom. Connector height will depend on number and size of wires in barrel. Pump must deliver 9.800 psi min.

\*\* combined wire size is for the whole connector (including upper half and lower half)

Use selection chart to determine appropriate die set (pages 425 and 426)

Pages 420 to 424 for tooling specifications

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

## Modular connectors

### Insulation piercing connectors

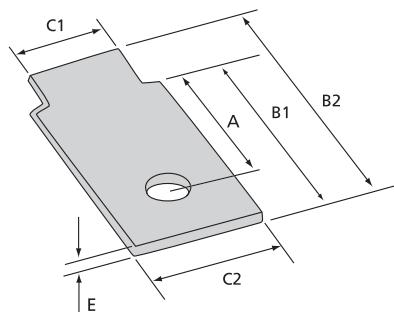


#### Technical Information

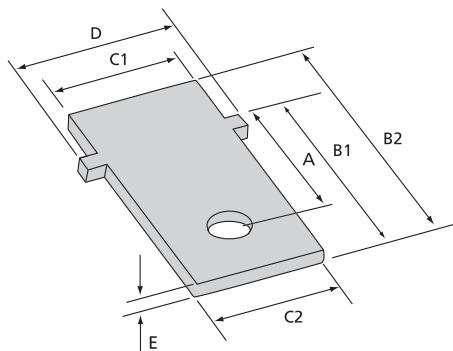
Material	Copper alloy
Plating	Tin plated
Colour	Metallic



E9809



210MT14  
210MT38



204MT14  
204MT38

Product Ref.	USA Stud size*	Dimensions							Description
		A [mm]	B1 [mm]	B2 [mm]	C1 [mm]	C2 [mm]	D [mm]	E [mm]	
210MT14	1/4	25.4	36.3	52.1	15.9	20.6	-	2.0	Screw-on clip for connectors 210214MT
210MT38	3/8	25.4	36.3	52.1	15.9	20.6	-	2.0	Screw-on clip for connectors 210214MT
204MT14	1/4	25.4	36.8	55.4	23.2	23.2	28.6	2.5	Screw-on clip for connectors 204210MT
204MT38	3/8	25.4	36.8	55.4	23.2	23.2	28.6	2.5	Screw-on clip for connectors 204210MT

\* USA stud size: see page 427 for metric conversion

NOTE: Wire sizes and combinations shown have been tested to and meet or exceed Thomas & Betts specifications. Connectors may be suitable for other wire sizes or combinations. Thomas & Betts sells these connectors with the understanding that the user will perform necessary tests to determine their suitability for the intended purpose.

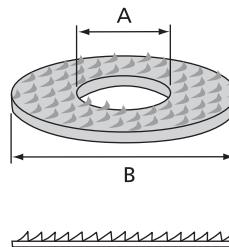
## Washers

Insulation piercing connectors

Teeth on the transition washers penetrate aluminium and copper oxides, enabling copper to aluminium connections to be made in a bolted joint without the use of inhibiting compounds. Transition washers also accommodate the difference in thermal expansion between copper and aluminium, and enhance the efficiency of bolted grounding connections.

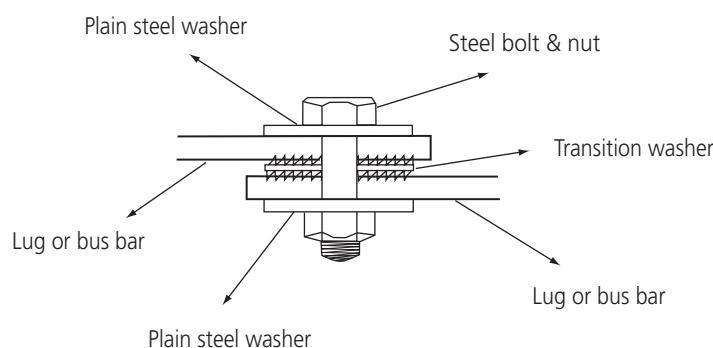
### Technical Information

Material	Copper alloy
Plating	Tin plated
Colour	Metallic



Product Ref.	USA stud size*	Metric equivalent stud size	A [mm]	B [mm]	Recommended installing torque [Nm]
FPW14	1/4	M6	6.9	17.3	5.5 - 9
FPW516	5/16	M8	8.6	25.4	14 - 18
FPW38	3/8	M10	10.9	25.4	18 - 27
FPW12	1/2	M14	14.2	31.8	44 - 61
FPW58	5/8	M16	17.3	35.6	61 - 82.5

\* USA stud size: see page 427 for metric conversion



## Hand tools

### Crimping tools



These manually operated tools are suitable for prototyping and limited production usage. They are equipped with a Shure-Stake™ mechanism, which requires full closure of the dies before release. Appropriate to crimp butt splices, parallel splices, taps and terminations. Dies are self-contained.

#### Product Ref. ERG811 and ERG18XX series

- Ergonomic fixed die tool
- Incorporates the ergonomically designed Comfort Crimp™ tool handles which distribute the force more evenly across the hand
- Shure-Stake™ mechanism ensures a complete crimp cycle before the tool releases
- Rubberised thermoplastic handles combine maximum friction with a soft, comfortable feel that reduces muscle tension
- Two-piece movable die nest provides easy connector removal

Product Ref.	Tool gauging [mm]	Connector
ERG1801	1.75 max.	22,F,L,R-1 Series
ERG1802	1.93 max.	22L002
ERG1804	0.86 max.	22L004
ERG1806	2.41 max.	22,F,L,R-6 Series
ERG811	2.62 max.	214420

## Air-operated tools

### Crimping tools

#### Product Ref. 11903A and 11904A

This pneumatic operated hydraulic crimping tool is available in hand or foot actuated models, with open "C" yoke design.

- The 3 interchangeable dies can crimp the 22xxx1, 22xxx2 and 22xxx6 series terminals and need to be ordered separately
- **Product Ref. 11903A:** hand-actuated tool (also requires one Product Ref. 11913 air hose).
- **Product Ref. 11904A:** foot-actuated tool (also requires two Product Ref. 11913 air hoses and one Product Ref. 11930 foot valve).
- Material: Steel with backed enamel paint finish
- Overall length: 276 mm
- Diameter: 57 mm
- Operating Pressure: 90 - 100 PSI (6.2-6.9 bar)
- Weight: 1.4 kg

#### Accessories

- **Product Ref. 11913:** 2.43 m long air hose with 1/4 NPT male & female fittings
- **Product Ref. 11930:** foot valve for 11904A



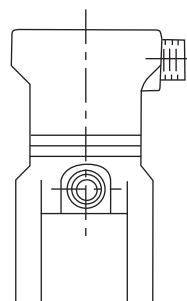
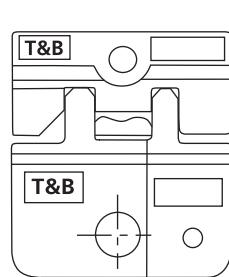
#### Product Ref.: 13500

- Heavy-duty air operated tool installs a wide range of Dragon Tooth® connectors.
- High-speed installation
- 3 interchangeable dies to be ordered separately
- Bench mounted for stability and operator control
- Compact size, all metallic construction
- Includes hoses, foot pedal and air treatment system
- Equipped with Shure-Stake™ mechanism ensuring full crimp cycle before release
- Height: 305 mm
- Base: 203 mm x 203 mm
- Weight: 7.7 kg
- Operating Pressure: (85 - 90 PSI) 5.9-6.2 bar



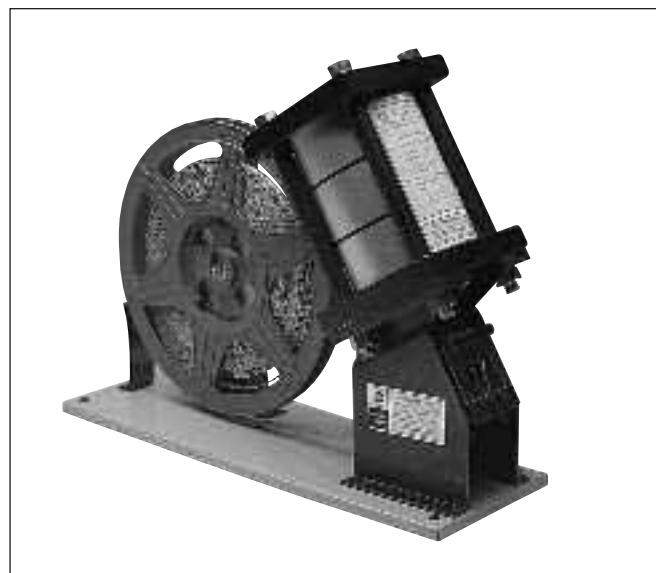
#### 11903A, 11904A and 13500 die selection chart

Product Ref.	Colour code	Connector	Die gauge max. [mm]	Die gauge min. [mm]
13201	Pink	22XXX1 SERIES	1.68	1.57
13202	Brown	22XXX2 SERIES	1.83	1.73
13206	Yellow	22XXX6 SERIES	2.29	2.18



## Auto-feed tools for connectors on strip

### Crimping tools



Pneumatic bench mounted foot operated tool for crimping copper or aluminium magnet wire and copper lead wire, not solder dipped or bonded.

- Operates on min. 85 psi, 6.0 bar air supply
- Foot pedal contains T&B Shure-Stake™ control mechanism which ensures a full compression each time
- Insulation piercing connectors are fed on a continuous reel mounted strip
- Dies are self-contained. Includes foot valve, hoses and air treatment system

Product Ref.	Connector product ref.	Connector qty per reel	Tool weight [kg]	Tool width [mm]	Tool depth [mm]	Tool height [mm]
13676A	220004	9000	8.6	127	356	279
13678	220001	3000	12.7	152	457	356
13679	220002-TB	3000	12.7	152	457	356
13696	220006	2500	14.5	152	457	406

See page 401 for more information about the connectors on strip.

## Hydraulic tools

### Crimping tools

#### Product Ref.: 13100A

- 14 Ton hydraulic head
- Output: 14 tons (nominal)
- Hydraulic operating pressure: 10,000 psi max., 690 bar
- Length (with coupling): 292 mm
- Width: 108 mm
- Weight (without dies): 4.5 kg
- Dies delivered separately



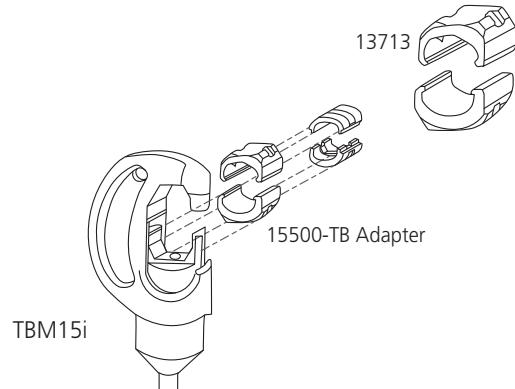
#### Product Ref.: TBM15i

- 15 Ton hydraulic head
- New longer, slimmer profile allows easier access into tight spaces
- Wider jaw opening eases crimping of larger connectors
- Available with an insulated head
- Supplied in a carrying case in steel
- Output force: 15 tons (nominal)
- Operating pressure: 10,000 psi (nominal), 690 bar
- Weight: 7 kg (without dies)
- Dies delivered separately



#### Installing dies for 13100A and TBM15i tool heads

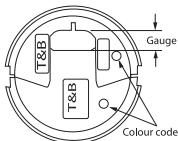
- Material: alloy steel
- For the TBM15i, the 15500TB adapter is required
- The die Nr 13713 is for the TBM15i tool head only (no adapter required)
- The die Nr 13713B is for the 13100A tool head only



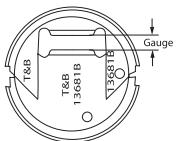
#### 13100A and TBM15i die selection chart

Product Ref.	Colour code	For connector	Gauge max. [mm]	Gauge min. [mm]
13670B	Red	210xxx series	4.42	4.11
13671B	Blue	204xxx series	6.25	5.94
13673B	Green	204xxxH series	11.94	11.79
13681B	Yellow	210214MT	4.47	4.17
13683B	White	22L008	2.84	2.46
13684B	Yellow	22L009	4.93	4.55
13686B	Orange	22L009H	9.50	9.12
13689B	Purple	204Txx series	5.18	4.80
13713		220015 to 220026	2.79	2.03
13713B		220015 to 220026	2.92	2.16

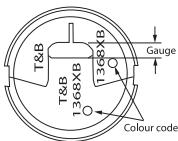
13670B, 13671B, 13673B



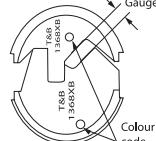
13681B



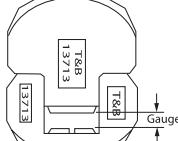
13683B, 13684B, 13686B



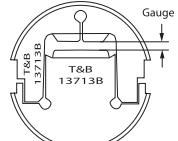
13689B



13713

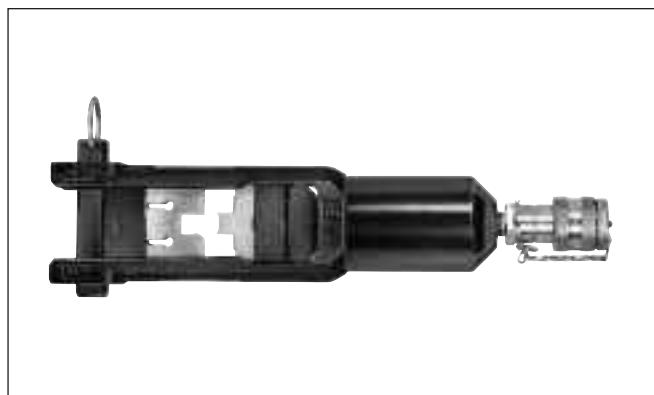


13713B



## Hydraulic tools

### Crimping tools



#### Product Ref.: 13400

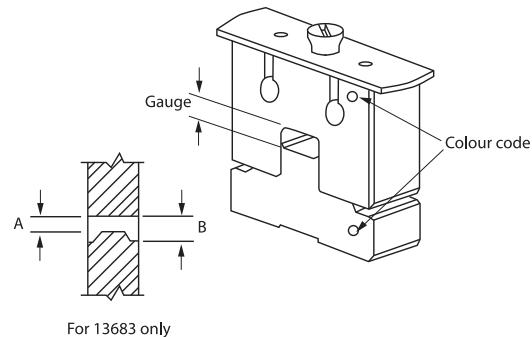
- 12 Ton hydraulic head
- Output: 12 tons (nominal)
- Hydraulic operating pressure: 10.000 psi max., 690 bar
- Length (with coupling): 368 mm
- Width: 84 mm
- Weight (without dies): 6.8 kg
- Dies delivered separately

#### Installing dies for 13400

- Material: alloy steel

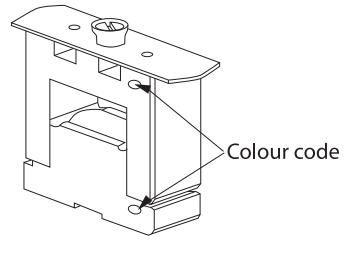
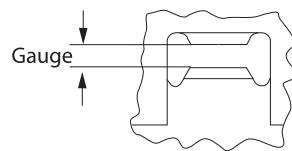
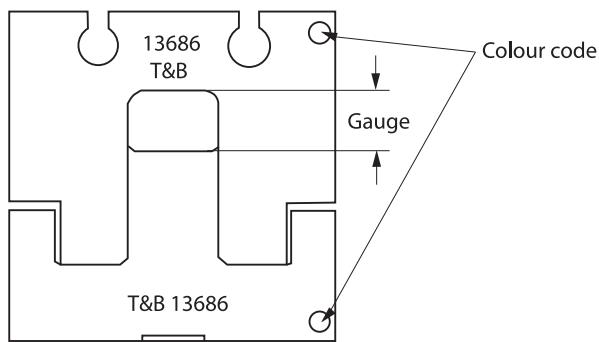
#### 13400 die selection chart

Product Ref.	Colour code	For connector	Gauge max. [mm]	Gauge min. [mm]
13670A	Red	210xxx series	4.42	4.11
13671A	Blue	204xxx series	6.25	5.94
13673	Green	204xxxH series	11.94	11.79
13681	Yellow	210214MT	4.47	4.17
13682	Brown	204210MT	7.65	7.34
13683	White	22L008	A: 2.74 B: 3.10	A: 2.59 B: 2.90
13684	Yellow	22L009	4.83	4.65
13685	Black	314xxx series	3.45	3.15
13686	Orange	22L009H	9.37	9.22



For 13683 only

13670A, 13671A, 13673,  
13683, 13684, 13685



13686

## Connectors, tool and die selection chart

*Crimping tools*

	Hand tools (fixed die)	Pneumatic tools 11903A, 11904A 13500	Auto-feed tool for magnet wire on strip	14 ton hydraulic head 13100A	12 ton hydraulic head 13400	15 ton hydraulic head TBM15i
TERMINALS	TOOL	DIE	TOOL	DIE	DIE	DIE + ADAPTOR
204210MT	—	—	—	—	13682	—
204210S	—	—	—	13671B	13671A	13671B with 15500TB
204210SH	—	—	—	13673B	13673	13673B with 15500TB
204210-1	—	—	—	13671B	13671A	13671B with 15500TB
204210-1H	—	—	—	13673B	13673	13673B with 15500TB
204210-2	—	—	—	13671B	13671A	13671B with 15500TB
204210-3	—	—	—	13671B	13671A	13671B with 15500TB
204210-3H	—	—	—	13673B	13673	13673B with 15500TB
204201-5	—	—	—	13671B	13671A	13671B with 15500TB
204211	—	—	—	13671B	13671A	13671B with 15500TB
204212	—	—	—	13671B	13671A	13671B with 15500TB
204217	—	—	—	13671B	13671A	13671B with 15500TB
204MT14	—	—	—	—	—	—
204MT38	—	—	—	—	—	—
204T14	—	—	—	13689B	—	13689B with 15500TB
204T38	—	—	—	13689B	—	13689B with 15500TB
210214MT	—	—	—	13681B	13681	13681B with 15500TB
210214S	—	—	—	13670B	13670A	13670B with 15500TB
210214-2	—	—	—	13670B	13670A	13670B with 15500TB
210214-3	—	—	—	13670B	13670A	13670B with 15500TB
210216	—	—	—	13670B	13670A	13670B with 15500TB
210217	—	—	—	13670B	13670A	13670B with 15500TB
210219	—	—	—	13670B	13670A	13670B with 15500TB
210MT14	—	—	—	—	—	—
210MT38	—	—	—	—	—	—
214420	ERG811	11956	—	—	—	—
220001	—	—	13678	—	—	—
220002-TB	—	—	13679	—	—	—
220004	—	—	13676A	—	—	—
220006	—	—	13696	—	—	—
220015	—	—	—	13713B	—	13713
220016	—	—	—	13713B	—	13713
220017	—	—	—	13713B	—	13713
220018	—	—	—	13713B	—	13713
220019	—	—	—	13713B	—	13713
220020	—	—	—	13713B	—	13713
220021	—	—	—	13713B	—	13713
220022	—	—	—	13713B	—	13713
220023	—	—	—	13713B	—	13713
220024	—	—	—	13713B	—	13713
220025	—	—	—	13713B	—	13713
220026	—	—	—	13713B	—	13713

(continued on next page)

## Connectors, tool and die selection chart

### Crimping tools

	Hand tools (fixed die)	Pneumatic tools 11903A, 11904A 13500	Auto-feed tool for magnet wire on strip	14 ton hydraulic head 13100A	12 ton hydraulic head 13400	15 ton hydraulic head TBM15i
TERMINALS	TOOL	DIE	TOOL	DIE	DIE	DIE + ADAPTOR
22F061	ERG1801	13201	—	—	—	—
22F066	ERG1806	13206	—	—	—	—
22F081	ERG1801	13201	—	—	—	—
22F086	ERG1806	13206	—	—	—	—
22F101	ERG1801	13201	—	—	—	—
22F106	ERG1806	13206	—	—	—	—
22L001	ERG1801	13201	—	—	—	—
22L002	ERG1802	13202	—	—	—	—
22L004	ERG1804	—	—	—	—	—
22L006	ERG1806	13206	—	—	—	—
22L008	—	—	—	13683B	13683	13683B with 15500TB
22L009	—	—	—	13684B	13684	13684B with 15500TB
22L009H	—	—	—	13686B	13686	13686B with 15500TB
22LF01	ERG1801	13201	—	—	—	—
22LF06	ERG1806	13206	—	—	—	—
22LM01	ERG1801	13201	—	—	—	—
22LM06	ERG1806	13206	—	—	—	—
22R061	ERG1801	13201	—	—	—	—
22R106	ERG1806	13206	—	—	—	—
22R146	ERG1806	13206	—	—	—	—
314118S	—	—	—	13685B	13685	13685B with 15500TB
314123	—	—	—	13685B	13685	13685B with 15500TB
314125	—	—	—	13685B	13685	13685B with 15500TB

## Unit conversion tables

Crimping tools

### AWG round wire size to diameter and cross-section

Wire size AWG	Nominal diameter [inch]	Nominal diameter [mm]	Cross- section [mm <sup>2</sup> ]	CMA circular mils [cmil]
4/0	0.4600	11.684	107.219	211600
3/0	0.4096	10.404	85.011	167800
2/0	0.3648	9.266	67.432	133100
1/0	0.3249	8.252	53.488	105600
1	0.2893	7.348	42.409	83690
2	0.2576	6.543	33.624	66360
3	0.2294	5.827	26.655	52620
4	0.2043	5.189	21.149	41740
5	0.1819	4.620	16.766	33090
6	0.1620	4.115	13.289	26240
7	0.1443	3.665	10.551	20820
8	0.1285	3.264	8.387	16510
9	0.1144	2.906	6.632	13090
10	0.1019	2.588	5.262	10380
11	0.0907	2.304	4.168	8230
12	0.0808	2.052	3.308	6530
13	0.0720	1.829	2.627	5180
14	0.0641	1.628	2.082	4110

Wire size AWG	Nominal diameter [inch]	Nominal diameter [mm]	Cross- section [mm <sup>2</sup> ]	CMA circular mils [cmil]
15	0.0571	1.450	1.652	3260
16	0.0508	1.290	1.308	2580
17	0.0453	1.151	1.040	2050
18	0.0403	1.024	0.823	1620
19	0.0359	0.912	0.653	1290
20	0.0320	0.813	0.519	1020
21	0.0285	0.724	0.412	812
22	0.0253	0.643	0.324	640
23	0.0226	0.574	0.259	511
24	0.0201	0.511	0.205	404
25	0.0179	0.455	0.162	320
26	0.0159	0.404	0.128	253
27	0.0142	0.361	0.104	202
28	0.0126	0.320	0.080	159
29	0.0113	0.287	0.065	128
30	0.0100	0.254	0.051	100
31	0.0089	0.226	0.040	79
32	0.0080	0.203	0.032	64

### American bolt sizes

US Bolt size	Min. hole diameter [mm]	Min. hole diameter [inch]	Matching bolt in metric size
2	2.337	0.092	M2
4	2.946	0.116	M2.5
6	3.632	0.143	M3
8	4.292	0.169	M4
10	4.978	0.196	M4
1/4	6.655	0.262	M6
5/16	8.204	0.323	M8
3/8	9.855	0.388	M8
7/16	11.506	0.453	M10
1/2	13.106	0.516	M12
5/8	16.510	0.650	M16
3/4	19.685	0.775	M18

AWG = American Wire Gauge

1 inch<sup>2</sup> = 645.16 mm<sup>2</sup>

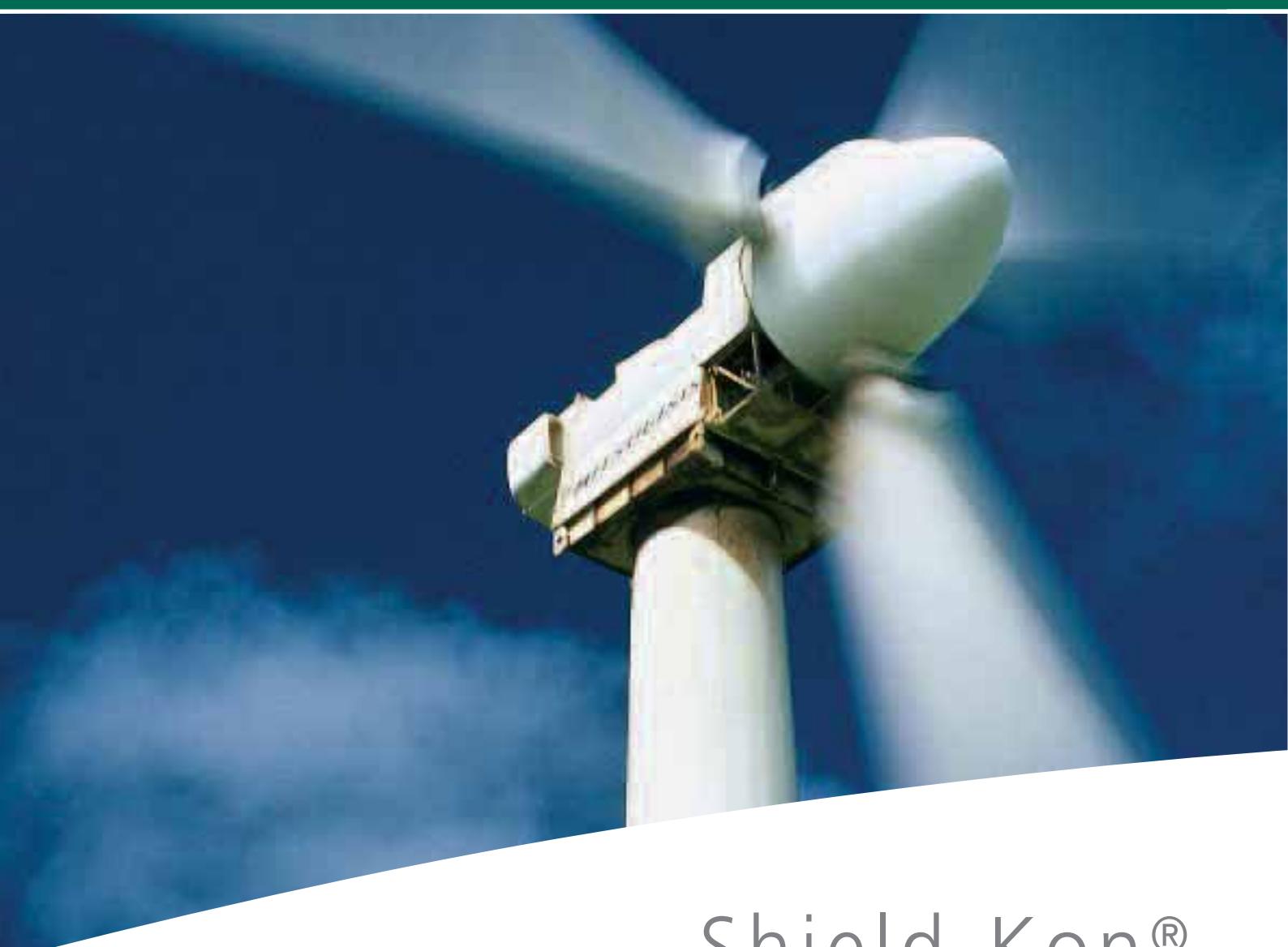
1 mm<sup>2</sup> = 0.00155 inch<sup>2</sup>

1 mm<sup>2</sup> = 1973.51 cmil

1 inch<sup>2</sup> = 1 273 230 cmil

1 cmil = 1 circular mil = 0.0005067 mm<sup>2</sup>

1 kcmil = 1000 cmil = 0.5067 mm<sup>2</sup>



Shield-Kon®  
Solderless connectors  
for grounding shielded  
and coaxial cables

## TERMINATION SYSTEMS

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Tooling	444



## Shield-Kon®, the Shield termination solution

**The Shield-Kon® solution from Thomas & Betts involves a crimp technique for shield termination on shielded cables, with a proven reliability that has led to a specification for the aeronautical and space technology industry and for military applications (MIL-F-21608).**

Wherever shielded cables and wires are fitted, there is the problem of finding a permanent, repeatable, safe and quick connection of the braided shield.

Conventional connection methods use soldering, which is more time-consuming and more expensive, and can often result in damage to the dielectric or to the internal shield conductor caused by heat. Moreover, the use of lead-based soldering methods can be in conflict with the latest European regulations.



*The reliability of Shield-Kon® terminals has led to a specification for the aeronautical and space technology industry and for military applications (MIL-F-21608).*

#### **Thomas & Betts offer two solutions:**

##### **The one-piece Shield-Kon® connector, which is wrapped around the shield during the crimping process.**

This solderless, wraparound connector terminates shielded cable in seconds with uniform precision. It's particularly well suited for production work in aircraft, aerospace, and electronic industries where size and weight are of importance.

Once crimped, it provides a compact, lightweight, low-resistance, high-strength connection, which meets and exceeds the performance requirements of MIL-F-21608.

The connector works equally well on braided, wrapped, or foil shields and has the added advantage of being able to be used as a mid-span termination.

Only four sizes, which can be easily identified by the colour of their insulation, are needed to cover a range of shielding diameters from 1.27 mm to 7.62 mm.

##### **The two-piece Shield-Kon® connector, which consists of two sleeves, between which the shielded braid and the drain wire are compressed.**

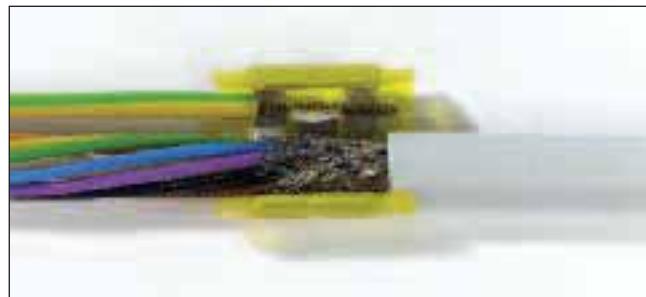
The Shield-Kon® two-piece shield termination system consists of two cylindrical sleeves: an inner sleeve with a smaller diameter, and an outer sleeve that has a larger diameter but is shorter and less hard than the inner sleeve. All inner and outer sleeves are colour-coded according to their size.

The conductors of the cable are inserted through the inner sleeve, whereas the shield (braided or foiled) and the drain wire are inserted between the two sleeves. The crimp operation is done by compressing the outer sleeve with a tool, while the inner sleeve ensures a mechanical protection to the inner conductors.

## Installation methods and procedure

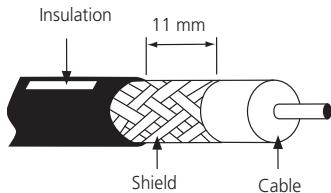
### One-piece connector

#### Installation methods



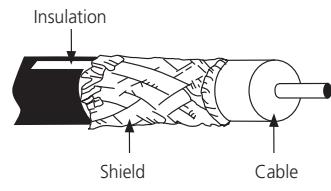
#### Standard method

Use the standard method when the shielded cable or the inner conductors are embedded in a dielectric.



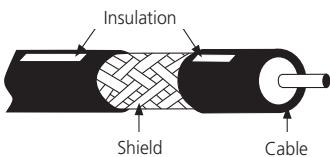
#### Fold-back method 1

If there is no common dielectric for several interior cables but the gaps are filled by textile threads or something similar, care should be taken to ensure that the insulating thickness of the individual cables is not less than 0.38 mm for PVC, and not less than 0.25 mm for Teflon. If this insulation thickness falls below this value, fold-back method 1 should be used.



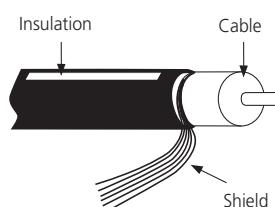
#### Mid-Span method

Allows installation anywhere along the cable.

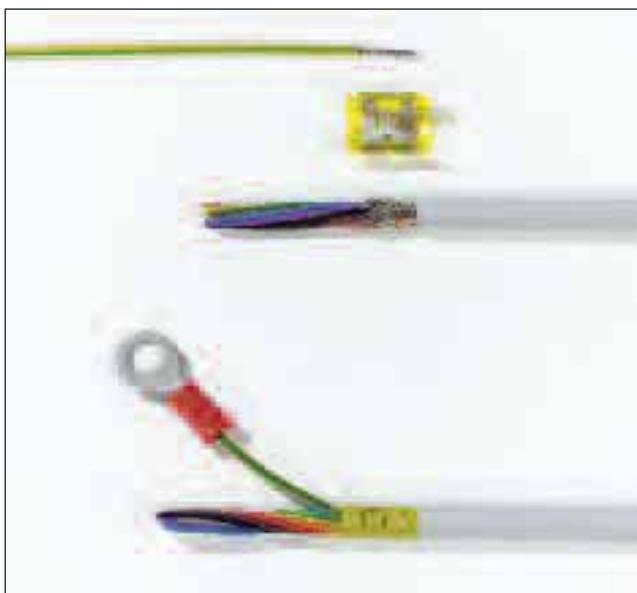


#### Fold-back method 2

Fold-back method 2 should be used if the cable shield is applied spirally or if a foil shield is being used.



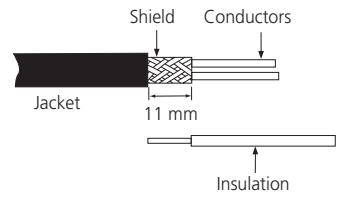
#### Installation procedures



#### Step 1

Prepare shielded wire and drain wire insulation as shown.

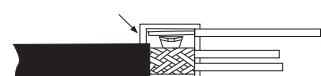
If two earth wires are required in a Shield-Kon® connection, twist both conductors before insertion into the connector.



#### Step 2

Select the appropriate connector according to the size of the shielded cable (see page 433). Place the drain wire around the trap hook and the shielded wire into the bottom of the connector.

Butt insulating jackets against metal edge



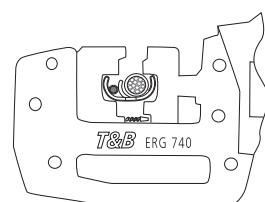
When inserting the shielded cable and grounding wire, care must be taken to ensure that their insulation is overlapped by the connector's Polyester insulation film.

100% insulation is possible after crimping when the stripped length of outer jacket (visible shielding) is 11 mm maximum.

#### Step 3

Select the appropriate die set for the crimp tool, according to the size of the shielded cable (see page 435) and mount the dies on the tool. Insert the connector (with the shielded cable and the drain wire) between the dies of the tool. Squeeze the tool handles firmly to crimp the connector around the shielding and the drain wire.

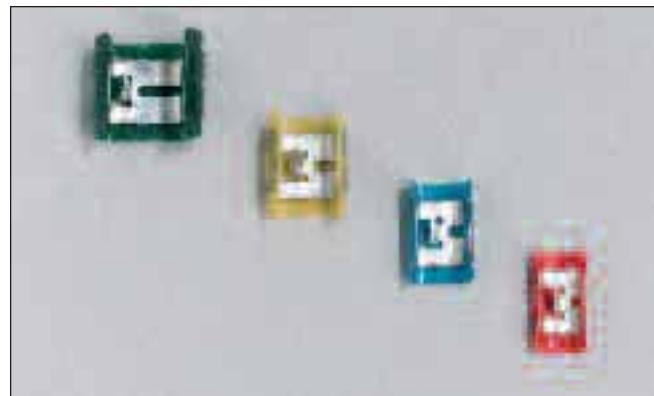
Connector opening faces away from tool



## Connectors

### One-piece connector

- Compact, low profile connector
- One piece "Wrap-around" design
- Inventory savings: only 4 sizes
- Transparent insulation, easily inspected
- MIL specified MIL-F-21608, industry approved technology
- NO HEAT OR POWER REQUIRED to install
- No damage to inner conductor
- Less installation time required
- Uniform, precise connection every time
- Low installed cost
- Mid-span termination possible, eliminating the need to demount a cable already installed

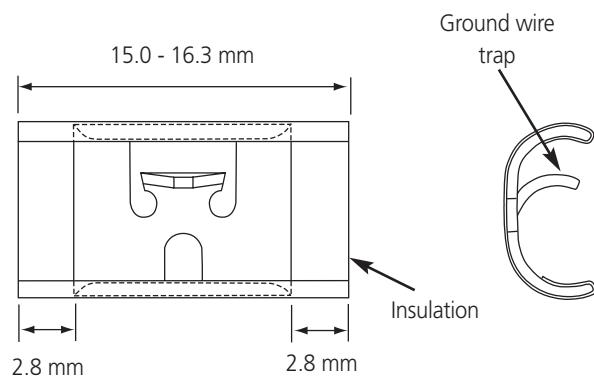


#### Technical Information

Material	Copper, conform to CDA No. 110
Plating	Tin, electro-plated (thickness 3 to 8 $\mu$ m), in accordance with MIL-T-10727A
Insulation	Polyester film, colour coded for size identification
Temperature	-65°C to +125°C

#### MIL-F-21608 specifications

Voltage drop	9 mV max. at 1 Ampere after environmental exposure
Insulation dielectric strength	500 VRMS at 60 Hz for one minute
Corrosion resistance	48 hours in 5% salt fog
Pullout strength	67 N min. with 0.25 mm <sup>2</sup> drain wire and 85N min. with 0.5 mm <sup>2</sup> drain wire
Vibration	0.76 mm double amplitude between 10 and 55Hz for 6 hours on each of two axis



Product Ref.	Colour	Shield diameter range [mm]	Acceptable drain wire size**	Quantity [pieces]	Installation tool*
RSK101	Red	1.27 - 2.28	1 or 2 pieces 0.25mm <sup>2</sup>	1000	
RSK5101				100	
RSK201	Blue	2.29 - 3.65	1 or 2 pieces 0.25mm <sup>2</sup> , or 1 piece 0.5mm <sup>2</sup>	1000	
RSK5201				100	ERG740
RSK301	Yellow	3.66 - 5.12	1 or 2 pieces 0.25mm <sup>2</sup> , or 1 piece 0.5mm <sup>2</sup>	1000	
RSK5301				100	
RSK401	Green	5.13 - 7.62	1 or 2 pieces 0.5mm <sup>2</sup> , or 1 piece 0.75mm <sup>2</sup>	500	
RSK5401				100	

(\*) See page 435 for tooling specifications and for die selection

(\*\*) Alternatively, a special accessory (RSK-flag) can be used in place of the drain wire, with the yellow and the green connectors

## Selection gauge

### One-piece connector



#### Product Ref.: RSK-LEHRE

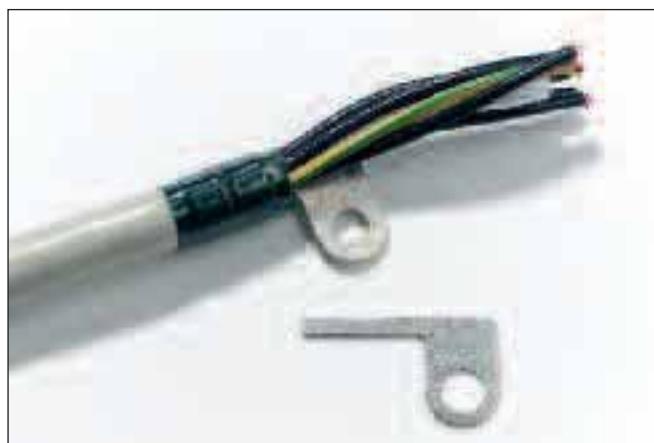
The choice of the appropriate connector and die set mainly depends on the size of the shielded cable.

The selection can be done very quickly with the RSK-LEHRE gauge.

1. Remove the outer jacket from the shielded cable, making the shielding visible
2. Insert this stripped end of the cable into the slots located around the gauge. The correct slot will be found when the cable can slide only in the upper part of the slot. If the cable can slide completely to the bottom of the slot, you should try with the smaller adjacent slot.
3. Once the appropriate slot is found, the corresponding RSK connector is defined by the colour of the strip around the slot, whereas the corresponding die set is given by the number marked below the slot (add prefix "D" to this number)
4. The table on page 433 summarises the different combinations of connector / die set, as well as the size of drain wire that can be used

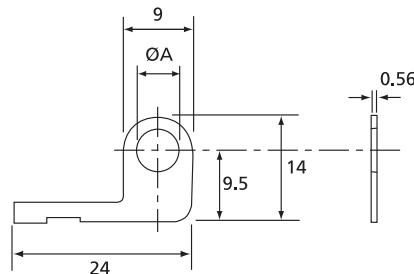
## Accessories: the RSK-FLAG connectors

### One-piece connector



Product Ref.	Termination screw size ØA	Weight [g/100]	Quantity [pieces]
RSK-FLAG-B3	M3	75	1000
RSK-FLAG-B4	M4	75	1000
RSK-FLAG-B5	M5	75	1000

- The RSK-FLAG connector is inserted into the one-piece Shield-Kon® connector and replaces the drain-wire
- Easy & direct connection of the RSK-FLAG to a piece of earthed equipment thanks to the installation hole
- Available in 3 sizes of hole
- To be used with the RSK-301 (yellow) or RSK-401 (green) connectors
- Material: Electrolytic copper
- Plating: Zinc alloy



## Ergonomic hand tools

### One-piece connector

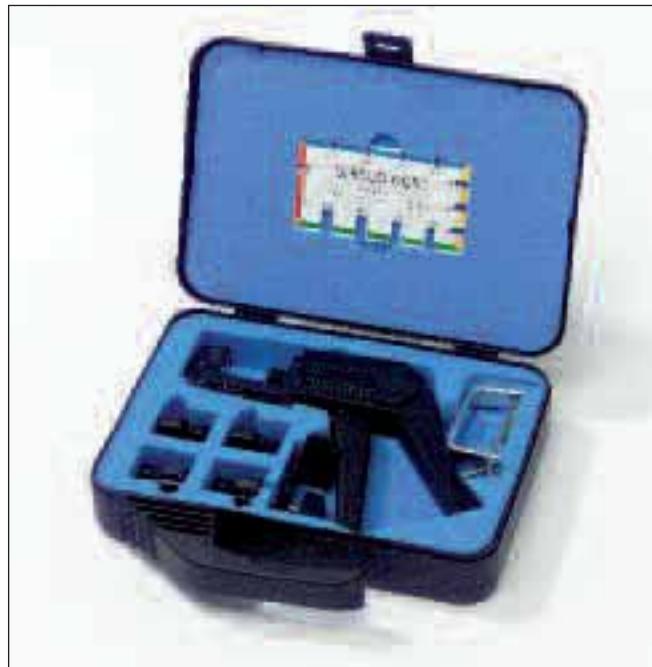
#### Product Ref.: ERG740

- Robust construction: metallic frame, partially covered with plastic
- Dies are easily interchangeable (to be ordered separately)
- Parallel action crimp
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Supplied in a plastic case with: 1 tool, 1 bench-mount stand for easier use in volume production, 1 gauge (Product Ref. RSK-LEHRE) for instant selection of the die and the connector to be used
- Dimensions of tool (L x W x H): 210 x 155 x 25 mm
- Weight of tool: 470 g
- Dimensions of plastic case (L x W x H): 245 x 210 x 55 mm
- Weight of plastic case with content: 930 g



#### Product Ref.: ERG740-01

- Same as ERG740, but in addition, supplied with 4 metal dies (D-101A, D-201D, D-301G, D-401K)
- Dimensions of plastic case (L x W x H): 245 x 210 x 55 mm
- Weight of plastic case with content: 1200 g



#### ERG740 die selection chart

Product Ref.	Colour	Shield diameter [mm]	For connector
D-101A	Red	1.27 - 1.79	RSK 101
D-101B	Red	1.80 - 2.28	RSK 101
D-201C	Blue	2.29 - 2.55	RSK 201
D-201D	Blue	2.56 - 3.00	RSK 201
D-201E	Blue	3.01 - 3.34	RSK 201
D-201F	Blue	3.35 - 3.65	RSK 201
D-301G	Yellow	3.66 - 4.13	RSK 301
D-301H	Yellow	4.14 - 4.71	RSK 301
D-301J	Yellow	4.72 - 5.12	RSK 301
D-401K	Green	5.13 - 5.86	RSK 401
D-401L	Green	5.87 - 6.36	RSK 401
D-401M	Green	6.37 - 7.00	RSK 401
D-401N	Green	7.01 - 7.62	RSK 401

## Overview

### Two-piece connector - Hexagonal Range

In the "Hexagonal Range" (diameters of dielectric between 1.1 mm and 9.4 mm), the outer sleeve is crimped with a hand tool and the result is a hexagonal-shaped crimp.

The choice of the appropriate combination of inner sleeve, outer sleeve and crimp tool / die will depend on the diameter of the dielectric.

However, a direct correlation with the diameter of the dielectric is not possible, as several different inner sleeves can be combined with the same outer sleeve (according to the type of shield).

With the directions shown below, a measuring instrument (calliper) is all that is required to make the right selection in 3 steps:

#### 1. Selection of the inner sleeve (GSB)

- Strip the outer insulator and remove the shield
- Measure the maximum value of the diameter of the dielectric (diameter without shield) by gently rotating the cable. When doing so, it should be possible to turn the cable easily between the jaws of the calliper
- Add 0.13 mm to the measured value. The sum will give the Inner Diameter (I.D.) of the GSB inner sleeve
- In the table, select the GSB inner sleeve having this I.D. or the nearest larger I.D.

#### 2. Selection of the outer sleeve (GSC)

##### Normal method:

- Slide the selected inner sleeve underneath the shield of the cable
- Measure the maximum diameter with the shield over the inner sleeve
- Add 0.8 mm to the measured value. The sum will give the Inner Diameter (I.D.) of the GSC sleeve
- In the table, select the GSC sleeve having this I.D. or the nearest larger I.D.

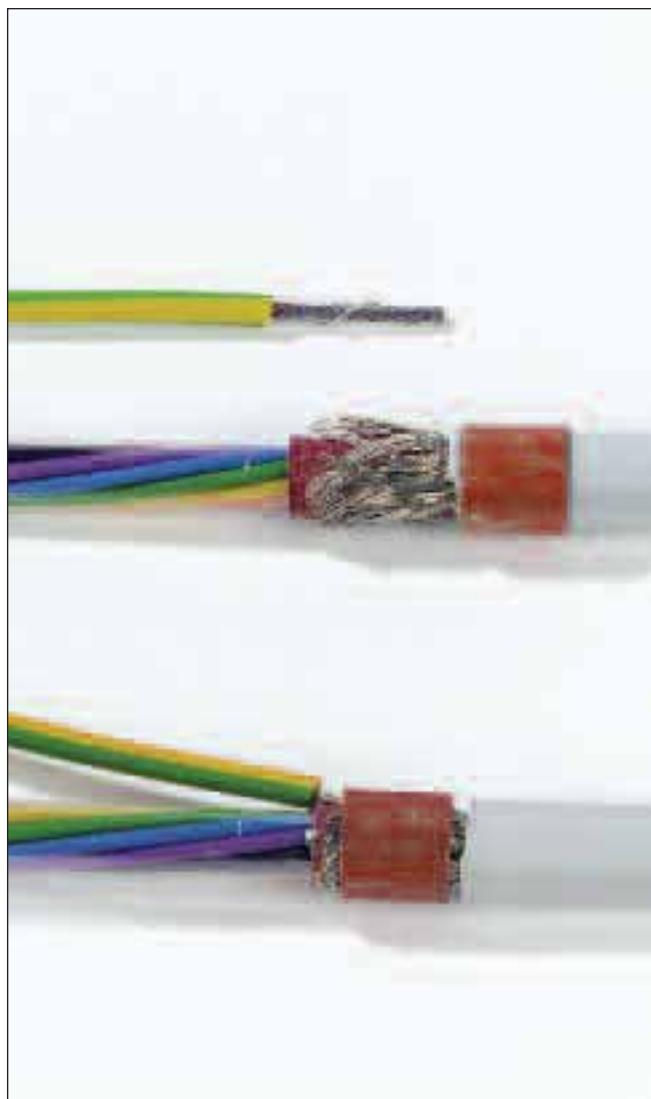
##### Quick method:

In most cases, a quicker method can be used to define the correct GSC outer sleeve:

- Once the appropriate GSB inner sleeve is found, the table will give the Outer Diameter (O.D.) of this GSB sleeve
- Add 1.5 mm to this O.D. and the sum will give the Inner Diameter (I.D.) of the GSC sleeve
- In the table, select the GSC sleeve having this I.D. or the nearest larger I.D.

#### 3. Selection of the die

The Product Ref. for the appropriate die is given in the table hereafter, in the same row as the GSC sleeve that has just been defined and in the column of the chosen tool.

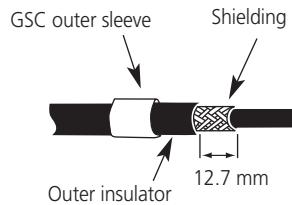


## Installation methods

### Two-piece connector - Hexagonal Range

Three installation methods are possible in the hexagonal range, for a quick, neat and accurately completed termination...at a greatly reduced production cost.

#### Method 1: Standard



A. After stripping the shield (12.7 mm in length), slip the outer sleeve over the outer insulation. If this is too big, slip the outer sleeve on, after method described in Fig. 3.



B. Widen the braided shield by gently rotating the inner conductor, then slip the inner sleeve under the braided shield.



C. Position the inner sleeve so that about 1.6 mm protrudes beyond the end of the braided shield.

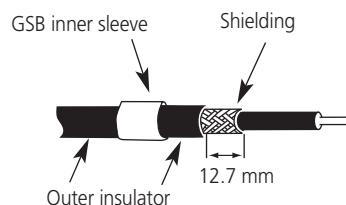


D. Slip the drain wire (0.25–0.5 mm<sup>2</sup>) under the outer sleeve (from the front or behind) and slip the outer sleeve over the braided shield.



E. Position the outer sleeve and ensure that the ends of all wires in the braided shield and drain wire are covered. Crimp both sleeves with the correct tool and tool die. Finished.

#### Method 2:



A. After stripping the shield (12.7 mm in length), slip the inner sleeve over the outer insulation.



B. Widen the braided shield by gently rotating the inner conductor.



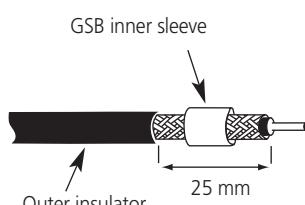
C. Fold back the braided shield over the inner sleeve and slip the outer sleeve over the braided shield



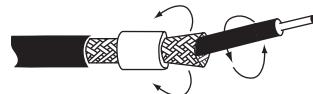
D. Slip the drain wire (0.25–0.5 mm<sup>2</sup>) under the outer sleeve (from the front or behind) and slip the outer sleeve over the braided shield.



#### Method 3:



A. After stripping the shield (25 mm in length), slip the inner sleeve over the braided shield



B. Widen the braided shield by gently rotating the inner conductor.



C. Fold back the braided shield over the inner sleeve and slip the outer sleeve over the braided shield



D. Slip the drain wire (0.25–0.5 mm<sup>2</sup>) under the outer sleeve (from the front or behind) and slip the outer sleeve over the braided shield.



E. Position the outer sleeve and ensure that the ends of all wires in the braided shield and drain wire are covered. Crimp both sleeves with the correct tool and tool die. Finished.

## Connector and die selection

### Two-piece connector - Hexagonal Range



The Thomas & Betts hexagonal compression (for diameters of dielectric up to 9.4 mm) is a reliable method for grounding, terminating and insulating shielded and coaxial cable. It has literally hundreds of millions of installations in communications, aerospace, electronic, telephone, radio and TV applications.

- Material: Hard bronze (inner sleeve), Soft bronze (outer sleeve)
- Finish\*\*\*: Tin plated (per MIL-T-10727A)
- Length: 7.9 mm (inner sleeve), 6.4 (outer sleeve)
- Standard packaging quantity: 1000 pcs. For 100 pcs packaging, add the code '5' in the Product Reference just after the "GSB" or "GSC" code. Example: GSC275 = 1000 pcs packaging, GSC5275 = 100 pcs packaging

Product Ref.	Colour code	Inner diameter [mm]	Outer diameter [mm]	Product Ref.	Colour code	Inner diameter [mm]	Outer diameter [mm]	Hand tool	Nest number	Hand tool* WT440/WT540 MIL - Spec.
<b>INNER SLEEVES</b>										
GSB 046	Silver	1.17	1.90	GSC 101	Silver	2.56	3.16	D-419403	19	4419
GSB 058	Yellow	1.47	2.10	GSC 128	Blue	3.25	3.86	D-419403	00	4400
GSB 063	Red	1.60	2.23	GSC 149	Purple	3.78	4.54	D-419403	01	4401
GSB 071	Green	1.87	2.44	GSC 156	Yellow	3.96	4.90	D-419403	02	4402
GSB 080	Blue	2.00	2.63	GSC 175	Blue	4.45	5.46	D-419403	03	4403
GSB 090	Orange	2.20	2.90	GSC 187	Orange	4.75	5.76	D-406410	06	4406
GSB 096	Purple	2.44	3.02	GSC 194	Red	4.93	5.74	D-406410	06	4406
GSB 101	Yellow	2.56	3.16	GSC 199	Silver	5.05	5.97	D-406410	06	4406
GSB 109	Red	2.76	3.36	GSC 205	Yellow	5.20	6.22	D-406410	08	4408
GSB 115	Silver	2.92	3.70	GSC 219	Green	5.56	6.35	D-406410	08	4408
GSB 124	Green	3.14	3.68	GSC 225	Purple	5.71	6.50	D-406410	09	4409
GSB 128	Silver	3.25	3.86	GSC 232	Orange	5.90	6.70	D-406410	10	4410
GSB 134	Orange	3.40	4.00	GSC 261	Yellow	6.63	7.54	D-411414	11	4411-SK
GSB 149	Blue	3.78	4.54	GSC 275	Silver	6.98	7.77	D-411414	12	4412
GSB 156	Red	3.96	4.90	GSC 281	Purple	7.14	8.40	D-411414	14	4414
GSB 165	Silver	4.20	4.92	GSC 287	Blue	7.29	8.30	D-411414	14	4414
GSB 175	Green	4.44	5.46	GSC 297	Green	7.54	8.50	D-411414	14	4414
GSB 187	Yellow	4.75	5.76	GSC 312	Yellow	7.92	9.20	D-415417	15	4415
GSB 194	Blue	4.93	5.76	GSC 327	Silver	8.30	9.45	D-415417	16	4416
GSB 205	Orange	5.20	6.22	GSC 348	Orange	8.84	9.98	D-415417	17	4417
GSB 219	Silver	5.56	6.35	GSC 359	Purple	9.12	10.13	D-450451	50	5450
GSB 225	Yellow	5.71	6.50	GSC 375	Yellow	9.53	10.31	D-450451	51	5451
GSB 232	Red	5.90	6.70	GSC 405	Red	10.28	11.50	D-452	52	5452
GSB 250	Green	6.35	7.14	GSC 415	Blue	10.54	11.76	D-452	52	5452
GSB 261	Blue	6.63	7.54	GSC 425	Silver	10.80	12.06	D-454	54	5454
GSB 266	Silver	6.75	7.54	GSC 460	Silver	11.68	12.95	ERG5456**	56	5456
GSB 275	Orange	6.98	7.77	GSC 500	Green	12.70	13.97	ERG5457**	57	5457
GSB 281	Yellow	7.14	8.40							
GSB 287	Silver	7.29	8.30							
GSB 297	Red	7.54	8.50							
GSB 312	Purple	7.92	9.20							
GSB 348	Orange	8.84	10.20							
GSB 375	Blue	9.52	10.30							

\* Dies 4419 and 4400 to 4417 are for the hand tool WT440. Dies 5450 to 5457 are for the hand tool WT540

\*\* Note: Product Ref. ERG-5456 and ERG-5457 are complete hand tools with pre-mounted die set

\*\*\* For Nickel plated terminals, add suffix NP to the Product Reference. Example: GSB128NP, GSC128NP

## Tooling

### Two-piece connector - Hexagonal Range

#### Product Ref.: WT440 and WT540

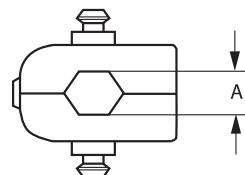
- MIL-specified parallel action hand tool
- A versatile tool, one frame with a selection of interchangeable dies covers the whole range of shield diameters in the Hexagonal Range
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Packaging: box containing 1 frame (dies to be ordered separately)
- Length: 203 mm (WT440), 264 mm (WT540)
- Weight: 450 g (WT440), 540 g (WT540)



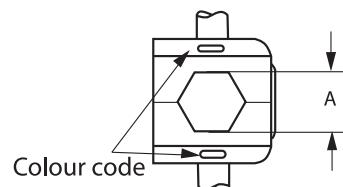
#### Dies for WT440 and WT540

- Interchangeable dies with single nest
- Hexagonal crimp
- Material: alloy steel
- Finish: black oxide
- 44xx series dies (for WT440 tool): crimping range (outer sleeves): from GSC101 to GSC348
- 54xx series (for WT540 tool): crimping range (outer sleeves): from GSC359 to GSC500
- 54xx series dies are marked with the die number and a colour-coded dot
- Go/no-go gauges are available for inspection

Dies for WT440 tool



Dies for WT540 tool



#### WT440 and WT540 die selection chart

Product Ref.	Dim. A across flats (+/- 0.10) [mm]	Colour code	For connector	Go / no-go gauge	Tooling
4419	2.67	-	GSC101	4419-G	
4400	3.25	-	GSC128	4400-G	
4401	3.84	-	GSC149	4401-G	
4402	4.06	-	GSC156	4402-G	
4403	4.52	-	GSC175	4403-G	
4406	5.00	-	GSC187, GSC194, GSC199	4406-G	
4408	5.41	-	GSC205, GSC219	4408-G	
4409	5.54	-	GSC225	4409-G	
4410	5.87	-	GSC232	4410-G	
4411-SK	6.48	-	GSC261	4411-G	
4412	6.81	-	GSC275	4412-G	
4414	7.37	-	GSC281, GSC287, GSC297	4414-G	
4415	7.85	-	GSC312	4415-G	
4416	7.98	-	GSC327	4416-G	
4417	8.23	-	GSC348	4417-G	
5450	8.71	Purple	GSC359	5450-G	
5451	9.12	Yellow	GSC375	5451-G	
5452	9.75	Red	GSC405, GSC415	5452-G	WT540
5454	10.90	Silver	GSC425	5454-G	
5456	11.53	Silver	GSC460	5456-G	
5457	12.07	Green	GSC500	5457-G	

## Tooling

Two-piece connector - Hexagonal Range



ERG2000KE die selection chart

Product Ref.	Nest nr.	For connector	Dimension of the nest [mm]	Gauge dimensions	
				Ø Go [mm]	Ø No-go [mm]
D-419403	19	GSC101	HEX 2.68	2.63	2.73
	00	GSC128	HEX 3.24	3.19	3.29
	01	GSC149	HEX 3.80	3.75	3.85
	02	GSC156	HEX 4.03	3.98	4.08
	03	GSC175	HEX 4.50	4.45	4.55
D-406410	6	GSC187, GSC194, GSC199	HEX 5.00	4.95	5.05
	8	GSC205, GSC219	HEX 5.36	5.31	5.41
	9	GSC225	HEX 5.56	5.51	5.61
	10	GSC232	HEX 5.84	5.79	5.89
D-411414	11	GSC261	HEX 6.46	6.41	6.51
	12	GSC275	HEX 6.78	6.73	6.83
	14	GSC281, GSC287, GSC297	HEX 7.32	7.27	7.37
D-415417	15	GSC312	HEX 7.74	7.69	7.79
	16	GSC327	HEX 7.86	7.81	7.91
	17	GSC348	HEX 8.32	8.27	8.37
D-450451	50	GSC359	HEX 8.66	8.61	8.71
	51	GSC375	HEX 9.10	9.05	9.15
D-452	52	GSC405, GSC415	HEX 9.72	9.67	9.77
D-454	54	GSC425	HEX 10.88	10.83	10.93

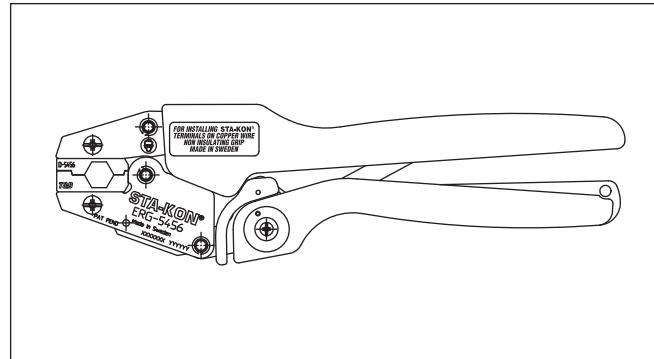


## Tooling

## Two-piece connector - Hexagonal Range

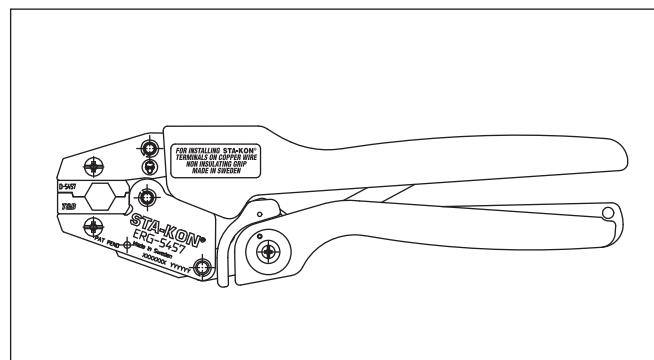
## Product Ref.: ERG5456

- Fixed die, ergonomic hand tool
- Designed to crimp the GSC460 outer sleeve
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Length: 252 mm
- Weight: 460 g
- Packaging: cardboard box containing 1 tool with pre-mounted die set



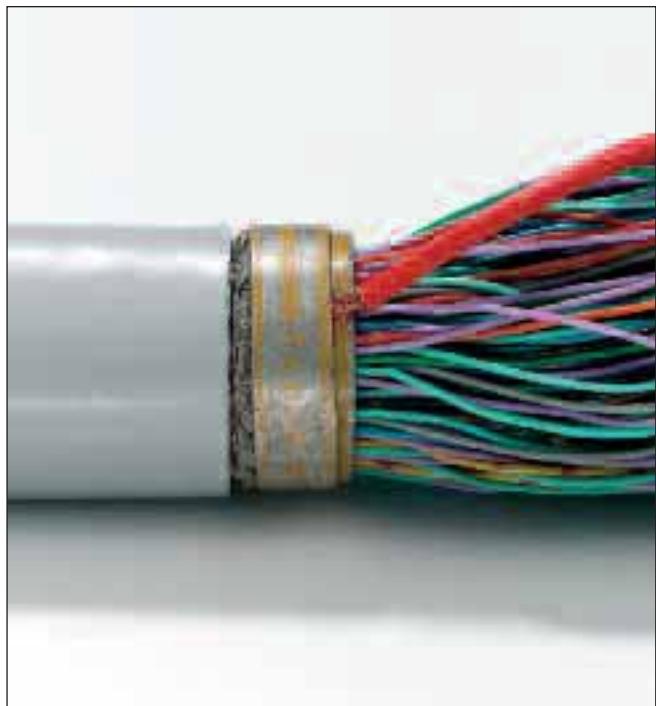
## Product Ref.: ERG5457

- Fixed die, ergonomic hand tool
- Designed to crimp the GSC500 outer sleeve
- Shure-Stake™ mechanism: once pressing has commenced, the tool can be re-opened only after successful completion of the crimping cycle
- Length: 252 mm
- Weight: 460 g
- Packaging: cardboard box containing 1 tool with pre-mounted die set



## Installation method

### Two-piece connector - Circular Range



The "Circular Range", for Multiple or Overall shielded cables, refers to larger diameters of dielectric (between 9.5 and 36 mm) and owes its name to the circular shape of the crimp.

The Shield-Kon® Connector System for multiple-conductor shielded cable is based on the principle of cold swaging. It uses a two-piece compression connector, which is colour-coded to match the proper die. The connector consists of a hard brass collector inner sleeve (ring) and a soft copper compression outer sleeve (ring). Each set of rings and matching installing die will connect a minimum of 5 shielding braids with one ground wire. The maximum number of braids is limited only by the space between the inner and outer rings.

#### The design advantages are:

1. Positive selection of inner and outer rings and installing die by a complete colour-coded system.
2. A more reliable grounding termination because only one ground wire connection is made - conventional daisy chain jumper method is eliminated.
3. Smaller, more compact bundle is easy to inspect.
4. Only one ground wire is required, however additional ground wires may be used if needed.
5. Smooth insulator protects conductor insulation.
6. With one stroke of the tool, the interlace die will produce a 360° compression uniformly securing all individual shields around the connector.

#### Installation method:



1. After overall insulation is removed to expose shielded cables, each conductor must be freed from the shielding braid. The braid is then folded back until all conductors are freed.



2. Flattened shielding braids are evenly distributed around the periphery of the GSB inner ring.



3. Position the GSC outer ring over the flattened shielding braid, locating it over the centre of the GSB inner ring. Braid may be trimmed even with the edge of the outer compression ring before or after compression. Ground wire or wires may be inserted between the outer ring and the shield prior to compression.

## Connector and die selection

### Two-piece connector - Circular Range

The choice of the appropriate combination of inner ring, outer ring and crimp tool / die will depend on the overall diameter of the inner conductors (underneath the shield)

In the case of the Circular range, there is a direct correlation between the diameter of the inner conductors and the inner and outer rings.

With the directions shown below, a measuring instrument (calliper) is all that is required to make the right selection.

#### Selection of the GSB inner ring

- Measure the maximum value of the overall diameter of the inner conductors (underneath the flattened shield) by gently rotating the cable. When doing so, it should be possible to turn the cable easily between the jaws of the calliper
- Add 0.13 mm to the measured value. The sum will give the Inner Diameter (I.D.) of the GSB inner ring
- In the table, select the GSB inner ring having this I.D. or the nearest larger I.D.

#### Selection of the GSC outer ring and of the die

Once the appropriate GSB inner ring is found, the table hereafter immediately gives the corresponding GSC outer ring and the appropriate die for the 13640 hydraulic head.



#### Technical Information Inner sleeve

Material	Copper alloy ASTM B135
Finish	Electro tin plated (per MIL-T-10727A)
Length	15.2 mm

#### Technical Information Outer sleeve

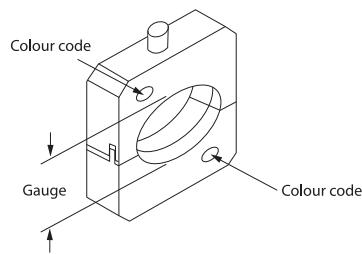
Material	Copper ASTM B188
Finish	Electro tin plated (per MIL-T-10727A)
Length	11.2 mm

Product Ref. GSB	Colour code	Inner diameter [mm]	Outer diameter [mm]	Product Ref. GSC	Colour code	Inner diameter [mm]	Outer diameter [mm]	Hydraulic crimp head 13640 MIL-Spec.
<b>INNER SLEEVES</b>								
GSB 430	Red	10.92	12.70	GSC 590	Red	14.99	17.02	GS590
GSB 550	Blue	13.97	15.75	GSC 710	Blue	18.03	20.07	GS710
GSB 670	Silver	17.02	19.05	GSC 840	Silver	21.34	23.37	GS840
GSB 810	Brown	20.57	22.35	GSC 1010	Brown	25.65	27.61	GS1010
GSB 920	Green	23.37	25.40	GSC 1130	Green	28.70	30.73	GS1130
GSB 1040	Pink	26.42	28.45	GSC 1250	Pink	31.75	33.78	GS1250
GSB 1122	Orange	28.50	30.28	GSC 1332	Orange	33.83	35.87	GS1332
GSB 1224	Purple	31.09	32.87	GSC 1440	Purple	36.58	38.61	GS1440
GSB 1353	Yellow	34.37	36.14	GSC 1563	Yellow	39.70	41.73	GS1563
GSB 1425	Red	36.20	39.24	GSC 1670	Red	42.42	44.45	GS1670

Standard packaging quantity: 50 pcs

## Tooling

Two-piece connector - Circular Range



## Product Ref.: 13640

- Hydraulic tool head
- For all 2-piece Shield-Kon® terminals in the circular range
- Quickly interchangeable steel dies (to be ordered separately)
- 3.5 ton nominal pressure (output)
- Pioneer coupling, for quick assembly
- Requires a 9800 PSI (approx. 676 bar) operating service pressure (input)
- Length: 400 mm approx.
- Weight: 5.5 kg approx.

## Dies for 13640

- Interchangeable dies with single nest
- Circular crimp
- Material: alloy steel
- Finish: black oxide
- Marked with the die number and a colour-coded dot
- Crimping range (outer sleeves): from GSC590 to GSC1670
- Go/no-go gauges are available for inspection

## 13640 die selection chart

Product Ref.	Gauge Ø min. [mm]	Gauge Ø max. [mm]	Colour code	For connector	Go / no-go gauge
GS590	14.91	15.16	Red	GSC590	GS590-G
GS710	17.96	18.21	Blue	GSC710	GS710-G
GS840	21.26	21.51	Grey	GSC840	GS840-G
GS1010	24.59	24.84	Brown	GSC1010	GS1010-G
GS1130	27.66	27.91	Green	GSC1130	GS1130-G
GS1250	30.71	30.96	Pink	GSC1250	GS1250-G
GS1332	32.54	32.79	Orange	GSC1332	GS1332-G
GS1440	35.13	35.38	Purple	GSC1440	GS1440-G
GS1563	38.40	38.66	Yellow	GSC1563	GS1563-G
GS1670	41.00	41.25	Red	GSC1670	GS1670-G

## Tooling

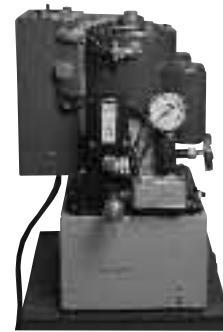
## Two-piece connector - Circular Range

A small selection of pumps to operate the 13640 head is shown below (please contact your Sales Office for availability of other types of pumps).

**Product Ref.: 13810E**

- Hydraulic pump, electrical power
- Service pressure (output): 10.000 psi (690 bar)
- Motor power: 1 1/2 HP - 12 Amp
- Voltage & frequency: 230V - 50 Hz
- Capability: 3800 cc / min at 200 psi (13.8 bar) 1000 cc / min at 8000 psi (552 bar)
- Reservoir volume: 7.6 l
- Coupling: Pioneer fitting
- Dimensions (L x W x H): 275 x 381x 522 mm
- Weight: 27 kg without oil
- The Pump 13810E also requires one 13611 hand switch or one 13612 foot switch and one 13613 hydraulic hose

13810E

**Product Ref.: 13606**

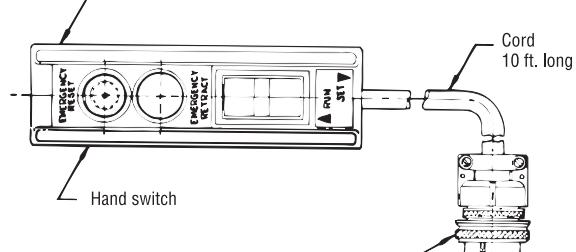
- Hydraulic pump, foot (or hand) activated
- Service pressure (output): 10.000 psi (690 bar)
- Over-pressure security valves
- Coupling: Pioneer fitting
- Dimensions (L x W x H): 597 x 133 x 165 mm
- Weight: 10.4 kg
- The pump 13606 also requires one 13613 hydraulic hose

13606

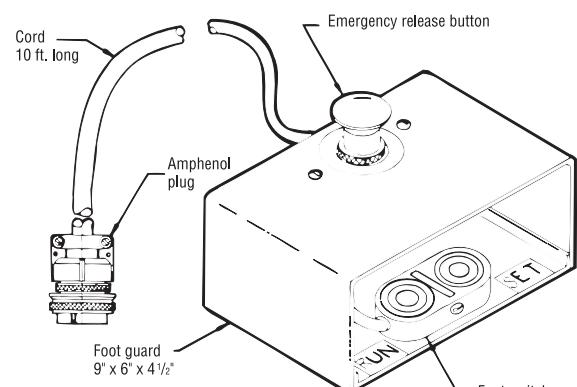
**Product Ref.: 13611**

- Hand switch

13611



13612



13613

